

VMI GROUP

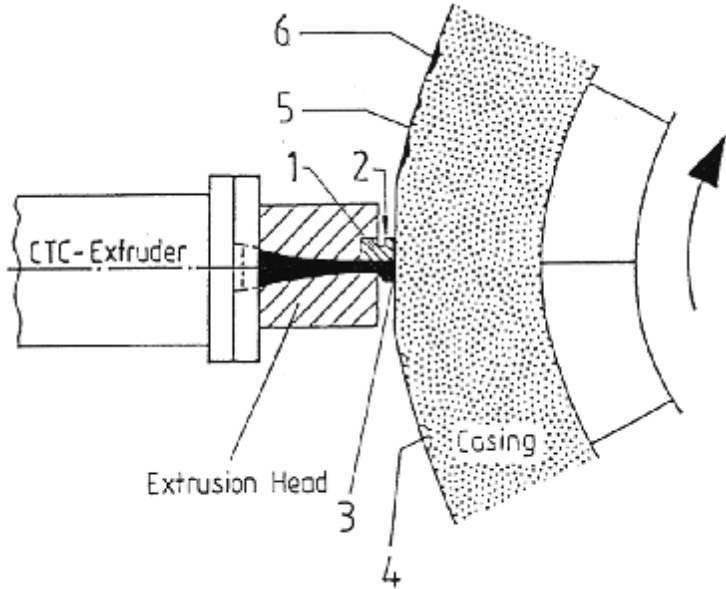
RETRAX

ARC 2018

KUALA LUMPUR

26-Sept-2018

VMI's Cushion to Casing Extrusion Smearing Technology; the principle



Cushion Gum Smearing

Key Benefits

- Applying the 1 mm cushion gum layer and at the same time
- Automatic skive hole filling
- Savings by one size feed strip
- Savings on extra shoulder work
- Savings in solution spraying
- Savings by automation
- Improved product quality due to better adhesion



RETRAX Line

3 Extruder Models

RETRAX 3003	RETRAX 6005	RETRAX 6011
30mm Extruder	60mm Extruder	60mm variable speed
Up to 120 tires per shift	Up to 180 tires per shift	Up to 240 tires per shift
Best performance-price ratio	Recommended size	Maximum output



Stitcher Unit in the RETRAX



Shoulder Shaping

Wingformers



VMI Group

We make machines

VMI is famous for tire building machinery

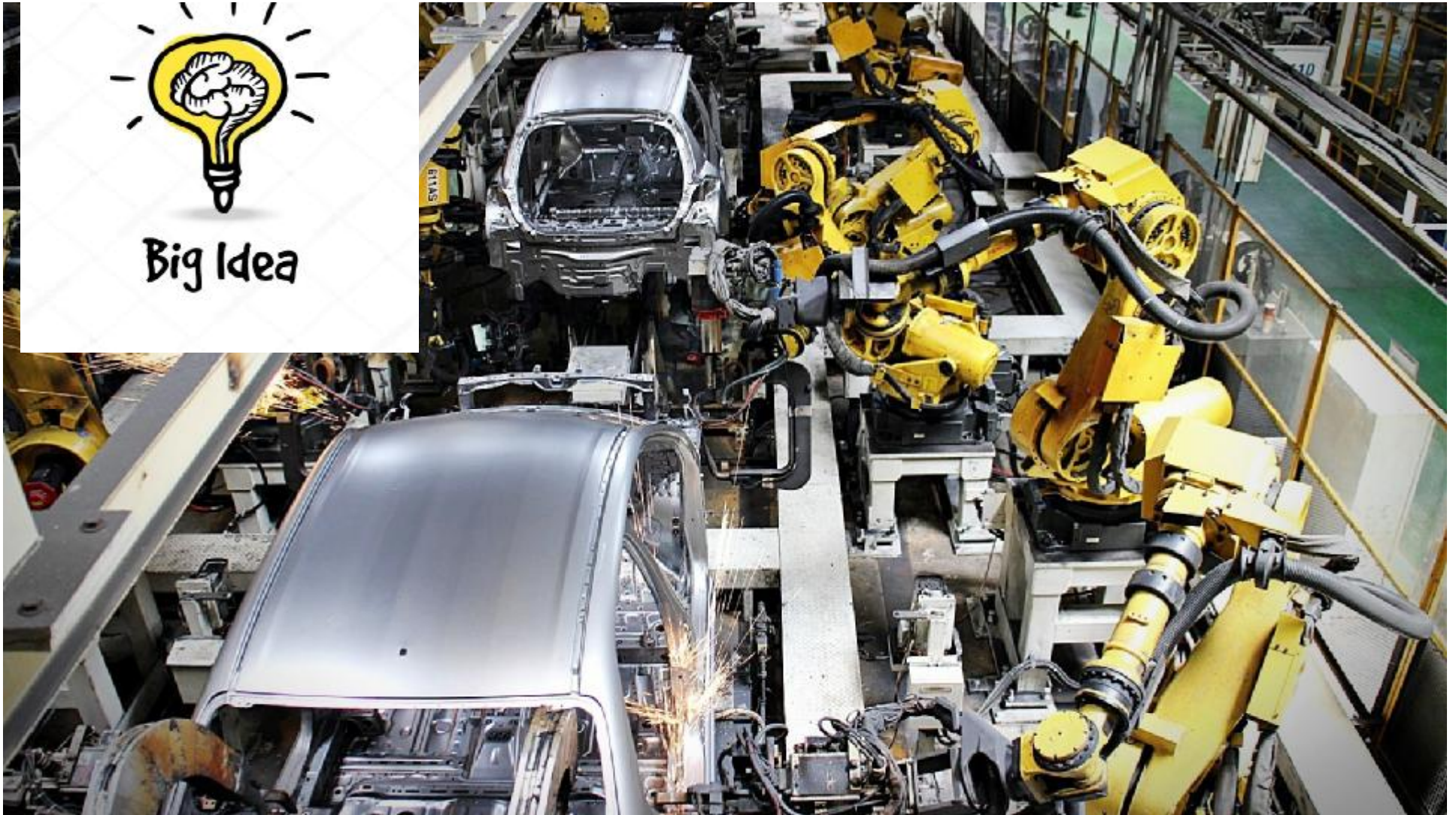
- High quality tires for PCR and TBR
- High output Machines
- Highly automated

