



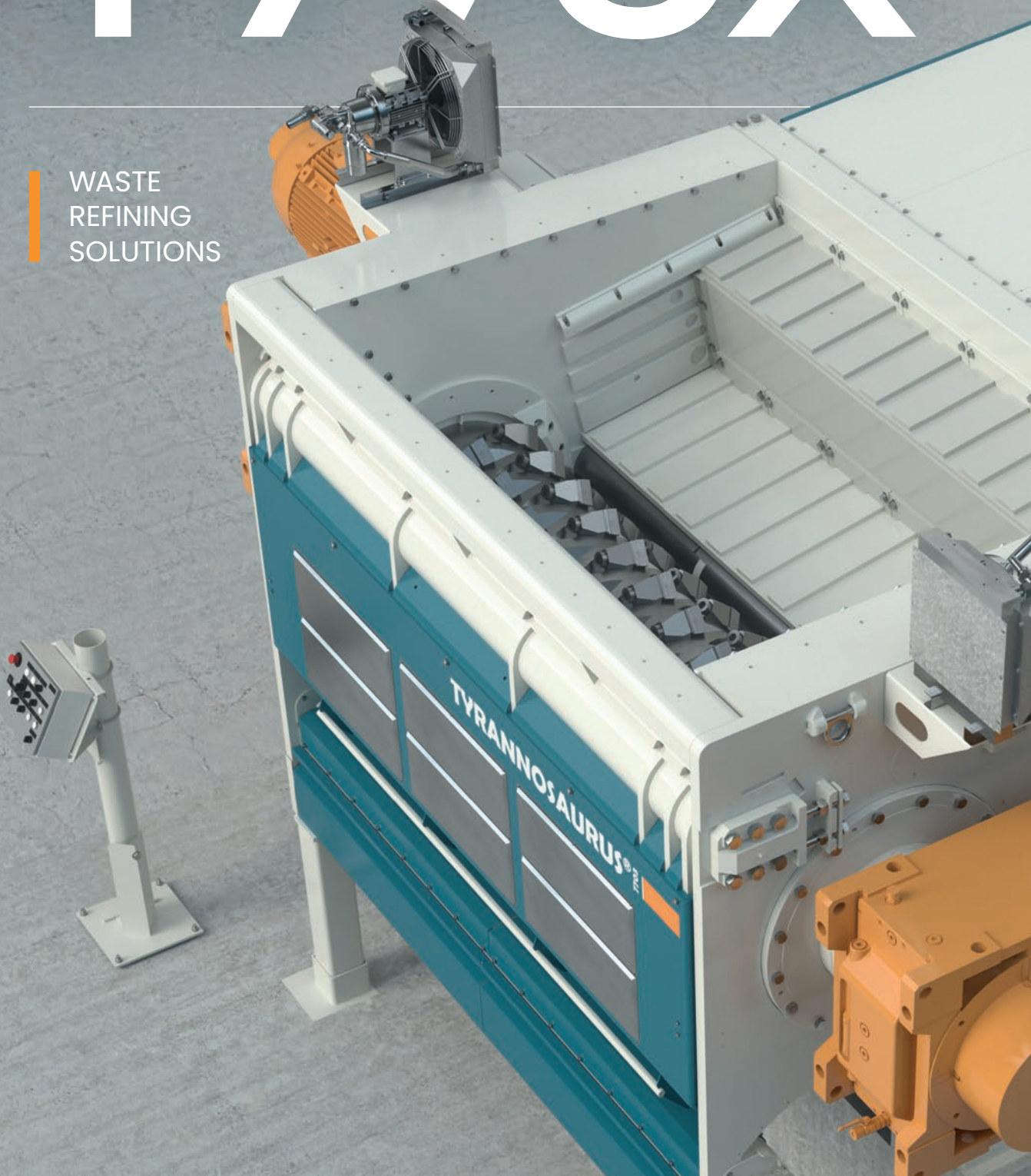
TYRANNOSAURUS® series

T770X

WASTE
REFINING
SOLUTIONS

SHREDDERS & CRUSHERS

BMH TECHNOLOGY





Over 250 plant deliveries
around the world

We are creating Renewable Future Together.

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

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



TYRANNOSAURUS® Waste Shredders & Biocrushers

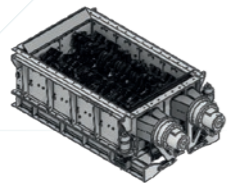
We are creating Renewable Future Together.

