

# Cherry and small fruits

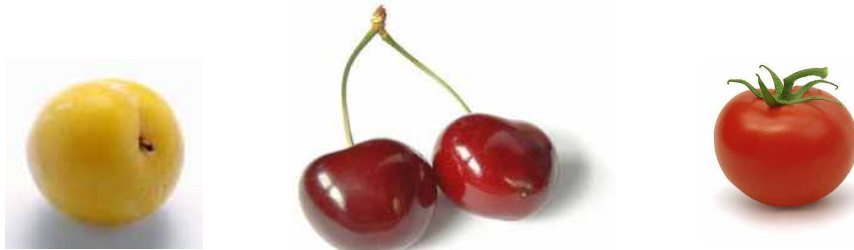
## Mechanical sizing machine

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### Fruits

The size sorting machine can process small fruits with minimum diameter 18mm and maximum diameter 45mm (cherry, plum mirabelle, cherry tomato,...)



The minimal configuration of an installation, is composed of : a feeding (and selecting) belt + a grading machine with an output inclined plane or a discharging belt + a final packing table.

Many options can complete the packing installation.. (cluster separator, feeding systems),...

- Patent Pending -

Several times awarded : SIVAL 2006 - SITEVI 2001 – As Trophy 2008



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## Principle of sizing

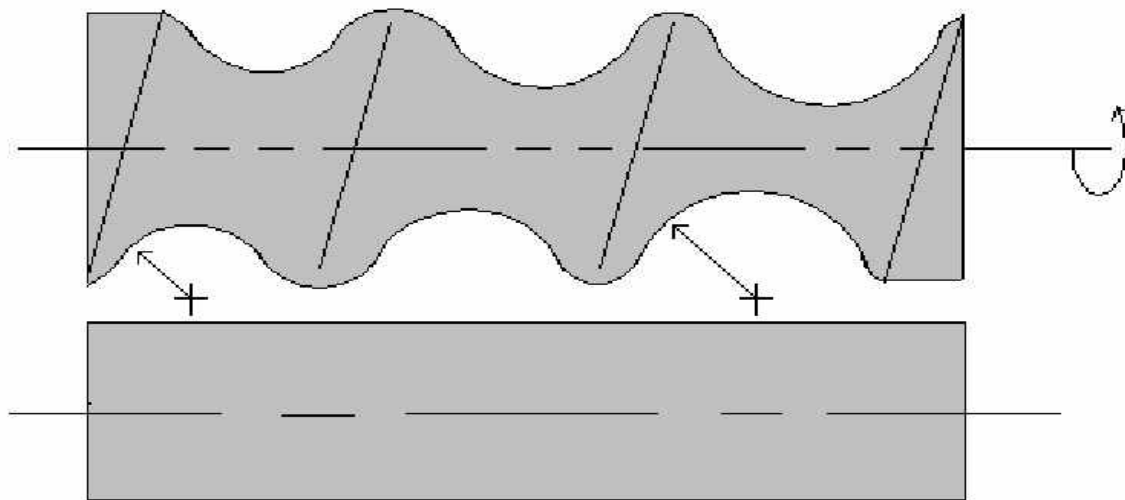


10 lines sizing machine



Main of the cherries take the same position on the screws

The endless screw drives the fruit very gently and makes it turn around. (the screw turns and lift the fruit)



1 line = 1 Endless turning Archimède screw + 1 Rigid stainless tube

The fruit goes along, transported between the endless screw and the rigid tube, above the grading space that increase gradually. When the grading space is equal to the size, the fruit is discharged under the endless screws and exits on an output inclined plane or on a belt that extracting fruits from the grading machine to the final size section.



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**Accuracy** : The mechanical size grading machine have a limited accuracy that mainly depends on the shape of the fruit (results are different according to the variety).

