

When it comes to shredding power
M&J Eta[®]PreShred serie



Our values are
based on what
we can offer our
customers



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Metso develops, produces and sells the well-known M&J Eta®PreShred units. More than 500 installations worldwide and our continued focus on R&D, gives Metso a position among one of the world's leading companies within shredding technology.

Our position also stems from our customer focus. To supply you and your business with the best shredder solution, we always go out of our way to understand your current situation, but also your future needs.

Our customers are fundamental to our business. Therefore we value the dialogue with our customers, which make it possible for us to support you in finding the right shredder for your installation – whether it needs to be a standard or customized solution. We have also learned that customer visits provide the best way of getting to know your specific demands and of enabling us to help you benefit from our shredding know-how.

Metso's know-how within primary shredding technology is second to none, and one of our most important tasks is transforming this know-how into designing the best solutions for our customers.



Obvious reasons for

more effective shredding

Profitability in the waste processing industry

Shredding is the key to efficiency and reliability in modern waste treatment processes – and to the profitability of companies in the waste processing industry.

In many cases, it is far from easy to reduce the size and volume of many different materials – especially when reliability and consistent productivity are essential.

For many applications, the obvious choice for this process is an M&JEta® PreShred unit, which boasts advanced technology, robust construction, versatile capabilities and low wear costs.

Reliable, energy-efficient shredding capabilities make it possible to manage the size and consistency of both inputs and outputs for a wide range of waste treatments. Efficient shredding equipment makes it possible to break down and sort virtually all kinds of material for reuse or recycling.

Shredding installations play a key role in helping turn waste into energy in everything from incinerator plants to biomass processing facilities.

These capabilities make Metso shredding technologies a key part of forward-thinking waste recycling and waste-to-energy processes, as well as being vital for managing the size and consistency of many industrial inputs and outputs.

Why shred your waste?

- Occupies less space
- Cuts transportation costs
- Produces a suitable energy source
- Enables sorting and recycling



Waste processing designed to meet your needs

Versatility and reliability

Incoming waste flows are normally highly mixed and with widely varying characteristics that can change considerably over time. This places heavy demands on shredding equipment.

- It is important to ensure the best possible balance between capacity, durability and life cycle costs.
- Well-proven robustness, versatility and reliability make M&J Eta®PreShred serie the obvious choice in numerous kinds of waste processing installations throughout the world.

Thanks to their versatility, M&J Eta®Pre-Shred unit can be used in almost any kind of waste treatment plant, thus playing a significant role in many different industries.

Waste-to-energy processing

There is increasing worldwide focus on recovering as much energy as possible from the vast volumes of waste that our society produces:

- Incineration is the most common method.
- It is essential that waste inputs are shredded, and in a consistent flow.

In addition, numerous technologies are now available for producing fuels and energy from

waste while avoiding the need for direct combustion.

- Pre-shredding plays an important role in both energy efficiency and cost reduction.

Biomass processing

Companies engaged in the industrial processing of biomass are increasingly adopting shredder technology to ensure that inputs have consistent specifications in order to boost and maintain the operating efficiency of the plant.

This application is currently very much in focus, because many different kinds of biomass are considered environmental friendly when recycled. Using processed biomass for energy production reduces our overall CO₂ footprint.

Shredding in industry

Modern waste processes often involve reducing the size and volume of difficult-to-handle materials. Here, shredding is one of the most effective ways of doing so reliably and with low operating costs

- Shredding operations can play a key role in the efficiency and, not least, the profitability of many modern industrial processes.
- The level of complexity is a major technical and engineering challenge.

Benefits from using M&J Eta®-PreShredder in waste processing:

- Non-sensitive to impurities
- Slow turning with low dust and noise emissions
- Low wear costs
- High-capacity shredder – also in mixed and changing wastes

In waste-to-energy processing:

- Versatility enables different waste types to be processed
- Low wear costs
- High availability factor
- Slow turning with low dust and noise emissions
- Worldwide experience from different applications
- Non-sensitive to impurities in the waste stream

In biomass processing:

- Non-sensitive to impurities in the input material
- Reliable technology for 24 hour operations
- Specially designed knives for maximum capacity and minimum power consumption
- Extensive experience of different straw types and moisture content – installations in Europe and China

In industrial shredding:

- Shredder solutions fully implementable in complete lines
- Pre-shredding with continuity in flow and size enables successful and efficient mechanical sorting after shredding
- Low dust and noise emissions facilitates maintenance and improves safety
- Different knife designs to accommodate various input materials



All the main functions are monitored and PLC-controlled with intelligent software that automatically adapts the operation profiles to match specific types of input flows.

Convincing results through research, development and dialogue

Patented technology

M&J Eta®PreShred feature patented cutting table and rotating knife design that set them in a class of their own. The underlying principle is protected by worldwide patents, as are several specific design features.

