

PRESS INFORMATION

Monday 27 February 2017

Michelin at SIMA 2017

Paris, France 26 February – 2 March 2017



**Introducing the NEW evolutionary
MICHELIN EVOBIB.**

**The '2 in 1' tyre that transforms at
low pressure to give an additional
useful 20 HP to the farmer.**

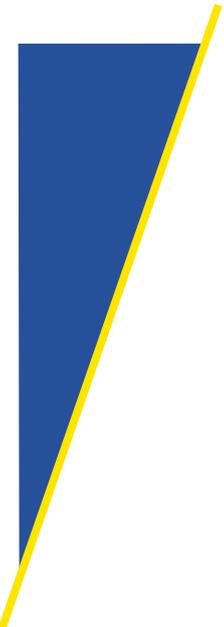


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MICHELIN

STAND 6 D 011





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Michelin Press Office:

+33 1 45 66 22 22

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Michelin innovations help farmers meet the challenges of sustainable agriculture

Michelin is committed to helping farmers today as they are challenged to grow food sustainably at affordable prices. Farmers are using progressively larger machinery which has to perform both in the field and on the road, and these assets are being used more intensively with the time spent on roads at high speeds increasing as farmers endeavor to maximize efficiency and productivity.

Michelin's challenge is to equip these powerful technically advanced machines with tyres that will improve useful power transmission, agronomic efficiency and the performance of their operations, whilst protecting the soil and reducing fuel consumption. At SIMA 2017 showcases three products that meet these challenges; the new MICHELIN EvoBib – making its world premiere at SIMA, AxioBib2 and CargoXBib HF.

Heralded as a 'game changer' the MICHELIN EvoBib was awarded the SIMA 2017 Innovation Gold Medal and is an evolutionary new tyre, a '2 in 1 tyre' that adapts its profile and footprint according the farmer's requirements. At ultra-low pressures the contact patch increases to reduce soil compaction, whilst enabling power transmission to be increased, whereas at higher pressures the tyre transforms so that only the central continuous band grips the road, giving a smoother vibration-free ride, fuel savings and improved safety .

The EvoBib also shares the famous MICHELIN Ultraflex technology with AxioBib 2 which offers the best load capacity in its class, low ground pressure and very high levels of traction in the field.

The CargoXBib HF is a high flotation tyre that continues the theme of carrying high loads whilst preserving the soil. Operating at half the pressure of a conventional trailer tyre it ensures farmers save time and energy and assists in optimising crop yields.

These products are covered in the following pages but for more detailed information please visit the Michelin stand and ask to speak to one of our experts.

MICHELIN - Stand 6 D 011

Ends...

MICHELIN EVOBIB – Innovation in action

Heralded as a 'game changer' the MICHELIN EvoBib was awarded the SIMA 2017 Innovation Gold Medal and is an evolutionary new product; a '2 in 1 tyre' that adapts its profile and footprint according to the farmer's requirements.

The evolving tyre – the MICHELIN EvoBib, has an innovative, patented technology which allows the shape and profile of the tyre to be transformed according to the inflation pressure.

At ultra-low pressures (less than 1.2 bar) the contact patch increases to reduce soil compaction, whilst enabling power transmission to be increased, whereas at higher pressures (above 2 bar) the tyre transforms so that only the central continuous band has contact with the road, giving a smoother vibration-free ride, fuel savings and improved safety.



This transformation results from the innovative new casing design which, in addition to Ultraflex technology, incorporates a 'hinge effect' which allows the shoulder lugs to be lowered or raised from the ground. When 'lowered' at low inflation pressures, the contact patch, or footprint, increases by 20% giving improved traction, power transmission and minimised soil compaction. Indeed, the increased footprint of the EvoBib facilitates a 20% to 50% increase in traction - a saving equivalent to about 20HP!*

The range comprises two sizes:

MICHELIN EvoBib VF 710/70 R 42 Rear
MICHELIN EvoBib VF 600/70 R 30 Front

The overall benefit for farmers of the MICHELIN EvoBib is a tyre that truly evolves according to the conditions of use, transforming to improve the useful power transmission, increase efficiency and save fuel.

* On a 300HP tractor ; see page 6



MICHELIN EVOBIB - THE '2 in 1' TECHNOLOGY

The new MICHELIN EVOBIB incorporates innovative "2 in 1" tyre technology which is a combination of an innovative tread pattern and a new casing design. This new patented technology allows the tyre to transform according to the conditions of use and changes the shape of the contact patch.

