USAGE GUIDE OF AUTOMATIC RHEOGRAPH AND SOFTWARE

YÜCEBAŞ MAKİNE

ANALİTİK CİHAZLAR SANAYİ

Fatih Mah. 2451 Sokak No: 6

Aliağa / İZMİR / TÜRKİYE

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YÜCEBAŞ MAKİNE ANALİTİK CİHAZLAR GIDA YEM KİMYEVİ

MADDELER PAZARLAMA SAN. TİC. LTD. ŞTİ.

Factory : Fatih Mah. 2451 Sokak No : 6 Aliağa / İZMİR / TÜRKİYE

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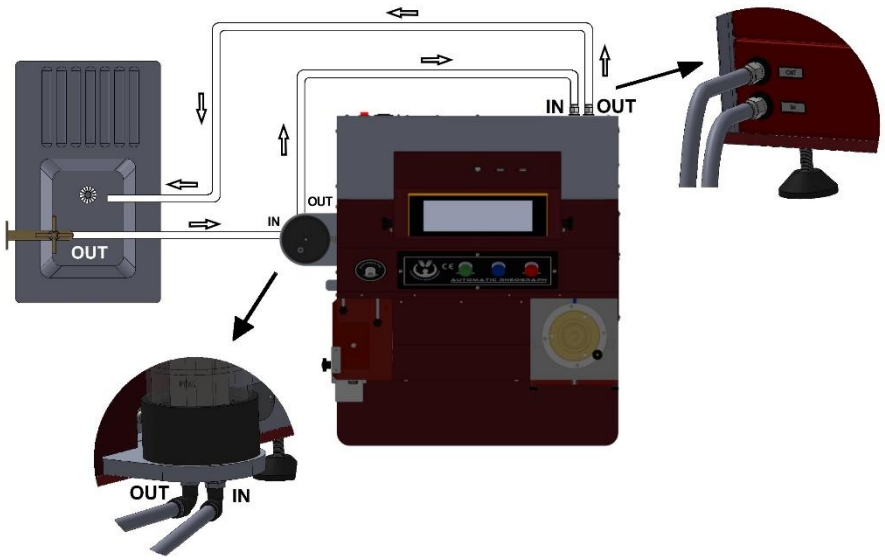
AUXILLARY MATERIAL LIST of AUTOMATIC RHEOGRAPH		
Quantity	**Description**	**Checking**
1 PCS	Dough shaping unit	
1 PCS	Dough pressing apparatus	
1 PCS	Dough cutting knife	
10 PCS	Dough trays	
1 PCS	Special glass burette	
1 PCS	Support for glass burette	
1 PCS	Dough spatula	
1 PCS	Oil brush	
1 PCS	Oil can	
1 PCS	Spatula	
1 PCS	Touchscreen Industrial Panel PC with Automatic Rheograph Software	
1 PCS	Powder funnel	
1 PCS	Flour weighing shovel	
1 PCS	Touchscreen pen	
3 PCS	Waterpipes	

USER MANUAL

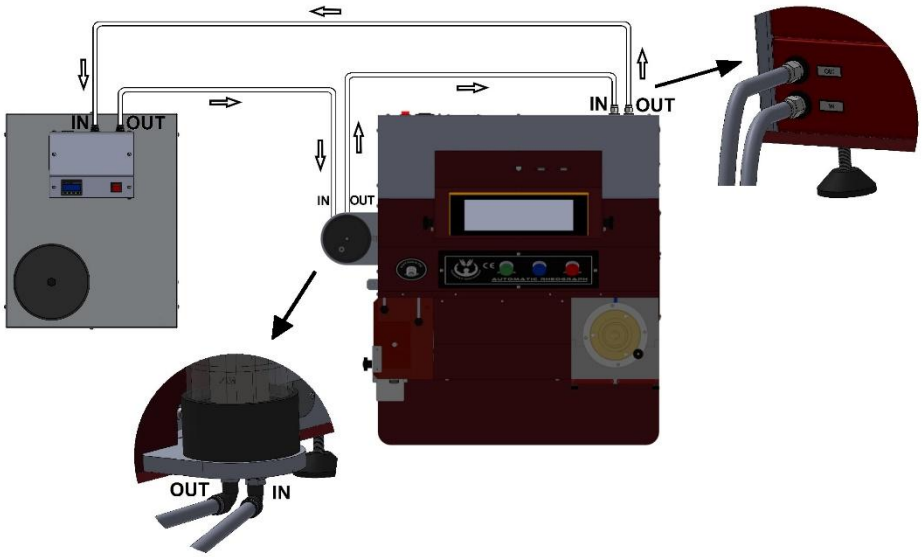
The Automatic Rheograph Device works with 220 V 50 - 60 Hz energy. Place the device on a flat surface as first step. You should make waterhoses connection of the Automatic Rheograph. If you connect the device directly into the city water supply, please follow the below scheme.



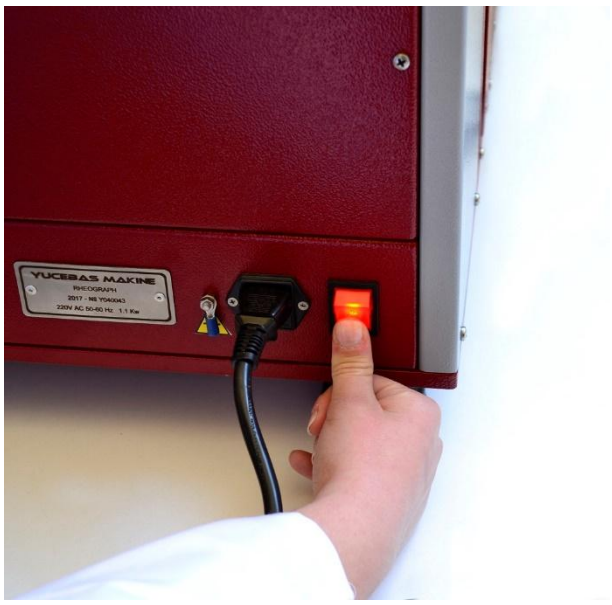
If you have the Heated and Cooled Water Tank[1], you can keep the constant temperature for water circulation during the tests. Heated and Cooled Water Tank provides the water saving too.

[1] Heated and Cooled Water Tank is recommended accessories.

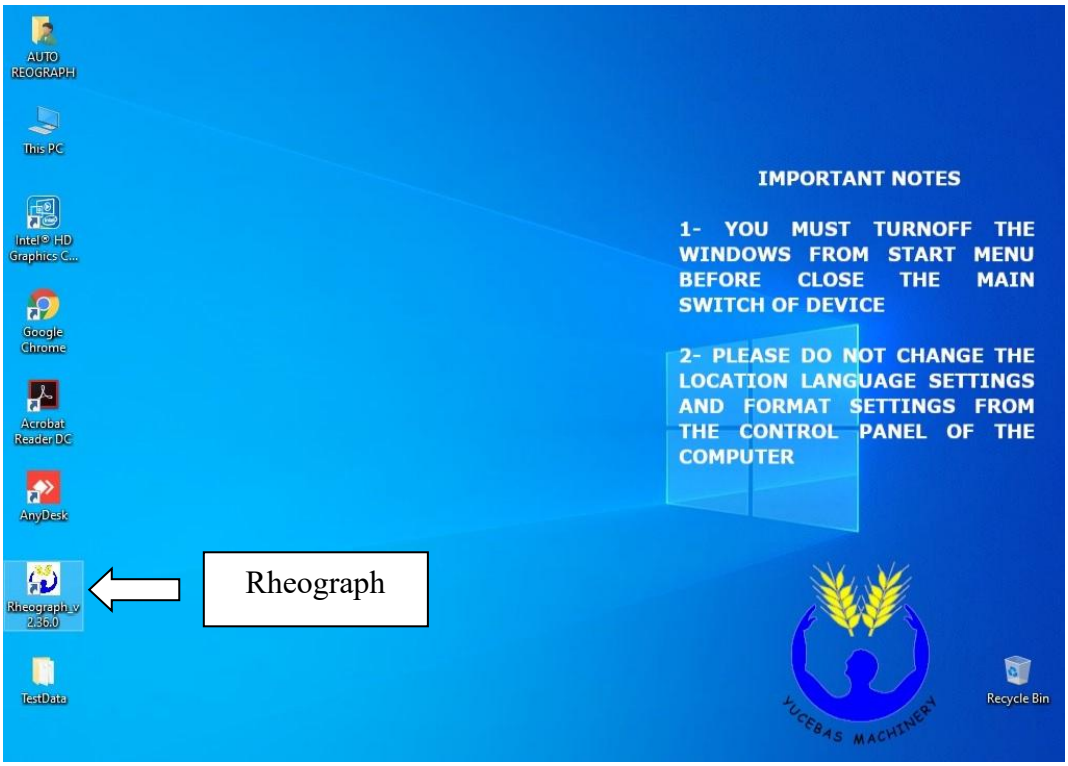
In such case, having the Heated and Cooled Water Tank, please follow the below scheme for waterpipes connection.



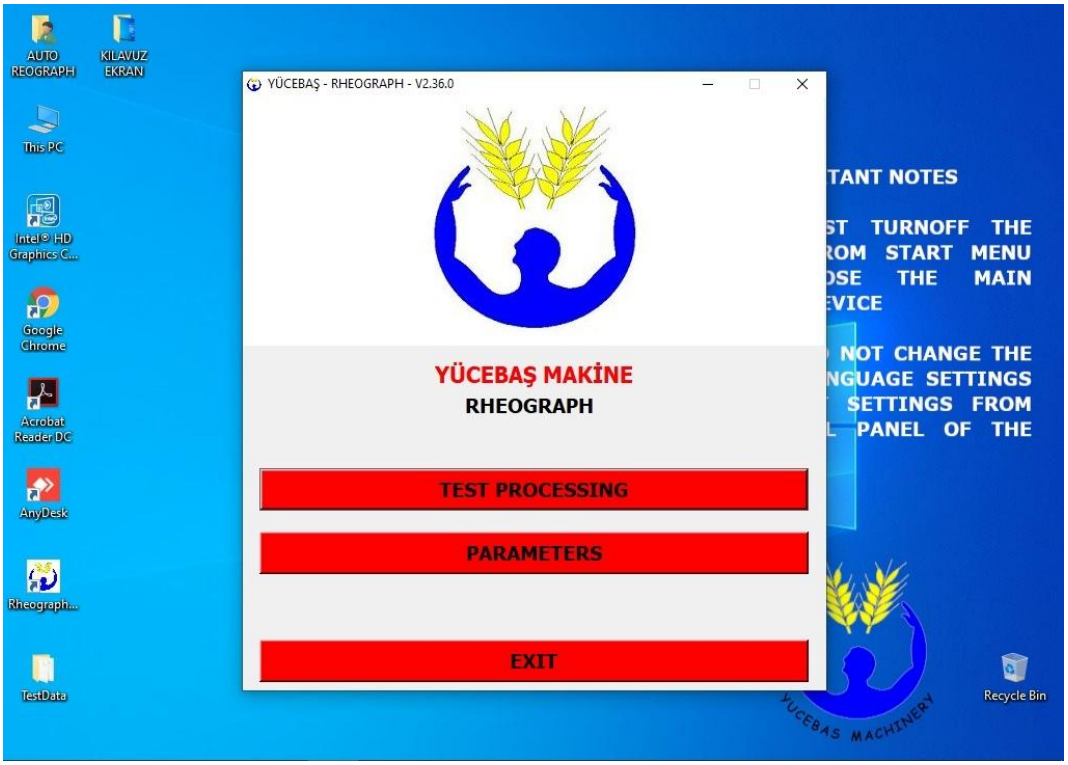
Run the Automatic Rheograph Device by use ON / OFF switch. This switch is on the right back side of the device.



When you open the main switch of Automatic Rheograph Device, Windows operating system starts to work automatically. Wait until the Windows is opened on the embedded touch screen industrial PC. You will see the screen on the desktop below.



You must double click to Krostest Rheograph icon for opening Rheograph Software. You will see the below screen on the desktop.

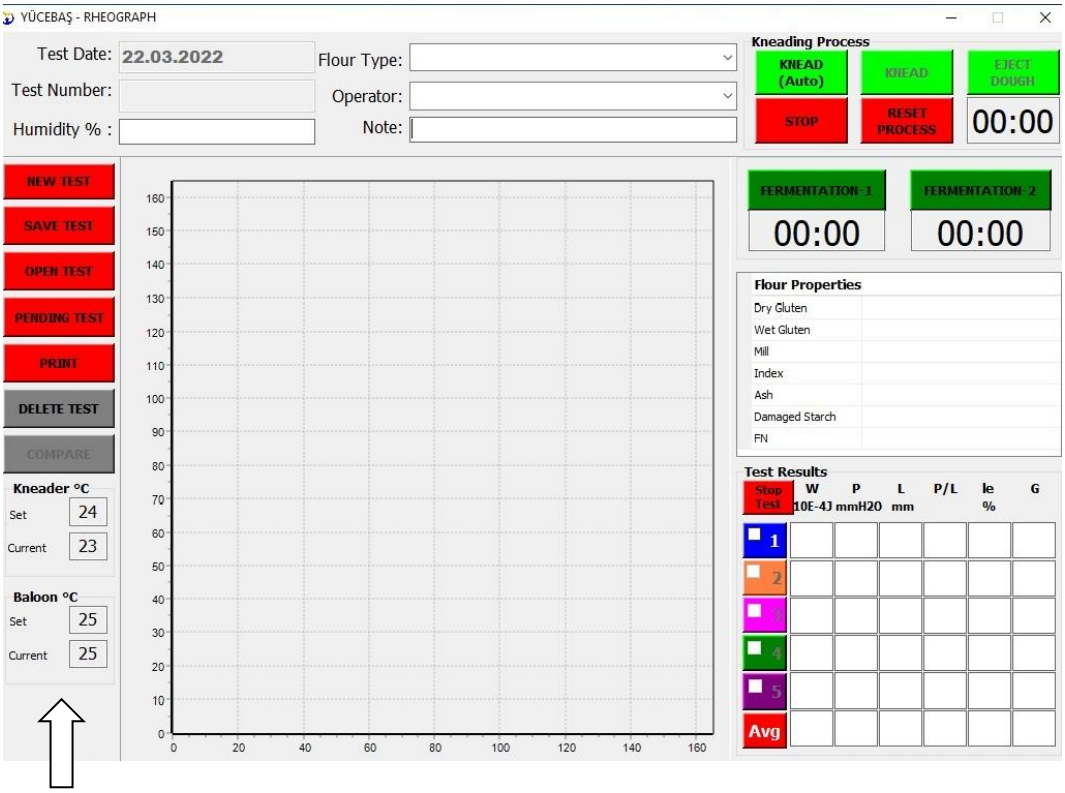


Explanation of Buttons:

Test Processing: Rheograph Test

Parameters: Adjustment of Software Parameters (Password protected, only for authorized personnel)

Exit: Exit the Software

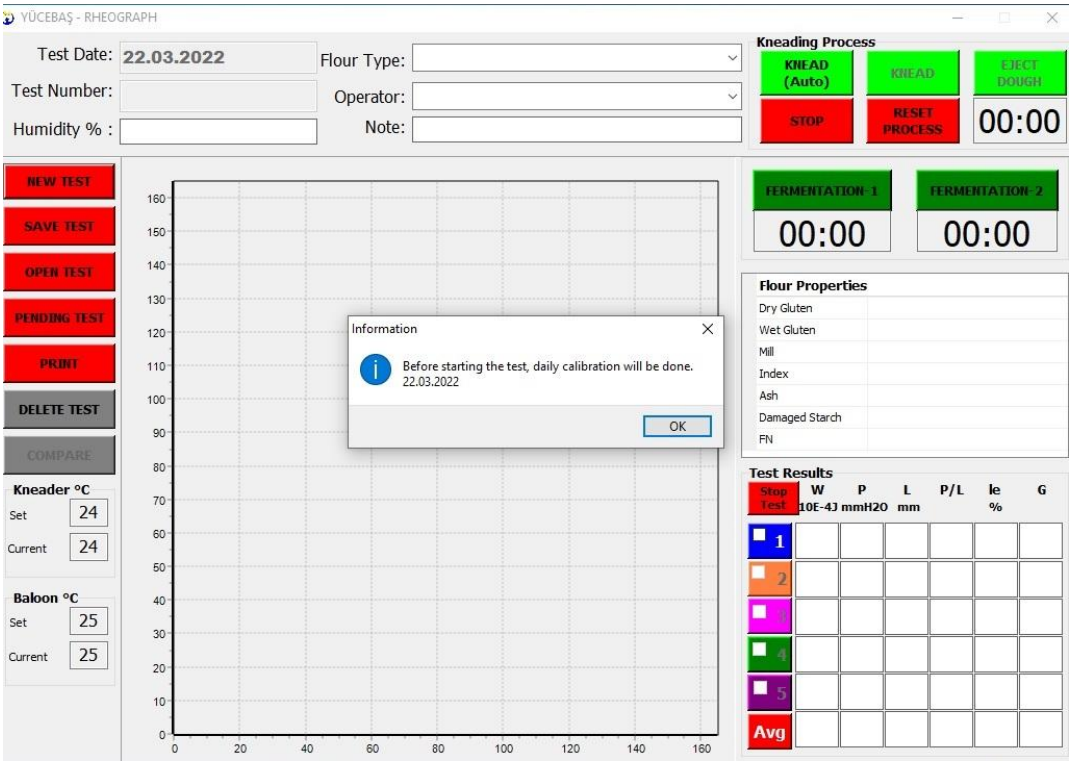


Temperature Settings

Device has automatically temperature control for kneader part and fermentation part as separately. The temperature for Kneader part is 24°C and it's 25°C for fermentation part.

