

JOSKIN

EN TORNADO3



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"SPREADING IN THE WIDE SENSE"

Tornado3



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ADVANCED TECHNIQUE

This high-tech fabrication concept inevitably goes along with significant investments in production tools able to handle the necessary steel plates: 8m laser cutting tables, bending machine, 8,2m folding press with digital control and automatic folding angle correction device, 8m welding robot, ...



Turning machine with digital control



Welding robot



Folding machine with digital control



Laser cutting table



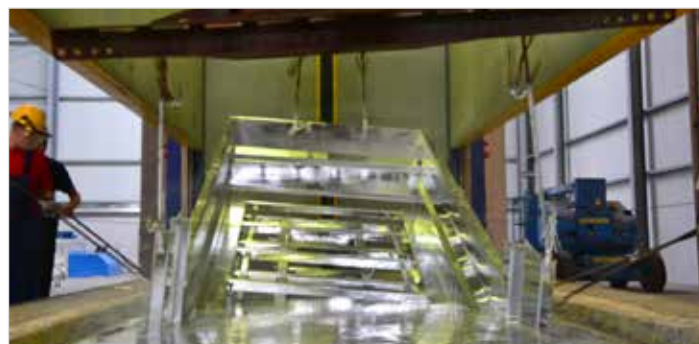
MANUFACTURING THE SPREADERS

At JOSKIN, there is not one winning solution, but well as many as different requests; that is why each spreader is manufactured independently on the basis of standardized components.

All these production stages are set out hereafter. Just like all JOSKIN products, the muck spreaders have an optimal surface treatment: cleaning by shot-blasting, Ester Epoxy finishing coating and thermal drying. Since JOSKIN galvanizes its machines in its factory, the muck spreaders are galvanized too for an optimal protection against corrosive matters.



Hand-welding



Hot galvanizing bath (inside and outside)

FULLY COMPUTERIZED CONCEPTION AND DEVELOPMENT

The JOSKIN muck spreaders are completely computer-designed by means of 3D-engineering softwares. Before the first prototype is produced, the development team can already visualize its creation, simulate all the movements and correct the possible mistakes.

From the very beginning of the project, the design is linked to the SAP global management program: the designers directly integrate the new parts lists to the central configurator. As a result, the new concept immediately comes within the continuous development process. This integrated architecture allows to standardize the production as much as possible and to rationalize the components in order to guarantee higher manufacturing precision and production flexibility.

INDIVIDUALIZED PARTS BOOK

The most obvious expression of the computer-aided management of the integrated JOSKIN production is the individualized parts book we deliver with each vehicle.

This book includes the drawings and references of the components mounted on your vehicle, with the exclusion of any other part. In this way, many mistakes can be avoided when ordering spare parts - even years later.



APPROPRIATE STRUCTURE

Unique Conception of the JOSKIN Muck Spreaders

Models:

- SIROKO
- FERTI-SPACE
- TORNADO3
- FERTI-SPACE HORIZON
- FERTI-CAP
- FERTI-CARGO



MADE IN JOSKIN

In order to constantly improve its manufacturing process, JOSKIN chose the standardization, which offers real possibilities to standardize designs and to use profitable production techniques. In that way, a controlled cost price can be offered for an unmatched quality level but also, and above all, transport and spreading technologies that are suited to the challenges of our time can be made affordable to most customers.

All spreaders of the JOSKIN range have a large standard equipment:

- shredding beaters with folded spirals for intense splitting and a large spreading width;
- manual control of moving floor drive by regulator with constant pressure;
- moving floor with shipping chain with grade 80 (the highest grade in traction chains currently existing);
- easy to reach floor stretcher placed outside the body;
- transmission protected by elastic coupling;
- drawbar with parabolic suspension leaves.

All these pieces of equipment make the JOSKIN muck spreaders very easy to use and ensure a better working comfort to the users.



Floor tightener



Drawbar with parabolic suspension leaves

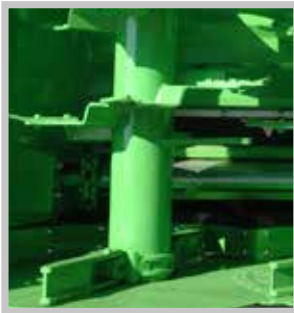


Shipping chains - bolted moving floor



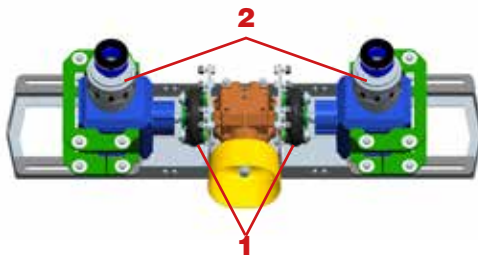
TORNADO3

Spreader with lowered narrow body for intensive work



TRANSMISSION

The transmission is protected by elastic couplings between the boxes (1) and between the boxes and the beaters (2).



