

**GLOBAL ORGANIZATION - LOCAL SUPPORT**



**BEAD ROOM SOLUTIONS**



**VMI GROUP**

TKH GROUP MEMBER

#### YOUR NEEDS - OUR MISSION

In the rubber and tire industry yesterday's technology is being replaced by today's innovation for tomorrow's requirements. Amidst the turmoil of innovation there is, however, one constant:

*VMI's commitment to supplying innovative and reliable services and equipment to the rubber and tire industry.*

#### YOUR NEEDS - OUR CHALLENGE

VMI supplies millroom equipment and a complete line of tire manufacturing, curing and testing systems for bias and radial tires for cars, truck, utility and off-the-road vehicles.

Our services range from financing through engineering and contracting projects. We also offer maintenance contracts and upgrade existing rubber and tire equipment.

We work closely with clients to create customised solutions that meet their needs.

*Rightfully VMI is known as the leader in millroom equipment and single-stage machines for radial car and truck tires.*

#### YOUR NEEDS - OUR NETWORK

VMI's network of agents is constantly monitoring developments on local markets on all continents. Our R&D department collaborates with the leading international rubber research institutes and with key suppliers of commercial components.

Our vast expertise and experience in rubber and tire production engineering enables us to respond rapidly to market developments and to specific needs of our clients.

*For cost-effective systems that are tailored to your requirements, VMI is the company to work with.*

#### YOUR NEEDS - OUR SERVICE

VMI's global organization includes spare-parts supply and servicing from our plants in the Netherlands, USA and P.R. of China. Our service departments are on call 24 hours a day to provide rapid on-site service.

*VMI: a partner to rely on in the race against time - and your competitors!*



## BEAD ROOM SOLUTIONS

VMI offers a unique range of products and services designed to improve efficiency, product quality and effectiveness of tire bead rooms.

In cooperation with sister Company VMI-AZ, VMI is able to supply a range of bead winding and apexing solutions as well as product handling systems with a level of automation and sophistication tailor-made to suit individual Users needs.



APEX Applicator & Turn-up head

### BEAD APEXING

VMI bead apex lines utilize VMI-AZ extrusion technology to produce the apex strip in-line. Dependent upon the characteristics of the rubber compound to be extruded a customer may select one of the following types of extruder:

- Pin-Barrel
- Multicut Transfermix (MCTD)

The extruder is fully integrated into the controls of the line, and includes the patented quick die change head which brings a significant saving in down time.

Single sourcing the entire line from VMI offers many benefits to the user, as production of dimensionally stable apex strip is the key to the correct functioning of the line.



VMI-AZ Pin-barrel Extruder with quick die change head

## SINGLE STATION APEX APPLICATION

The VMI Basic system is a single station system which applies the apex to the bead which is located on a former. The bead and the bead apex assembly can be loaded/unloaded manually or automatically dependent upon the needs of the user.

The system can handle beads up to 24" diameter, and can apply Apexes from 10mm up to 70 mm in height.

The fully automatic system has the capability to process up to 10,000 beads per day with minimal operator involvement.

Direct extrusion combined with automated apex application ensures a consistently high quality of apexed bead which is ideally suited for use in automated tire building systems for the manufacture of high quality tires.



Single station APEX Applicator



Four station Application

## HIGH SPEED APPLICATION

The VMI high speed applicator is a multi station system which applies the apex horizontally to the bead, and turns it up onto the bead.

Beads are loaded at station 1 either from a bead winder or from A pre-prepared stack of beads. Apex application and turn-up takes place at station 2, consolidation at station 3, and unloading with separator at station 4.

The utilization of a multi-station approach results in productivity figures of upto 18,000 beads per day, whilst maintaining high quality levels.

This sophisticated system is designed to process beads up to 24" diameter, and can apply apexes from 20mm up to 70 mm in height.

## FLEXIBILITY

In line with VMI's philosophy all bead apex lines are designed for flexibility.

The single station applicator includes quick change tooling for different bead Apex configurations, whilst the four station system utilizes servo driven multi size applicator and consolidation heads.

VMI bead apexing lines can handle both multi-wire and single wire beads, together with a wide range of separator designs.

Apexes are applied to the bead after cooling, which ensures dimensional stability after application. Cooling is achieved either by air or water, dependent upon the preference of the user.

