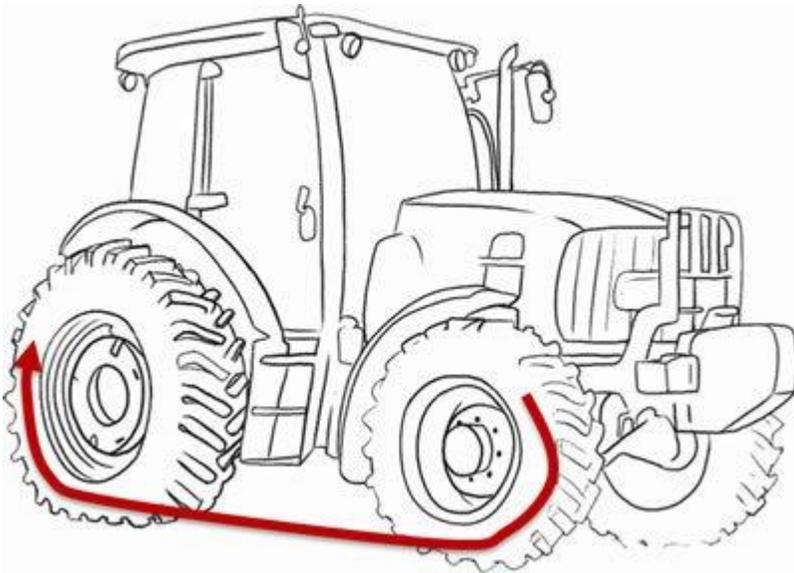


WHEN YOU DECIDE TO REPLACE YOUR TRACTOR TYRES, YOU MUST CALCULATE THE LEAD

Contrary to popular belief, your tractor's original mount is not the best, it's merely what is cheapest for the manufacturer. So take advantage of a change of tyre to increase their size, which will allow you to increase the tractor's load capacity considerably.

When you have determined the maximum rear wheel diameter for your tractor and the most suitable agricultural tyre, you will need to calculate the diameter of the tyre to be mounted in front to avoid any problem of synchronisation between rear and front axle.

The recommended lead ratio is **between 0% and 3%**. At these percentages, **the lead ratio is optimal and will allow your tractor to transmit all its power**, its drive shafts working in perfect harmony.



WHAT ARE THE CONSEQUENCES OF AN INCORRECT LEAD RATIO?

What happens if the lead ratio is more than 4% to 5%?

The rear axle slows down the front axle of your tractor, which is subject to too much mechanical stress. You will have problems with steering and your front tyres will wear much quicker than your back tyres.

What happens in the case of negative lead (lag)?

The rear axle pushes the front axle of your tractor, which therefore loses its efficiency, transmission is damaged and there is considerable rear wheel slippage.



For a 4 wheel drive tractor with different diameter wheels, the right lead between front and back wheels must be obtained.

HOW DO YOU CALCULATE THE LEAD OF A 4 WHEEL DRIVE TRACTOR?

The calculation is relatively simple: first you need to find the "Front axle ratio" in the manufacturer data.

Then you use the following formula:

$$\text{LEAD} = \frac{\left(\begin{array}{c} \text{Rolling circumference} \\ \text{of the front tyre} \end{array} \times \begin{array}{c} \text{Front axle} \\ \text{mechanical ratio} \end{array} \right) - \left(\begin{array}{c} \text{Rolling circumference} \\ \text{of the back tyre} \end{array} \right)}{\begin{array}{c} \text{Rolling circumference} \\ \text{of the back tyre} \end{array}} \times 100$$

For example:

If the rear mount is:
650/75/R38 with a rolling circumference of 5760 mm.

The front mount used is:
600/65/R28 with a rolling circumference of 4450 mm.

The tractor's front axle ratio is 1,325.

The lead calculation is as follows: $((4450 \times 1,325) - 5760) \div 5760 \times 100 = 2.36\%$

In this example, the lead is correct and the tractor's efficiency will be excellent with wheels larger than originally supplied.

The Bridgestone-agriculture.eu blog is written and administered by **tractor tyre experts who are available to provide you with the advice** you need on the subject of your agricultural tyres. They allow you to maximise your productivity with information on all subjects linked to tyres: Cheap tractor tyres — Technical data for agricultural tyres — Air pressure advice — Solutions to avoid soil compaction — Sprayer tyre pressure — Why and how to ballast your tractor tyres — When to use dual wheels — The mechanical causes of abnormal wear — Cheap agricultural tyres – etc...

To learn more and boost your farm's profits, Bridgestone-Agriculture is offering you a free, detailed white paper that **explains the essential role your agricultural tyres play in your productivity**.