



SMART SOLUTIONS TO PRESERVE THE ENVIRONMENT



SHREDDERS
& SYSTEMS
FOR WASTE
RECYCLING

Forrec designs and manufactures single machines and complete installations for waste treatment and processing.

Forrec is continuous research supported by an internal technical office consisting of 9 engineers, several technology partners and the willingness to keep up to date on market regulations and trends.

Forrec is mainly manufacturer of "tailor-made" machines and installations with unique solutions, flexible design combining experience and knowledge in the recycling industry with the needs and expertise of the customer.

Forrec is also a "reactive" company, assisted by specialized teams and mobile workshops, call centre, remote assistance and equipped spare parts storage for scheduled maintenance and emergencies.

A complete, active company and a reliable partner oriented to the sustainable development.

MAIN APPLICATIONS

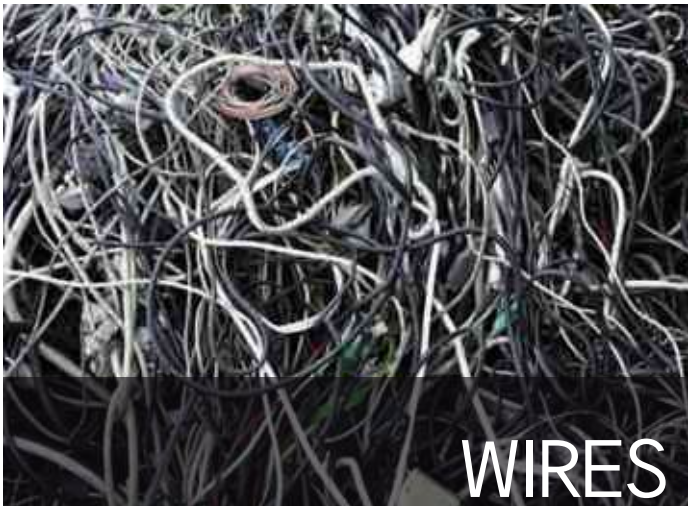




PLASTIC



WOOD



WIRES



ELECTRIC MOTORS

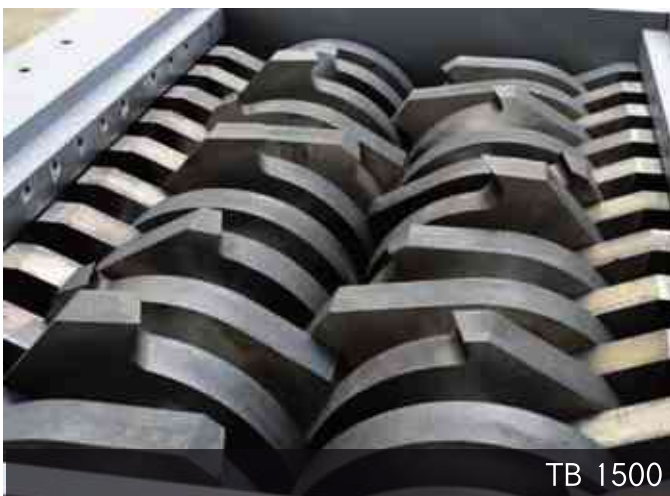


ALUMINIUM



METAL SCRAPS

PRIMARY DOUBLE-SHAFT SHREDDERS



TB 1500

Efficient and robust industrial counter-rotating shaft shredders, designed for effective performance during treatment that involves a reduction in volume and shredding of materials, with partial control of output size. The shredders designed by Forrec can be used for the treatment and transformation of all types of solid waste.

TB - TBS



TB 1300

Designed to achieve high torque, they operate with low rpm and therefore feature very low consumption. Shredder blades, made of special steel, ensure long life cycles and reduced maintenance.

These crushers can be used for WEEE treatment or as an initial system for materials pressed in bales, without being cut. They can treat a high input of materials.