Exceptionally durable

M&J Eta®PreShred have a large shredding zone that facilitates dealing with over-size items and prevents bulky material bridging. Openings between the counter knives ensure that sand and gravel pass through easily without causing unnecessary wear. All knives are made of Hardox 500 wear resistant steel.

Hardox steel is exceptionally resistant to wear and tear, ensuring the longest possible service life.

Self cleaning

A special system ensures that M&J Eta®PreShred automatically reverse their rotational direction at pre-programmed intervals. This function loosens any material on the shaft and “cleans” the cutting table – preventing unnecessary wear.

Power Pack

The rotation shafts on M&J Eta®PreShred are powered by specially configured hydrostatic drives. These drives are fed by robust hydraulic pumps.

The result is a very high shredding torque – even at low rotational speeds – and a high degree of reliability, even when processing heavy loads.

Modular design

Each and every M&J Eta®PreShred can be customized and extended to meet specific customer requirements.

Intelligently controlled

Advanced control electronics facilitate linking the shredder to centralized surveillance facilities and control rooms.



M&J Eta®PreShred can be remotely controlled or linked to electronic control systems via industry-standard databases.



The knives are solidly welded onto the shafts; there are no bolts, bearings or adjustable parts anywhere in the cutting area, reducing servicing requirements.



We make sure

you have the right solution

At your service

In most cases, the best shredder investment is the time spent exploring the various options and analyzing your requirements in detail, and how best to address them. Therefore, we put all our Metso know-how at your disposal to help you decide how to tackle your needs – both now and in future.

Shredding focused on improving your benchmark

To meet budgets and schedules and to deliver what your facility has contracted to provide, we design and configure M&J Eta®PreShred equipment so each model focuses on improving your benchmarks for:

- Processing reliability uptime
- Here-and-now operating costs
- Equipment life cycle costs
- Energy consumption
- Service and maintenance requirements
- Health and safety compliance.

World-wide service

Access to practical experience with quick and efficient implementation, training your shredder operators and 24/7 on-call service makes all the difference when deciding on the best shredder technology for your installation. This is why we go out of our way to be available before, during and after you purchase an M&J Eta®PreShred.

We are proud to put our service team entirely at your disposal, and to give you the benefits of the service agreements which we have designed based on the experience we have from installing more than 500 shredders worldwide.

Examples of Metso service agreements for M&J Eta®PreShred

	Premium Service Agreement	Extra Service Agreement	Regular Service Agreement
Regular service intervals every 500 operating hours; includes filters, grease, gear oil, hydraulic oil, oil samples, labour, travel and accommodation.	Orange bar	Green bar	Dark green bar
Regular hard surface welding every 500 hours on rotating shafts and stator knives in the cutting table; includes welding materials.	Orange bar	Green bar	
All repair work including all spare and wear parts needed for 10,000 hours of operation (including replacement cutting table).	Orange bar		



The technology behind

the shredding power

General characteristics:

- Stationary and mobile models
- Power supply from electro-hydraulic or diesel-hydraulic Power Packs
- Mobile shredders are equipped with a compact power unit – designed and built by Metso
- Individually adjusted grain sizes

M&J Eta®PreShred 1000 range

is the smallest shredder for limited quantities and is designed to avoid bridging. Two powerful twin shafts run asynchronously – shredding in both directions to keep the material constantly moving.

The M&J Eta®PreShred 1000 stationary

makes it easy to cater for individual requirements regarding chassis heights and conveyor lengths. This model is available with different electric motors to match the material and the required capacity. This compact electrostatic hydraulic unit can be mounted in any position.

The M&J Eta®PreShred 1000 mobile

is ideal on sites with no electric power, or when it is necessary to move the shredder around. The mobile shredder is available for hook-lift or as a semi-trailer, trailer or with hydraulic legs or mounted on crawlers. Power is supplied by a 159 KW/213 HP Perkins diesel motor.

Exceptionally versatile – ideal for a wide range of different, changing needs.

The M&J Eta®PreShred 2000

is a stationary single-shaft shredder that features PLC-controlled automatic reversal. Shredding in both directions prevents material wrapping, eliminates stoppages and prevents breakdowns.

This is the ideal choice for large capacities. Equipped with patented rotating knives – either HD or HP

HD/Heavy Duty: All-round knives designed for difficult materials – carpets, mattresses as well as wood and normal household waste.

HP /High Performance: For household waste, wood construction debris and organic waste.

M&J Eta®PreShred 4000 range

is our most versatile model. It is designed to deal with a wide range of input materials – in terms of both size and composition – including unexpected and highly awkward items. A very large cutting table and the twin-shaft design handle the shredding without bridging problems and with a consistent output flow. It has a double hydrostatic drive system powered by motors from 264 kW up to 400 kW, configured in accordance with input material and the required output.

