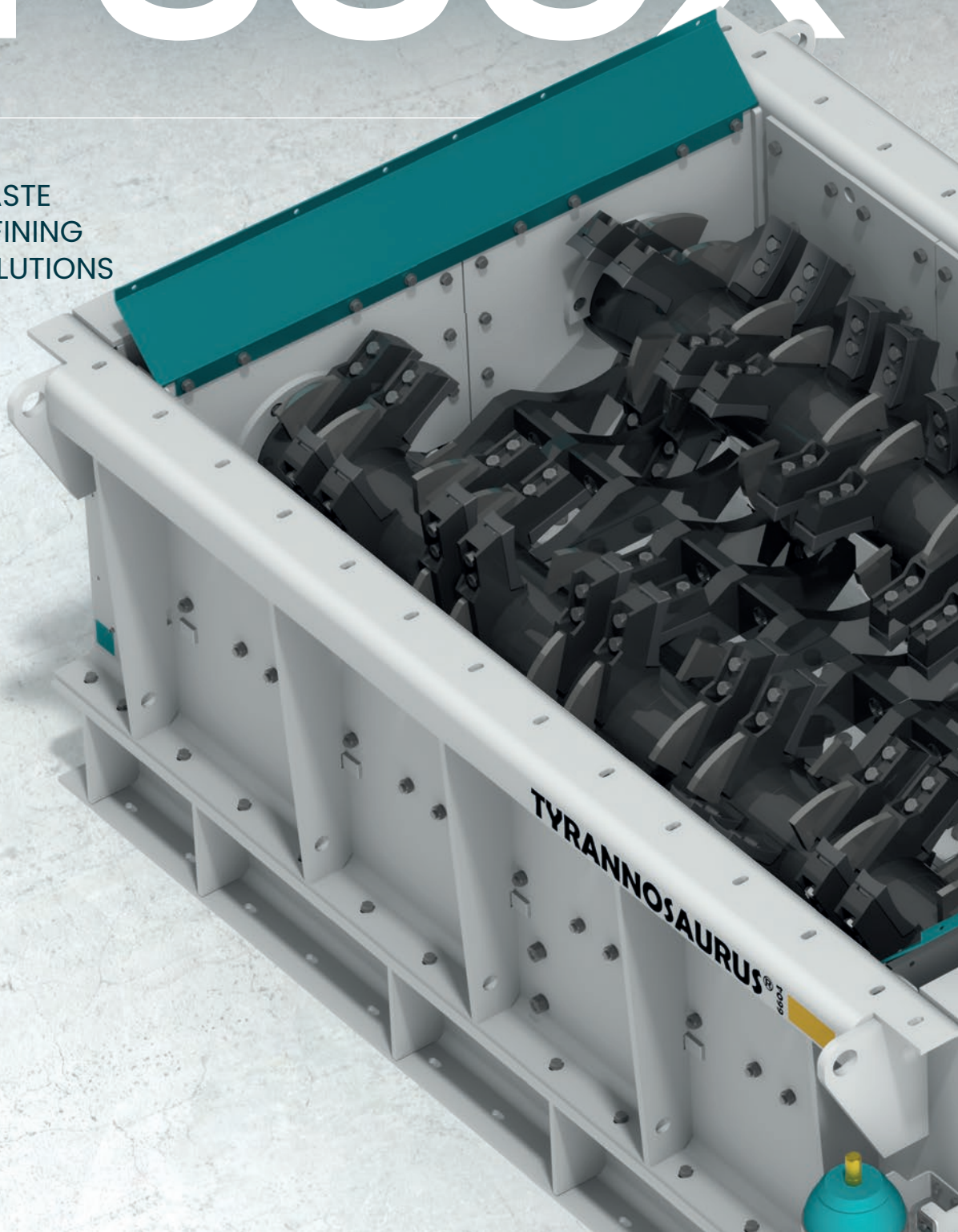
SHREDDERS & CRUSHERS

TYRANNOSAURUS® series

T660X

WASTE
REFINING
SOLUTIONS



BMH TECHNOLOGY

Over 250 plant deliveries around the world

1 Renewable

BMH DESIGNS AND BUILDS solutions for recycling, material recovery, renewable energy and recreation of raw materials.

