

GLOBAL ORGANIZATION - LOCAL SUPPORT



VMI MAXX SYSTEMS

RADIAL PASSENGER TIRE
BUILDING SYSTEMS



VMI GROUP

TKH GROUP MEMBER

SHAPING TECHNOLOGY

VMI is committed to supplying custom-engineered systems to the rubber and tire industry. This includes also machinery for rubber compound handling, tire components, tire assembly and tire testing for radial passenger, light truck and all steel radial truck, bus and off-road tires.

Since the company was founded in 1945 in Epe, the Netherlands, VMI has established a sound reputation as a leading supplier to the rubber and tire industry, with customers worldwide. Our leading position is based on our capacity to provide custom-engineered solutions using cutting edge technology in precision workmanship to ensure accurate, reliable performance.

All the machines are backed by the VMI worldwide service, 24 hours a day, 7 days a week. Our service centers are strategically located in Epe (the Netherlands), Yantai (Shandong Province, China) and Stow (Ohio, USA). There is a full range of services throughout the lifetime of your machine including preventive maintenance, spare parts and upgrades.



MORE TIRES PER DAY WITH MAXIMUM FLEXIBILITY

FAST, FLEXIBLE SINGLE STAGE TIRE BUILDING SYSTEMS FOR RADIAL TIRE ASSEMBLY

VMI is a leading supplier of single stage tire building systems for radial tires. All machines are designed and built using the very latest technology to give you faster, flexible and reliable performance in producing a top quality end product. In this machine 30 years of VMI's single stage building knowledge is brought together.

Eight very good reasons to choose VMI to supply all your single stage tire building machines:

1. More tires per day

Our robust machines have a higher output of finished green tires, more than any other machines currently available. All machines are designed for highly reliable and continuous operation with an absolute minimum of downtime for size changes.

2. High accuracy

Cutting and application of components is highly accurate with a minimum of product waste. The components are precision controlled by sensors, magnets and CCD camera's throughout the entire process, from let-off to finished green tire.

3. Excellent quality

All machines are of first class quality, designed to operate trouble free for decades. Chosen machine parts are supplied by carefully selected partners and are assembled and extensively tested by skilled craftsmen.

4. Customized solutions

The flexible, modular machine design allows us to customize solutions to your specific requirements and to incorporate additional features such as extra applicators for run flat strips, fabric or steel chafers and other components.

5. Easy operation

All machines have a user friendly HMI (Human Machine Interface) and require only one operator. Component widths, lengths and angles are easily adjusted and are guided by the recipe. Components can be quickly replaced with the aid of ergonomically designed cartridges or reel systems. Automatic component changes are also possible.

6. High green tire uniformity

The result of the high fabrication standards of the machine, together with the controlled application of the components onto the drums, provides green tires with excellent uniformity figures in all aspects.

7. Flexibility

The demands of today ask for a highly flexible machine to produce very small batches of tires. VMI machines are designed for that. Most of the settings are recipe controlled and a tire size change is completely guided via the recipe. Tooling is also designed for quick change. After a tire size change the machine is immediately ready for producing the next lot of ultra high quality tires!

8. Lifetime service

All machines are designed for easy maintenance and are fully supported by the worldwide VMI service organization 24 hours a day, 7 days a week.

VMI TIRE BUILDING MACHINES "NEVER LET GO!"

The machine is based on the principle that the components must always stay under full control. That is why VMI machines never let go!



RADIAL PASSENGER

VMI MAXX

“REAL HANDS OFF PRODUCTION IS POSSIBLE UP TO 1800 TIRES/DAY”

The fully automated VMI MAXX processes different components with high precision onto the building drums to achieve the best possible tire.

High accuracy

- The component centering, guiding and cutting systems result in a very accurate application onto the building drums and thus give the basis for an excellent uniformity.
- The VMI MAXX is fitted with a mechanical carcass building & shaping drum with special features such as mechanical bead locks, mechanical turn-up arms, bead-shoulder support system and a synchro mechanism. The turn-up length is variable and adjustable in speed, all resulting in the best possible base for assembling a tire.
- Fixed applicator conveyors and moving drums result in optimal component application accuracy.

High productivity

- The VMI MAXX has a very short cycle time. All actions are optimized and balanced to reach the optimal cycle time.
- The VMI MAXX is designed specifically to minimize downtime, with easy, efficient changeover of components by having dual positions of component let-offs as an option. This enables preparing a second position and thus saving time during component changes.
- The mechanical building & shaping drum, without any bladder, provides a consistent building sequence and no down time due to sudden bladder defects.
- The size change system, together with the menu driven automated machine settings, enable fast, accurate changeover of component width, type and angle. This makes the VMI MAXX also suitable for small batches.
- Automatic loading of bead apexes by a robot handling system is possible, whereby bead apexes are supplied to the VMI MAXX in cartridges.

High reliability

- State-of-the-art sensor technology together with mechanical building drums ensure a reliable application and building cycle. Every time, without a single miss.
- The component application is highly reliable because the components are fully controlled throughout the let-offs, feeding, measurements, cutting and applications onto the drum. All by means of sophisticated guiding systems, CCD cameras and fixation on the drum during application.
- The green tire removal unit enhances the productivity by eliminating the green tire removal work from the operator. This will result in a more ergonomic way of working with less reliance on the operator and a more constantly running machine.

High compatibility

- The VMI MAXX is supplied with fast-change single or dual let-off systems to accommodate your tire building logistics. Choose reels, shells or cassettes to your specific production logistics.
- Numerous options are available to customize the VMI MAXX to your specific requirements. Options include automatic stock roll changes, splice monitoring systems, automatic bead loading by a robot handling system and a green tire removal system.
- Servicers and applicators for run flat inserts, gum strips or for fabric or steel chafers are available and can be customized to match your tire technology.
- Existing VMI tooling fits on the VMI MAXX.
- Existing VMI recipes can be easily transferred.
- The VMI MAXX can also be configured for bladder type carcass drums.



Body ply cutter



Breaker and tread side



Static transfer ring

BASIC MACHINE DATA

VMI MAXX

Bead size range	: 13" - 24"
Green tire diameter	: max. 1000 mm
Body ply width	: max. 980 mm
Innerliner width	: max. 700 mm
Sidewall width	: max. 240 mm
Pre-assembly width	: max. 1200 mm
Breaker width	: max. 350 mm
Tread width	: max. 400 mm
Breaker angle	: 18° - 34°
Cap strip (spiral overlay)	: 10 - 25 mm

Depending on the required building size ranges, modules are available in different versions:

- The carcass servicer is available in 1000 mm and 1200 mm wide versions.
- The tire assembly machine is available in 13"-20" and 14"-24" versions.
- The breaker and tread servicer is suitable for the whole range.

MODULE OVERVIEW

Tire building machine	- B&T drum - Mechanical or bladder carcass drum - Splice stitchers - Bead loader - Bead setter - Static transfer ring - Green tire removal system - Bead loading by robot (option)
Carcass servicer	- Innerliner - Sidewall - Body plies - Fabric chafers - Steel chafers - Rubber strips
Breaker servicer	- Breaker 1 - Breaker 2
Cap strip servicer	- Dual high speed 3D let-off - Tension control
Tread servicer	- Tread out of reels, shuttle type - CCD camera controlled application (option)



VMI MAXX



Breaker monitor



Static transfer ring and bead setter



Dual shuttle tread let-off (option)

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.

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