Use this know how in building retreads





Big Idea



Handbook of Rubber Bonding

Bryan Crowther (Editor)

rapra
TECHNOLOGY

RETRAX Builder

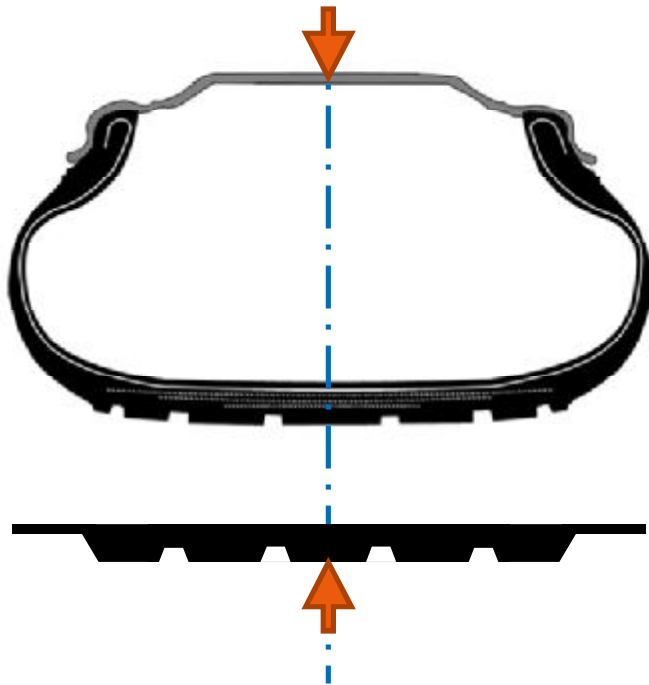
Automatic Cushion gum extruder and Tread Applicator in one machine

- Automatic Centering of the tread to the casing
- Automatic length checking and stretching
Error message if tread length out of range
- Fast
- Automatic stitcher
- High product quality



Tread Applicator

Basic WITHOUT Camera



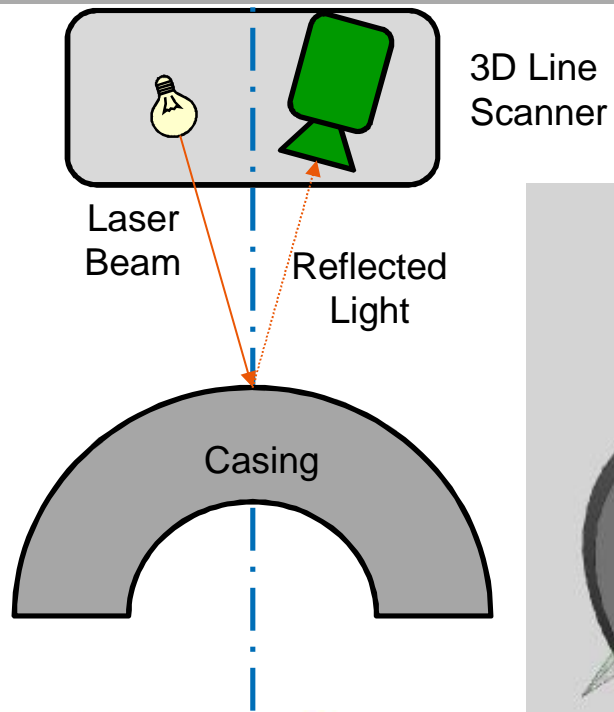
- The alignment is purely mechanical and fixed
- The new tread is positioned on the center line of the applicator table
- Which is on the center line of the expanding rim