Calibration Process:

The device has an automatic air calibration function. In order to complete the daily air calibration, first click on the NEW TEST button on the screen. The below message will appear on the software and click OK.



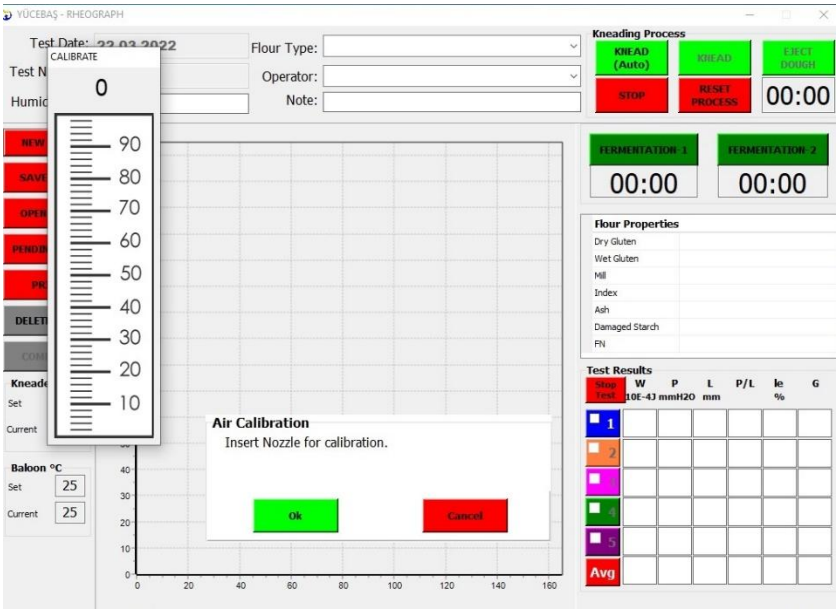
After that the air calibration column will appear on the screen. Insert the calibration nozzle into the device as it has shown in the pictures below and follow the instructions from the software to complete air calibration.

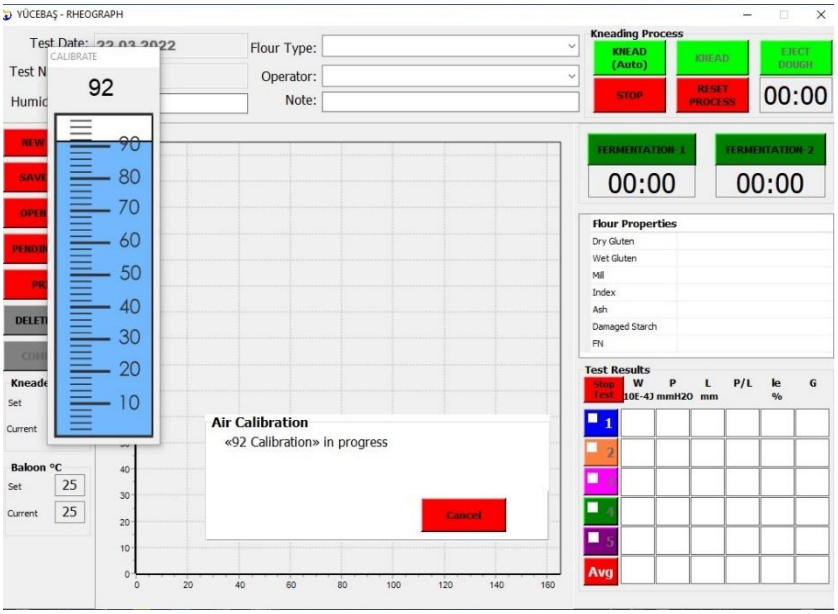
You should place the calibration nozzle to balloon inflate section and close the upper press part by turning like below picture. Close the main screw by using black colored arm.

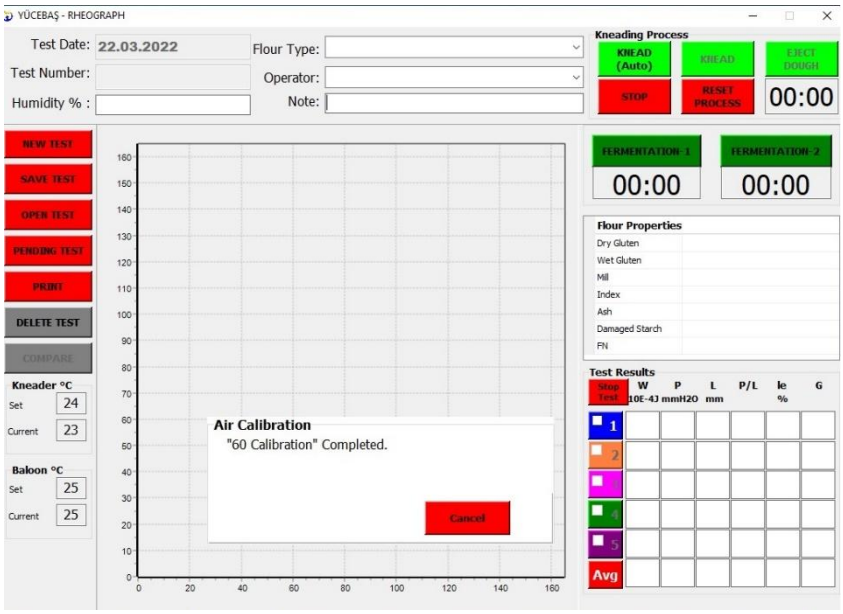

DOSING
AIR
POWER
AUTOMATIC RHEOGRAPH


DOSING
AIR
POWER
AUTOMATIC RHEOGRAPH

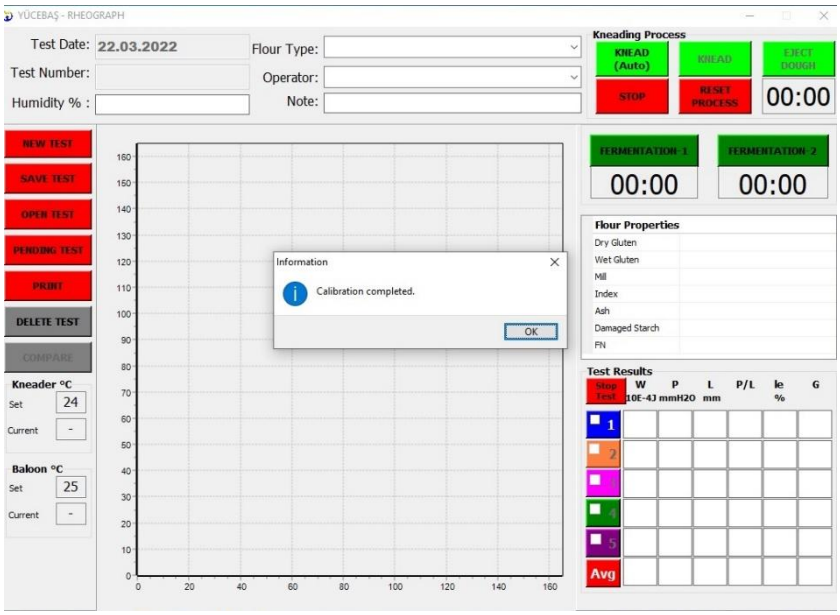

AUTOMATIC RHEOGRAPH
DOSING
AIR
POWER


YÜCEBAŞ - RHEOGRAPH
Test Date: 22.03.2022
Flour Type:
Operator:
Note:
Kneading Process
KNEAD (Auto)
KNEAD
EJECT DOUGH
STOP
RESET PROCESS
00:00
FERMENTATION-1
FERMENTATION-2
00:00
00:00
Flour Properties
Dry Gluten
Wet Gluten
Mill
Index
Ash
Damaged Starch
FN
Test Results
Stop Test
W
P
L
P/L
le
G
10E-4J
mmH2O
mm
%
Avg
CALIBRATE
0
90
80
70
60
50
40
30
20
10
Air Calibration
Insert Nozzle for calibration.
Ok
Cancel
Baloon °C
Set
Current
25
25


YÜCEBAŞ - RHEOGRAPH
Test Date: 22.03.2022
Flour Type:
Operator:
Note:
Kneading Process
KNEAD (Auto)
KNEAD
EJECT DOUGH
STOP
RESET PROCESS
00:00
FERMENTATION-1
FERMENTATION-2
00:00
00:00
Flour Properties
Dry Gluten
Wet Gluten
Mill
Index
Ash
Damaged Starch
FN
Test Results
Stop Test
W
P
L
P/L
le
G
10E-4J
mmH2O
mm
%
Avg
CALIBRATE
92
90
80
70
60
50
40
30
20
10
Air Calibration
«92 Calibration» in progress
Cancel
Baloon °C
Set
Current
25
25

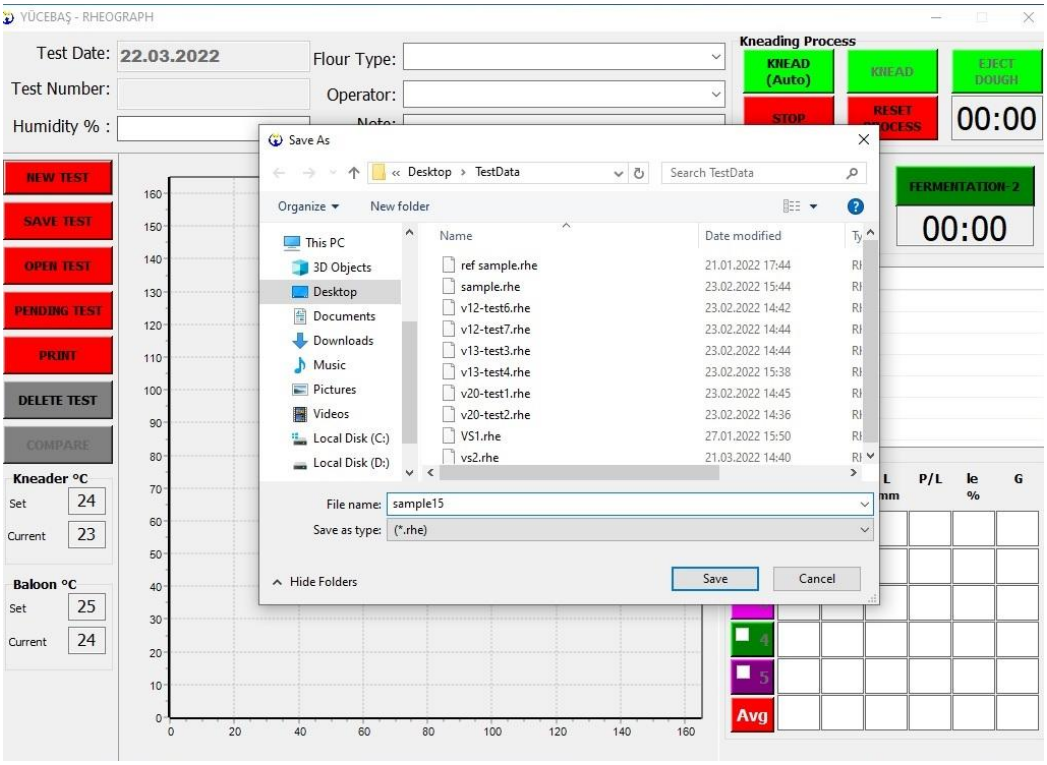


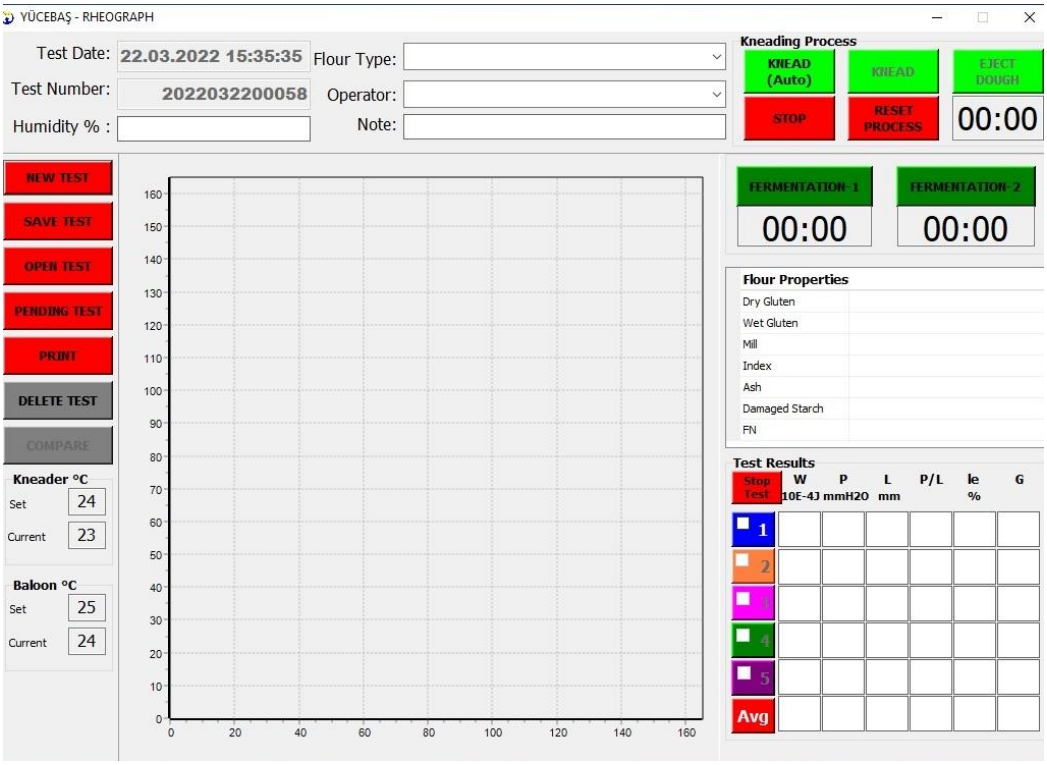
When the calibration is completed, you will see the below message and press OK. Once the calibration is completed open the screws and take out the caibration nozzle from the device.



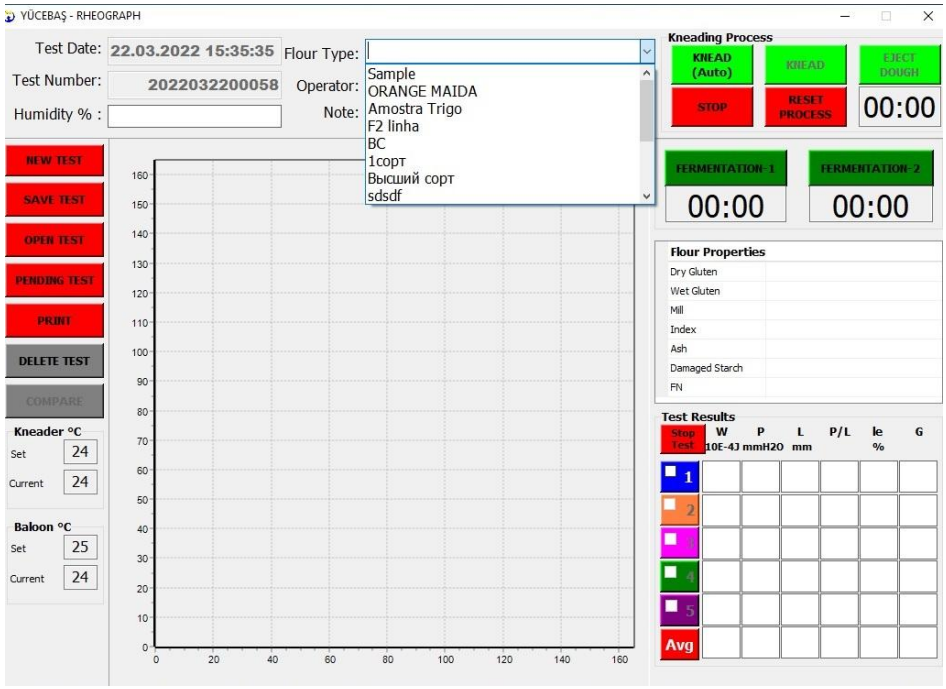
TEST PREPARATION:

After the calibration process, the Test Date of current day will be appear in the "Test Date" Box as automatically. The test number should be taken for testing after checking the current date. Press the NEW TEST button and following screen will appear. Please type the related file name and than click SAVE. When you click the save, the test number will appear directly.

