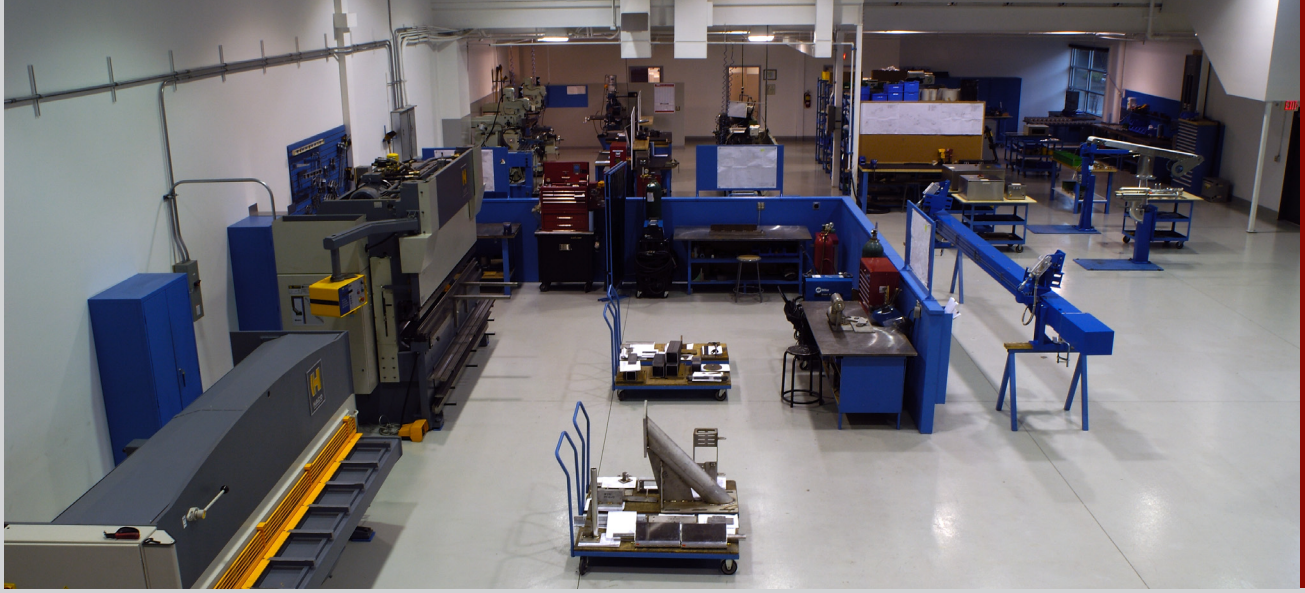

About Mantech Enterprises Inc.

- Mantech provides full project management services, the highest caliber of engineering design and manufacturing, and timely deliveries for our clients.
- Mantech has two interrelated core business units:

  Advanced Paper Systems is focused on innovative threading and tail cutting technologies for the paper manufacturing sector.

  Manufacturing Solutions provides high quality manufacturing services, including all aspects of machine and system building, and manufacturing consulting.

Mantech's unparalleled customer focus has earned us loyal clients around the globe.

MantechEnterprises.com Start by connecting with us.

