



NONWOVEN TERMS

For the informed employee

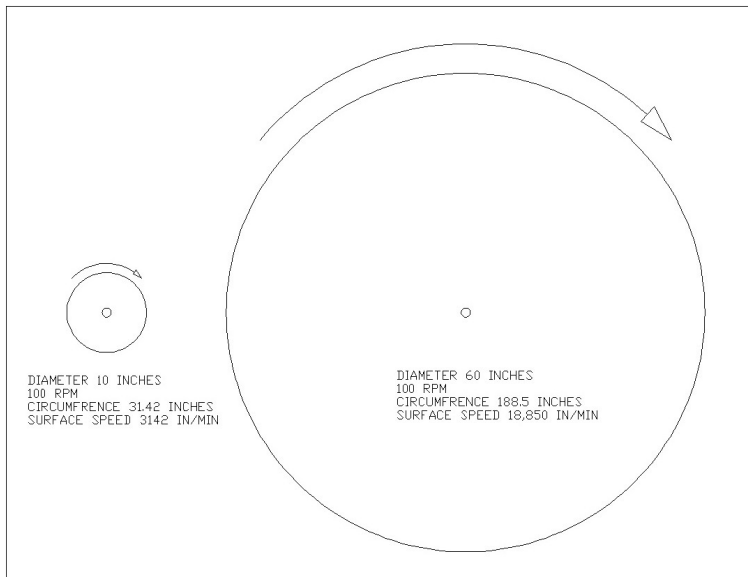
RPM/Surface Speed

RPM stands for revolutions per minute and refers to how many complete rotations a shaft or other rotating object makes in a minute. Surface speed is a linear measurement of how far the surface of a roll travels in a minute. The rolls could be a card main cylinder, the head pulley of a conveyor, a calender roll, or a roll of fabric on a winder. To understand the relationship between RPM and surface speed we will use the illustration below.

In the left roll the shaft is rotating at 100 rpm and the diameter of the roll is 10 inches. Since the circumference or distance around the roll is always 3.1416 times the diameter, the circumference is 31.416 inches. The surface speed is rpm times circumference, 100 times 31.416, or 3,142 inches per minute. 100 rpm is not very fast and the surface does not travel very far in one minute.

For the second roll we increase the diameter to 60 inches. That is the size of main cylinders on many cards. We leave the rpm at 100. This time the circumference is 3.1416 times 60 inches or 188.5 inches. The surface speed for the same rpm jumps to 18,850 inches per minute which is 1,570 feet per minute. Notice that the diameter of the large roll is 6 times the diameter of the first roll and the surface speed is 6 times that of the first roll. We say that the surface speed varies directly as the diameter if the rotation speed or rpm stays constant.

RPM and surface speed are measured with a hand tachometer. The pointed tip is used in the end of a shaft to measure rpm and the wheel is used on the surface of a roll to measure surface speed.



HAND TACH

“Dictionary is the only place that success comes before work. Hard work is the price we must pay for success. I think you can accomplish anything if you're willing to pay the price. “

Vince Lombardi

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