Waste

Biomass

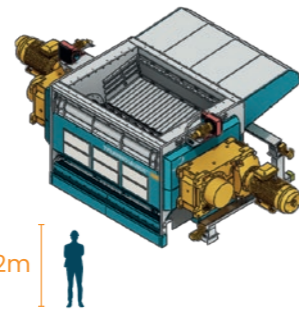
T660X series

Pre-shredder for MSW & ICW



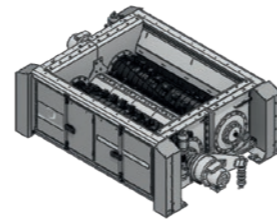
T770X series

Main shredder for ICW & MSW



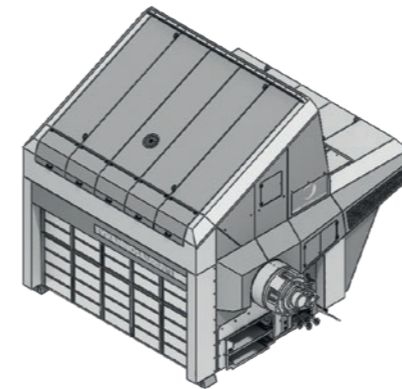
T880X series

Main shredder for MSW & ICW



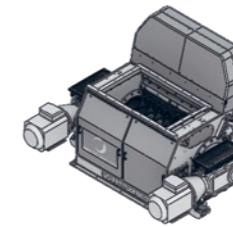
T990X series

Main shredder for ICW & MSW



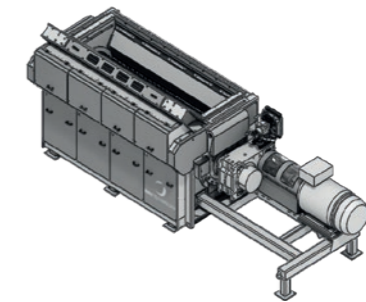
T750X series

Post-screening over-size shredder for ICW & MSW



T120X series

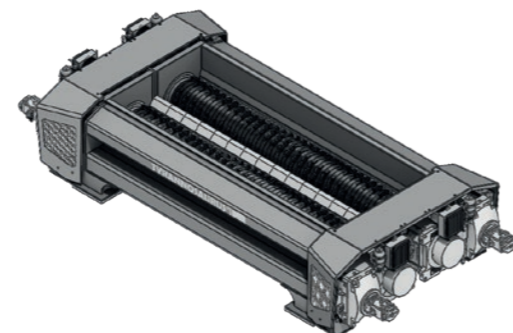
Fine shredder for sorted and pretreated waste