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Our Technologies

Conveyors

CVC Conveyor
Standard Fan Type Vacuum Conveyor

Air Foils

Airfoil Threaders & Deflectors
Calender Threaders

Tail Breakers

SGC Guillotine Tail Breaker
SBB Tooth Blade Tail Breaker

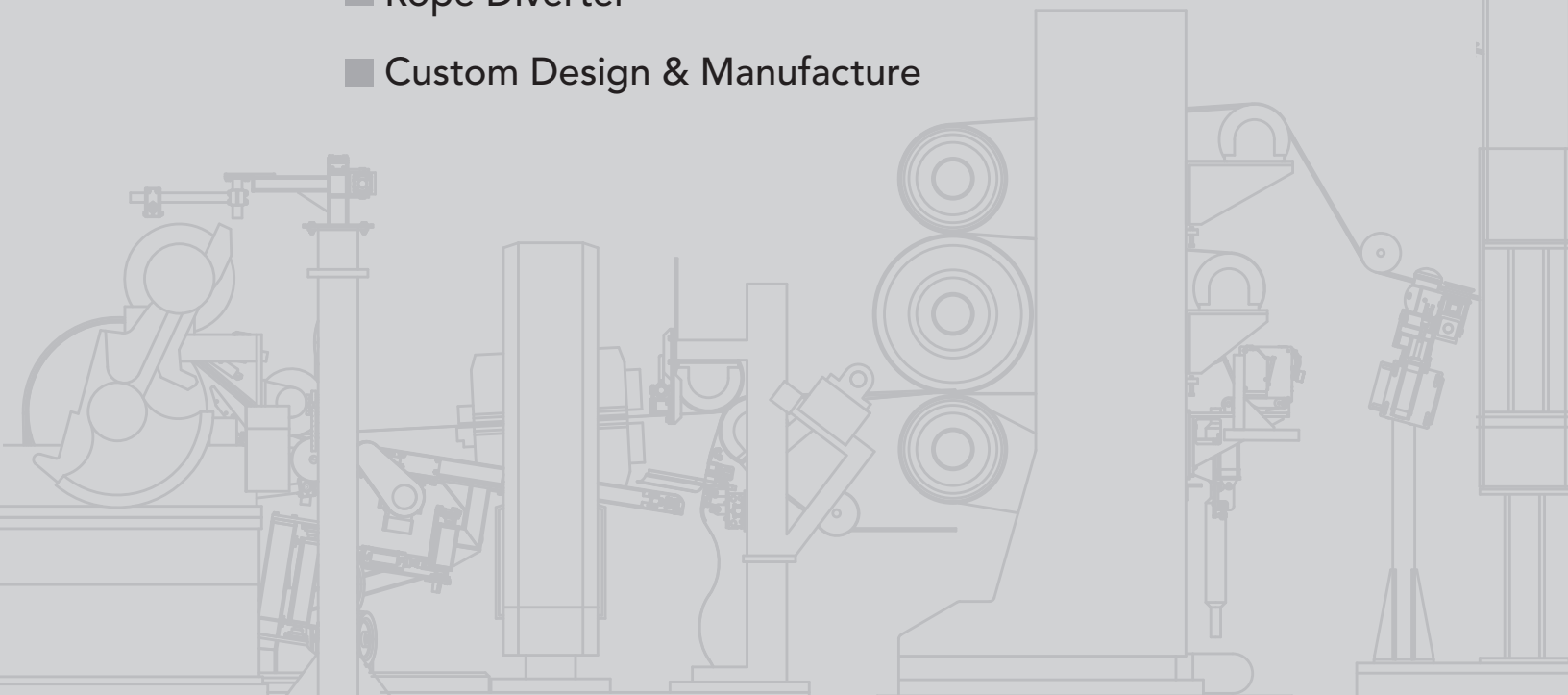
AMH Mechanical Hand

Tail Cutters

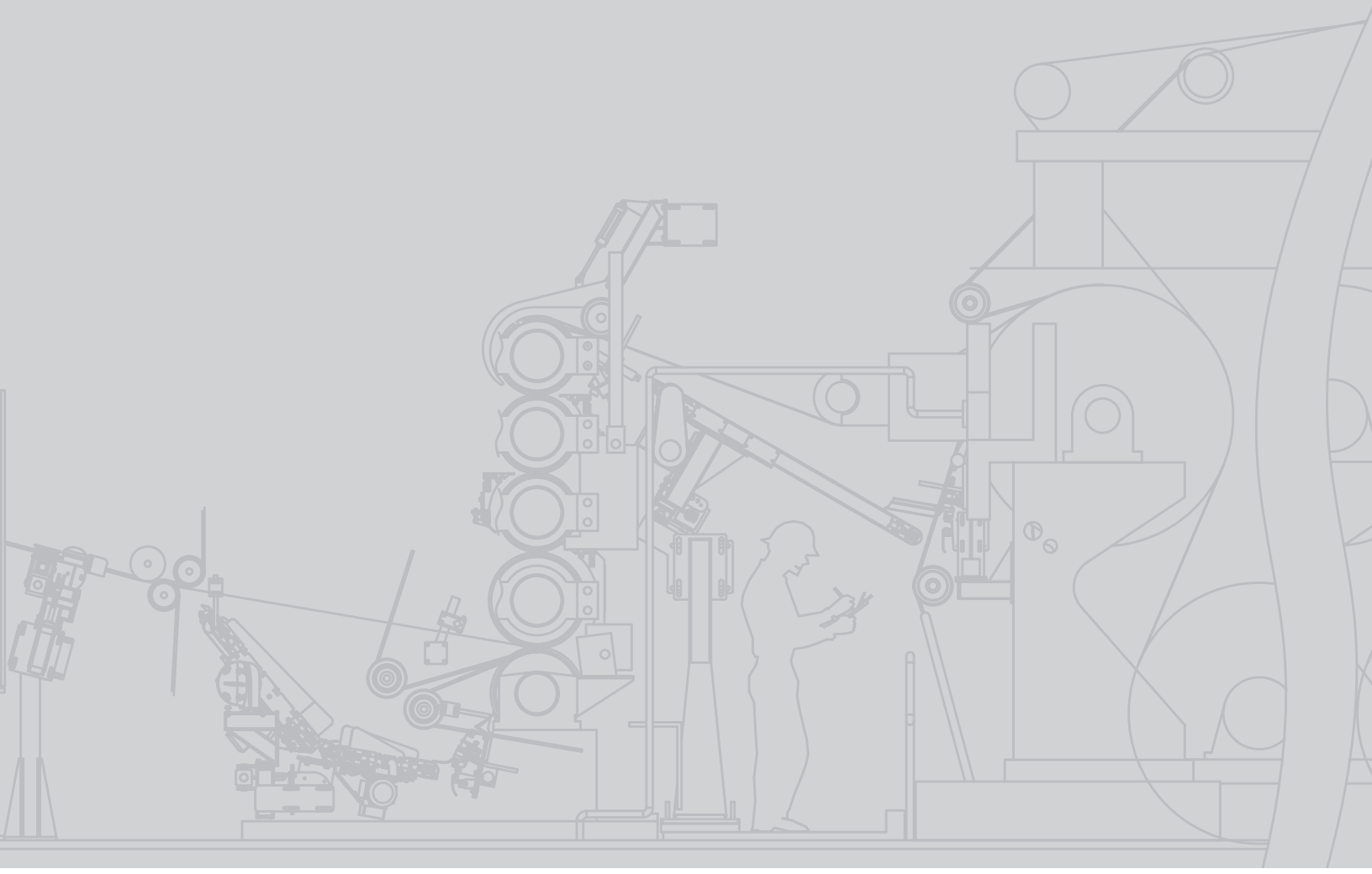
Rotary Saw Blade Tailcutter
Knife Blade Tailcutter
Water Jet Tailcutter

Rope Diverter

Custom Design & Manufacture



Innovative Threading, Tail Cutting & Rope Diverter Technologies



MANTECH Enterprises Inc. | Advanced Paper Systems

Innovative Threading & Tail Cutting Technologies

Innovative Threading, Tail Cutting & Rope Diverter Technologies

Mantech Advanced Paper Systems offers innovative solutions to all paper and pulp machine threading, cross machine tail cutters and rope diverter projects—no matter what their scale.

Threading applications include Press to Press and Press to Dryer sections, Size Press and Coater sections, Dryer to Calender and Calender auto threading, Calender to Reel and virtually any intermediate auto threading sections.

Our compact Tail Cutters utilize Low Pressure water, fixed or rotating blades, and are suitable for wet or dry applications. Rope Diverters automatically reposition rope runs through scanners, away from Edge Markers or environmentally hostile areas during production.