TB 1500



TECHNICAL CHARACTERISTICS

MODEL	CUTTING CHAMBER DIMENSIONS (MM.)	POWER UP TO
TB500	410x500	5,5 kW
TB700	660x710	30 kW
TB1000	660x1020	30 kW
TB1300	960x1260	75 kW
TB1500	1100x1460	150 kW
TB1800	1100x1760	150 kW
TB2000	1300x1960	180 kW
TBS500	620x490	15 kW
TBS600	620x590	15 kW
TBS800	850x750	37 kW
TBS1000	850x1000	37 kW
TBS1300	850x1250	37 kW

ROTARY SHEARING MACHINES

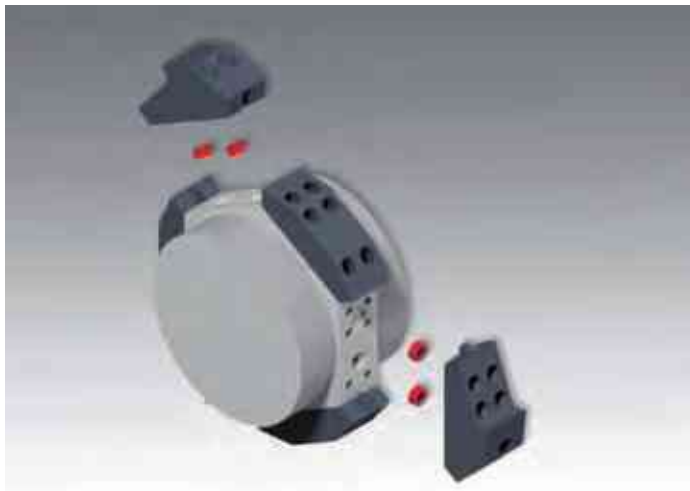


Rotary shearing machines are double-shaft shredders with 4 motors, ideal for shredding and reducing the volume of particularly resistant materials such as ferrous and non-ferrous metal scraps, even when packaged. They are also ideal for shredding large tyres.

FX



Designed to achieve high torque, they operate with low rpm and therefore feature very low consumption. Shredder blades, made of special steel, ensure long life cycles and reduced maintenance.



They come with a unique patented system of interlocking interchangeable cutting sectors, designed for high standards of work and reduced maintenance times.



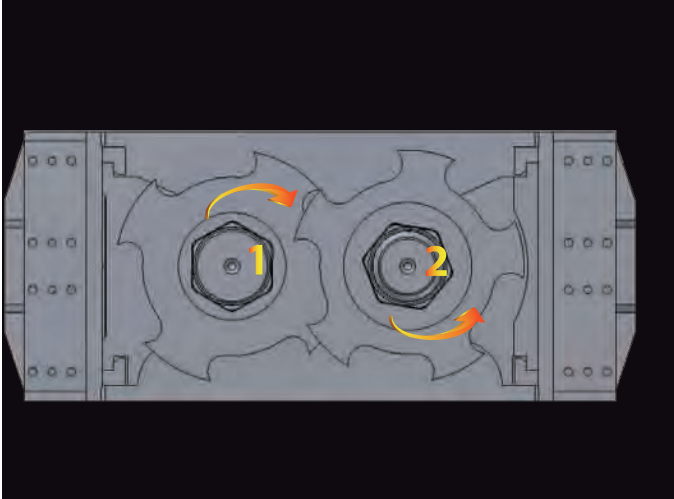
TECHNICAL CHARACTERISTICS

MODEL	CUTTING CHAMBER DIMENSIONS (MM.)	POWER UP TO
FX5000	1500x2000	4x90 kW
FX8000	1850x2500	4x110 kW
FX8000S	1850x2500	4x200 kW

CRUSHERS



Crushers are machines with special blades designed to prepare materials for subsequent manual sorting or automatic selection thanks to the operational process that opens materials without cutting them.



Each shaft is fitted with its own gearbox and motor, and has a different rotation speed. High torque and low rpm are used for more resistant materials. Wear-proof steel blades can be configured in thickness and the number of teeth.



These crushers can be used for WEEE treatment or as an initial system for materials pressed in bales, without being cut. They can treat a high input of materials..