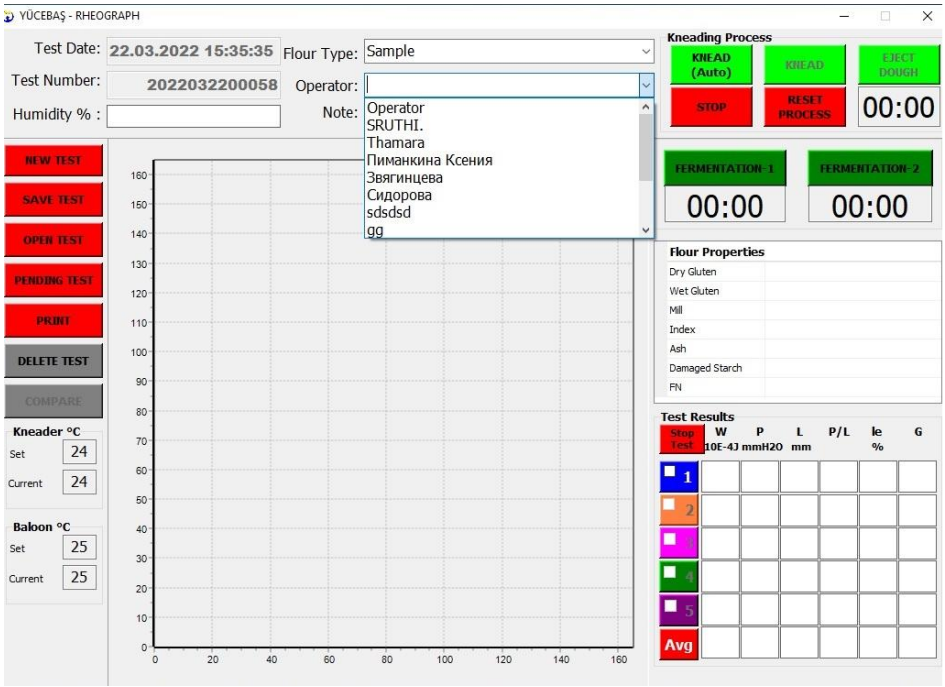




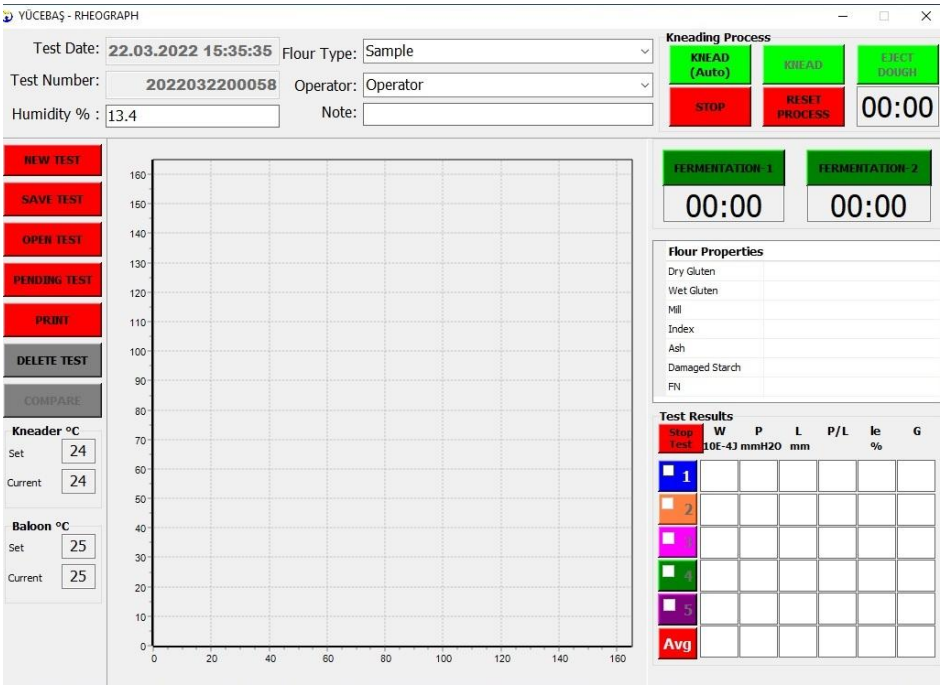
You should enter the Flour Type after getting the test number. Please write the Flour Type into the related box. For each new flour type written on the software, it is necessary to click on the INSERT button from the keyboard than save the new flour type. By clicking on the small arrow next to the Flour Type box, you can see and choose the previous entered flour types.



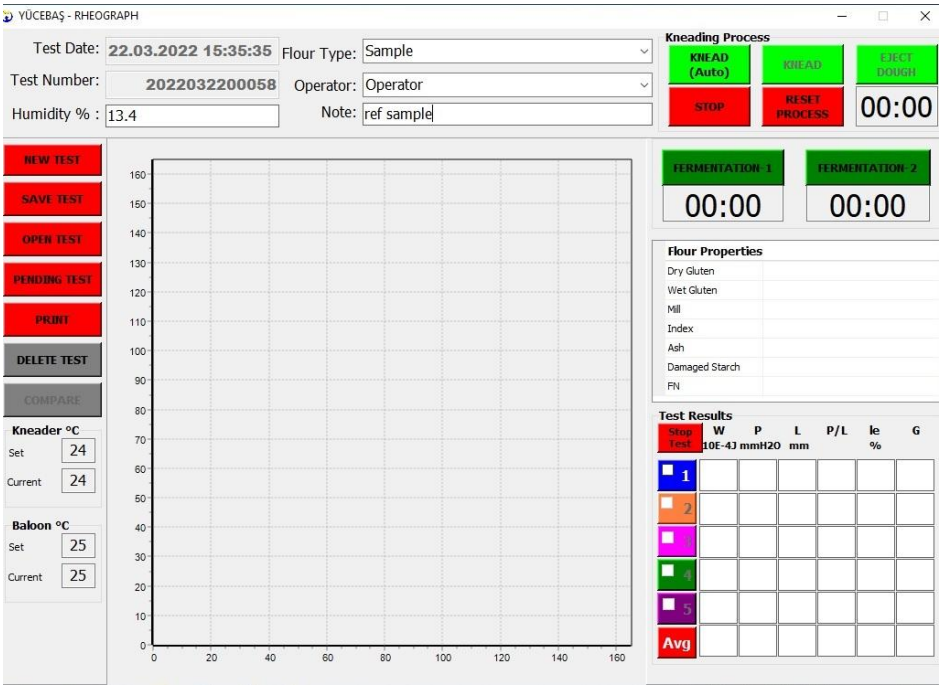
Please, write the Operator details into the related box (Operator box). For each new operator name written on the software, it is necessary to click on the INSERT button from the keyboard than save the new operator name. By clicking on the small arrow next to the Operator box, you can see and choose the previous entered operator names.



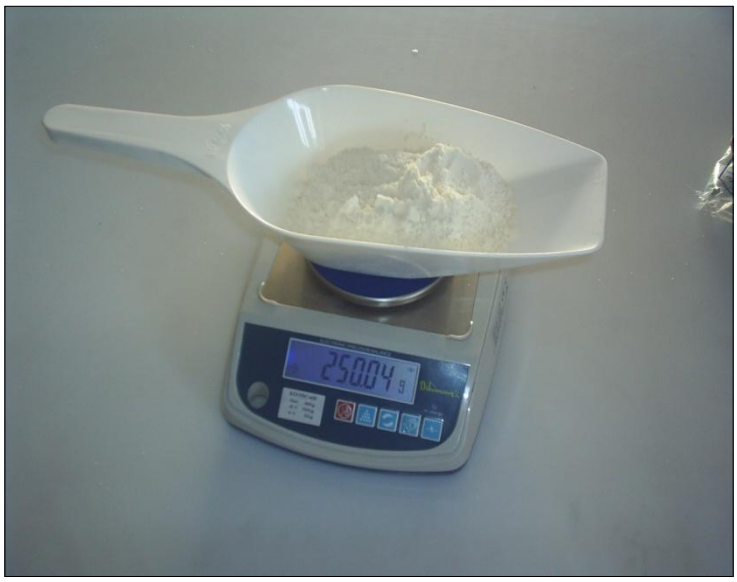
You should write to humidity content of the flour sample to the Humidity box. While typing the humidity content, please pay attention to use DOT (.) between the decimals.



If there are some notes about your test sample, please type them into the Note box. Besides, you may type other flour propertiese such as dry gluten, wet gluten, mill, index, ash, damaged starch, falling number into the related boxes.



250 grams of flour is weighed. You should add the 250 gram flour in to the dough kneader section of device and upper cover is closed like below pictures.




DOSING
AIR
POWER
AUTOMATIC RHEOGRAPH


DOSING
AIR
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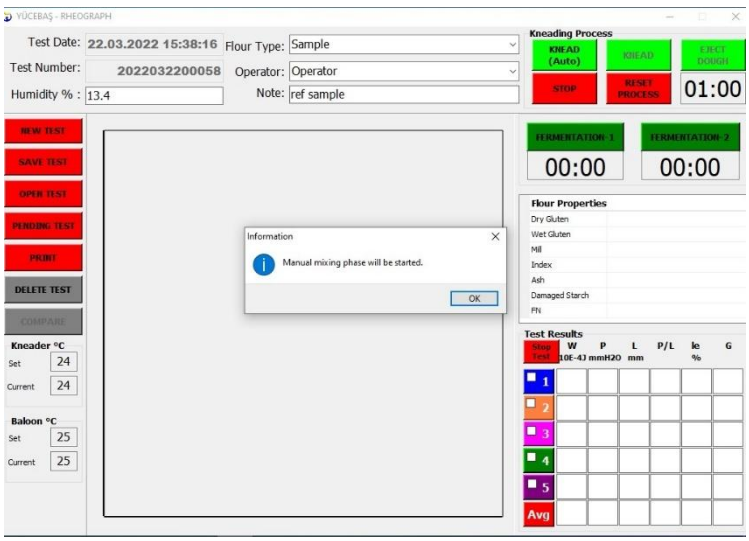
AUTOMATIC RHEOGRAPH

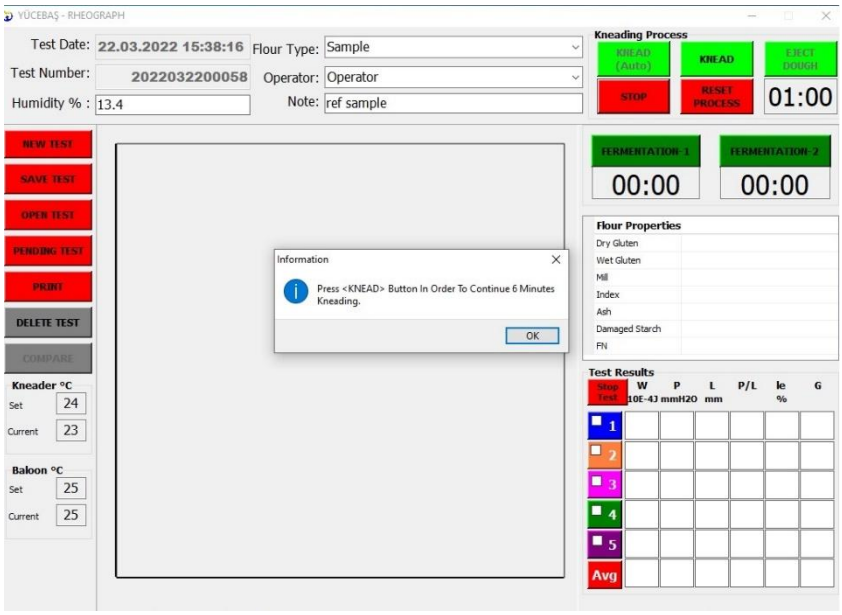
Add 2.5% sodium chloride solution to the dosing tank of the device. The approximate capacity of the dosing tank of the device is 1.75 liters. For dosing air output and the dosing calibration, please check the dosing calibration section of the user manual.

Click to the KNEAD (AUTO) button and follow the instructions on the screen. When the software says to insert the dosing injection nozzle into the mixer, please apply it properly and the test will start. When you click KNEAD (AUTO) button, the mixer will start to work and the timer and the mixer will stop 1 minute after the beginning for the cleaning process. Follow the instructions on the screen.



The Kneader will stop at the end of the 1 minute. You should open the upper lid and clean the mixer walls and upper lid with plastic spatula . You have 1 minute for this cleaning procedure.

You should close the upper lid after cleaning process (after 1 minute). The software will ask to click OK in order to continue to 6 minutes kneading. Click first to OK and click to KNEAD button.



During the 6 minutes kneading, you should lubricate the extrusion plate, dough pressing apparatus (5 drops of oil), dough shaping unit (16 drops of oil), dough cutting knife, spatula and dough trays (5 drops per each tray) with nut oil or liquid paraffin specified below:

Refined vegetable oil, low in polyunsaturates, such as **hazelnut oil**, or oleic vegetable oil with acid value less than 0.4. As an alternative, **liquid paraffin (soft petroleum paraffin)**, with an acid index value less than or equal to 0.05 and the lowest possible viscosity (maximum 60 cP at 20°C). Lubricating process is shown in the below pictures. Please pay attention to **DO NOT use olive oil**, **sunflower oil** or **machinery oil** for lubricating.


