



**MALTING SYSTEMS**  
FOR CEREALS  
AND SPROUTED SEEDS

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# MALTING SYSTEMS for cereals and sprouted seeds

The manufacturing of malting plants has been a natural step for our company, coming from experience acquired in the production of machines for cereal processing combined with a greater sensitivity in the food industry. After decades of products obtained from large transformation cycles, there is now a trend towards regionalization. Therefore the production of its own malt has regained importance for small and medium-sized companies. Mostly for craft breweries, terms like “origin” and “territory”, now play a key role in their activity.



The production of malt from local cereals creates a lot of interest. “Local” concepts are becoming more and more popular. Primarily in the food industry, health and traceability are the topics of high interest for final consumers. This determines a step forward in the production of organic products. The slogan “from field to drinking glass” becomes important as the brewery, in addition to beer, produces its own malt as well.



Now even commercial malthouses have a system whereby they can produce small batches of new malts and sprouted seeds. These products can be used in various sectors, from food to beverages, from cosmetics to pharmaceutical products. The potential is manifold to be able to give a significant final added value, also from an economic point of view.



### SPROUTED SEEDS

Sprouted seeds are an example of nature's extraordinary ability to produce energy. Germination is a natural process thanks to which an incredible flow of energy is activated, necessary for the plant to grow, which transforms a nutrient, the seed, into a super nutrient: the sprout.



#### The properties of a malted / sprouted seed are:

- LESS CALORIES, LESS CARBOHYDRATES
- MORE PROTEINS, VITAMIN B, VITAMIN C, VITAMIN E, BETA-CAROTENE
- MORE NUTRIENTS, AMINO ACIDS AND FIBERS
- LESS ANTI-NUTRIENTS
- MORE DIGESTIBLE BECAUSE ITS RICH IN ENZYMES
- LESS GLUTEN, MORE SUITABLE FOR THOSE WITH FOOD INTOLERANCE

# 01 STEEPING VESSEL

The well cleaned and graded product is loaded into the steeping vessel through an auger or other type of conveyor. Once the loading is finished, controlled temperature water is introduced for the steeping phase and, thanks to the forced movement of the water, residual impurities are expelled. The product reaches the desired humidity with alternating phases of steeping and resting times. Once the product is in compliant, it is transferred to the malting drum.

## COMPONENTS

- Vertical tank with conical bottom in AISI 304 stainless steel
- Air-water command and control valves
- CO<sub>2</sub> extraction fan
- Water overflow system
- Tank support structure, with reinforced profiles in AISI 304 stainless steel
- Pneumatic valves for process automation
- Level sensor
- Walkway with control ladder
- Steeping vessel cover

## WEIGHING

- 4 loading cells applied to the legs

## Optional:

- Product transfer pump (excluding piping)
- Water heating coil
- Steeping vessel insulation
- Temperature sensor
- Product loading elevator



TECHNICAL DIAGRAM OF THE STEEPING VESSEL



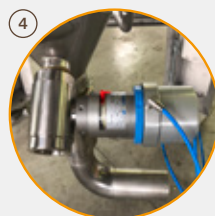
LEVEL SENSOR



CO<sub>2</sub> EXTRACTION FAN



AIR IMPULSE SYSTEM



PNEUMATIC VALVE



TRANSFER PUMP



LOADING CELLS

MODEL	CAPACITY ton*	LENGTH mm	WIDTH mm	HEIGHT mm
MAC 20	2	3200	2250	4500
MAC 40	4	3600	2750	5200
MAC 60	6	4000	3250	5600
MAC 120	12	4675	3950	7400

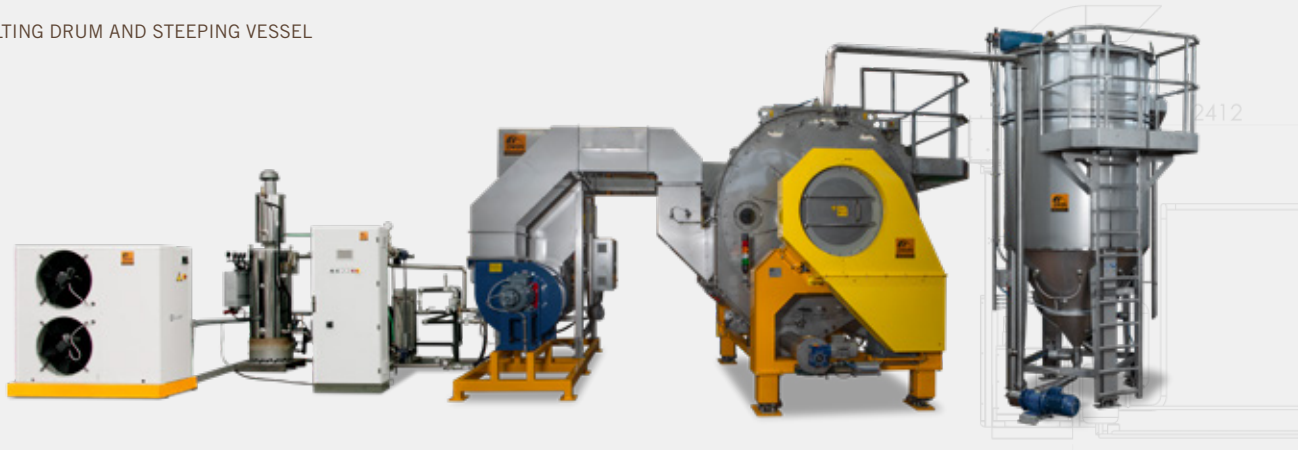
\*Capacity is calculated based on barley, entering with 14% moisture level, well cleaned and calibrated. Dimensions are approximative. Final data-sheets are valid.

