



# OVERVIEW RECYCLING

## FROM IN-A-BOX SOLUTIONS TO IN-LINE SYSTEMS

<i>The specifications for all recycling systems are based on recycling of EPS</i>	MICRO IN-A-BOX	MINI IN-A-BOX	MINI INLINE SYSTEM	MAXI INLINE SYSTEM	JUMBO INLINE SYSTEM
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### Capacity

#### SHAPE MOULDING

Granulated and dedusted EPS material on 6mm screen	2-3 m <sup>3</sup> /h 70-105 ft <sup>3</sup> /h	6-8 m <sup>3</sup> /h 210-280 ft <sup>3</sup> /h	6-8 m <sup>3</sup> /h 210-280 ft <sup>3</sup> /h	10-12 m <sup>3</sup> /h 350-420 ft <sup>3</sup> /h	15-20 m <sup>3</sup> /h 630-700 ft <sup>3</sup> /h
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#### BLOCK MOULDING

Granulated and dedusted EPS material on 10mm screen	4-6 m <sup>3</sup> /h 140-210 ft <sup>3</sup> /h	9-10 m <sup>3</sup> /h 315-350 ft <sup>3</sup> /h	9-10 m <sup>3</sup> /h 315-350 ft <sup>3</sup> /h	18-20 m <sup>3</sup> /h 630-700 ft <sup>3</sup> /h	35-40 m <sup>3</sup> /h 1225-1400 ft <sup>3</sup> /h
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#### HIGH DENSITY MOULDING

Granulated and dedusted EPP material or high density EPS	20-50 kg/h 44-110 Lbs/h	50-100 kg/h 110-220 Lbs/h	50-100 kg/h 110-220 Lbs/h	100-160 kg/h 220-350 Lbs/h	N/A
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### Measurements

Hopper opening	780x400mm 30x15"	900x600mm 36x24"	900x600mm 36x24"	1400x600mm 56x24"	1800x800mm 72x31"
Pre-crusher/granulator					
Granulator screen surface	0,2 m <sup>2</sup> 2 ft <sup>2</sup>	0,9 m <sup>2</sup> 9,7 ft <sup>2</sup>	0,9 m <sup>2</sup> 9,7 ft <sup>2</sup>	1,4 m <sup>2</sup> 15 ft <sup>2</sup>	2,4 m <sup>2</sup> 26 ft <sup>2</sup>
Floor space required	5 m <sup>2</sup> 52 ft <sup>2</sup>	6 m <sup>2</sup> 65 ft <sup>2</sup>	12 m <sup>2</sup> 120 ft <sup>2</sup>	16 m <sup>2</sup> 160 ft <sup>2</sup>	40 m <sup>2</sup> 400 ft <sup>2</sup>

### Electrical load

Standard EPS	11,5 kW	19 kW	19 kW	36 kW	50 kW
EPP or high density EPS	14,5 kW	32 kW	32 kW	53 kW	57kW



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# Technical Data sheet

# SYSTEM CONFIGURATION



- A version:** Direct vertical material feeding
- B version:** Direct horizontal material feeding
- C version:** Direct vertical + feeding of precrushed material from silo
- D version:** Feeding of pre-crushed material from silo placed above granulator
- E version:** Feeding of pre-crushed material from silo placed next to granulator

