



IPA FREE PRINTING WITH HEIDELBERG PRESSES

IPA free printing is a real possibility with the newer generation of fountain chemistry. It is mature technology and as of 2008 there are virtually NO printers in the United States using IPA in their dampening systems and very few in Europe. Our experience here has seen some problems encountered converting Heidelberg presses to run 100% IPA free as opposed to Komori, Mitsubishi, KBA, Ryobi and Roland. This is due to a number of engineering differences. However, there are many tips and tricks that we have developed to extract the maximum efficiency from Heidelberg presses during this process. We have converted many Heidelberg's to part or total IPA Free running and we have listed the tips below:

Shore Hardness- Dampeners: Soft Durometer is essential. *The optimal is 18-22° degrees, Shore A.* If the hardness is in the 30° range, IPA can only be reduced to around 3-5%, and no more.

Vario Dampener Settings: Heidelberg applies the Delta Effect and this refers to the Patented technologies used to slow down the water form roller while printing to remove hickies from the plate. The technology was originally designed by Dahlgren® and combined a skew setting for metering and an 8.2% reduction in overall surface speed as it relates to the surface speed of the plate cylinder. Heidelberg calls the option "Vario" dampener (meaning variable speed) Heidelberg slow the matte chrome roller to 12% and in theory this would by friction, drag the dampening form roller instead. This presented problems (especially in the USA) when running IPA free as it disturbed the harmonics of the system especially when the plate gap was encountered. *The Vario needs to be turned off when running IPA free.*

Roller Profile- Dampeners: Another trait of Heidelberg Vario presses is they have a crown on their dampening rollers rather than a skewing facility. This is similar to a microscopic "bulge" in the centre of the roller thinning out to the edges. The purpose of this is to force the dampening solution to the edges of the plate, and overcome the drying out on plate cylinder extremities. (where the IPA evaporates due to heat) As we are removing the IPA and evaporation is dramatically reduced, it is advised to *eliminate the crown.* If not eliminated you will see excessive dampening and washing out on the plate edges and fluctuations in ink-water balance during the run.

Roller Settings: You need to increase the stripe of the plate dampener to about 8-10 mm to help with plate clearing and back off the metering roller pressure to the chrome to aid the flow of the new "thicker" dampening solution to the plate (the water is now thicker or more viscous with removal of IPA). It is also critical to change the pre-dampening profile on the CPC units. Normally the pre-dampening speeds start at around 600, so increase this to 800-900 to provide extra wetting for cleaner start ups. On later model presses in order to keep the dampeners clean at slowdown or stop, set Print Start to 5/ Print Interrupt to 3 and Print Post Damp to 3. It is wise to test different settings to find the sweet spot.

Other Settings: Because you are now no longer using IPA, you also do not need the tank chiller to be so cold. The chiller is only there to keep the IPA from rapidly evaporating. Therefore raising the tank temperature to around 16°C will prevent "shocking" the mix, and aid the fount/ water combination to flow and lay better on the plate.

Roller Compounds- Dampeners: We have seen best results when using *Westland® special IPA FREE dampening rollers.* As an alternative we have had success with *Katsura® Rollers* and in some cases with *Bottcher®.*

Again remember that this is mature technology worldwide and the product you are running is used extensively in the USA, Europe and Asia 100% IPA free. Good luck and happy printing!