2 Future

WE WANT TO BE an integral part of building greener and cleaner future globally.

3 Together

WE WORK TOGETHER with our customers and enable them to succeed in their businesses and environmental targets. This we do together within BMH as a team.

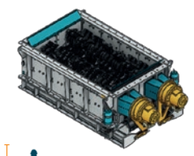
We have decades of experience in waste processing and biomass handling.

We create solutions for waste to be reborn as raw materials and renewable energy.

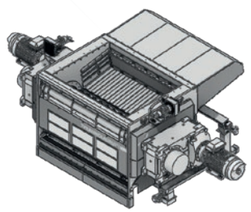
BMH TECHNOLOGY bmh.fi

TYRANNOSAURUS®
Waste Shredders & Biocrushers

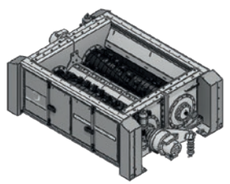
T660X series
Pre-shredder
for MSW & ICW



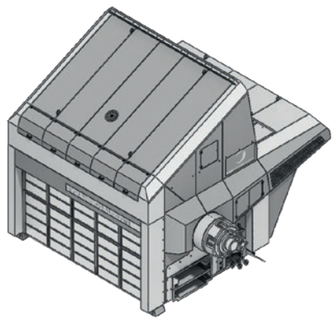
T770X series
Main shredder
for ICW & MSW



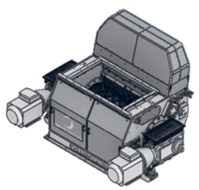
T880X series
Main shredder
for MSW & ICW



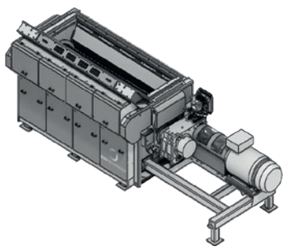
T990X series
Main shredder
for ICW & MSW



T750X series
Post-screening
over-size shredder
for ICW & MSW



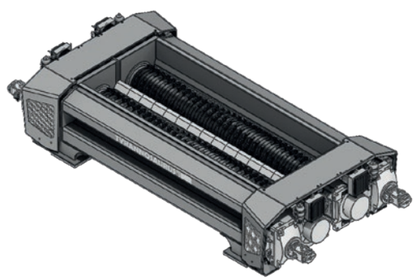
T120X series
Fine shredder
for sorted and
pretreated waste



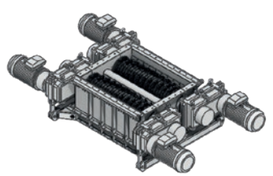
All our rotors have spiral knife arrangement. This means maximized power for each cutting event.

We have delivered more than 270 stationery shredders since 1980.

T902X series
Main crusher
for wood-based biomass



T65XX series
Post-screening
over-size crusher
for wood-based biomass



MSW = Municipal Solid Waste **ICW** = Industrial and Commercial Waste

TYRANNOSAURUS® Shredders and BioCrushers are the core of our expertise. They are the outcome of long experience in material handling combined with outstanding engineering skills. TYRANNOSAURUS® Shredders and BioCrushers represent smart technology, raw power and excellent availability with high capacity.