## 02 MALTING DRUM



The malting drum allows to carry out the subsequent stages of malting: germination and kilning. During these processes, the management software, designed by Zanin, controls the temperature, ventilation, mixing and times set by the user in its recipe. These parameters are essential for determine the final quality of the malt.

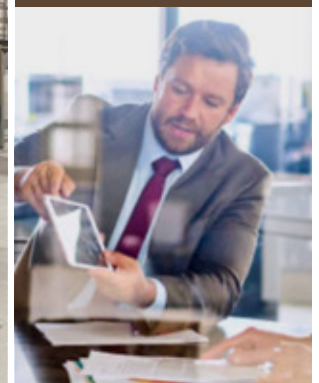
MALTING DRUM AND STEEPING VESSEL



TELEASSISTANCE



CONSULTING

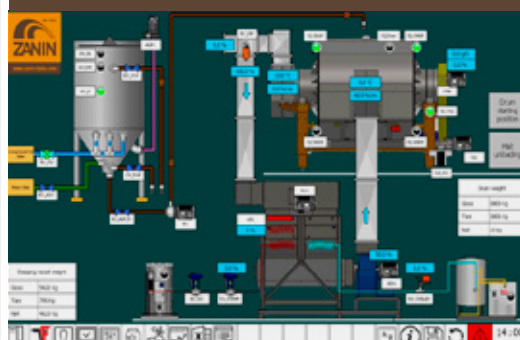


### MANAGEMENT:

Through a simple and intuitive interface the user is able to set the recipes for the production of different types of malt, check or change the parameters of process even from remote, view the logs and graphs of temperature and humidity.

The software, therefore, is able to handle the whole process in an automated way according to the directives set by the user.

TOUCH SCREEN



- ① HEATING - COOLING SYSTEM
- ② FAN
- ③ INLET AIR DUCT
- ④ MOTORISATION
- ⑤ ROTATING DRUM
- ⑥ OUTLET AIR DUCT



### DRUM COMPONENTS:

#### DRUM

- Insulated drum in AISI 304 stainless steel complete with service window
- Ventilation and special sectional air ducts, internal and external
- Motorisation with direct transmission to the drum
- Unloading auger inside the drum
- Temperature-humidity detection probes
- Drum support structure manufactured with reinforced profiles in painted carbon steel

#### WEIGHING

- 4 loading cells applied to the legs

#### HEATING-COOLING

- Finned air heating coil
- Finned air cooling coil
- Heating system with diesel or gas burner. On request with renewable energies
- Electric cooling system

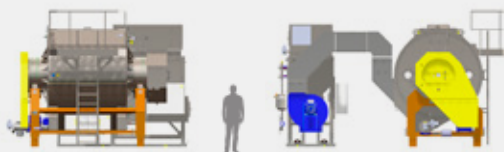
#### ELECTRICAL CABINET

- built according to current standards CEI-EN-60204-1 with components of quality approved and selected
- Command and control PLC on keyboard TOUCH SCREEN

