

Simple Solutions for Complex Tasks



[File name: **abb1.tif**]

Fig. 1: Selection of lifting columns for each possible application

Plant and special machines are combinations of individual technical solutions which are skilfully combined to provide a complete system.

To improve the reliability of the final solution and to make the manufacturing cost more competitive manufacturers are using the so-called mechatronic components.

They are available quickly, can be integrated, and are consistent in technology, and in addition to that, they are on the cost level of series production.

Decision processes for the acquisition of a plant can take months, even years. However, at the time, the decision for the new investment has been made, the new system actually has long been overdue. Consequently, the just received order turns into a race against delivery time.

This, as well, is the case for the implemented logistics plant for HP printers. On the conveyor section, accessories like power cables, printer cables and documentation shall be packed into the still open boxes. This job shall be done manually directly on the conveyor section in a standing position.

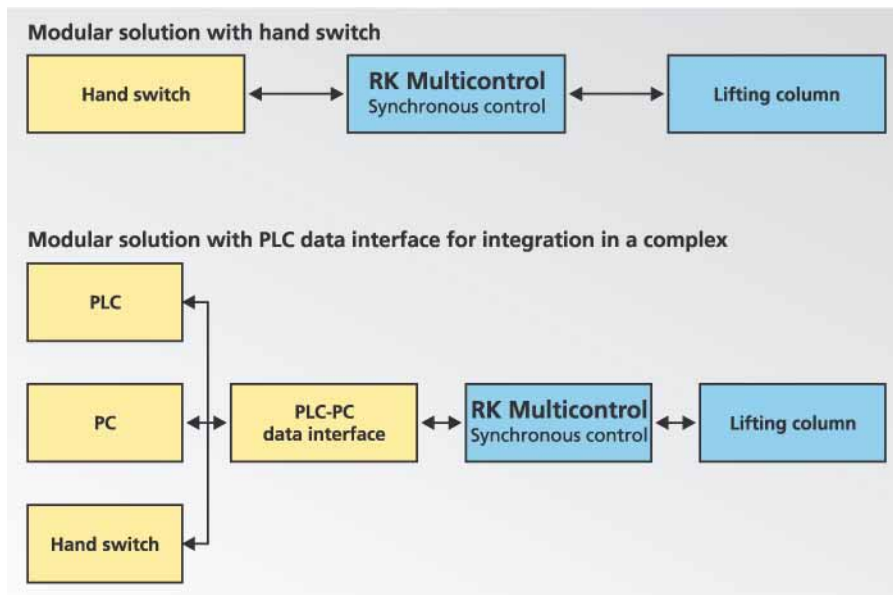


[File name: **abb2.tif**]

Fig. 2: Ergonomic, height-adjustable conveyor section for packing of printers

In this case, the challenge was to adjust the height of each individual segment of the conveyor system according to ergonomic aspects. Due to the varying height levels of the other conveyor systems that feed the accessories, it was also necessary to integrate a height adjustable solution for these systems.

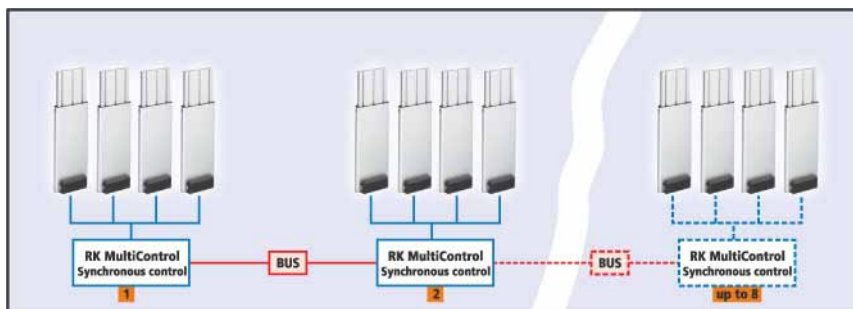
Due to the complexity and the size of the plant synchronously controlled height adjustment units on the corner positions are ideal. Actually this is an expensive and long lasting job. Unless, readily made solutions are used which are able to be integrated optimally.



[File name: **abb3.gif**]

Fig. 3: Alternative control models

For these tasks, complete systems of motor driven Powerlift-lifting columns and MultiControl-controls made by RK Rose+Krieger were used. On one hand, the Powerlift-lifting columns include the drive unit consisting of a worm gear motor and a system of toothed racks. On the other hand, the lifting columns are equipped with longitudinal guides to safely absorb the side forces. The MultiControl control unit can be integrated in the column depending the demands or it can be placed in a separate housing.



[File name: **abb4.gif**]

Fig. 4: Up to 8 controls with 4 lifting columns each can be synchronised

The columns are connected to each other by BUS-technology and can be moved synchronously on request. With this, 2 or maximal four columns can be synchronised depending on their application. If the external MultiControl control unit is used it is possible to increase this number because the controls also communicate with each other via BUS-lines. —In this way, up to eight controls with four lifting columns each can be chained without control loss. In the above mentioned logistic solutions, two 4-times synchronisations and one 6-times synchronisation were applied.

The Plug&Play principle also facilitates the starting up and saves valuable working time. This is why the MultiControl control unit recognises the connected components automatically.

Depending on the stated job, the synchronised lifting columns can be moved by hand switch or can be integrated in the control loop of the plant by optionally available PLC-modules. (See image.)

It is recommended to consult the manufacturer for selecting the mechatronic systems. The manufacturer will find the best possible combination, accepts responsibility for the delivered solution package and offers world-wide service including spare parts.



[File name: **abb5.tif**]

Fig. 5: Ergonomic, height-adjustable conveyor section for packing of printers

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Quote 1: Mechatronic components as independently functioning subsystems have amazing rates of growth because they are cost-effective, reliable and available quickly.

Quote 2: Due to our 30 specialists' assistance of our RK development centre, we are able to react fast to the market situation, to identify potentials and to find the optimal solution by applying the resulting developments.

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