	Micro-in-a-box - Version A	Micro-in-a-box - Version D	Mini-in-a-box - Version B	Mini-in-a-box - Version C	Mini-inline - Version A	Mini-inline - Version B	Mini-inline - Version C	Mini-inline - Version D	Mini-inline - Version E	Maxi-inline - Version A	Maxi-inline - Version B	Maxi-inline - Version C	Jumbo-inline - Version D
<b>Capacity (Granulated material output):</b>													
0 - 5 m3/hour	●	●											
0 - 10 m3/hour			●	●	●	●	●	●	●				
0 - 20 m3/hour										●	●	●	●
0 - 40 m3/hour													●
<b>Capacity by weight (EPP + HD versions only!)</b>													
0 - 50 kg/hour	●	●											
0 - 100 kg/hour			●	●	●	●	●	●	●				
0 - 160 kg/hour										●	●	●	●
Regular EPS/Graphite EPS	●	●	●	●	●	●	●	●	●	●	●	●	●
High density EPS/HD Graphite EPS/Regular EPP	●○	●○	●○	●○	●○	●○	●○	●○	●○	●○	●○	●○	●○
Arcel/Bio/Piocelan	●	●	●	●	●	●	●	●	●	●	●	●	●
High density EPP			●○	●○	●○	●○	●○	●○	●○	●○	●○	●○	●○
Built-in pre-crusher	●	●	●	●	●	●			●	●	●	●	●
Separate pre-crusher required/optional		●	●	■		■	●	●	●	■	●	●	●
Feeding pre-crushed material from cutting line		●	●		●	●	●	●		●	●	●	●
Heavy-parts filter for pre-crushed material		●	●		●	●	●	●		●	●	●	●
Separate transport blower for pre-crusher required/optional		●	●		●	●	●	●		●	●	●	●
Silo for pre-crushed material required/optional		●		■		■	●	●		■	●	●	●
Built-in granulator	●	●	●	●	●	●			●	●	●		
Separate granulator							●	●			●	●	●
Screen sizes available:													
4 mm	●	●	●	●	●	●	●	●	●	●	●	●	●
4,5 mm	●	●	●	●	●	●	●	●	●	●	●	●	●
5 mm	●	●	●	●	●	●	●	●	●	●	●	●	●
6 mm	●	●	●	●	●	●	●	●	●	●	●	●	●
8 mm	●	●	●	●	●	●	●	●	●	●	●	●	●
10 mm	●	●	●	●	●	●	●	●	●	●	●	●	●
12 mm	●	●	●	●	●	●	●	●	●	●	●	●	●
Built-in de-dusting unit	●	●	●	●									
Separate de-dusting unit					●	●	●	●	●	●	●	●	●
Built-in dust compactor with cyclone	●	●	●	●									
Separate dust compactor - with air venting bags (optional)					●	●	●	●	●	●	●	●	●
- with air cyclone (optional)					●	●	●	●	●	●	●	●	●
<b>Recommended mixing system:</b>													
Styromix 3 (shape moulding)	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
Styrometer Mini (shape & block moulding)			▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
Styrometer Maxi (block moulding)										▲	▲	▲	▲
Styrometer Jumbo (block moulding)										▲	▲	▲	▲
Styrometer Gigant (block moulding)										▲	▲	▲	▲

- Available system/function/unit
- Require high density version
- May be required or optional depending on customer requirement
- ▲ Recommendation but other combinations can be applied

# Technical Data sheet

# SYSTEM CONFIGURATION



## In-a-box systems

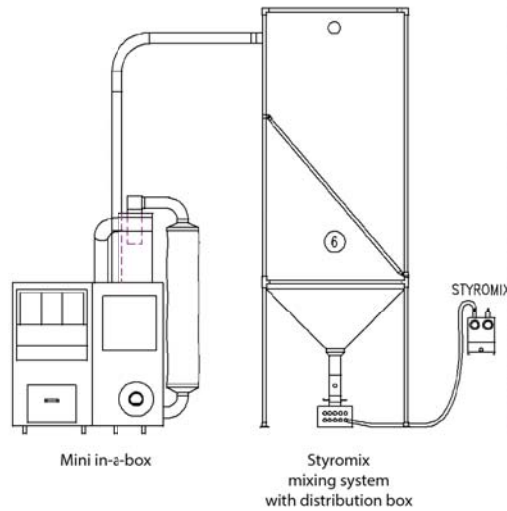
### Micro-in-a-box & Mini-in-a-box

Complete integrated systems with optional separate pre-crusher, heavy-parts filter and feeding silo. Can be equipped with any mixing system

Illustration 1 features a Mini-in-a-box transferring recycled material to a silo with a distribution box connected with Styromix 3 system.

Illustration 2 features Styrometer mixing system.

