

# SALT AND GRAVEL SPREADER TS-3



## Application:

The TS-3 spreader has a variable working width from 1 to 8m and is therefore especially suitable for gritting roads, paths and parking sites. The TS-3 is used for chippings (crushed stone), chippings/salt mixture, coarse-grained de-icing salt. (Especially for fine-grained dried and partially dried de-icing salt from silos or as bagged goods, there is an optional variante, the TS-3 S salt spreader.)

## Description:

When designing the TS-3 salt and grit spreader, particular emphasis was placed on a process- and function-optimised design. It offers several additional options and is therefore especially suitable for gritting roads, paths and parking sites. Developed with a focus on close attachment to the three-point linkage for optimum weight distribution, the implement offers the best possible ride on snow and ice covered surfaces. The TS-3 is available with a volume of 0,7 m<sup>3</sup>, 1 m<sup>3</sup> or 1,5 m<sup>3</sup>.

The feed auger and the grids inside the hopper are galvanised, all other components are galvanised and spray painted. The spreading vanes and deflector plates are made from stainless V4A steel.

A choice of two different control systems is available as an option:

The TS-N proportional control is an electronic cab-based control unit which uses a micro controller to set the application rate and width. There is also an on/off switch, a switch for optional work lights and a switch for the optional electric spreading width control including LED position light.



The TS-W path-dependent control system can be controlled in the tractor cab via a 5" touch-screen display and 3 potentiometers. The spreading data can be easily read out, saved and analysed via a USB port at the rear. The USB port also makes it easy to install software updates on the control unit so that it is always up to date.

With the proportional control unit spreading width, spreading quantity and spreading pattern (optional with electrical spreading pattern) can be set depending on the driving speed from the driver's seat.

Moreover, the presetting of 4 different spreading materials or mixtures is possible at the push of a button. In addition, there is a switch for work lights and flashing lights and a "2x" button for temporary doubling of the spreading quantity. The integration of a GPS receiver is possible, if there is no standardized signal socket on the tractor available.

For the best possible control, a filling level indicator, which determines the fill level by a sensor using ultrasound on the inside of the hopper, and a spreading control, which is mounted on the chute of the steel vanes, are optionally available. To warn following vehicles, optional LED flashing lights on the rear can be ordered.

An optional stirring unit is available for dissolving clumped spreading material. This helps to prevent tunnel formation on the auger and enables the spreading material to be spread continuously.

Every spreader has to be calibrated to the existing hydraulic system of the tractor and to the manufacturer-specific „pulse signal“ for the path-dependent control unit and evt. fitting of hoses and cables has to be made. (Required time approximately 4 hours.)

### **Advantages:**

- User-friendly design
- Optimum weight distribution
- Multiple options
- Long durability thanks to high-quality material
- Optimised design of spreader and spreading unit

### **Standard specification:**

- Separate auger and vane drives; 1 hydraulic motor for each (requires 1 da spool)
- Manual spreading pattern control by adjusting the deflector
- Manual spreading rate and width control via spools
- V4A stainless steel vanes and deflector
- Galvanised auger and hopper grid
- Strong, galvanised and paint-coated hopper base
- Full-width rubber curtain protects the vehicle
- High-quality, long-lasting and low-energy LED road lights
- Stand

