RINGSPANN®

Customer-specific expanded range of services

Highly efficient belt and direct drives ensure the powerful rotation of cutting shafts and blade strips in Lindner Recyclingtech's stationary waste shredders. To prevent sudden overloads from getting through to the drive elements, the designers of the Austrian plant manufacturer have been relying on the friction torque limiters in RINGSGPANN's RSHD series for many years now. Recently, the two companies have intensified their cooperation to such an extent that ready-to-install system units consisting of a friction torque limiter and a V-belt pulley are increasingly being used in the shredder assembly – preassembled and already set to the correct torque.

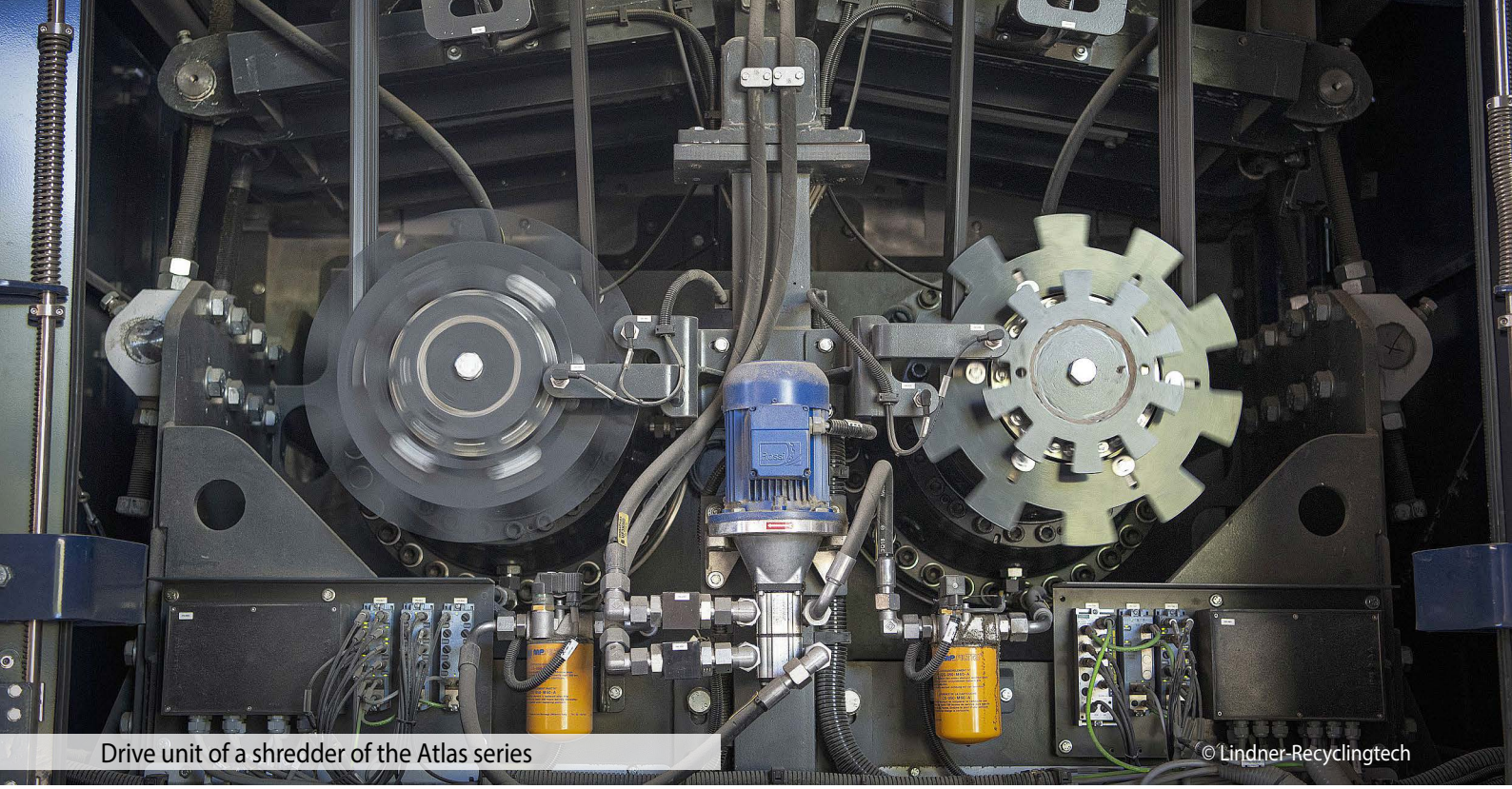
Waste shredders from Lindner Recyclingtech are proving their worth in the shredding lines of waste disposal and processing companies all over the world. Since the company was founded in 1948, it has been part of its quality promise to use only high-quality and durable units and components for the manufacture of its machines. This also means that the procurement department trusts in selected suppliers who adhere to the company's own quality and innovation standards. In the field of drive technology, the German company RINGSPANN and its subsidiary RINGSPANN Austria are therefore among the preferred suppliers. For several years now, they have been making a fundamental contribution to the overload protection of the drive trains of a number of the Austrian manufacturer's stationary shredders with the friction torque limiters from the RSHD series. "We are currently equipping numerous universal shredders, secondary shredders and our new Atlas series primary shredders with these heavy-duty friction torque limiters from RINGSPANN. With a high degree of reliability, we not only reduce the risk of damage and failure of the belt and gear drives used here, but we also minimise the costs required for their maintenance. Both aspects correspond to our dual objective of maximising the operational reliability and availability of our shredders on the one hand, and reducing our customers' MRO costs on the other," explains Peter Weingartner, Chief Technology Officer at Lindner.

