

Agrosta®14 Motor V4

Automatic penetrometer for fruits

Agrosta

The Agrosta®14 Motor Version 4 has been designed in 2015

It integrates the best technology for measuring the firmness / softness of crisp fruits and materials – It is a statistic instrument for measuring the crispness of Apples, pears, potatoes, mangos, apricots, papaya, cucumber, peaches, kiwi... and many other fruits and vegetables



Many thanks for having acquired an Agrosta instrument

Your package contains :

- The instrument itself
- A SD card already inserted in the instrument
- A micro SD to SD adaptor
- A power supply
- A certificate of conformity
- A manual

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The Agrosta®14 Motor is provided with 2 tips : A tip of 11 and a tip of 8 + specific tips according to your requirements

- The tip of 11 is recommended for : APPLE, PEAR, PEACH, KIWI, PAPAYA
- The tip of 8 is recommended for : MANGO, CUCUMBER, APRICOT, POTATO

Main characteristics of the machine :

- Using Stepper Motor Nema 23
- Stepstick (Motor Electronics) from Asia
- Main electronic processor based on Arduino (Made in Italy) – 2 Boards, 1 for movement & 1 for measurement & statistics
- Electronic shield for pressure testing made in Hong Kong (Based on HX 711 24 bits precision)
- Screen & Keypad made by DF Robot in Asia
- Design and software made by Agrosta in France
- Precision force sensor made in France

- Resolution : 1 gram
- Max pressure : 15 000 grams
- Min pressure measurement : 500 grams
- Precision : 1.5 grams
- Memory : 450 measurements per batch, number of batched limited by SD card capacity (huge..)



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Comparison between previous Agrosta®14 MOTOR and new model :

- The precision is 24 bits instead of 12 bits for previous version (More than 1000 times more precise..)
- Equipped with a larger screen (2 * 16 characters) with retro light
- Equipped with sd card slot for unlimited storage of data
- Touch sensor makes easier repetitive measurements for user (And it is much more easy to clean..)
- Motor driver cooled by a fan for longer life time
- 6 Different electronic boards for each function, 2 microprocessors (1 for movements, 1 for measurements)

1) HOW TO START THE INSTRUMENT

- Connect the power supply to the instrument
- The motor goes back to Upper Home position
- The screen switches on

1st Menu :



Press 1 to start a new batch, 2 to consult or delete previous batches

2nd Menu after choice 1 :



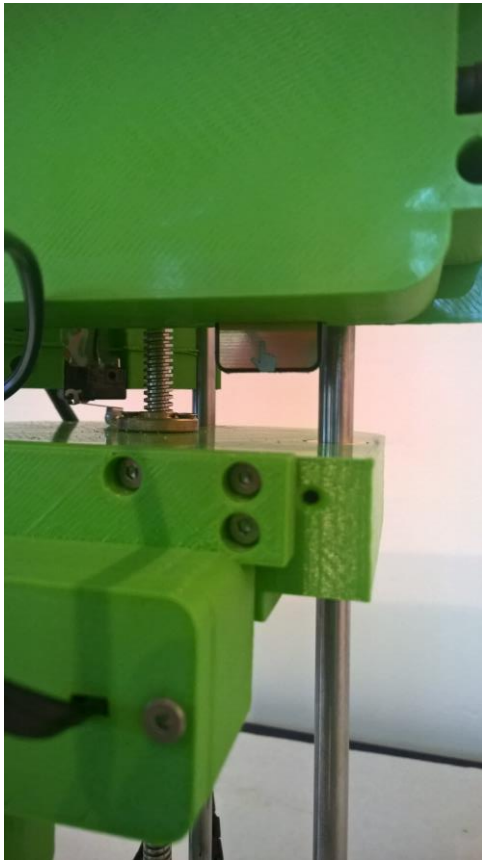
You can measure your fruits one after each other
Press C to cancel last measurement
Press N to record and obtain statistics
Press E to go back to Home menu without recording

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For starting the movement :



Press on the touch patch presented on this picture

The sensor moves down, when it feels the fruit, it starts a precise run, and goes back home

The value is displayed

**TAKE CARE !!
IF YOU START THE MOVEMENT WITHOUT HAVING
STARTED A BATCH (SEE PREVIOUS EXPLANATIONS),
THE SENSOR WILL GO TILL LOWER ENDSTOP AND
PROBABLY EXPLODE YOUR FRUIT AND BE DAMAGED
!!**

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If choice N :



The statistics of the batch are displayed, Press E to go back to Home menu

Menu "Manage Database"



Press N for batched consultation – Each batch statistics is displayed during 3.5 seconds – “A” corresponds to the average, “St” is the standard deviation of the batch, “Hi” corresponds to the homogeneity index of the batch (shall be less than 10% for good homogeneity)

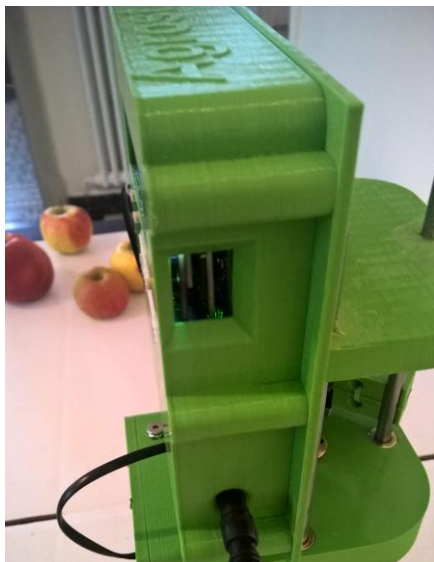


Press C to erase Data, and go back to Batch 1, the data is deleted on SD card (Confirmation is asked by pressing 1)



2) ON SD CARD

The SD card is located on the right side of the instrument. In order to remove it, apply a light pressure on it till it “clicks”



2 Files are available on the SD card :

- ALL.txt is used by the machine, and shall no be deleted nor modified (If deleted, it is re-created by the instrument, but the memory is erased)
- BATCHES.csv can be opened by Excel (choose “;” separator when Excel tries to open the file) – All measurements and statistics are stored on this file – We recommend to copy it on your computer, and not to modify the file on the SD card

