

Shredding Technology Centre



The development of shredding technology in the company is based on the results of prototype, pilot, and trial runs of equipment, which are performed in the company's own technology centre. Hence, the high quality of supplied products and their consequent adaptation to the customer's requirements are guaranteed. The multifunctional utilisation of the technology centre represents a unique solution in Slovakia, which enables ING. ČASTULÍK to maintain its leading position in the shredding equipment market.

Shredding Technology Tests

This is the primary utilisation of the technology centre, which is focused on adapting supplied technology to the customer's requirements. The customer is present at the trial grinding of material samples. Before purchasing the equipment, the customer has the opportunity to become thoroughly acquainted with its function, method of operation, and maintenance requirements, and decide upon any possible modifications. Customers therefore have the opportunity to convince themselves of the correctness of their investment, directly on the premises of ING. ČASTULÍK.

Technological lines delivery

Ample experience in the application of material disintegration and separation technology enables ING. ČASTULÍK to provide comprehensive solutions to its customers in the area of waste upgrading and recycling. We supply turnkey technological lines for waste processing, whereby we follow our business concept: We Produce Machines – We Provide Solutions.

The following technologies are available as standard: alternative solid fuel production line; a waste PET bottle processing line; a cable and electro-scrap recovery line; an oil filter processing line.

The Utilisation of Plastics

Plastics are continuously ground for commercial purposes at the company's technology centre.

In addition to grinding materials for commercial reasons, the company also offers its customers the capacity of its technology centre for the one-off or repeated grinding of material. The size of the ground material depends on the customer's requirements.



ING. ČASTULÍK
WASTE PROCESSING TECHNOLOGIES

Shredding Technology



Twin-Shaft Shredders • Cutting Mills
Lines for the Waste Utilisation

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Cutting Mills

The material is ground in the cutting mill on the linear cutting edge of working tools, which are located on the machine rotor and stator. The working tools on the stator are made up of two flat blades; three such blades are fixed to the rotor carriers. Technology with five rotor blades may be supplied if the customer wishes so. The stator and rotor blades are arranged in such a way that they form a certain angle with the rotor axis, which results in a shear effect. Compared with the conventional parallel arrangement, the aforementioned arrangement results in a reduction of energy consumption and machine noise. A mesh screen situated under the rotor plane is used to determine the required dimension of the grinding equipment's output. The screen meshes may have a diameter of 8, 10, 12, or 15 mm, depending on the customer's specifications.

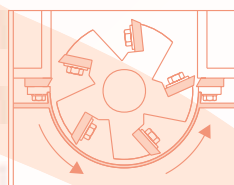
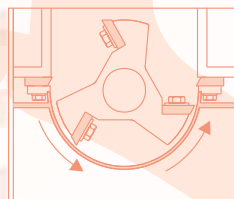
Materials that may be ground by the cutting mill to the required dimensions include plastic bottles; plastic pots; plastic foil, plates, pipes, and girders; plastic waste in the form of flow moulds, discards, edgings, and foam; rubber; leather, bones, keratin, etc.



In order to make the choice of suitable equipment easier, ING. ČASTULÍK offers professional consultancy, which also includes the trial processing of supplied samples in the company's technology centre. After carrying out the tests, the parameters of the equipment are optimised so as to achieve maximum compliance with the customer's requirements. This also includes the adaptation of the machine frame and its feed hopper, all based on the customer's specifications. Our company also offers appropriate accessories targeted at further increasing the effectiveness of the cutting mill: an exhaust fan for the pneumatic transportation of the ground material; a cyclone for the direct filling of the material into bags; a feed hopper with noise elimination, and a bag or big-bag holder. As in the case of other products manufactured by ING. ČASTULÍK, a one-year guarantee applies to the cutting mills. Guarantee and post-guarantee service is performed directly at the customer's premises within 72 hours of a failure being reported.