GENERAL POINTS

The TORNADO3 has a lowered narrow body in HLE steel and wheels with a large diameter as well. Its high capacities and strength are ensured by its body made up of successive folds and by a lateral reinforcing post. This body is 1.570mm high (1.370mm for 5513/14V and 6013/16V) and offers load volumes from 11,5 to 25,8m³ according to the model. The shredding beaters with folded spirals spread evenly on a width from 7 to 16m per row, according to the product.



SPECIFICITIES

Hitching suspension	Cross-suspension with parabolic leaves
Moving floor	2 Ø 16mm shipping chains
Vertical beaters	Ø 1.010mm with 4 or 5 folded spirals of 2.220mm high
Teeth	Removable in HB 400 high tensile steel (80 x 12mm)
Blades	Retractable - Ø 1.100mm at the basis - option disc with 3 blades
Drive	1.000rpm
Rotation speed of the beaters	445rpm

MODELS⁽¹⁾ TORNADO3

	Off-road payload	Length before door	Inner body dimensions (m)			Body volume before door	Manure volume before door	Manure volume up to beaters	Axle: □ (mm) - track (mm) - studs	Brakes (mm)
			Length up to beaters	Width	Height					
T5511/12V	12 T	5,5	6,0	1,45	1,13	9,5m ³	11,9m ³	13,3m ³	ADR 130x2100-10G	406 x 120
T5513/14V	13 T	5,5	6,0	1,45	1,37	11,5m ³	14,4m ³	16,1m ³	ADR 130x2100-10G	406 x 120
T5516/16V	14 T	5,5	6,0	1,45	1,57	13,1m ³	16,0m ³	17,8m ³	ADR 150x2100-10G	420 x 180
T6013/16V	15 T	6,0	6,5	1,45	1,37	12,7m ³	15,9m ³	17,6m ³	ADR 150x2100-10G	420 x 180
T6016/17V	15 T	6,0	6,5	1,45	1,57	14,3m ³	17,5m ³	19,3m ³	ADR 150x2100-10G	420 x 180
T6516/19V	16 T	6,5	7,0	1,45	1,57	15,6m ³	19,0m ³	20,9m ³	ADR 150x2100-10G	420 x 180
T6516/19BV	18 T	6,5	7,0	1,45	1,57	15,6m ³	19,0m ³	20,9m ³	ADR 2x130x2300-10G	406 x 120
T7016/21BV	20 T	7,0	7,5	1,45	1,57	16,8m ³	20,6m ³	22,4m ³	ADR 2x150x2300-10G	420 x 180
T7018/24BV	21 T	7,0	7,5	1,45	1,57 + 0,25	20,3m ³	23,9m ³	25,8m ³	ADR 2x150x2300-10G	420 x 180

⁽¹⁾ The first 2 figures refer to the average length, the next 2 ones to the average height and the last ones to the manure volume before the door.

OPTIONS VERTICAL BEATERS

Good equipment for a better work!



JOSKIN MUCK SPREADERS, A FEW OPTIONS...

GUILLOTINE DOOR

Unless otherwise indicated, all options are available on the whole range of JOSKIN muck spreaders. All JOSKIN muck spreaders can be fitted with a tight guillotine door which is adjustable on the full height of the beaters.

It avoids load losses during transport and makes it possible to regulate the flow while spreading.



Guillotine door



Anti-blocking door runner

HYDRAULIC INSTALLATION

An independent hydraulic installation is available to drive the moving floor or all hydraulic elements of the machine.

This option is interesting for use of the spreader by several owners (avoid oil mixing) or with a tractor with no sufficient hydraulic circuit.



