



FITTING AND REMOVAL METHOD

FOR AGRICULTURAL AND
COMPACT LINE TUBELESS TYRES



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Michelin Tyre PLC
Campbell Road, Stoke-on-Trent ST4 4EY

Whilst great care is taken to ensure that the information in this leaflet is as up to date and accurate as possible,
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For more technical advice please contact Michelin Technical Services on Tel: (UK) 0845 366 1535 (ROI) 01 459 5955
www.michelin.co.uk



CONTENTS

Preliminary conditions & Safety rules Operator's equipment	p. 4
1. Preparing the machine Tools and accessories required	p. 5 p. 5-12
2. Removing the tyre	p. 6
3. Verification before fitting	p. 9
4. Fitting the tyre	p. 10
5. Inflation and seating the beads	p. 11
6. Ballasting tyres with liquid	p. 13
7. Storage	p. 14

A white, anthropomorphic Michelin Tyre character with a smiling face, arms, and legs, wearing a blue Michelin logo belt, is shown from the waist up, holding a large black agricultural tire.

Preliminary conditions & Safety rules

OPERATOR'S EQUIPMENT

Operators must be provided with equipment allowing them to work in the best possible conditions and in complete safety.



Suitable working clothes (Boiler suit, overalls, wet weather gear...) and 1 high-visibility jacket



1 pair of gloves



1 pair of safety shoes or boots



1 pair of safety glasses



1 set of ear defenders



A hard hat if necessary



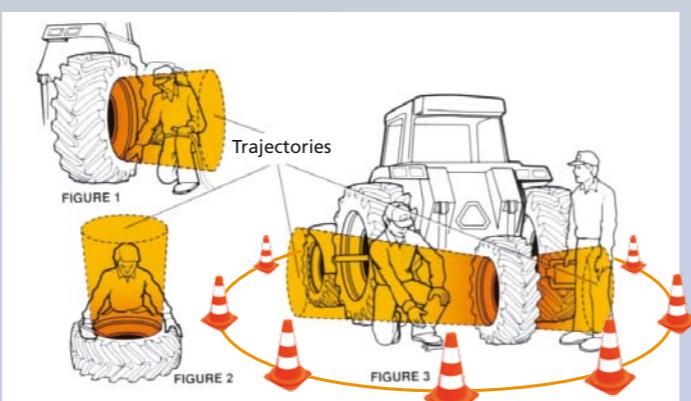
Traffic cones

To do the job in the safest possible conditions:

- Use an inflation gun connected to the valve by an air hose at least 3 metres long, equipped with a clip system on the valve side, with a calibrated pressure gauge in perfect working order.
Never lock the handle.
- Wear safety shoes or boots.
- Wear a pair of safety glasses.
- Use a pair of gloves.
- Use ear defenders.
- When fitting a tyre in the workshop, use a retaining system for the tyre unit. If there is no safety bar or cage, the operator must stand as far away from the tyre as possible, facing the tread.

SAFETY RULES:

- Mark out the safety perimeter with traffic cones.
- Wherever possible, work on a clean surface (free of loose soil or gravel).
- Tyre removal and fitting operations contain an element of danger, so they must be performed by a trained and qualified professional, using appropriate tools and methods of work.
- Never entrust this operation to a trainee working on his own.
- The operations are to be performed by two people working together when fitting or removing Large Volume tyres.
- Use a compressed air circuit fitted with a pressure limiter, set to the correct value for the tyres, not the tools.
- Failure to comply with these instructions and methods of work may give rise to a tyre being fitted incorrectly on the rim, causing the tyre to burst, with a risk of serious physical injury or even death.
- Caution: never stand in line with the potential trajectory of the rim (figures 1, 2, 3) to prevent any risk of physical injury in the event of an accident.



CAUTION:

- Never heat, weld or braze a rim or wheel with the tyre fitted. Always remove the tyre from the rim before carrying out any work on the rim.
- Always use the Michelin inflation chart to determine the correct pressure for use.
- Under-inflation causes exaggerated distortion of the casing and leads to the tyre becoming prematurely unfit for use.
- Over-inflation reduces the contact patch with the ground, causes a loss of grip and makes the cover more susceptible to impacts and cuts.
- If the loads are lower than indicated on our pressure and load charts, never go below the tyre's minimum pressure.

1

Preparing the machine

Tooling and accessories required



1 wire brush



Safety sticker



Set of chocks



Wooden blocks



1 high-lift 10 tonne jack, hydraulic or pneumatic



1 jack stand suited to agricultural and industrial vehicles



WHEN CHANGING A TYRE, MAKE SURE BEFORE YOU DO ANYTHING THAT THE NEW TYRE IS SUITABLE FOR THE VEHICLE (CORRECT SIZE) AND THE CHARACTERISTICS OF THE RIM.

