



VECOPLAN SYSTEM TECHNOLOGY – FROM SINGLE COMPONENTS TO COMPLETE INSTALLATIONS – CUSTOMIZED AND EFFICIENT

HiTorc® to our customers' benefit

- accident-proof drive concept
- high operational reliability
- high throughput due to large speed range
- high starting reliability under load
- savings in energy costs of up to 50 %

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SHREDDING IS OUR CORE COMPETENCE

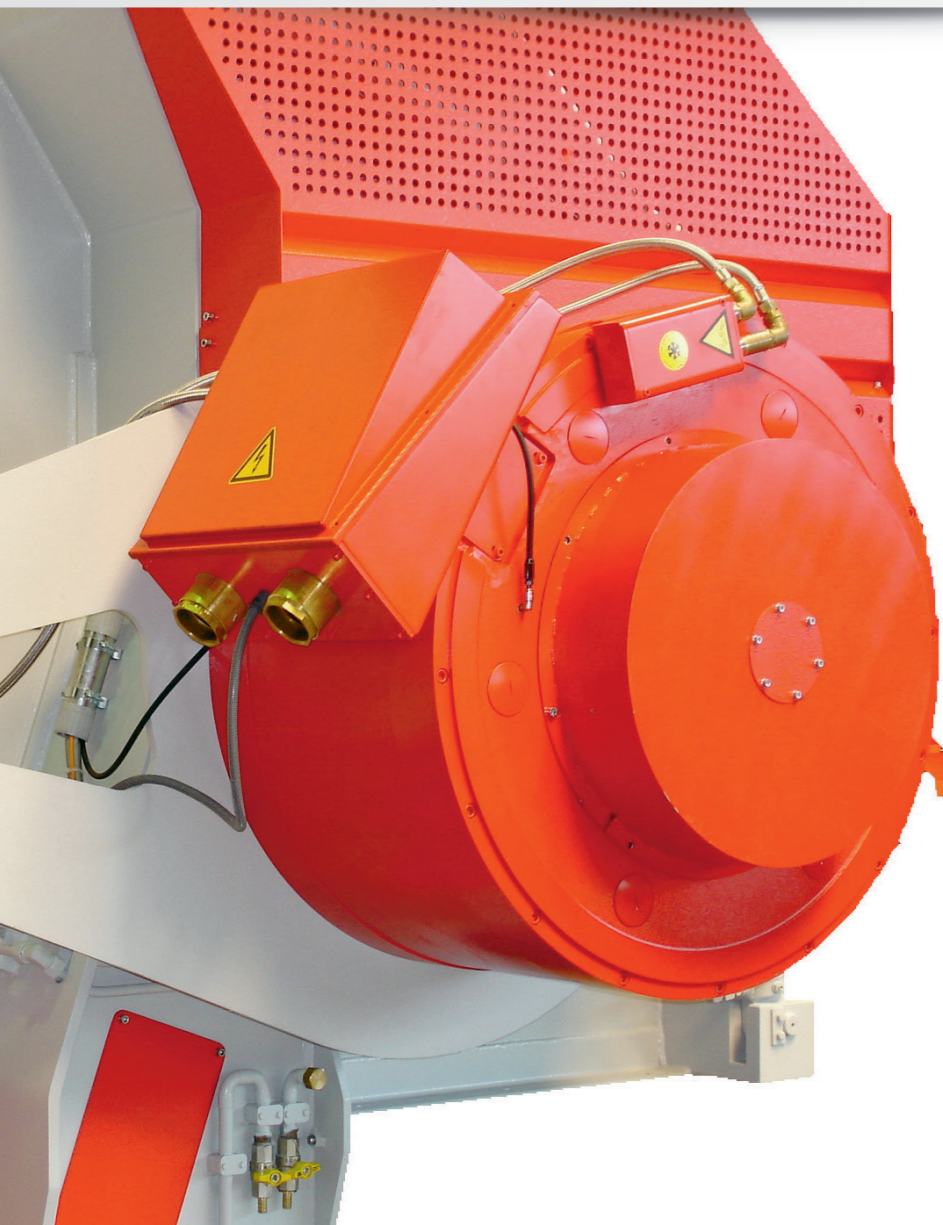
HITORC® - DRIVE

THE REVOLUTION OF SHREDDING TECHNOLOGY



VECOPLAN ENGINEERS DEVELOP THE PROGRESS

HiTorc® is a patented VECOPLAN innovation. Since its introduction in 2005 it wrote its own success story: about 650 HiTorc®-motors in both single-shaft shredders and double-shaft shredders are successfully in operation worldwide. HiTorc® is our industrial engineering department's response to rising oil prices and high energy costs and forms a further contribution to "Today's technology for tomorrow's world".



Winning arguments for the HiTorc®-drive to our customers' benefit

- Increased machine throughput capacity by wide speed range
- Strong starting and high torque
- Very dynamic – thus improving the starting and reversing characteristics