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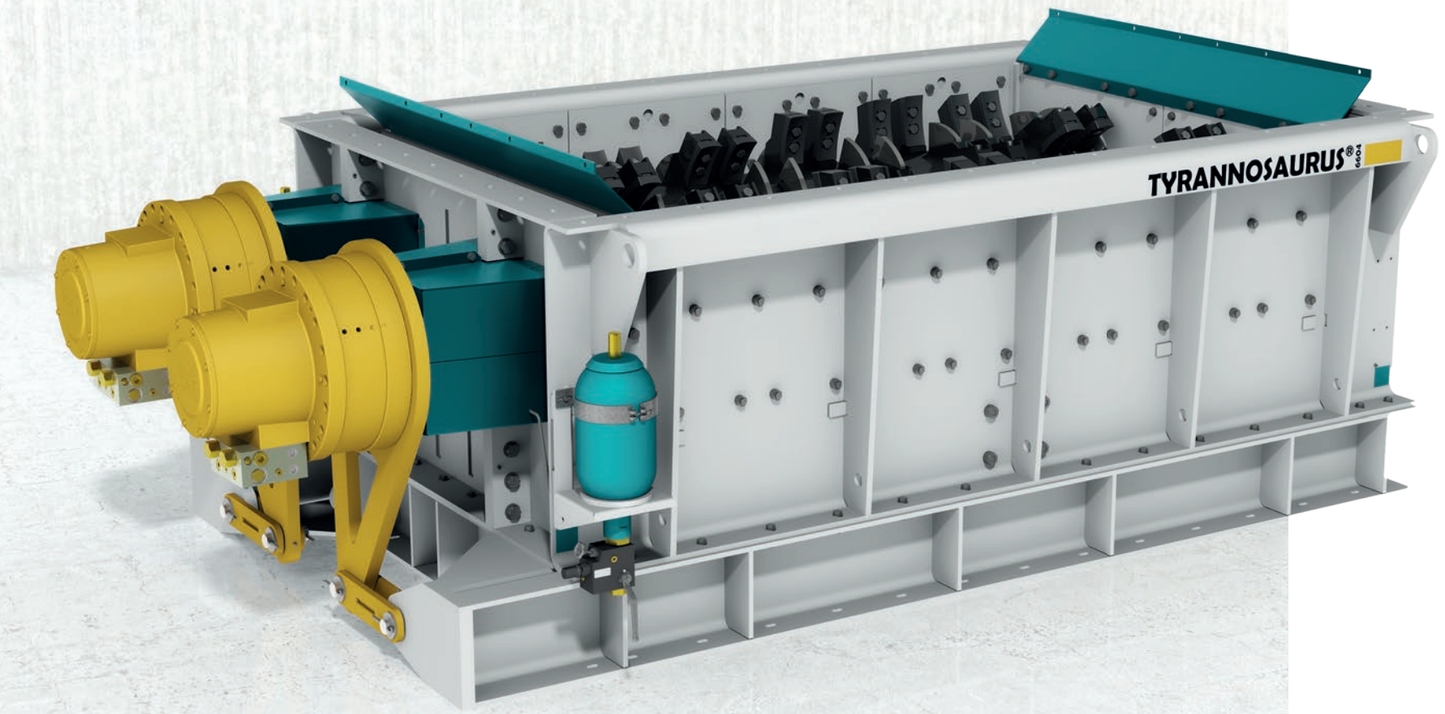


A TYRANNOSAURUS® preshredder in a waste refining process enables improving the waste separation efficiency.

T660X series

Smart and simple preshredding for MSW

T660X SERIES consists of slow-rotating two rotor pre-shredders designed for industrial scale shredding of unsorted Municipal Solid Waste. The purpose of preshedding is to prepare the waste for further processing.

1

ROBUST structure specifically designed for heavy-duty use. Works equally well for opening plastic bags before actual shredding or initial size reduction of bulky items.

2

IMPRESSIVE throughput achieved with simple yet robust construction.

3

EFFORTLESS and inexpensive to operate and service.

Advanced knife geometry guarantees maximal throughput.

4

THE T660X SERIES is typically installed in:

- An RDF preparation plant for power boilers
- An SRF preparation plant for cement kilns
- A pre-treatment plant for anaerobic digestion plants
- A pre-treatment plant for waste to chemical plants
- A grate-fired plant as a coarse shredder

T660X series represents simple performance.

We have optimized the shredder's knife geometry to achieve more efficient separation.

LET TYRANNOSAURUS® SHOW ITS TEETH.

Designed to perform

THE T660X SERIES is designed for industrial scale pre-shredding of unsorted Municipal Solid Waste. It mostly includes everyday items such as packaging materials and organic waste.