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

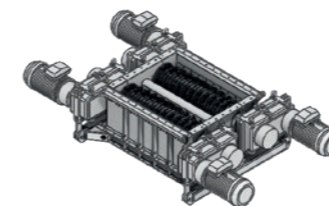
T902X series

Main crusher for wood-based biomass



T65XX series

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

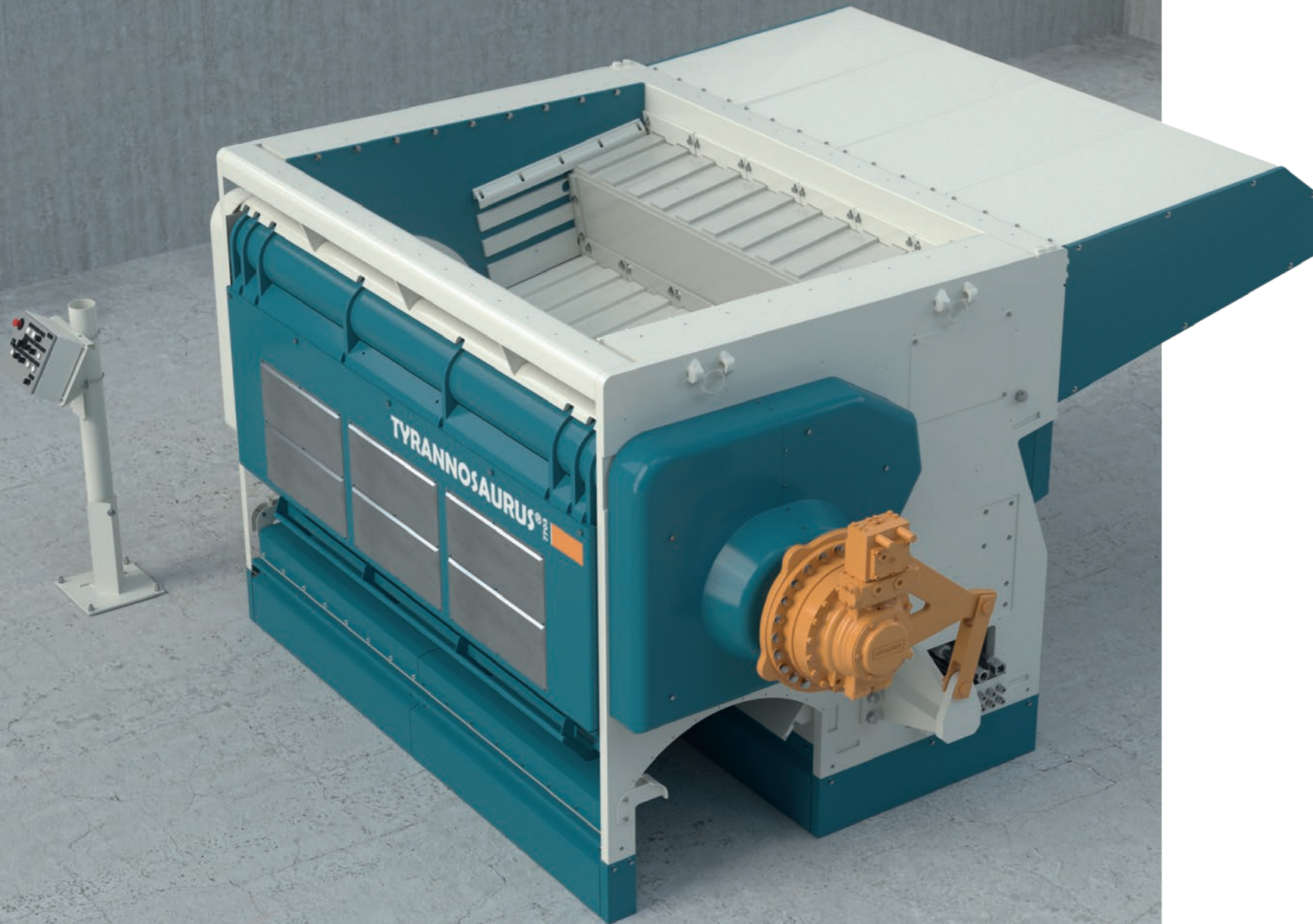


TYRANNOSAURUS® Shredders and BioCrushers are the core of our expertise. They are the outcome of long experience in material handling combined with outstanding engineering skills. TYRANNOSAURUS® Shredders and BioCrushers represent smart technology, raw power and excellent availability with high capacity.

bmh.fi

We have delivered more than 270 stationary shredders since 1980.

MSW = Municipal Solid Waste ICW = Industrial and Commercial Waste



The T770X series is the perfect solution when Zero Gap® cutting is a must-have.

T770X series

Optimal cutting technology for ICW

T770X SERIES is a medium speed single-rotor with a pusher designed for industrial scale shredding of industrial and commercial waste.

1

T770X PLAYS a significant role in an RDF/ SRF process line where the particle size always matters. T770X will be tailored to produce particle size in range of 40–70mm with high capacity.

T770X series represents high quality and top performance in a compact size.

2

ZERO GAP® cutting technology and semi-automatic MIPS® enable low OPEX.

3

THE 770X SERIES is available with hydraulic or electric drive unit.

4

TYPICAL applications for T770X series shredders are to produce:

- ➔ Alternative fuel for cement kilns
- ➔ RDF for high-efficiency boilers

Semi-automatic MIPS® (Massive Impact Protection System)

A large industrial shredder machine is shown in operation, processing waste into small particles. The machine's heavy-duty metal components and rotating parts are visible, surrounded by a large volume of shredded waste material, including plastic and paper fragments. The scene is set in a dark, industrial environment with dramatic lighting.

**T770X series
delivers even
particle size
with precision.**

We have optimized the shredder's knife geometry for ICW.

LET TYRANNOSAURUS® SHOW ITS TEETH.

Designed to perform

THE T770X SERIES is designed for shredding ICW and source-sorted municipal solid waste (MSW). The ICW usually consists of plastics, cardboard, wood and textiles.

Source-sorted MSW usually consists of everyday items such as packaging materials and bio waste.