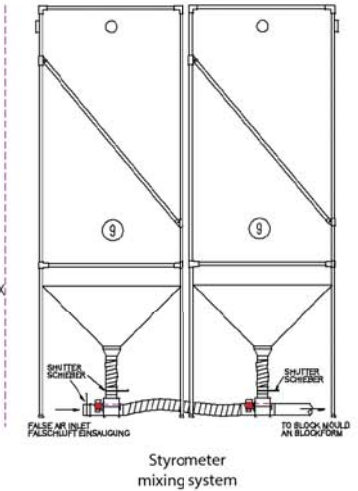
Illustration 1



Mini in-a-box

Styromix mixing system with distribution box

Illustration 2



Styrometer mixing system

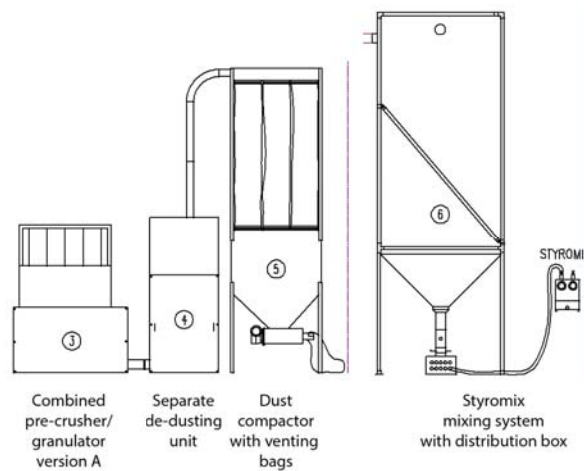
## In-line systems with combined pre-crusher/granulator

### MINI + MAXI systems

In-line systems with combined pre-crusher/granulator, de-dusting unit, dust compacting and mixing system.

Illustration 3 features a combined pre-crusher/granulator A version, with de-dusting unit and dust compactor with venting bags. Illustration 4 features Styromix with distribution box and Styrometer mixing systems.

Illustration 3



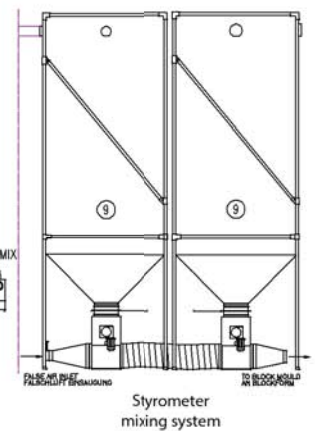
Combined pre-crusher/granulator version A

Separate de-dusting unit

Dust compactor with venting bags

Styromix mixing system with distribution box

Illustration 4



Styrometer mixing system

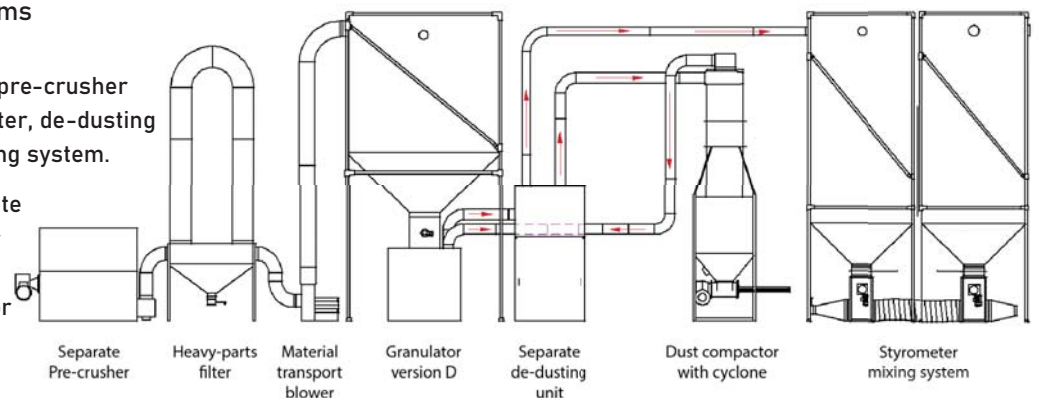
## In-line systems with separate pre-crusher and granulator

### MINI + MAXI + JUMBO systems

In-line systems with separate pre-crusher and granulator, heavy-parts filter, de-dusting unit, dust compacting and mixing system.

Illustration 5 features a separate pre-crusher, heavy-parts filter granulator D version, de-dusting unit, dust compactor with cyclone and Styrometer mixing systems.

