



# High Production Gluing & Laminating For Short & Long Components

## Taylor Automated Clamp Carriers



## Taylor Side Loading Automated Clamp Carriers

### Taylor Manufacturing

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**Made in USA**  
Poughkeepsie, NY



# Hydraulic Automated Clamp Carrier



8 1/2' 40 section Automated Clamp Carrier  
NOTE: This system is available with pneumatic or hydraulic power

The Automated Clamp Carrier is the industry standard for high production edge gluing. Sizes range from 20 to 80 sections and widths from 8-1/2' (2.5 M) wide to 20-1/2' (6 M) wide. The Automated machine doubles operator productivity with its automatic cycle which tightens the clamps on new stock, rotates the machine, and loosens the clamps on panels to be removed. This allows the operator to spend 100% of their time preparing and loading stock. It also reduces operator effort and paces the overall production.

Since its introduction in 1986, the design has been refined to provide reliable, high production output of panels and laminations.

## Operation

1. The operator removes glued panels from one section of the Clamp Carrier and refills the section with stock taken from the outfeed of the Glue Applicator.
2. The operator adjusts the rear jaws of the clamps (if necessary), and presses the "Tighten" button on the control stand. The machine does all the rest.
3. The operator is free to prepare stock and feed the Glue Applicator.
4. All panels are flattened and clamps tightened automatically until the Tightener/Flattener carriage comes to a stop at the right end of the front rest. The front rest then slides out to provide clearance for the clamps, the Motor Drive indexes the Clamp Carrier to the next section of clamps, and the front rest returns. The Tightener/Flattener carriage then traverses to the left, stopping and loosening clamps that it finds along the way, and comes to a stop at the left end of the front rest.

5. The operator unloads the cured panels and the cycle is repeated.

## Production

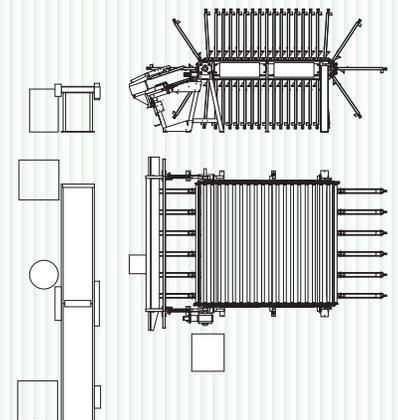
Production is based on cycle time and panel size. Assuming that each section is curing 3 panels 24" x 24" (60 cm x 60 cm) and assuming a cycle time of 90 seconds, production per shift equals:

One Panel:  
= 4 sq. ft. (.36 M2)

One Section:  
= 12 sq. ft. (1.1 M2)

One Cycle:  
= 90 seconds  
= 40 cycles/hour  
= 320 cycles/shift

Production output:  
= 12 sq. ft. x 320 cycles  
or 3840 sq. ft./shift  
= 1.1 M2 x 320 cycles  
or 352 M2/shift



# Taylor's "Smart Clamp" Software

## The **First** and **Only** Production Reporting System for your Gluing Operation

James L. Taylor Mfg. is again setting the standard for other woodworking machines to follow. The Automated Clamp Carrier with "Smart Clamp" Software improves reliability by monitoring the functions of the machine and calibrating the machine in response to the data collected. The "Smart Clamp" also collects a vast amount of data on the operation of the machine that can be accessed by a computer over a network (including the internet) to be used to gather production figures and diagnostic information. This control system will:

**Monitor and Report Production Rates**

**Monitor and Automatically Self-Calibrate Operating Speeds**

**Monitor and Diagnose Problems as they Occur**

**All the above leads to a faster more reliable machine.**

## New Hydraulics

The Clamp Carrier hydraulic system now incorporates a proportional valve controlled by the programmable controller. By using a series of sensors and inputs, the controller monitors and measures the traverse speed of the Clamp Tightener carriage, the rotational speed of the Clamp Tightener, and the speed of the Clamp Carrier rotation. These measurements are taken on every cycle during normal operation and speeds are automatically adjusted up or down without operator or maintenance intervention. This upgrade is a huge step towards a **maintenance free machine**.



