

CRAMBO

UNIVERSAL SHREDDER FOR GREEN WASTE AND WOOD

UNIVERSAL APPLICATION

FLEXIBLE PARTICLE SIZE

EFFICIENT DRIVE

ROBUST AND INSENSITIVE TO CONTRARIES





HIGHLIGHTS



- » High throughput with general-purpose use
- » Aggressive feed with long, counter-rotating shredding drums
- » Variable particle sizes through simple screen basket change
- » Insensitive to contraries
- » Slow-running operation minimises noise and dust emissions
- » New: Efficient mechanical drum drive for top economy



CRAMBO VERSATILE

The Crambo is one of the best machines for shredding all types of wood and green waste. Two slow-running drums with shredding tools minimize fine particle and noise/dust emissions, and resist contraries. The Crambo enables easy adjustment of the output particle size, by simply exchanging the screen basket to instantly change your required particle size. In addition to the existing hydraulic-drive model there is now a mechanical-drive version, the new Crambo direct.

The drive train of the Crambo direct combines the functionality of hydraulic drive with the efficiency of mechanical drive. That means top economy, while retaining all product benefits like overloading protection, reversibility, adaptation to the material etc. A modern operating console and convenient access to all maintenance points makes everyday work very easy.



01

Treated/untreated waste wood

When shredding waste wood, the wear-resistant surface-hardened teeth provide a high level of resistance to contraries. Counter-rotating shafts, together with the special shape of the teeth, produce a perfect feed, even for fractions with high board content.



02

Green waste – woody biomass

A high throughput of bulky vegetation is made possible with a generously dimensioned feed area, a folding hopper and counter-rotating teeth. Blockages from wet material and high grass content are practically impossible. The teeth clear the screen baskets on every revolution.



03

Root stocks/ forest wood residue

If a root stock fits into the shredding area, it will also go through. The highly effective tooth power offered by the efficient drive, the intense motion of the material and the insensitivity to embedded stones all make the Crambo ideal for this application.



04

Specialist applications

The innovative shredding concept provides a wide range of application possibilities. Established applications are shredding bio-waste for composting, shredding market waste and food / kitchen waste for fermentation, and preshredding roofing fabrics for further treatment.

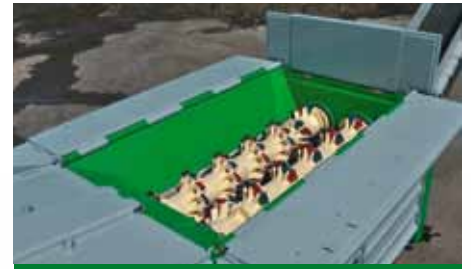


INSIDE THE MACHINE

The Crambo is powered by a modern Caterpillar® diesel engine, equipped with the latest emission control. The complete muffling of the engine compartment reduces noise emissions to a minimum.

Purchasers can choose between highly efficient mechanical drum drive with automatic transmission - the Crambo direct - or the familiar hydraulic drive with load-dependent speed regulation.

Control electronics continually monitor the operational status of the machine, and intervene to protect the machine should a breakdown occur. Reversing programs precisely adapt the shredding process to the material. The menu guidance follows a logic any user can understand, and the screen shows all machine functions graphically.



Material feed

- » Extremely large shredding compartment with two 2.8 metres long shredding drums
- » Counter-rotating drums with tools in a spiral arrangement for active material movement
- » Hydraulic folding hopper for more hopper volume

01
Large feeding area with flap and fold system for filling hopper

02
Shredding drums with aggressive cutting tools

03
New drive: CAT® diesel engine and gearbox

04
User-friendly operator panel with on-board computer

05
Swivellable screen basket cartridge





Drive system Crambo direct

- » High-performance automatic transmission
- » Adaption to the material with 2 speeds and intelligent control
- » No engine stalling in the event of blockages due to overload clutch
- » Programmable reversing function for self-cleaning



Operation

- » Large colour display with logical menu guidance for easiest operation
- » Optimum adaptation of machine function to the material
- » Ideal placement of controls for folding out the hopper and conveyor