DOSING
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POWER
AUTOMATIC RHEOGRAPH


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DOSING
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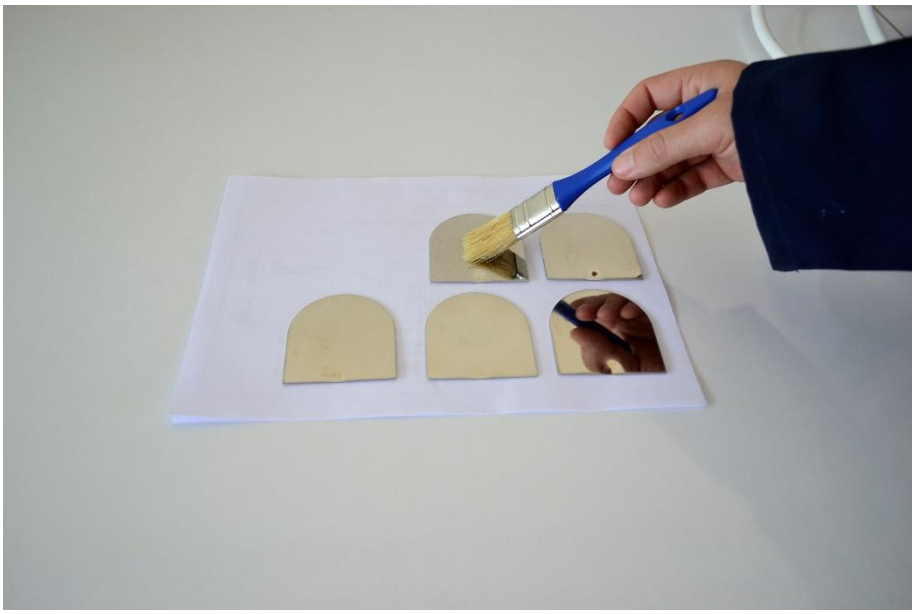
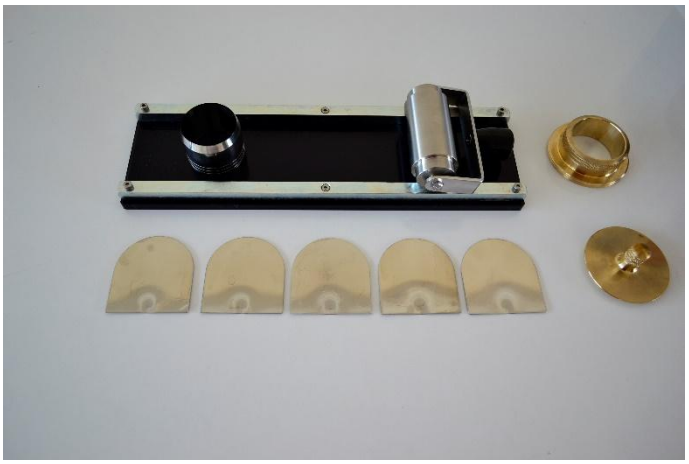
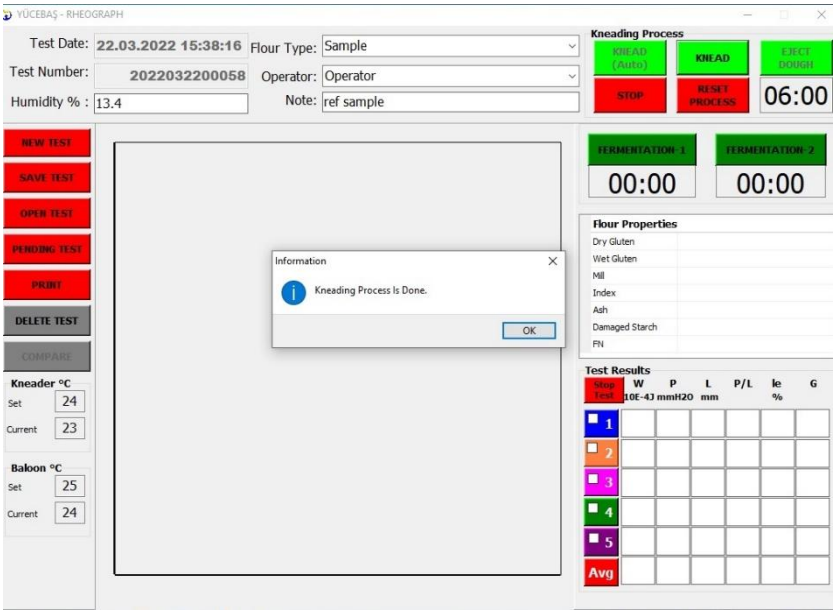
AUTOMATIC RHEOGRAPH





After 8 minutes, the kneader will stop and you will receive following screen. Please click to OK first than you should pull up the dough extrusion plate like below picture. And than press to EJECT DOUGH button

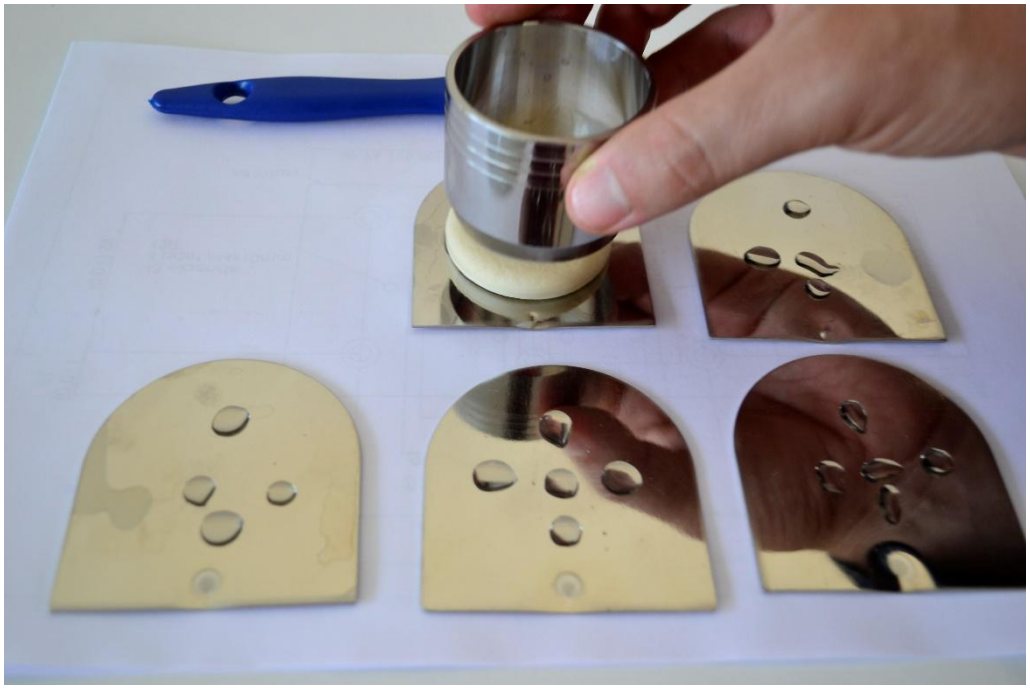


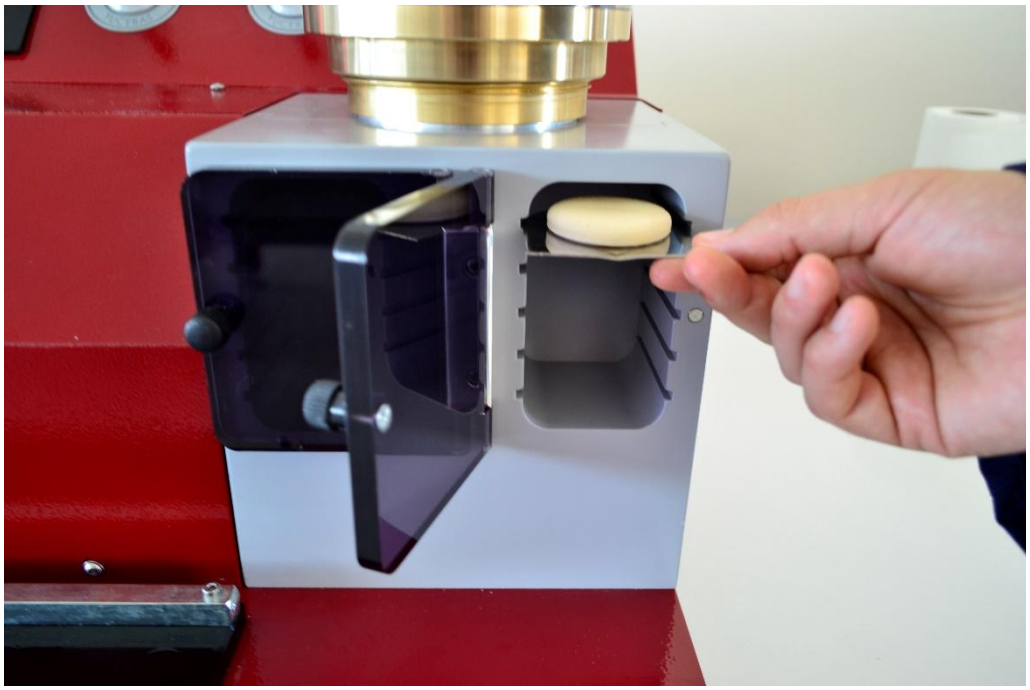
When the kneader will start to work for reverse direction and dough will start to get out, cut and remove the first centimeter of the dough.

When the dough reaches around 6 centimeters, cut it by spatula and place to the dough shaping unit.

Do not forget to oil the dough during the extrusion. Press the dough 12 times (in both directions - up and down -) with dough pressing apparatus on the dough shaping unit.

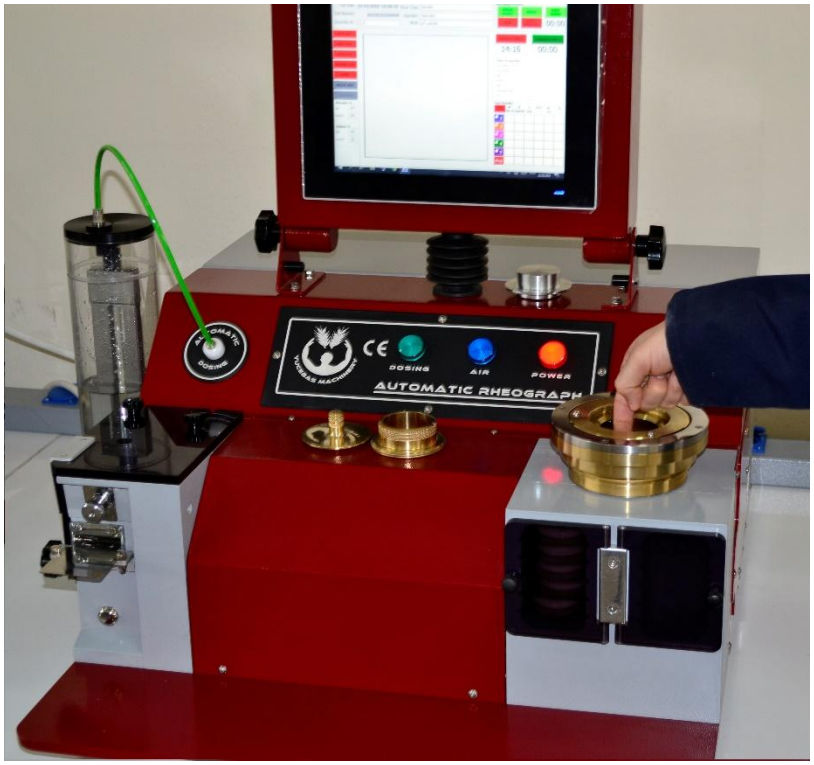
Than cut the dough with dough cutting knife and place the sample to the fermentation chamber with the tray for resting as 20 minutes. You can click the Fermantation timer button on the software for following the fermentation time.





After placing the first dough sample into the fermentation section, press to the Fermentation-1 button for starting the fermentation time. Repeat the dough preparation totally in 5 times.

After the 20 minutes fermentation, placed to the dough to balloon inflate section of the device. The dough must be placed center of the balloon inflate section. You must oiled the balloon inflate section and compress apparatus. Close and open the screw like below pictures.


CE
DOSING
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POWER
AUTOMATIC RHEOGRAPH


YUCEBAS MACHINERY
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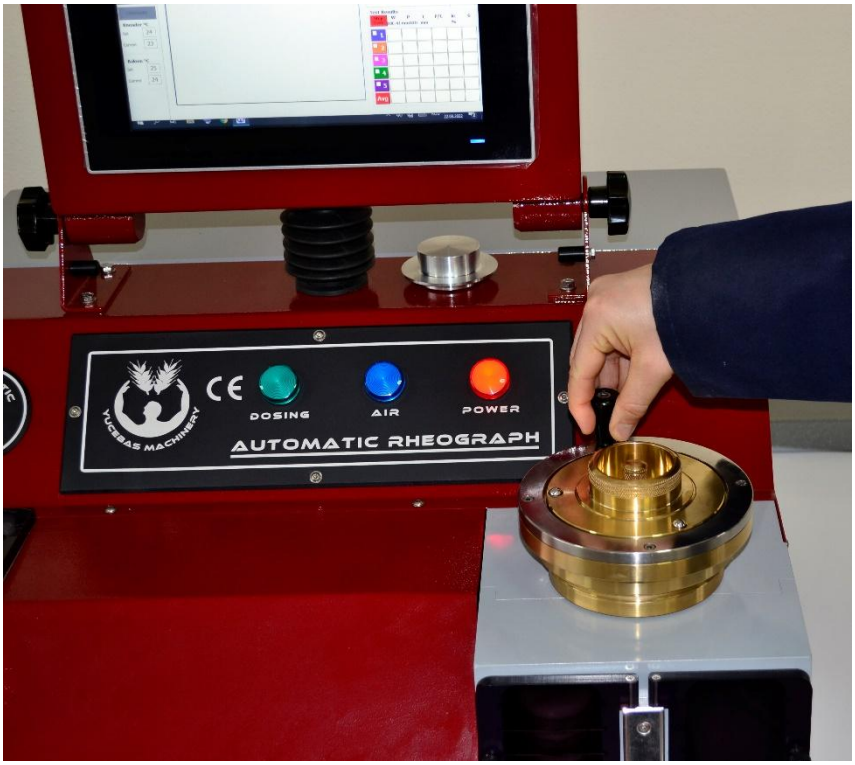
CE
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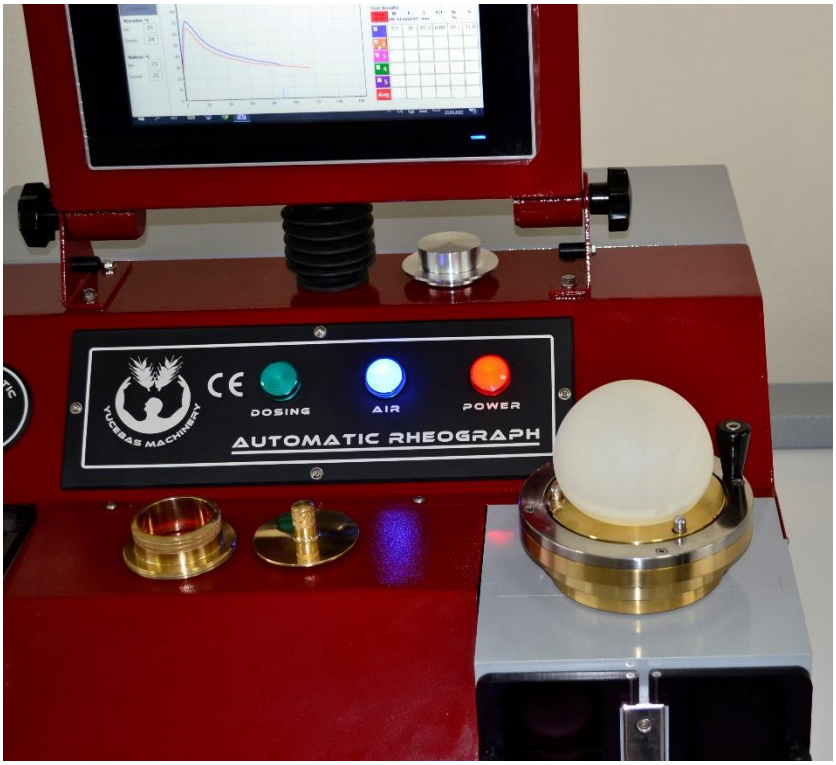
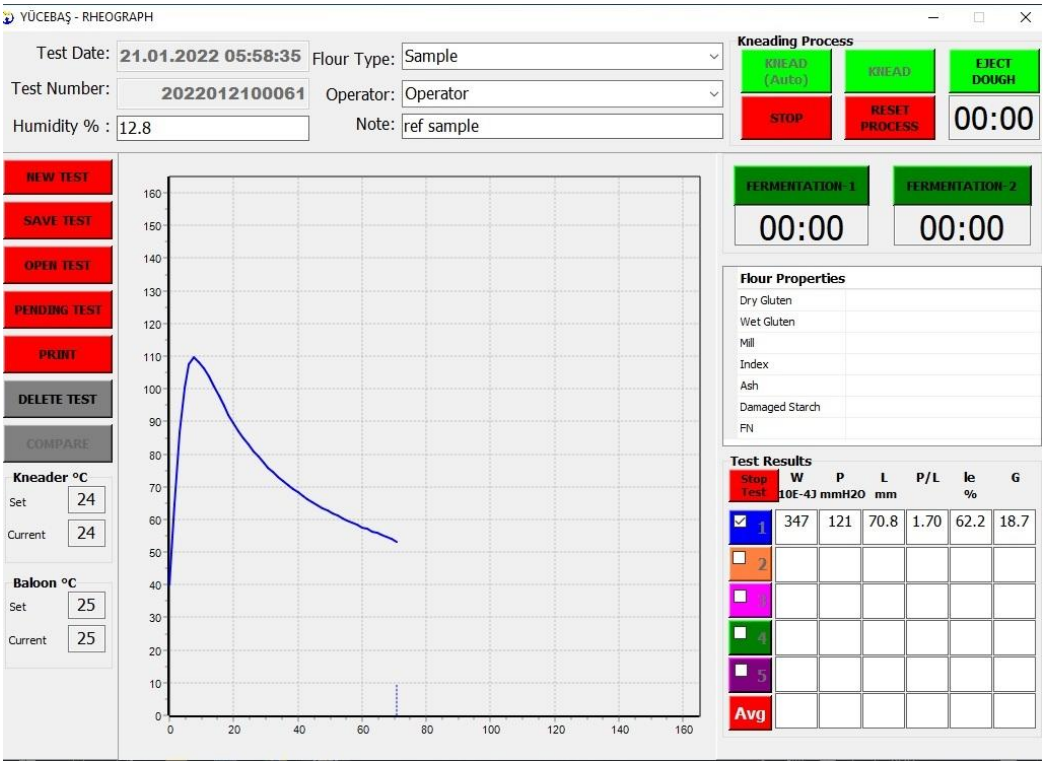
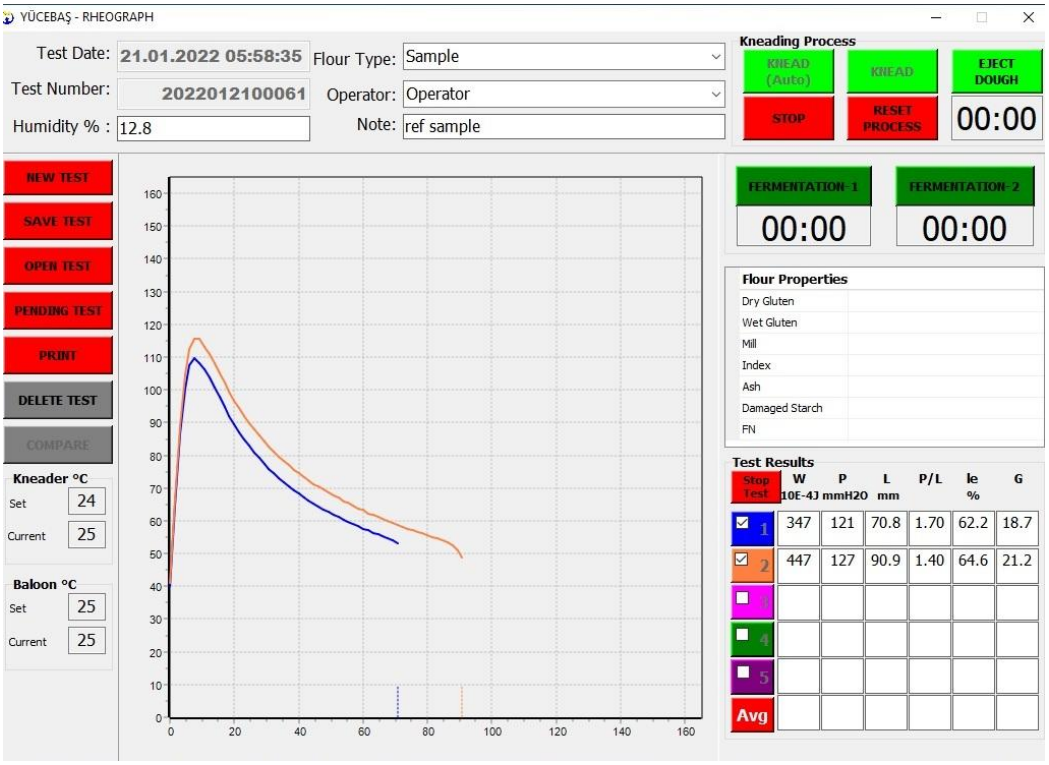
AUTOMATIC RHEOGRAPH

