



“New Generation” Tornado: Universal Spreader with Narrow Body!

As one of the best sellers in the JOSKIN muck spreader range, the 'new generation' Tornado has been given a number of improvements, as well as an upgraded design.

Since its creation in the late 1990s, the Tornado muck spreader has continued to evolve and the basics on which it has built its reputation have continued to be improved: a narrow, lowered body which, combined with large-diameter wheels (max. 2,060 mm), allows for easier traction and a reduced ground pressure thanks to an increased contact area, regardless of the terrain.

A REDESIGNED AND OPTIMISED BODY

Compared to its predecessor, the body of the new generation Tornado is now more tapered and the side walls are smooth in order to make emptying and cleaning easier. The rear side has also been widened to increase the spreading regularity. The hydraulic pipes are now integrated into the upper body edge strip, and therefore protected from any contact with the material. Finally, the mudguard has been redesigned with a 45° inclination to avoid material heaps on the machine.



WELL THOUGHT-OUT DESIGN

Whether it is the body or some of the components, such as the drawbar or beater frame, the Tornado is manufactured in high tensile steel. This steel is characterised by its resistance and dynamic properties. It is thereby not necessary to add any body side reinforcements, which considerably reduces the machine empty weight. As for the beaters, they are designed to minimise the vibrations of the machine.



1. Front Wall

The front wall of the body is perforated for a better visibility from the tractor cab, and a headboard prevents the material from falling onto the drawbar.



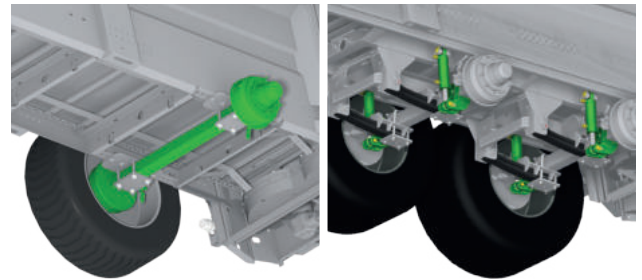
2. Moving Floor

The moving floor is made of steel tubes and two shipping chains (Ø 16 mm), the tension of which can be adjusted by means of 2 easily accessible mechanical side tensioners. The moving floor moves over a welded high tensile steel floor (4 mm) and brings the manure to the spreading device which, being wider than the body, allows the conveyed material to expand before ejection by the beaters. The direction of rotation can be reversed from the tractor via a double-acting hydraulic control valve.



3. Running Gear

The single-axle Tornado has an oversized axle bolted under the body. It can be moved easily, which allows a perfect balance, with sufficient weight on the eyelet, regardless of the chosen tyre configuration. The double-axle models are equipped as standard with a free-steering axle and a Hydro-Tandem hydraulic suspension, which ensures traction ease and an optimal stability.



4. Standard Equipment

The Tornado is fitted as standard with a simplified closed-circuit hydraulic drawbar suspension and air brakes for an unmatched driving comfort. A galvanised access ladder, a hydraulic skid, a wide-angle P.T.O.-shaft and retractable full LED lights also complete a rather extensive standard equipment.



Simplified hydraulic drawbar suspension with closed circuit



Galvanised access ladder



Hydraulic skid



Retractable full LED lights

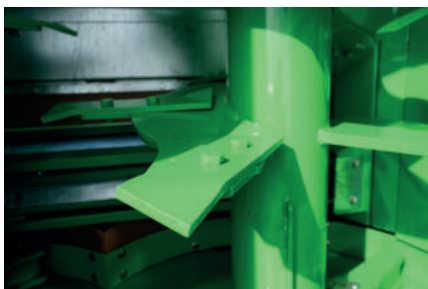


VERTICAL OR HORIZONTAL BEATERS... IT IS UP TO YOU!

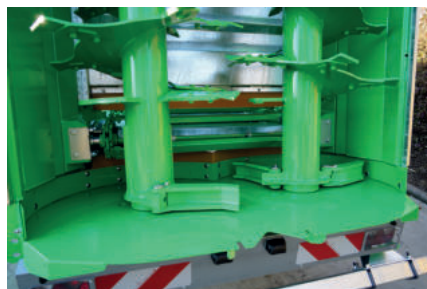
The Tornado, whether with one or two axles, is available with either vertical beaters or with a spreading table and horizontal beaters. Depending on the model, the capacity can vary from 8.6 m³ for the smallest model to 22.4 m³ for the largest one. Sharing the strengths mentioned above, the two Tornado models also have very specific features. A brief overview...

1. Vertical beaters

The model with vertical beaters is less expensive, low-maintenance and the most common on the market. It is designed to spread heavier manure with straw over an area of 7 to 16 m, depending on the material spread. Its design allows to achieve very high spreading rates. To achieve them, the 2 slightly forward sloping vertical beaters rotate at a speed of 423 rpm and project the material to be spread by means of the bolted HB400 teeth (80 x 12 mm). At their base are two retractable blades (Ø 1,060 mm) which project the manure and act as a smashing hammer. In the event of stones, the blades retract to absorb shocks and thus protect the entire drive system of the beaters (P.T.O.-shaft, gearboxes, etc.). The flow per hectare is easily adjusted by combining the speed of the tractor with that of the moving floor. The 1,010 mm wide beaters of the Tornado are among the widest on the market and ensure a good crumbling of the material and a precision spreading. They are also very high to facilitate the spreading of a possible dome of material. A galvanised cord cutter can cut long fibres that may wrap around the beaters. The vertical Tornado is available in 3 different body heights: 1.1 m (T11), 1.3 m (T13) and 1.6 m (T16). It has been designed to best meet the loading height constraints of farmers.



