

CUT BIG JOBS DOWN TO SIZE

Rosenthal Manufacturing, Inc., located in Northbrook, IL is a third-generation family-owned business and a world wide leader in the design and manufacturing of custom sheeting machinery. The company was among the first to realize that “Hand trimming just does not cut it anymore”. Today, as Mike Rosenthal, Vice President of Manufacturing, points out “Rosenthal Mfg. benefits of outstanding name recognition in the Converting Industry due to our flexible design approach of building Sheeting machines to customer’s specifications. This allows us to handle many unique applications which would otherwise go unsolved.”



Rosenthal sheeters are designed to cut virtually anything from paper, fabric and plastic to vinyl, copper, rubber and fiberglass as well as many other materials. The Sheeters are proven performers, helping companies convert their rolled materials with greater safety, reliability

“B&R’s regional office in Chicago provided excellent on and off sight technical support during the set up of our servo and motion based machine application. They make the difference in using these products.” With B&R Rosenthal therefore found the perfect partner from a high

sheeter developed with B&R consists of an unwind, a feeder, a cutter and a stacker. The machine is about 7 feet wide, 16 feet long and 6 feet high. The feeder which consists of pinch rollers is designed to ensure accuracy and proper handling of the material. An electromechanical



Precise placement of product on the stacker.



Gripper, product stacker and cutter assemblies.



View of lowering table with stacked product.



Unwind and feeder assembly.

and affordability. The machines offer the flexibility of customized systems with the performance and dependability of field proven designs for various industries which utilize sheets in the fabrication, production or packaging of their products. In the medical industry for example Rosenthal sheeters are used to manufacture surgical garments and drapes, as well as vinyl IV bags and X-Ray film. In the Automotive Industry Rosenthal sheeters convert various fabrics and plastics for use in automotive interiors. Rosenthal machines can furthermore be found in the Screen Printing, Aerospace and Electronics industries.

When choosing their controls supplier it was important for Rosenthal to find a strong partner sharing their own philosophy of “a close partnership with the customer”. Mike Rosenthal says that

quality product as well as excellent service point of view for the development of their machine.

According to Mike Rosenthal, “The machine was built to sheet and automatically stack film up to 84” long and 60” wide with an accuracy of +/- 1/64”. The stack could be up to 2 feet high and weigh 2000 lbs. The material stacks onto a lowering table which is floor accessible. The machine is meant to run automatically. The operator would only load roll and unload the finished stack. The material feeds out at up to 180 feet per minute and the stacker arm travels at close to 300 feet per minute.”

In general Rosenthal sheeting systems perform three basic kinds of operations on rolled material: feeding, processing and output operations. The Rosenthal

clutch-operated drive pulls the web through the sheeter maintaining proper unwind tension. The feeder as well as the stacker are controlled by B&R ACOPOS Servo Drives. The benefit of B&R ACOPOS servo drives controlling the feed is the accomplishment of precise and fast feeding while at the same time achieving less than 1 mm accuracy. Cutting mechanisms are designed to deliver millions of clean cuts. According to Rosenthal’s specifications the machine needed to be able to cut a 4 Foot piece of material in a total cycle time of 3.3 seconds which equals 18 pieces of sheets in a minute. For a 7 Foot piece of material this meant a total cycle time of 5 seconds which includes feeding and stacking of the sheets produced. In order to meet the requirements synchronous movements are essential between the feeder and the stacker. As mentioned above this was achieved using B&R

ACOPOS Servo Drives. Furthermore, the machine features a Power Panel PP21, a visualization unit with integrated powerful PLC and digital I/O. The compact and intelligent Power Panel PP21 is the first choice for automation on small and mid-size machines. B&R’s Automation Studio™ Software has been used for programming every aspect of the application including control, motion and visualization.

To the question why Rosenthal changed its previous inverter (VFD) to a servo based solution Mike Rosenthal explains that, “The accuracy and speeds of the

machine application required a precision servo motor solution. The vector drives were not fast or accurate enough.”

Whether custom or standard it has been Rosenthal’s philosophy and part of their success for over 70 years to produce machines to match the customer’s needs. For this reason Rosenthal offers a special section on their web site called “Design it online” giving the customer the opportunity to provide the sales engineers with detailed information regarding their needs.

Rosenthal Mfg., Inc. is furthermore a member of the Screenprinting and Graphic Imaging Association International Association. [a](#)