

I-GRIND

 DANISH DESIGN BY GRONNING

ENGLISH

I-GRIND

 DANISH DESIGN

IN THE HEART OF SALLING • IN THE HEART OF SALLING •




**SIMPLE,
ROBUST AND
INCREDIBLY
EFFECTIVE**

**» VARIOUS EXAMPLES OF
CRUSHED MATERIALS**

**Manure
after crushing**

**Dry straw
after crushing**

*The dry straw can be
crushed down in the
desired size*

**Grain and maize
after crushing**

**Wet straw
after crushing**

I-GRIND crushes straw, hay, beets, potatoes, maize, grain, manure, and virtually all other forms of biomass using a robust hammer mill, significantly increasing the utility value of the individual components.



I-GRIND is a simple yet incredibly effective machine that crushes, chops, and hammers most forms of biomass into smaller sizes while opening up their fibers. It consists of a chassis, drive, hammer mill, screens, rotating drum, discharge belt, and controls - all made of durable materials and dimensioned for tough work.

SERVICE-FRIENDLY «

I-GRIND is designed for intensive use, long workdays, and high productivity. Therefore, it's important that it's easy to perform daily service checks, inspect belts and hydraulic hoses, check hydraulic oil, lubricate bearings, etc. To make it easy and give users unhindered access to all vital parts, the drum can be tipped using hydraulic cylinders. The same feature is used when the screens under the hammer mill need to be removed or changed to a different size.

I-GRIND is produced with quality components from reputable brands. Most can be purchased from well-known distributors, ensuring both low service costs and fast service.

APPLICATIONS «

I-GRIND has many applications, as its robust construction and unique working principle enable it to crush and process virtually any form of biomass. Whether it needs to process straw for bedding, feed ingredients, or waste products for biogas plants, it doesn't matter as long as the screens and drum rotation speed are adjusted accordingly.

AGRICULTURE

I-GRIND has many applications, including preparing straw for bedding, refining feed ingredients, or crushing beets, grain, and maize. This allows it to operate for a high number of hours throughout the year, making it a valuable tool for farmers, agricultural contractors and industrial purposes.

» BEDDING

Straw is quickly crushed into quality bedding with optimal properties for subsequent manure handling. I-GRIND's working principle, where the individual straws are not only cut lengthwise, but also subjected to intense impacts in the hammer mill, ensures maximum absorbency and minimizes straw consumption.

» STRAW FEED

Crushed straw/hay cannot be sorted out by the animals and is therefore included in uniform quantities in all feed rations. When I-GRIND has prepared the straw feed, it is quick to mix compact feed wagon-mixer regardless of the mix type and brand.

» CO-ENSILING

By crushing/mixing beets, potatoes, corn, straw, etc., the feeding value of the various roughage crops can be enhanced, and the need for loading numerous different feed ingredients into the mixer-wagon can be reduced.

» CRUSHING FEED INGREDIENTS

Grain, maize, peas, field beans, beet pellets, rapeseed cakes, etc., can be quickly crushed into a uniform mass. By crushing the feed ingredients, the animals' ability to sort mixed feed is minimized, and the uptake/digestion of the individual feed ingredients is promoted.



BIOGAS



I-GRIND can crush most green products into biomass of the desired size - quickly, energy-efficiently, and reliably.

The physical properties for mechanical handling are improved by crushing the biomass, whether it is straw, deep litter, corn, beets, green mass, or other materials. At the same time, the value of several materials in the gasification is enhanced through crushing.

I-GRIND has already demonstrated that it can quickly convert wet and unusable big bales into valuable biomass.

There's a particular focus is on crushing straw for use in biogas production, as numerous studies show that the gasification value of straw increases significantly when crushed.

The biological processes are simply promoted because the hammer mill has "opened" the straw on all surfaces. At the same time, the raw material becomes pumpable since there are no long straws after processing, making the process significantly more energy-efficient.



TECHNICAL DATA

Product name	I-GRIND 2.0
Width	300 cm
Height with folded unloading conveyor	400 cm
Length with folded unloading conveyor	690 cm
Unloading conveyor length	730 cm
Unloading conveyor rotation (horizontal)	+/- 200 cm
PTO	1.000-1.100 rpm
Gearing	1:2
Hammer mill drive, belts	10 pcs.
Hydrostatic pumps	265 l/min.
Hydraulic oil cooler with auto review	Standard
Hammers	88 pcs.
Screens, diameter	By demand
Remote control with control panel	Standard
Grain insert	Extra
Transport speed	40 km/h
Air brakes	Standard

Tractor requirements:

HP	200-500 hp
Electrical plug	12 V
Hydraulic equipment	2 double-acting

The tractor's hydraulics are used to maneuver the unloading conveyor and tipping of the drum.