### MODELS AVAILABLE

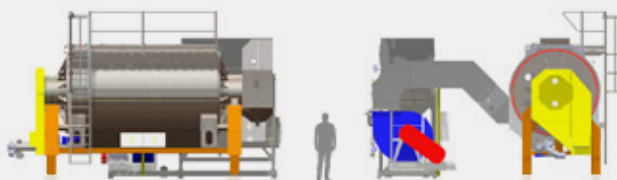
#### MALT-T 20

2 Ton Cycle Capacity



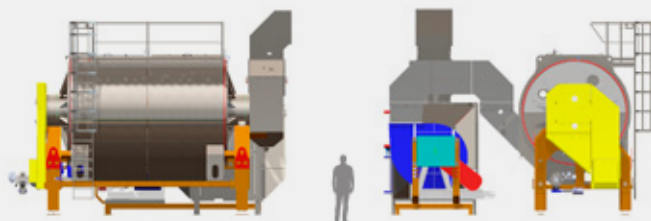
#### MALT-T 40

4 Ton Cycle Capacity



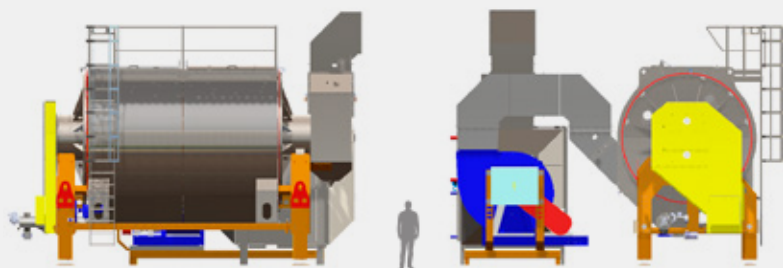
#### MALT-T 60

6 Ton Cycle Capacity



#### MALT-T 120

12 Ton Cycle Capacity



MODEL	BARLEY CYCLE CAPACITY ton*	CYCLES / MONTH N°	DRUM SYSTEM DIMENSIONS mm
MALT-T 20	2,0	5	5400 x 5500 x h = 3400
MALT-T 40	4,0	5	8300 x 6200 x h = 3800
MALT-T 60	6,0	5	7250 x 6800 x h = 5100
MALT-T 120	12,0	5	10100 x 9000 x h = 6700

\*Capacity is calculated based on barley, entering with 14% moisture level, well cleaned and calibrated. Dimensions are approximative. Final data-sheets are valid.

## 03 CLEANING AND MAINTENANCE

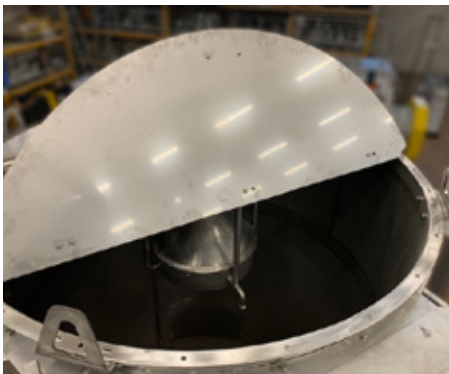


Another important aspect of Zanin malting systems is the simplicity of the cleaning and sanification operations.

### STEEPING VESSEL

The steeping vessel is equipped with an upper opening from which it can be internally washed. Access to the part upper is possible through ladder and the inspection platform.

Optional: automatic washing through rotating nozzles.



### MALTING DRUM

The drum has both in the bottom and the top part wide doors that allow, if required, internal access. This guarantees the operator the complete cleaning of the machine from the outside.

Even the malting drum has as standard equipment an upper inspection platform with ladder.



# 04 MINIMALTING SYSTEM

The minimalting system mod. MINIMALT-5, is an All-in-One system where the phases of steeping, germination and kilning take place in the same machine. It is capable of processing 500 kg of incoming product per cycle. The software developed by Zanin allows an automated management of the process, whose work parameters are defined by the user in his own recipe.

## DRUM COMPONENTS:

### VERTICAL DRUM

- Insulated vertical tank in AISI 304 stainless steel complete with service porthole
- Sectional ventilation and air ducts special, internal and external
- Motorisation with direct transmission to the vertical auger
- Temperature/humidity detection probes
- Construction support structure with reinforced profiles in AISI 304 stainless steel

### WEIGHING

- 4 loading cells applied to the legs

### HEATING-COOLING

- Finned air heating coil electrically operated
- Cooling finned coil of the air
- Electrical cooling system

### ELECTRICAL CABINET

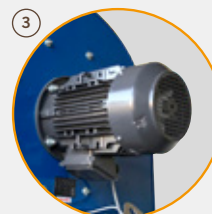
- built according to current standards CEI-EN-60204-1 with components of quality approved and selected
- Command and control PLC on keyboard TOUCH SCREEN



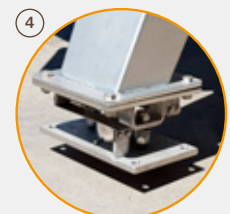
BATTERIES



AIR RECIRCULATION SHUTTER

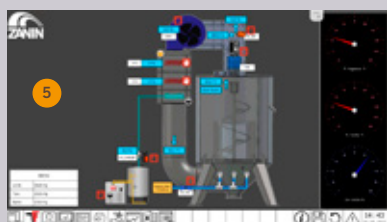


FAN



LOADING CELLS

## TOUCH SCREEN



MODEL	BARLEY CYCLE CAPACITY Kg.*	CYCLES / MONTH N°	DIMENSIONS mm
MINIMALT-5	500	5	2750 x 1850 x h = 3750

\*Capacity is calculated based on barley, entering with 14% moisture level, well cleaned and calibrated. Dimensions are approximative. Final data-sheets are valid.





