

# FUEL FROM BIOMASS

Treatment of  
woody biomass





# Think green!

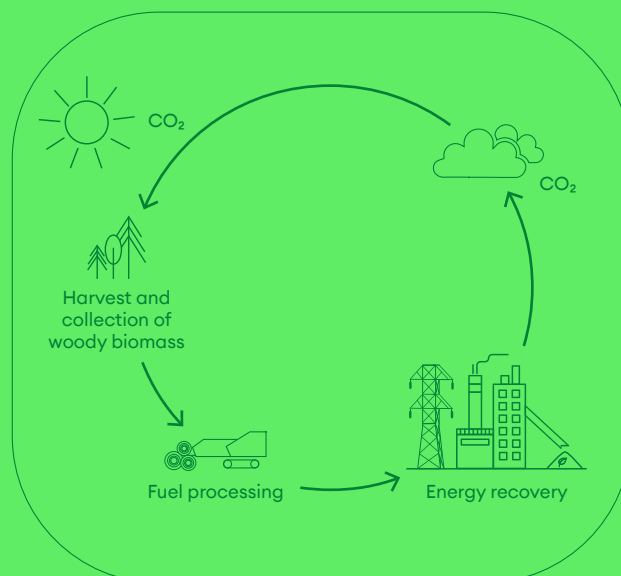
Komptech is a leading international technology provider. We plan, build and supply machines and systems for the mechanical and biological treatment of solid waste and biomass, and the processing of woody biomass for use as a renewable fuel.

## Fuel from woody biomass

Woody biomass plays a key role in the transition from fossil fuel to renewable energy. With the right machinery, waste wood, agricultural and forestry waste can all be turned into marketable fuels. Companies formerly working in disposal can use this to add energy production to their portfolio.

Low- or high-speed shredders, flexible star screens and – where needed – powerful stone separators are the key components for efficient fuel production. The customers are biomass heating and cogeneration plants, who need a low-cost fuel with a specific calorific value and grain size.

When wood is combusted, only as much carbon dioxide (CO<sub>2</sub>) is released as a tree absorbs from the atmosphere during its growth. Energy from wood is therefore CO<sub>2</sub>-neutral and an important contribution to climate protection.



## APPLICATION

# Wide application area

With the right processing, generally involving shredding, screening and separating, marketable fuel can be extracted from a variety of materials. Examples are tree and shrub cuttings from public and private landscaping or forest residues from wood harvesting - an inhomogeneous fraction of tops and branches. For the energetic use of these materials, processing is indispensable. Only this way high-quality fuels that meet plant-specific requirements can be produced. Our role is to develop the right concepts and most cost-effective machinery for this market.



**01** Green waste, branch and shrub cuttings (woody)

**02** Untreated waste wood, rootstocks, driftwood

**03** Forest residues

**04** Wood trunks





03



## 01 Shredding Page 8

Shredding woody biomass is typically accomplished with low-speed shredders like the Crambo, which produces very little fines and whose teeth are extremely resilient against damage from contaminants and high mineral content. With higher wood content and lower contamination with contaminants, the Axtor or Lacero high-speed shredders come into its own.

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## 02 Screening Page 10

Komptech star screens separate the material into fine, medium and coarse fractions in one pass. Typically the medium fraction is the most suitable for use as fuel. The fine fraction is further processed as compost, while the coarse fraction is cycled back for re-shredding by high-speed or low-speed machines.

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## 03 Separation Page 12

For better fuel quality, a cleaning step can be added to the process. The ash content, an important criterion for heating plant operators, is increased by stones in the fuel. A stone separator can be used to remove them efficiently.

02 ←

**Multistar One/S3/L3/XL3**

Mobile star screens

**Multistar SE (optional)**

Stationary star screens

**Primus/Maxx/Nemus/Cribus (optional)**

Mobile drum screens

**TS 18/45...25/120 (optional)**

Stationary drum screens



01 ←

**Axtor**

Mobile high-speed shredder

**Crambo**

Mobile or stationary low-speed 2-shaft-shredder

**Lacero**

Mobile high-speed, high-performance shredder

03 ←

**Stonefex**

Mobile stone separator

**Hurrikan S (optional)**

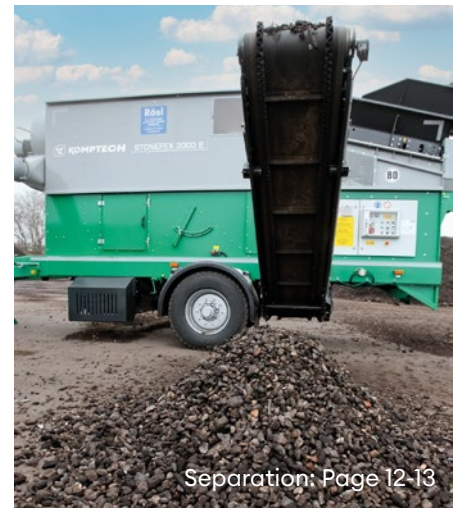
Mobile or stationary wind sifter



Shredding: Page 8-9



Screening: Page 10-11



Separation: Page 12-13



A high throughput of bulky green waste is made possible by the generously dimensioned feed area, folding hopper and counter-rotating teeth.

