

Who wants Yesterday's Paper?

Old news has no market value. Similarly, yesterday's newspaper has no value today. This in turn means that it is most important to print the latest news, at the last possible moment, at the highest possible speed. Therefore, the controller system must meet extremely high demands.



Manugraph India Ltd. is one of the premier manufacturers of offset printing machines in India. Founded in 1972 in Kolhapur, Western India, the company is now a leading manufacturer of 4-page press in Asia, and well-known around the entire world.

The company has a modern manufacturing centre at Kolhapur, with an area of 130,000 sq. meters, and an employee base of 1200 people. An ISO 9001 certified company, Manugraph has very strong Research & Development units. The company has always been a pioneer at incorporating top-of-the-line and forward-looking automation products in their machines.

Manugraph machines take the performance demands on automation products to new limits by employing large numbers of interlinked PLCs and MMIs.

An extensive product range

Manugraph has a line of web offset presses named Cityline express,

Hiline, Frontline and Mainline. The sheet-fed offset press is called Printmagic 74.

Manugraph Industries decided to partner with B&R for development of the Hiline series in the year 2000. Since then, the machines have been successfully installed not only in India, but also in several locations abroad. B&R is successively involved in automating of more and more of Manugraphs products.

Apart from the technical capabilities, the application demands high availability of the control system. This factor is extremely critical in the printing machine industry. Applied to the introductory statement, one can see that a delay during printing is not acceptable. After all, nobody wants to read yesterday's paper. In other words, the machine must deliver the desired output at the desired time. Since the news continues to pour in at all times of day and night, the actual printing is done as late as possible.

The application

The NL 45 is a newspaper printing machine manufactured by Manugraph India. It can print newspapers with speed a of 45,000 IPHs (Impressions per Hour).

The machine is divided into three basic sections:

The Folder

Here all the finished, printed newspapers are collected and folding, cutting, multi sheet detection and counting operations are performed. These operations are controlled by the main PLC.

The back bone of the system consists of a B&R System 2005 CPU. A PROVIT 2000 IPC handles visualization and HMI. The machine operator has complete control over all functions, such as: water/ink application, machine setup, web (paper) break detection functions and setting the registration mark of the newsprint. Furthermore he can monitor any



“We at Manugraph are extremely happy with the innovative automation solutions provided by B&R. Their timely technical support is a major contribution to satisfying our clientele.”

Mr. Mohan Harshe
Director (Works-Unit 1 & 2)
Manugraph India Ltd.

alarms and warnings via this operating panel.

The Printing Unit

There are two types of printing units. Horizontal printing units (H/Y) and Hiline stack printing units. Generally, single or two-color printing is done using horizontal printing units while four color printing is done with the Hiline stacks.

Typically, a machine has eight horizontal printing units and four Hiline stacks. Each printing unit has a System 2005 PLC with a Panelware P127 operator panel. The operator can therefore control each printing unit locally. The main controller sends commands to the local printing unit PLCs via a CAN network. The local PLCs then analyze the commands

and perform the actual operation. In order to ensure high printing quality, the operator can monitor and control the water/ink percentage and set the registration marks individually.

The Auto Paster

These are basically reel stands. These stands maintain the proper paper tension and perform pasting functions, i.e. when an old paper roll ends the new paper roll is automatically pasted on. These operations are carried out by a standalone System 2003 PLC. The main function of this controller is to provide safety redundancy for the machine. It too is connected to the main controller via CAN.

As a forward looking company, Manugraph is constantly looking to

upgrade their machines. Some of these upgrades include using more powerful HMIs, servo drives for completely shaftless solutions, etc. Thanks to continuous product and technology innovations, B&R can keep up with these growing demands. The future promises to strengthen the relationship and cooperation between B&R and Manugraph.

Configuration of the Manugraph Hiline Newspaper Printing Machine