The M&J Eta®PreShred 4000 stationary

can work with almost any type of waste, but is especially suitable for recycling plants and facilities producing refuse-derived fuel (RDF) as well as for large-scale processing plants for hazardous waste. The two shafts run asynchronously in both directions, powered by a double hydrostatic transmission.

The M&J Eta®PreShred 4000 mobile

is powered by a 530 HP Mercedes diesel engine and is equipped with either a standard hydraulic system or the special high-speed HDC version. It is available in semi-trailer, trailer and crawler mounted versions and with hydraulic legs for semi-static use where no electricity is available.

M&J Eta®PreShred 6000 range

is one of the largest stationary shredders in the world. It is equipped with two 4-metre-long shredding shafts and features a powerful electro-hydraulic power unit. These features make this top-size unit ideal for unusually bulky or very heavy inputs and large volumes, e.g. large bales of paper, cardboard and plastic, and rolls used in the paper industry. “We can deliver the Eta®PreShred 6000 unit both as a mobile or stationary shredder, please contact us, for further information about the mobile version.”



Overview of M&J Eta®PreShred series

stationary and mobile shredders

	M&J Eta®PreShred 1000 Stadionary	M&J Eta®PreShred 2000 Stadionary	M&J Eta®PreShred 4000 Stadionary
Specification			
Overall dimension std. (L × W × H)	9000 × 2100 × 3000 mm	9700 × 2300 × 3350 mm	9700 × 2300 × 3500
Weight in total	13.2 - 16 ton	14.3 - 16.4 ton	20.5 - 23.5 ton
Standard colour	RAL 7011 & RAL 9002	RAL 7011 & RAL 9002	RAL 7011 & RAL 9002
Loading height (without hopper)	3000 mm	3350 mm	3500 mm
Power pack			
Overall dimension std. (L × W × H)	3000 × 2188 × 2108 mm	3375 × 2188 × 2108 mm	3375 × 2188 × 2108 mm
Electric motor (S-models) - Diesel (M-models)	2 × 55 kW / 2 × 75 kW / 2 × 110 kW	1 × 110 kW / 1 × 132 kW / 1 × 200 kW	2x132 / 2x160 / 2x200
Electric control unit	PLC	PLC	PLC
Drive principle	Double hydrostatic transmission	Hydrostatic transmission	Double hydrostatic transmission
Weight	2.3 - 3.3 ton	2.2 - 2.5 ton	3.7 - 4.2 ton
Cutting table			
Number of shafts	2 – Asynchronous drive	1	2 – Asynchronous drive
Rotating speed (standard/HDC power pack)	13-52 / 10-37 rpm	16-40 / 26-55 rpm	16–40 rpm / 26–55 rpm
Number of knives	2 × 4 / 5 / 6 / 7	1 × 6 / 8 / 9 / 10	2 × 5 / 6 / 8 / 9 / 10 / 12
Number of counter knives	2 × 8 / 10 / 12 / 14	1 × 12 / 16 / 18 / 20	2 × 10 / 12 / 16 / 18 / 20 / 24
Cutting area (L × W)	1584 × 1600 mm	2420 × 1273 mm	2420 × 2000 mm
Weight	7.9 - 8.7 ton	8.7 - 10.2 ton	12.5 - 14.9 ton
Chassis			
Standard belt conveyor (L × W)	4500 × 1200 mm	4500 × 1200 mm	4500 × 1200 mm
Discharge height	1145 mm	1145 mm	1145 mm
Discharge width	1200 mm	1200 mm	1200 mm
Weight (incl. / excl. conveyor)	2.1 / 1.1 ton	2.6 / 1.6 ton	2.8 / 1.8 ton



Proven and highly efficient design features

- All Metso shredders operate at variable speeds, and shred efficiently in both directions.
- Hydrostatic drive systems provide the ideal combination of revolutions and torque, avoiding the need for vulnerable shaft-mounted mechanical gears.
- Anti Jam System (AJS) that protects both shredding knives and power units from unnecessary damage.
- Automatic lubrication systems help minimize maintenance.
- Replaceable cutting tables ensure exceptional service life.
- All bolts, bearings and other parts that may require adjustment, servicing and cleaning are mounted away from the cutting area for easy, safe access.

And you are, of course, ensured of the all the benefits that the Metso service organization offers regardless of which M&J Eta®PreShredder you choose to install.