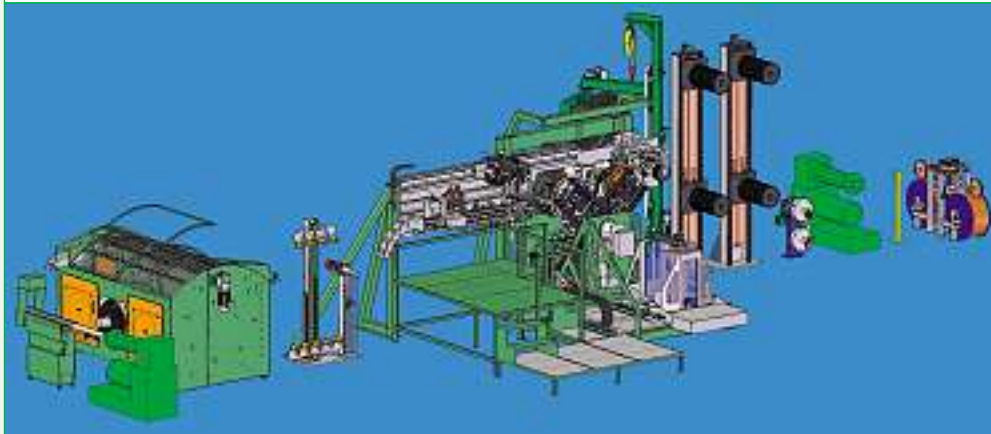


Consolidation station

## COMBINED WINDING AND APEXING

The bead loading station of the four station bead apexing system can be replaced with a single wire bead winder, producing two beads per machine cycle. This combined system gives the following benefits:

Horizontal Apex Application	=	Very high quality apex splice
No intermediate storage of beads	=	Eliminates bead damage
	=	Reduces Work-In-Progress
	=	Improves logistics
	=	Eliminates need for bead re-freshening
Easy size change and adjustment	=	Flexible
Apexing applied to "fresh" beads	=	Improves quality
Integrated machine	=	Reduces capital and running costs
Balanced System with low cycle time	=	High level of productivity
Tried & Tested technology	=	Short commissioning period



Combined bead winding & apexing

## ROBOTIC HANDLING SOLUTIONS

VMI in association with automated handling specialist group (former EBM), are able to offer bespoke solutions to improve the efficiency of the bead room. From simple loading and unloading systems to robotic storage and identification systems VMI is ideally suited to provide a total solution to your needs.



**VMI SUPPLIES A COMPREHENSIVE**

**RANGE OF MACHINERY FOR**

**RUBBER COMPOUND HANDLING,**

**MANUFACTURING**

**OF TIRE COMPONENTS, TIRE**

**ASSEMBLY, TIRE CURING AND TIRE**

**TESTING FOR THE PRODUCTION OF**

**RADIAL PASSENGER, LIGHT TRUCK,**

**ALL STEEL RADIAL TRUCK AND BUS**

**AND OFF THE ROAD TIRES.**

For more information see:

[www.vmi-group.com](http://www.vmi-group.com)

or contact us by e-mail:

[sales@vmi-group.com](mailto:sales@vmi-group.com)

**HEADQUARTERS:**

P.O.Box 161, 8160 AD Epe  
The Netherlands  
[sales@vmi-group.com](mailto:sales@vmi-group.com)  
phone +31 578 679111

**SALES OFFICES:**

**STOW, OHIO, USA**

[sales@vmi-usa.com](mailto:sales@vmi-usa.com)  
phone +1 330 9296800

**YANTAI, SHANDONG, CHINA**

[vmiy@vmi.com.cn](mailto:vmiy@vmi.com.cn)  
phone +86 535 6300139

**KUALA LUMPUR, MALAYSIA**

[dennis@isoelectra.com.my](mailto:dennis@isoelectra.com.my)  
phone +60 3 78469988

**MOSCOW, RUSSIA**

[office@vmi-group.ru](mailto:office@vmi-group.ru)  
phone +7 495 7950332

**RUNDING, GERMANY**

[info@vmi-az.com](mailto:info@vmi-az.com)  
phone +49 9971 76139-0

**BERGAMO, ITALY**

[sales@vmi-group.com](mailto:sales@vmi-group.com)  
phone +39 0307 365399

**SAO PAULO, BRAZIL**

[raraujo@vmi-az.com](mailto:raraujo@vmi-az.com)  
phone +55 11 22792520

**WORLD WIDE SUPPORT**

24 HOURS AT CALL: + 31 651 533 912