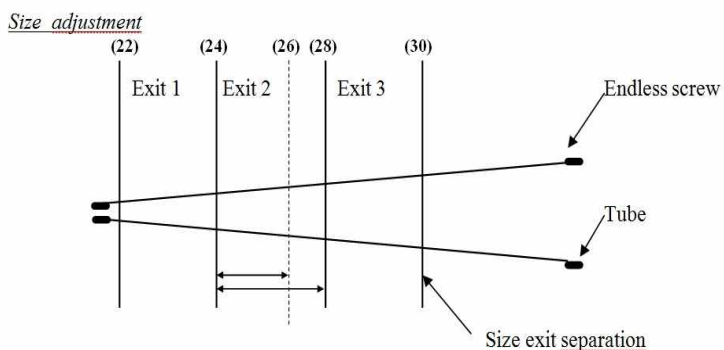
Tests conducted by the French research center 'domaine de la Tapy', show that this machine is the most accurate of the market (measurements of the expected accuracy of sizing conducted with 3 or 4 different cherry varieties / 4 kinds of cherry mechanical sizers have been compared).

All these tests and results of have been published (available too on our web site, or on demand)

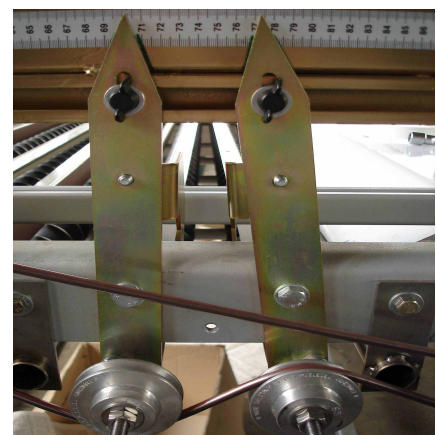
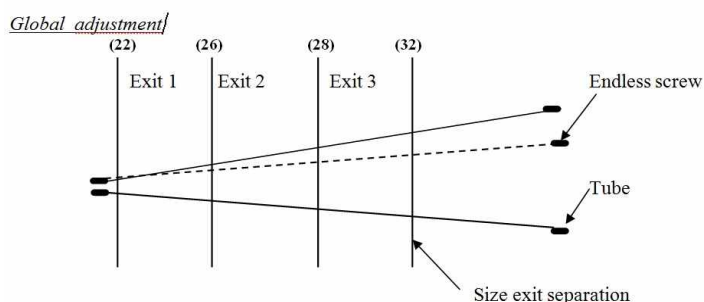
**Sizes outputs** : 5 adjustable sizes.

## Sizing Adjustments

**Size sections adjustment** :The size sections are adjustable by moving the output partitions along a millimeter calibrated marking system (different positions according to the variety).



**Global size adjustment** : It's possible to change the distance between endless screws and fixed tubes, that allows to adjust all the outputs (bigger or smaller).



**Speed adjustment** : With frequency inverter or with mechanical moto-variador, according to the option.



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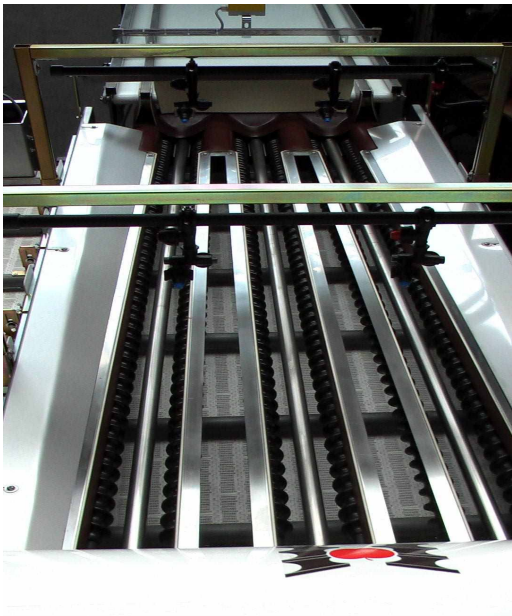
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## Specifications

