

TECHNICAL SUMMARY

2008 MarquipWardUnited 1650 mm

SheetWizard Precision Sheeter

1. Commercial Frame

Supplier	MarquipWardUnited — a Barry-Wehmiller company
OEM Plant	
Sales Contact	
Machine	SheetWizard — precision rotary sheeter for corrugated & folding-carton board
Working Width	1,650 mm (65 in)
Configuration	Multi-web (dual rollstand) precision sheeter with single-out stacker + side tamper (2-out capable)

2. Machine at a Glance

The quoted machine is a full 1,650 mm SheetWizard line configured as a two-web (dual rollstand) precision sheeter with a dual-rotary knife, vacuum-assisted overlap delivery, and a Flat-Plate Wizard Stacker with semi-automatic pallet change. The specification is aimed at mid- to high-volume converting of paperboard / light corrugated and folding-carton substrates, with provisions for splice detection and in-line web cleaning.

Key Process Capabilities

- **Multi-web unwind:** Two simultaneous webs (up to 1,850 mm / 73 in each) unwinding from dual Marq-III rollstands.
- **Tension control:** Closed-loop load-cell tension control per web, independent of roll diameter.
- **Decurling:** Three-bar progressive decurler per web (13 / 32 / 50 mm bars) for staged curl removal.
- **Cutting:** Dual-motor (100L) steel knife cylinders with helical blades for excellent cut quality and speed curve.
- **Pulling:** Heavy-duty 458 mm (18 in) pull rolls at 2,310 N (520 lb) pulling force.
- **Delivery:** Vacuum-assisted perforated overlap belt + low-inertia snubber wheels for reliable high-speed overlapping.
- **Stacking:** Flat-Plate Wizard Stacker with 2,275 kg (5,000 lb) lift capacity and semi-automatic pallet pusher.
- **QC:** Capacitance-type mill-roll splice detect + automatic reject gate for quality assurance.

3. Scope of Supply — Itemized

3.1 Unwind Section — Dual Rollstands

Item	Qty	Technical Detail
1,850 mm (73 in) Marq-III Dual Rollstand, 1,830 mm roll Ø	1	Manual, heavy-duty unwind. Hydraulic arm/roll lift; linear-bearing pivoting beam; RE multi-caliper air-cooled disc brakes; safety interlock against accidental arm disengagement; narrow-roll offset for width utilization.
Max lift capacity	—	3,410 kg (7,500 lb) per roll
Corefinder™ to Stop	1	Pre-settable stop diameter; auto-calculated deceleration ramp to avoid extended low-speed running.
Split-web capability (non-standard option)	1	Allows simultaneous running of two narrower webs from a single wide roll on the rollstand.
Manual Roll Trolley	1	Low-profile rail system; floor trench only 50 mm deep; trolleys removable for service.

3.2 Web Handling

Item	Qty	Technical Detail
Load-Cell Tension Control System	2	Software controls tension vs. roll diameter; fast-reacting load-cell pair for fine trim with minimal stroke.
Motorized Three-Bar Progressive Decurler	2	13 mm / 32 mm / 50 mm bars on a rotating frame; three-stage engagement reduces cracking of heavier grades.
Paper Delivery Bridge (overhead)	2	Access to idlers, tension devices and decurler; unwind controls integrated into tubular bridge legs.
Roll Aligner	2	Line alignment of a freshly loaded roll to the running roll — reduces splice defects.
Idler Roll Bridge for Multi-Web Sheeters	1	Dedicated thread-up aid for multi-web configuration.
Operator-Side Platform (catwalk)	1	Stacker/knife area access platform for operator ergonomics.
Simco Simplex Dual-Sided Web Cleaner	1	Full-width two-side contact + adjacent dust-collection hookup; removes loose fiber and contaminants prior to the knife.

3.3 Rotary Knife & Pulling

Item	Qty	Technical Detail
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1,650 mm (65 in) Dual Rotary Knife — 50L base	1	Low-inertia steel cylinders, helical cutting blades; PC controls; brushless liquid-cooled motors; standard pull-roll force 1,156 N (260 lb).
50L → 100L Upgrade (single-motor → dual-motor)	1	Additional cylinder motor + drive — improves sheet-length-to-line-speed ratio and speed curve.
Heavy-Duty Knife Pull-Roll Upgrade	1	Pull roll increased to 458 mm (18 in) Ø, pulling force raised to 2,310 N (520 lb).

3.4 Delivery / Stacker Feed

Item	Qty	Technical Detail
1,650 mm Reject Gate	1	Between the two high-speed tape sections — diverts spliced/jammed sheets to a waste basket (basket by customer). Auto-trigger or manual.
1,650 mm Accumulation Conveyor	1	Full-width blanket conveyor that accelerates ahead of the pallet-change cycle to open a gap — enables non-stop pallet change at reduced speed.
Vacuum Box under Perforated Overlap Belt	1	Grips and decelerates sheets at the overlap point; flattens sheets and reduces snubber-wheel impact — critical for high-speed light-weight work.
Jam Detect with Auto-Stop	1	Sensors at jam-prone points trigger emergency stop + reject-gate opening.

