

COMPOSTING

THE TASK
COMPETENCE
PROCESS FLOW
KEY COMPONENTS





- 01** Biowaste, household waste, residual waste, agricultural waste
- 02** Green waste, yard waste
- 03** Sewage sludge, manure



01



02



03

THE TASK

The purpose of composting is to decompose organic substances as efficiently and odourlessly as possible, to convert them into a stable, plant-friendly, high-quality humus product in a controlled rotting process that is as efficient, short and low-emission as possible. We at Komptech have been working intensively on this for more than 20 years. The results of our close collaboration with scientists, agriculture specialists and mechanical engineers are composting products and solutions that, when tailored to their on-site conditions, guarantee maximum ecological and economical efficiency.

One-stop supplier

Our products range from mobile machines for open-air composting operation, to large-scale plants with pre-treatment, closed rotting, and final treatment of the end product. Komptech has the necessary expertise and appropriate machine and system technology for all applications, to turn waste into a valuable product while preserving and recycling resources.



Komptech GmbH

Komptech is a leading international manufacturer of machines and systems for the mechanical and mechanical-biological treatment of solid waste and biomass, and the processing of woody biomass for use as a renewable fuel.

Our product range comprises over 30 different types of machines, which cover the key steps in waste handling and biomass processing.

All share a practical focus and pioneering spirit. Practical focus means that they are designed around our customers' needs, not our own. Pioneering spirit means working towards the future, by further cultivating our accustomed high development expertise.

EXPERTISE

The following technologies are generally used from raw material to end product:

Preparation

By shredding, mixing and, where required, screening, a blend is produced that is as free as possible from contraries and is optimised for the rotting process.

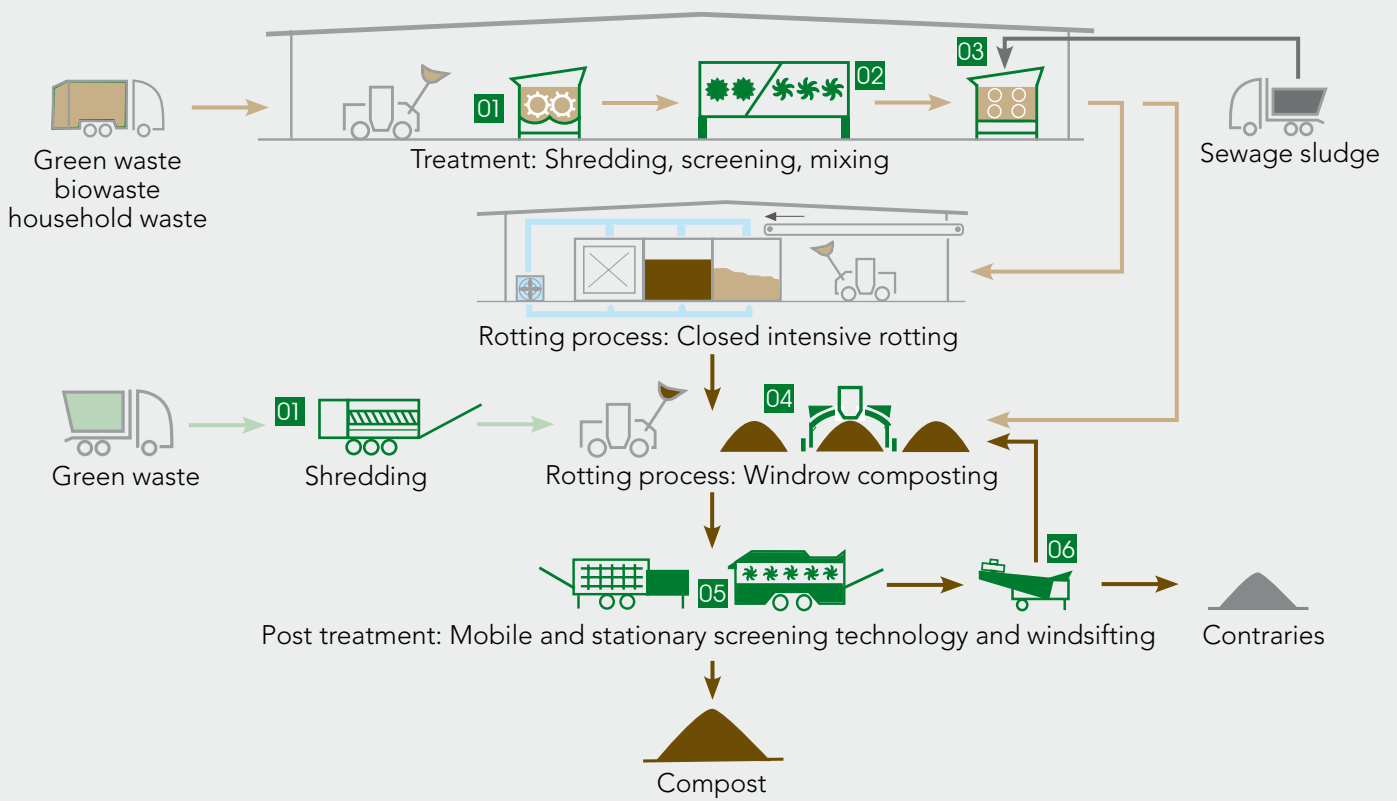
Rotting process

The decomposition and conversion process, performed by microorganisms, is controlled from outside by ventilating, mixing and watering.

