

Cameron

AUTOMATION

High Yield Rip Systems



Smarter Machines for Less Money

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The Rip-One scans, defects, optimizes and rips

The scanner has mega-pixel color cameras, top and bottom, operating at over 100 frames per second.

The scanner captures accurate color images as well as 3D profile data for each board.



Operation is as simple as placing boards on the infeed conveyor.

Compact design allows one operator to feed and tail the system, reducing labor or easily integrate with automated material handling system.

Three models of Rip Saws are available:

12" 2 moving blade

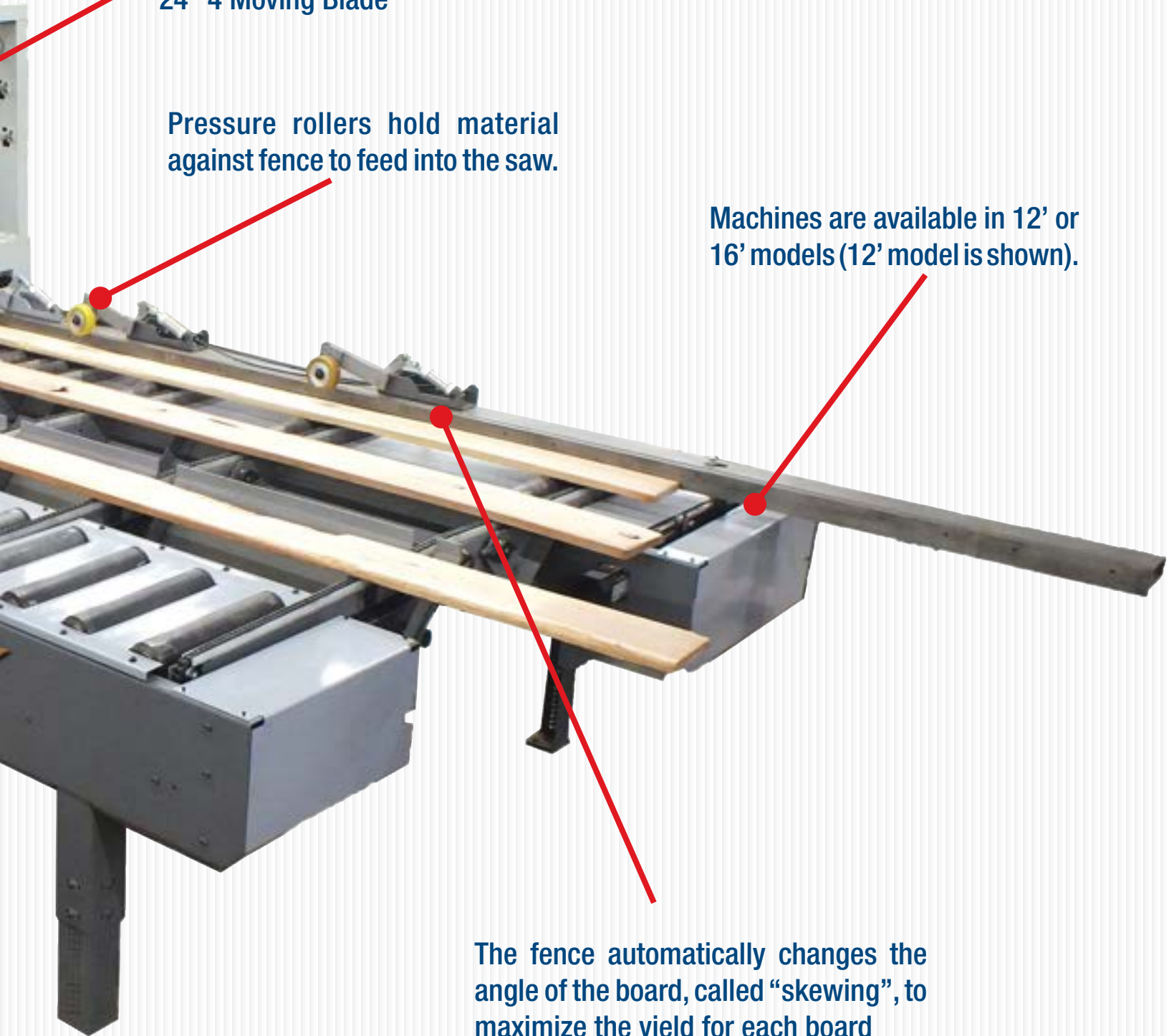
18" 3 moving blade

24" 4 Moving Blade

Pressure rollers hold material
against fence to feed into the saw.

Machines are available in 12' or
16' models (12' model is shown).

The fence automatically changes the
angle of the board, called "skewing", to
maximize the yield for each board





The Optimizing, Defecting, and Ripping Vision System.