Occasional difficult materials will not break the shredder. Materials it tolerates in small amounts:

- Bricks
- Carpets
- Ceramics
- Mattresses
- Metal scrap
- Rocks
- Scrap tires



T770X SERIES is ideal for shredding unsorted industrial and commercial waste but also suitable for MSW.

THE KNIVES' MATERIAL AND SHAPE HAVE BEEN CAREFULLY SELECTED TO RESIST WEAR AND FRACTURING.

**ZEROGAP®
TECHNOLOGY
MAINTAINS
THE CUTTING
GAP IN ZERO.**

High average capacity

THE LONG-TERM CAPACITY is generated by average hourly capacity and uptime hours. When it comes to T770X, we have focused on both factors.

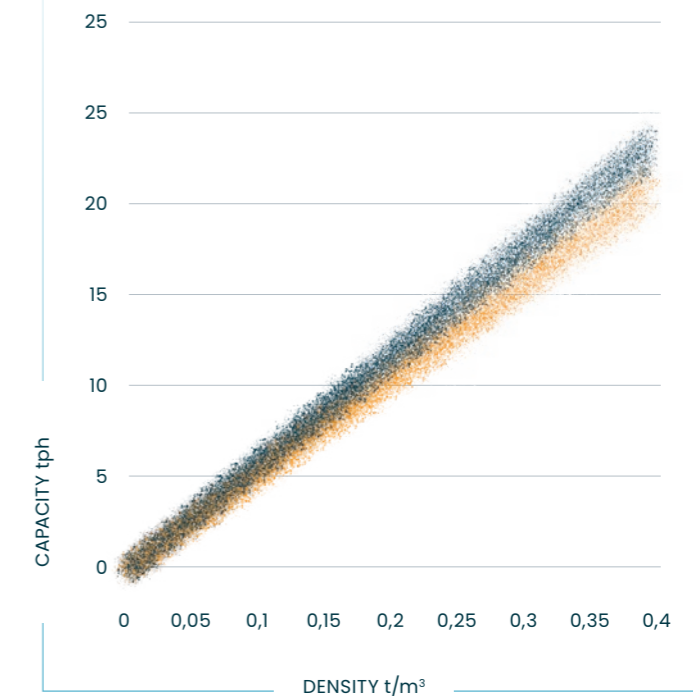
T770X SERIES IS CAPABLE of delivering high average capacity because:

- 1 High power (264–480 kW) enables also reserve, which is needed for heterogenous feedstock.
- 2 The pusher, controlled by the shredder's intelligent automation system, presses the material against the rotor.
- 3 The cutting technology has been optimized from several aspects:
 - ➔ Zero Gap® cutting technology: each 800 mm section of the counter knives can be adjusted, in a way that the cutting performance is maintained even when the knives start to wear.
 - ➔ Large rotor enables a great amount of knives, which leads to high number of cuttings per minute.
 - ➔ Even load on the rotor by spiral knife arrangement.
 - ➔ Full focus on knife functionality, zero focus on appearance.

OPTIONAL INTEGRATED FEEDER INCREASES THE CAPACITY UP TO 20–30%. ➔ SEE PAGE 19.

- **T7703 90% P<70mm and 98% P<100mm**
- **T7703 90% P<50mm and 98% P<80mm**

INDICATIVE DIAGRAM OF T7703 CAPACITY. PERFORMANCE GUARANTEES ARE CASE-SPECIFIC.



High capacity by high uptime

TO REACH MAX UPTIME, BMH has focused not only on robustness but also on introducing relevant design and technologies.

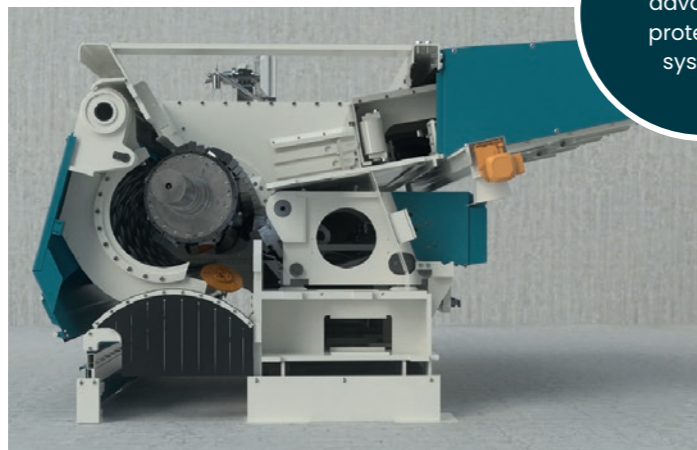
SEMI-AUTOMATIC MIPS®

- The counter knives are held in position hydraulically. This allows the MIPS® system to reject unshreddable materials and prevents damages to the shredder.
- The semi-automatic MIPS® enables easy removal of unshreddables without the need to enter the feeding hopper.