## Proportional Control Provides:

**Smoother Operation**  
**Reduced Wear**  
**Less Maintenance**

- 1 Smoother Driver Engagement**
- 2 Automatic Self-Calibration of Traverse Speeds**
- 3 Automatic Self-Calibration of Rotation Speeds**
- 4 Quick & Easy Adjustment of Tightening Pressure**

# ***Pneumatic Automated Clamp Carrier***



As stated earlier, the Automated Clamp Carrier also comes in a pneumatic version. The operation of the machine is identical to the hydraulic version, however, there are features to this machine that may be advantageous to your business:

- Smaller investment
- Designed to be used on a smaller Clamp Carrier
- Designed for one man operation
- Highest productivity per man hour

Most systems are shipped with a 20 section Clamp Carrier because 20 rows of clamps provide the right amount of cure time with a one man operation.

## ***Production***

Production is based on cycle time and panel size. Assuming that each section is curing stair treads 36" long x 12" wide with a cycle time of 2.5 minutes and one operator.

One Panel  
= 3 sq. ft. (.28 m<sup>2</sup>)

One Section  
= 4 treads  
= 12 sq. ft. (1.1 m<sup>2</sup>)

One Cycle  
= 2.5 minutes  
= 24 cycles/hour  
= 192 cycles/shift

Production Output  
= 12 sq. ft. x 192 cycles  
or 2,304 sq. ft./shift  
= 1.1 m<sup>2</sup> x 192 cycle  
or 211 m<sup>2</sup>/shift

# Component Features

The major operating components of the system are:

- The Automated Clamp Tightener/  
Panel Flattener carriage
- The motor drive for rotation.

These are powered by pneumatics and operated by a PLC. The normal operating cycle is fully automatic with flattening, tightening, rotation and loosening sequences pre-programmed.

## System Advantages:

- Simple design
- Easy to maintain
- Medium to high production
- Overall Reliability
- Versatility, productive short runs
- Time tested, Industry Standard



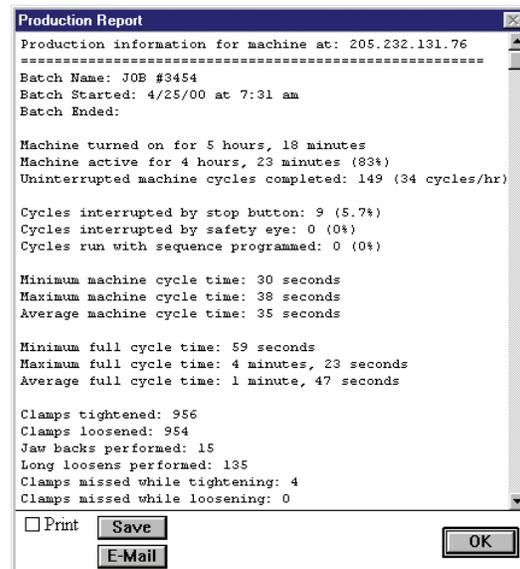
## Production Reports

The Smart Clamp Software gathers information about the operation of the machine including job times, productivity, machine interruptions and down time. It allows you to monitor and measure production, keeping your manufacturing costs as low as possible.

Communication with the machine happens one of two ways:

The machine comes equipped with either an operator terminal or an ethernet port. The operator terminal is mounted on the control box and essential information is communicated at the machine. The ethernet port connects the machine to a computer or network and provides a full communication link.

Windows Version



Screen shot of "Smart Clamp" Production Report

# Side Loading Clamp Carrier



Side Loading Automated Clamp Carrier with Infeed Table and Glue Applicator, (mounted above infeed).

The Side Loading Automated Clamp Carrier is a standard model in our Automated Clamp Carrier line. The system includes all the productivity and design features of our Automated Clamp Carrier. However, it is equipped with a side loading infeed table and application system. This design is especially effective when edge gluing or laminating long material. Productivity levels are higher than the standard Automated Clamp Carrier because panels are being laid up on the infeed table at the same time that the previous panel is being tightened and flattened. In addition, large panels are pushed out of the machine onto a table or conveyor. This eliminates heavy lifting.

