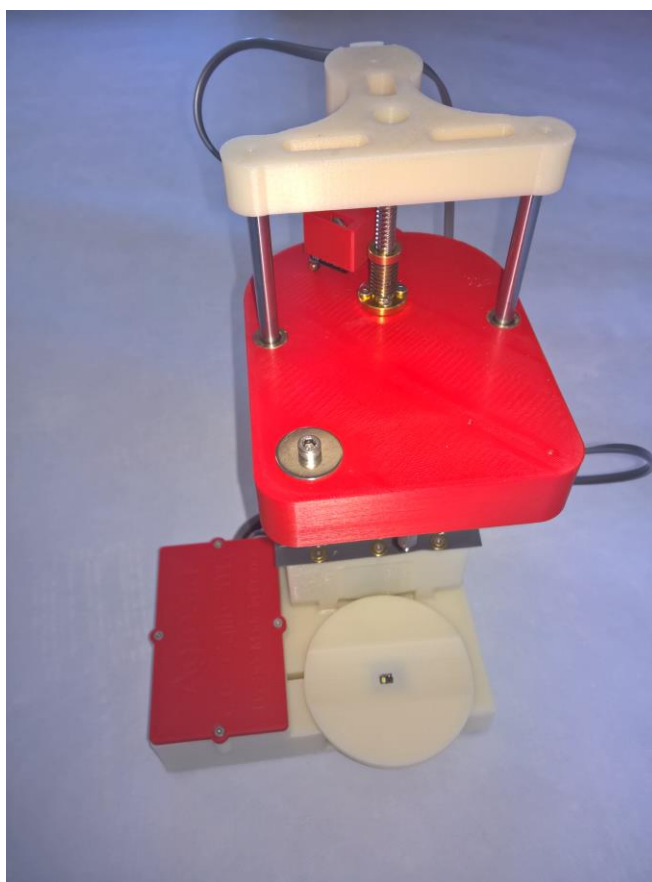


The Agrosta®Texturometer Version 2 has been designed in 2016

In order to provide to researchers a simple and reliable tool to determine : Freshness, spreadability, Tenderness, Springiness, Gumminess, Hardness, Firmness, Consistency, Fracturability etc of a variety of Food Products and soft materials

In September 2017, the texturometer for semi-solids and gels has been combined with Agrosta Texturometer, as a "PULL" function has been added



Many thanks for having acquired an Agrosta instrument

Your package contains :

- The instrument itself
- 1 Beakers and / or one table
- 5 different tips
- A power supply & a USB cable
- The software for windows on USB key (With video for easy setup of the machine)
- A certificate of conformity
- A manual

