How do you check the pressure on your tires?

Do you measure how low the tire is against the ground?

No!

Instead

you measure the air pressure inside the tire

By having the right air pressure you optimize the performance of the tire

This is comparable to measuring the pressure inside the cylinder nip of a printing press

Rolf Hansson Consulting
In the printing industry, we continue to use the incorrect concept of measuring the height of the blanket over the surface of the cylinder or the bearer. This value is then used as a complete measurement of performance.

Alternatively, by measuring the pressure level between plate and blanket, all factors influencing the function of the blanket in the cylinder nip will be included.

Factors influencing the function of the blanket in the cylinder nip

- Surface hardness
- Surface structure
- Properties of the surface rubber
- Compressibility
- Fabric properties
- Underpacking
- Height of blanket over bearer
- Tightening of blanket

Rolf Hansson Consulting
**Pressure in the cylinder nip**

It is well known that blankets of varying design and manufacture are being compressed differently when exposed to the same pressure level. However, in order to optimally use each blanket type, an underpacking should be used which is based on the specific properties of the blanket, rather than a standard instruction.

For the first time, it is now possible to measure the pressure level inside the cylinder nip and get a value in N/cm². The method is easy to use, and the measurements are the same regardless of who takes the measurements. The value can be communicated and easily integrated into systematic quality control. Over time, the durability of the blanket can be observed and easily compared with other blanket designs in the software *hansson nips*.

**Pressure Indicator™**

The pressure level between cylinders is instantly shown on the display of the Pressure Indicator™ instrument. The extra-thin sensor blade is inched into the cylinder nip, and immediately the peak pressure level of the nip is reported in N/cm². The instrument can be calibrated, which makes the measurements verifiable and therefore the values can easily be linked to national or international standardization systems.

Get more information about the instrument on [www.nipcontrol.com](http://www.nipcontrol.com).

**The cylinder nips**

The paper must be squeezed into the blanket with sufficient force, and blankets with varying viscoelasticity (flexibility) perform this task differently. Too low pressure level will lead to bad transfer of ink and water to the paper and a poor print. The result will be a print with mottling effects which is easily recognizable.

Too high pressure level will lead to plate deterioration and high heat generation. However, this cannot easily be observed on the printed sample until after a long time.

Heat is always generated inside the cylinder nip as the blanket is being compressed and then expands during high frequency. The heat generation affects the rheology of the ink and water emulsification as it passes the cylinder nip on its way to the paper. An instable rheology will lead to an instable print quality.

The level of heat generation is furthermore a measure of the amount of energy needed to compress the blanket. The more force needed to run the printing press, the more energy is used. The ability to control and manage energy consumption is becoming increasingly important for both economical and environmental reasons.

The demands on the properties of a blanket and its mounting on the cylinder are to some extent contradictory. The instrument Pressure Indicator™ is especially important in exposing high pressure levels.

**Mounting the blanket**

When mounting the blanket it is important to tension it with optimal force. Overtensioning the blanket makes it thinner and it looses its flexibility. This will influence the pressure including the measured value in the Pressure Indicator™. The best way of avoiding these problems is torquing the blanket.
**Trends**

The ability to detect trends of press variables, makes it easier to understand the sustainability of material durability and press settings, thereby facilitating predictability and repeatability of the printing process. This is now possible by using the Pressure Indicator™ and the trends analysis software hansson™nips.

In this sample diagram from hansson™nips, a change in pressure level can be observed from the 9th measuring series on. This can indicate that the blankets have aged and are starting to become worn.


For further information see www.optirep.