## Operation

1. One operator loads the Glue Applicator infeed.
2. The other operator unloads the material from the Glue Applicator onto the Carrier infeed table. This continues until a complete section of panel(s) is loaded on the infeed table.
3. The material is automatically pushed sideways onto the section of clamps. Cured material is pushed onto the outfeed table.
4. The automated tightening/flattening cycle is started. The carriage travels along the front rest, automatically stopping at each clamp to tighten

and flatten the material. The standard sequence for tightening is left to right. However, the operator can input any other sequence as necessary to increase the quality of the panels.

5. Once all the clamps are tight, the Carrier automatically rotates to the next section. The carriage again travels along the front rest loosening each clamp. While the automatic cycle is in process, the operator(s) load the next section of material on the infeed table (Steps 1 & 2).
6. When the automatic cycle is complete and the next section of material is ready, the pusher bar is used to push new material into the section and push cured panels out onto the outfeed table,
7. The cycle is repeated. Normal cycle times range from 60 to 90 seconds depending on the material to be glued.

## Production

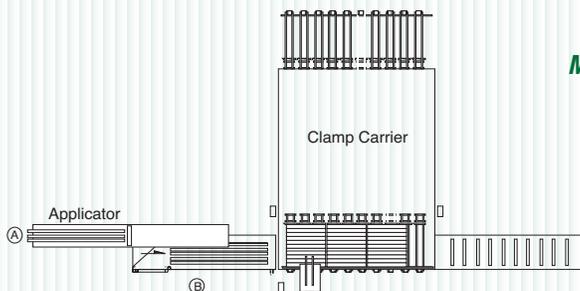
Production is based on cycle time and panel size. Assuming that each section is curing 1 large panel whose dimensions are 8' x 3' (2400 mm x 900 mm) and assuming a cycle time of 90 seconds, production per shift equals:

One Panel:  
= 24 sq. ft. (2.16 M2)

One Section:  
= 24 sq. ft. (2.16 M2)

One Cycle:  
= 90 seconds  
= 40 cycles/hour  
= 280 cycles/shift

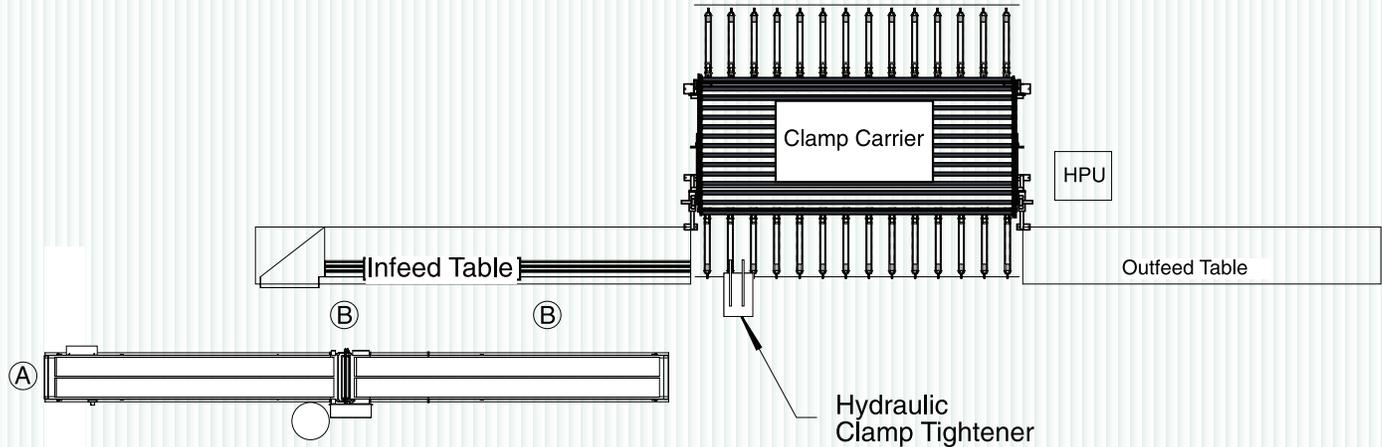
Production output:  
= 24 sq. ft. x 280 cycles  
or 6720 sq. ft./shift  
= 2.16 M2 x 280 cycles  
or 605 M2/shift