M&J Eta®PreShred 6000 Stadionary

M&J Eta®PreShred 1000 Mobile

M&J Eta®PreShred 4000 Mobile

M&J Eta®PreShred 6000 Mobile

11550 x 2700 x 4150 mm	Hooklift: 6480 x 2100 x 2643	9120 x 2460 x 3876 mm - semi-trailer	11410 x 2710 x 4060 mm - semi-trailer
34,3 - 39,2 ton	15,0-16,0 ton	30 - 32 ton	50,0 - 52,5
RAL 7011 & RAL 9002	RAL 7011 & RAL 9002	RAL 7011 & RAL 9002	RAL 7011 & RAL 9002
4150 mm	2408 mm	3350 mm	3580 mm
3375 x 2188 x 2108	-	-	-
2 x 200 kW / 2 x 250 kW	159 kW / 212 hp	390 kW / 530 HP	390 kW / 530 hp
PLC	PLC	PLC	PLC
Double hydrostatic transmission	Double hydrostatic transmission	Double hydrostatic transmission	Double hydrostatic transmission
4.2 - 5.7 ton	3.1 ton	5.8 - 6.5 ton	6.5 ton
2 - Asynchronous drive	2 - Asynchronous drive	2 - Asynchronous drive	2 - Asynchronous drive
11-32 rpm	13-52 / 10-37 rpm	16-40 rpm / 26-55 rpm	11-32 rpm
2 x 9 / 12 / 14 / 16	2 x 4 / 5 / 6 / 7	2 x 5 / 6 / 8 / 9 / 10 / 12	2 x 9 / 12 / 14 / 16
2 x 18 / 24 / 28 / 32	2 x 8 / 10 / 12 / 14	2 x 10 / 12 / 16 / 18 / 20 / 24	
3461 x 2400 mm	1584 x 1600 mm	2420 x 2000 mm	3461 x 2400 mm
24.5 - 27.7 ton	7.9 - 8.7 ton	12.5 - 14.9 ton	24.5 - 27.7 ton
6500 x 1200 mm	5000 x 1000 mm	4000 x 1000 mm + 6400 x 1200 mm	13100 x 1200 mm
1143 mm	2373 mm hooklift	4335 mm	4200 mm
1200 mm	1000 mm	1200 mm	1200 mm
4.5 / 3.3 ton	3 ton	8.2 ton semitrailer	12.0 ton



M&J Eta®PreShred demonstrate daily

they can handle any kind of waste

M&J Eta®PreShred handle:

- Bulky waste
- Industrial waste
- Hazardous waste
- Household waste
- Wood waste
- Construction and demolition waste (C&D)
- Biomass baled materials



For example:

- Mattresses and carpets
- Big bags
- 200-litre drums
- 1,000-litre containers
- Stumps and sleepers
- Cable reels
- Straw
- Green waste
- Paper, carton and plastics
- Paper bales

M&J Eta®PreShred is made for:

- Recycling
- Incineration
- RDF lines
- Landfills
- Cement kilns
- MBT plants
- Transfer stations
- Biomass plants

“We made the right decision in choosing an M&J Eta®PreShred,” says Executive Manager Mr Saito at Flight One, Japan.

“Choosing to install an M&J Eta®PreShred 1000 in 2010 has had a very positive impact on our production.

The shredder has greatly benefited our operations, and since the installation productivity has improved by 10%. In addition, we can shred a wider range of materials. The size of the output meets our customers’ expectations, which allows us to sell our RPF at even better prices.

Finally, the Metso service team is always ready to answer our questions and advise us regarding maintenance. The ease with which parts can be replaced is also a great benefit.

As we have a variety of shredders from several different manufacturers, it is easy for us to distinguish the good from the bad – and our new M&J Eta®PreShred is top quality.”



Our technology

– your advantage

We are ready to answer any question you may have regarding our shredding technology – and how you can benefit from it.

After many years in the waste business, we know that not two customers are alike in terms of the waste they handle or their production flow, i.e. the challenges they face are always different. This means that we need to know your specific situation before we are in a position to recommend any M&J Eta®PreShred unit. However, we have also discovered that time spent on research and dialogue in the initial phase of a project is time well invested.

It is important for us to ensure that you enjoy all the advantages offered by our technology. Thus, we need to know your exact requirements regarding shredder capacity and grain size. This information can only be learned through dialogue, and therefore we urge you to contact us as early in the process as possible.

Before making a final decision on which shredder to buy, you may like to consider some of the following issues

- Life cycle costs
- Maintenance
- Does the shredder deliver a consistent output?
- Does the shredder deliver a homogenous grain size?
- Is it possible to update the shredder with the most recent technology?
- Is it possible to design the shredder to meet your specific needs?

Metso Recycling Equipment

Our range:

Pre-Shredders
Shredders
Shredder Plants

Metal Crushers
Scrap Shears
Turnings Crushers
Briquetting Presses

Double Screw Presses
Anode Crushers
Screen Drums
Scrap Baling Presses

Waste Fine Shredders
Waste Pre Shredders

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