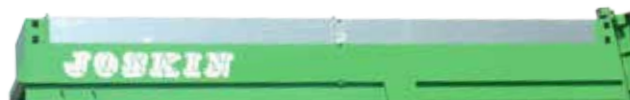
Hydraulic installation

EXTENSIONS

- PVC protection for upper body strip
- Aluminium or wooden extensions (250mm)



PVC extensions



Aluminium extensions



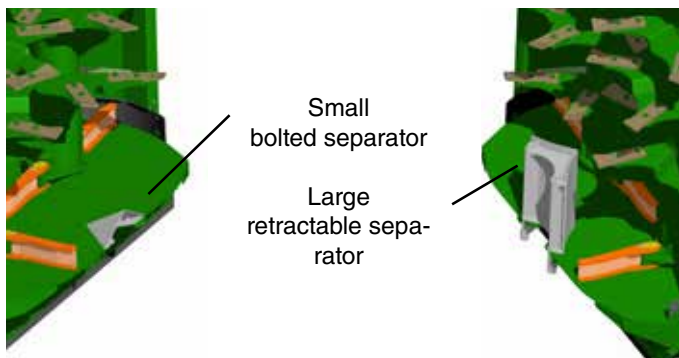
Wooden extensions

FLOOR TIGHTENER

Every JOSKIN muck spreader is standard fitted with a mechanical floor tightener. As option, it is possible to choose a hydraulic tightener with hand pump.



CENTRAL SEPARATORS



LIMITATION BOARDS

These limitation boards, which can be mounted on the left or right-hand side, are used for headland spreading. A double limitation board can also be mounted. The two parts are then independently opened. It is used for headland spreading and to cover the beaters.



Spreading width limitation board



Double protection board

REAR GRATE



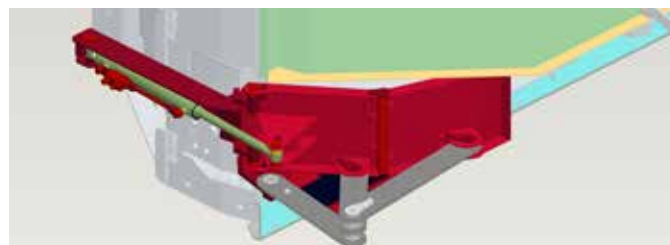
Protection grate for the beaters with hydraulic opening upwards (compulsory in some countries).

CANOPY

Interesting tools for spreading of lighter products (droppings, etc). JOSKIN proposes canopies with quick uncoupling or hydraulic opening. They can also be fitted with a limitation board. Thanks to the hydraulic opening/closing device, it is possible to spread on headland with a canopy.



Canopy with quick uncoupling



Spreading canopy with width limitation board(s)

OPTIONS

Management, Control and Novelties



MANAGEMENT AND CONTROL

JOSKIN proposes three ways to control its spreaders:

- 1 DIRECT CONNECTION (SELECTOR)
- 2 ELECTRO-HYDRAULICS VIA FERTI-CONTROL
 - LOAD SENSING
 - OPEN CENTRE
- 3 ISOBUS VIA FERTI-ISOCONTROL
 - ELECTROHYDRAULIC CONTROLS
 - FLOW MANAGEMENT BY DPA

FERTI-CONTROL

There are three control boxes to manage and control the JOSKIN muck spreaders. They each have their own functions.

- **FUNCTIONS FERTI-CONTROL 200:**
 - Door opening indicator
 - Spreading counter
- **FUNCTIONS FERTI-CONTROL 300:**
 - On/off switch
 - Electric moving floor control
 - Inversion of the moving floor direction by tractor selector
- **FUNCTIONS FERTI-CONTROL 4000:**
 - On/off switch
 - Electric moving floor control
 - Inversion of the moving floor direction by tractor selector
 - All electro-hydraulic functions



Ferti-CONTROL 200



Ferti-CONTROL 300



Ferti-CONTROL 4000



ISOBUS

The ISOBUS is a standardized system transmitting data. It creates a kind of common language which is compatible with the technical requirements of all agricultural applications. To transmit this information, the standardization implies the use of a Bus Can network. The Bus is the physical constituent of the network (standardized electric wires) whereas the Can is the data exchange protocol. Finally, the norm governs the connections to the Bus that allows to link the different elements that have to communicate (tractor, tool, boxes) with the standardized Iso 9-pin plug.

The ISOBUS principle is to centralize all the electro-hydraulic functions of the machine, as well as the flow meter functions, in one single control box, called Terminal. This Terminal does not know anything about the machines connected to it. Actually, it is an input and output device with no intelligence and allowing to download the software of the computer situated on the machine via the ISO plug.

Once the software is downloaded, the terminal displays all the functions allowing to control the machine. In option, it can be completed with a multi-function joystick allowing to control all functions of the machine.