1. Identify the internal and external bead unseating slots and position the valve at the bottom. If there is any earth or any major traces of rust on the wheels, clean them (brush, pressurised water jet).



THE TRACTOR MUST BE IMMOBILISED ON A STABLE SURFACE WHICH IS AS FLAT AS POSSIBLE, PREFERABLY ON CONCRETE OR ASPHALT.

2. Apply the warning stickers.



NEVER START THE ENGINE WHILE TYRES ARE BEING REMOVED OR FITTED. REMOVE THE TRACTOR'S IGNITION KEY.

3. The tractor is immobilised by applying the parking brake and by positioning chocks in front of and behind the front and rear wheels on the side opposite to that on which tyres are being fitted or removed.

4. Position the jack on the side where the wheel is to be removed. To ensure that there is good, secure contact, it is advisable insert a suitable piece of wood, thus avoiding metal to metal contact.

5. Jack stand :

- Always position it at the points indicated by the vehicle manufacturer and as close as possible to the wheel, without coming into contact with the tyre's sidewall.
- Set the height as close as possible to the point of contact with the tractor.

If the ground is loose rest it on a base which is sufficiently stable (wooden blocks).

1

2



3



4



5



Preparing the machine



1 lifting bag

6. Lift the tractor, making sure that everything is stable. Lift it high enough to be able to insert the lifting bag and allow all the tyre operations to be performed.



6



1 curved or
tyre spoon lever

2

Removing the tyre

Tooling and accessories required



1 pair of universal pliers (or
preferably "third hand" tool)



1 hydraulic or mechanical
bead breaker for agricultural tyres

7. **MAKE SURE THAT THE RIM WELL IS ON THE OUTSIDE BEFORE STARTING TO REMOVE OR FIT TYRES ON THE VEHICLE.**
If the rim well is on the inside, take the wheel off the tractor and remove the tyre on a machine, (alternatively swap the wheels from side to side).



7

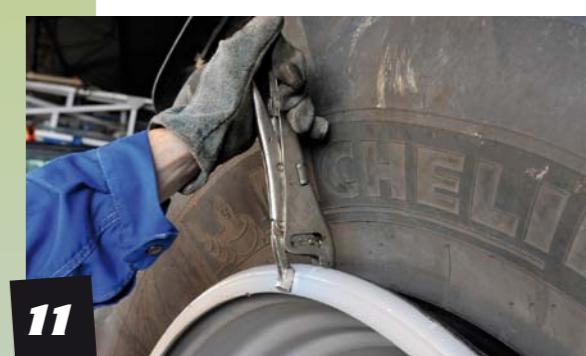


1 pot of special lubricant
for agricultural tyres
1 wide, flat brush (70mm)

10. Push the bead into the well.
11. Fix the mole grips on the rim (at the highest point of the rim) to prevent the beads springing back and to make the lubrication operation easier.



10



11

12. Lubricate the seat and rim flange, and the tyre bead.



12



1 curved tyre
spoon lever

13. Use the tyre spoon lever to finish releasing the tyre bead.



13



1 hydraulic or mechanical
bead breaker for
agricultural tyres

14. Proceed in the same way for the inner bead. If possible, position yourself in front of the bead unseating slot.

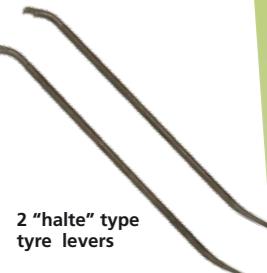


14

Removing the tyre

15. Extract the bead at the top using the "halte" levers, having first removed the mole grips.
Withdraw the bead breaker.
Pull the tyre towards the outside.

If the tyre is fitted with an inner tube, extract it and store it in a clean place.



2 "halte" type
tyre levers



1 lifting bag

16. Inflate the lifting bag to make the tyre easier to remove.



1 lifting bag

17. Pull off the 2nd bead, using the "halte" levers.



1 lifting bag



15



16



17

Tooling and accessories required



MICHELIN
inflation chart



1 wire brush



1 pot of special lubricant
for agricultural tyres
1 wide, flat brush (70mm)

3

Verification before fitting

MAKE SURE THAT YOU USE THE APPROPRIATE RIM DIAMETERS:

The rim diameter must be exactly the same as the tyre's internal diameter. There are rims with a seat diameter of 15.3" ; never fit 15" diameter tyres on these rims. Similarly, never fit 16" diameter on 16.1" and 16.5" diameter rims

Make sure :

18. That fitting the tyre on rims of this width and profile is authorised (see characteristics in *MICHELIN* literature).