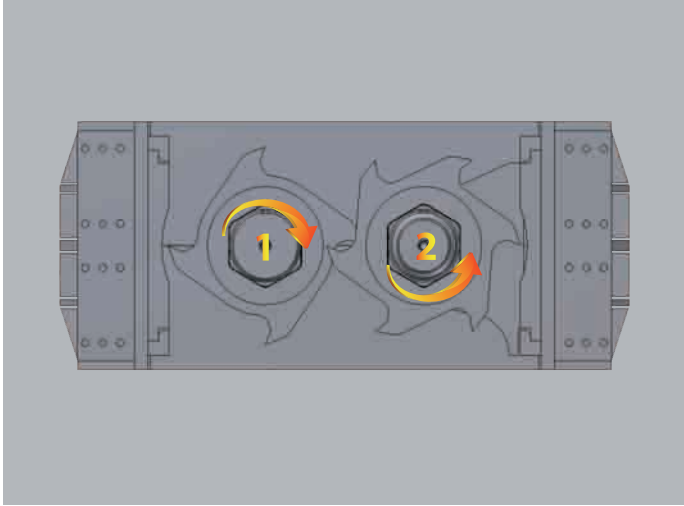
TECHNICAL CHARACTERISTICS

MODEL	CUTTING CHAMBER DIMENSIONS (MM.)	POWER UP TO
LC1300	960x1260	45 kW
LC1500	1100x1460	52 kW
LC1800	1100x1760	77 kW
LC2000	1300x1960	77 kW

BAG OPENERS



Bag openers are machines fitted with special blades designed to prepare waste for subsequent manual sorting or automatic selection. Bags are cut and opened and their content is put on a conveyor belt for sorting.



Each shaft is fitted with its own gearbox and motor, and has a different rotation speed.

High torque and low rpm are used for more resistant materials.

Wear-proof steel blades can be configured in terms of thickness and the number of teeth.



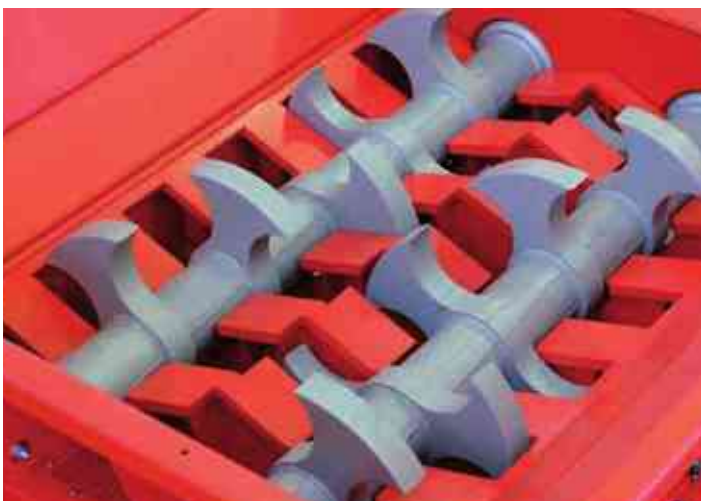
Bag openers can be used specifically for processing mixed waste, which is treated without being cut



TECHNICAL CHARACTERISTICS

MODEL	CUTTING CHAMBER DIMENSIONS (MM.)	POWER UP TO
LS1300	960x1260	45 kW
LS1500	1100x1460	52 kW
LS1800	1100x1760	77 kW
LS2000	1300x1960	77 kW

MULTI-CRUSHERS



Multi-crushers are designed for use in plants that treat municipal solid waste, bulky waste, industrial waste, packaged waste and loose waste. The work cycle of the multi-crusher shafts is PLC controlled, allowing the treatment of large quantities of materials, thus avoiding machine downtime due to overloading or bridging in the work chamber.

FR



The FR multi-crusher is designed with a sieving/cutting table to determine the output size of materials. It is separate from the frame of the machine, which makes it easy to replace, and can be produced in various configurations depending on customer needs.