The Rip-One is Cameron Automation's newest rip system. The Rip-One is an entire lumber scanning, optimizing, and gang ripping work cell designed for the smaller shop. The Rip-One uses high resolution scanning technology to view both sides of a board to capture board dimensions and defects. The high resolution images are used to optimize each and every board going through the system

How it works:

1. Material reaches the infeed rollers manually or by conveyor.
2. The infeed rollers carry the board through the scanning area, where a high resolution image is sent to the computer for evaluation.
3. The Cameron software figures out how to rip the board based on yield, board value, or required amounts.
4. Boards are kept in queue at the first and second stops until the machine is ready to process them.
5. Boards are released to the fence, which is positioned and skewed to feed the board at the right spot on the arbor. The moving blades are moved into place to create the proper rip sizes.



Advantages of a Rip-One

- High resolution scanning at a reasonable price.
- Full control over scanning parameters to meet your needs.
- Can be ran by single operator or "lights out" operation.
- Simple to operate with no need for specially trained operators.
- Software is built on the time-tested Opti-Rip platform.
- Tallies both incoming and outgoing material automatically.
- See the whole board, defects and all, not just a profile.
- Extremely compact design.



Simple to Use

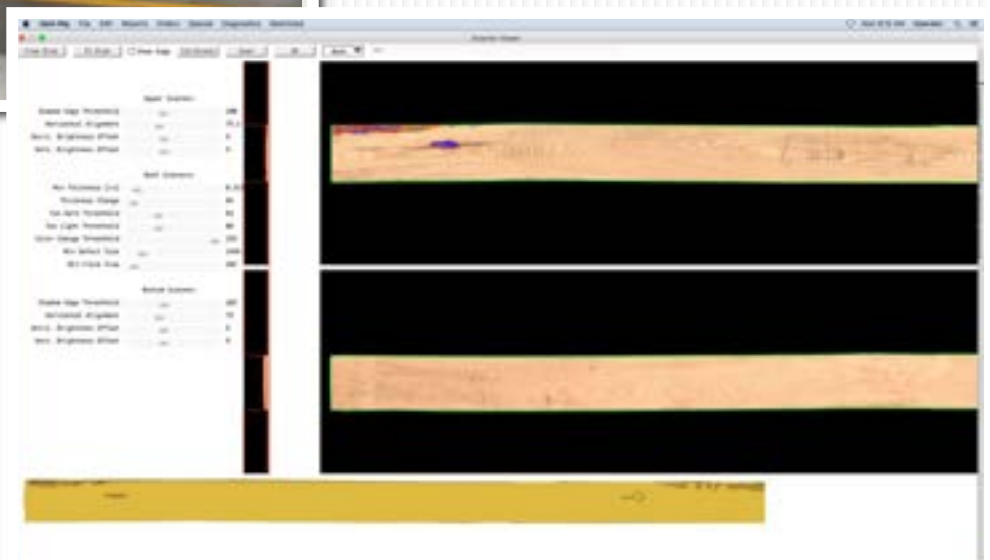
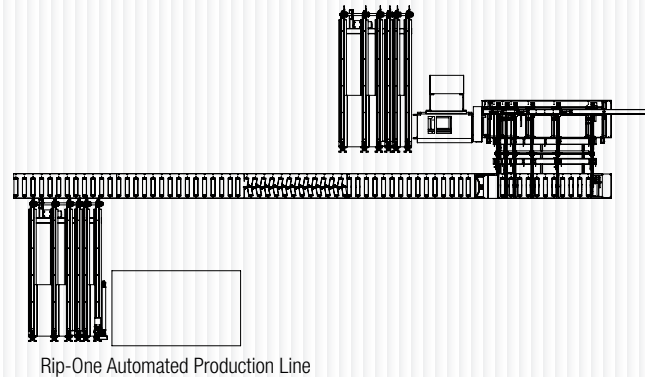
- Multiple scanning profiles can be saved and re-used depending on the material.
- No time spent trying to rip around knots and wane, and more time producing material
- Communicates with moving blade saws to position blades automatically.
- Can be run as a one-man, two-man, or fully automated operation.
- Software can choose from different cut-bills based on board length.

Why Cameron Scanning?

1. Cameron scanning offers an affordable scanning solution while other systems cost 2-3 times more.
2. The system identifies defects by color and profile. Parameters for defect detection can be modified by the user. Multiple parameter profiles can be saved for different wood species.
3. Optimization software uses defect information to maximize usable product.
4. The scanners use long lasting, inexpensive LED lighting.
5. The entire system is built with off-the-shelf computers and hardware. This makes the system inexpensive to maintain and upgrade.
6. There is no need for specialized operator training to run a Rip-One. Simply create a profile that rips the way you want it to and save! All the operator does is load and unload!
7. Software is based on the Opti-Rip optimization platform that has been continually refined since the early '90's.
8. The system can be efficiently run as a one-man or two-man operation, depending on production requirements.
9. Cameron Automation has over 20 years of optimizing experience. Using this, we have developed a scanning system that is easy to run, maintain, and rips the way YOU want it to!