Illustration 5



Separate Pre-crusher

Heavy-parts filter

Material transport blower

Granulator version D

Separate de-dusting unit

Dust compactor with cyclone

Styrometer mixing system

# Technical Data sheet

## MINI RECYCLING IN-LINE COMPLETE RECYCLING SYSTEM - 10 M<sup>3</sup>/HOUR CAPACITY



Since the first completely integrated recycling concept for reusing EPS materials was developed in 1978, we have supplied more than 500 complete recycling plants world-wide, solving recycling problems and brought substantial savings to our customers production.

The KBM MINI recycling plant for EPS and EPP is suitable for small/medium shape moulding and small block moulding operations. Thanks to the two step/double chamber system and the large screen surface and granulation chamber, the MINI plant processes waste products, cut-offs from cutting lines and even used EPS and EPP/EPE mouldings, into high quality recycled material with a minimal content of dust.



Recycled EPP & EPS.  
Pre-crushed, granulated and de-  
dusted - ready to be reused in  
your production



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# Technical Data sheet

## MINI RECYCLING IN-LINE

### COMPLETE RECYCLING SYSTEM - 10 M<sup>3</sup>/HOUR CAPACITY



Brand name: KBM MINI RECYCLING PLANT	A complete system with individual units, for converting moulded EPS/EPP/EPE/NEOPOR/ARCEL packaging and insulation materials into individual beads ready to be mixed with virgin beads to mould new products.
Material	Cabinets are made of galvanized steel.
Density range	Standard EPS version < 35-40 Kg/m <sup>3</sup> (< 2.2-2.5 lb/ft <sup>3</sup> ) High density version (HD) < 100-120 Kg/m <sup>3</sup> (< 6.2-7.5 lb/ft <sup>3</sup> )
Capacity by volume (Granulated EPS)	
6mm screen	6-8 m <sup>3</sup> per hour (210-280 ft <sup>3</sup> /hour)
10mm screen	9-10 m <sup>3</sup> per hour (315-350 ft <sup>3</sup> /hour)
12mm screen	12-13 m <sup>3</sup> per hour (420-455 ft <sup>3</sup> /hour)
Capacity weight HD+EPP	
6mm screen	50-100 Kg/m <sup>3</sup> per hour (130-220 lb/hour)
Screen surface	0,9 m <sup>2</sup> (9,7 ft <sup>2</sup> )
Space required	Approx. 12 m <sup>2</sup> (120 ft <sup>2</sup> )
Measurements L x W x H	
Pre-crusher/Granulator (1)	1.4x1.1x2.5 m(55x44x100")
Dust separating unit (2)	1.2x1.1x2.5 m(48x44x100")
Dust compactor (3)	1.6x0.6x5.1 m (64x24x204")
Storage silo	Any size available
Pipe connections	160 mm (6")
Hopper opening	900 x 600 mm (36x24")
Estimated conserved material	Min. 93-95%
Extracted dust & particles	Max 5-7%
Dust content after processing	Max 1%

MINI version B



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# MINI RECYCLING IN-LINE

## COMPLETE RECYCLING SYSTEM - 10 M<sup>3</sup>/HOUR CAPACITY



The recycled EPS and EPP material can be reused in shape moulding productions in a ratio of at least 10–20 % without any perceptible visual nor physical change in the product quality. For block moulding 20–50 % can be added.

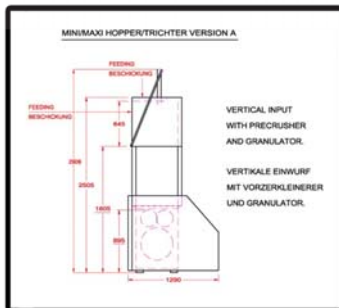
As the material is broken down to homogeneous, individual beads which mix perfectly with new pre-expanded beads, it consequently minimizes the uneven density distribution in the silos and thus in the block. Blocking of core vents, due to dust and lumps in the material, often causes hot wire cutting problems and thus unwanted surface appearances on the final insulation sheets.

The KBM MINI recycling plant consists of one combined pre-crushing and granulating unit (1), and a separate dust separating unit (2). Both units are sound insulated. After recycling the material, it's blown into a storage silo (6), a big bag made of antistatic fabric with a steel frame for easy assembling.