CAPACITY

The capacity naturally depends on the base material, the desired degree of crushing, and the horsepower capacity the tractor provides. In dry straw, the loading/unloading speed may be a limiting factor, as it takes no more than about two minutes to transform a big bale into quality bedding.

GRAIN INSERT

The I-GRIND can be equipped with a grain insert that is easily mounted down in the drum. The insert sits on the bottom of the drum and feeds the loose material over the hammer mill using a cell feeder, which then breaks down the material.

When installing the insert, the hydraulics are switched from the drum rotation to operation of the cell feeder. This allows loading loose material in full loads, as the cell feeder automatically doses the material according to the hammer mill's capacity and the tractor's horsepower. The grain insert is sold separately.

DESIGNED AND PRODUCED IN DENMARK

The I-Grind is produced in the highest quality in Denmark, earning it a seal of quality. To maintain our high standard, we have carefully selected European suppliers with whom we are in ongoing dialogue.

The choice of subcontractors for hydraulic equipment, controls, etc. is also European, so no matter where you use the I-GRIND, spare parts are easily accessible.

SIEVES IN ALL SIZES

The hammer mill processes the material until it can pass through the sieves under the mill and onto the unloading conveyor. The design of the screens is adapted to the task and can be easily replaced without specialized tools.



FOLDABLE UNLOADING CONVEYOR

The operator can easily unfold the unloading conveyor using hydraulic cylinders, and after the work is done, fold it back up and place it in the transport position behind or over the machine.

A custom frame secures the conveyor



CHASSIS FOR ROAD TRANSPORTATION

I-GRIND has a large capacity and will often be used in many locations. Therefore, it is built on a robust chassis designed for high-speed road travel. Brakes help promote safety during driving.

SINGLE-OPERATOR

A single operator can easily perform all work functions from the loading machine itself - loading, monitoring, changing the direction of the discharge belt, and adjusting the machine's operation quickly becomes a routine.

Thanks to the automatic control of the drum's rotation speed and the hammer mill's rpm, the machine is not overloaded, allowing the operator to concentrate on loading and utilizing I-GRIND's high capacity. This results in very high productivity per man-hour.



FLEXIBLE UNLOADING

I-GRIND's discharge belt can be adjusted in both height and direction via the controls on the machine itself or with a remote control. It is flexible and minimizes the need for, e.g., leveling in flat silos. The mobility is +/- 2 meters to the sides.

HAMMER MILL <<

The hammer mill consists of an extremely sturdy cylinder with 88 hammers, distributed with 11 hammers on eight rows. The hammers beats/pulls the material out through the screens and crushes it until the desired size passes through the screens, to be transported away via the discharge belt.

SPECIALY DEVELOPED HAMMERS <<

The specially developed hammers are optimized for the biogas industry, where wet and heavy biomasses needs to be crushed. Each hammer weighs approximately 3.6 kg and is designed with a narrow but heavy attack angle, producing a fine, uniform mass with high capacity. The hammers are welded with a special alloy on the tips.

DRUM <<

I-GRIND's drum rotates while feeding the material over the hammer mill. The drum's rotation speed is set by the operator. When the drum rotates with the material, the hammer mill's speed monitoring can adjust the feed rate of the material to avoid overloading the machine.

The operator sets the drum's rotation speed on the machine with a single press. The machine's setting can then be changed from zero to the set speed via a wireless remote control.

If the hammer mill's rotation speed drops below 1,800 rpm, the drum's rotation speed decreases or stops completely until the hammer mill is back up to speed, thus avoiding overload and downtime.

When I-GRIND's optional grain insert is installed, the hydraulics from the drum are instead directed to the grain insert's rotary valve, which also decreases in speed or stops if the hammer mill loses speed.



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From our place in the heart of Salling, we proudly and passionately operate Grønning Smede- & Maskinforretning. It is here in the agricultural lands of Salling that we have put down our roots, and it is in close collaboration with the local farmers and businesses that we evolve every day. The strong support from our loyal Salling customers has enabled us to be innovative and develop solutions that benefit not only our local farmers, but also farmers, businesses, and livestock owners in Denmark and Europe.



As a dedicated Salling-based company, we are ready to serve agriculture, private individuals, and businesses in all areas. Our customers are the core of our business - their trust is fundamental to our company, and we value every single relationship we have built.



We appreciate your interest in our products, which have been developed with inspiration from and for the benefit of the local business community.

With local greetings, Joakim and Claus