18

19. That the rim's "seat" diameter corresponds to the "seat" diameter of the tyre to be fitted (E.g. cover VF 710/60 R 42 161D rim : DW25B x 42).



19

- Check that there are no cracks or distortion on the rim.
- Remove any metal flash likely to damage the tyre's bead heel.
- Clean the rim seats using a wire bush.
- Check that the inside of the tyre is clean and make sure that it is totally free of foreign matter.



20

20. Verify the condition of the bead heels and make sure that the bead toes are in good condition.



21

21. When fitting a Tubeless tyre, change the valve when fitting the new tyre.

- If fitting a Tube Type tyre, fit a new inner tube.

4

Fitting the tyre

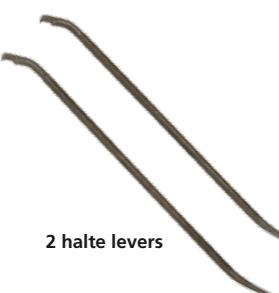
Tooling and accessories required



1 pot of special lubricant for agricultural tyres
1 wide, flat brush (70mm)



1 lifting bag



2 halte levers

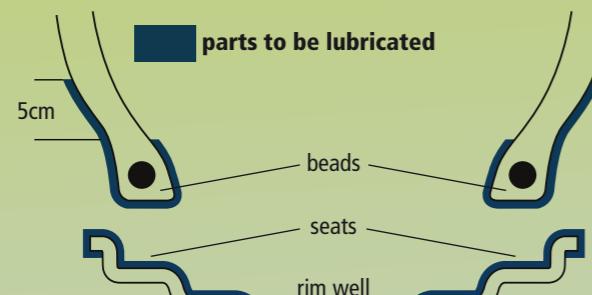


1 pot of special lubricant for agricultural tyres
1 wide, flat brush (70mm)



Mole grips

22. Lubricate the rim seats, the grooves and the well, as well as the first cover bead (inside and outside) to be engaged on the rim.



23. Engage the first bead of the cover, using the lifting bag to raise the tyre.

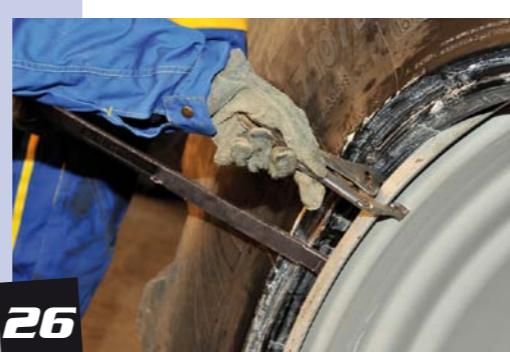


24. Using 2 fusil, force or halte levers (to be determined on site), finish fitting the first bead over the rim. To make it easier to get over the rim, work in 10cm steps.



25. Lubricate the second bead.

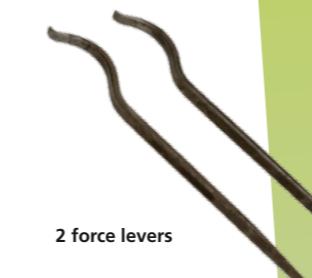
⚠ Never position the bead unseating slot opposite the valve.



26. Position the mole grips as high as possible between 9 o'clock and 12 o'clock, with the valve at 6 o'clock (at the bottom).

Fitting the tyre

27. Engage the cover bead using the fusil, force or halte levers (to be defined on site) according to the size and flexibility of the tyre.



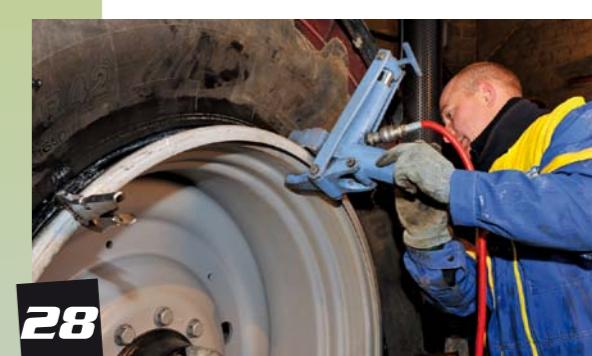
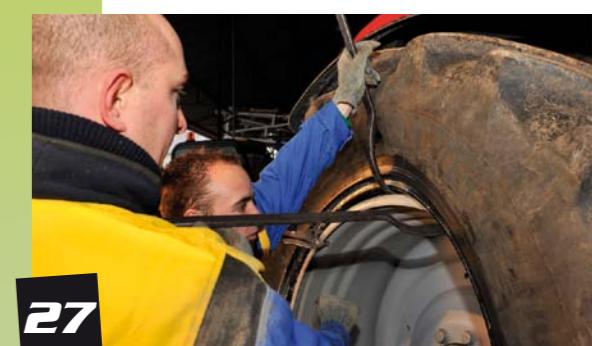
1 hydraulic or mechanical bead breaker for agricultural tyres

28. Using the bead breaker, position the bead in the bottom of the groove, particularly with DW and DWW rims.

Make sure that the lifting bag is positioned correctly under the tyre.