Details of the sieving/cutting table (Counter-blades) are positioned on both sides of the blades to uniform wear use on both sides, allowing blade life to be doubled. The blades are made of wear-proof material and can be reconstructed for a machine with low maintenance costs.



TECHNICAL CHARACTERISTICS

MODEL	CUTTING CHAMBER DIMENSIONS (MM.)	POWER UP TO
FR1000	904x968	30 kW
FR1300	904x1208	45 kW
FR1800	1045x1690	160 kW
FR2000	1245x1890	250 kW
FR2500	1245x2500	250 kW
FR5000	1695x2500	315 kW

FOUR-SHAFT SHREDDERS



Forrec's four-shaft shredders are efficient flexible machines designed for the special treatment of materials. The same reliability and power of double-shaft shredders is combined with controlled output size of materials, so they can also be used for very intensive uses.



Four-shaft shredders are designed to increase productivity when treating solid waste, electronic waste, refrigerators, wires, oil filters, paper, aluminium, metal scraps and any materials for which power, reliability and controlled output size of materials are required.



They are fitted with a unique system of interchangeable shafts and sieves with wear-proof treatments to optimize running costs and maintenance operations. Selection sieves ensure the consistent and controlled size of shredded materials.



TECHNICAL CHARACTERISTICS

MODEL	CUTTING CHAMBER DIMENSIONS (MM.)	POWER UP TO
TQ1000	865x1000	74 kW
TQ1300	1260x1320	134 kW
TQ1800	1700x1760	260 kW

SINGLE-SHAFT SHREDDERS



EK 1900



EK 1300

The single shaft shredder in the AE and EK range are ideal for treating light materials such as plastic, wood and wires, as well as for applications that require low productivity. The unique system of interchangeable blades ensures quick maintenance operations and reduced downtime.

AE - SR - EK



SR 1500

Thanks to the special solutions used, AE and EK shredders allow low energy consumption with high performance and reduced dimensions.

The use of a sieve ensures an output of materials in uniform sizes.



EK 1300

Single-rotor technology is used with a simple small machine, designed to obtain a calibrated output, fitted with a sieve that determines the size of material output.



EK 1300

TECHNICAL CHARACTERISTICS

MODEL	ROTOR DIMENSIONS (MM.)	POWER UP TO
AE600	215x625	15 kW
AE600R	215x625	30 kW
SR1000	300x1000	22 kW
SR1500	300x1500	37 kW
EK1300	450x1250	75 kW
EK1900	450x1900	90 kW

ENHANCED SINGLE-SHAFT SHREDDERS



Forrec's enhanced single-shaft shredders meet high work standards and ensure high productivity especially in treating MSW, plastic, wood, paper and cardboard (for the XM series), electric wires, rubber and materials with high specific weight (for the MR series).

XM - MR



The MR series feature robustness and reliability.

The machine is included in tyre treatment lines as a secondary shredder with a 25 mm sieve.

The special shape of the blades allows the rubber to be entirely removed from the iron filament.



The XM series has optimum flexibility, enabling the treatment of different types of material of various density, making it ideal in the most difficult work conditions.



TECHNICAL CHARACTERISTICS

MODEL	ROTOR DIMENSIONS (MM.)	POWER UP TO
X2000M	600x2000	200 kW
X2500M	600x2500	200 kW
X3000M	600x3000	250 kW
MR1500	600x1500	200 kW
MR2000	600x2000	250 kW

HYDRAULIC SINGLE-SHAFT GRINDERS



XH series: A hydraulic motorized single-shaft shredder for treating light metals (ferrous and non-ferrous), able to meet high demands in terms of work and productivity.



The shredder, with enhanced frame and performance, is fitted with larger interchangeable blades than other models to incorporate a unique buffer bearing that reduces breakage, guaranteeing quick maintenance and a significant increase in productivity.



A hydraulic motorized machine with low rpm. This single-shaft machine has a parallel-axis geared motor and a programmable automatic reverse system. Its blades can be configured according to thickness and the number of teeth.



