

pkgWARE®



**Paper Mill Solutions
MES**



pkgWARE MES for Mills includes best-of-class paper machine trimming and scheduling—providing paper mills with the ability to optimize paper machine operation, reduce waste, and increase profitability. Powered by MillTrim™, CTI’s best of breed paper machine trimming and scheduling solution—and our MillLink™ data collection module—pkgWARE MES includes advanced support for operations with multiple paper machines. Integrated trim reports give visibility into paper machine KPI’s; including utilization, number of sets by grade, and trim efficiency.

MillTrim

The MillTrim software module is used to generate schedules for liner and medium paper machines at the mills and to create associated planned shipments.

Some of MillTrim features and capabilities:

- Accept Orders from the business system
- Generate the trim solutions (which maximize usage across the width of paper machine) by grade
- Generate (and allow manual adjustment of) planned truck and rail car shipments
- Update Sales Order Management module with order status so that it knows
 - Orders that are in the process of being trimmed (and that customer service knows when it’s appropriate to accept order changes and to follow-up with planning/production)
 - Quantity of each order that has been scheduled on the paper machine
- Facilitate manual adjustment/sequencing of trim solutions (and sets within the trim solutions) so that trucks and rail cars are fully utilized and their loading times are minimized
 - Order balances are accurate when the

scheduler replaces rolls in a trimmed schedule without retrimming

- Print the trim solutions/schedules which can be appropriately distributed
- Send planned shipment information to business system
- Integrate with MillLink module to make trim schedules quickly visible throughout plant and to facilitate production data collection/reporting
- Maintain trim solutions
- Maintain paper machine parameters/constraints (related to trimming and scheduling) or accept from appropriate module of business system
- Maintain grade parameters (related to trimming and scheduling) or accept from appropriate module of business system
- Calculate tentative weight per width value by grade using the most recent 30 days of production (beater and off-grade rolls—as well as rolls where the ordered roll grade does not match the grade of the trim sheet—are excluded from the calculation)
- Allows review and adjustment of the calculated weight per width values

The screenshot displays the MillTrim software interface. On the left, a navigation pane shows various statistics for the current trim sheet, including:

- Solution date: 9/2/2007
- Total # of patterns: 3
- Total # of sets: 5
- Avg # of rolls per set: 3
- Total slitter changes: 3
- Avg # of sets / slitter change: 0
- Average trim width: 246.1
- Total rolls trimmed: 15
- Total tons: 32.95
- Total inches: 1,250.4
- Total area: 1,997,182.65
- Trim loss (tons): 1.86
- Trim loss (inches): 69.4
- Trim loss (area): 112,717.35
- Trim loss (% of production): 5.64
- Total # of orders: 5
- Total # of order lines: 5
- # of solution deviations: 2

The main window shows the 'Orders Summary' table with columns for Purchase Order ID, Ship To Code, Vehicle Type, Transition Accepted?, Order Type, Rolls Ordered, Weight Ordered, and various inventory and schedule metrics. Below this, the 'Trim Sheet' section displays a detailed view of a roll, including its ID, weight, and transition information.



Web Reporting

Allows users that have access to the plant's intranet to use a web browser to view:

- “Real-Time” Order Status information that includes qty. ordered, qty. from existing inventory, qty. trimmed, qty. produced and the order balance to be trimmed
- Paper Machine Schedule information that includes when each trimmed grade is expected to start/complete, orders trimmed, tons trimmed, qty. of planned shipments and the orders, rolls, and tons in each planned shipment
- Daily and Month-To-Date Trim Efficiency (percent utilization of web) by grade that also includes distribution of roll widths and set widths
- Balance sheet report shows rolls committed from inventory—the quantity of rolls committed from existing inventory scheduled to a load automatically prints on the trim sheet report and they are included in the planned shipment load(s)