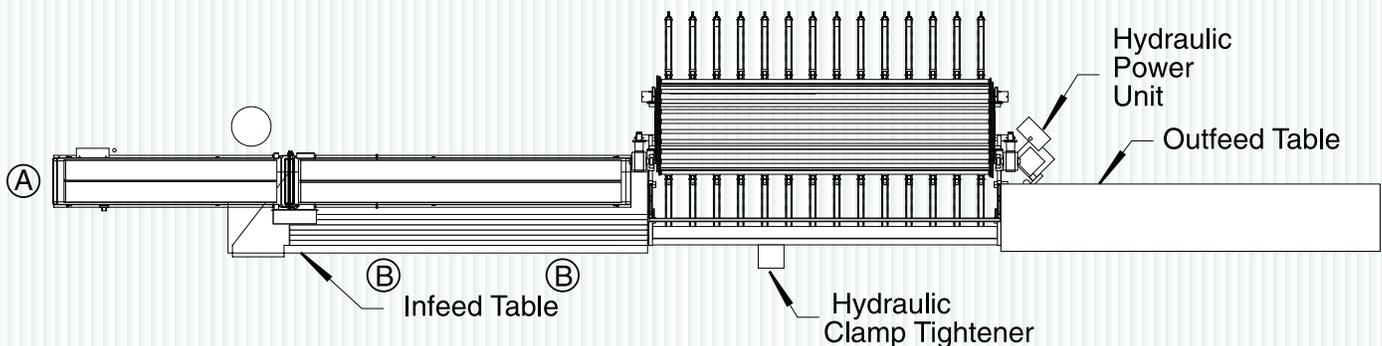
**Machines Available in  
Left Hand Feed  
or  
Right Hand Feed.**

# Floor Layouts & Operation

**Machines can be configured for material flow from left to right or from right to left.**



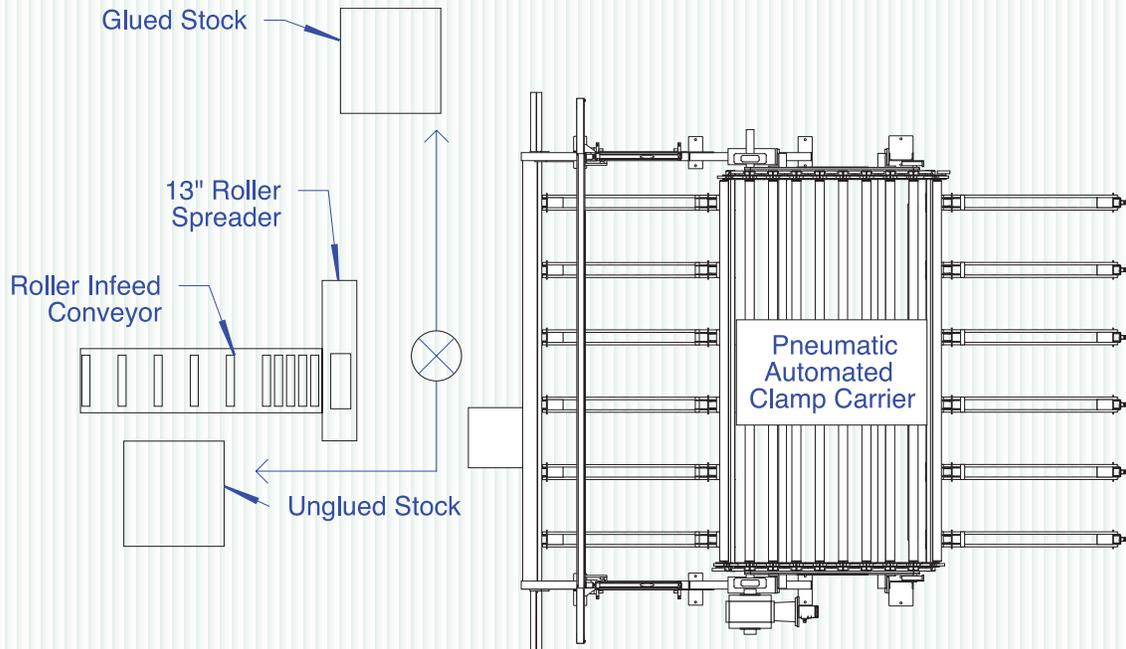
Machines can be equipped with the Glue Applicator mounted on the infeed table or self-standing on the floor.