Bolted teeth



Retractable blades (Ø 1,060 mm)



Cord cutter



2. Horizontal beaters

The concept of the HORIZON spreaders is based on the same principles as their vertical version, but with horizontal beaters and a spreading table.

The latter has been designed to crumble and project light materials (compost, lime, chicken manure, etc.) over large widths (from 12 to 22 m), as well as for smaller quantities (up to a minimum of 5 m³/ha). The material once crumbled by the 2 horizontal beaters (Ø 600 mm) and their reversible bolted S700MC steel teeth (240 x 50 mm) is projected against the closed spreading canopy to finally fall on 2 spreading discs (Ø 1,040 mm). To avoid the material to stick on the walls of the canopy, they are covered with EPDM. Each spreading disc is equipped with 6 adjustable blades to take the finely crumbled material and spread it evenly over the field. The combined work of the spreading table and the horizontal beaters guarantees in this way a perfect distribution of the material, even with small quantities. As standard on the HORIZON, the Ferti-CONTROL 4000 control box and the galvanised guillotine door make the adjustment of the application rate per hectare easier. Like on the vertical model, the beaters on the Tornado HORIZON are very high to facilitate the spreading of a possible dome of material. The horizontal beaters are driven by a P.T.O.-shaft with a cam security. In the event of a malfunction, the entire system stops instantly, thus avoiding any potential damage. Sensors also allow the system to 'pause' in the event of a difference in speed between the discs and the beaters. To quickly inform the tractor driver of any irregularities, a sound alarm on the front of the machine is automatically activated. The Tornado HORIZON is available with a body height of 1.3 m (T13) or 1.6 m).



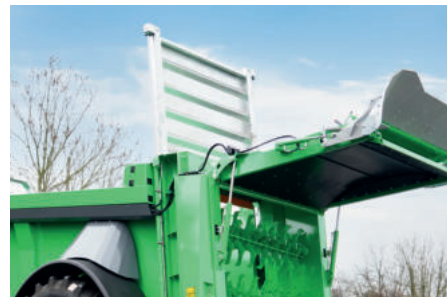
Spreading discs



Closed spreading canopy



Ferti-CONTROL 4000 control box



Galvanised "guillotine" door



EXTENSIVE CATALOGUE OF OPTIONS

The Tornado can be equipped with many extra accessories:



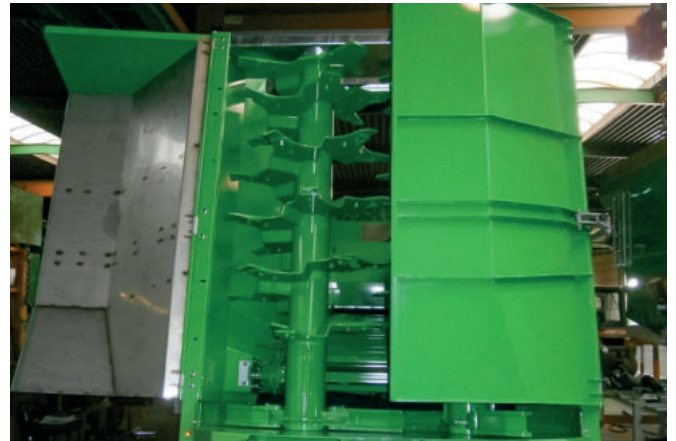
Galvanised "guillotine" door for easy dosing and transport of lighter materials (standard on "HORIZON" models)



Wooden or aluminium extensions (250 mm) to increase the loaded volume



Limitation boards to prevent manure from falling onto roads or rivers at the edge of fields



Spreading canopy with quick coupling system or hydraulic opening (standard on "HORIZON" models)



Beater protective grating with hydraulic opening for road travel (only available on "vertical" models)



Rear central galvanised separator (only available on "vertical" models)





Various displays and control boxes are available:
Ferti-control 500, 4000 (standard only on Horizon), Touch 800...