## 01 Shredding

Making fuel from green cuttings usually requires coarse pre-shredding to separate out the woody components in subsequent screening, possibly after a short rot for drying. The tough Crambo is ideal for the task. With large screen baskets it outputs the right grain size for further processing.

The Axtor can turn woody green cuttings, clean forestry residue and untreated used wood directly into fuel. For high volumes the Lacero is the ideal processor for almost all landscaping materials. The fuel it makes can go right to a heating plant, or can be further conditioned through screening for more exacting demands.

## Crambo

The Crambo is one of the best machines there is for shredding all types of wood and green cuttings. Two low-speed drums with teeth minimize the fines component, as well as noise and dust emissions, and are resilient against contaminants. The degree of shredding can be set flexibly. Just change the screen basket to get the ideal grain range for further processing.

Crambo mobile



## Axtor

Compact dimensions and high flexibility make the Axtor the ideal machine for biomass treatment. Other features are a wide feed area with tilt hopper, tough and aggressive intake system, and roomy service platform with excellent access to engine and drum for maintenance.

Axtor



Lacero



With fixed tool holders and chipping blades, the Axtor is a powerful chipper. With its large drum diameter and efficient shredding geometry, the Axtor can handle logs up to 0.8 metres in diameter.

## Lacero

The new Lacero 8010 extends our product portfolio for processing woody biomass. This high-speed shredder has a large-dimensioned intake and 812 hp engine power. The cladding design makes the machine quiet, protects it from dirt, and offers great maintenance access.





As the material passes over a bed of rotating stars they knock any impurities off the material, giving a high quality output.

## 02 Screening

A fine fraction, a medium fraction and a coarse fraction can be produced in one pass with a 3-fraction star screen. The medium fraction is generally the usable fuel fraction. In practice, a lower screen section with a hole size of 15-25 millimetres and an upper screen section with 80-100 millimetres have proven to be common for the particle size of the middle fraction.

For newer heating plants equipped with the appropriate conveying technology, particle sizes of up to 150 millimetres can be used.

Drum screens can also be used for this task: They provide robust design and universal application.

## Multistar One/S3/L3/XL3 /XXL2/SE

With Multistar star screens, high throughput and selectivity are assured even with materials of varying moisture content and composting stages. Versions and configurations are available for virtually any application and plant size. The electric drive makes screening quiet, efficient and economical.

Multistar One



## Mobile and stationary drum screens

Our wide range of drum screens deliver almost any desired performance level. The Primus and Maxx screens have proven their value for many years in the medium performance range. The Nemus adds innovative details to these tried and true solutions. The Cribus machine series includes three electrically powered models. Seven more sizes are available in stationary versions, with drum lengths of up to twelve metres.

Nemus



Multistar L3



The drum screens offer a choice of a diesel-hydraulic or electric drive with power from grid or an on-board generator.





The Stonefex can be combined with almost any standard screening machine. The electric drive of all components keeps energy costs low.

## 03 Separation

Forest residues and municipal green waste are often contaminated with stones during collection and storage. But stones are undesirable contaminants that reduce the quality and price of biofuels. The Stonefex improves fuel quality by removing up to 90 percent of stones and inert materials.

If required, lightweight materials (plastic foils) can be separated by windsifting with the Hurrikan S.

On both machines, all components are electrically powered, using grid power or the onboard diesel generator.

## Stonefex

The Stonefex stone separator reliably and very effectively removes stones and inert items from biomass fuels. A patented system of pressure and suction blowers generates exactly the right air flow in the expansion chamber to separate the stones and the organic fraction.

Stonefex



## Hurrikan

Hurrikan wind sifters provide effective removal of plastic film from screen overs. They work with a patented pressure-suction process that gives a separation efficiency of up to 95 percent on the Hurrikan S. Electric drive of all components ensures top efficiency, while offering many control possibilities. A magnetic and a rolling fraction separator can further enhance the quality of the recyclable overs.

Hurrikan S



The Hurrikan S has an enlarged suction zone with two suction blowers. An integrated power unit makes this wind sifter completely independent of grid power.





# The Komptech plus



## Top advice

We'll show you how to optimize your processes, based on our experience and extensive data analyses.



## All-in solutions

From individual mobile machines to complex stationary systems, with us you get the right process solution.



## Service near you

Expert technicians are on-site quickly to make sure your machines keep running.



## Productivity in view

Apps and integrated monitoring let you keep an eye on operating data and economy.



## Spare parts always available

Intelligent stocking for the fast, economical provision of high-quality spare parts.



## Need-based service

Our maintenance and service agreements, as well as extended warranties, are aligned with your needs.



# Never waste an opportunity.

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## We create value for you



### **Waste-stream expertise**

Because you need a setup that is tailored to your waste stream.



### **Innovative technology**

Because you need to adapt your output to your market needs.



### **Flexible sales models**

Because you have the choice between new, rental and used machines.



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