Post treatment

Screening and wind sifting guarantee compost with a homogenous particle size and free of contraries.





01 Crambo

02 Flowerdisc / Multistar

03 Mashmaster

04 Topturn X

05 Drum screens / Multistar

06 Hurrikan



KEY KOMPONENTEN

All components shown are available in many different performance ranges, to permit configurations for any desired plant capacity.



PREPARATION

Shredding, screening, mixing

The process steps in the treatment phase involve separating out contraries and conditioning the material for the subsequent composting process. Preparation can be enclosed or open-air, depending on the input material and local conditions.

Low-speed machines like the Crambo or high-speed ones like the Axtor are used for shredding. Both types can be adjusted to output the desired particle size, using the appropriate screen baskets and teeth. Drum screens, Multistar star screens and Flowerdisc disc separators remove contraries and non-compostable fractions. To provide an environment that is favourable to microorganisms, the material is then mixed using the Mashmaster batch mixer, or during the layered build-up of the windrow with a wheel loader and in subsequent mixing with a turner.



ROTTING PROCESS

Open /closed composting

The input material and its associated limiting factors determine whether composting should be closed, i.e. in an indoor part of the system, or in open-air windrows. The first phase of the process often takes place in a closed system with ventilation and outlet air treatment. The subsequent final composting process can then take place in open windrows, which are turned using mobile turners. The process is generally complete after 6 to 12 weeks.

Turning compost with a Topturn improves ventilation, enables re-watering and ensures mixing of the different rotting areas in the windrow.

If the requirement is for a closed system, tunnel composting systems are used in cooperation with an experienced partner.



POST TREATMENT

Screening, windsifting

To attain a product of uniform particle size, and to separate off any contraries still present, the compost is screened. Komptech has a wide range of mobile and stationary drum and star screening machines for this process. The particle size produced is based on the intended use, ranging from coarse compost fractions for agriculture, to home and garden compost, to finely screened material for mixing into garden and potting soil.

For agricultural use, the Farmtech product line includes a broad range of general-purpose spreaders. Screening after composting generates a usable fraction and a screen overflow. The overflow can be run through a Hurrikan windsifter to remove the light components and then used as structure fill, or it can be used as biomass fuel once the stones have been removed by a Stonefex.



- 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



CRAMBO

Low-speed universal shredder

The Crambo is capable of shredding of wood in all of its various guises - from branch and shrub prunings with a high leaf fraction to rootstocks weighing several tonnes, from untreated pallets to waste wood intermingled with contraries – everything is shredded to the set particle size.

Low-speed drums with shredding teeth minimize fine particle and noise/dust emissions and resist contraries. The particle size is configurable by simply exchanging screen baskets.

This is a key benefit since it allows the ideal particle size and type for subsequent processing to be generated. A hydraulic drive with load-dependent speed control gets maximum utilization of the engine output.

The hook lift platform, trailer chassis and steel tracks with hydraulic drive options provide excellent mobility. For the stationary versions an optional disconnection of the shredding unit from the drive simplifies integration into the system.



AXTOR

High speed universal shredder

Shredded green material for composting, or precisely sized chips for fuel – the Axtor does both. Power is provided by a sturdy power band. This power is transferred to the drum via a manual gearbox and comes from a Caterpillar C18 engine in the underfloor mounting position on the Axtor 8012. A 3-axle central axle trailer, a semi-trailer or a chain drive lend the Axtor mobility.

- Long feed area, open to the front, with filling capability on both sides
- Aggressive feed with pre-compression by horizontal and vertical feed rollers
- Two shredding modes:
Shredder mode or Chipper mode
- Ideal servicing access to the engine (underfloor) and to the shredding area



SCREENS

Drum screens, star screens and disc separators

Stationary technology is commonly used for pre-screening.

Stationary drum screens are used in a wide array of applications, and are available with many mesh sizes. Direct-drive heavy-duty drum supporting wheels provide quiet operation, and their high efficiency reduces energy consumption and noise levels.

Star screens can separate input into three fractions in one pass, even if the material is moist, and offer pushbutton particle size control. The modular design lets screen decks, feed hopper, wind sifter and magnet separation be precisely configured to the job at hand.

Compact Flowerdisc separators feature high throughput with low energy consumption, and are very resistant to contraries.



MASHMASTER

Stationary universal screw mixer

Wet organic waste, shredded woody structural material and various aggregates (residual waste and sewage sludge) are transformed by the Mashmaster screw mixer into an output mixture ideal for the rotting process. Four electrically driven screw shafts keep the material in an intensive mixing motion. Rugged tools on the screws provide unraveling homogenization.

