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NIP WIDTH IMPRESSION KIT FOR RUBBER COVERED ROLL UNWAXED STYLE INSTRUCTIONS

The use of carbon paper to determine the actual nip widths of pairs of rolls under operation conditions is too infrequently used. Normally, if the web being processed appears to be uniform in moisture content as it leaves the process, it is assumed that all is working well all along the line. Uneven pressure along the width of the roll caused by insufficient crown will not be detectable by tests on the furnished product, provided the pressure is not high enough to actually start crushing the web being processed.

The effect of this uneven pressure, caused by lack of crown, or excessive loading for the crown used, will then become evident only by uneven wear and end-cracking of the rubber covered rolls, decreased felt life, poor paper information, shady dyeing, etc. The time will be more than compensated for by improved performance and decreased costs.

YOUR PRC NIP WIDTH KIT

This Passaic Rubber Company Nip Width Kit has been specifically designed to determine the actual working nip widths of a pair of rolls under operation conditions. This impression may be used to determine the need for corrective measures, such as re-crowning or refinishing, or to determine more satisfactory roll pressures for a given operation.

These impressions should be retained and may be referred to periodically, and be compared with successive impressions to check rate of wear, roll performance, etc. Nip width impressions are taken when rolls are not rotating and only when the machine is down and the felts (if used) are removed or pushed to one side.



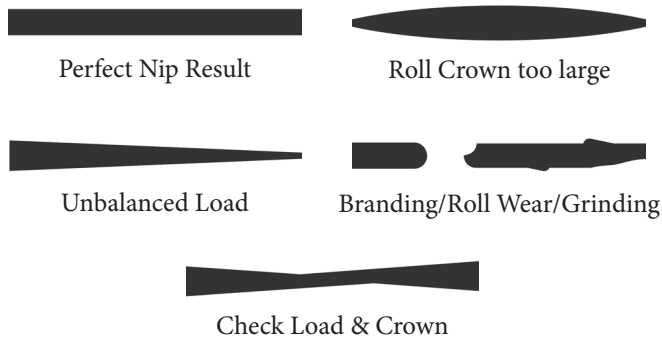
NIP IMPRESSION KIT INSTRUCTIONS

A. Make certain that both the top and bottom rolls are clean and dry in the area in which the nip width impression is to be taken.

B. Dispense the carbon and paper on the bottom roll (white paper down) at the line of contact between top and bottom of roll. Make certain that carbon and paper are centered so that the nip impression appears in the center. If rolls are horizontal and on the same vertical place, the kit will normally remain on the roll without use of tape. If rolls are offset or overhang we suggest the use of small strips of pressure sensitive tape to hold the sheet in proper position.

C. Bring the rolls together, gently at first, then gradually load to normal operations pressure. Wait for approximately one minute after pressure has normalized before separating the rolls. Carbon sheet may then be removed and disposed of and the nip width impression evaluated.

For more information or to purchase, please visit our website at:
passaic.com/product/nip-impression-paper



DETERMINATION OF ROLL CROWN FROM NIP WIDTH IMPRESSION

Having the nip widths under the desired loading and knowing the diameters of our rolls, we can determine the additional crown for:
2 Roller System (Different Diameters).

C = additional crown required, ie, the difference in diameter between the center and 2" in from the ends of the dub

N_1 = nip width at center of roll
 N_2 = nip width 2" from the end of the dub
 D_1 = diameter of the top
 D_2 = diameter of bottom roll

Then:

$$C = \frac{(N_2^2 - N_1^2) (D_1 + D_2)}{2D_1D_2}$$

Or the rolls have equal diameters:

$$C = \frac{N_2^2 - N_1^2}{D}$$

$N_1 = 0.6$
 $N_2 = 0.8$
 $D = 12$

$$C = \frac{0.8^2 - 0.6^2}{12} = \frac{0.64 - 0.36}{12} = \frac{0.28}{12} = 0.023$$

If our rolls were originally ground straight face we would now put a crown of 0.023" into the rubber. If the crown were originally 0.030" it would be increased to 0.053". If the situation were reversed and the nip at the center (N_1) were 0.8" and the nip ends (N_2) were in 0.6", our indicate crown would then be 0.023" indicating that the nip already contained too much crown. Now if the crown of our roll were 0.030" then the proper crown would be 0.003". It is frequently helpful to determine crowns for various loadings so that if one desires to change the loading then the proper crown for the roll will be immediately available. The crown as determined above is, of course, the combined crown for the two rolls involved. The amount of this crown put into the top and the bottom roll will depend on the individual machine and operation.