

# Axmat Radar system for material flow measurement

## Overview



## Measurement of thrown material

**Axmat** is a control system optimizing the lateral distribution of disc spreaders.

**Axmat** is a joint development of Rauch Landmaschinenfabrik GmbH and MSO Meßtechnik und Ortung GmbH. MSO has developed the core Radar system.

For this purposes MSO disposes of Know-How for the application specific development and manufacturing of Radar systems.

**Axmat** has been bestowed on [the gold medal for novelties at Agritechnica 2013](#).

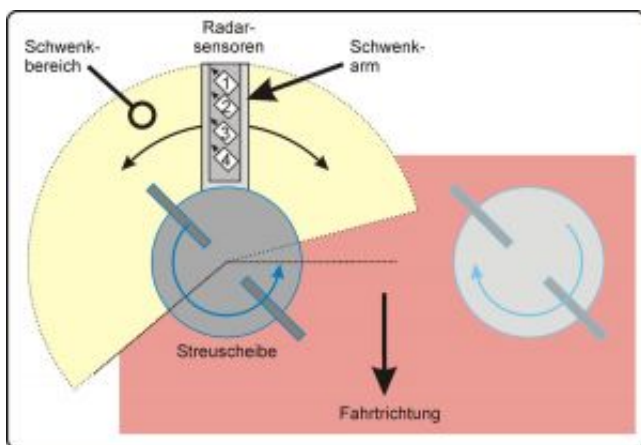
MSO has - exclusively for Rauch Landmaschinenfabrik GmbH - further developed the **Axmat** swivel arm system for measuring the lateral distribution on disc spreaders towards the **Axmat system**. **Axmat** is manufactured and in production by MSO.

**Axmat** measures the lateral distribution on both discs with two fixed ring segments. Each of these ring segments does consist of 27 radar sensors - in total for two rings 54 sensors - detecting the flow of thrown material continuously with high resolution. The thus measured lateral distribution is applied in the superordinate Rauch control monitor to adjust the position of the material flow tripping orifice to the spreading disc thus controlling the lateral distribution.



## Details

## Detection of the lateral distribution



The innovative MSO radar sensor system for measurement of material flow is the core function element of the **Rauch Axmat** system. It features four radar frontends in a row on a multiprocessor module. The radar signals are sampled at a high rate. Each radar frontend supposes of it's own microcontroller (32-bit Arm Cortex M4F) for processing. Further processing and communication is handled by another dedicated MCU.

The MSO Radar sensor system is mounted on a swivel arm in a fully protected casing. By swivelling the arm the material flow from the disc is scanned with high resolution. Integrated in the MSO radar system is the processing of the measurement data and computing of the lateral distribution of the spreading "fan". The angle correlated lateral distribution is being output to the Rauch ECU and used for control by adjusting the position of the tipping point of the material flow onto the disc.

## Benefits

## Benefits and advantages

- Contactless measurement of a free thrown material flow
- Detection of angle correlated lateral mass distribution in the "launch" area of the disc
- For all material being spread by the disc spreader
- Optimization of monitoring, control and closed-loop control of a disc spreader
- Simplifying and improving the setup of the spreader
- Optimizing the cost intensive mineral fertilization
- Continous control (self-adjusting) and function monitoring of the spreader
- Insuspectible to soiling
- Fully IP69K protected

## Gallery

### Rauch Axmat

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