## Operation:

An operator in position "A" loads unglued material onto the Glue Applicator. One or two operators (depending on length of material) load material from the Glue Applicator to the infeed table in position "B". When the machine has finished loosening clamps, the pusher bar is used to feed this fresh stock into the clamps and push the cured stocks onto the outfeed table. The automated cycle is started, the operators off-load the outfeed table and reload the infeed table.

# Floor Layouts & Operation



## Operation with an Automated Clamp Carrier with One Operator

1. The operator unloads glued stock from the clamp carrier and stacks it.
2. The operator then applies glue to fresh stock and loads it into the clamps.
3. When the section is loaded, he presses the cycle button and the machine proceeds through the auto cycle of tightening, rotating and loosening.
4. While the machine works automatically he is free to arrange the next set of panels to be glued and clamped.

## Production

1 Machine, 1 Operator

Cycle time = 2.5 minutes = 24 cycles/hour

Production = 12 sq. ft./section x 24 = 288 sq. ft./hour

Productivity = 288 sq. ft./man hour

1 Machine, 2 Operators

Cycle time = 1.5 minutes = 40 cycles/hour

Production = 12 sq. ft./section x 40 = 480 sq. ft./hour

Productivity = 240 sq. ft./man hour

2 Machine, 3 Operators

Cycle time = 60 seconds

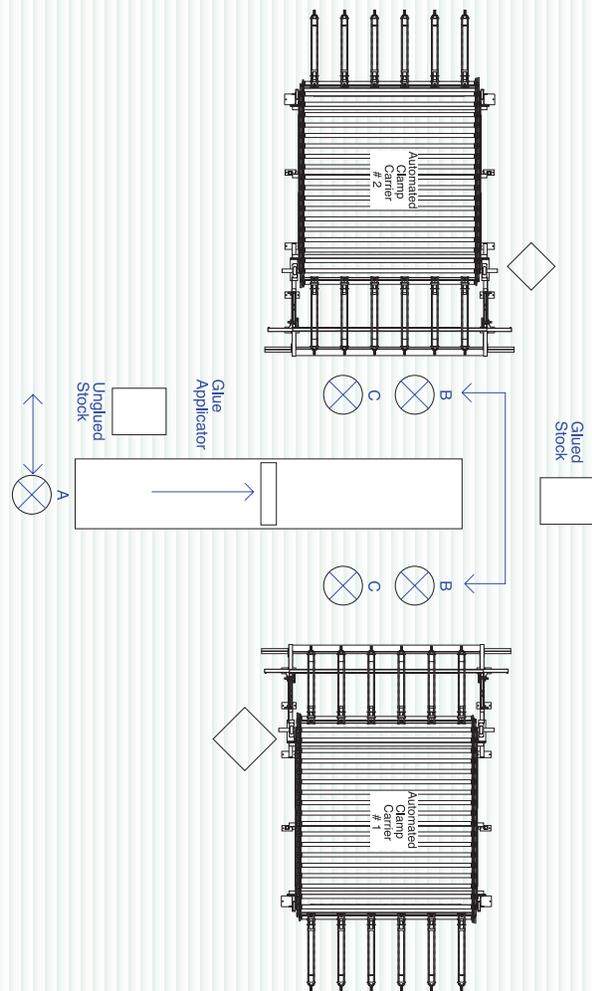
Production = 12 sq. ft./section x 60 = 720 sq. ft./hour