3.5 Stacking Bay

Item	Qty	Technical Detail
1,650 mm (65 in) Wizard Stacker — Flat Plate	1	Adjustable "gator-mouth" two-stage knife outfeed; corrugating nip into overlap section (light-weight control); modulated tail blow-down; low-inertia snubber wheels; full-width flat belt (eliminates slit-edge misalignment); motor-driven back jogger; pneumatic vibrating side plates; chain-driven lift table.
Stacker lift capacity	—	2,275 kg (5,000 lb)
Sheet length range (std.)	—	405 – 1,650 mm (16 – 65 in)
Design material density (typ.)	—	753 kg/m ³ (47 lb/ft ³)
Plastic-Mesh Conveyor on Lift Table	1	Handles finished stacks off the lift table during pallet change; compatible with any pallet runner/foot type.

Semi-Automatic Pallet Pusher	1	New pallet staged below overlap tape conveyor and pushed in when a full stack exits; stacker returns to normal speed automatically.
Additional SheetWizard Side Tamper	1	Enables 2-out operation — extra delivery/stacker hardware for a second pocket.
Plastic-Mesh Discharge Conveyor	1	Discharge of finished stacks, in-line or side-exit from the stacker bay.

3.6 System-Level Options

Item	Qty	Technical Detail
Mill-Roll Splice Detect (Capacitance Sensor)	1	High-sensitivity capacitance sensor detects a splice in a single web even when multiple webs are running; also detects tear-outs on the sensor-side edge. Offending sheets are auto-rejected via the reject gate.

4. Expert Commentary

4.1 Configuration Logic

The proposal is internally consistent as a two-web precision sheeter for folding-carton / paperboard converting. "Quantity 2" counts on the tension-control system, decurler and delivery bridge, together with the Idler Roll Bridge for multi-web sheeters, confirm a dual-web unwind feeding a single dual-rotary knife. Two webs into one knife is the standard SheetWizard arrangement for combining or alternating grades (e.g. SBS + recycled backer) without adding a second cut line.

4.2 Productivity Package

Three upgrades together define the productivity ceiling of this build:

- **50L → 100L knife upgrade:** doubles the cylinder-drive torque and improves the sheet-length-vs-line-speed envelope — essential if Arrendamientos Botella expects to run short sheets at top speed.
- **Heavy-duty pull roll (458 mm Ø):** moves pull force from 1,156 N to 2,310 N — roughly 2× — so the knife can reliably pull heavier caliper board (typical FC/SBS 16–28 pt) without slip.
- **Vacuum-assisted overlap + semi-auto pallet change:** the combination of accumulation conveyor + vacuum overlap box + pallet pusher delivers non-stop pallet change at reduced (but non-zero) speed — the single biggest SheetWizard uptime feature on light-weight grades.

4.3 Quality & Waste Control

Scrap and complaint-rate risks are mitigated by four elements stacked in series: the capacitance mill-roll splice detector, Corefinder-to-Stop on the unwind (to avoid running out of paper mid-sheet), jam detectors with auto-stop, and the automatic reject gate that physically removes defective sheets before they reach

the stack. The Simco dual-side web cleaner upstream of the knife protects both cut quality and downstream printing/laminating operations.

4.4 Overall Assessment

This is a well-specified, production-grade SheetWizard for a converter running two-up or split-web folding carton / light corrugated board up to 1,650 mm trim. The machine includes essentially every SheetWizard productivity and quality option except fully automatic rollstands (manual Marq-III was chosen — a deliberate cost trade-off) and a fully-automatic pallet-change cell (semi-automatic pallet pusher is quoted instead). The option mix is appropriate for a mid-volume converter and leaves a clear upgrade path toward auto-rollstands and fully automatic pallet handling if future volumes justify it.

5. Quick-Reference Specification Card

Parameter	Value (metric)	Value (imperial)
Machine working width	1,650 mm	65 in
Rollstand roll width	1,850 mm	73 in
Max roll diameter	1,830 mm	72 in
Rollstand lift capacity	3,410 kg	7,500 lb
Knife pull-roll Ø (upgraded)	458 mm	18 in
Knife pulling force (std / upgraded)	1,156 N / 2,310 N	260 lb / 520 lb
Decurler bar diameters	13 / 32 / 50 mm	0.5 / 1.25 / 2 in
Stacker lift capacity	2,275 kg	5,000 lb
Stacker sheet length range	405 – 1,650 mm	16 – 65 in
Design material density	753 kg/m ³	47 lb/ft ³
Roll-trolley floor trench depth	50 mm	≈2 in
Number of webs	2	—
Number of outs (with side tamper)	2	—





