TECHNICAL CHARACTERISTICS

MODEL	ROTOR DIMENSIONS (MM.)	POWER UP TO
X2000H	600x2000	320 kW
X2500H	600x2500	320 kW
X3000H	600x3000	400 kW

REFINERS



With a robust frame and high performance, these enhanced refiners combine the traditional method of shredding with a technology based on interchangeable blades fitted with a special buffer bearing that provides protection against breakage.

XRF



The XRF refiner has a rotor with a larger diameter (800 mm) and a greater surface area for grinding and, consequently, an increased treatment capacity.



The special ergonomic project guarantees easy access and therefore a reduction in maintenance times, also thanks to a simplified fixing system for the sieves. Several important structural features ensure that the rotor is hermetically sealed.



TECHNICAL CHARACTERISTICS

MODEL	ROTOR DIMENSIONS (MM.)	POWER UP TO
X2080RF	800x2000	320 kW
X2580RF	800x2500	320 kW
X3080RF	800x3000	320 kW

GRANULATORS



Rotary-blade granulators are designed to grind and reduce different scraps of plastic materials produced in the injection moulding, extrusion, blow-moulding, thermo-forming and granulating rubber sectors.

FML - FMS



In addition, the special types of steel used for components make them ideal for treating the most difficult materials. The special cutting system ensures energy saving and a significant reduction in the dust released during the waste treatment process. Maximum performance, energy saving and easy management.



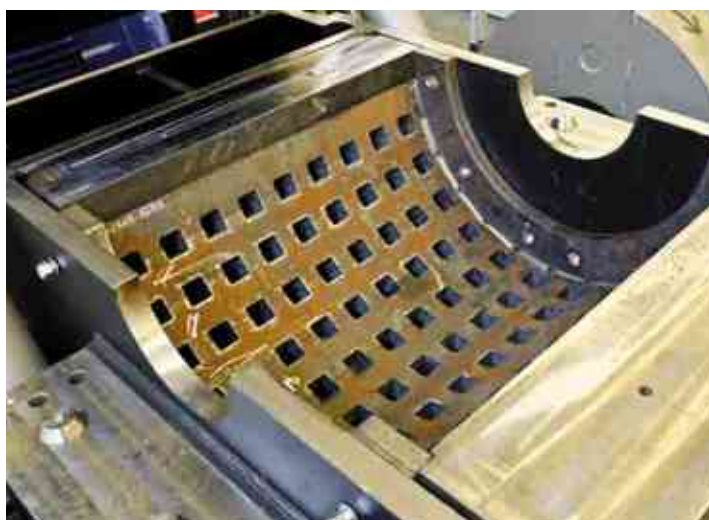
The FMS granulator by Forrec is designed to grind scraps left over from the injection-moulding and blow-moulding process, extruded parts (pipes, profiles, sheets, small fragments), loose film and reels of film, and blocks. These special grinding systems are also used for the treatment of refrigerators, electric wires and tyres.



TECHNICAL CHARACTERISTICS

MODEL	ROTOR DIMENSIONS (MM.)	POWER UP TO
FML 60-45	500X600	37 kW
FML 90-45	500X900	45 kW
FML 120-45	500X1200	45 kW
FMS 100-70	700X1000	90 kW
FMS 150-70	700X1500	110 kW
FMS 200-70	700X2000	200 kW

HAMMERS MILLS



Hammers mills allow grinding of various types of materials and the transformation of treated scraps into smaller fragments. Forrec's hammers mill mod. Z15/1000 stands out for its robust frame and quick access to parts that are subject to wear and tear.

Z14 - Z15



Used for the treatment of ferrous and non-ferrous metals and electric motors, the configuration of hammers can be customised according to type, thickness, number and special damping pads, for reducing stress, positioned on the support frame of the machine.



Hydraulic opening system for the upper chamber.
 Hydraulic lifting of the rotor by raising the upper crushing shell.
 Hydraulic opening system for the door that discharges foreign bodies.
 Section sieve locked by the upper chamber.
 Adjustable mobile crushing shell.