The T660X opens plastic bags, which enables more efficient separation. It also reduces the size of large particles to prevent blockages further in the process.

The shredder withstands occasional difficult materials, such as car tires, waste textile rolls etc.

T660X SERIES is ideal for opening plastic bags.

A large feeding hopper enables different loading options and shredding of large objects.

Powerful technology generates high capacity

DIRECT HYDRAULIC DRIVE and optimized shredding geometry are the main factors in generating high capacity.

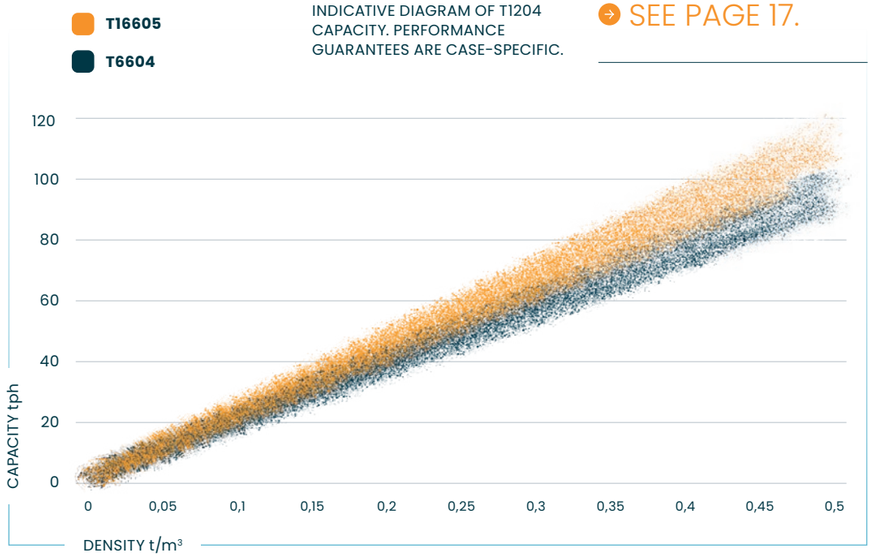
POWERFUL SHREDDING

- Direct hydraulic drive provides high torque which is required to shred heteregenous feedstock
- T660X is high-power (220–320 kW) shredder, which enables a large number of shredding events. It also maintains a power reserve in normal operation, which is occasionally needed for managing heterogeneous feedstock.

OPTIONAL INTEGRATED FEEDER INCREASES THE CAPACITY UP TO 20–30%.

SEE PAGE 17.

INDICATIVE DIAGRAM OF T1204 CAPACITY. PERFORMANCE GUARANTEES ARE CASE-SPECIFIC.

