

Mission to Mars

After 2010, ORION is planned to replace the space shuttle for low orbit flights around Earth, with later plans to perform moon landings with four astronauts before 2020. After that, ORION will depart for a one and a half year journey to Mars with a six-person crew on-board.

With well-deserved pride, "Ready to go DAVI Rolls into Space Exploration" is the slogan used by Promau-DAVI to announce the NASA decision to use DAVI machines for building ORION.

NASA employs 4-roll bending machines to manufacture the crew and service module as well as the spacecraft adapter. The crew module is used for crew and cargo transport, the service module provides propulsion, electrical power and fluids storage and the spacecraft adapter is the structural transition to the launch vehicle.

The only system to return to Earth is the crew module.

DAVI, market leader in the manufacturing of sheet metal working machines and profile bending machines, has recorded unequalled growth over the past five years. The production area has grown by 200%, the number of employees by 250% and revenues have more than tripled. Customers such as CATERPILLAR (excavator shovels), ABB (switching cabinets), VOEST ALPINE, FIAT, GENERAL



DAVI
EXCELLENCE IN FORMING



“The diverse lineup of innovative products and the excellent service are B&R’s distinguishing factors. They allow us to fully utilize our potential for innovations.”

Enrico Lucci
 Manager R&D
 Davi Promau

The rolls are fixed and rotate on auto-aligned shaped bearings (self-lubricated) to obtain a high level of performance.

Fully-automatic folders

The folding machine was designed with the precise objective of making the bending cycle more economical and has the fastest payback when used to make enclosures of relatively thin steel and medium sized fabricating profiles. By using dual-beam bending technology it is possible to make both positive and negative bends without manually turning the sheet over. Furthermore, the rotating turret on the in-feed table also makes it possible to eliminate all manual material handling processes typical of a press brake application.

Automation of the folding machine presented two challenges to overcome. The first task involves positioning the sheet quickly and accurately. The encoder is located right on the servo motor in order to achieve the desired dynamic properties. A second encoder, which determines the actual position of the sheet, is located on the table to ensure the necessary accuracy. The intelligent B&R ACOPOS servo drives, which allow the processing of two encoders in parallel, made it possible to successfully carry out this task without

MOTORS, CHRYSLER, CHINA OFFSHORE (steel girders for oil platforms), AIRBUS (wings for the A 380) and as mentioned earlier, even NASA count on the expertise of DAVI, just to name a few. Dun & Bradstreet has awarded Promau-DAVI the highest ranking among manufacturers of roll bending machines for the last three years.

Roll bending machines

The hydraulic 3 and 4-roll bending machines are currently the most innovative and revolutionary machines on the market. They are able to bend plates from 1 to 200 mm in thickness and up to a length of 12 m, making them the world’s largest roll bending machines. Just one example of such an application includes the production of steel girders for oil platforms.

The 3-roll bending machine uses three independent hydraulic motors and three gear motors which are connected right to the hubs of the rolls. This makes it possible to transport any material without difficulty and without risk of slipping, which is ideal for heavy steel construction goods. The hydraulically-driven compensation function for circumferential velocity is considerably more efficient than conventional solutions with couplings.

Automatic bending of the leading edge ensures that the remaining straight edge is extremely short. The plate is rounded without having to be removed, rotated and re-inserted. Furthermore, the two edges do not have to be bent before starting the round-bending process.

Profile bending machines

The DAVI profile bending machines are used for bending profiles with a standard cross-section, such as flat bars (flat or on edge), rectangular sections, T or UPN, angles or tubes with square or rectangular sections, as well as stainless steel tubes, aluminum, brass, copper and other materials.


The heavy structure and sizing together with the complete range of accessories, including a hydraulic traction device, make the profile bending machine particularly well adapted for processing beams with sections of up to 500 mm and girders up to 1000 mm. The machine can be equipped with correcting rolls to compensate for the deformations that occur during the bending process.



Even the design of this fully automatic folder is setting new standards.

The folder is operated using B&R's customizable Automation Panel 800. Operator panels with a wide range of functions can be mounted on the left and right sides of the 15" touch display. A corresponding keyboard is offered for mounting at the bottom. All components meet the IP65 protection standard.



Further optimization came from the use of remote I/O modules with IP67 protection. The amount of time and money needed for wiring was also reduced considerably thanks to the pre-fabricated cables from B&R, which simultaneously eliminated the typical wiring errors. DAVI chose B&R because of the innovative products offered. Close customer contact and excellent support also played a decisive role. Lucci adds "Whenever we need assistance, I know that I can count on B&R no matter if it's in our own production or at our customers'. That's why I consider B&R to be a reliable partner". 

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a great deal of effort. Keeping the upper folding beam parallel at all times presented a further challenge. Thick sheets that do not cover the entire width inevitably cause a slight sloping of the beam, which negatively affects the mechanics and quality of the product. To prevent this, a position encoder is located on the left and on the

right hydraulic cylinder. Both encoders are read by the X20 CPU and a closed loop controller keeps the upper beam parallel to the lower folding beam at all times. Enrico Lucci, R&R Dept. Manager, proudly shares, "B&R's Automation Studio considerably reduced programming times compared to other systems."

Further expansion in the USA


B&R opens office in Los Angeles



The B&R office in Los Angeles

B&R USA is contributing to the worldwide success of Bernecker & Rainer with ongoing expansion in the American market. The new sales office in Los Angeles is a further milestone on the road to continuous growth and market share. B&R's new presence in the southwest will allow it to provide intensive support to its customers in important regional industries such as packaging, semiconductor technology and tool machines. "I'm looking forward to expanding B&R's sales in southern California," says Paxton Shantz, the new Regional Manager of the B&R office in Los Angeles.

B&R USA, with its headquarters in Atlanta, Georgia, has been working closely with American customers since 1987. Since then, sales and support have continued to expand. In addition to sales offices, they have established a one-of-a-kind sales network. These "Automation Partners" are independent companies with an exclusive sales region for B&R products. They pro-

vide first-class automation support and services for their customers on-site. So far, B&R USA has developed relationships with a total of nine partners. The 24 offices cover 27 states and provide excellent close contact with the customers. Nevertheless, further expansion projects are already in preparation. Additional locations should be finished by the end of 2008, which will provide local representation in the majority of US states. 



Paxton Shantz, Regional Manager, B&R Los Angeles