Grade ID: 1126 TrimSheet ID 10 Status: Planning				
X 1	242100136 - 30 - 69.7	242100136 - 30 - 69.7	242100136 - 30 - 69.7	242500014 - 100
Transition: Reel Change 33 Total Width 258.0 Trim Waste 2.3 COMP TIME:				
X 1	242100136 - 30 - 69.7	242100136 - 30 - 69.7	ID-1126 - 2 - 69.7	242500014 - 100
Transition: Reel Change 33 Total Width 258.0 Trim Waste 2.3 COMP TIME:				
X 1	242100136 - 30 - 69.7	242100136 - 30 - 69.7	ID-1123 - 1 - 47.6	242500014 - 100
Transition: Reel Change 33 Total Width 258.0 Trim Waste 2.3 COMP TIME:				
X 1	242100136 - 30 - 69.7	242100136 - 30 - 69.7	242100136 - 30 - 69.7	242500014 - 100
Transition: Reel Change 33 Total Width 258.0 Trim Waste 2.3 COMP TIME:				
X 3	242100136 - 20 - 73.7	242100136 - 20 - 73.7	242500014	242100136 - 20 - 73.7
Transition: Reel Change 1 Total Width 258.0 Trim Waste 4.3 COMP TIME:				
X 1	242100136 - 20 - 73.7	242100120 - 10 - 87.7	242100120 - 10 - 87.7	
Transition: Reel Change 33 Total Width 258.0 Trim Waste 6.3 COMP TIME:				
X 6	242100136 - 10 - 84.7	242100136 - 10 - 84.7	242100136 - 10 - 84.7	
Transition: Reel Change 2 Total Width 258.0 Trim Waste 3.3 COMP TIME:				
Grade ID: 1133 TrimSheet ID 4 Status: Scheduled				
X 2	242100105 - 10 - 86.7	242100099 - 60 - 73.6	242100105 - 10 - 86.7	
Transition: Reel Change 67 Total Width 268.0 Trim Waste 12.4 COMP TIME:				
X 1	242100105 - 10 - 86.7	242100099 - 60 - 73.6	242100105 - 20 - 83.7	

MillLink

MillLink

The following functions primarily cover the needs of the production users at the winder, re-winder and roll scale. It also includes the display of schedule information throughout the plant and integration with equipment (where feasible) to reduce manual entry of production information.

- Display machine schedule (that has been released by the trimmer/scheduler)
- Allow users to see status (and other) information related to orders in the schedule
- Allow authorized users to adjust the sequence of sets in the schedule
- Allow authorized users to extend a grade schedule (to make up for bad production)
- Interface to systems in plant where feasible to minimize the manual entry of production information (e.g., reel change/ID, moisture content of rolls)
- Print roll tags
- Report roll production information to business system (so that manufactured rolls are available to store in warehouse or to load and ship)
- Report other information to business system (to support consumption/backflushing of raw materials)
- Scheduling can see what rolls were not produced from the trimsheet and the balance remains scheduled for subsequent production

Mill					
CUSTOMER			ROLL NUMBER		
LOCATION			110000H		
GRADE			CUSTOMER ORDER NUMBER		
11000H7			2341		
Liner			LINEAL MEASURE		
23,500 FT			ROLL WEIGHT		
26 LBS			41,000 LBS		
WET STRENGTH			MOISTURE		
69.70 IN			6.50%		
GBC #		DATE		INSPECTED BY	
110000		08/29/07		110000	
110000H7		110000H7			

Web Reports

Note: The process control of the paper machine and supporting equipment (e.g., boilers, digesters, etc.), collection and warehousing of process and quality data and reporting/display of process and quality data are outside of the current scope of this system. These functions will continue to be provided by the existing systems (that mills typically have) for process monitoring.



Fast and Easy to Use

- Quickly trim your entire schedule
- Schedule multiple paper machines

Simulates “What if?” Scenarios

- Avoid unforeseen problems by testing possible schedule changes prior to making commitments

Improves Productivity

- Schedule just-in-time (JIT) for greater production flexibility
- Increase visibility of trim schedules
- Improved plant communication
- Reduce waste
- Automatically generate loads
- Quickly modify schedules to respond to customer demand in real-time
- Reduce job execution time
- Proactive planning
- Better customer service

Innovative Technologies

- Global view of trim results for easier decision making
- Monitor machine utilization, efficiency, trim waste, moisture, cost results, and other key indicators of business performance



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15150 Avenue of Science, San Diego, CA 92128

Tel: 858.578.3550 Fax: 858.546.1401 Email: info@corrtech.com Web: www.corrtech.com