Maintenance access

- » New designed engine compartment with large doors and foldable platforms
- » All maintenance points are externally accessible (fuel, oil, filters etc.)
- » Excellent access to the discharge channel through side service doors



Adaptions

- » Particle size adjustment: Change of screen baskets or change of the entire basket cartridge
- » Adjustable overbelt-magnet or magnetic drum at discharge conveyor
- » Active feed device for moving on site by remote control (Track, Trailer)
- » Remote control, central lubrication and more



green efficiency® by Komptech is an innovation programme that gives our machines lower consumption and higher performance. This incorporates the latest exhaust-scrubbing technology, reduced noise emissions and design measures that make the machines generally more efficient in use.

Crambo direct - criteria in detail

Mechanical gearbox with up to 35 percent lower fuel consumption than diesel-hydraulic machines

Diesel engine with current exhaust technology minimizes harmful emissions (fine particulates and nitrous oxides)

Newly designed engine compartment with maintenance access points on the outside simplifies maintenance costs

Improved drive components and new acoustic design for engine compartment reduced noise emissions

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HIGHLIGHTS



- » Extremely large feed area measuring 2000 mm in width and 2820 mm in length
- » Slow-running tool elements produce no fine fractions
- » Variable particle size spectrum by selecting the right screen basket
- » Quick-change system for screen basket and teeth
- » Low wear and maintenance costs



SHREDS ANYTHING

In the generously dimensioned shredding area, two 2820 mm long counter-rotating shafts provide active feed. The teeth seize the material and press it in a cutting/splitting action against the cutting edge and screen baskets located underneath. Slow turning (rotation speeds up to 44 rpm) results in a lumpy shred initially.

The material does not exit the shredding area until the particle size matches the hole size of the screen basket, enabling the quantity of shredded material in the desired particle size to be maximised. There is no additional generation of fine fractions, and overlengths are reduced to a minimum.



01

Shredding drum

Specially developed bearings keep the massive shredding drums securely in place, even under extreme loads. Strong planetary gears boost drive train life, for dependable service through thousands of operating hours. The shredding drums can also be optionally armored at areas susceptible to wear, for additional protection.



02

Tools

With their optimal profile the dropforged wear teeth guarantee prolonged service life whilst retaining consistent functionality.

Types:

Sickle teeth: general purpose use, aggressive feed

Hook teeth: armoured, for waste wood

Planing teeth: for waste wood, wet waste, with a long service life



03

Screen baskets

Screen baskets are tailored to the cutter and are available in sizes most commonly used in practical applications.

To replace, activate the button to swivel the screen basket cartridge out hydraulically. Remove the screen basket halves from the cartridge and replace with another screen basket or even more conveniently exchange the entire screen basket cartridge. Swivel in again to continue working.

Options for biomass processing

These features make the Crambo the ideal biomass machine, especially where coarser particle sizes are the order of the day, and where metal, stones, and soil make life difficult for fast-running shredders.



Bio cutting unit

This cutting unit is ideal for preparing woody biomass for use as fuel. Counter-cut teeth inserted near the central cutting edge give an efficient cut, for finer shredding and the right output particle consistency.



Bio-Basket XL

This combination of a special screen basket, holder and bio-blades gives more fuel and less fines. Its shredding efficiency boosts throughput while reducing fuel consumption.



HIGHLIGHTS



- » All mobile versions can be transported without special authorisation
- » Switch from the transport position into the working position immediately
- » On-site mobility possible with towing or automatic feed device (option)
- » The right chassis for every surface and application



CRAMBO MOBILE

Mobile technology – getting from A to B quickly and easily. But also getting ready for operation on site quickly: Unload, open up, power on – and start working. The Crambo offers a selection of hook lift, three-axle chassis or steel tracked versions. On the hook lift version, towing or automatic feed device options provide manoeuvrability on site.

With its airsprung axles and automatic feed device (option), the Crambo trailer version offers the utmost in mobility. The self-propelled steel track version, with extra wide three-bar track baseplates, is ideal for soft ground or unstable terrain. Two speeds are available and steering is done by remote control.