The big advantage of the radial tyre, designed by Michelin in the 1940s, is the separation of the functions of the tread area and the sidewalls of the tyre and the resulting benefit of a solid contact patch with the ground regardless of pressure, load or usage. For a standard radial agricultural tyre this means that the contact area is restricted to the width of the tyre lugs.

The advantage of the MICHELIN EvoBib is that it has two sizes of contact patch; one at high pressure for road use, the other at very low pressure for field use, and this is achieved by the tyre incorporating a 'hinge effect' into the tyre construction. This innovative design allows the tread pattern of the tyre to widen as the shoulder blocks rotate down to make contact with the ground at lower pressures; less than 1.2 bar. Thanks to this mechanism the surface area of the contact patch is increased by more than 20%, not only the width but also the length, which greatly improves traction and reduces soil compaction in the field with a more evenly distributed load.



LOW PRESSURE

HIGH PRESSURE

20% larger footprint – longer and wider



MICHELIN EVOBIB – the 3rd REVOLUTION !

The third revolution in innovative agricultural tyre design following the Radial and Ultraflex.

This technological advance is made possible due to 2 key elements in the EvoBib casing:

- 1. A new belt in the tread area/summit**
- 2. A new structure of the radial plies and carcass of the tyre**

At high pressure, the tread pattern is carried by the top belt which is composed of several overlapped bracing plies that ensure a uniform contact patch to improve road performance (wear, comfort, consumption). This belt also has a controlled stiffness gradient which helps with the "hinge" effect.

At low pressure, the shoulder elements are deployed thanks to the "hinge" effect, which results from the patented design of the casing. This is achieved by a complex arrangement of several textile plies at the edges of the tread area which allow the shoulder blocks to rotate at low pressures adding to the load bearing tread area. This effect increases the contact patch by over 20% in length and width and gives higher levels of traction, particularly at high power.

With the new MICHELIN EVOBIB, the difference in tractive capacity demonstrated is an additional useful 20+ HP* to be used in the field. The useful power generally observed in the fields is 160 HP for a given engine power at 300 HP. This allows the farmer to use 9 blades on his plough** instead of 8; equivalent to one day less work to plough an area of 160 hectares, for exemple!

** This result was calculated on a 10% skid tractor (rate known to offer the best efficiency) comparing a MICHELIN EVOBIB VF710 / 70R42 0.6b to a MICHELIN AXIOBIB IF710 / 70R42 at 0.9b. Source: internal test conducted in November 2015.*

*** Example used of an 18-inch plough at a speed of 6 km / h at 30 cm depth in silty soil (common in field crops). Sources: internal data and "Tractor: engine to traction effort" book by André ABADIA, Agricultural Equipment Edition, Sept. 2014.*

Ends...



MICHELIN AXIOBIB 2

The MICHELIN AxioBib 2 range is dedicated to medium/high power tractors, and offers the highest load capacity of its class

Different dimensions of this tyre can be seen on the Massey Ferguson and New Holland stands.

Medium to high horsepower tractors have evolved in recent years: they are used more intensively, better performance is required and the time they spend at high speeds on the roads has increased as operators look to increase productivity. At the same time, farmers also want the option to use narrower rims as fitted to older machines. The MICHELIN AxioBib 2 range provides the solution to these two requirements.



The tyres have been specially designed for high traction use with trailed or fully-mounted cultivators and transportation, including harvesting and manure spreading, usually done using tractors with high-torque engines. The range comprises four sizes, with two new additions specifically dedicated to ploughing in the furrow:

MICHELIN AxioBib 2 VF 540/65 R30 158D/155E TL
MICHELIN AxioBib 2 VF 650/65 R42 174D/171E TL

MICHELIN AxioBib 2 VF 620/75 R30 172D/169E TL – NEW
MICHELIN AxioBib 2 VF 650/85 R42 183D/180E TL – NEW

The MICHELIN AxioBib 2 range offers the best load capacity in its class along with high levels of traction in the fields, plus full compatibility with on-board tyre inflation systems.



I. Class leading load capacity, without compromising on comfort

This range offers technical features never seen before, and compared to its competitors, MICHELIN AxioBib 2 tyres have the highest load indices available. Machines equipped with these tyres can carry a higher load or work at even lower pressure while preserving the soil, which ensures farmers and contractors save time, energy and optimise crop yield – all of which lead to improved efficiency.