EASY MAINTENANCE

- E.g. excellent access to the screen for replacement and cleaning activities.
- The knives and counter knives are easily accessible and fast to replace.
- Changing the knives doesn't require cleaning the whole shredding chamber as no welding or grinding is needed.

IN ORDER TO SAVE COSTS, BOTH ENDS OF THE KNIFE CAN BE UTILIZED BY TURNING THE KNIFE 180°.



The most advanced protection system.

→ The maintenance points are easy to access.

THE COUNTER KNIFE STRUCTURE IS ROBUST YET FLEXIBLE IN A SMART WAY TO PREVENT DAMAGE.

Productivity is not only about the downtime of the machine but also the uptime of people.

Reduced downtime by shortening the stops in operation

ALL MACHINES REQUIRE maintenance stops. We've put plenty of effort on easy maintenance.

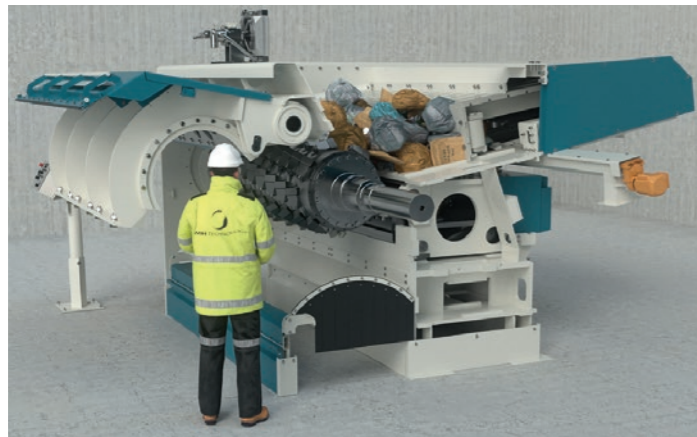
Big doors and hatches ensure that accessing the shredder is effortless. Cleaning, maintenance and replacement of spares take only a minimal amount of time. Operational hours can be used for the main func-

tion – shredding.