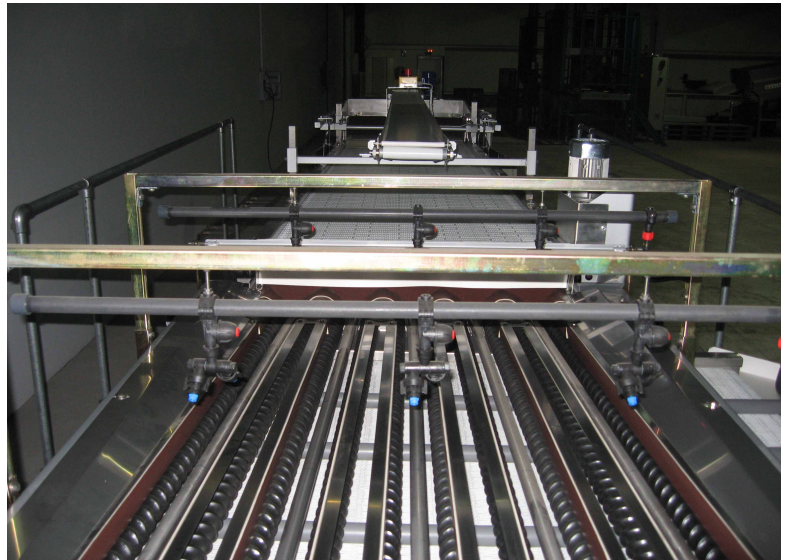
**Capacity** : The capacity of the installation depends on :

- the **number of lines** ( 4, 6, 8 or 10 sizing lines ),
- the quality / regularity of the feeding (not under-feeding, but not over-feeding too...),
- the cluster separator device system (by hand, or with an hydraulic cherry separator...),
- and of the kind of fruits (big / small, only a few clusters / numerous big clusters).

The max capacity in cherry can reach up to 100 kg/h/line (so maximum 1T/h with a 10 lines machine).



*6 lines sizer*



*10 lines sizer*

## Fruits exit (after sizing)

The fruit exit can be (according to the requirements of individual customers) :

- on an output inclined plane (economic solution, left picture),
- or on a large discharging belt (advised solution, right picture), with a reduced fall.



*Exit on inclined plane*



*Exit on discharging conveyor belt*



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## Frame

Stainless steel frame (advised) or metal frame (less expensive).

## Water spray

The water spray (brumisation) is necessary, This improve the slip of the fruit on materials.

The water spray is adjustable with a timer (programming of the 'on' spray time, and of the 'off' time between 2 sprays), adjustable nozzles, (water from the domestic water network) with stop valve and filter.



*Water sprays over the sizer*

## Periphery / optional equipments :

The simplest installation consists of a cherry sizer + a selecting belt,

This can be completed with cherry water separator, water dumping system, extra packing belt / rotary .

The architecture is flexible and depends on the customer requirement : sorting before or after cluster separation, quality sorting before or after sizing.



*Above & Under : 4 lines minimum equipped*



*Above & Under : 10 lines fully equipped*



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## Stem separator (optional)

Patented hydraulical cluster separator, that separates cherry clusters at their junction, by water hydraulic effect.

This machine uses 500 liters of water, and it can be associated to a refresh water system. The separation is a natural separation (same as if you do it by hand). Less damage on the fruit than with classical separators. This system increases the life of the cherry after separation.

The frame can be painted steel (less expensive) or stainless steel.



*Hydraulical cluster separator*

## Water dumping system (optional)

Water dumping system with plastic elevator.

This device allows to empty big quantity of cherry, and to gently and regularly supply the packing line.

## Packing conveyors / Rotary (optional)

Packing belt conveyor.

Rotary (turning table) to accumulate and pack the fruits.



*Water dumping system*

## Platform (optional)

Platform to be at the right height for sorting.



*Rotary (turning table)*



*Platform*



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