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AUTOMATION IN PAD PRINTING

There are occasions when we are called in to resolve printing problems that unfortunately have expensive solutions. This is particularly the case when pad printing is used on automated systems. One application in particular was where 8,000 components an hour had to be printed with a single colour. These components were approximately 300 mm x 12 mm and 2 mm thick. The feed mechanism was very sophisticated and would transport the items at the required speed to and from the printer, unfortunately it appeared that the designers had spent most of their time working on this mechanism and the printer was placed on almost as an after-thought. Location devices at the print position restricted the pad shape that could be used. These location devices also operated intermittently. The nests were designed such that the metal item bowed under the pressure of the pad. In addition the printing machine stroke had been increased to enable the print position to be nearly three inches below the bed of the print machine. The effect of this was that the print machine cycle time was extended such that the print rate, dictated by the feed mechanism could not be maintained. Even with the feed mechanism slowed down the items were moving whilst being printed, and the apex of the pad was running through the center of the print resulting in thinning of the ink at this point. The problems could be resolved but it required a £30,000 re-build of the equipment. The nests at the print position had to be upgraded and the location devices moved. This allowed a pad to be used shaped such that the apex was off the print area. The printing machine was lowered so the stroke was reduced.

Recognise that it is not possible always to achieve ideal presentation of the item to the printing machine, because of the size or shape of the item to be printed. However it is vital that a feed mechanism should be designed around a printing machine or machines, rather than the machine mounting onto a feed mechanism. As a rule the safest option is to buy the feed mechanism from the printing machine supplier and give them total responsibility. Special purpose machinery manufacturers do not always understand the peculiarities of pad printing (although some are very knowledgeable) and it can result in being very expensive for all concerned.