The Rip-One with a 2 Moving Blade Saw



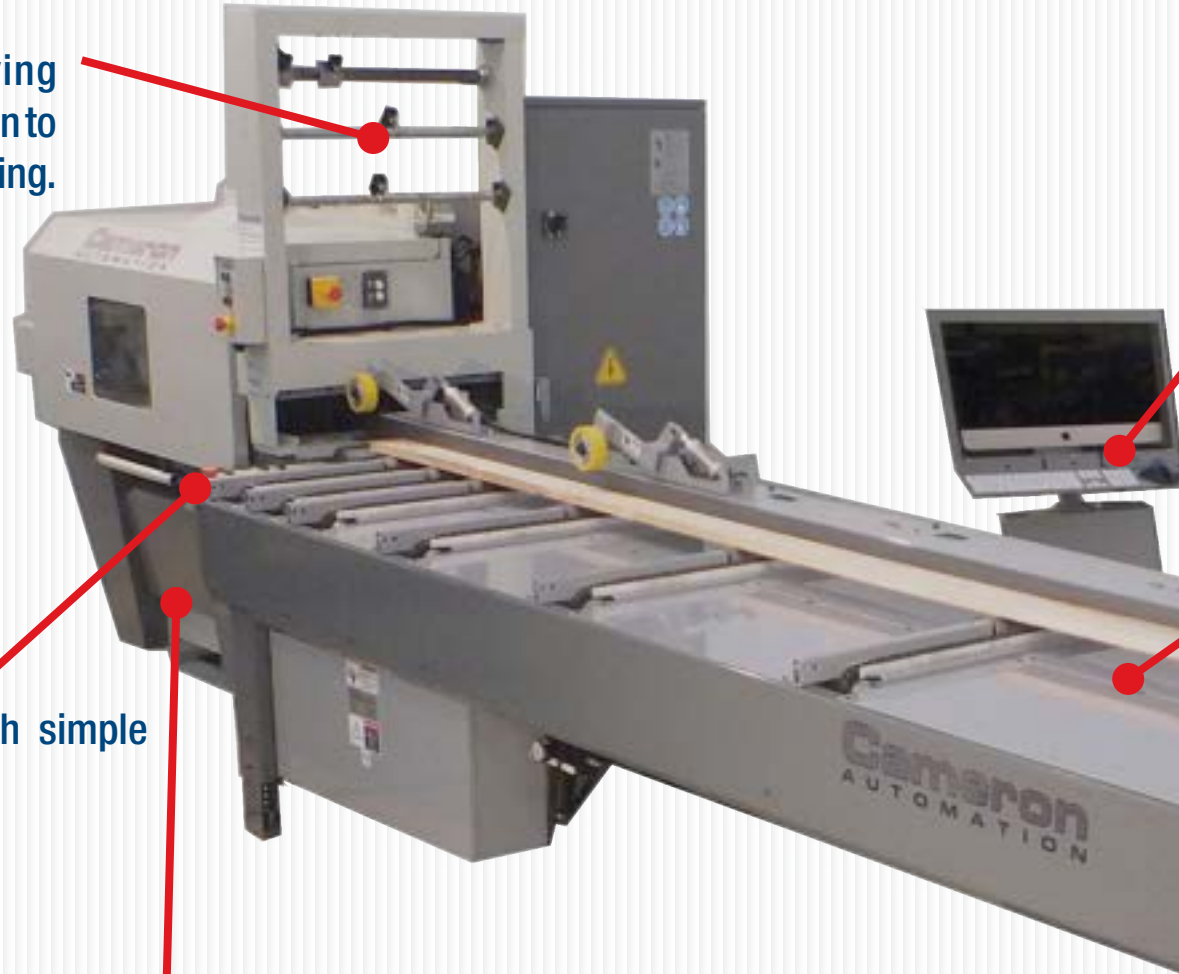
Editing a profile using the Opti-Rip Scanner View.

The Skew Rip System

Laser rack and moving lasers provide rip solution to the operator prior to ripping.

Operator's station with simple and intuitive controls.

12" (340 mm) 2 moving blade saw.
2 fixed blades come standard.