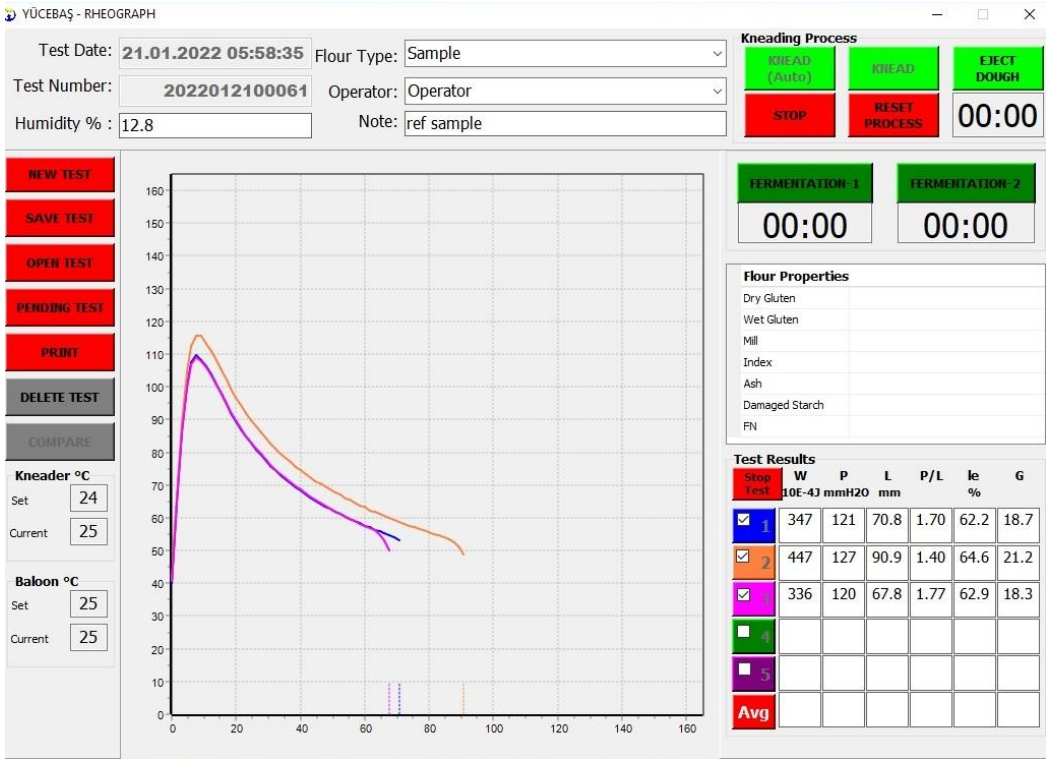
When you removed the dough compress apparatus, click to the number 1 button on the computer screen. The dough will be balloon and program will start the drawing as simultaneously.

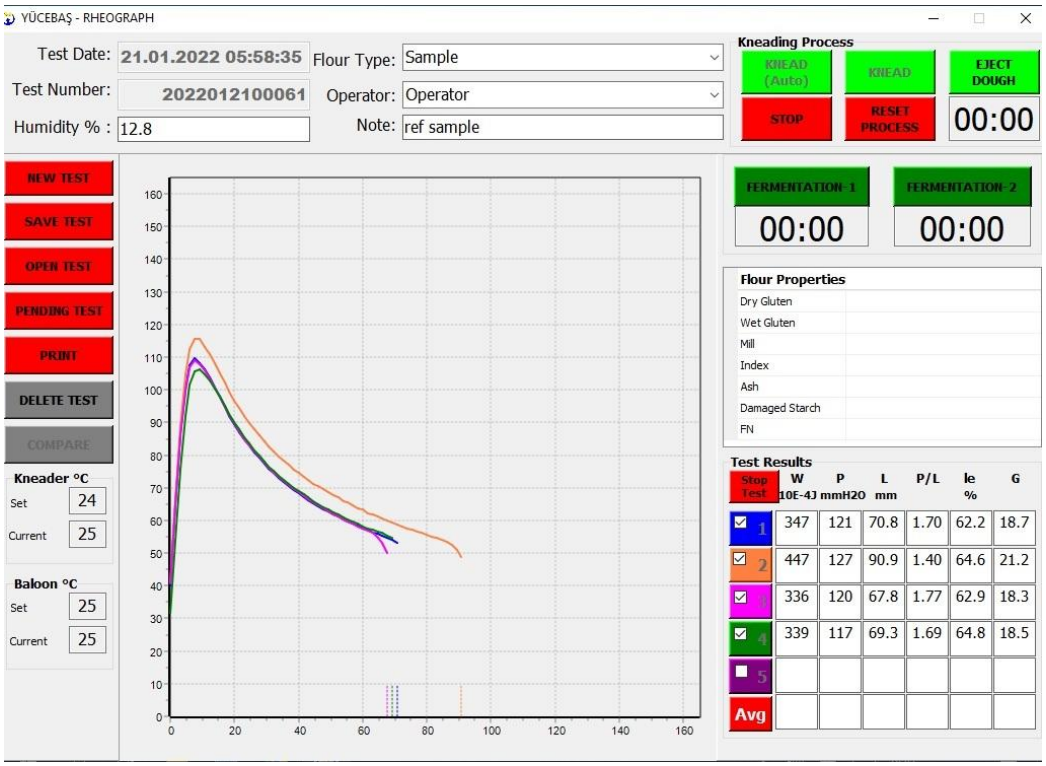


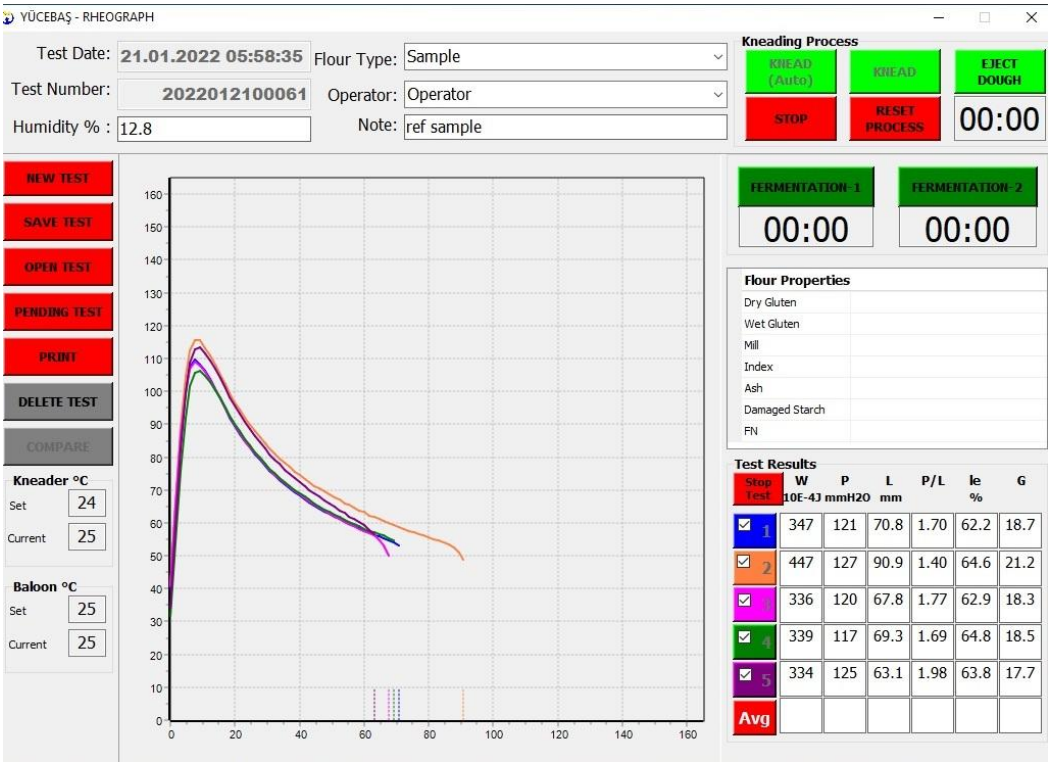


You should repeat this process for 5 times. The software will show the 5 curves and results at the end of the test.

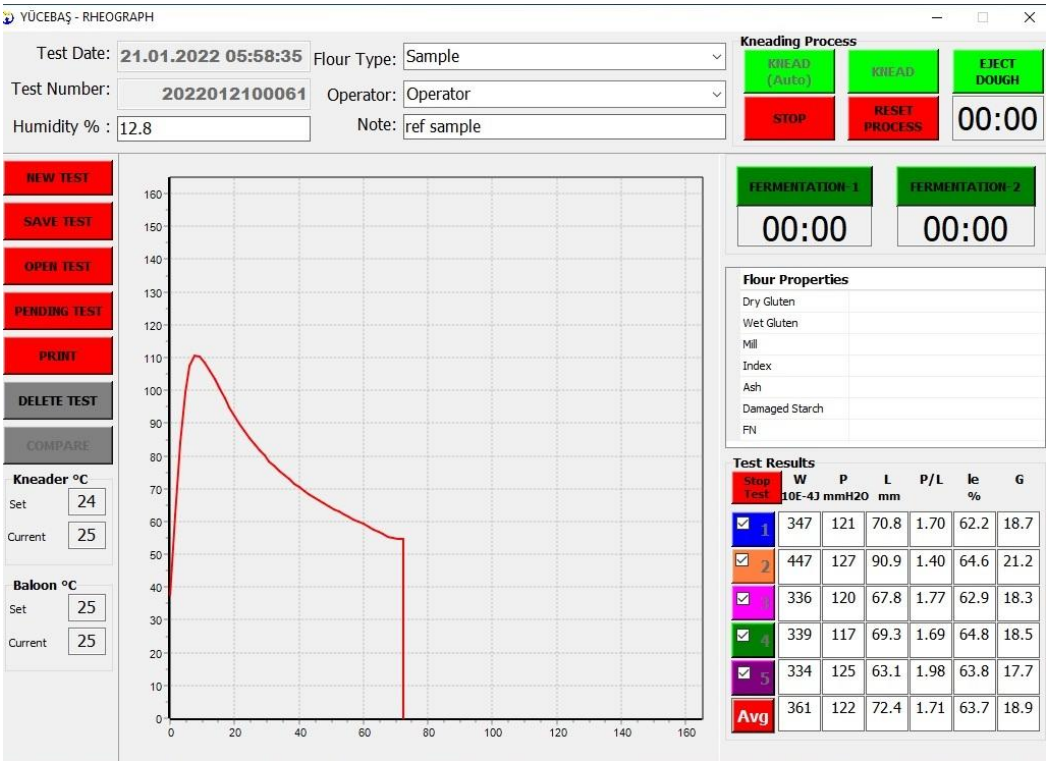




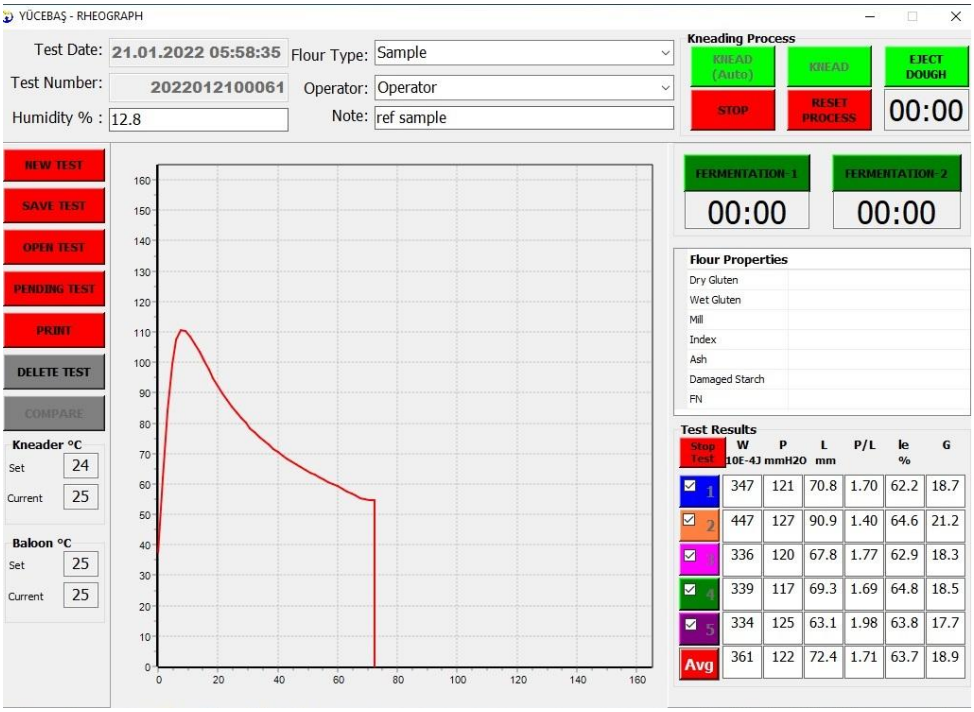

YÜCEBAŞ - RHEOGRAPH
Test Date: 21.01.2022 05:58:35
Flour Type: Sample
Test Number: 2022012100061
Operator: Operator
Humidity % : 12.8
Note: ref sample
Kneading Process
KNEAD (Auto)
KNEAD
EJECT DOUGH
STOP
RESET PROCESS
00:00
NEW TEST
SAVE TEST
OPEN TEST
PENDING TEST
PRINT
DELETE TEST
COMPARE
Kneader °C
Set 24
Current 25
Baloon °C
Set 25
Current 25
FERMENTATION-1
00:00
FERMENTATION-2
00:00
Flour Properties
Dry Gluten
Wet Gluten
Mill
Index
Ash
Damaged Starch
FN
Test Results
Stop Test
W 10E-4J
P mmH2O
L mm
P/L
le %
G
1 347 121 70.8 1.70 62.2 18.7
2 447 127 90.9 1.40 64.6 21.2
3 336 120 67.8 1.77 62.9 18.3
4 339 117 69.3 1.69 64.8 18.5
5
Avg


