Drive & Control **profile**

Bosch Rexroth Shaftless Drive Technology Key to New Flexo Press for Corrugated Industry

Using shaftless, gearless drive technology, KBA's CORRUGRAPH features the impression cylinders integrated in a vacuum transport system that runs the entire length of the press.

KBA, one of the world's leading press manufacturers and a major player in the newspaper and commercial printing market, is addressing the special needs of the corrugated container industry with a 66-inch by 118-inch sheet-fed flexo press that uses proven SYNAX200 shaftless servo drive technology from Bosch Rexroth.

Named the CORRUGRAPH, the press provides board-handling capabilities that pick up where large format Rapida offset presses leave off. The new gearless design of the printing units, with dedicated servo drives for the impression cylinder, vacuum transport, plate cylinder and anilox roller, enables printers to accommodate multiple printing plate thickness and allow for plate length compensation.

Challenge

Dramatically increase printing and converting quality of corrugated cardboard press for world-class press manufacturer

Bosch Rexroth Solution

- SYNAX200 shaftless servo system with ETHERNET and PROFIBUS
- Up to 37 servo drives

Benefits

- Multi-job storage
- Automatic set-up of printing, die-cutting parameters
- Increased printing and converting quality
- Just-in-time production; fast order change within a few minutes
- Intuitive, interactive controls for maintenance, diagnostics, process control, troubleshooting and press operation
- Increased operating efficiency
- Reduced production costs for converting companies

The CORRUGRAPH was designed and is manufactured by KBA North America, Inc., located in York, PA—a member of the KBA Group headquartered in Wurzburg, Germany. According to Jan Lindstrom, KBA North America's vice president of technology, the new press has an electronic line-shaft utilizing up to 37 Bosch Rexroth servo drives within the flexographic print machine with die-cutting capability. Up to eight printing stations with various options can be placed in line with an automatic feeder module at the front and a rotary die-cutter module downstream of printing.

The CORRUGRAPH can produce multi-color, direct-printed graphics with die cutting in a single pass on corrugated substrates at a rated output of 10,000 sheets per hour.

Making a Good Impression

The CORRUGRAPH's fixed-frame open architecture design uses widely spaced printing units that extend dwell time and provide space for inter-station dryers. The electronic processing stations with touch screens for press controls and drives are interlinked by ETHERNET and PROFIBUS, which allow multi-job storage and automatic set-up of the printing and die-cutting parameters. The design is further complemented by intuitive, interactive controls for maintenance, diagnostics, process control, troubleshooting, and press operation. In addition, the CORRUGRAPH is supported by remote diagnostics via modem. The result is a highly reliable, operator- and service-friendly press.

Jim Hulman, Bosch Rexroth business developer for printing and converting says, "The shaftless design significantly increases the printing and converting quality for corrugated boards. A fast order change with preset drive and control data, for example, can be realized within a few minutes." Hulman says this allows frequent format changes and just-in-time production, even for small batches, dramatically increasing the operating efficiency of corrugated machines like the CORRUGRAPH and reducing the production costs of a corrugated converting company.

Using shaftless gearless drive technology, the CORRUGRAPH features the impression cylinders integrated in a vacuum transport system that runs the entire length of the press. The vacuum transport, high board line design and servo drives allow the operator to change the plates, ink and/or anilox rollers in the idle units while the rest of the press is printing saleable products. Moreover, the large diameters of the 12-inch impression cylinders and anilox rollers ensure a stable printing platform during continuous production. The anilox roller can be changed in approximately 15 minutes with the aid of a transport/change cart. Various lock-

Servo drives allow the operator to change the plates, ink and/or anilox rollers in the idle units while the rest of the press is printing saleable products.

up systems for the printing plates can be manually skewed with an optional plate skewing mechanism.

Also beneficial is the inline rotary die-cutter, which is positioned well beyond the last printing unit, eliminating the risk that the sheet can be caught between two nips. A minimum distance between the individual units of 68 inches ensures that the sheets are never in a feed and print nip, two print nips, or a print and die-cut nip at the same time.

The CORRUGRAPH can produce multi-color, direct-printed graphics with coatings and inline die-cutting in a single pass on a wide range of corrugated substrates at a rated output of 10,000 sheets per hour. Keeping the printing and die-cutting sequences separate eliminates die-cutting disturbances during printing and guarantees absolute sheet control and registration. Servomotors mounted directly to both the die-cut cylinder and the anvil drum provide accurate control of the die-cut and the ability to compensate for anvil wear. Pneumatic/hydraulic lateral oscillation of the lower drum also promotes uniform anvil wear.

The CORRUGRAPH has an electronic line-shaft utilizing up to 37 Bosch Rexroth servo drives.

In addition to the servomotors, power supplies, amplifiers and controllers provided by the Bosch Rexroth Electric Drives and Controls technology group, the CORRUGRAPH includes linear rails and aluminum structural framing from the company's Linear Motion and Assembly technology group. The new press also includes pneumatic valve assemblies, regulators and other components from the Bosch Rexroth Pneumatics technology group.

Rexroth
Bosch Group

Bosch Rexroth Corporation
5150 Prairie Stone Parkway,
Hoffman Estates, IL USA 60192-3707
Telephone (847) 645-3600
www.boschrexroth-us.com