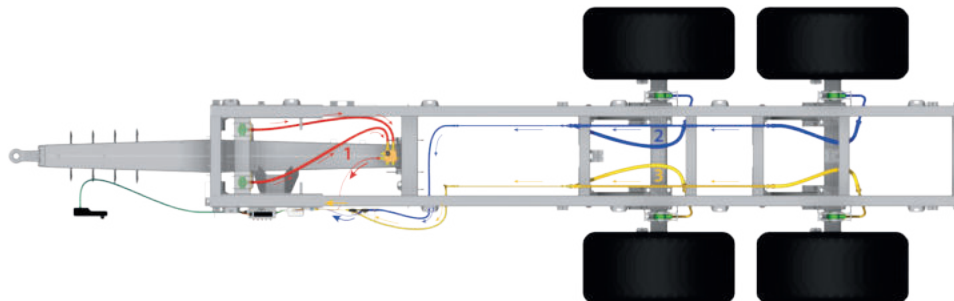


Hydraulic installation (useful when the spreader has to be coupled to several tractors in order to avoid mixing the oils)

Control of the hydraulic functions of the spreader through Load Sensing or ISOBUS



Weighing system with weigh cells (single-axle models)



Weighing system on the hydraulic suspension (double-axle models)

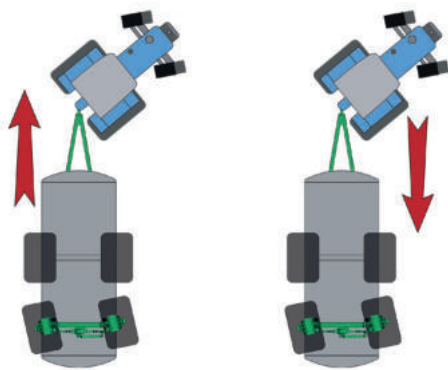




Rear bumper, extra lighting (flashing beacon, lights, etc.)



Mudguard



Self-steering axle



Bolted, and therefore interchangeable, integrated eyelet (Ø 80 mm 4 t standard)

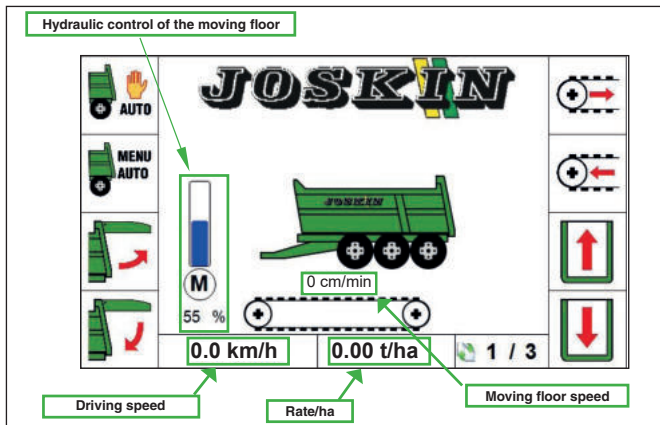


Automatic lubrication



Hydraulic moving floor tensioners on hand pump

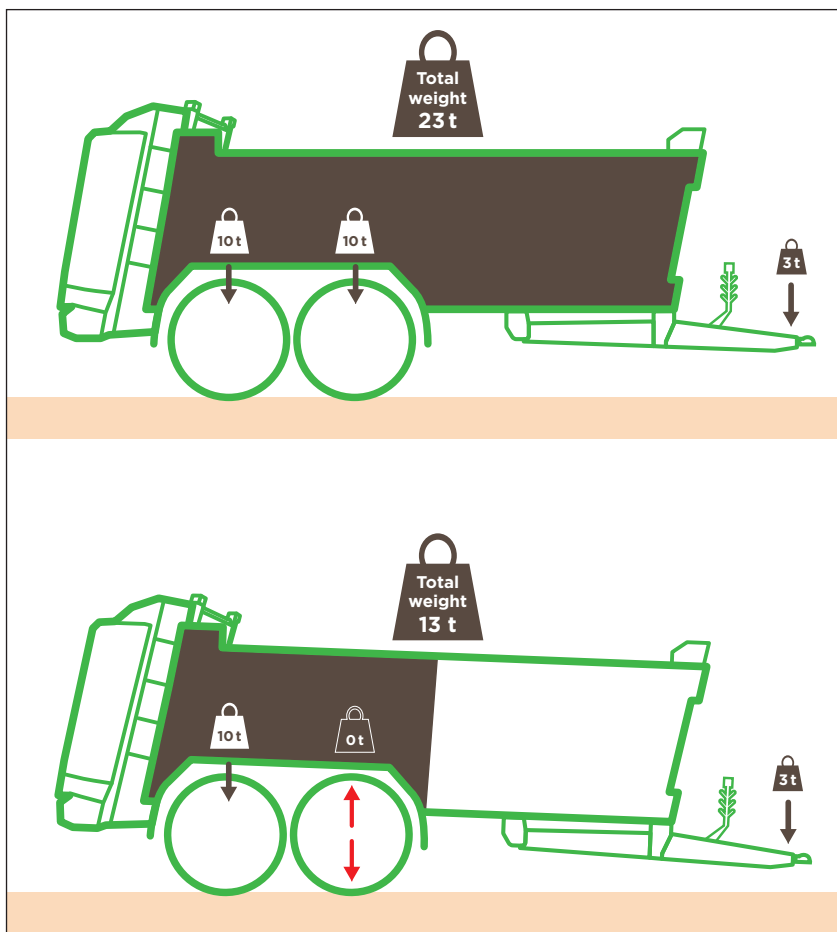




Flow proportional to the driving speed (DPA)



PVC protection for the upper body strip



Front lifting axle for a better grip (only on double-axle models)