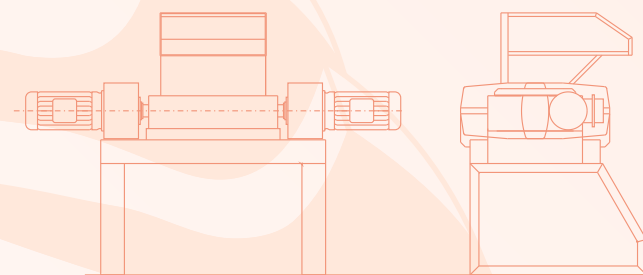
Technical parameters	SP	MN300	SG400
Rotor diameter (mm)	200 – 500	300	400
Blade length (mm)	300 – 700	400	600 resp. 900
Number of stator blades	2	2	2
Number of rotor blades (standard)	3	3 – 5	3 – 5
Rotor speed (rev/min)	550	700	700
Inlet (mm)	Various	300 × 400	400 × 600 resp. 900
Motor input (kW)	5,5 – 37	15	30 – 55
Cutting mill performance (kg/h)	100 – 800	300 – 600	do 1200
Equipment weight (kg)	320 – 2060	700	2000 resp. 2800
Dimensions (mm) – width/depth/height	Various	950 × 1125 × 1560	1500 × 1500 × 2300



Twin-Shaft Shredders

The material is ground in a twin-shaft shredder of the DR type in a shredding chamber, which utilises two sets of discs with projections that rotate in an opposite direction. When the discs turn, the processed material is caught by these projections and driven further into the grinding chamber. The shredding process is all-inclusive, and includes the cutting, breaking off, grinding, and tearing of the material. The size of the processed material depends on the dimensions of the grinding discs and the number of projections on them. In general, the ground material is larger than in the case of cutting mills. For instance, the size of ground fragments varies from approximately 36/36/36 to 200 mm if a double-rotor grinder with a 36 mm disc and five projections is used. One or two electric motors with gearboxes are used for driving the twin-shaft shredders. The broad range of possible uses of motors with various inputs and the possibility of various drive constructions make it possible to adapt the grinder's performance requirements to the specific needs of the customer.

DR340/1500_75kW
Machine intended for very heavy operating conditions. Shreds wide range of the materials

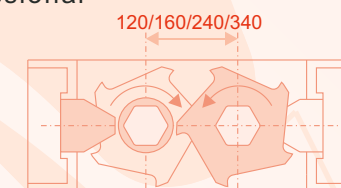


DR240/900_37kW
Machine intended for heavy-duty operating conditions. Shreds plastics, wood, tires, etc.



DR160/350_9,2kW
Machine intended for the light operating conditions, shreds salvage, small wooden waste, thin-wall plastic products

An automatic device, which protects the shredder against overloading, controls the twin-shaft shredder. This system can even control the drive of the service conveyors and regulate the input of the processed material into the feed hopper. ING. ČASTULÍK offers professional consultancy, including the trial processing of supplied samples in the company's technology centre. After carrying out the tests, the parameters of the equipment are optimised so as to achieve maximum compliance with the customer's requirements. This also includes the adaptation of the machine frame and its feed hopper in accordance with the customer's specifications. In order to further increase the effectiveness of twin-shaft shredder, our company also offers a pressure mechanism in the feed hopper of the equipment, which optimises the feeding of the processed material into the shredding chamber. As in the case of other products manufactured by ING. ČASTULÍK, a one-year guarantee also applies to the twin-shaft shredder. Guarantee and post-guarantee service is performed directly at the customer's premises within 72 hours.



Technical parameters	DR120	DR160	DR240	DR340
Distance between rotor axes (mm)	120	160	240	340
Shredding disc width (mm)	28 (18)	28 (9; 18)	38 (58; 78)	78 (98; 118)
Rotor speed (rev/min)	14 – 41	14 – 41	14 – 41	9 – 32
Inlet (mm)	350 × 300	400 × 350 – 600	600 × 500 – 1300	850 × 900 – 2000
Motor input (kW)	2,2 – 7,5	7,5 – 22	22 – 100	52 – 200
Equipment weight (kg)	650 – 750	700 – 1700	2000 – 8000	10 000 – 20 000
Dimensions (m) - width/length/height	1,1/1,4/2,8	2/1,4 – 2,3/2,2	2,6/2,6 – 3,6/2,7	3,2/4 – 6,5/3,2

Parameters are only informative. Device can be configured according to the customer's requirements.