YÜCEBAŞ - RHEOGRAPH
Test Date: 21.01.2022 05:58:35
Flour Type: Sample
Test Number: 2022012100061
Operator: Operator
Humidity % : 12.8
Note: ref sample
Kneading Process
KNEAD (Auto)
KNEAD
EJECT DOUGH
STOP
RESET PROCESS
00:00
NEW TEST
SAVE TEST
OPEN TEST
PENDING TEST
PRINT
DELETE TEST
COMPARE
Kneader °C
Set 24
Current 25
Baloon °C
Set 25
Current 25
FERMENTATION-1
00:00
FERMENTATION-2
00:00
Flour Properties
Dry Gluten
Wet Gluten
Mill
Index
Ash
Damaged Starch
FN
Test Results
Stop Test
W 10E-4J
P mmH2O
L mm
P/L
le %
G
1 347 121 70.8 1.70 62.2 18.7
2 447 127 90.9 1.40 64.6 21.2
3 336 120 67.8 1.77 62.9 18.3
4 339 117 69.3 1.69 64.8 18.5
5 334 125 63.1 1.98 63.8 17.7
Avg

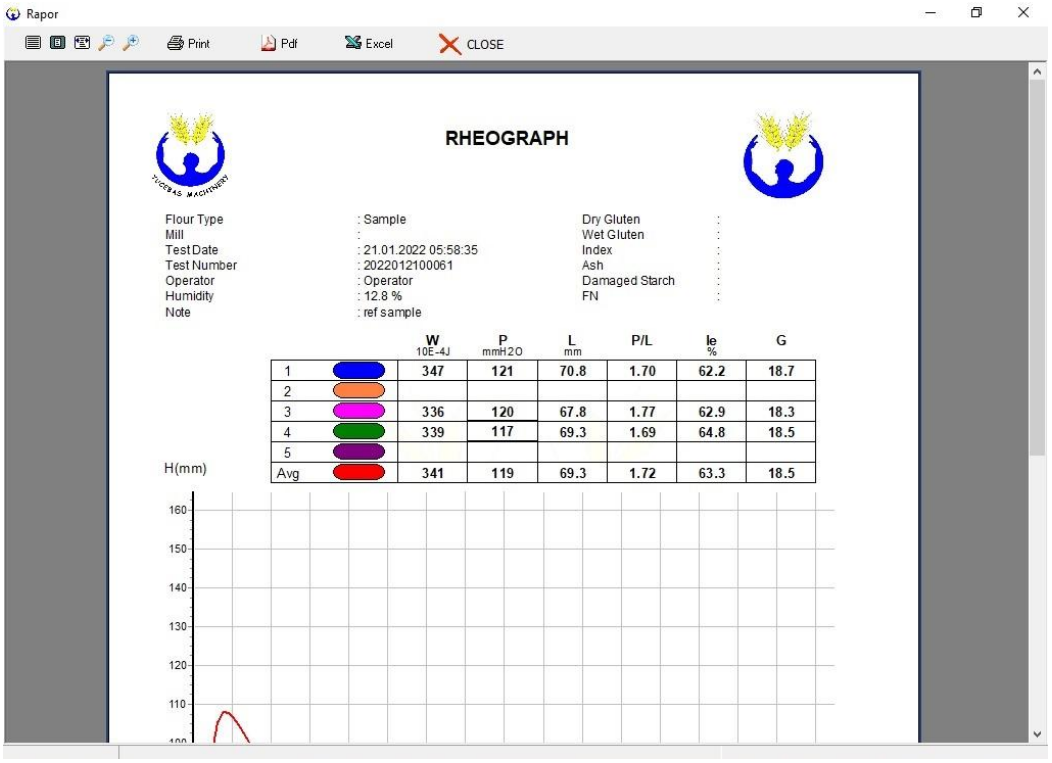
After the drawing the 5 graphics, you can click to the Avg. button in order to see the average results and average graphic.



You can remove the two different curves (if needed) from the all five with removing the clicks close to the test numbers and with clicking to Avg. button, you can obtain the average result and graphic of those three curves.



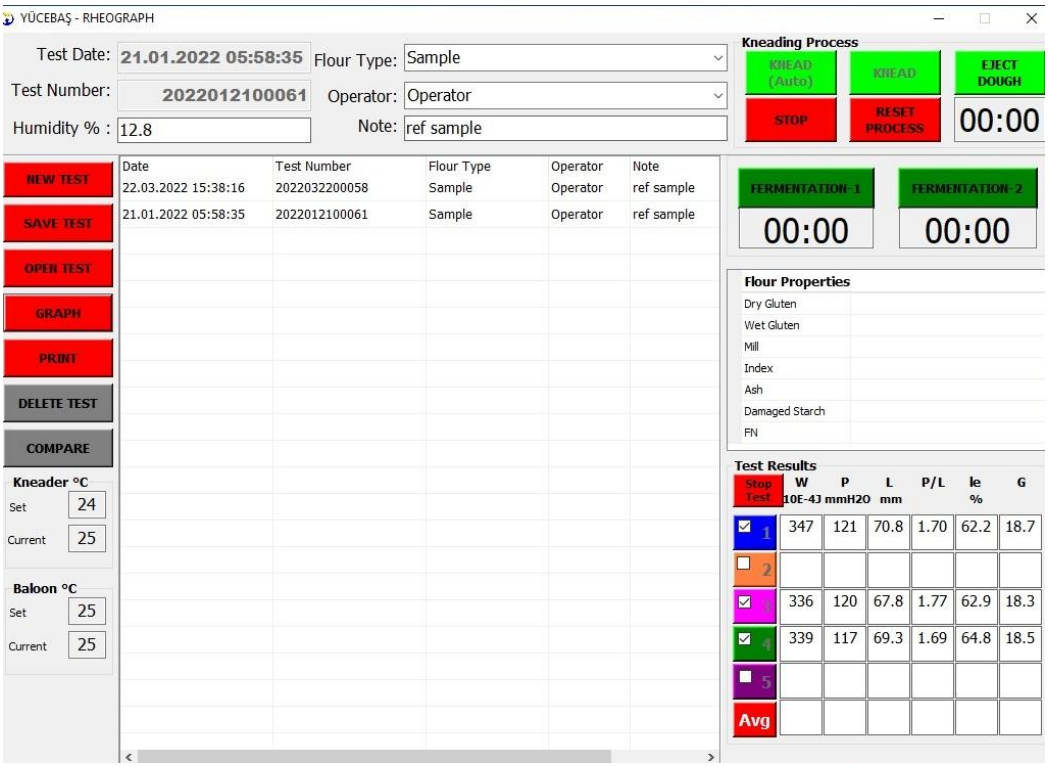
By clicking to the PRINT button, you can directly print out the test results from your printer. Or you can convert the test results to pdf file by pressing to pdf button. Or you can transfer the test results to excel file by pressing on excel button.



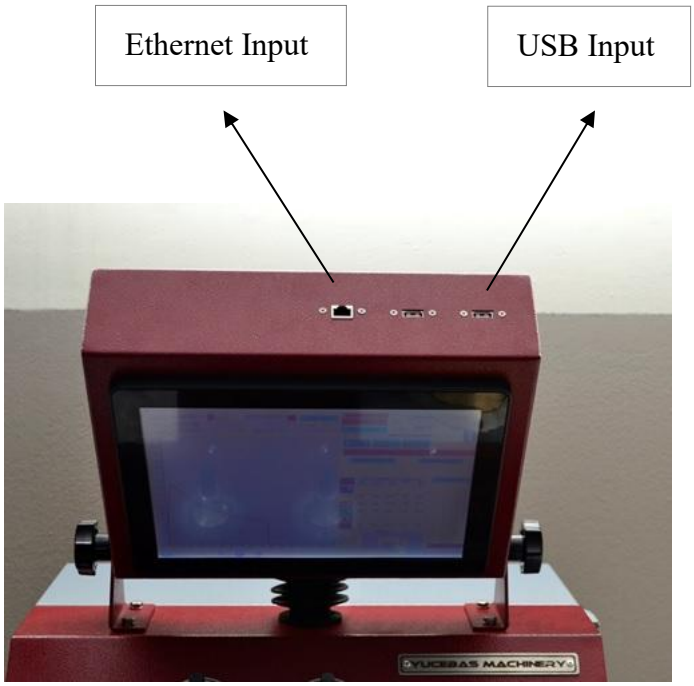
***Important Note :** The graphics used in this guide is only for presentation. The graphs do not give any real results and drawing.

When you need to see older test results, click to the OPEN TEST button. Than choose the requested test to see the test results.

After opening at least two tests when you click to the PENDING TEST button, you can switch the graphics and the results of the different tests easily.



When you click to the COMPARE button, you can compare the test results of at least two tests or more.



You can make the internet connection of device by using Ethernet input. Besides you can make the printer connection by using USB input. These sockets are on the upper side of Touchscreen panel of device.

Important Notes for Automatic Rheograph

1 – YOU MUST TURNOFF THE WINDOWS FROM START MENU, BEFORE CLOSE THE MAIN SWITCH OF RHEOGRAPH DEVICE.

2 - PLEASE DO NOT CHANGE THE LOCATION, LANGUAGE SETTINGS AND FORMAT SETTINGS OF THE DATE FROM THE CONTROL PANEL OF THE COMPUTER.

3 – PLEASE DO NOT CHANGE THE UP-DATE SETTINGS OF THE WINDOWS SOFTWARE.

4 – You can delete the selected test using the "Delete Test" button.

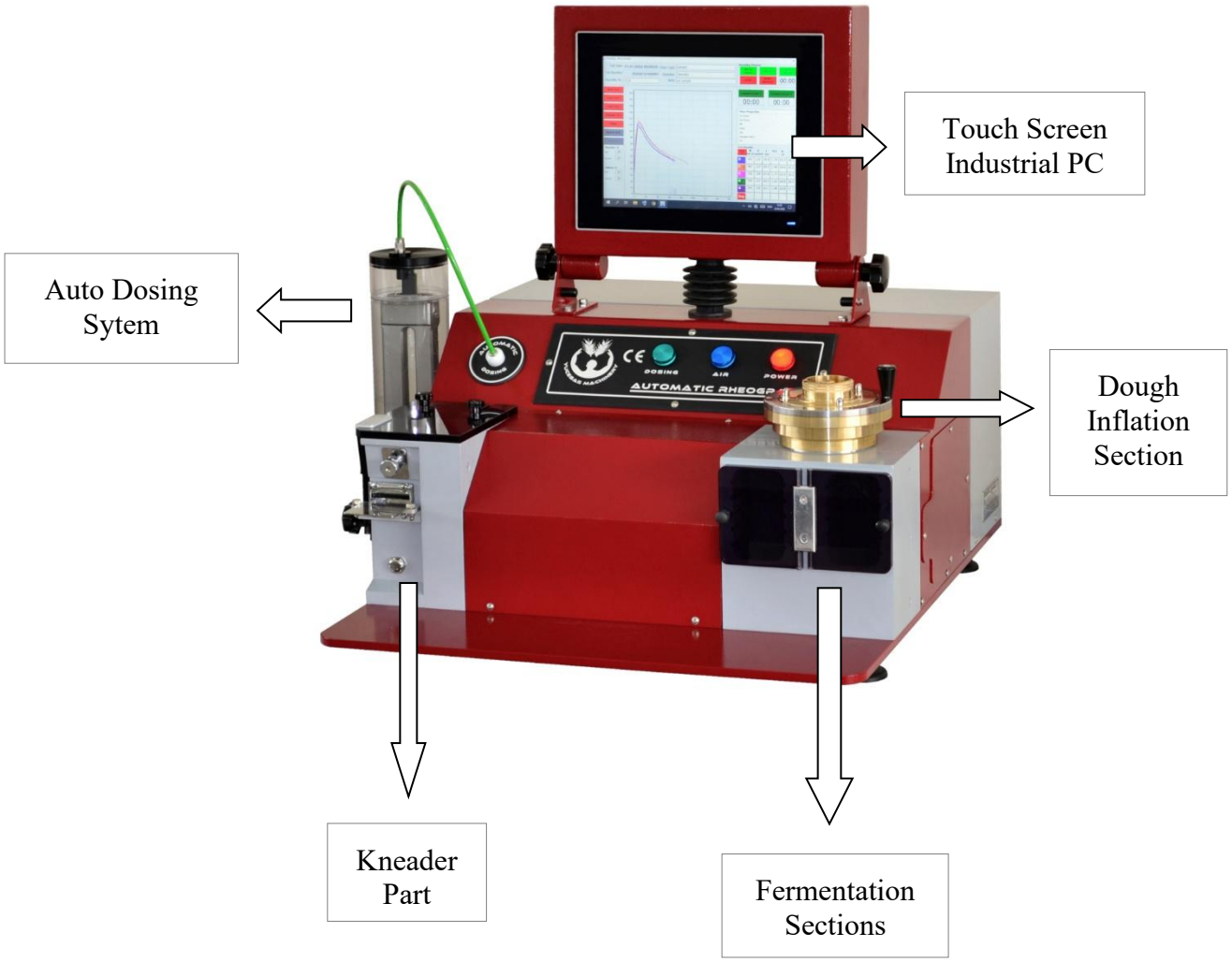
Important Note : You can not see the deleted test once again.

5 – If software doesn't work , Please check the following items:

– Energy connection of device

– Be sure that the new test button was pressed for new sequence number

– If you can not solve the software problem, you can restart the Windows.


Touch Screen
Industrial PC
Auto Dosing
Sytem
Dough
Inflation
Section
Kneader
Part
Fermentation
Sections

Technical Specifications of Automatic Rheograph:

Dimensions: (H x D x W) 360 mm x 750 mm x 770 mm

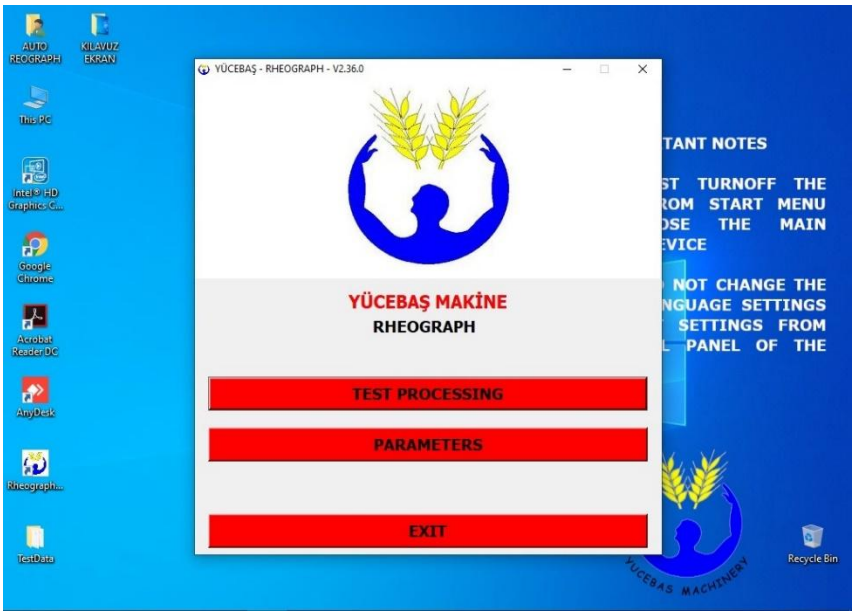
Energy: 220 V AC, 50 - 60 Hz

Power : 1.1 KW

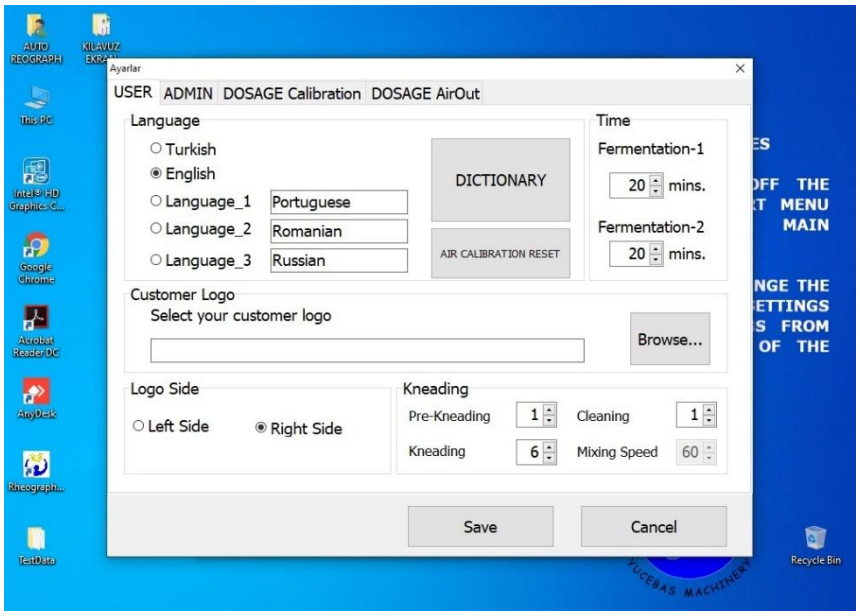
Net Weight: 100 Kg

DOSAGE AIR OUT

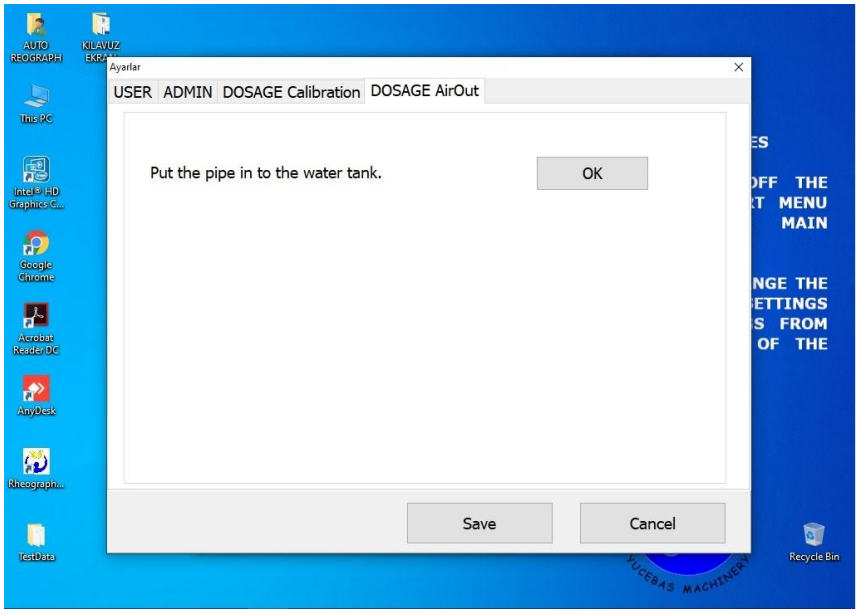
Click to the PARAMETERS section on the main menu of the software.