There is no check on the actual position of the shoulders or on the shape of the buffed surface

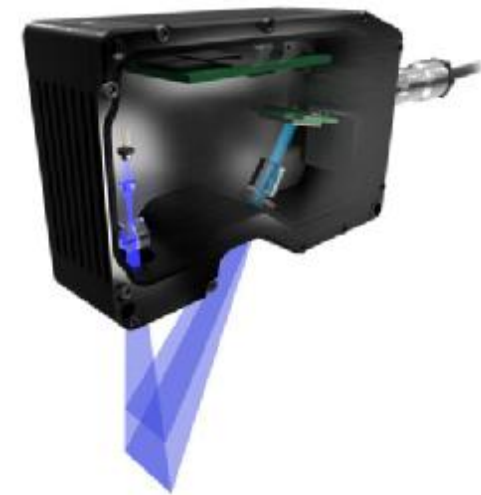
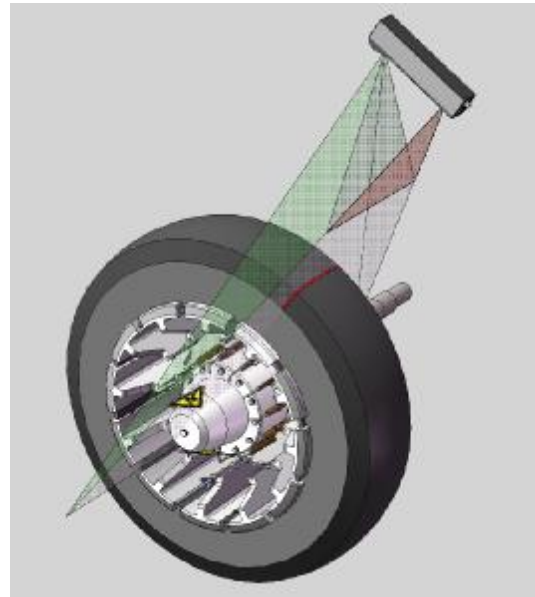
The tread is applied on the center line between the tire beads

Tread Applicator

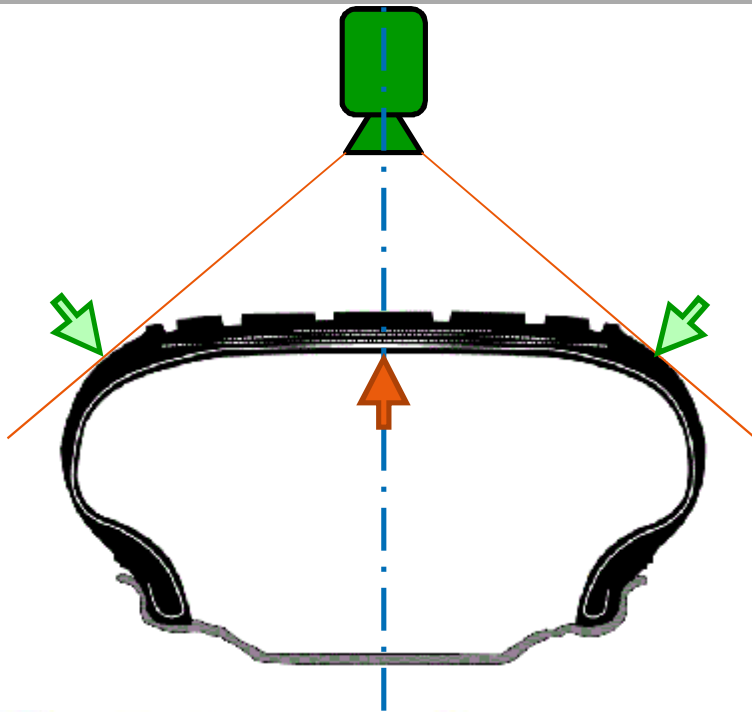
Tire scanning camera



The camera is actually a:
3D line scanner with the Laser light and
sensor in a single box