- Shredding-mixing-homogenization in one machine
- Accurate definition of the mixing ratio, and automation with conveyor belt feed possible with electronic scales
- Prolonged service life with wear-resistant tools, tray with interchangeable base



- Generously-dimensioned turning drum for high throughput and excellent mixing
- *Wheel* drive for outstanding traction and quick mobility
Track drive for maximum mobility on unpaved ground
- Swiveling cab for simplified transportation and easy boarding
- Three sizes and many options



TOPTURN X

Turner for triangular windrows

The Topturn X is designed for heavy-duty use. Hydraulic drive - wheeled or tracked - combined with a solid telescopic frame allow full mobility on any terrain. A large, powerful, hydraulically driven drum with efficient conveyor and throwing blades accelerates the composting process by ensuring that all materials are mixed, so nothing is missed. The pivoting cabin combines easy access from the ground with a perfect view in the working position.

With the cab in the transport position the turner is very compact, simplifying multi-site use. A lateral displacement device can be coupled to the turner to minimise transportation distance and improve visibility and monitoring.

Powerful watering by a hose system, a patented scraper device for reaching the lowermost ground layer, and fast versions for quick manoeuvres are further customization possibilities.



DRUM SCREENS

Hydraulic and electric drum screens

Komptech has a broad range of drum screens for virtually any application, with a choice of diesel-hydraulic or electric drive, from mains power or an on-board generator.

The hydraulic machines feature tough, proven technology, in size classes starting with the Joker and Primus at the small end, going on to the Maxx and Mustang machines for medium to large composting operations, and ending with the Magnum for the largest jobs.

On the new Cribus E series, the focus is on operating costs. Everything on the Cribus E is driven electrically, from the hopper to the discharge belts.

This, together with numerous innovations, minimizes the energy, wear and servicing costs of the whole machine. With three sizes, there is the right Cribus E for any application.

For the stationary drum screens, variable substructure, service access, housing and drive configurations simplify adaptation to on-site conditions.

- A wide product range for any need
- Extensive options for individual configurations
- Hydraulic machines with tough, proven technology
- Cribus E series with electric drive for the lowest operating costs
- Stationary machines with variable configurations for optimum adaptation to location and application



- Separation into 2 or 3 fractions with one machine, in one pass
- High throughput with precise selectivity using the CLEANSTAR system
- High flexibility, with particle size changes in seconds
- Ease of operation and simple servicing with intelligent machine design
- Multi-functional with numerous options



MULTISTAR

Star screens

Screening is always in season with Multistar star screens. High throughput and selectivity are assured even with material of varying moisture content and composting stages. This is because the screen units are continually cleaned by the patented CLEANSTAR cleaning system. To change the particle size, the operator need only press a button – the machine does the rest. The electrical drive gives quiet, efficient and economical operation.

Magnet separation, wind sifting and removal of rolling fraction make star screens multi-functional - anything is possible. Mobile machines range from simple hook-lift models to the high-performance XXL class. The modular design of stationary star screens allows configuration of feed hopper, screen decks, wind sifter and magnet separation to the separation job at hand.



HURRIKAN

Windsifter

The mobile Hurrikan windsifters allow effective separation of plastic foils out from over-sized screened particles. The patented „pressure-suction“ process enables an effective separation of light fraction from screening residues. In the first step, material is separated off by a pressure blower. In the second step, the lightweight material is drawn off by a powerful suction blower. The quality of the recyclable oversized particles can be improved yet further by using magnet separation and a stone trap.

- Reliable separation of plastic foils with selectivity up to 90 percent
- Optimal adjustments to material properties
- Powerful S-version with enlarged suction section (Two suction blowers)
- Mobile wind sifter can be combined with virtually any commercially available screen machine



STONEFEX

Stone separator

The Stonefex 3000 E stone separator reliably and very effectively removes stones and inert items from biomass fuels. The input material is the usable biofuel fraction from a screener, for example woody green cuttings, screen residue from compost, or forestry chips. A patented system of pressure and suction blowers generates exactly the right air flow in the separation chamber to remove stones and heavy objects from the wood. Fractions that were previously difficult to use due to their high amount of stones can now be processed into fuel.

- Dependable removal of up to 95 percent of stones and inert items (depending on input material)
- Throughput up to 100 m³/h with configuration for input particle size of 10...20-100 mm
- Wide range of application due to simple modification of separation limits
- Low energy costs due to electrical drive of all components
- Compatible with almost all mobile screening machines



MEGAFEX

Compost spreader

The Megafex and Fortis general-purpose fertiliser spreaders are the solution for applying large amounts of fertiliser. Weights of up to 30 tonnes present no problem, either for the robust axle unit (up to 3-axles) with parabolic suspension or for the rigid trapezoidal frame. Ease of use is also offered by the optional sprung drawbar with high or low hitch height, hydraulic jack, lift axle and electro-hydraulic remote control, for operation from inside the tractor cab.

- High-performance spreader with two horizontal mill beaters and two spreader plates (removable), for spreading widths up to 25 m
- Conical body for material transport to the wide spreader discs without clogging
- Designed for heavy duty use and long service life – floor conveyor with heavy-duty round steel chains or RÜBIG-flat chains, and HARDOX wearing parts on the spreader unit

TECHNOLOGY FOR A BETTER **ENVIRONMENT**



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