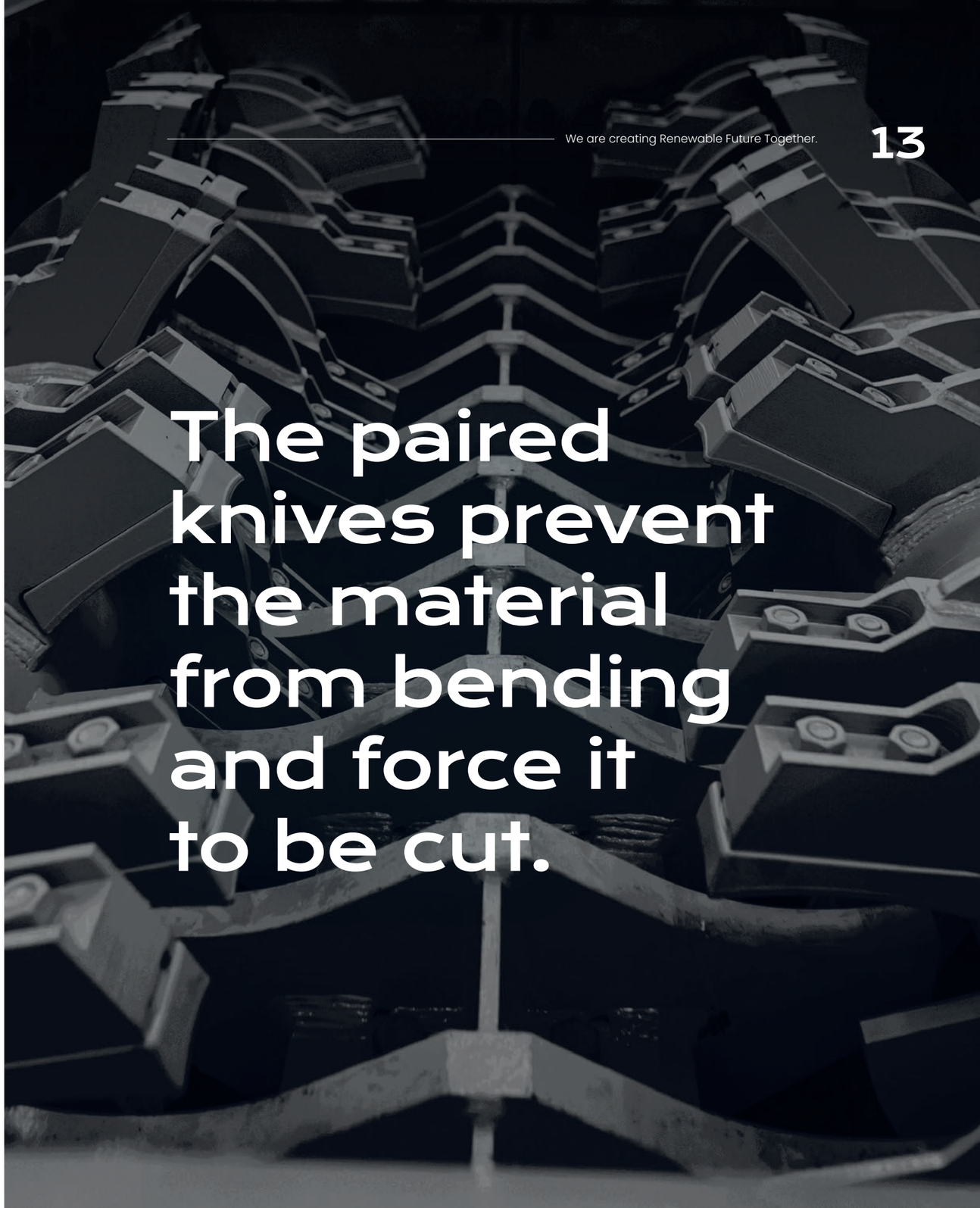


Optimized shredding geometry

THE KNIFE GEOMETRY is a key factor when it comes to generating capacity.

1. A large cutting area: two long rotors enable a large number of knives.
2. As the knives are positioned in a spiral shape, the power train is loaded evenly, which protects the drive unit.
3. Paired knives prevent the material from bending and force it to be cut.
4. The knife geometry prevents the particles from sticking to the knives. This generates real throughput as the particles don't just circle with the rotor.
5. The knife dimensions (length/width ratio) are optimized from a performance aspect.
6. Exceptionally even particle size (quality) compared to other coarse shredders.

THE KNIVES ARE POSITIONED IN A SPIRAL SHAPE, WHICH PROTECTS THE DRIVE UNIT FROM HIGH-LOAD PEAKS.



A limited number of moving parts and electronics improves reliability and reduces the need for maintenance.

Focus on uptime

THE T660X SERIES is designed for preshredding of unsorted MSW, which means it must be able to handle varying sizes and characteristics of waste. This is taken into account in design and can be seen for instance as robustness in wall thicknesses and the shredder's weight. The T660X series shredders can weigh up to a massive 13,8 tons and have walls up to 40mm of thickness.

Maintenance made simple and easy

T660X series shredders have a limited number of moving parts and electronics, which improves reliability and reduces the need for maintenance.