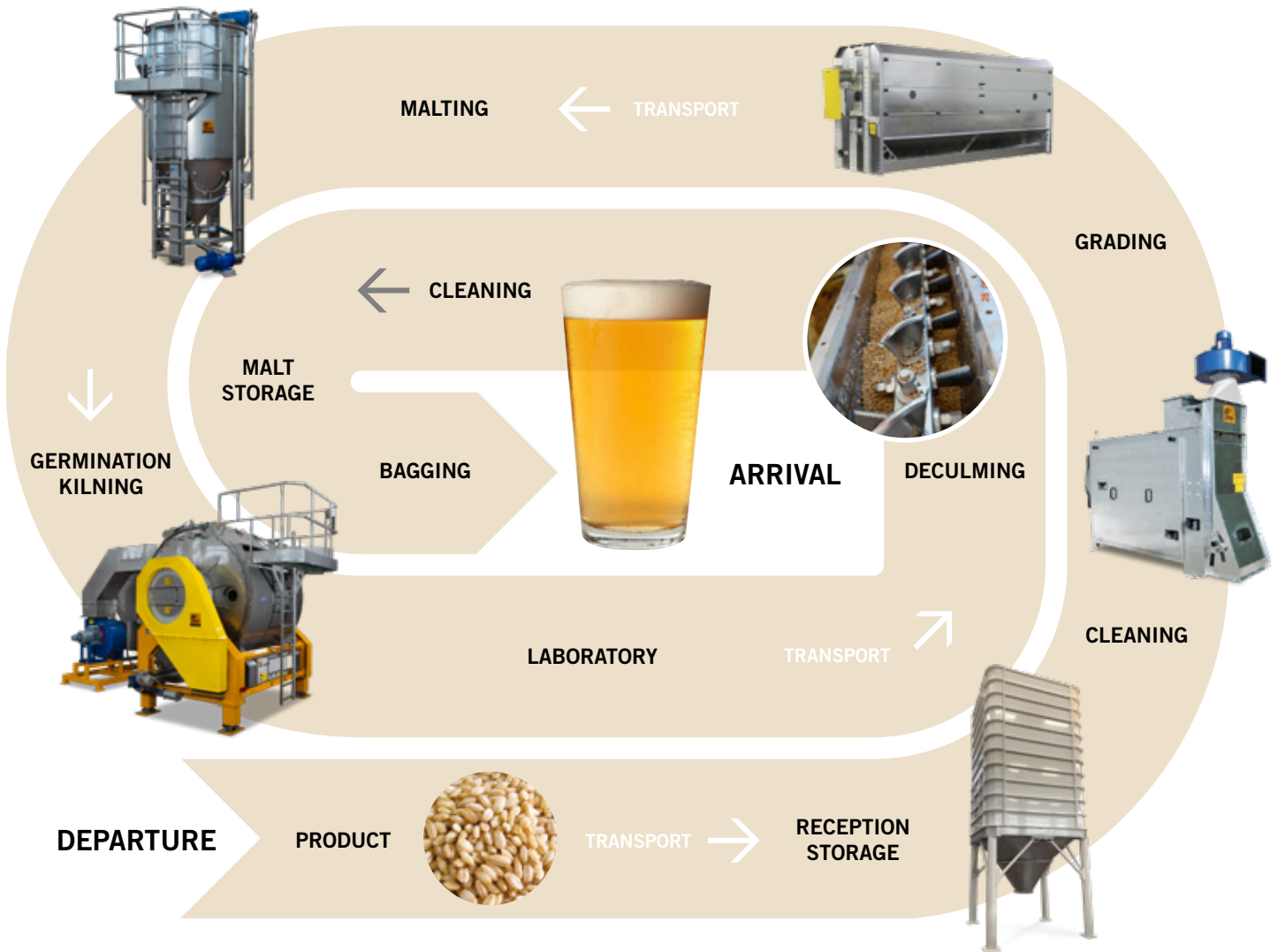
**MINIMALTING SYSTEM  
COMPLETE WITH  
DECULMING SCREW**



# Everything is under control from reception to malt.

## THE PROCESS

Zanin is able to create tailor-made solutions for the customer ranging from the receipt of the raw material up to the packaging of the finished product. It is essential to remember that the product, before the malting process, must be cleaned and graded to obtain that homogeneity defining the final quality of the malt.



## LABORATORY

Zanin offers its customers laboratory equipment essential to analyse both the quality of the raw material and the final product. Such tools are necessary for the continuous improvement of the final result.



### RECEPTION AND STORAGE



### 2-STEP DECULMING



### CLEANING AND GRADING



### MALT STORAGE



### PRODUCT PACKAGING





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DEALER