Markus Berger
Managing Director of
RINGSPANN Austria

Premium class overload protection

The heavy-duty friction torque limiters in RINGSPANN's RSHD series are in the high-performance category of overload clutches and are currently setting international standards in the market segment of friction torque limiters. They are only equipped with first-class components and convince with a high degree of dry-running stability at high operating temperatures. Their hubs, spring carriers and pressure rings are made of structural steel, heat-treatable steel and spheroidal cast iron, and all external surfaces have an anti-corrosion coating.

The design of the RSHDs, following the RIMOSTAT® principle of the Bad Homburg manufacturer, offers the decisive advantage that not the disc springs but the ISO helical springs generate the contact pressure on the friction linings. And with a linear, flat characteristic curve, which is why even



Drive unit of a shredder of the Atlas series

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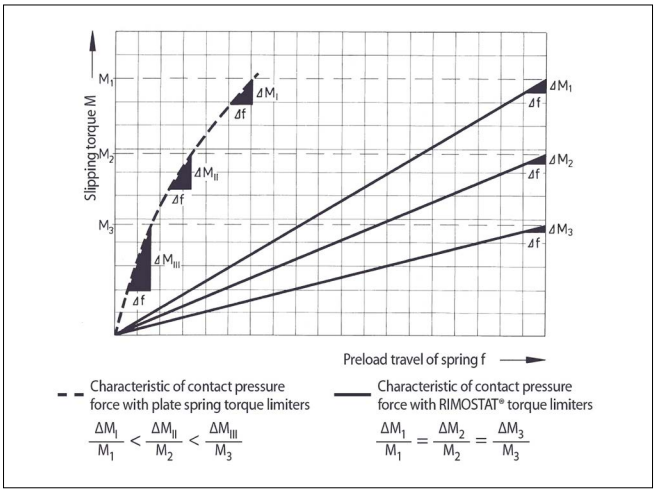
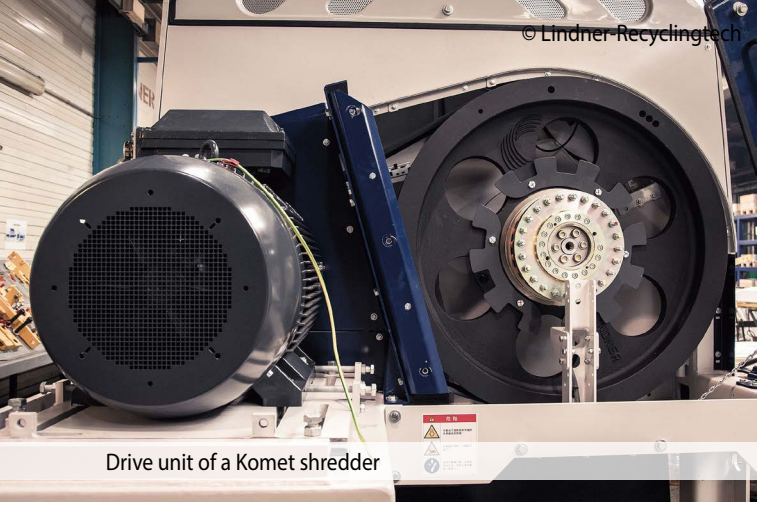
wear to the friction lining has hardly any effect on a drop in the slipping torque - the most important parameter of a torque limiter. As the RSHDs from RINGSPANN also have high-performance friction linings made of a nickel-free sintered material, their design advantages can be exploited well into the upper heavy-duty range. Markus Berger, Managing Director of RINGSPANN Austria, emphasises: "With our RSHDs, we offer plant and machine manufacturers a premium-class overload protection system that can significantly strengthen the competitiveness of their heavy-duty units. It is proven in many areas, for example in the drive systems of construction and agricultural machinery, conveyor belt systems, power plants or even shredding mills."

Markus Berger has been supporting Lindner's mechanical engineers in their development and optimisation work for some time now. He has become deeply familiar with the subject of shredding technology and actively supports the Austrian manufacturer in the accurate selection of the right friction torque limiters for the various drive systems of the pre-shredders, universal shredders and secondary shredders. At present, there are primarily three versions of RINGSPANN's RSHD series that are used in the V-belt and direct drives of the shredders: The two basic models RSHD 400 and RSHD 500 with maximum slipping torques of 24,000 Nm and 50,000 Nm, and the RSHD 310, a custom size realising slipping torques of up to 10,000 Nm. RINGSPANN offers the heavy-duty torque limiter in six standard types. The smallest RSHD has a diameter of 205 mm and covers slipping torques of 600 to 3,000 Nm at speeds of up to 2,700 min^{-1}. The largest version, on the other hand, has a diameter of 600 mm and can be used for slipping torques ranging from 10,000 to 68,000 Nm at speeds of up to 1,000 min^{-1}.