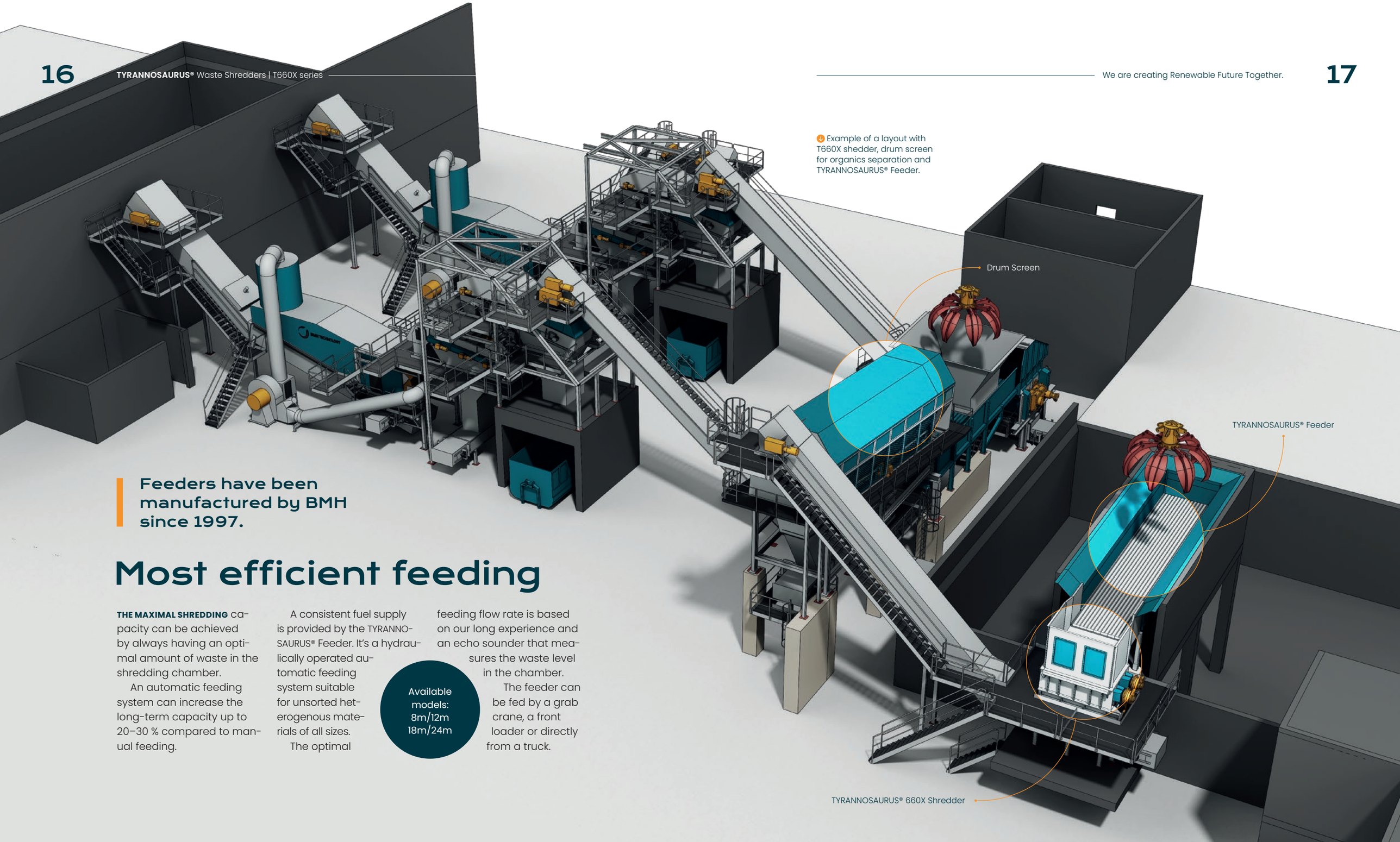
We've also optimized the knife geometry in terms of durability and ease of use:

- The shape of the knife has been carefully selected to endure heavy-duty use.
- The knives have two usable sides, which increases their lifetime.
- They are easy and fast to rotate or replace because each knife is fitted with only 2 bolts.