Tire scanning camera



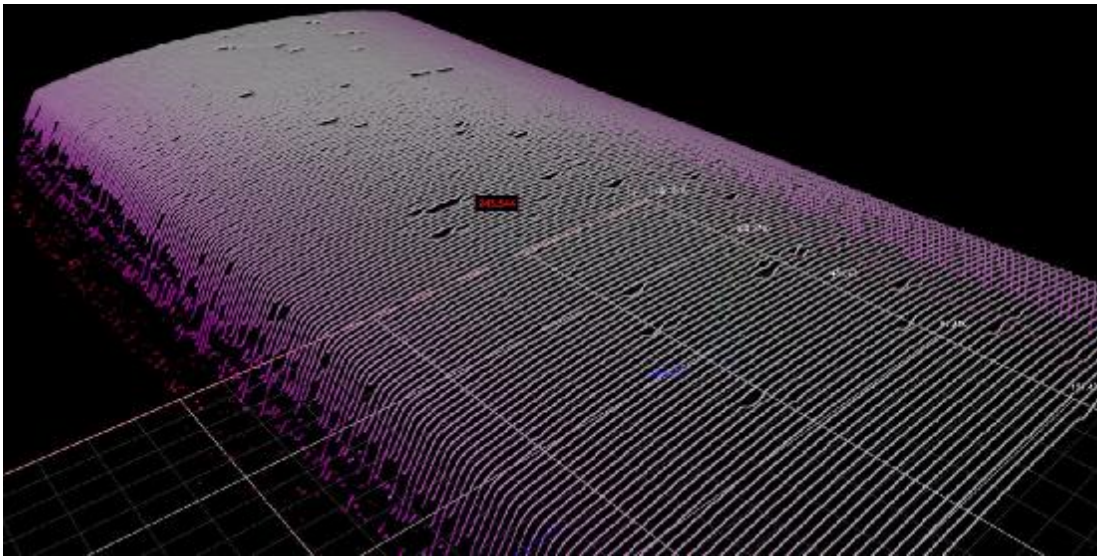
- The Camera is on the centre line of the expanding rim
- Only part of the shoulder is visible
- Depending on the shape of the shoulder after buffing

A special software algorithm is used to calculate the position of the shoulders (green pointers) and then to calculate the center line between the shoulders (red pointer)

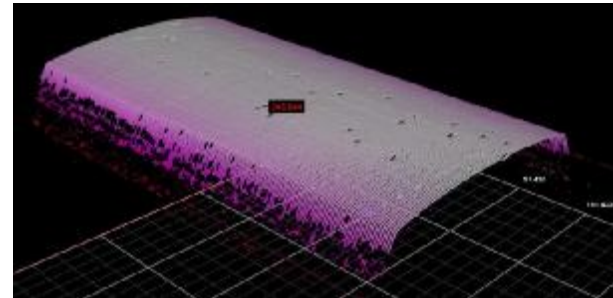
This will be the reference center line for the cushion gum application and for the new tread application

Camera Scan

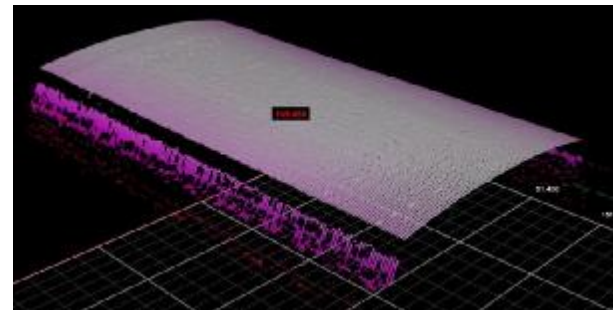
The scan signal from the camera. Note the skive holes on several scan lines.



Before cushion gum extrusion.



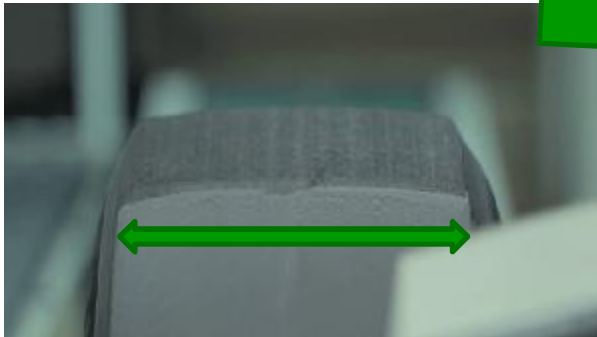
With cushion gum, before Tread application.



Camera Scan

before cushion gum extrusion

1. To position the cushion gum.



Laser scan to measure the tire width.