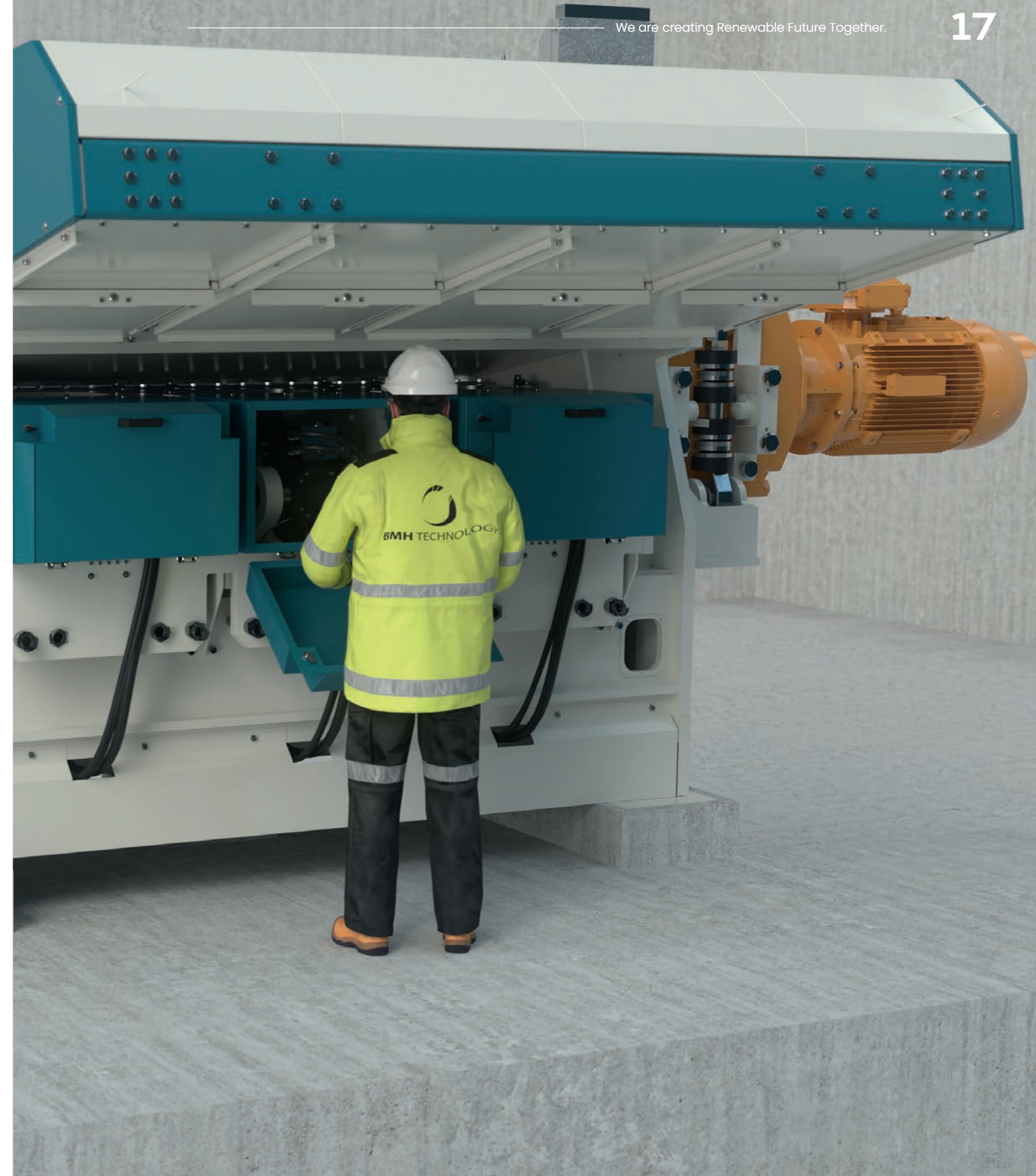
The shredder is protected by means of automation and mechanical protection when something hard faces the rotor.

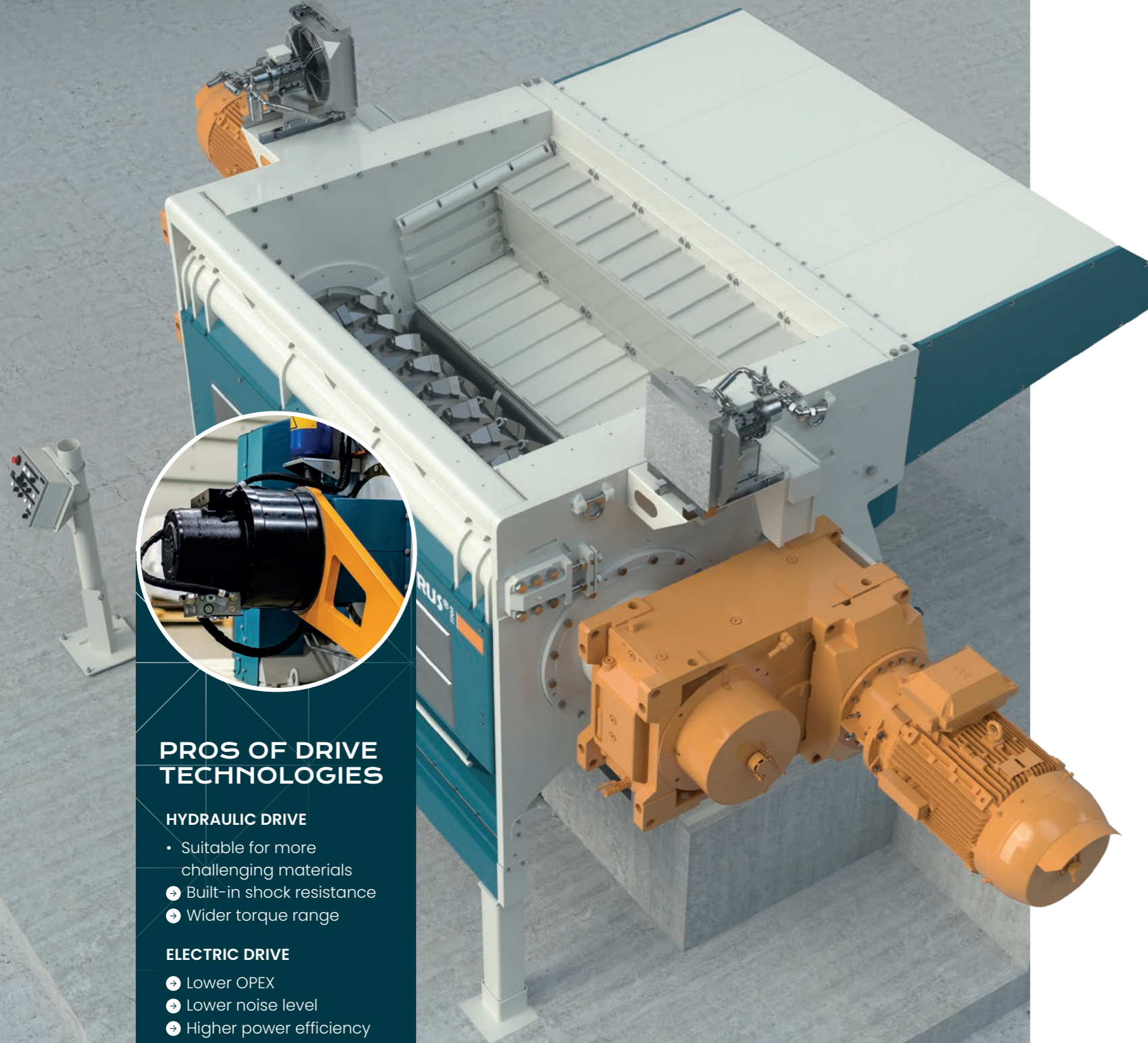
Furthermore, safety standards have always been a priority in our products – it's not only about the downtime of the machine but the uptime of the people.

