

Two systems for increasing traction power efficiency

1 December 2017 by Fendt

AGCO/Fendt has developed two unique systems which not only offer farmers greater efficiency and more driving comfort, but also protect the soil and save fuel. Using the automatically-controlled implement attachment VarioPull, the load distribution is optimised for the front and rear axle of the tractor, and the vehicle weight is therefore ideally distributed on the ground. The tried and trusted Fendt VarioGrip is also now available for stub axle vehicles. Previously, the integrated tyre pressure system was only available for flanged rear axles. Fendt VarioGrip controls the tyre pressure between 0.6–2.5 bar within a few minutes, and also increases the tractor power.

Fendt VarioPull: A pioneering innovation.

Weight is shifted from the rear axle to front axle

On large, heavy combines, the question arises of how to optimise the axle load distribution to prevent wear, to protect the soil, and to maximise the traction power of the different-sized tyres. Previously, the design-based axle load distribution of a tractor could only be changed by the mounted implement using front weights, wheel weights and the tongue weight. The aim of Fendt VarioPull is to be able to set the ideal load distribution between the axles, by utilising the existing weight of the operating equipment better in terms of traction, taking the varying implement tongue weights into account. In doing so, the tongue weight is shifted as far as possible from the rear axle to front axle. VarioPull does this by drawing the coupling point, for example the lower link hook, as close as possible to the rear axle using a hydro-mechanical locking cylinder. This lowers the lever arm between coupling point and rear axle, and therefore reduces the load relief on the front axle.

Best possible traction with minimal ground pressure

By using Fendt VarioPull and by intelligent use of the implement tongue weight, the farmer can reduce the front ballast and therefore the total weight to be moved in the field, without losing traction. The variable adjustment of the axle load also allows the inner tyre pressure of both axles to be optimised, for the first time in combination with the fully integrated VarioGrip tyre pressure regulation system. The ground pressure is also reduced, and the traction power maximised. The reduced front ballast also increases the driving safety and comfort on the roads. One positive side benefit of the system is the improved safety and comfort when coupling the mounted implement. When the coupling point is lifted, it can be best seen from the driver's seat.

Other benefits of using Fendt VarioPull are an increase in acreage capacity thanks to less drag, less roll resistance in the field, fewer emissions and better soil protection. The integrated change system allows the use of drawbars, ball couplings, PitonFix, hitch hook or lower link hook. Fendt VarioPull, is the perfect addition to traction management, which consists of the integrated tyre pressure regulator system, Fendt VarioGrip, the Fendt VarioDrive drivetrain system, as well as the electronic assistant system, Fendt Grip Assistant.

Ease of use due to the position measuring system

The key purpose of developing Fendt VarioPull was to make the system easily and quickly operable for the driver. Due to the integrated position measuring system, the user is always informed of the current position by Fendt VarioPull, and can conveniently adjust this from the driver's seat in the cab or optionally via the app. Above all, it makes attaching implements easier and safer. Along with static load distribution, the dynamic forces are intelligently utilised by the attached implement, and the tractor's power is transferred perfectly to the ground. The traction power of all tyres is put to best use and the machine efficiency maximised.

Fendt VarioGrip: now available for stub axle vehicles.

No issues with air supply in dual wheels

Due to VarioGrip for stub axle vehicles, the tyre pressure regulator system is available ex works for the first time for all axle variants, and allows unrestricted use of the stub axle for a variety of purposes. The integrated design means that the permitted full width of the tractor due to VarioGrip combined with the stub axle is not exceeded, and that there is no limit to the applications it can be used for. The stub axle remains functional along its entire length. With Fendt VarioGrip, the air supply of dual wheels on stub axles is never an issue. On dual wheels, an air-supplying wheel bolt guarantees a reliable and safe air supply to the tyres.

Adjust the tread quickly and easily

A number of practical benefits are provided thanks to the integration of Fendt VarioGrip into the stub axle. The farmer can quickly adjust the tread if he wants to switch between different crops, for example from maize to potatoes. Along with cost savings and increased yields, harmful emissions are also reduced, the soil becomes less compacted and soil erosion decreases.

Source: Fendt Press Office, AGCO Limited