2. To position the tread slides for wing treads.



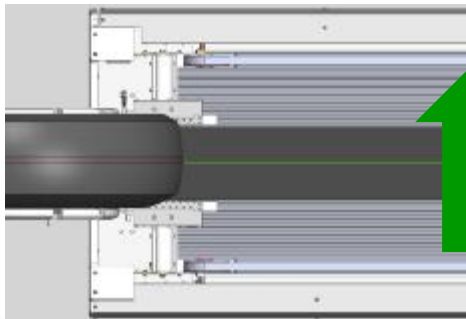
Camera Scan

before tread application



Laser scan to measure the tire center line and diameter.

The complete table with the tread on top moves to match to the center line of the tire.

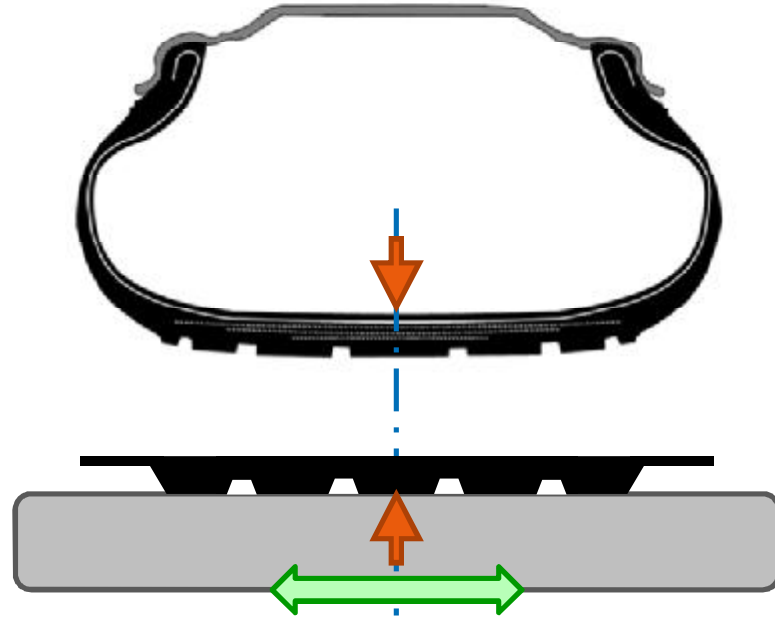


To stretch the tread to make a perfect splice.



Tread Applicator

with Camera



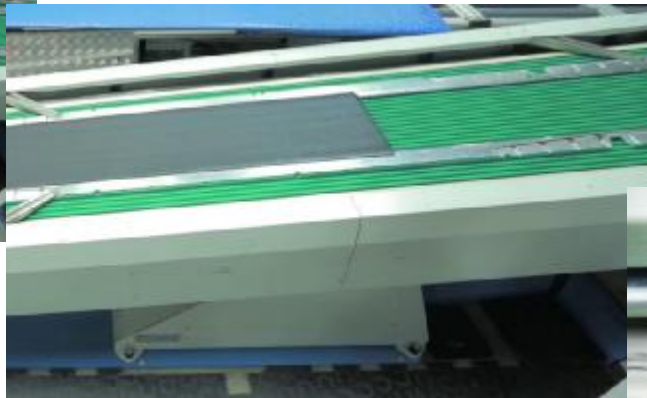
- The new tread is positioned on the center line of the applicator table
- The table with the tread moves (green arrow) to align to the position measured by camera

The tread is applied on the center line between the tire shoulders

Wing Tread Centering

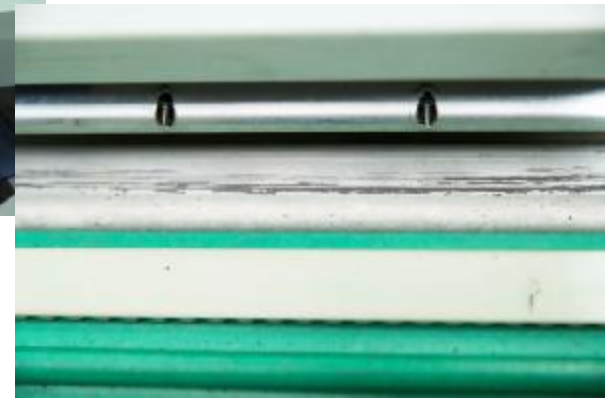


First the operator places the tread in between the slides



Second the slides push onto the tread to ensure it is straight and centered on the table

Needles in the slides ensure sufficient grip on the side of the tread



**THANK YOU
FOR YOUR
ATTENTION**

Flexible
Innovative,
Inspired,
Dedicated