With 2 Moving Blade Gang Saw

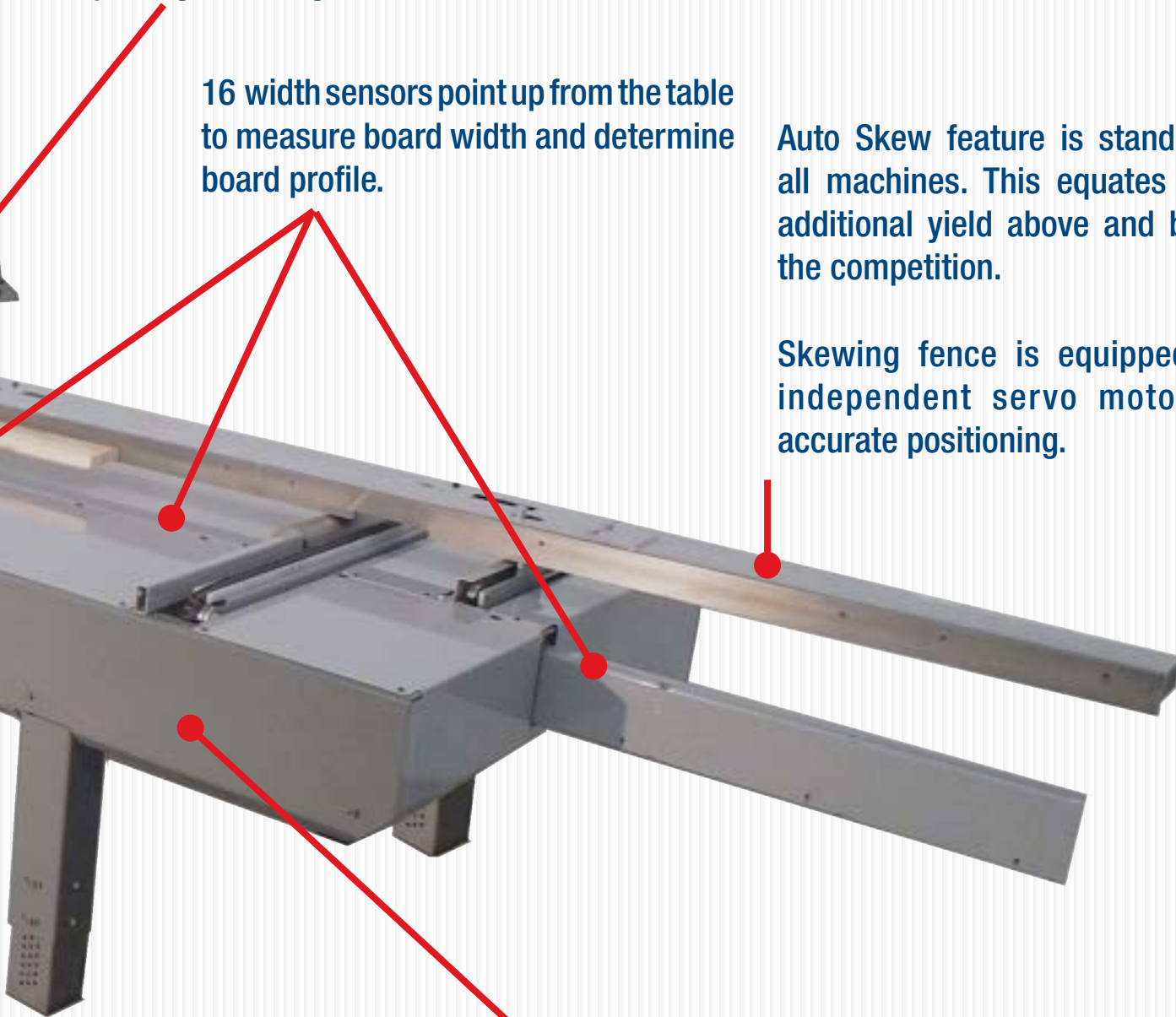
Software Optimization - Operation,
Reporting, Planning.

16 width sensors point up from the table
to measure board width and determine
board profile.

Auto Skew feature is standard on
all machines. This equates to 3%
additional yield above and beyond
the competition.

Skewing fence is equipped with
independent servo motors for
accurate positioning.

The Skew is a very compact design. No
additional floor space is needed beyond
a hand rip operation.





Cameron Automation has pushed the envelope once again to simplify sophisticated equipment and bring it to the small shop to increase yield and save labor.

The Skew Rip System is our answer for Rip Optimization in a custom shop. It will quickly transform any small hand-fed gang saw into a full and complete rip optimization system. Cameron has further refined their rip software to make it easy and affordable for the small shop while still offering the same features as our bigger systems!

Typical Skew users:

- Custom Moulding & Millwork.
- Custom Cabinet Shop.
- Wholesale Lumber Distributor.

How it works:

1. A board is placed on the infeed section.
2. The system measures the width, length, and shape of the board using sensors placed at 1' increments.
3. With our unique "Skewing Fence", the machine adjusts the angle and position of each board to achieve the highest possible yield.
4. The laser lights move with the saw blades to project the rip solution on the board.
5. The operator has several options available to improve the final rip solution. Once that is determined, the board is processed into the saw and the next board is measured.