Mantech's Advanced Paper Systems are in use in Australia, Austria, Belgium, Canada, China, Colombia, England, Finland, France, Germany, Italy, Netherlands, New Zealand, Russia, Scotland, Sweden, Ukraine and USA.

Mantech APS has been the Main Supplier of Threading Equipment for the EC's "Making Paper Safely" CE Directive in the UK.

CONVEYORS

FEATURE LIST

- All stainless steel construction
- Compressed air vacuum generator built into vacuum chambers, one per chamber
- Vacuum chambers sized for optimum air flow and vacuum distribution.
- Custom design diffuser plate for each specific position
- Simplified, low profile design – ideal for restricted spaces.
- Uses mill air – filter / separator recommended.
- Operating pressure range 70 to 90 psig (4.76 to 6.10 Bar)
- Precision crowned driven and idler pulleys, dynamically balanced.
- Fully sealed, stainless steel bearings
- Quick change vacuum belt easily adjusted tracking and tensioning mechanism
- Standard frame drive motor, TEFC, mill and chemical duty, off-the-shelf interchangeability
- Standard, fixed motor mounting
- Interchangeable, standard components

1 CVC Conveyor

For threading of high-speed lightweights to market pulp, and with horizontal, vertical and inverted designs for positions from press to reel, our conveyors provide unmatched versatility, control and efficiency. Construction is all stainless steel, designed for high service reliability and low maintenance.