HIGHLIGHTS



- » Electric motor for top economy and minimal maintenance
- » New: Mechanical drive with optimum efficiency
- » Perfect integration into the process flow
- » Optional separated design:
 - Protection of drive unit (dust protected, better cooling)
 - Space-saving integration of compact shredding unit



CRAMBO STATIONARY

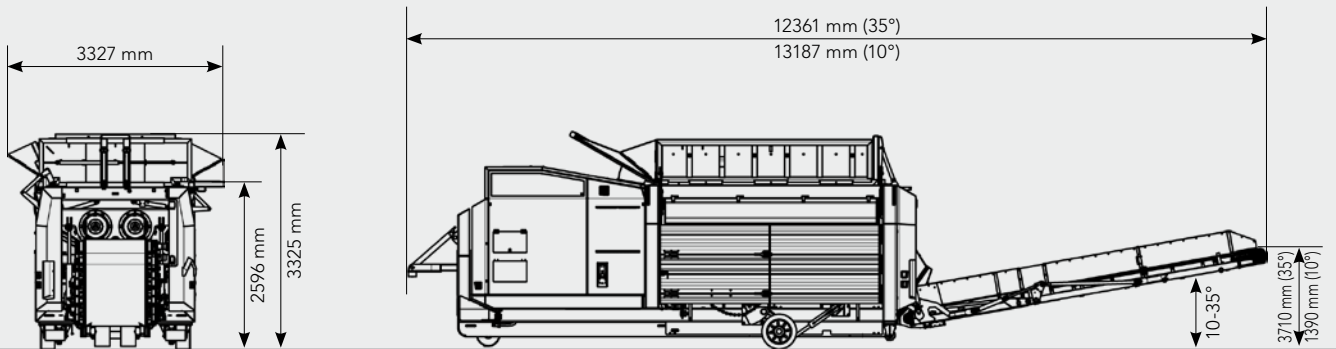
If mobility is not needed, electric drive is the best solution from the viewpoint of operational efficiency. With their energy efficiency, virtually maintenance-free operation, and control benefits, electrical drives are the solution of choice – especially for large-scale plants with long operating times. Moreover, a variety of options simplifies adaption to site conditions.

In addition the existing hydraulic-drive model there is now a mechanical-drive version for even higher efficiency. A new engine compartment with large doors offers perfect access to all drive components. For the hydraulic version separation of the drive unit from the shredding unit is provided as an option. The advantages: Better protection of drive unit and space-saving integration into the process cycle.

