



FROM ROSTA'S EXPERTS

SUSPENSION CHALLENGES

OUR INDUSTRY INSIGHTS



WHEN THE TOOLS SAVE THE CROP

The correct preparedness of farming fields allows for successful seed planting in order to produce a robust and bountiful crop.

In order to prepare the fields correctly, proper operation of your equipment is essential. Sometimes mother nature does not want to play fair, so there exists only a small window of opportunity exists for the farmer and so their equipment must be able to perform correctly and efficiently.

Reliable suspension systems on high speed tillage equipment provide continuous correct down pressure of the discs to ensure the proper depth of cut, while turning of the residual crop and soil in order to blend the nutrients back into the ground.

Sometimes there are different ground hardness' or occasional rocks that over time begin to surface and can cause extreme and expensive damage to the equipment. In such cases, the suspension needs to compensate for these factors.

ROSTA ADVANTAGES

- 1.** Continuous and correct down pressure of the discs
- 2.** Allowance for resistance of angular pressures by the discs
- 3.** Compensation of shock loads and impacts when hitting rocks, with a quick return to operating position
- 4.** Maintenance free components
- 5.** Longevity of the equipment

OUR EXPERTISE

ROSTA's experience in working with equipment manufacturers has provided us with insights into their concerns and needs to provide efficient products to the farmer, dependable for uninterrupted operation when needed.

Specialised rubber technology, offered by ROSTA, can successfully address the challenges described above. Moreover, it has the potential to optimise the performance of the equipment and provide a long, maintenance free operational lifespan.

**75 YEARS OF
EXPERIENCE,
SWISS ENGINEERING
EXCELLENCE FOR
RUBBER SPRINGS.**

**SIMPLY
THE BLUE ONES
FROM ROSTA.**

WHO IS ROSTA?

The ROSTA Group have designed and manufactured specialised rubber suspension components for over 75 years, for a variety of industries and applications. We provide engineering support to help ensure the correct combinations of mountings and rubber cord performance, and dimensions are used. Our in-house laboratory is able to conduct torque and FEA testing for performance assurances for the given application.

We have our own rubber manufacturing facility with in-house chemists and engineers constantly developing & testing new rubber compounds to meet industry demands.

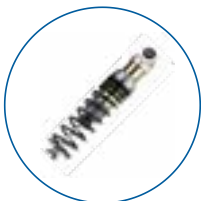
We are the global leader in the supply of both standardized and customized torsional elastomer spring based solutions. ROSTA has successfully delivered countless projects for our customers around the globe and gained a comprehensive understanding of our customer's needs and requirements. Our solutions offer simple and safe options when it comes to optimizing the performance of machinery.

ROSTA rubber suspension technology has been proven to significantly reduce the total cost of ownership of assets through their long lasting and maintenance free operation.

THE CORE OF ROSTA RUBBER SUSPENSION ELEMENTS

The ROSTA Element is the foundation of our product offering. The uniquely designed torsion spring consists of an inner square profile and outer square housing separated by four high quality rubber cords. Such design allows for the inner square to rotate by up to 30° clockwise and anticlockwise in relation to the outer square, compressing the rubber inserts and generating a torsional spring force. In a ROSTA suspension solution, the pre-loaded torsion spring is a store of mechanical energy used to exert pressing force on the disc arms. The release of this stored energy automatically compensates for impacts or shock loads, while maintaining the required force and efficient operation for extended periods of time.

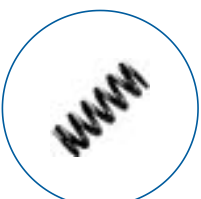
OUR ELEMENT



a vibration damper



a pivot bearing



a coil spring



TYPICAL USE CASES

ROSTA rubber cords are an ideal solution for cultivator disc arm suspensions allowing simplified adjustment of row spacing for large multi disc machines.

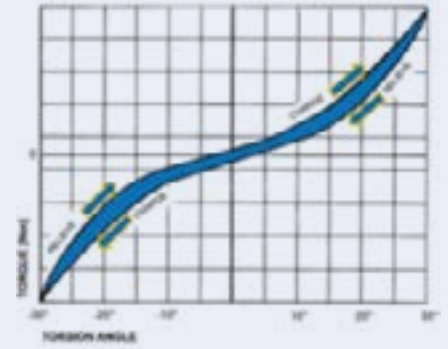
ROSTA offers a high torque value for ideal pressure against the varying soil conditions and provides superior damping and shock load reaction when encountering rocks, to deflect and react back into position during high speed cultivating. Other applications would include seeder/packer and sprayer arm suspensions.



Seeder / packer wheel combinations



Sprayer boom suspensions



ROSTA ELEMENT Spring Characteristic



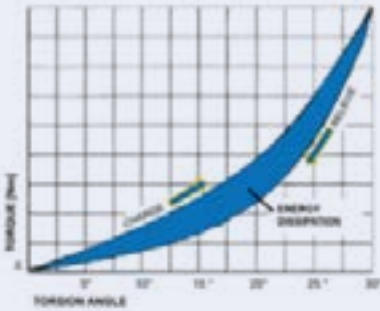
ROSTA Element Pre-load



ROSTA ELEMENT Spring Characteristic



Rubber Heating



ROSTA Hysteresis (Energy Dissipation)

THE BENEFITS OF INHERENT DAMPING

Throughout the operation of the equipment, torque peaks and some shocks or vibration can occur, especially during impacts with rocks or hard surfaces.

A suitably designed ROSTA suspension system can help protect the equipment and other components from these forces through a level of inherent damping. When such force is experienced, the ROSTA Element's rubber cords can further compress. This rapid polymer deformation converts part of the mechanical energy into heat.

As a result of the energy dissipation, the dynamic suspension reacts against this with a significantly reduced force. Damped reaction of the system reduces damage to the equipment components. This further minimizes the risk of unplanned operational downtime. The damping effect of ROSTA's technology differs from other solutions, such as coil spring-based tensioning systems, where the kinetic energy from a shock load is returned to the equipment with equal force.

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