MANTECH Enterprises Inc. | Advanced Paper Systems
Innovative Threading & Tail Cutting Technologies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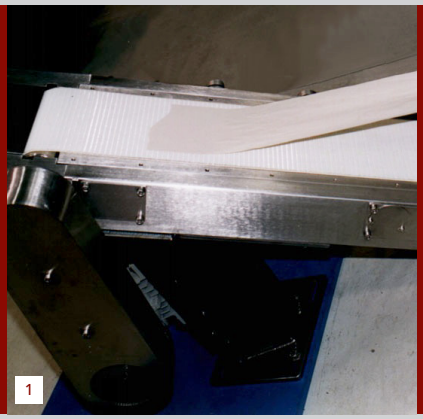
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Standard Fan Type Vacuum Conveyor

This conveyor is suited for pulp systems or for conveyors exceeding 12 ft. (3.6 meter) lengths, and is applicable for modifications or additions to existing fan systems.

FEATURE LIST

- All stainless steel construction
- Custom design diffuser plate for optimum airflow and distribution
- Single or double air plenum maximizing air flow and vacuum distribution
- Precision crowned driven and idler pulleys, dynamically balanced.
- Fully sealed, stainless steel bearings
- Quick change vacuum belt easily adjusted tracking and tensioning mechanism
- Standard frame drive motor, TEFC, mill and chemical duty, off-the-shelf interchangeability
- Standard, fixed motor mounting
- Interchangeable, standard components
- Full storage articulation; horizontal, vertical, linear, providing machine access

3 Calender Threaders

For use on three to eight roll stacks, and for threading high-speed lightweights to board. Over-the-top threaders eliminate the need for an upper pinch roll, which reduces equipment needs, roll wear and roll refinishing. Feature highly efficient use of compressed air with air knife applications.

FEATURE LIST

- All stainless steel construction utilizing air knife and tube type air jets
- Simple robust design and construction
- Minimalistic parts providing low maintenance
- Fully adjustable air flows for each jet providing suction and transfer control
- Full storage articulation; horizontal, vertical or linear, providing calender roll and water box access
- PLC control in conjunction with Auto Threading Equipment feeding the Calender Threaders.

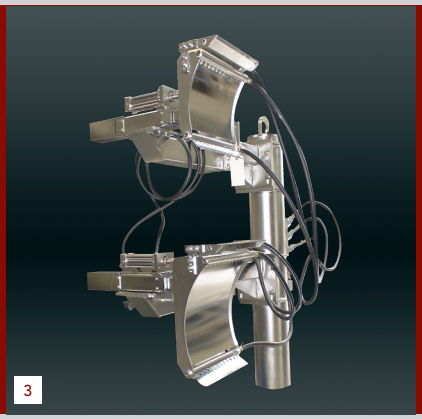
AIRFOIL THREADERS & DEFLECTORS

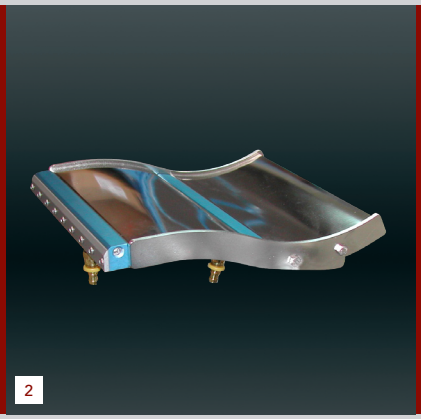
FEATURE LIST

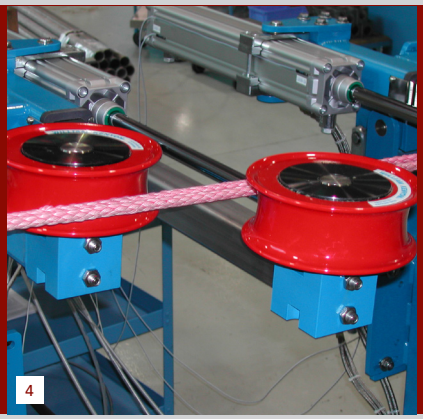
- All stainless steel construction
- Simple robust design and construction
- From 8" (200mm) to 20" (500mm) wide, up to 6'-0 (1.8 meter) lengths
- Specific jet design to prevent stalling of the tail
- Designed to suit specific paper/board grade and machine position
- Fully adjustable air flows for each jet
- Quick disconnects for press section systems
- Easily mounted pivoting and linear slide mechanisms

