

MOBILE AND TRANSPORTABLE ROLLER CRUMBLER OF WET GRAIN WITH YEAR-LONG USE

M1



SUMMARY OF ADVANTAGES:

- The feed texture can be varied according to the requested fineness both for cattle and monogasters.
- The feeding value of the wet ensiled grain processed by roller method, boosts digestibility and also production effectivity.
- Costs savings reach up to 33 €/t.
- Throughput of 20 t/hr is reached by power input of mere 60 HP.

OPERATING SPECIFICATIONS		M1
tractor drive		60 HP
throughput (wet maize grain*)	cattle	15 to 20 t/hr
	pigs**	7.5 to 15 t/hr
hopper		0.9 m ³
additional hopper		2.3 m ³
curb weight		2150 kg

* crumbler's specifications after conversion to a grinder or crimper of dry grain are the same as those of the standard roller mills ROMiLL S900 and M900

** if the request for finer feed texture for pigs persists

PRINCIPLE

The machine takes part in technology of the so-called split harvest of wet grain and its ensilage. It is used for processing maize and wet grain of various kinds of grains, legumes, mainly in colder regions where the crop does not mature. This is an economically highly effective method of post-harvest treatment. This method has found its first European use in Finland and England. Now it is spreading dynamically all over Europe, even in the very hot southern regions. Farmers, regardless of regional conditions and differences in breeding kinds, convert to this method of feed processing. Owing to significant costs savings, they can get ahead and gain competitive advantage at animal products market.

SPECIFICATION

M1 model is supposed for use mainly at ensiling place. It is designed both for producers of grains and for harvest services companies. It can be used for the whole year: as the wet grain crumbler during the harvest season, and as dry grain grinder, eventually also as crimper in remaining part of the year.

The machine is driven either by a lower-class 60 HP tractor or by electric motor. The throughput of one M1 crusher is fully sufficient for output of one harvesting thresher, even at highest yields. Wet grain is transported from field to the machine and is filled to the bucket which enables the use of front loader. Consequently, the grain is crumbled according to required different product texture for cattle and monogasters by setting appropriate gap between rollers. After crumbling, the product is sprayed by preservative, optionally by water for higher requested moisture. The processed product is then transported by a conveyor, or directly ensiled by optimum 30 to 40 % moisture – stored with maximum possible removal of air, for example by pressing to bags or by bedding in silo pits, etc.

BENEFITS

Processing of grains by this method immediately after harvesting, enables to reach unrivalled lowest costs. In the conditions and price relations of the Czech Republic, the savings by withdrawing the drying of maize grain are about 20 – 33 €/t. For about 9 t/ha yield, the costs range from 13 to 17 €/t. In summary, this method provides cost savings about 33 €/t. The diesel consumption of the ROMiLL roller crumbler is about 0.5 l/t – that is by 2 l/t lower than by a hammer mill of equal throughput.

The feed processed by the method mentioned, contains more water-soluble sugars, is better digestible and has higher usability of soluble nitrogen. It optimizes starch ratio in paunch and small intestine. This lowers occurrence of paunch acidosis.

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Modular and mobile concept

The frame of the machine with hopper is attached to the chassis. All other machine components are attached to the frame and chassis. The chassis is a semitrailer for connection to a tractor, or a trailer for connection to an automobile for transport to a longer distance. The tractor semitrailer has a parking mechanical brake as standard. The automobile trailer has drive-up and parking mechanical brakes and a connecting device to the tractor. The semitrailer and trailer are demountable. The machine can be eventually delivered without chassis as stationary, and the chassis can be ordered later. The stability of the machine and its horizontal plane is assured during operation by four hydraulic struts. A forklift stacker can be used for handling of the machine without trailer, and a standard transport vehicle for its displacement. The included roller crumbler can be converted to a crimper. Without connection to a tractor, the machine can be driven by electric motor. The tractor electric circuit feeds end, brake and direction lights, eventually also other two circuits – for preservant sprayer pump and for electric accessories. In the machine with electric motor, these circuits can be fed also by a switchboard from mains.

Mechanical processing of grain

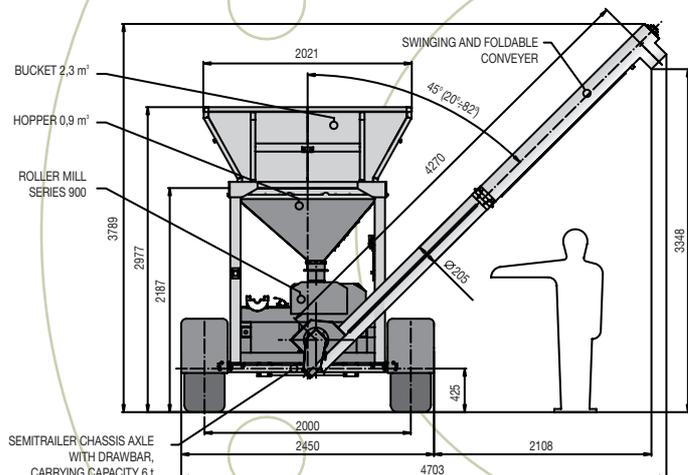
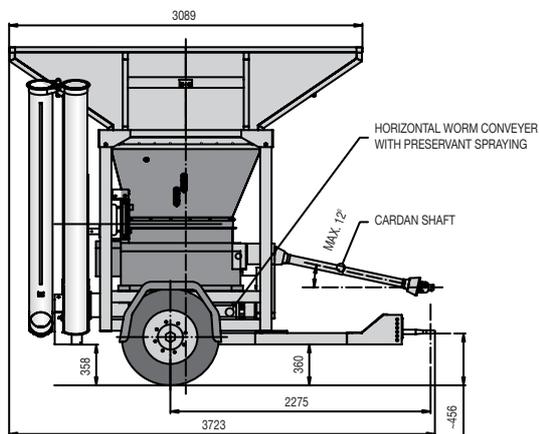
Grain is crumbled by a ROMiLL roller mill series 900, specially designed for processing of wet grain. The crumbler is driven from tractor by a cardan shaft or by an optional electric motor.

Transport of processed product

The discharge hopper located under the crumbler, vents to the collecting horizontal conveyer that transports grain to vertical discharge conveyer with possibility of positioning the outlet. Both tubular/worm conveyers are made of stainless steel. The torque from crumbler's drive is transferred to the conveyers mechanically by a security slip clutch.

Preservation

Preservants are sprayed on crumbled grain in horizontal conveyer by acids applicator with a flow rate meter.



Optional moisturing

Similarly as the preservant sprayer, a water inlet (usually from an independent tank) vents to the horizontal conveyer. It is used for optional moisturing of the processed grain.

Basic accessories

- › cardan shaft
- › preservant sprayer
- › sound and light signaling of operational conditions that require an attendance intervention
- › lighting for night operation

Optional accessories:

- › automobile trailer with drive-up brake
- › pneumatic brakes for tractor semitrailer
- › mechanical struts for stabilization of stationary model
- › electric motor with switchboard
- › conversion kit for crimper

LONG LIFETIME OF ROMiLL ROLLER MILLS

- › robust design
- › high abrasion resistance of rollers
- › stabile alignment of rollers
- › protection of rollers against damage by hard objects by a unique mechanism
- › reliable gears