Productivity = 240 sq. ft./man hour

# Floor Layouts & Operation

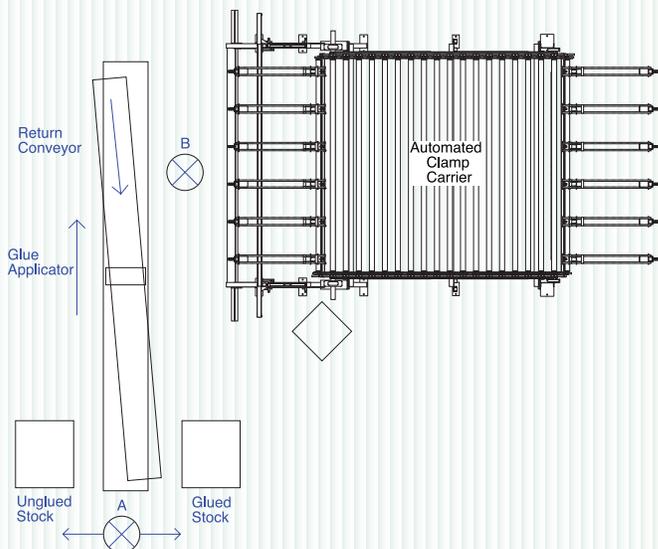
## Operation with Two Automated Clamp Carriers

1. Operator A loads unglued stock onto the infeed of the Glue Applicator
2. Operator B & C walk to the left end of Clamp Carrier #1 when it has just finished loosening the clamps on the far left hand panel. (Note: For this setup, Clamp Carrier #1 loosens clamps from left to right.) They follow the Automated Clamp Carrier carriage, removing the cured panels. The panels are stacked on the pallet of glued stock.
3. As they remove glued panels from the clamps, operator B & C reloads the clamps with stock from the Glue Applicator.
4. When all of the clamps are reloaded, operator B presses Clamp Carrier #1's "Tighten" button to begin its automated cycle.
5. Operator B & C then proceeds to Clamp Carrier #2 and repeats step 2 through 4 on the second machine.



## Operation with an Automated Clamp Carrier and Two Operators

1. Operator A loads unglued stock onto the infeed of the Glue Applicator
2. Operator B follows the Automated Clamp Carrier carriage, removing the cured panels and placing them on the Return Conveyor as he goes. The panels are conveyed by gravity to the pallet of glued stock for off loading and stacking.
3. As the glued panels are removed from the clamps, the Operator B reloads the clamps with stock from the Glue Applicator.
4. When all of the clamps are reloaded, the operator presses the Clamp Carrier's "Tighten" button to begin its cycle.
5. Operator A unloads the glued panels from the Return Conveyor and stacks them on the pallet of glued stock.



# ***Taylor Conveyor Type Applicator***



16' Conveyorized Glue Applicator with PVA Glue Pump

## ***Increased efficiency with better material handling***

### ***The Taylor Glue Applicator***

The Taylor Automatic Conveyor-Type Glue Applicator is available in lengths from 16' to 60'.

Standard models are supplied one of two ways. The Felt Roll model is designed for use with PVA type adhesives. It is equipped with a stainless steel glue pan, doctor roll, and outfeed cross bars. The glue roll is felt covered to provide even glue spread and is quickly removed for easy cleaning.

The Stainless Roll model is designed for use with urea, resorcinol and melamine type glues. It is equipped with a stainless steel glue roll, stainless steel doctor roll, and water jacketed glue pan. Optional: Rubber coated glue roll.

Either model Glue Applicator can be set up with a manual feed of the adhesive to the glue pan or with a PVA Glue Pump which automatically feeds and controls the amount of adhesive in the glue pan.

The length of the Glue Applicator depends on the loading area of the Clamp Carrier. For instance, an 8-1/2' wide Clamp Carrier is usually equipped with a 16' (8' infeed, 8' outfeed)

Glue Applicator. Conversely, a 14-1/2' Clamp Carrier is usually equipped with a 28' (14' infeed, 14' outfeed) Glue Applicator.

The width of the Glue Applicator depends on the thickness of the panel. Generally, 3/4 and 4/4 stock only require a 13' wide glue roll. Thicker material, 5/4, 6/4 and above, require our 20" or 36" machines.

We recommend the use of a wet film mil gauge to measure optimum glue spread thickness (7-9 mils).

# Features

To produce the best Glue Applicator on the market, we have concentrated our efforts in three key areas:

## A) Precise and adjustable glue spread:

The Taylor Glue Applicator is equipped with a fully adjustable live doctor roll. The doctor roll spins in the opposite direction (from the glue roll) which provides a controllable even spread. Thumbscrews and locking nuts are used to independently adjust both ends of the doctor roll.