Moreover, the Terminal is compatible with a GPS system for a precise guiding while spreading on the different parcels.

DPA ISOBUS

The constant evolution of the technologies which are needed to make agricultural machinery work properly implies the use of appropriate systems.

JOSKIN proposes an electronic spreading control DPA ISOBUS with weighing device for the loaded matter. From a practical point of view, the operator first has to validate the load in the spreader (available thanks to the weighing device). Then, he has to indicate the desired loaded volume (full load, half load, etc.), flow per hectare (in m³ or t/ha) and working width. He also has to choose the position of the door according to the matter to spread. Once this information is introduced in the terminal, the movement of the moving floor will be automatically controlled according to the demanded volume and to the driving speed of the spreader. The regulation works in closed circuit and the moving floor speed is continuously controlled. This system ensures that the necessary floor speed will be respected even if the body is almost empty or if, on the contrary, it is well filled and that the spreader is on a steep slope.



Ferti-ISOCONTROL



Automated Storage Systems

JOSKIN has understood that the after-sales service is a duty, not only for each representative or dealer, but also for the manufacturer, first of all for the user's satisfaction, and in the second place, for the future development of the products. Thanks to a centralized stock for all Europe, located in the centre of a European road interchange, and given the current efficiency of the (accelerated) parcel delivery services, JOSKIN offers a quick and quality after-sales service to its customers.

The current used system of QR codes provides satisfaction to our partners and customers. Combined with the individualized spare parts book, these stickers allow the customer to make sure the parts he got corresponds to the reference he found in his nomenclature.

Today, there are two automated storage areas for the spare parts in Soumagne. The first one, which is fully automated, is active since July 2014 and houses large spare parts. With a volume of 28.000m³, this space allows a optimal management of the stocks and therefore a faster response to the demand! The second one

includes 21 automated carousels for small spare parts. These installations respect JOSKIN's aim, which is to always have all spare parts in stock so as to guarantee a quality after-sales service.

Moreover, JOSKIN promises to supply the spare part within 24 to 48 hours after the order has been taken in order to reduce wastes of time, and therefore of money, that a defective part could cause in a farming concern.



Automated Storage Area of 28.000m³

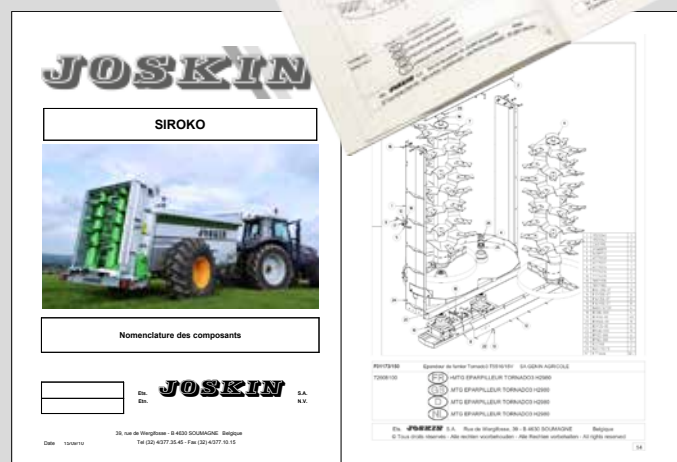


Parts Book

Since 1996, JOSKIN has been delivering each vehicle with an individualized parts book, which allows to easily identify and efficiently supply the spare parts for life. It is the very expression of the Group's precision.

This book only contains the components used for the fabrication of the machine. They can easily be identified thanks to the detailed plans of each assembly, which allow to order the part to be replaced with the greatest accuracy.

Furthermore, JOSKIN has filed the used components since 1984 and will always supply you the appropriate spare part. The individualized parts book, far from being a luxury, is the key of a good lifetime service but also the warranty of a longer lifetime of your machine.



Assistance service

Next to the after-sales service, JOSKIN also has its own assistance service. It includes technicians who roam the roads in order to provide constant advice and support to dealers.

In order to constantly improve its assistance service, JOSKIN is regularly organizing trainings on its site of Soumagne. Their aim is to prepare in the best possible way the actors on the ground

who will be in charge of maintaining or repairing your machines. Given the constant evolution of the machines and the addition of new technologies or new products, they are indispensable and aim at updating technicians' knowledge.



JOSKIN

"QUALITY WITHOUT COMPROMISE"



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