When it comes to
shredding power

metso
Expect results

Performance that improves
your waste processes

Our values are based on

what we can offer our customers

Metso develops, produces and sells the well-known M&J shredder. With more than 500 installations worldwide and our continued focus on R&D, we are recognised as 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.

M&J 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&J shredder, 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 shredder systems the obvious choice in numerous kinds of waste processing installations throughout the world.

Thanks to their versatility, M&J shredders 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 CO_2 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 shredders 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 maxi mum 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 shredders feature patented cutting table and rotating knife designs 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

All M&J shredders 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 shredders 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 shredders 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 shredder 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.

All M&J shredders 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 M&J shredder know-how at your disposal to help you decide how to tackle your needs – both now and in future.

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 shredder. 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.

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 shredder 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.

Examples of Metso service agreements for M&J shredders	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.	■	■	■
Regular hard surface welding every 500 hours on rotating shafts and stator knives in the cutting table; includes welding materials.	■	■	
All repair work including all spare and wear parts needed for 10,000 hours of operation (including replacement cutting table).	■		

The technology behind

the shredding power

General characteristics:

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

M&J 1000 range is the smallest shredder for limited quantities and is designed to avoid bridging. Two powerful twin shafts run asynchronously – shredding in both direction to keep the material constantly moving.

The 1000S makes it easy to cater for individual requirements regarding chassis heights and conveyor lengths. 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 1000M is ideal on sites with no electric power, or when it is necessary to move the shredder around.

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 2000S is a stationary single-shaft shredder that features PLC-controlled automatic reversal. Shredding in both directions prevents material wrapping, eliminates stoppages and prevents breakdowns.
The ideal choice for large capacities.
Equipped with patented M&J rotating knifes – 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 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 4000S 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 4000M 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 6000S 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.

Overview of M&J

stationary and mobile shredders

	M&J 1000S	M&J 2000S	M&J 4000S
Specification			
Overall dimension std. (L × W × H)	8420 x 2100 x 3000 mm	8995 x 2300 x 3350 mm	8995 x 2300 x 2108 mm
Weight in total	13.5 - 14.3 ton	14.5 - 15.9 ton	20.8 - 22.7 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)	2847 x 2078 x 2108 mm	3175 × 2078 × 2108 mm	3175 × 2078 × 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	2 × 132 kW / 2 × 200 kW
Electric control unit	PLC	PLC	PLC
Drive principle	Double hydrostatic transmission	Hydrostatic transmission	Double hydrostatic transmission
Weight	3 ton	3 ton	5.5 ton
Cutting table			
Number of shafts	2 – Asynchronous drive	1	2 – Asynchronous drive
Rotating speed (standard/HDC power pack)	25-52 / 25-37	25–40 rpm / 25–55 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	7.8 - 8.6 ton	8.8 - 10.2 ton	12.3 - 14.2 ton
Chassis			
Standard belt conveyor (L × W)	4500 × 1200 mm	4500 × 1200 mm	4500 × 1200 mm
Discharge height	1136 mm	1136 mm	1136 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 M&J 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 organisation offers regardless of which M&J shredder you choose to install.

	M&J 6000S	M&J 1000M	M&J 4000M
Specification			
Overall dimension std. (L × W × H)	11195 x 2700 x 4150 mm	10003 × 2350 × 3291 mm	9120 x 2500 x 3876 mm
Weight in total	35.2 - 38.5 ton	17.8 - 18.5 ton	30 - 32 ton
Standard colour	RAL 7011 & RAL 9002	RAL 7011 & RAL 9002	RAL 7011 & RAL 9002
Loading height (without hopper)	4150 mm	3223 mm	3356 mm
Power pack			
Overall dimension std. (L × W × H)	3175 × 2078 × 2108	–	–
Electric motor (S-models) · Diesel (M-models)	2 x 200 kW / 2 x 250 kW	159 kW / 213 HP	390 kW / 530 HP
Electric control unit	PLC	PLC	PLC
Drive principle	Double hydrostatic transmission	Double hydrostatic transmission	Double hydrostatic transmission
Weight	6 ton	3.1 ton	5.8 ton
Cutting table			
Number of shafts	2 – Asynchronous drive	2 – Asynchronous drive	2 – Asynchronous drive
Rotating speed (standard/HDC power pack)	11-32 / 14-38 rpm	25-52 / 25-37 rpm	16–40 rpm / 26–55 rpm
Number of knives	2 × 9 / 12 / 14 / 16	2 × 4 / 5 / 6 / 7	2 × 5 / 6 / 8 / 9 / 10 / 12
Number of counter knives	2 × 18 / 24 / 28 / 32	2 × 8 / 10 / 12 / 14	2 × 10 / 12 / 16 / 18 / 20 / 24
Cutting area (L × W)	3461 × 2400 mm	1584 × 1600 mm	2420 × 2000 mm
Weight	24.5 - 27.8 ton	7.8 - 8.6 ton	12.3 - 14.2 ton
Chassis			
Standard belt conveyor (L × W)	6500 × 1200 mm	5000 × 1000 mm	4000 × 1000 mm + 6400 x 1200 mm
Discharge height	1136 mm	3178 mm	4310 mm
Discharge width	1200 mm	800 mm	1200 mm
Weight (incl. / excl. conveyor)	4.5 / 3.3 ton	2.3 ton	8.2 ton

M&J shredders demonstrate daily

they can handle any kind of waste

M&J shredders 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 shredders are made for:

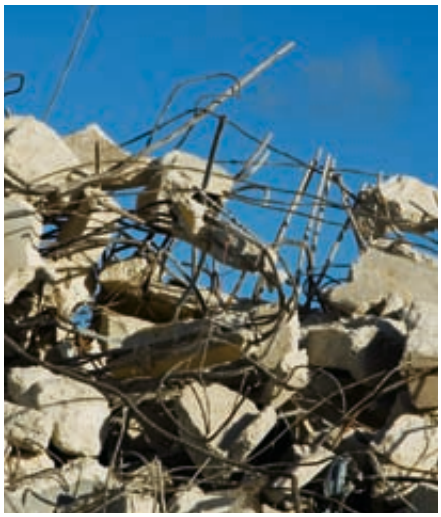
- Recycling
- Incineration
- RDF lines
- Landfills
- Cement kilns
- MBT plants
- Transfer stations
- Biomass plants

"We made the right decision in choosing an M&J shredder," says Executive Manager Mr Saito at Flight One, Japan.
"Choosing to install an M&J 1000S-7 shredder 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 shredder 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 no 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 shredders. 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?

For more information, contact your local Metso representative or contact Metso Denmark directly.

Moreover, please visit our website for more information about shredding technology.

If you would like to see an M&J shredder processing your waste, please do not hesitate to contact us to arrange a demonstration.

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