MUSSELS SORTING LINE

Extrasorter 3W — 3 Way separation

Extrasorter 3way separation - first new: for use with whole products, to sort tomatoes, walnuts, olives, potatoes and seafruits.
The 3W separates the product into 3 classes according to type and quality; a first class of rejected products such as or rotten, broken mussels. A second class made of limestoned mussels and a last class of compliant products.

3w for sorting whole mussels

This new machine features avant-guard electronic technology and thanks to its size, it is particularly adaptable to high-capacity production lines, as it is able to reach a maximum circumference radius of 150 cm, plus a loading capacity for walnuts of 20 t/h (Extrasorter 150 3W). In fact, the sorting system is available in different formats (50, 75, 100 and 150) and is able to adapt to different production lines and capacities.

The sorter consists of:
- two vision units
- a cleaning and washing system for the vision units
- two ejection units
- a frame suitable for the conveyor and motorisation system
- a power panel containing the electronic command circuit

WORLD FIRST

VISION SYSTEM

The vision system consists of a lighting device based on high-intensity LED technology using six different wavelengths (i.e. esachromatic technology) that is able to identify and discard unwanted mussel according to colour and detect the presence of foreign bodies.

Also, the infrared background contrast enables to effectively detect the colour white (i.e. rotten mussels, foreign matter, etc.)

IMAGE CAPTURE SYSTEM

The opposite sides of the product are inspected rapidly and simultaneously by high-precision and highly sensitive sensors, thus ensuring a homogeneous, 360° inspection. Two completely independent lighting and vision units are used here. They are placed at the exit of the conveyor belt and inspect the product from both the upper and lower side.

The central processing unit analyses and correlates the captured images, defining the types of defects that are to be discharged based on the preset operating mode.

The software installed on the machine is able to identify seafruits according to a given colour and enables to achieve the following results:

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• **White limestoned are detected and discharead** • **Rotten mussels are detected and discharead**

• **Foreign bodies including leaves, branches, pieces of wood, stones, fabric, insects, tin and plastic are detected and discharead.**

Foreign bodies can be of whatever colour, even the same colour as the mussel.

The vision unit comprises a cleaning system with a timer managed by the relevant control unit.

The cleaning system comprises a washing device specifically designed to avoid resorting to a dry cleaning procedure to clean the protective glass.

The unit is enclosed in an electrical panel with protection class IP65.

EJECTION

The pneumatic ejection system, for the machine running at full capacity, is comprised of 60 electro-pneumatic ejectors.

The two ejection units are placed right next to the vision system.

The two ejection units are independent and can be programmed to dischard two different kinds of defects.

OPEN MUSSELS

Technical features

Extrasorter 3W	20C	30C	40C	60C
Characteristics of sorting				
- Capacity*	5 T/h	8 T/h	10 T/h	15 T/h

* (*) these values are purely indicative and depend on the type of product and on their distribution on the belt. For more accurate data, please contact Protec.

Extrasorter 3W	20C	30C	40C	60C
Vision system		Optical Sensor		
- Overall reading width	500 mm	750 mm	1000 mm	1500 mm
- Lighting		DEL visible/infrarouge		
- Container/casing		AISI 304 stainless steel		
- Vision system protection level		IP65		
Sorting efficency				
- White limestoned		92 %		
- Broken and Rotten		92 %		
- Foreign bodies		90 %		

** The efficiency depends on the quantity, dimension, type of defect and distribution of the product on the conveyor belt.

Extrasorter 3W	20C	30C	40C	60C
Ejection system		No. 2 air blast pneumatic units.		
- Number of ejectors for ejection	40	60	80	120
- Operating pressure		6 bar		
- Protection level		AISI 304 stainless steel		
- Degré de protection		IP65		
- Air treatment		Filtering and lubrication with food grade lubricant		
- Nominal operating pressure		6 bar		
- Average air consumption		200 N/l min.		
- Operator interface		With the LCD terminal programming		
- Cleaning system		With water, pneumatic replacement of the brush, automatic operation with timer		

Extrasorter 3W	20C	30C	40C	60C
Electromechanical features				
- Operating voltage		400 V, 50÷60 Hz 3F+T		
- Power consumption		1,5 kW		
- Control voltage		24 V DC		

Technical documentation is in conformity with EC standards.

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Winery technology division

PROTEC

SORTING EQUIPMENT
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