Up to 7,000 board feet per shift

Advantages Over Hand Feeding

- Increased operator safety.
- 7-10% Increase in yield.
- Extremely accurate positioning of boards. (No yield loss due to misalignment).
- Arbor Optimization.
- Simulate production runs using actual board data.
- Tallies both incoming and outgoing material automatically.



Simple to Install... Simple to Use

- Machine ships assembled.
- Up & Running with operators trained in one day.
- Communicates with moving blade saws to position blades automatically.
- Single operator loads and defects.
- A simple push button control panel provides all the options for maximizing yield.



Up to 18,000 board feet per shift



The Quick Rip System is a mid-range Optimization System for shops ripping 6,000 - 18,000 board feet per shift.

Unlike other systems, the Quick Rip is fenceless and has Auto Skewing for achieving highest possible yield. Our sensors read the width, the length, and the shape of the boards. If a board has crook or taper, our software can determine if the board should be skewed for higher yield. If so, it happens automatically. This adds up to an additional 3% yield over systems with a fence.

How it works:

1. An operator loads boards, one at a time, onto the infeed arms.
2. Once the process button is pressed, the board passes over measurement sensors that measure the board at 1' increments. These sensors detect the width and shape of the board.
3. The board is moved to a staging area where lasers project the rip solution for the operator. At this point, the board will also be skewed if necessary.
4. Once the desired rip solution is found, the operator presses the process button to send the board to the proper place in the pinch roller area.
5. The pinch rollers come together and bring the board up to the height of the rip saw. This allows the belts to be free for the next board to be moved around for evaluation.

Advantages of the Quick Rip

- 7-10% Increase in yield.
- Extremely accurate positioning of boards. (No yield loss due to misalignment).
- High Throughput (10-12 or more boards/minute). 17 for flooring (Fixed arbor saw).
- Increased operator safety.
- Tallies material automatically.
- Catalog each and every board.
- Machine ships assembled.
- Up & Running in 1 day.
- Moving laser lights for **ZERO** setup.
- Expandable to our fully Automated Opti-Rip.

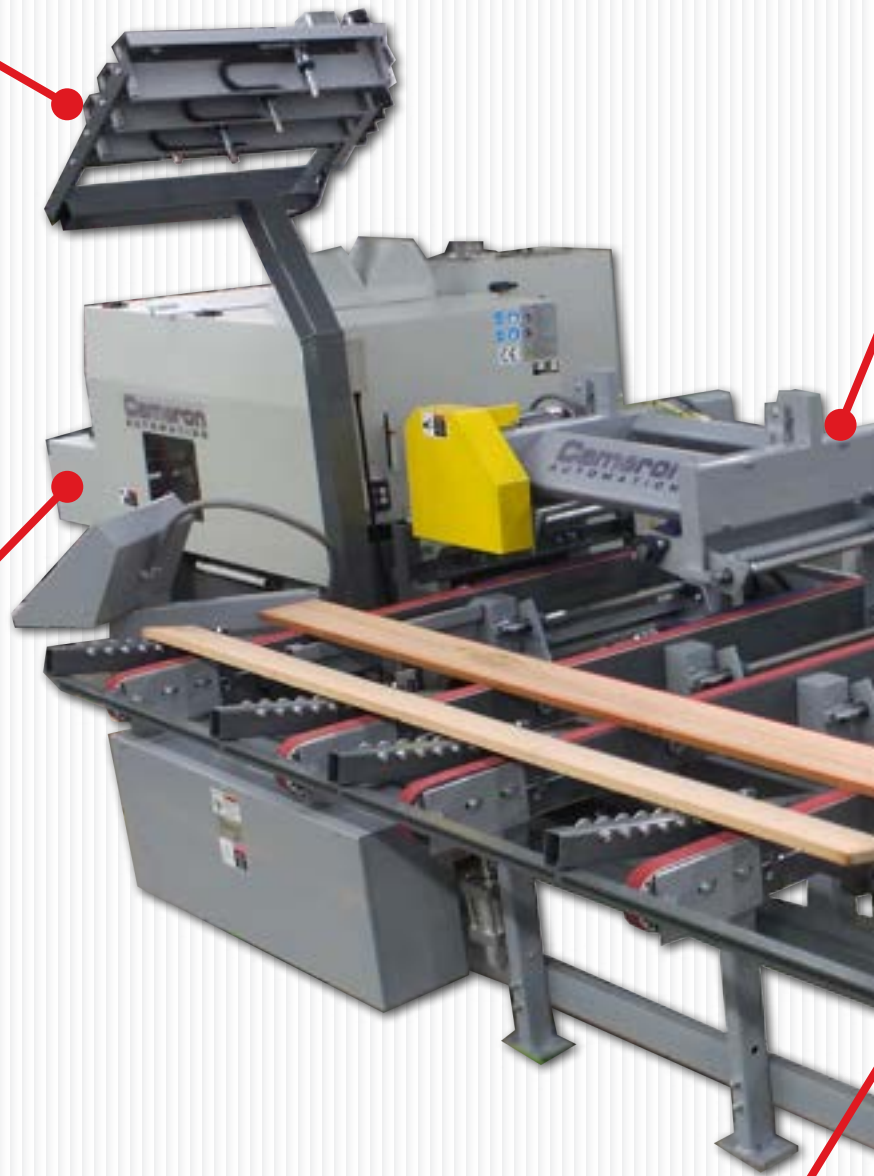


Laser rack and moving lasers provide rip solution to the operator prior to ripping the lumber.