TECHNICAL CHARACTERISTICS

MODEL	ROTOR DIMENSIONS (MM.)	POWER UP TO
Z14-700	600x690	132 kW
Z15-1000	900x1018	250 kW

SIZE SIEVING SYSTEMS



Disc sieves are used for separating (according to size) pre-shredded materials such as: municipal solid waste, industrial waste and tyres. All the parts of the sieve in contact with waste are made of anti-wear steel and tempered to reduce maintenance costs.

DS - TDS



Disc sieves comprise a set of steel shafts, to which polygonal discs of different diameter and width are clamped depending on the materials to be treated, the size and the capacity requested. The FORREC sieve has been designed to prevent long materials from twisting around the structure of shafts.



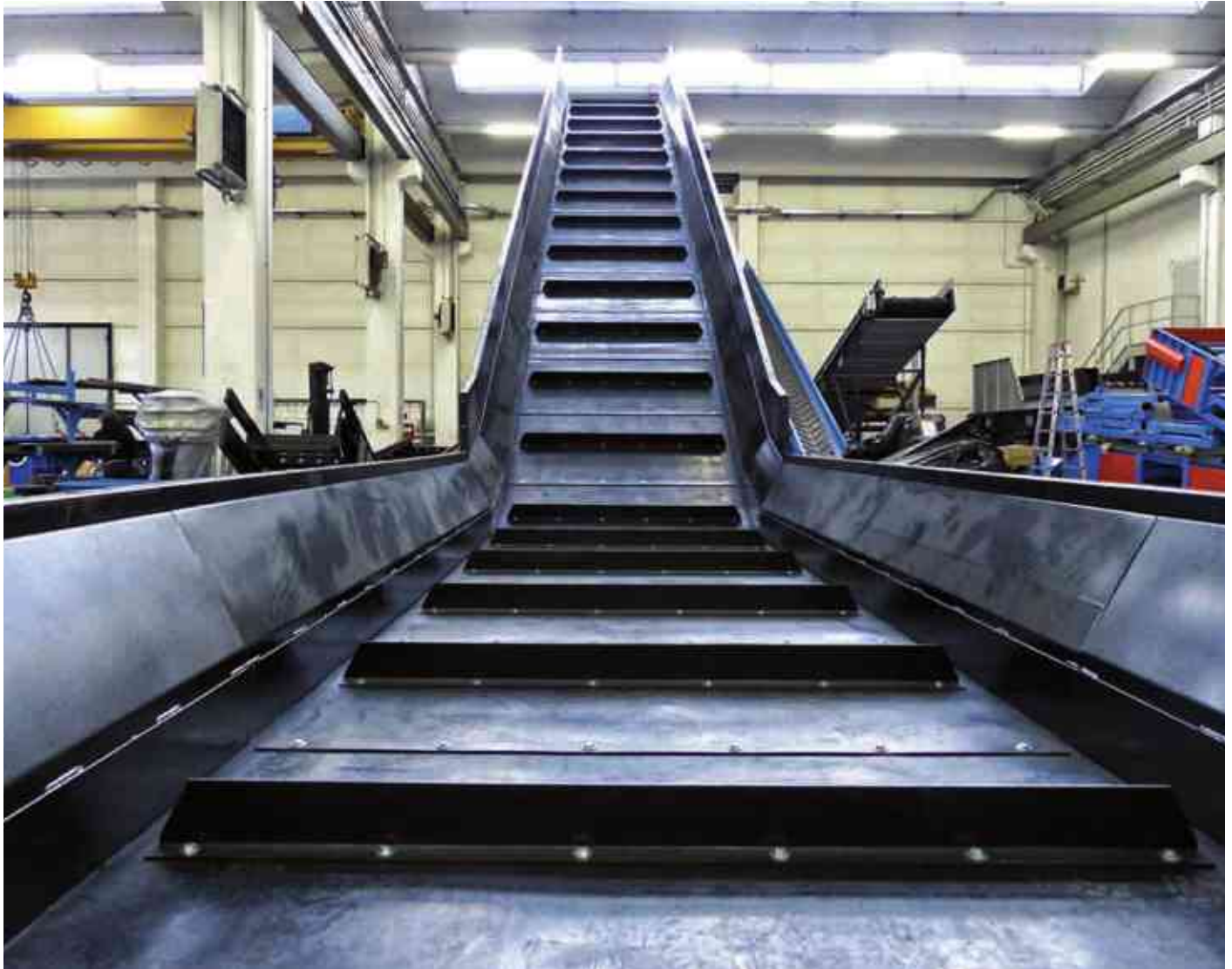
Forrec's daisy sieve is the ideal tool for separating rubber from tyres according to size. The machine is positioned downstream of the shredding and roughing phase to prepare the product for grinding, the next step in the treatment.



