

## Sheeting Machinery Dual-Rotary Direct-Drive Knife



### Features:

- Tangentially mounted blades allow for higher knife loading
- Advanced operator controls provide on-screen diagnostics for quick problem resolution
- Unique blade design reduces maintenance time
- Windows 2000 based operator controls
- Low power consumption reduces energy costs
- Dual-rotary helical-cutting blades produce excellent cut quality
- Knife retrofit capability improves quality and productivity of existing sheeting lines
- Pulse-width modulated drives control knife cylinders precisely
- Brushless liquid-cooled motors directly drive the knife cylinders
- Design techniques significantly reduce noise emissions

## Barry-Wehmiller

# Sheeting Machinery

## Dual-Rotary Direct-Drive Knife

A dramatic simplification of controls was made possible by liquid-cooled motor and drive technology. All the electronic enclosures are completely sealed. This totally protects the controls from the outside plant environment, which is typically full of dust, moisture, and other contaminants. There are no brushes or electromechanical contacts to wear out in the knife motor and no air filters to replace; this significantly reduces maintenance costs and improves overall machine reliability.

### *Highest Speeds*

Brushless, hi-torque knife cylinder motors combine with low-inertia knife cylinders to provide the highest cutting speeds in the industry. Short sheets as small as 500 mm (20") in length can be cut at speeds above 100 mpm (300 fpm). Sheets as short as 700 mm (27.5") can be cut at 335 mpm (1100 fpm).

### *Excellent Cut Quality*

Dual-rotary, helical-cutting blades cut cleanly, squarely, and precisely. Cuts have virtually no fiber pulls and produce less dust than other sheeter configurations.

### *Higher Knife Loading*

The MarquipWardUnited knife design, with a knife loading of 1000 GSM (613 lbs/3000 ft<sup>2</sup>), is capable of cutting coated fine paper or board with a total caliper as great as 1 mm (38 pt) or uncoated paperboard up to 4.5 mm (180 pt). Multiple webs of paper can be run without limiting speed, thus permitting greater product mix flexibility and enhanced production.

### *Accurate Cutting*

MarquipWardUnited's PWM (Pulse Width Modulated) drives provide current (torque) commands to the motors as many as 5000 times per second as compared to a maximum of 360 times per second for SCR drives. This helps ensure that all sheets are cut precisely and squarely to within  $\pm 0.0125''$  (.25mm).

### *Reduced Blade Maintenance*

MarquipWardUnited's unique knife blade design allows the blades to be sharpened while mounted on the cylinders via a lapping and turning process that precisely matches the upper and lower blades. This process usually takes half as long as changing to new or resharpened blades.

### *Direct Drive*

MarquipWardUnited's brushless, liquid-cooled motors directly drive the cut cylinders through precision-machined, helical gears. There are no mechanical linkages, chains, or PIVs as in other knives.



### *Upgradable*

MarquipWardUnited's Series 50L Knife (1-motor system) can be field upgraded at a later date to a Series 100L Knife (2-motor system) to meet your future production needs.

### *Low Power Consumption*

Energy consumption is significantly reduced using brushless, liquid-cooled knife cylinder motors and drives, and low inertia knife cylinders. A capacitor bank system stores regenerative energy, further reducing electrical consumption. Only 32 kW (70A at 460V) of power is required to run the knife, including the pull roll, at peak operation.

### *Integral Design*

The unique integral design of the MarquipWardUnited sheeter knife eliminates all external drive cabinets, which greatly reduces installation time and cost, and ensures a trouble free startup.

### *Retrofit Capability*

MarquipWardUnited's Dual-Rotary Direct-Drive Knife can be retrofitted to most existing sheeters for significant improvements in productivity and quality.

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## **MarquipWardUnited, Inc.**

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