### **Requirements for operating the spreader:**

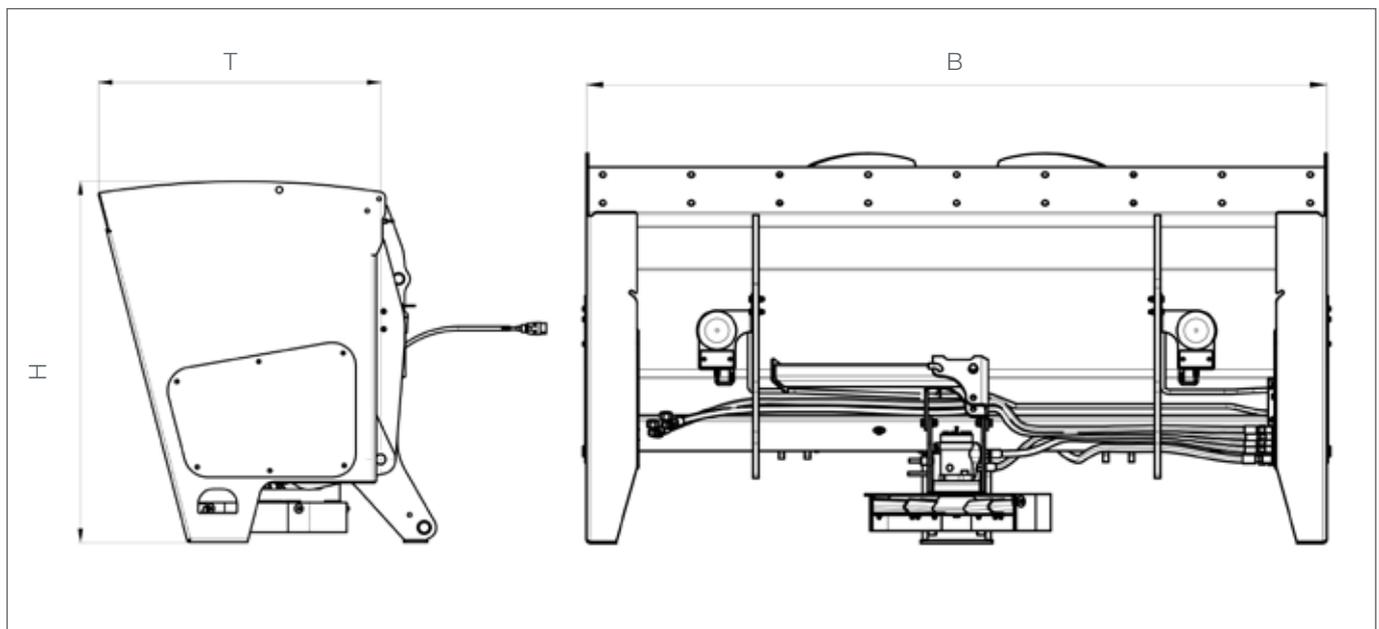
- One single-acting coupler and free return line
- 12V socket, 1x 3 pins and 1x7 pins
- For hydraulic self-loading system - requires 1 extra da spool
- Standard tyres
- The spreader is suitable for spreading dry materials
- TS-3 is suitable for spreading gravel, salt or a mix of these
- Operating the spreader and a snow plough is only possible when using an external oil supply or checking back with the tractor manufacturer

## Options:

- Electronic proportional TS-N control for straightforward spreading rate and width control
- TS-W path-dependent proportional control with electrical control panel for tractor cab  
Pulses via standardized signal socket from the tractor (DIN 9684 / ISO 11786; is required on the tractor)
- Speed sensor for path-dependent control unit TS-W (required in lack of signal socket)
- Electric spreading pattern control (require TS-N or TS-W)
- Hydraulic self-loading system (requires 1 extra da spool)
- Tarp cover
- Tarp cover 2.0
- Remote oil supply by pto pump
- V4A stainless steel auger
- LED work lights (require TS-N / TS-W)
- Outside temperature indicator with sensor for TS-W
- Filling level indicator for path-dependent control TS-W
- Spreading control with sensor for path-dependent control TS-W
- Flashing light (require TS-N or TS-W)
- Stirring unit for dissolving clumped spreading material
- V4A stainless steel stirring unit for dissolving clumped spreading material
- Power Beyond – operation on request.
- TS-3 S version salt spreader especially for fine-grained dried and partially dried de-icing salt from silos or as bagged goods

## Technical data:

Type	Unit	TS-2 07	TS-2 10	TS-2 15
Hopper volume	m <sup>3</sup>	0,7	1	1,5
Total width B	mm	2010	2010	2010
Depth T	mm	907	945	1010
Height H	mm	1062	1219	1475
Spreading width (varies depending on spreading material)	m	1-8	1-8	1-8
Salt spreading rate	g/m <sup>2</sup>	0-50	0-50	0-50
Gravel spreading rate	g/m <sup>2</sup>	0-200	0-200	0-200
Minimum rate in litres	l/min	50	50	50
Unladen weight	kg	415	445	525





Electronic proportional TS-N control



Proportional micro-processor based control TS-W



Tarp cover 2.0