TECHNICAL CHARACTERISTICS

MODEL	SIEVING AREA (MM.)	POWER UP TO
DS3000/1200	3000x1200	7,5 kW
DS4000/1200	4000x1200	7,5 kW
DS5000/1200	5000x1200	15 kW
DS6000/1200	6000x1200	15 kW
DS3000/1600	3000x1600	7,5 kW
DS4000/1600	4000x1600	7,5 kW
DS5000/1600	5000x1600	15 kW
DS6000/1600	6000x1600	15 kW
TDS4000/1200	4000x1200	7,5 kW

CONVEYING SYSTEMS



A wide range of conveyor belts and screw conveyors ideal for transporting all the materials treated, from loading to unloading. Slat conveyor belts made of electro-welded tubular metal with cross frames are accompanied by a gear-motor coupled, with a flange, to the conveyor drive shaft, chain, reinforced sides and metallic or rubber-coated slats.

NTM - NTMG - NG - SC - NTMS



The rubber and/or PVC conveyor belt with loading flights comes with supports, rollers, anti-skid profiles, tow head with adequately powered gear-motor, idle head, belt tension frame, side panels with eventual hoppers in the initial section, and feet. In the lower part, the conveyor belt is supported by rollers or sets of three plastic wheels, kept in place by through-shafts.



Screw conveyors, systems for transporting materials of reduced dimensions in small fragments and usually positioned downstream of single-shaft grinders, ensure materials are conveyed for their subsequent treatment or for unloading in big-bags. Made of reinforced sheet metal, they are ideal for transporting light materials.



TECHNICAL CHARACTERISTICS

MODEL	DETAILS
NG	RUBBER BELT
NTM	RUBBER-COATED METALLIC SLAT CONVEYOR BELT
NTMG	OVERLAPPING METALLIC SLAT CONVEYOR BELT
NTMS	METALLIC SLAT CONVEYOR BELT
SC	SCREW CONVEYOR

CASE-HISTORY

ALUMINIUM



HAMMER MILLS Z15-1000



HYDRAULIC SINGLE-SHAFT SHREDDER X3000HH

WIRES-MOTORS



FOUR-SHAFT SHREDDERS TQ1800H



COMPLETE INSTALLATION

METAL SCRAPS



HAMMER MILLS Z14-700



ROTARY SHEARING MACHINES FX5000

REFRIGERATORS



MOBILE INSTALLATION



WHITE GOODS



CASE-HISTORY

PLASTIC



TYRES



WEEE



HOSPITAL WASTE



FOUR-SHAFT SHREDDER TQ1800



SINGLE-SHAFT SHREDDER EK1900

MUNICIPAL SOLID WASTE



BAG OPENER LS1500



BAG OPENER LS2000

TONER



BAG OPENER LS1500



FOUR-SHAFT SHREDDER TQ1300

SERVICES



10

assistance / assembly
teams



6

call centers and
remote assistance



NEW
mobile app

RE
AC
TI
VE

Ready to solve



6.000sqm
unique
headquarter



1.500sqm
ready spare parts
warehouse and stock

WORLDWIDE



8 sales
area
manager



16 dealers



40 agents



FOR REC SRL
Viale Dell'Artigianato, 24
35010 Santa Giustina in Colle
Padova - Italia
T: +39 049 0990015
F: +39 049 0990490
forrec.eu



A STEP
FORWARD
WITH YOU