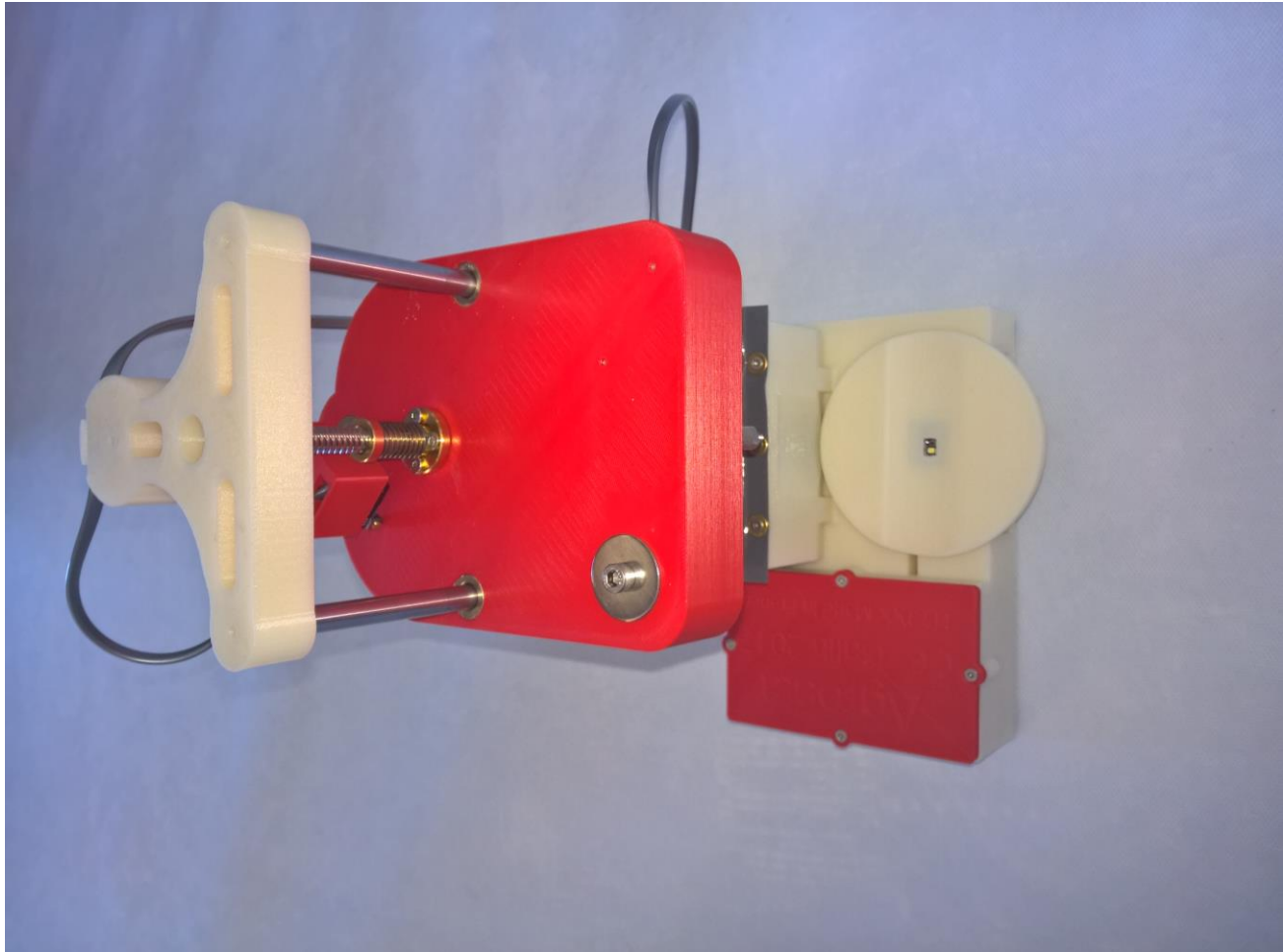
## Agrosta®Texturometer has been designed and produced in France by Agrosta

- The motor is a Nema 23 stepper motor
- There are 2 microprocessors, one is measuring and communicating with the PC, the other one is managing the movements and the motor (Both motherboards come from USA)

LOAD RANGE (LOAD CELLS TYPES AVAILABLE)	750 g 1 Kg 5 Kg 20 Kg
AVERAGE ACCURACY	0,2 g for 10 Kg
POSITION RANGE	0 to 220 mm
TEMPERATURE MEASURING RANGE	0 to 90 °C
COMPATIBILITY	Windows 2000 XP Vista Windows 7 Windows 8 Windows 10
POSITION ACCURACY	0.03 mm
SPEED	Up to 100 mm/s
SPEED ACCURACY	+/- 0.1% of set speed
CUSTOM DESIGN FIXTURE AND PROBE	YES (3D printing, immediate result)
CUSTOM SOFTWARE	Option
CUSTOM ELECTRONICS	Electronics can be customized Additional features available
OPEN SOURCE	Code provided to pilot the machine Standard Nema 23 motor Standard Arduino boards Low cost spare parts
DESIGN Generation	~ 2016
TEMPERATURE PROBE	No
CALIBRATION	Check using Lab scale
VARIETY OF BASE PLATES AND PROBES	More than 100
TEST PARAMETERS	10
PRE-CONFIG TEST MODES	8 + Calibration check
MADE IN	FRANCE
DATA EXPORT FROM SOFTWARE	Excel, Word, Xml, Jpg
WORKS WITHOUT COMPUTER	NO
GUARANTEE	2 Years full guarantee
STATISTICS	Unlimited data