Your choice:
12" (340 mm) Arbor
2 Moving Blades

18" (450 mm) Arbor,
3 Moving Blades

24" (610 mm) Arbor
4 Moving Blades



16 laser sensors at 1' increments measure the length, width and shape of every board.

Pinch Roll Assembly is used to lift boards from the belts and deliver to the saw without changing the rip solution.

The over/under feature allows more throughput than fence systems.

Servo drives and polyurethane belts accurately position boards under the lasers and then into the saw.

The Quick Rip is fenceless. Boards are skewed (if necessary) for the operator to see under the laser lights. They are then picked up and fed into the saw.

Auto Skew feature is standard on all machines. This equates to 3% additional yield above and beyond the competition





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The Automated Opti-Rip is designed in a modular fashion for easy integration with a wide variety of lumber de-stacking and feeding systems.

16 laser sensors at 1' increments measure the length, width and shape of every board.

The Opti-Rip is fenceless. Boards are skewed (if necessary) prior to the Pinch Roll section. They are then picked up and fed into the saw.

Auto Skew feature is standard on all machines. This equates to 3% additional yield above and beyond the competition.



24,000 board feet per shift and more



How it works:

The Automated Opti-Rip rip optimization system works as follows: A simple chain conveyor places the boards, one at a time, on a servo-controlled series of belts. The belts then accelerate the board to be processed past multiple sensors that measure the board every foot for the length and width, to determine its full profile. Next, the belts accurately position the board under a series of laser lights, presenting the operator with the optimum rip combination based on the measured width. The operator can then choose an alternate rip pattern, fine tune the positioning and/or skew the board to the angle that will result in the optimized rip. When the operator is happy with the positioning of the board, a button is pressed and the belts then position the board in front of the rip saw where a series of pinch rollers lift the board and feed it into the saw. A major advantage to this novel method is that lumber can be skewed on the conveyor, resulting in an increase in yield.

Advantages:

- Increases yield 7-10%
- Boards can be fed skewed for maximum yield.
- Feeds lumber automatically
- Software includes: Simulations and Arbor set-up

Customers who will benefit from the Automated Opti-Rip:

- Those who currently have mid-sized ripping operations
- Defecting gang rip saws 18-40" wide
- Production rates between 10,000 and 24,000 bd. ft.

The Automated Opti-Rip rip saw optimization system is very adaptable to many material handling systems. Some of our systems are fed manually from a scissor lift of planed lumber. Some systems have a landing deck and are fed from the outfeed conveyor of a planer and some systems are fed by de-stackers and singulation machines

Software Specifications

- ***Factual Statistics***

Since Cameron measures the width of each board in multiple locations, the true usable yield of the board can be calculated. The sum of rips produced is compared to the board width you bought, giving you factual yield values you can depend on.

- ***Pack Report***

Incoming material can be measured pack by pack. This allows you to check supplier totals and determine which supplier and/or grades are best for which jobs.

- ***Most Profitable Choice***

Cameron uses actual values expressed in dollars per thousand board feet for each different net rip width in choosing the most profitable rip combination for each board. The system automatically gives priority to the rip width that is worth the most to you.

- ***Computes Product Value***

Cameron also calculates, in dollars per thousand board feet, the board value after ripping by relating the value of rips produced to the cost of the original boards. When a run is completed, these values can be used to instantly determine how much value was gained in the ripping operation. Suppliers and loads of lumber can easily be evaluated by comparing these output values.

- ***Production Tracking***

The length measurement feature enables the system to record the lineal footage of each rip width and the actual board foot volume of lumber processed.

- ***“What If?” Simulation***

Cameron can simulate a production run to test different arbor setups. Board data measured by the machine from an entire production run is saved for each set up. This data or a random sampling generated by the computer itself, can be used to calculate yield and production results without actually ripping boards. With this tool, you can quickly and easily fine tune your arbor configurations.

- ***Arbor Optimization***

One of the most important factors in maximizing yield (or value) when running a gang rip saw is properly configuring the saw spacing on the arbor. Because there can be as many as 39 million ways to arrange a particular arbor, this can be a daunting task for a human. A computer, however, can quickly evaluate and optimize these arbors. Built into Cameron software is a powerful arbor optimization program that can result in dramatic yield increases. This arbor optimizer can be run either on the machine itself or on a desktop computer using the simulation software provided.