Attaining the proper glue spread thickness is very important. Too much or too little glue spread will weaken glue joints. Also, too much glue wastes money, slows production and creates more “clean up time” for both the applicator and the Clamp Carrier.

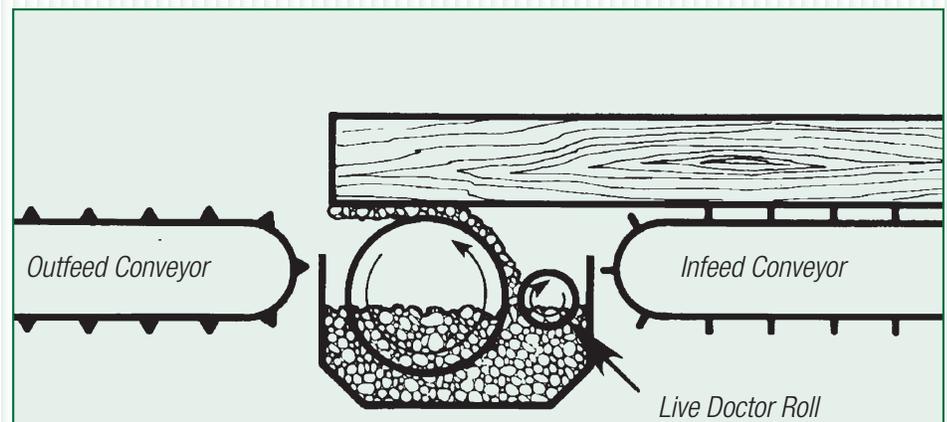
With each machine, Taylor provides a wet film thickness gauge for measuring. More importantly, it is our Live Doctor Roll design that allows each customer to fine tune the spread to their specifications.

**B) Easy and fast clean up:** We have equipped the Glue Applicator with a nightly storage system to save glue and clean up time. The glue pan cover fits tightly over the top of the glue pan and a large sponge is fitted to the roof of the cover. When soaked with water, the sponge keeps the cavity of air moist and prevents skimming of the glue during the night. During weekends and vacations, the glue pan and glue roll should be removed and cleaned. This job is completed quickly because the glue pan drops out with the removal of two pins. The glue roll is mounted on a removable shaft. When the shaft is gently pulled, the glue roll slides out of the top of the Glue Applicator for cleaning.



**C) Durability:** The machine is designed with components which stand up to the rigors of a high production gluing operation. In addition, an adjustable safety clutch protects the conveyor chain against damage when careless operation

results in wood jamming in the conveyor. This feature reduces down time and is self-healing so the machine returns to normal function once the jammed stock is removed.

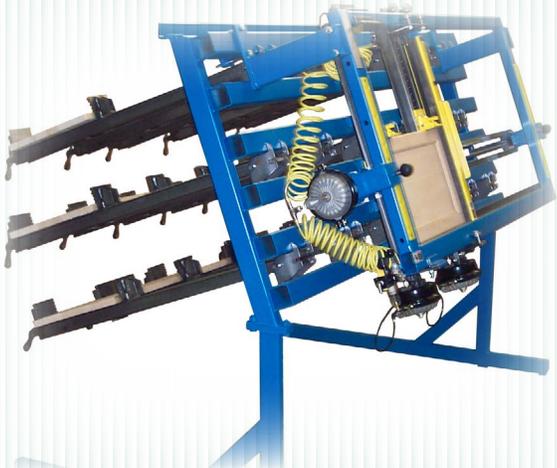




**Rip Optimization for the Custom Shop**



**Custom Shop Clamp Carrier For Long Stock - 16' Rail & Posts**



**Pneumatic Door Clamp & Panel Clamp Combo System**



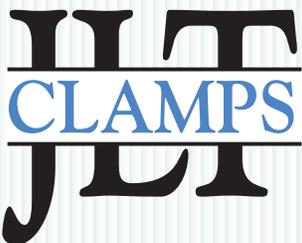
**Cameron Rip Optimization System**



**Taylor Hydraulic Automated Clamp Carrier**



**Push Feed Chop Systems**



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