- Speed limit adjustable to throughput capacity or cutting thrust (torque and centrifugal moment)
- Drive is absolutely insensitive to tramp material
- Almost maintenance-free
- No wear parts (belt drive, coupling, etc).
- Best availability
- No spare parts storage required (VECOPLAN stores motors and converters for you!)
- Almost no drive noise
- Space saving
- Best efficiency as all mechanical drive elements are omitted
- Most energy-efficient drive

HITORC® – TO OUR CUSTOMERS' BENEFIT

Availability

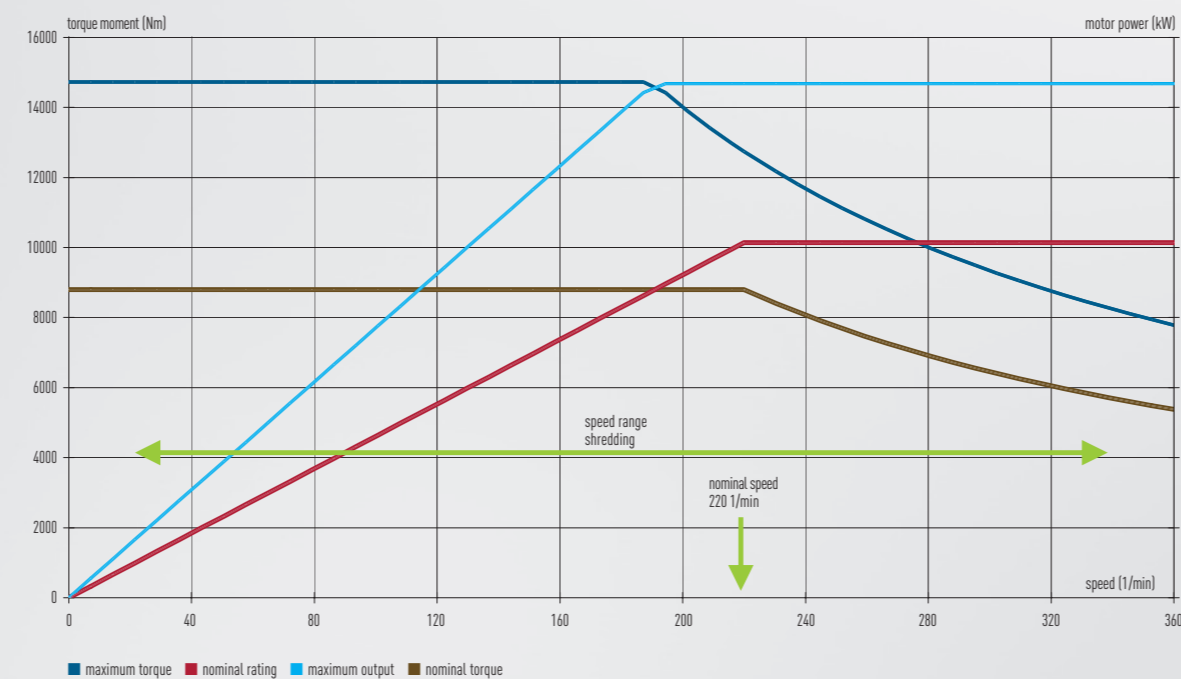
Almost no maintenance leads to increased operation time. The drive is completely insensitive to tramp material. The use of the HiTorc®-drive is already justified if just one unscheduled downtime occurs due to e.g. one broken rotor shaft, one faulty drive coupling, one defective belt drive, one damaged gear-box, etc. By the way, VECOPLAN stores HiTorc®-motors and converters for your needs. The most important requirement at start of the machine is the achievement of a high rotor speed within a very short time so that the solid steel rotor's centrifugal moment and the motor's torque can interact. Inert power trains slow down this process with the result that the start-up often fails and the machine needs to be cleared manually.

