NEW BIG BAG CLOSING SOLUTION

BRANCH OF INDUSTRY
packaging

ITEM
robotic system for automatically closing bags contained in cartons

CYCLE TIME
less than 20 s per carton

SPECIAL TECHNICAL FEATURES

- bags are handled and closed by robots
- a modularly constructed system, supplied complete and ready for use
- available as either stand-alone or inline solutions
- reduced emissions during the filling of bags with pigments

TASK

In conjunction with a development project, ASA Automatisierungs- und Fördersysteme engineered an automated bag-closure system. The focus of the development work was on arriving at a process for handling and closing bags without exposing personnel to materials hazardous to health, particularly while filling bags with finely powdered materials that can readily become airborne.

IMPLEMENTATION

This system incorporates a pair of robots that prepare cartons containing plastic bags for filling and, once filled, close the bags so that the cartons are ready for closing and shipment. The bags are initially automatically filled. Cartons then enter a cell and are halted at a defined position.

The pair of robots grasp the edges of the bag, raise the slack portions of the bag, press them together until as little air as possible remains in the bag, and then close the bag, where one robot grasps those portions of the bag that overhang the top edges of the carton, which are then twisted together by rotating the carton, and attaches a clasp or other means of closure to the hank of twisted plastic foil. Various means of closure may be employed, depending upon the fill material involved and customer requirements. The entire procedure takes less than 20 seconds. The carton containing the filled and closed bag, which is still open, then exits the cell and runs out onto a roller conveyor, where it is closed and is then ready for palletizing.

BENEFITS

The packaging cell supplied by ASA automated work that had formerly involved health hazards due to particulate emissions. Its air intake and exhaust systems have been designed such that no contamination by particulates of areas outside the cell occurs, which also contributes to creating a more-healthy working environment.

This ASA-system's clearly defined interfaces allow an incremental automation of preceding or subsequent processing stages. For example, the system may be comparatively easily adapted to accommodate increasing packaging volumes and processing packaging units holding other contents. Although this bag-closure system was initially designed as a stand-alone solution, it has been so flexibly designed that it may also be employed inline.