Always finish tyre fitting at the valve.

Remove the mole grips.



29. To position the tyre's beads correctly on the rim seats, centre the tyre using the lifting bag.



1 lifting bag

Inflation and seating the beads

5

Tooling and accessories required



1 valve dismantling tool

30. Connect the tyre inflator hose, having first removed the valve insert.

If fitting the tyre with an inner tube, check that the tyre beads do not nip the tube.



Inflation and seating the beads

31. To ensure that the beads are seated perfectly, inflate the tyre to 2.5 bars without exceeding this pressure.



! *The pictogram opposite indicates the maximum inflation pressure which is not to be exceeded for seating the beads. This pictogram can be found on both sidewalls of the tyre.*



1 tyre inflator with
3 metre hose

32. Stand in line with the tyre's tread, as far away as possible, using the full length of the hose.



If the tyre is not perfectly centred (bead not in place) deflate, lubricate again, re-inflate to 2.5 bars and repeat the operation as many times as necessary. During inflation, check that the sidewalls are correct (e.g. absence of distortion) and that the two beads are correctly positioned and centred.



Never lock the inflation gun's trigger. This operation must be carried out under your surveillance. It is your responsibility to ensure that there is nobody else in the vicinity of the tyre throughout the inflation process.



MICHELIN
inflation chart

33. Consult the MICHELIN inflation chart to determine the correct pressure.



34. Screw in the valve insert and check that it does not leak. Adjust the pressure. Screw on the valve cap.



1 leak detector

Ballasting tyres with liquid

6

In some special cases, to increase the tractor's adhesive weight or lower its centre of gravity, both in Tubeless and in Tube Type, one solution is to ballast the tyres with liquid.

Agricultural valves are of the "air and water" type. They can be filled up to a maximum of 75% (1) (consult our technical literature for filling volumes).

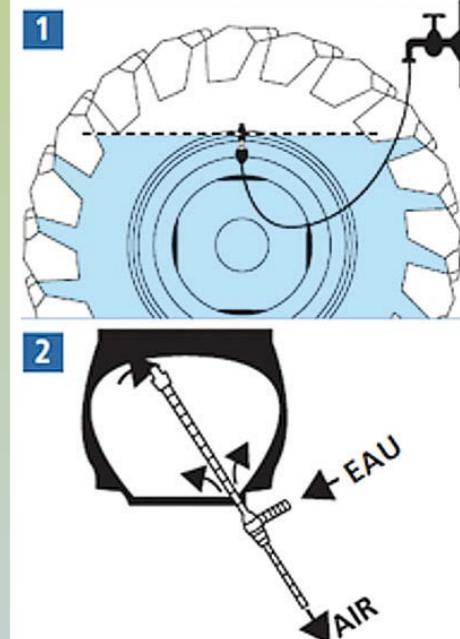
In Winter, temperatures may fall below 0°: it is essential to use a Glycol-based anti-freeze product which does not damage rubber.

Place the valve at the top. Fill the inner tube or Tubeless tyre with liquid, up to the height of the valve, expelling the air. (2) Adjust the pressure with air.

As the volume of air providing the pressure is quite small, (about 25% of the total volume) it is essential to keep checking the pressure at regular intervals; we recommend checking it monthly.

In the case of liquid ballasting in Tubeless:

- Fit and seat the cover.
- See method for "Inflation and seating the beads" above.
- Deflate the tyre to a low pressure (0.2 bar to 0.5 bar).
- Place the valve at the top.
- Fill the cover with liquid ballast (water + anti-freeze) up to a maximum of 75%, expelling the air. (2)
- Finish inflation with air, adjusting the pressure.



For good storage, tyres must be kept in a good, clean condition in dry, well-ventilated premises, out of direct sunlight and remote from any sources of ozone (electric motors, transformers, arc welding sets, etc.), well away from any chemical substance, solvents or hydrocarbons likely to alter the nature of the rubber, and away from any object which might penetrate the rubber (pointed or cutting metal objects, etc.).

Avoid proximity to naked flames or an incandescent body.

During periods of storage, agricultural tyres and inner tubes must be:

- Kept in such a way as to avoid any deformation due to tension or compression.
 - Fitted on wheels and inflated if they are stacked.



Notes