Operating expenses

Since all the transmission components are eliminated, the efficiency is improved by about 10 – 15%. The synchronous motor is extremely energy efficient at the nominal-speed range and/or part-load operational range. At idle motion this motor only consumes 10% of the energy compared to the needs of a similar direct connected asynchronous motor. These operation conditions are particularly common in pre-shredding and one-step shredding. The Re-Shredder V-EBS is designed for an operating speed of about 220 rpm and is therefore very energy-efficient. Since almost no maintenance is required consequently the operating costs are reduced.

Example: energy cost savings at pre-shredding of domestic waste:
60,000 t/a x 3 KWh/to energy cost savings x 0.1 €/KWh = 18,000. - €/a electricity cost savings

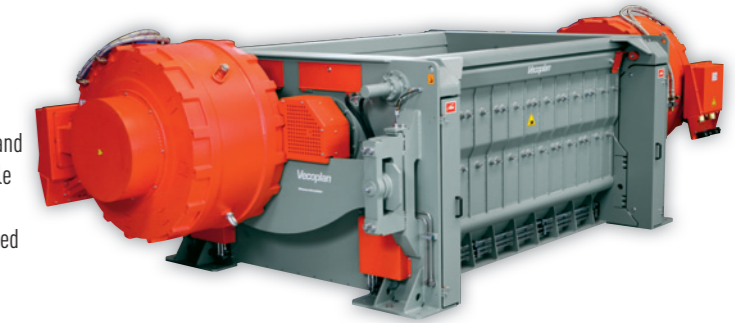
Example: 203 kW synchronous motor frequency controlled by 315 kW converter



APPLICATIONS

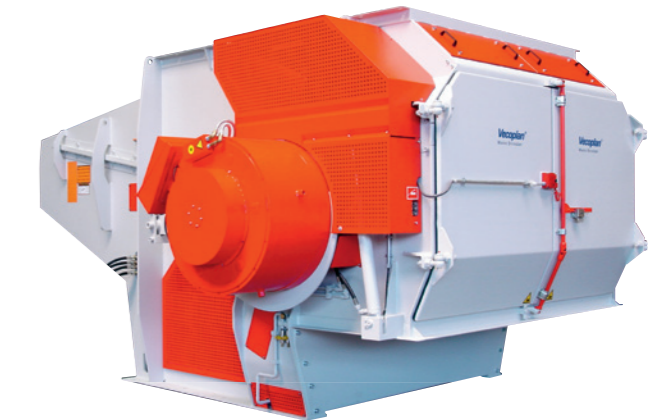
Pre-Shredding

The double-shaft shredder WZ 250 is a Pre-Shredder for difficult and tramp material contaminated material, as e.g. pallets, crates, cable drums, scrap wood, furniture, chipboard, domestic and industrial waste. Average energy savings with HiTorc® of about 50% compared to electro-hydraulic drives.



One-step shredding Re-Shredding

The VAZ VECOPLAN-shredder saves about 30% of energy compared to electro-mechanical direct connected drives and about 10 to 15% compared to electro-mechanical drives with frequency converter and asynchronous motors.



Re-Shredding

The newly developed Re-Shredder V-EBS actually averages energy savings of about 30% compared to electro-mechanical direct connected drives and of about 10 to 15% compared to electro-mechanical drives with frequency converter and asynchronous motor.