- ***Minimum Yield***

Our machines can be configured to rip one edge of the board when other solutions will drop below the "minimum yield." This will allow the board to be used in another set up that may result in higher yields. This feature can be overridden by the operator at any given time. Also, any board can have one edge ripped by hitting a button on the control panel.

- ***Bundle Report***

Our software keeps track of rip widths and rip lengths. You can accumulate exact amounts into bundles for inventory control, downstream production, or customer orders.

- ***Customer Orders***

The software allows downloading of customer orders and our machine will sort by species and thickness to group rips and increase yield.

- ***Software Reports***

Software reports are the tools for better understanding of lumber usage and yield giving you the security of knowing you got what you paid for.

- ***Bottom Line***

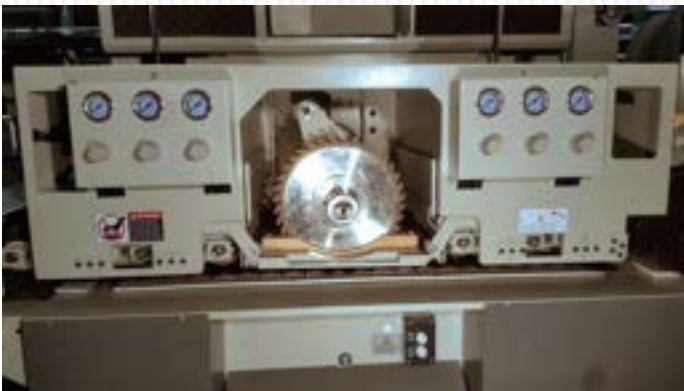
Very simply, Cameron will add dollars to your bottom line. Increased yield of raw material will increase your profits. The Quick Rip's design also allows you to value different rips according to your production needs. This reduces inventory and shortens delivery time. Our simple design is a small investment compared to your increased profit.

The Cameron Two Moving Blade Rip Saw



Model #413A

The Cameron Two Moving Blade Rip Saw is the perfect pairing for a Cameron Skew or Quick-Rip System.



Pneumatic Feed Rollers

- The Cameron Two Moving Blade Rip Saw is equipped with three steel and one rubber pneumatic hold down rollers.
- The feed roller pressure can easily be checked and adjusted by regulators.
- A pneumatic pressure plate is also included to ensure excellent cut quality.



Rubber Slat Feed Chain

All Cameron Rip Saws feature polyurethane slat inserts on the feed chain. These slats ensure a glue line cut and are easily changed when worn.



Three Rows of Anti-Kickback Safety

- All Cameron Rip Saws are equipped with three rows of anti-kickback fingers, keeping your operators safe of danger during cutting.



Servo Driven Accuracy

- The Cameron Two Moving Blade Saw is equipped with two independent servo motors to drive the blades.
- This allows the Cameron Saw to make extremely accurate cuts.
- The ball screw system is designed to be long lasting with minimum maintenance.



Digitally Controlled Lubricator

- The Cameron Two Moving Blade Rip Saw is equipped with a high performance, digitally controlled lubricator, providing a protective film of oil between the feed chain and the rails.
- Through the Cameron Software, an operator can easily increase or decrease the amount of oil.
- The intuitive system alerts the operator of low oil situations and also stops the feed chain to ensure a long service life of the track.



Variable Feed Speed Control

- All Cameron Rip Saws are equipped with a variable frequency drive to control feed speed.
- The feed speed can be changed quickly and easily at any time using the Cameron Software.
- With a variable feed speed range from 26-130 FPM, always keep a perfect cut on your material.



Mechanical Lubricator

- The Cameron Three/Four Moving Blade Rip Saw is equipped with a high performance, mechanical lubricator, providing a protective film of oil between the feed chain and the rails.
- Lubrication is increased with the speed of the track. Amount of lubrication can be changed at any time by adjusting one screw.
- The intuitive system alerts the operator of low oil situations and also stops the feed chain to ensure a long service life of the track.



Pneumatic Feed Rollers

- The Cameron Three/Four Moving Blade Rip Saw is equipped with four steel and one rubber pneumatic hold down rollers.
- The feed roller pressure can easily be checked and adjusted by regulators.
- A pneumatic pressure plate is also included to ensure excellent cut quality.



Variable Feed Speed

- All Cameron Rip Saws are equipped with a variable frequency drive to control feed speed.
- The feed speed can be changed quickly and easily at any time using the Cameron Software.
- With a variable speed range from 26-165 FPM, always keep a perfect cut on your material.



Servo Driven Accuracy

- The Cameron Three/Four Moving Blade Saw is equipped with three/four independent servo motors to drive the blades.
- This allows the Cameron Saw to make extremely accurate cuts.
- The ball screw system is designed to be long lasting with minimum maintenance.