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



← Hard particles, such as brake discs can be removed without emptying the feeding hopper.





PROS OF DRIVE TECHNOLOGIES

HYDRAULIC DRIVE

- Suitable for more challenging materials
- Built-in shock resistance
- Wider torque range

ELECTRIC DRIVE

- Lower OPEX
- Lower noise level
- Higher power efficiency

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

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.

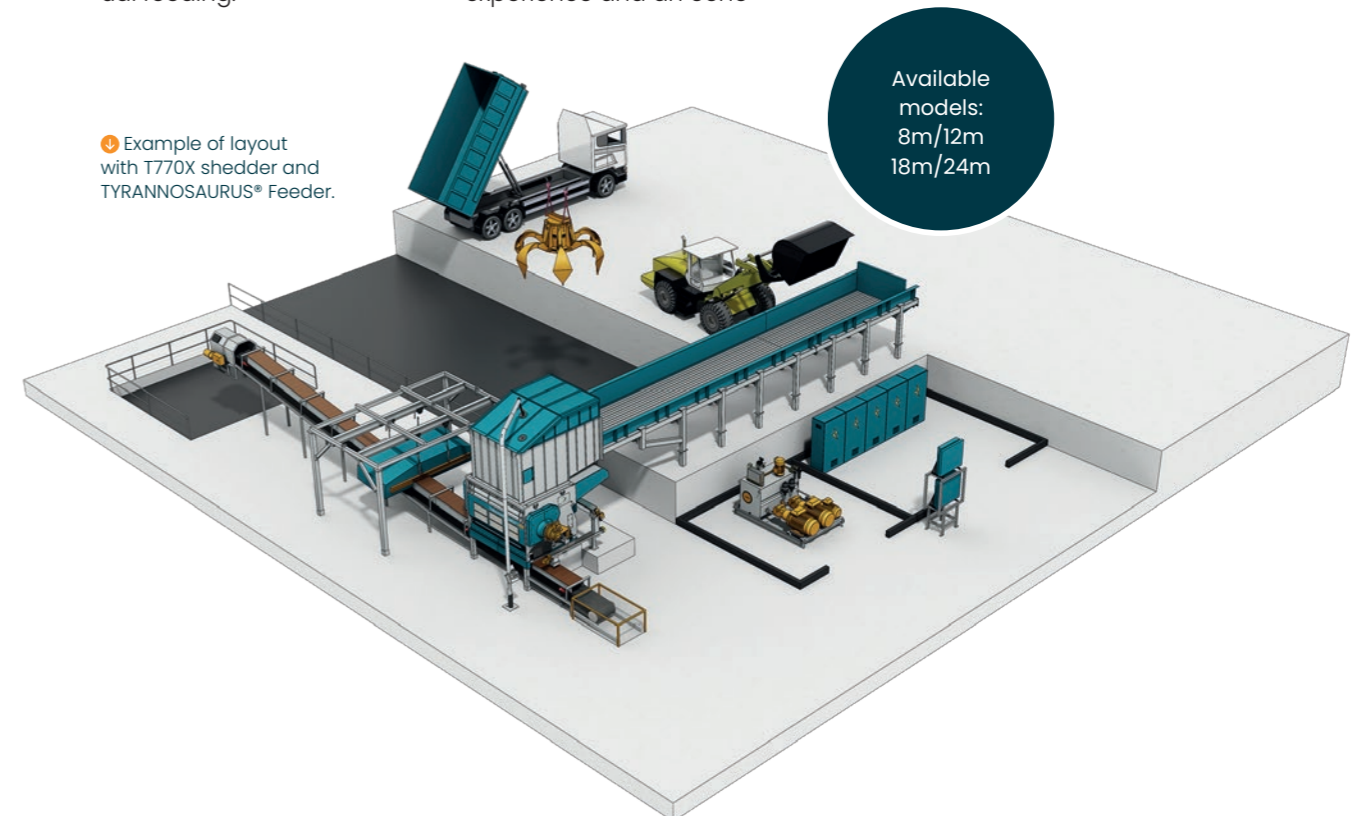
A consistent fuel supply is provided by the TYRANNOSAURUS® Feeder. It's a hydraulically operated automatic feeding system suitable for unsorted heterogeneous materials of all sizes.