2 Airfoil Threaders

For standalone deployment, or for use with vacuum conveyors, this threader can handle high-speed lightweights to market pulp, in positions from fourdrinier to reel, within rewinders, and on pulp layboy or sheeter tables. Horizontal, vertical and inverted designs assure versatility, and all-stainless, minimalist construction provides low maintenance. Available with tube type air jets or highly efficient air knife applications.







4 Rope Diverter

Applicable for scanners, edge markers or size press rope removal, this diverter allows full sheet scanning, rope clearance with splasher pans, etc. It lifts rope off rotating rolls when the rope system is in idle or stop mode. Configurable with single, double or three-rope systems, for standalone implementation, or can be tied into the paper machine control system.

FEATURE LIST

- Pneumatically operated pulleys relocate the rope run for threading, scanning, or production.
- Diverts rope horizontally, vertically or on any required angle.
- Rope system can operate at full production speed when diverted or released
- Equipment stores out of the paper path when threading
- Epoxy coated carbon steel or stainless steel construction
- Simple long life maintenance free control system

7 AMH Mechanical Hand

This device simulates a human pulling the tail into a rope nip, eliminating the need for a person to go into the machine. It automatically pulls the tail into the ropes, holds the tail for threading, and releases or holds the tail out of the ropes. It is normally used in conjunction with transfer equipment, which takes the tail off a press roll and transfers it into the next machine position.

FEATURE LIST

- All stainless steel construction, linear slide and tail grabber
- Press section design for harsh environment & caustic clean up.
- Quick disconnect fittings and fastening for rapid removal for maintenance and press felt change out.
- All PLC controlled propriety action
- Pre-transfer Equipment, to initially take the tail off a press roll & transfer it into the next machine position available.

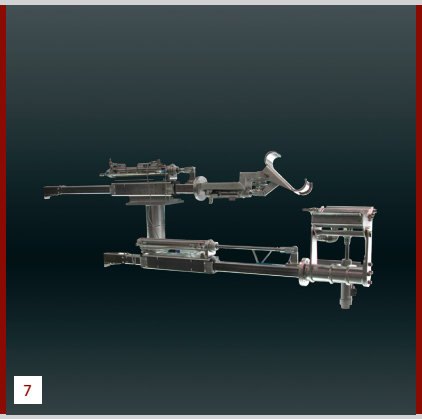
TAIL BREAKERS

FEATURE LIST

- Designed for all grades in the light-medium to heavy range (50gsm to 1200gsm) and market pulp.
- High speed pneumatic operation
- Blades remain closed until tail breaker is ready for use - totally safe mode
- Hardened stainless steel blades with interchangeable cutting edges
- Stainless steel, electro-polished hardware with corrosion resistant air cylinders
- Can be mounted to machine doctors, conveyors, air foils or machine frames.
- Action of tail breaker automatically directs tail onto next threading device.

5 SGC Guillotine Tail Breaker

Simple, compact, and safe, with a low maintenance design, these are the most effective high speed tail breakers available. Whether used standalone, or in conjunction with an Edge Doctor, straight, clean cuts are assured.



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6 SBB Tooth Blade Tail Breaker

This compact, safe and effective design is suited for press or high-speed lightweights. It uses a hardened stainless steel saw-spike tooth blade

FEATURE LIST

- Standard all stainless steel construction
- Hardened stainless steel large profile saw-tooth blade
- Pneumatically operated – safe storage position for blade when not in use
- No regular maintenance required
- Designed for tissue, toweling, high speed news or for threading in press sections

Water Jet Tailcutter

Made entirely of stainless steel, this cutter is available with customer water supply or new water supply systems. Cut positions are accurately set, and fully adjustable. Double or single nozzles are available, with edge trim squirts available.