Click to the DOSAGE AIR OUT section.

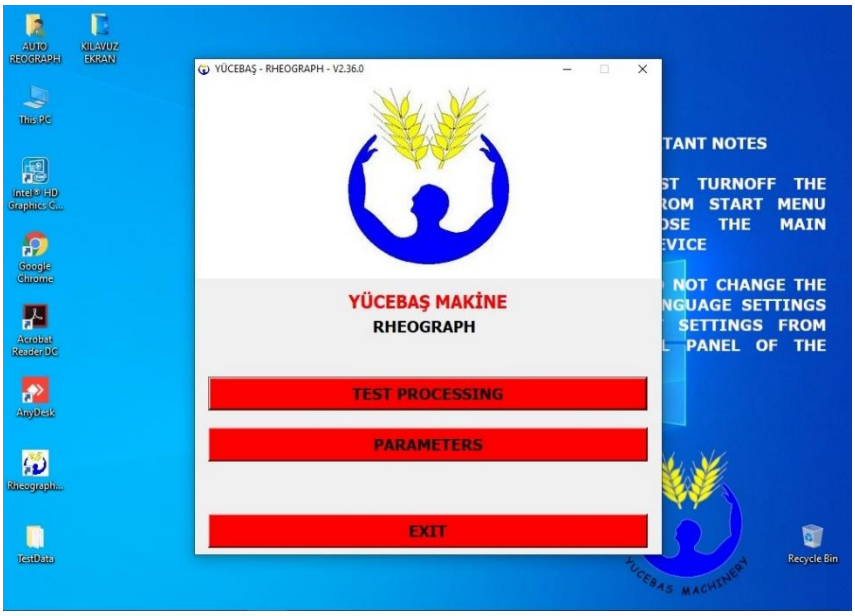


Fill the dosing tank with the 2.5% of the salt solution. Apply the instructions tht appears on the Dosage Air Out section at least 3 – 4 times during the first time of the filling of the auto dosing system. The air bubles from the waterpipes has to be removed. If the solution level is below than the lowest level, which is marked on the dosing tank, apply the same procedures too.

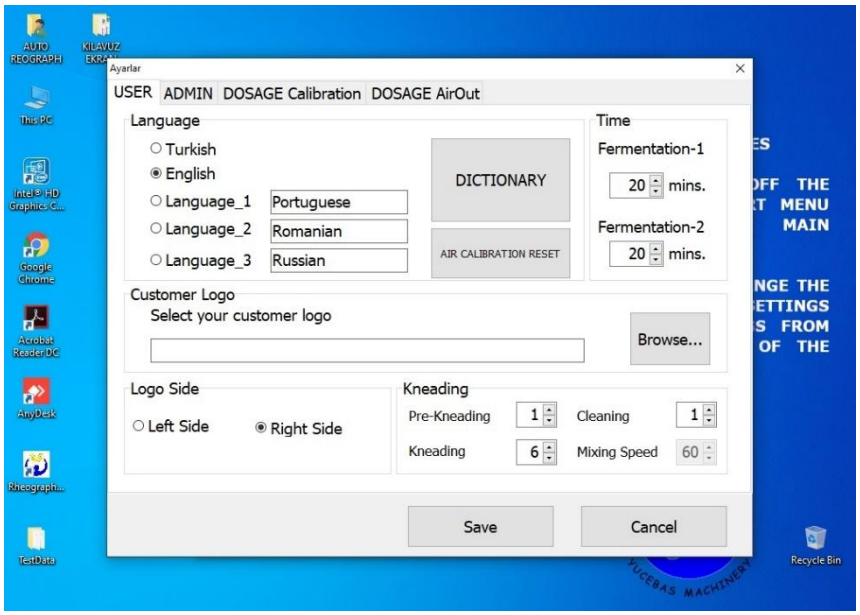


DOSAGE CALIBRATION

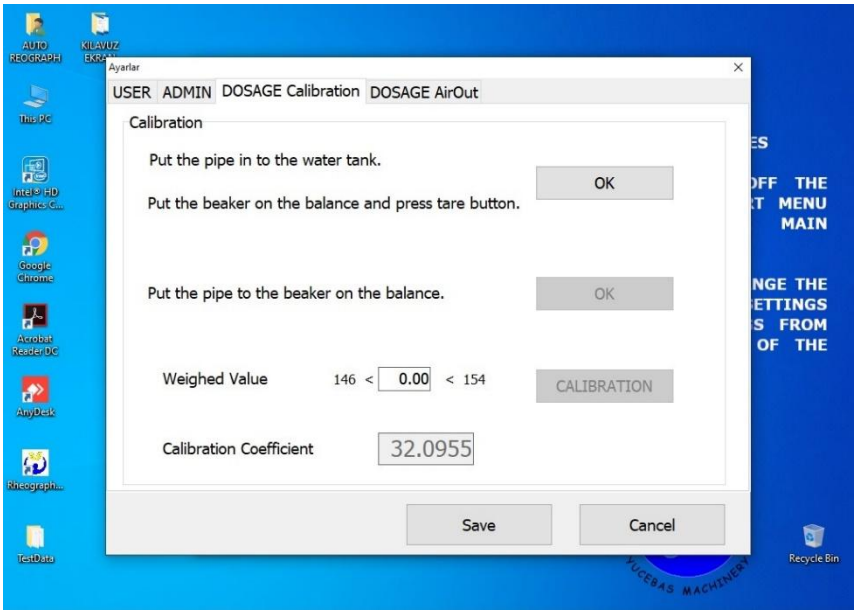
Click to the PARAMETERS section on the main menu of the software.

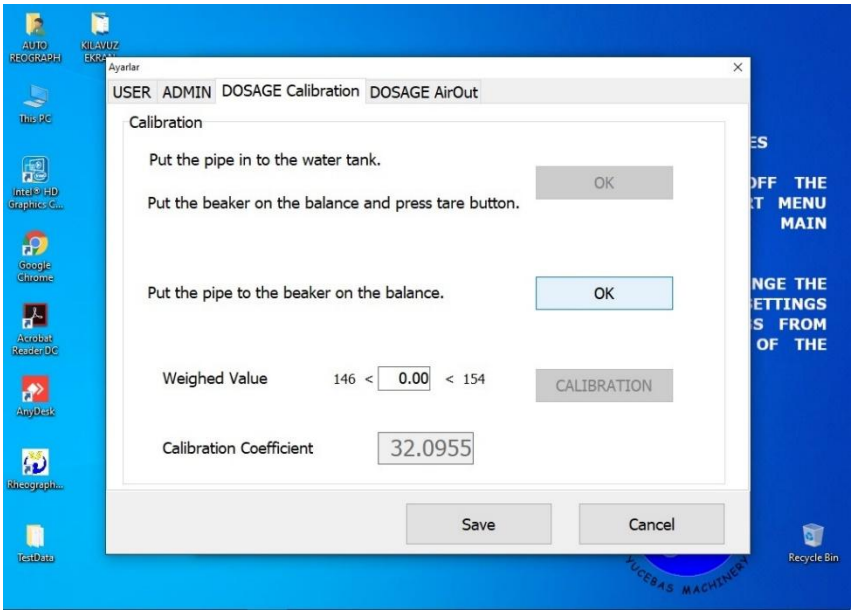


Click to the DOSAGE CALIBRATION section.

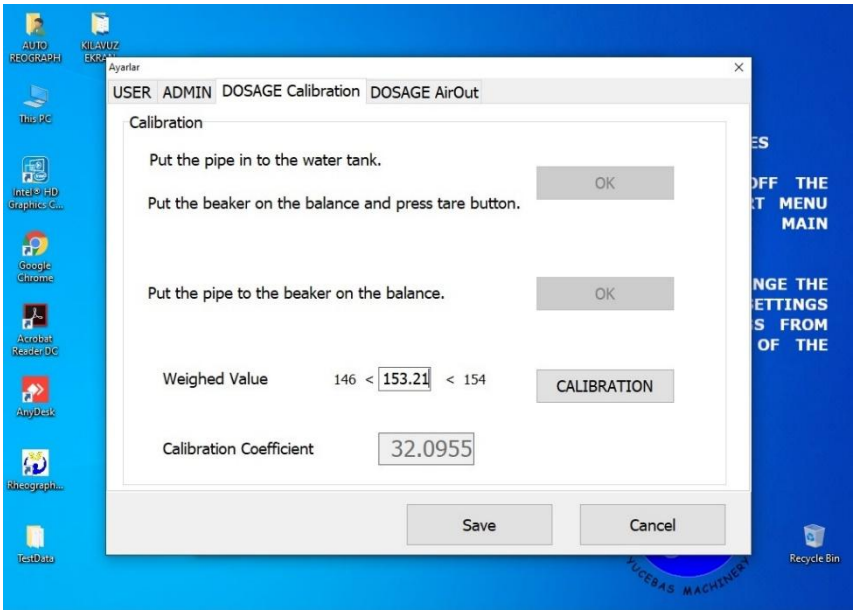


Fill the dosing tank with the 2.5% of the salt solution. Make sure that the DOSAGE AIR OUT is completed properly. Than apply the instructions one by one.



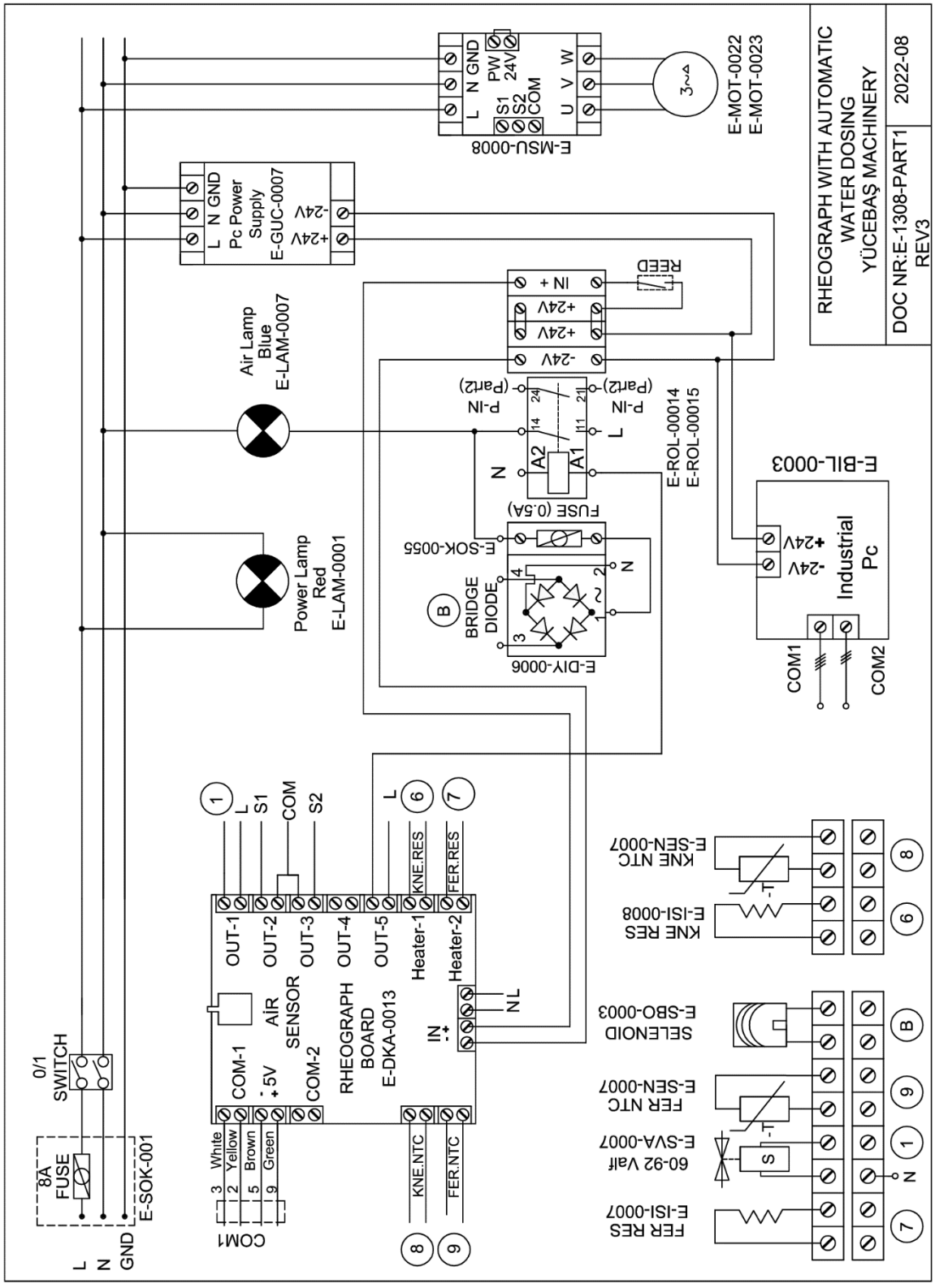


Type the weighed value on the related box and than press CALIBRATION. Do not forget to press SAVE before going to exit from the PARAMETERS menu.