## Starting :

- Install the software on your PC before connecting the device, accept driver setup
- Connect the device with the USB cable (only to the PC, not to sector power)



- Wait till it is recognized, and driver configured
- Plug the device to the power (100 to 240 V)

## Operating :

- You can chose if you use the beaker or the table according to the products you want to test
- Use the longer axis when you use beaker, and the shorter when you use the plate



- In case of **EMERGENCY = REMOVE POWER PLUG !**
- Start the software from the PC, and select the COM port corresponding to your device (If you don't know which COM port is used by the machine, just try each of them, click on "OK", and launch a cycle

## First Cycle :

The screenshot shows the software interface with the following elements:

- Top Panel:** Includes 'COM1', 'COM5', 'Refresh', 'OK', 'Erase data', 'Export to Excel', and 'Record Max and Erase (Production batch analysis)' buttons.
- Left Panel:** Contains 'Statistics on Maximums recorded' (Average, St Dev, Mini, Maxi), '1 PRESS SLOW 5mm', '2 PRESS SLOW 5mm', and 'BLOOM (Load Cell 1Kg)'. It also features a 'STOP FILLING DATA TABLE' button.
- Right Panel:** Includes 'TARE RECORDED RE-CLICK IF TARE CHANGES', 'Export batch and statistics to Excel', and 'LAUNCH CYCLE (PUSH)' / 'LAUNCH CYCLE (PULL)' buttons.
- Center:** A graph titled 'DATA COLLECTION WILL START WHEN (Grams) : 5' showing a force profile over time.
- Bottom:** Two small photographs showing a hand connecting a cable to the device and the device itself.

**Callout 1:** Select the COM corresponding to your machine / Click on Refresh if you have connected your machine after software launch / Then Click on OK

**Callout 2:** Tare after having placed the tip

**Callout 3:** You can click on a standard profile to test the machine, and then launch Cycle Push

**Callout 4:** The left side is dedicated to « PUSH » and the right side to « PULL »  
The DATA COLLECTION WILL START WHEN (Grams) parameter is common to both

**Callout 5:** If you choose a « PULL » cycle, first go to the origin position with those arrows (Fill the increment in 0.1mm)

## Parameters :

You can use the pre-configured programs, or apply your own parameters

Your last configuration is recorded by the software, and will be applied the next time you will start the soft

You can adjust and select the following parameters with the software :

- “a” + fast speed in 0.1 mm / s
- “b” + slow speed after first contact with the sample, in 0.1 mm/s
- “c” + stroke after first contact with sample in 1/10 of mm
- “d” + threshold in grams (For how many grams does the machine consider that the tip is in contact with sample), we recommend a minimum of 50 grams
- “e” + first return speed in 0.1mm/s
- “f” + backlash compensation in 1/10 of mm (Mechanical clearance compensation)
- “g” + second slow speed in 0.1mm/s, if not indicated, the machine does not make a second cycle (Second cycle is used to determine springiness)
- “h” + second stroke in 1/10 of mm
- “k” + return stroke between first and second pressure, in 1/10 of mm
- “t” + waiting time between the 2 cycles

The curve is displayed, and you have the choice between 3 buttons :