Feature List

- Operating pressure up to 5000 psig (340Bar)
- Water connections at drive side or tending side for existing customer water supply or new water supply system
- Very compact rigid structural beam design – unlimited cross machine length
- All internal beam components in stainless steel
- Unique, "V" wheel carriage to maintain positive motion without play/backlash
- DC cross drive motor with rugged reduction gearbox – fully sealed
- PLC automatic control system or fully manual operation.
- Double or single nozzle
- Adjustable Edge trim squirts with either remote or local adjustment available

TAIL CUTTERS

FEATURE LIST

- Air motor driven saw blade
- Hardened steel blade with non-plugging, low dust, tooth design
- Sheet stabilizing plate integral to cutting head
- Compact rigid structural beam in stainless steel or epoxy coated structural steel
- All internal beam components in stainless steel
- Pivot mechanism to engage cutting head into sheet
- Unique, "V" wheel carriage to maintain positive motion without play/backlash
- AC or DC cross drive motor with rugged reduction gearbox
- PLC automatic control system or fully manual operation.
- Standard design is suitable for wet or dry end of the machine

8 Rotary Saw Blade Tailcutter

Simple, reliable and versatile, with single, dual, or portable hand held control stations. These feature a very compact, rigid structural beam design for unlmited cross-machine length, and fully-adjustable or preset positions to optimize precise tail cut positioning. Special tooth designs on the rotary saw blade minimizes dust and controls fiber build-up and plugging.


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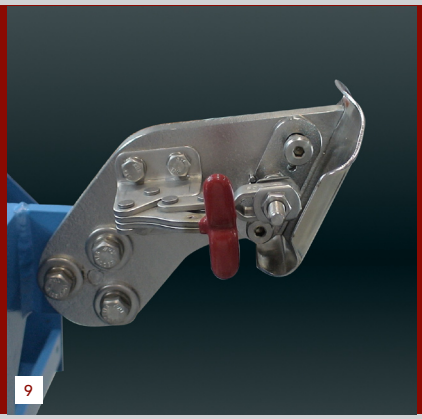
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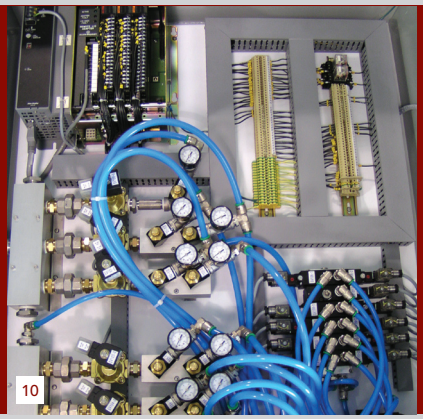
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9 Knife Blade Tailcutter

Simple, reliable and versatile, with single, dual, or portable hand held control stations, these feature a very compact, rigid structural beam design for unlimited cross-machine length, and fully-adjustable or preset positions to optimize precise tail cut positioning. No tools are required to quickly change the blade on this simple, low maintenance cutter. The head can be parked at front or drive side for blade changes, and a sheet stabilizing plate is integral to the cutting head.

Feature List

- All stainless steel design
- Designed to accept typical "Utility Knife" blade or special hardened steel blade for extended blade life
- Toggle clamp design for blade exchange
- Beam and control designs – same as Rotary Saw Blade unit

10 System Controls

All Threading, Tail Cutters, Rope Diverters, or Mechanical Hand Systems come with full control packages. Operator stations, Control panels, Pneumatic panels and Drive panels are custom designed for each application. All systems and panels are CE Certified, meeting the world recognized standards for safety and reliability, ensuring consistent safe operation of the systems.

Feature List

- Operator Stations as stand alone, built into existing bench boards or remote hand held units are available.
- Fully automatic to semi-automatic operation via PLC control available.
- Turn-key Variable Frequency Drives fully built up with protection control and by-pass circuits for exacting motor control.
- Turn-key Pneumatic Systems fully protected for harsh environments, enclosed within panels
- NEMA 4 or 4X panels available for standard or stainless steel required areas.
- Individual components used within the panels are CE Certified, and upon application or customer specification may contain UL and CSA listings.
- Metric or Imperial, European or North American components available.
- Custom CE Certified PLC Control or VF Drive cabinets (non-paper industry) also available upon request.