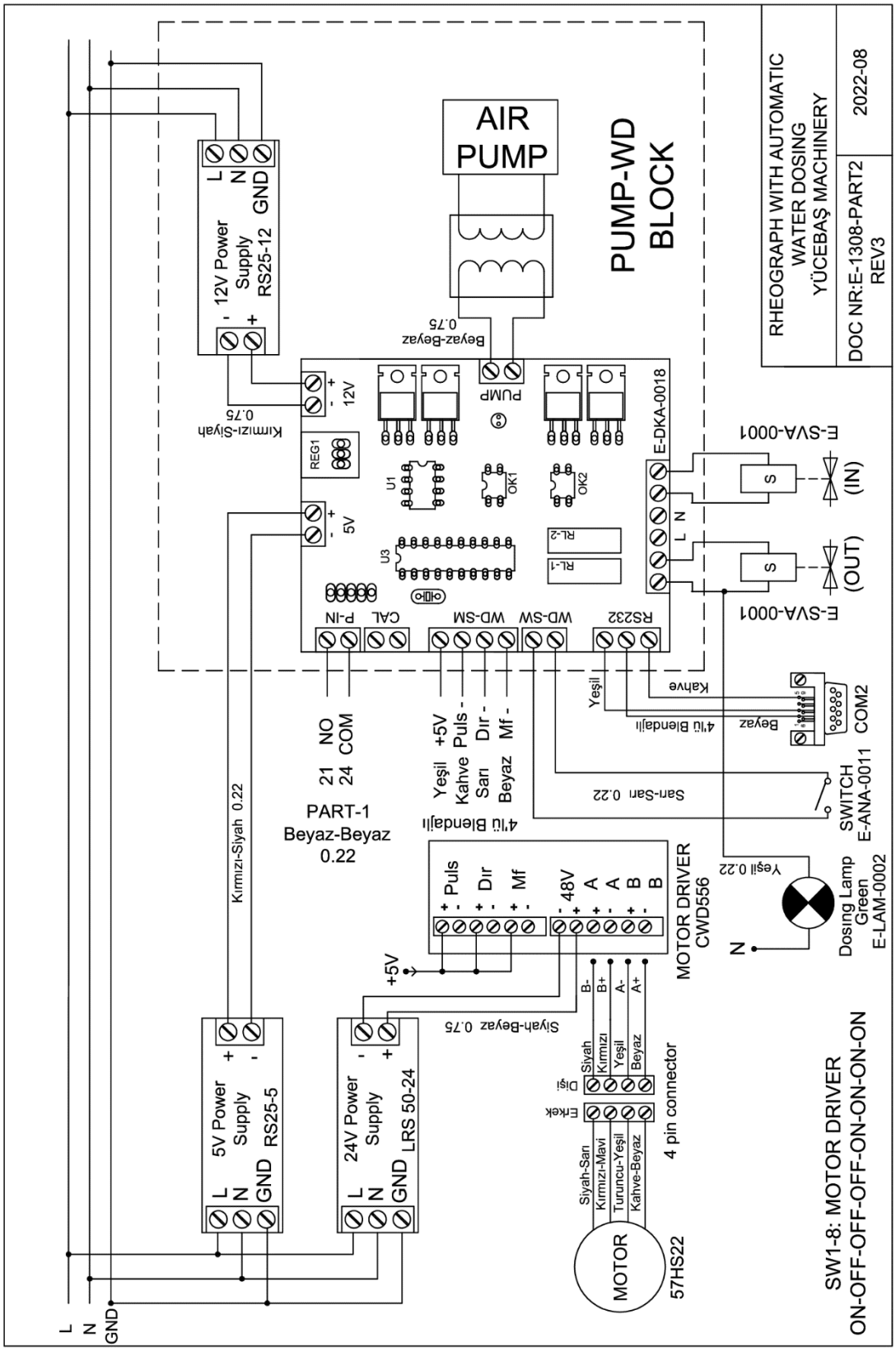


The dosing calibration is recommended for once a week in case the dosing tank is not empty.

ELECTRICAL DIAGRAM OF AUTOMATIC RHEOGRAPH



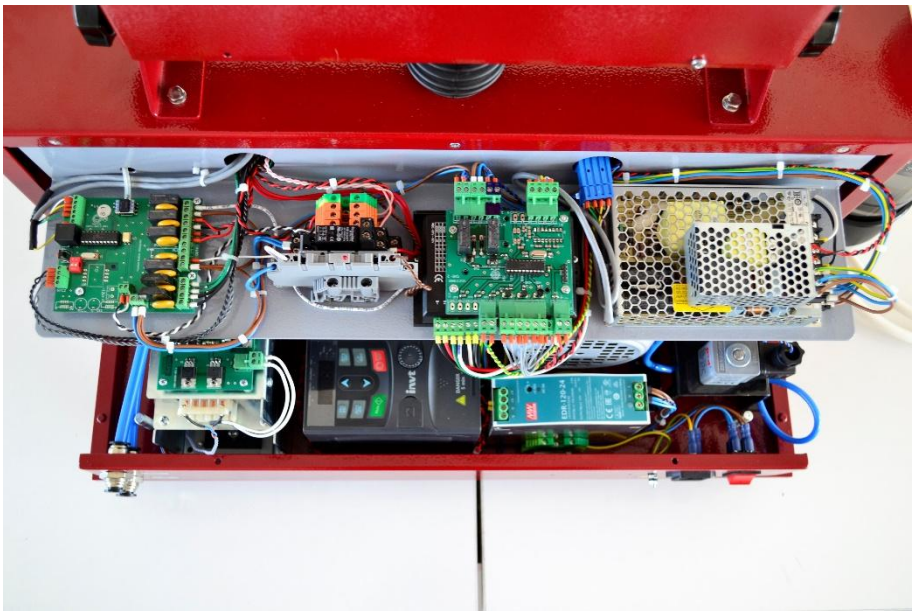
ELECTRICAL DIAGRAM OF AUTOMATIC RHEOGRAPH



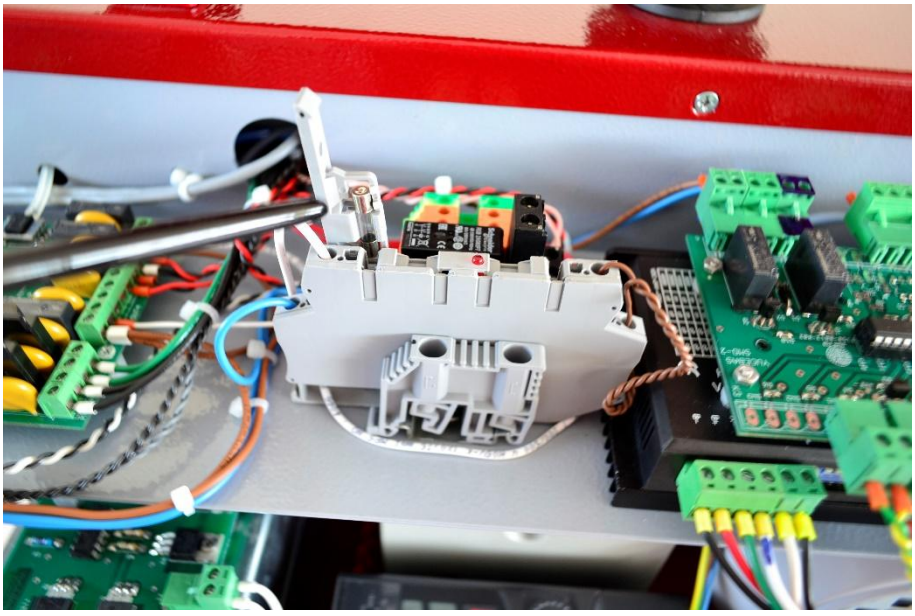
FUSE CONTROL

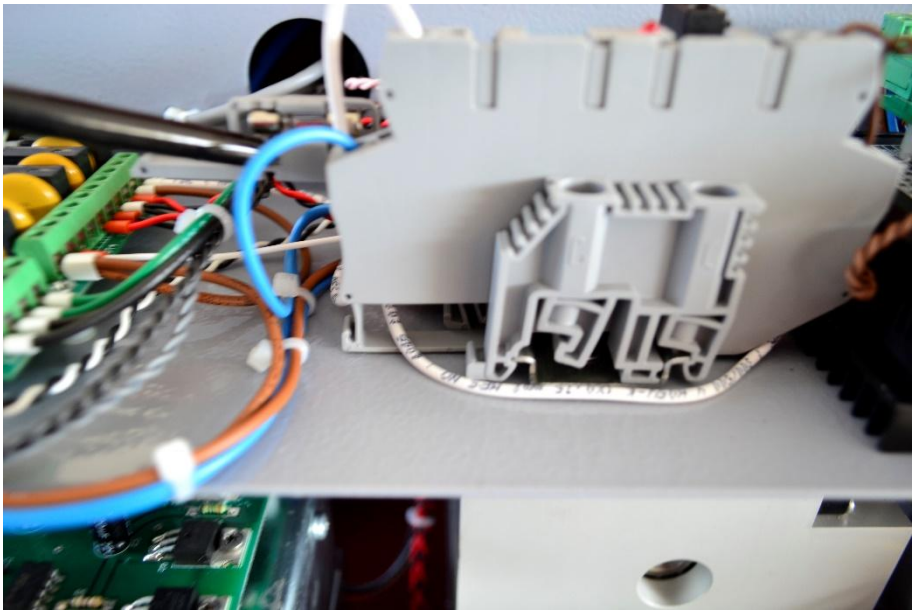
If the bubble inflation unit does not work, please check the followings:

Switch off the device and remove the upper back cover.



Pull up the clips of the electric terminal with the fuse.





Control if the fuse is broken or not. If it is broken, replace it with the spare ones (500mA or 0.5A).

REAGENTS FOR RHEOGRAPH TEST

1.) NaCl Solution:

Dissolve 25 g NaCl in distilled water and make up to 1000 ml.

Necessary quantity per test: The necessary amount of the solution depends on the humidity content of the test sample. The solution is added to the test sample considering its humidity content with the special glass burette, which provided by the manufacturer.

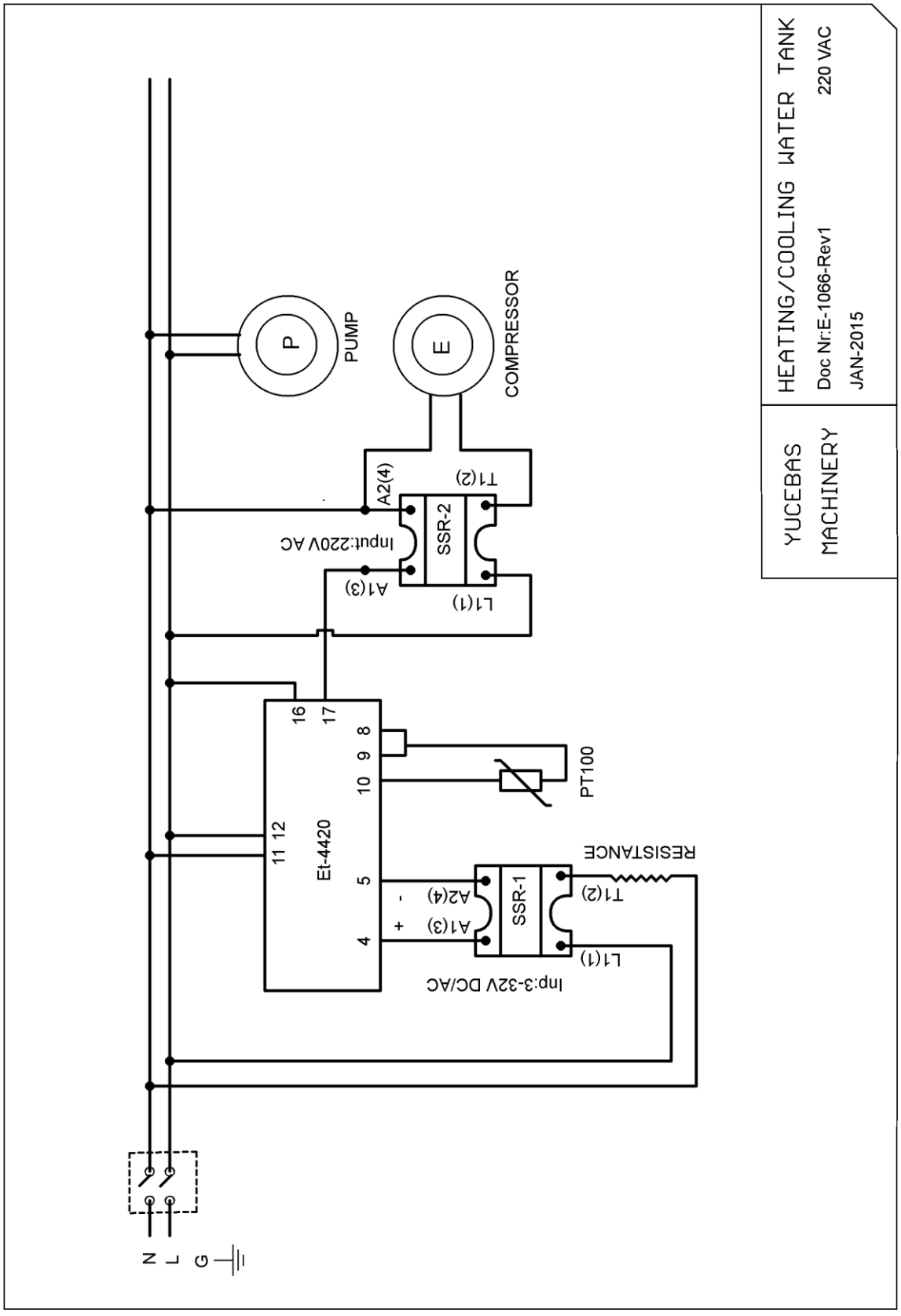
2.) Refined vegetable oil;

low in polyunsaturates, such as **hazelnut oil**, or oleic vegetable oil with acid value less than 0.4. As an alternative, **liquid paraffin (soft petroleum paraffin)**, with an acid index value less than or equal to 0.05 and the lowest possible viscosity (maximum 60 cP at 20°C)

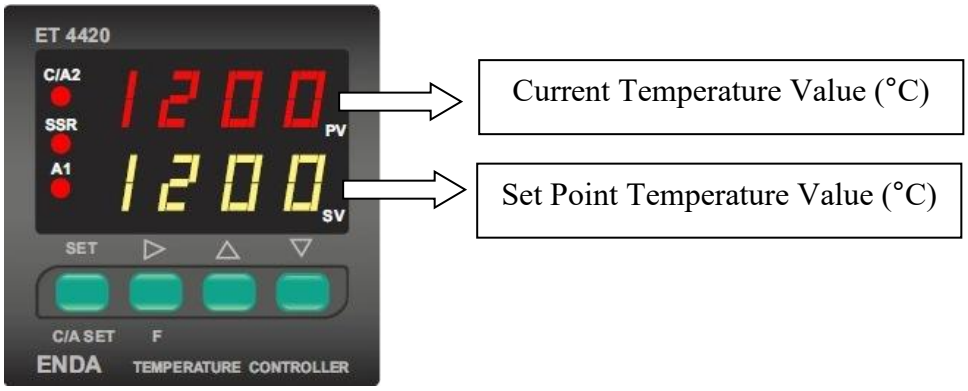
Necessary quantity per test: After the kneading process, the surfaces, where interferes with the dough sample needs to be oiled, which described above, in order to eliminate the stickiness of the test sample.

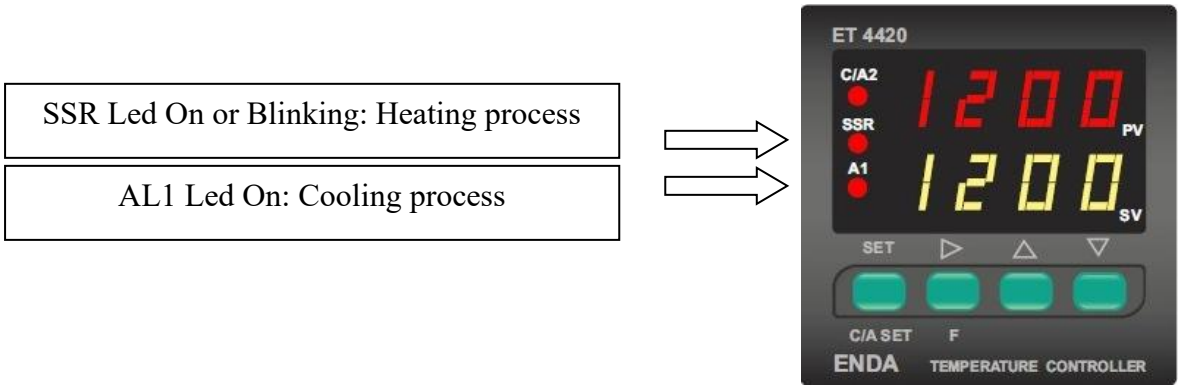
Picture 1. Hazelnut Oil

ELECTRIC DIAGRAM OF HEATED AND COOLED CONTROL WATER TANK



CHANGING THE SET VALUE OF THE TEMPERATURE CONTROLLER ON HEATED AND COOLED WATER TANK (ET 4420)





Heating Set Value:

Press SET key (Display C1SE), ▲(increase) or ▼(decrease) key heating set value.

Cooling Set Value:

Press SET key (Display A1SE), ▲(increase) or ▼(decrease) key cooling set value.

Note: If display shows A2SE, please set ASET key again.

For Rheograph tests;

C1SE Value: 23 °C

A1SE Value: 24 °C – 25 °C

A1SE > C1SE
C1SE + (1 °C or 2°C) = A1SE