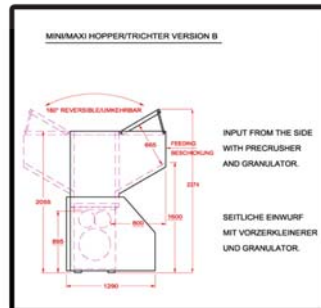
The dust is blown into the dust compactor (5), with air venting filter bags. The dust is collected in the lower part and is compacted into a octagonal rod with a density of 150–300 Kg/m<sup>3</sup> (9–18 lbs/ft<sup>3</sup>).



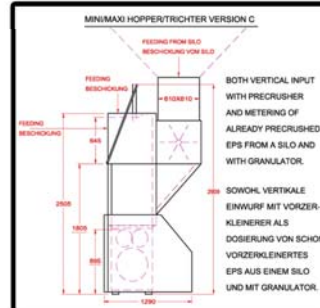
VERSION A



VERSION B



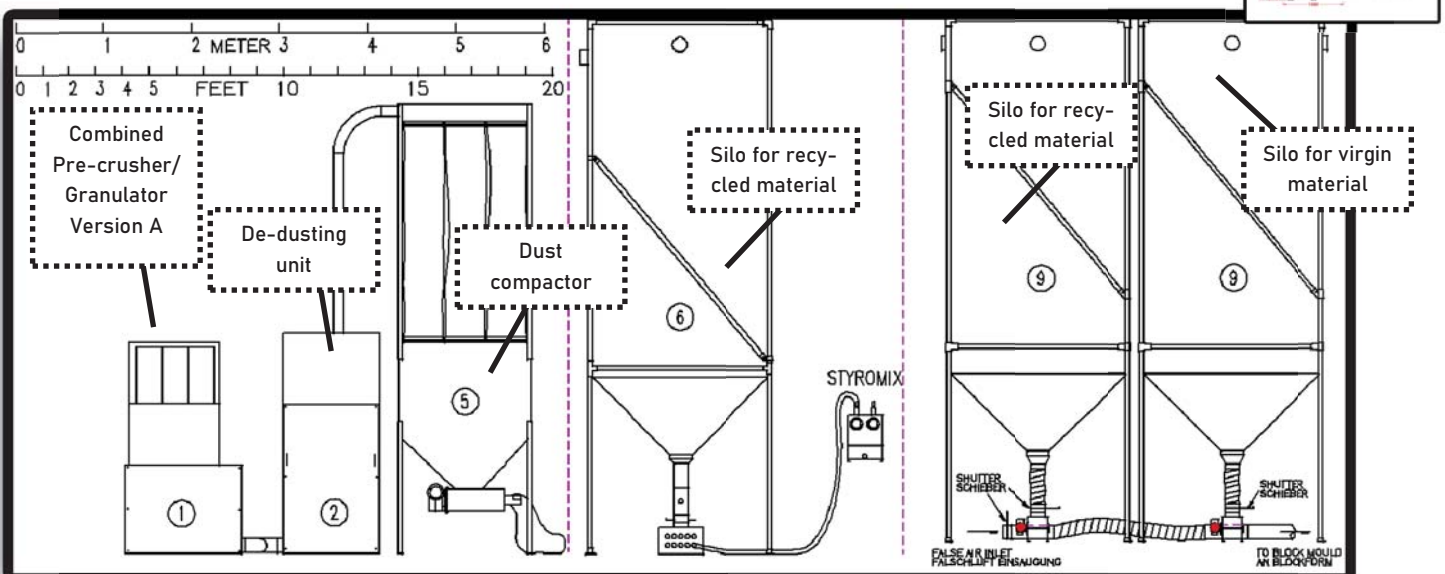
VERSION C



VERSION D



VERSION E



# Technical Data sheet

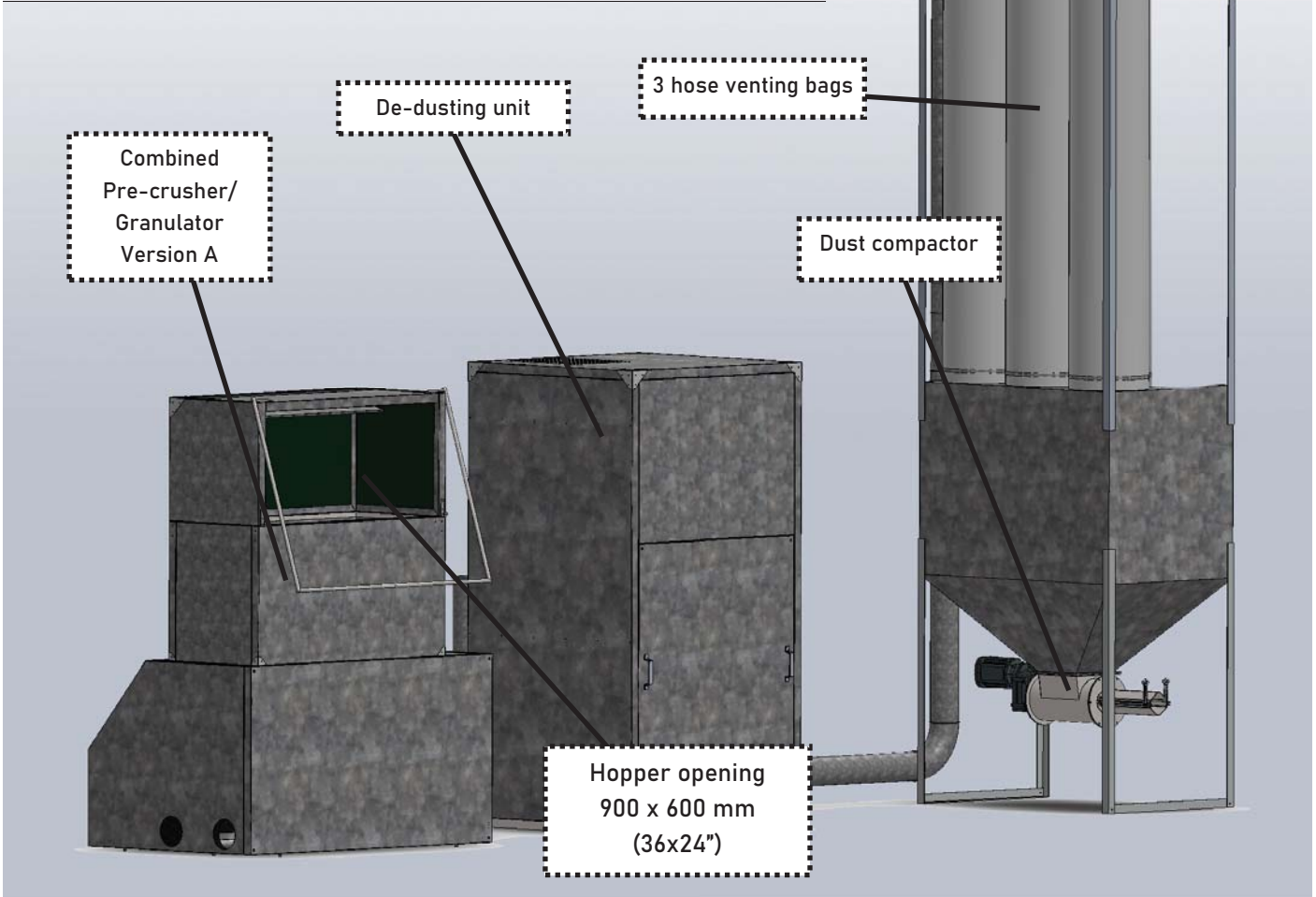


## MINI RECYCLING IN-LINE

COMPLETE RECYCLING SYSTEM - 10 M<sup>3</sup>/HOUR CAPACITY

Brand name:  
KBM MINI RECYCLING PLANT

Electrical load	EPS version	EPP+HD EPS version
Pre-crusher/granulator	13,2 kW	26,0 kW
Dust separating unit	4,0 kW	4,0 kW
Dust compactor	1,5 kW	2,2 kW
Styrometer/Styromix	See chapter with mixing units	See chapter with mixing units
Voltage	3x400 V/50 Hz or other Voltages	3x400 V/50 Hz or other Voltages



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