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.

Example of layout with T770X shredder and TYRANNOSAURUS® Feeder.



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



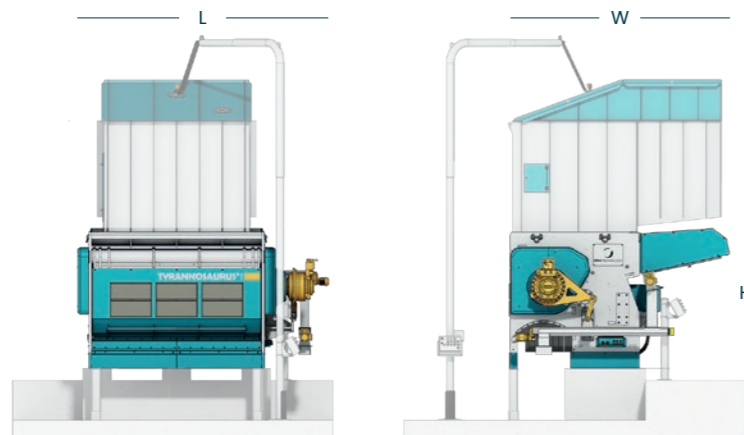
Full focus
on knife
functionality,
zero focus on
appearance.

T770X series / Technical details

MODEL	T7703E	T7703	T7704
MAIN DIMENSIONS (L x W x H) [mm]	5000 x 3850 x 2450	5000 x 3850 x 2450	5800 x 3850 x 2450
WEIGHT [t]	27	38	42
DRIVE POWER [kW]	357	357	517
DRIVE SYSTEM	ELECTRIC*	HYDRAULIC	HYDRAULIC
INFED OPENING [mm]	2400 x 1900	2400 x 1900	3200 x 1900
NUMBER OF ROTORS	1	1	1
ROTOR LENGTH [mm]	2400	2400	3200
ROTOR DIAMETER [mm]	770	770	770
ROTATION SPEED [mm]	50-100, ADJUSTABLE	50-100, ADJUSTABLE	50-100, ADJUSTABLE
ROTOR KNIVES [pcs]	80	80	108
COUNTER KNIVES [pcs]	21	21	28
CASSETTES + SCREENS [pcs]	3+3	3+3	4+4
CAPACITY [t/h, max]**	UP TO 15	UP TO 20	UP TO 25
TYPICAL OUTPUT PARTICLE SIZE [mm]	70	70	70
WIDTH OF OPTIONAL FEEDER [mm]	2400	2400	3200
AUXILIARY HYDRAULIC POWER UNIT(S) [kW]	37	37	37

* WITH FREQUENCY CONVERTERS

** THESE INDICATIVE VALUES HAVE BEEN CALCULATED USING TYPICAL WASTE PROPERTIES. PLEASE SEE GRAPH ON P. 13.



DATASHEET

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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