THE T660X SERIES SHREDDERS CAN WEIGH UP TO A MASSIVE 13,8 TONS.

Robustness and simplicity create pure performance.

Example of a layout with T660X shedder, drum screen for organics separation and TYRANNOSAURUS® Feeder.



Feeders have been manufactured by BMH since 1997.

Most efficient feeding

THE MAXIMAL SHREDDING capacity can be achieved by always having an optimal amount of waste in the shredding chamber.

An automatic feeding system can increase the long-term capacity up to 20–30 % compared to manual feeding.

A consistent fuel supply is provided by the TYRANNOSAURUS® Feeder. It's a hydraulically operated automatic feeding system suitable for unsorted heterogenous materials of all sizes.

The optimal feeding flow rate is based on our long experience and an echo sounder that measures the waste level in the chamber.

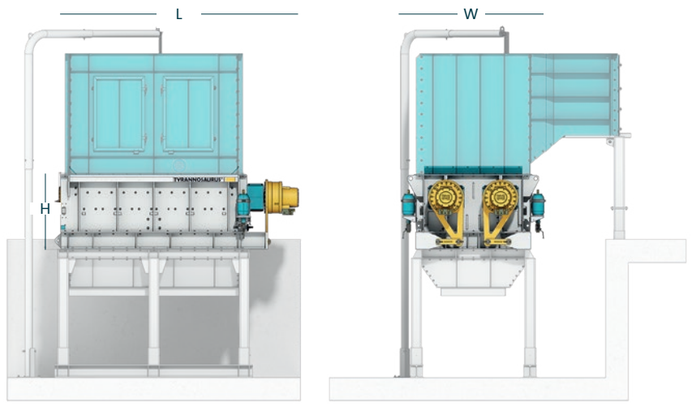
The feeder can be fed by a grab crane, a front loader or directly from a truck.

Available models:
8m/12m
18m/24m

T660X series / Technical details

MODEL	T6603	T6604	T6605
MAIN DIMENSIONS (L x W x H) [mm]	3510 x 2280 x 1300	4140 x 2280 x 1300	4770 x 2280 x 1300
WEIGHT [t]	11	12	13
DRIVE POWER [kW]	220	264	320
DRIVE SYSTEM	HYDRAULIC	HYDRAULIC	HYDRAULIC
INFEED OPENING [mm]	1990 x 1705	2620 x 1705	3250 x 1705
NUMBER OF ROTORS	2	2	2
ROTOR LENGTH [mm]	1900	2500	3200
ROTOR DIAMETER [mm]	660	660	660
ROTATION SPEED [rpm, max]	0–32	0–28	0–30
ROTOR KNIVES [pcs]	36+36	48+48	60+60
COUNTER KNIVES [pcs]	3+6	4+8	5+10
CASSETTES + SCREENS [pcs]	3+0	4+0	5+0
CAPACITY [t/h, max]*	UP TO 50	UP TO 70	UP TO 90
TYPICAL OUTPUT PARTICLE SIZE [mm]	100–300	100–300	100–300
WIDTH OF OPTIONAL FEEDER [mm]	2400	2400	3200

* THESE INDICATIVE VALUES HAVE BEEN CALCULATED USING TYPICAL WASTE PROPERTIES. PLEASE SEE GRAPH ON P. 11.



We design and build solutions for recycling, renewable energy and recreation of raw materials.

BMH TECHNOLOGY

Finnish cleantech company rooting back to 1929.

We create solutions for waste to be reborn as raw materials and renewable energy.

We offer material handling solutions for our customers who work towards carbon neutrality and a greener future. With our plant solutions, equipment and life cycle services they can reuse material previously seen merely as waste. We help our customers turn municipal, industrial, commercial and wood-based waste into raw materials and renewable energy. This answers to the needs of industrial, chemical and energy production as well as construction and infrastructure.

COMPLETE SOLUTIONS

STRONG REFERENCES

EXECUTION CAPABILITY

LOCAL SERVICE

Renewable future together.

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