The Cameron Three/Four Moving Blade Rip Saw



Model #413B/#413C

The Cameron Three/Four Moving Blade Rip Saw is the perfect pairing for a Cameron Quick-Rip, Opti-Rip or Rip-One System.



Rubber Slat Feed Chain

All Cameron Rip Saws feature polyurethane slat inserts on the feed chain. These slats ensure a glue line cut and are easily changed when worn.

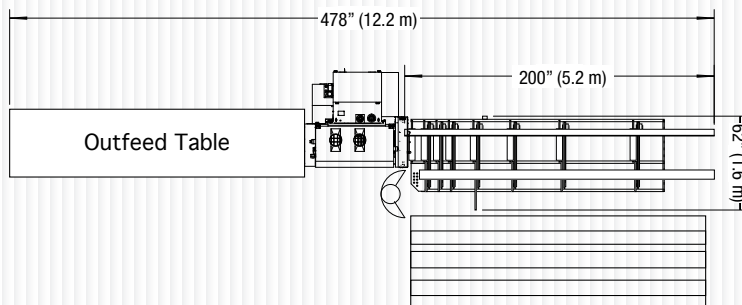


Three Rows of Anti-Kickback Safety

- All Cameron Rip Saws are equipped with three rows of anti-kickback fingers, keeping your operators safe of danger during cutting.

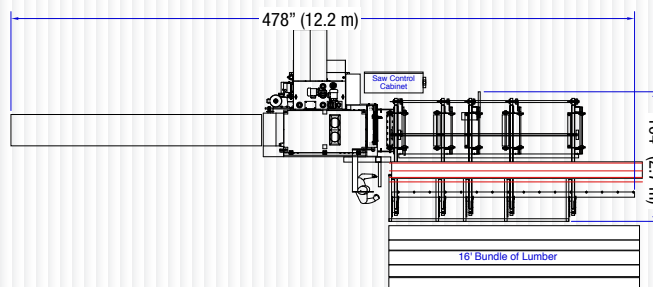
16' Skew

- 5 - 7 Boards per minute
- 5' (28" Optional) - 16' Length
- 2" (50 mm) Maximum Thickness
- 12" (340 mm) Standard Width
- 7,000 Board Feed per shift



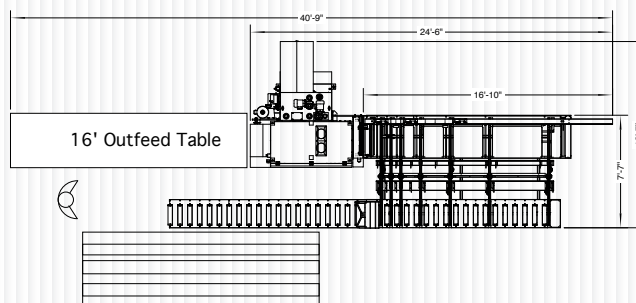
16' Quick Rip

- 7 - 10 Boards per minute
- 5' - 16' Length
- 2-1/2" (3-1/2" Optional) Maximum Thickness
- 24" or 40" Capacity
- 18,000 Board Feet per shift



16' Rip-One / 3 Moving Blade Rip System

- 5-7 Boards per minute
- 5' (28" Optional) - 16' Length
- 3.5" (88 mm) Maximum Thickness
- 12,000 Board Feet per shift



Cameron Saw Specifications

SAW SPECIFICATIONS	#413A	#413B/#413C
Max. cutting thickness (with short stock cutting device)	2" (50 mm) (3-3/4" w/ 14" Blades)	2" (50 mm) (3-3/4" w/ 14" Blades)
Max. cutting width	12" (305 mm)	18" (450 mm) / 24" (610 mm)
Min. material length (standard)	26" (660 mm)	26" (660 mm)
Max. sawblade diameter	14" (Ø355 mm)	14" (Ø355 mm)
Min. sawblade diameter	12" (Ø305 mm)	12" (Ø305 mm)
Saw arbor diameter	2.8" (Ø70 mm)	2.8" (Ø70 mm)
Saw arbor speed	4500 rpm	4500 rpm
Saw arbor motor	50 (Standard), 60 HP	60 (Standard) -125 HP
Feed motor	3 HP	5 HP
Variable feed speed	26 - 130 ft/min. (5-40 M/min)	26 - 200 ft/min. (8-60 M/min)
Dust hood diameter	6" (Ø200 mm) x 1 / 4" (Ø100mm) x 1	8" (Ø200 mm) x 2 / 4" (Ø100mm) x 1
Table height from floor (H)	35.5" (900 mm)	33.4" (850 mm)
Net weight	4,840 lbs (2200 kgs)	12,320 lbs (5600 kgs)