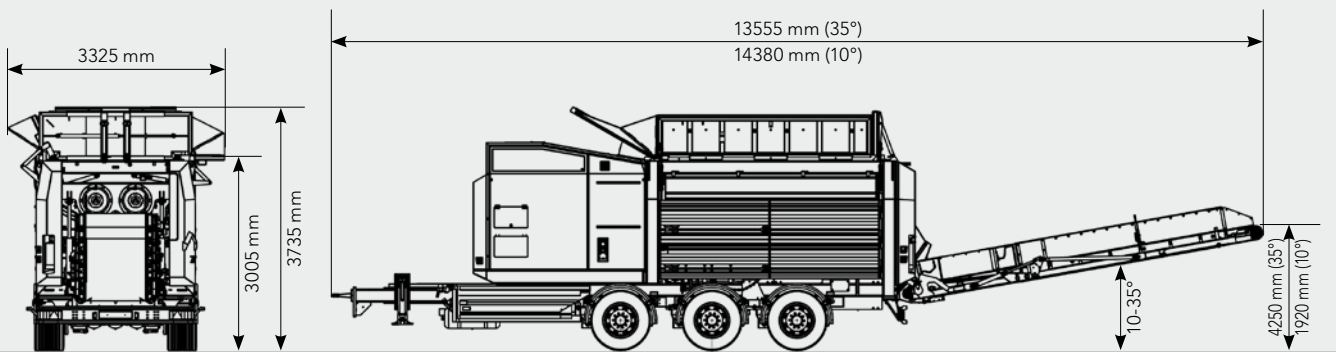


	4200 direct	5200 direct	6200 direct	3400	5000	6000
Engine						
Diesel engine:	CAT ® C9	CAT ® C13	CAT ® C18	CAT ® C9	CAT ® C13	CAT ® C18
Power (kW / HP):	242 / 330	328 / 446	429 / 583	242 / 330	328 / 446	429 / 583
Power electrical motor (kW):	1 x 160	1 x 200	2 x 160	1 x 160	1 x 200	2 x 160
Shredding unit						
Drum drive:	mechanical			hydraulic		
Drum rpm:	1. gear: 18 (max) 2. gear: 28 (max)	1. gear: 23 (max) 2. gear: 34 (max)	1. gear: 29 (max) 2. gear: 44 (max)	max 32	max 32	max 41
Drum length (mm):	2820					
Drum diameter (mm):	610					
Loading heights						
Loading heights (mm):	Hook: 2596		Trailer: 3005	Track: 2906		
Discharge heights (mm, 10°-35°):	Hook: 1390 - 3710		Trailer: 1920 - 4250	Track: 1830 - 4150		
Dimensions transport position/working position (Conveyor belt 35°)						
L x W x H Hook (mm):	7290 x 2490 x 2905 / 12361 x 3327 x 3710					
L x W x H Trailer (mm):	9120 x 2550 x 3360 / 13555 x 3325 x 4250					
L x W x H Track (mm):	6940 x 2855 x 3265 / 11371 x 3327 x 4150					
Weight (dependent on equipment)						
Hook (t):	~ 22.4	~ 22.7	~ 23.1	~ 21.7	~ 22.0	~ 22.4
Trailer (t):	~ 24.7	~ 25.0	~ 25.4	~ 24.0	~ 24.2	~ 24.6
Track (t):	~ 25.8	~ 26.1	~ 26.5	~ 25.1	~ 25.3	~ 25.7
Throughput						
Performance (t/h): (dependent on material)	up to 55	up to 80	up to 120	up to 45	up to 60	up to 100
Options						
Engines emission level Tier 3a and 4f/EU stage III and IV, drum armored, hook-shaped teeth, planing teeth, bio cutting unit, screen baskets 80/100/125/150/180/250/300, radio remote control, central lubrication, transferring magnet with swinging arm, magnetic pulley etc.						

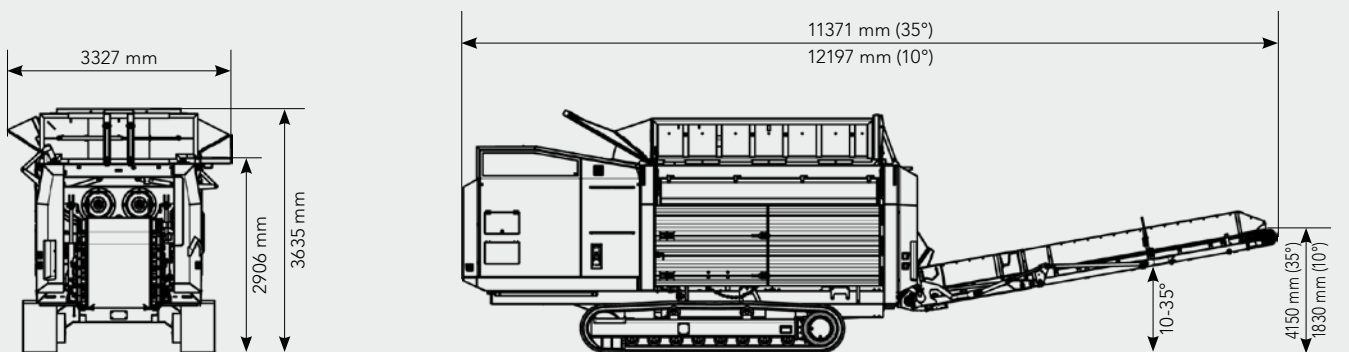
Hook



Trailer



Track



TECHNOLOGY FOR A BETTER **ENVIRONMENT**



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