

Agrosta®Citrus Motor V2

Automatic texturometer for fruits

Agrosta

The Agrosta®Citrus Motor Version 2 has been designed in 2015
It integrates the best technology for measuring the firmness / softness of citrus fruits and
mango : Orange, pomelo, lemon..
It is a statistic instrument for measuring the texture of soft fruits



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
- 2 Tips

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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

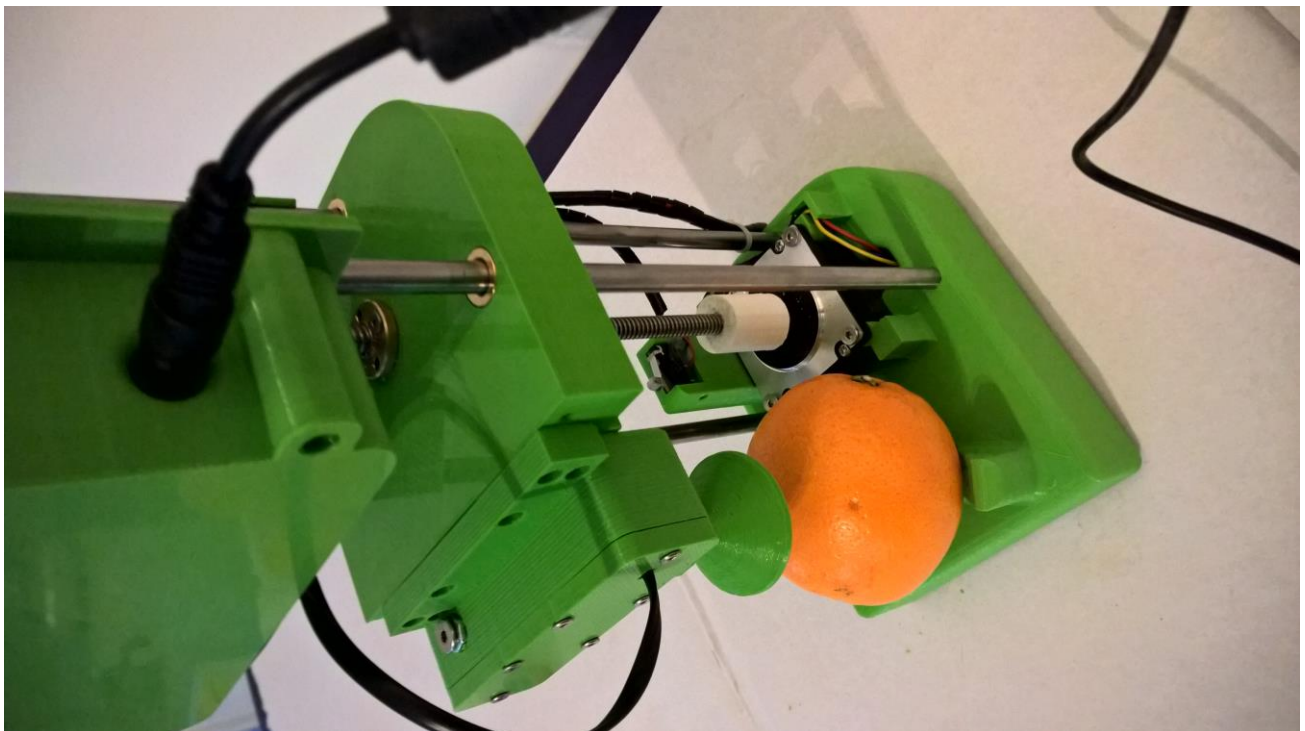
- Resolution : 1 gram

- 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..)



Principle :

- The sensor moves down from upper Endstop
- When it touches the fruit, it starts to measure the pressure each 0.05 second
- When the pressure reaches 500 grams, the sensor starts a precise run of 4mm, pressing on the fruit
- Then it goes back
- When the pressure returns to less than 500 grams, the maximum pressure measured during the run is recorded and displayed
- The you know which force has been applied by the fruit itself when it was pressed by the sensor
- You have an exact idea of the internal pressure of the fruit

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 :



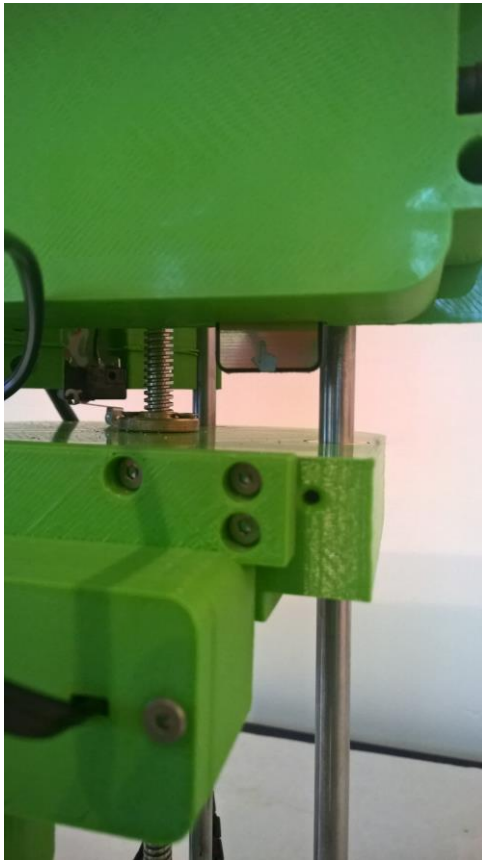
Press 1 to start a new batch, 2 to consult or delete previous batches

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

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