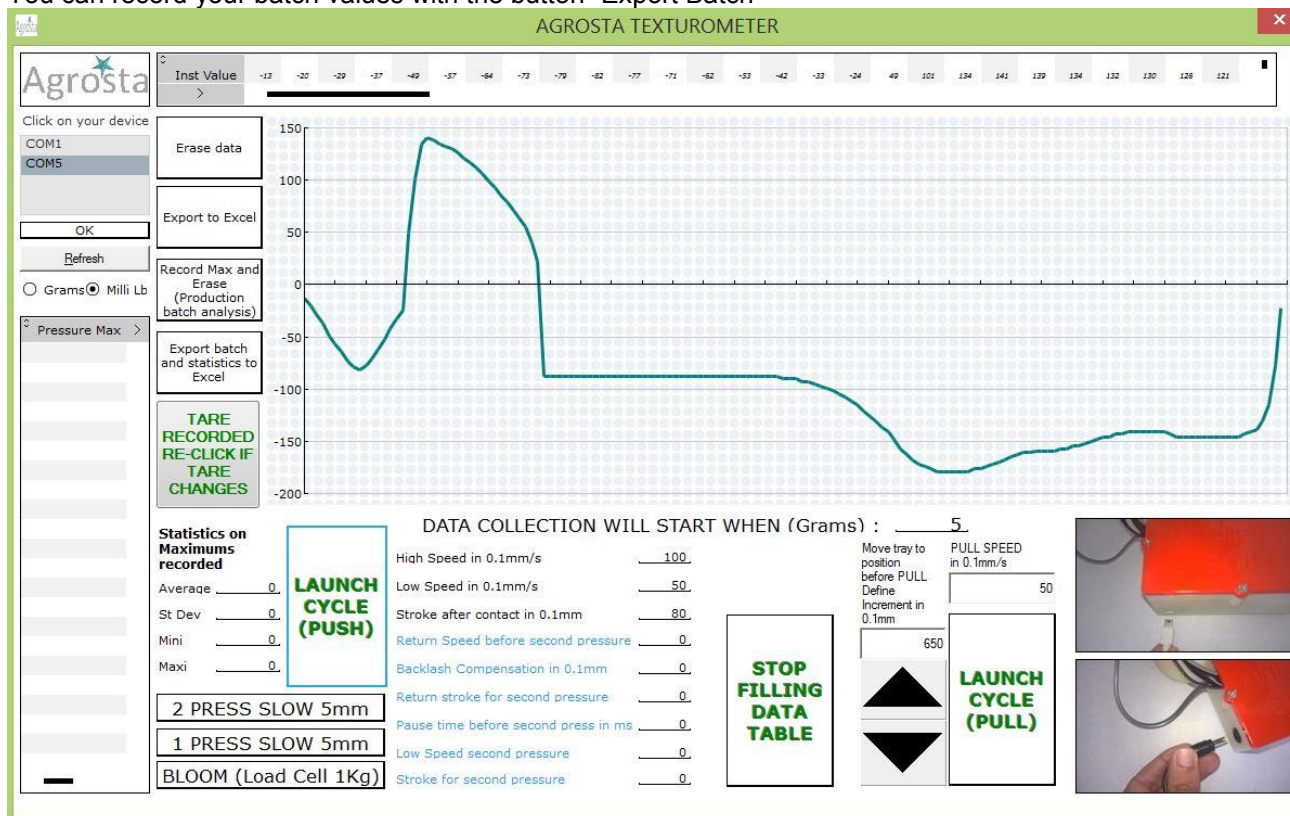
- Erase data
- Export to Excel the raw data
- Record maximum + Erase

This last button is very useful if you want to use the software for production issues

In this case, you want to manage batches of samples, and obtain statistics for a large number of samples.

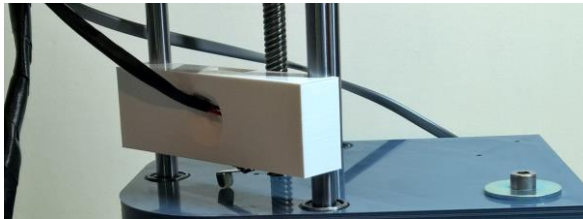
This buttons records the maximum in the chart “Pressure Max” and statistics are automatically calculated for your batch

You can record your batch values with the button “Export Batch”



## Changing configuration :

It is recommended to move the upper endstop in order to adapt it to the size of your sample (This is in order to save time) – The white piece on the photo (It is red in 2017 sometimes) :



It slides along the metal axis  
The machine will always go back to HOME position in contact with this Endstop

## Using your own software to communicate with the machine (Advanced configuration) :

The machine communicates on a very simple way with the computer  
Just write on the COM (Serial port) corresponding to the machine the parameters as follows :

a60b400c55d150j1

This example is for only one stroke of 5.5 mm length after contact. Contact is detected at 150 grams  
The instruction j1 is to start the cycle

For moving up, use n + the stroke in 0.1mm

For moving down, m + stroke in 0.1 mm

For pull cycle, indicate parameter d, and then p1 : Example d5p1 (Speed is fixed in pull function)