II. High performance traction in the fields

The MICHELIN AxioBib 2 VF range has an elongated contact patch, ensuring a 19% larger contact area with the ground*. The number of lugs in contact with the ground is increased, and this allows the tractor to use up to 35% more tractive power compared to the previous range.

* Internal test made in June 2016 using a standard tyre on the actual market

In addition, the new MICHELIN AxioBib 2 sizes are the only ones available on the market. This tyre is dedicated to ploughing in the furrow for high-power tractors, a process which requires a "narrower" tire to pass through the furrow with maximum traction and using a pressure lower than 1 bar. A field test was carried out in October 2016 with Massey Ferguson and Grégoire Besson, and the results appear on the JETRACTEJEGAGNE booth common to the three companies.

III. Compatible with original equipment on-board inflation systems and NRO marked

Farmers who specify an on-board inflation system are able to use the full range of tyre pressures to ensure the optimum performance whatever the conditions, both on the road or in the fields. The MICHELIN AxioBib 2 range allows the use of pressures as low as 0.6bars, another Michelin first. This range increases the availability of MICHELIN Ultraflex low pressure tyre options, which can bring farmers a crop yield gain of up to 4%*.

* Cf. Harper Adams University Study

In addition, the 650/65 R 42 MICHELIN AxioBib 2 is not only compliant with the rim sizes recommended by ETRTO (European Tyre and Rim Technical Organisation), but they are now marked 'NRO' (Narrow Rim Option). This marking allows the use of a smaller rim width than normally allowed by the ETRTO standards for IF or VF tyres which increases the possibilities to use these tyres on machines already owned. This size of tyre would normally be fitted to a 23 inch rim but due to the NRO can also be fitted to 20 inch or 21 inch rims.

Ends...



MICHELIN CargoXbib HF

Reducing soil compaction, even with heavy trailers and big slurry wagons

This tyre can be seen on the Dangreville stand, where it is fitted to the intelligent spreader, which is a SIMA innovation award winner.

The Michelin CargoXBib High Flotation range, launched in 2014, offers the first Ultraflex tyres for trailers equipped with inflation systems.

In today's large-scale farms, operators and contractors use high-tech towed machinery, which are based on two or three axles, are sometimes equipped with suspension, brakes, and with inflation systems to adjust tyre pressure according to load and to usage. Trailer tyres must meet a complex set of specifications: they must be able to withstand heavy use and have a high load capacity, up to more than 10 tons per axle; they must be able to drive at speeds up to 60 km/h on the road, where permitted by law; they must hang on all surfaces, even on slopes, in the fields while preserving the vegetal cover.

The advantages of an inflation system are many:

- It allows the pressure to be adapted to the task and the ground conditions on which the work is carried out;
- It allows both better soil protection and a reduction in fuel consumption;
- It allows mobility across construction sites at the most suitable speed, increasing productivity;
- It contributes to increase the longevity of the tyres.

All of these advantages are fully in line with those offered by the MICHELIN Ultraflex technology, which optimise the performance of the MICHELIN CargoXBib. In fact, these low-pressure Michelin tyres contribute to better soil protection, better productivity and lower operating costs. The equation proposed by Michelin technology has been summarized as follows: "lower pressure, increased harvest". Indeed, its Ultraflex casing allows it to deliver the best performance at a range of pressures from 0.8 bar in fields to 4 bars on the road, when the trailers are equipped with an inflation system. Fitted to Dangreville's intelligent spreader, the Michelin CargXBib HF maximises its performance.

The MICHELIN CargoXBib High Flotation tyre is already available in both original equipment and the replacement market, in the following sizes:

MICHELIN CargoXBib 600/55 R26.5 165D
MICHELIN CargoXBib 710/50 R26.5 170D
MICHELIN CargoXBib 710/45 R22.5 165D
MICHELIN CargoXBib 650/65 R30.5 176D
MICHELIN CargoXBib 750/60 R30.5 181D

Ends...

Michelin, the leading tire company, is dedicated to enhancing its clients' mobility, sustainably; designing and distributing the most suitable tires, services and solutions for its clients' needs; providing digital services, maps and guides to help enrich trips and travels and make them unique experiences; and developing high-technology materials that serve the mobility industry. Headquartered in Clermont-Ferrand, France, Michelin is present in 170 countries, has 111,700 employees and operates 68 production facilities in 17 countries which together produced 184 million tires in 2015. (www.michelin.com)