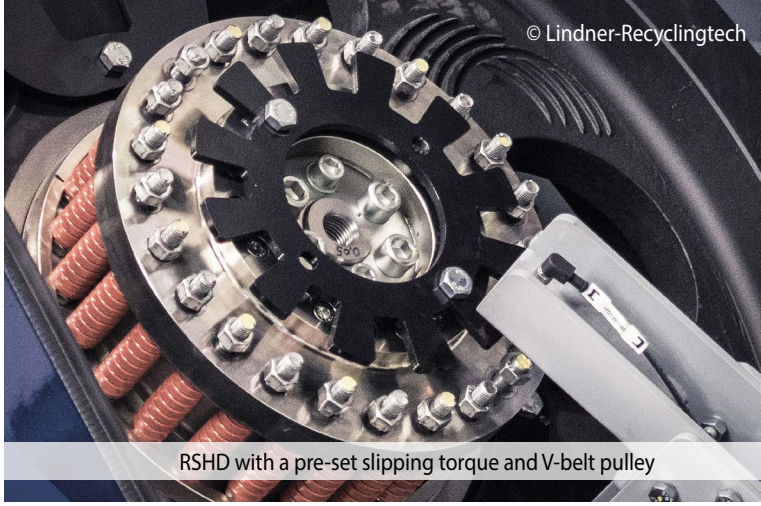


Trustworthy pre-assembly

Since these torque limiters are designed according to RINGSPANN's RIMOSTAT® principle, the user has the option with all sizes to adjust the required slipping torque quite simply by activating or deactivating complete springs. This means he does not have to adjust each individual spring preload and therefore saves a lot of time. The shredder specialists at Lindner, however, no longer need to worry about this at all. This is because they now receive most heavy-duty friction torque limiters in special versions with factory preset torques. Peter Weingartner explains: "This additional service is part of the extended catalogue of services that RINGSPANN currently covers for us. It is an expression of our extremely trusting partnership that has developed over the last few years - and sometimes touches upon important process stages of our engineering."



Drive unit of a Komet shredder



RSHD with a pre-set slipping torque and V-belt pulley

This nod to engineering is a specific reference to the direct relationship between the torque of the torque limiter and the installation situation: Precisely pre-setting the torque is only feasible in a meaningful way for RINGSPANN technicians if they know the physical and kinematic prerequisites of the constructive environment and the attachment part. It was with this in mind that the Carinthian machine manufacturer decided to accept a suggestion from its German supplier, which has since turned out to be an ideal win-win solution: The routine provision of pre-assembled system units consisting of V-belt pulleys and RSHD friction torque limiters with slipping torques already correctly preset. RINGSPANN delivers these complete assemblies as required to Lindner's assembly department, where they are docked onto the drive systems of the respective shredders. "In terms of process technology, we benefit from this in two ways. Firstly, because we considerably reduce our costs of adjusting the torque of the torque limiters; and secondly, because we save ourselves the internal assembly of the belt pulleys onto the torque limiters of the drives", explains Peter Weingartner.

From component to system

By assuming responsibility for the assemblies and the associated engineering services, RINGSPANN has in this case completed the transition from component supplier to system supplier. In addition to the geographical proximity of the Austrian subsidiary to the customer, it is in particular the high level of consulting competence and flexibility in the implementation of special requests that have proven to be the driving forces along the way. For Markus Berger, the Lindner example shows once again "that RINGSPANN can convince not only through the high quality of its drive technology components but also through the transfer of technology and engineering expertise, thus strengthening the competitiveness of its customers with additional benefits." Many of these added value factors are already firmly anchored in the RINGSPANN portfolio. In the case of the torque limiter series RSHD alone, the company offers - entirely in line with its one-stop shop strategy - a large number of additional customer-centred services: From the realisation of custom designs, to the provision of comprehensive smart solutions (e.g. torque limiter plus flexible coupling), to the aforementioned pre-assembly of drive technology assemblies.

Collaboration potential

Whether shredders, construction machines or conveyor systems - overload damage to the drive units can quickly turn into a costly nuisance. Repairs or too short maintenance intervals can quickly devour large sums of money. The cost-saving contribution of heavy-duty fricition torque limiters such as the RSHD from RINGSPANN should therefore not be overestimated. Furthermore, the example of close collaboration between the German one-stop supplier and its customer in Austria demonstrates: as soon as the supplier is in a position to cover additional engineering or assembly services, further possibilities for process optimisation quickly emerge for the machine manufacturer beyond the technological advantages. <<

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How RSHD friction torque limiters work

The RIMOSTAT® RSHD heavy-duty torque limiter from RINGSPANN is a friction torque limiter. If the slipping torque previously set on the RSHD is reached during operation of the drive system, the drive element - such as a V-belt pulley - slips in a defined manner to relieve the components of the drive train. During this process, the input and output continue to rotate relative to each other, transmitting the set slipping torque; this process is accompanied by high energy consumption. Re-engagement is not necessary and, thanks to the RIMOSTAT® principle, no readjustment due to friction lining wear is required.