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1_Familiarity with Farinograph device

The Farinograph measures certain properties of flour, and its main application is to measure and viscosity of a mixture of flour and water.

The following can be determined using Farinograph results:

- _Water absorption
- _The viscosity of the dough includes the maximum ratio of water to gluten
- _Maximum mixing time to achieve gluten water absorption
- _Stability of dough under mix
- _Gluten resistance of dough

Flour and bread specialists also use a farinograph to obtain flour specifications and using

They determine the necessary changes in the process of making flour and preparing flour for different baking. Also from this

The device is used to prepare dough for extensograph testing. Farinograph device of Ardazmalian Engineering Company, using artificial intelligence, it is possible to determine the quality of hardness and type of wheat used to produce different flours and determine characteristics such as water absorption, processing time, stability and softening of dough.

Provided





Instructions for using the Farinograph device

The use of frinographs and extensographs allows flour mills, bread makers, biscuits and other cereal products and research centers to grade all types of flour and wheat according to curves and, if necessary, purchase suitable samples of wheat and flour. And mix to change the properties of flour as desired because in many cases without the above information, the behavior of flour can not be predicted and controlled during the fermentation and baking operations. The basis of operation of this device is in accordance with the international standard ISO with number 1-5530

2- Installation steps of Farinograph

Follow the steps below to install the device.

- 1- Make sure the device is on a flat surface. The unevenness of the surface or the slope of the device can affect the result.
- 2- Connect the device to 220 V 50 Hz power supply.
- 3- Place the stabilizer and earth device on the input power path.
3. Guide on how to use Farinograph

After installation and preparation, the device is now ready for testing.

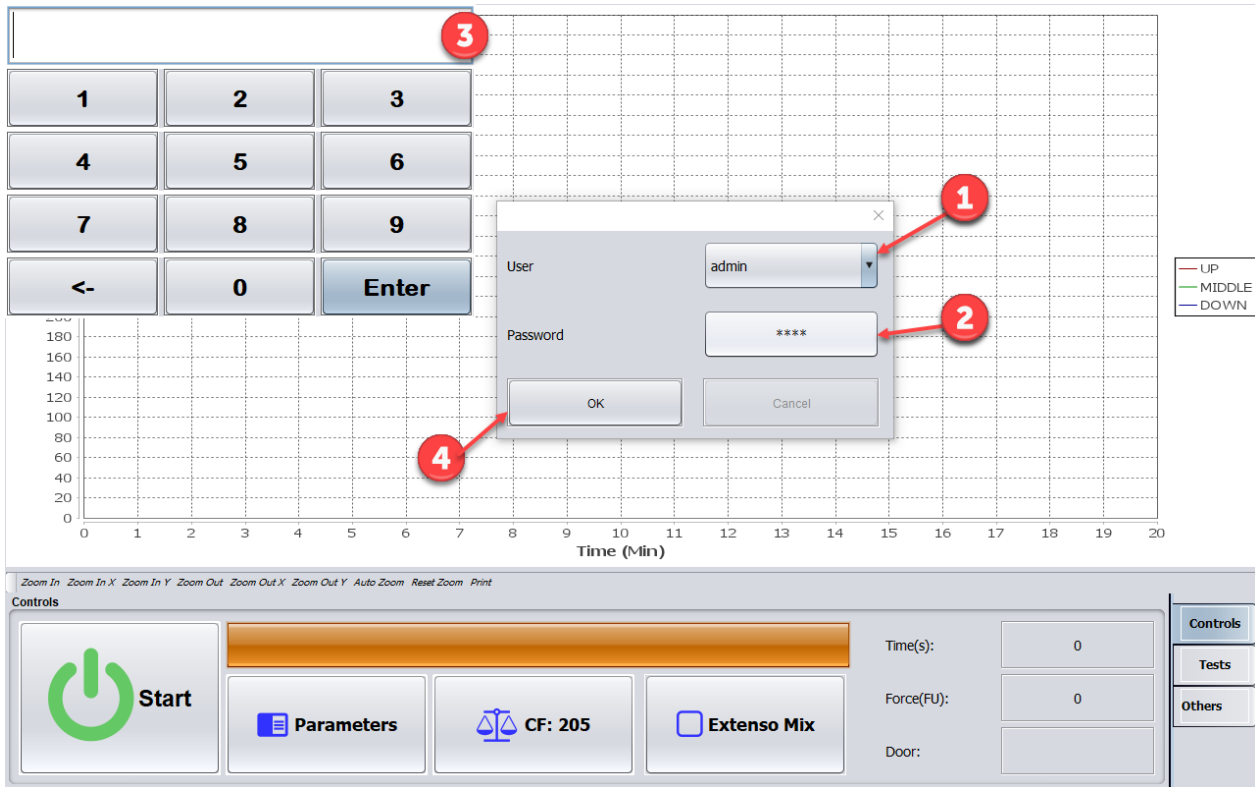
3-Login to the program

When logging in, the user must select their username and enter the password:

1. Touch to select a username.
2. Touch the Password box to open the keyboard for the password.
3. Enter the password and touch the Enter key.
4. Click the OK button.

If the password is entered correctly, you will be taken to the main page of the program.

Instructions for using the Farinograph device



The screenshot shows the software interface for the Farinograph device. It includes a numeric keypad (1-9, 0, Enter, and a back arrow) and a graph area with a grid. The graph's x-axis is labeled "Time (Min)" and ranges from 0 to 20. The y-axis ranges from 0 to 180. A legend on the right indicates that red, green, and blue lines represent UP, MIDDLE, and DOWN movements, respectively. A login dialog box is overlaid on the graph, with the following fields and buttons:

- User:** A dropdown menu currently showing "admin".
- Password:** A text field containing "****".
- Buttons:** "OK" and "Cancel".

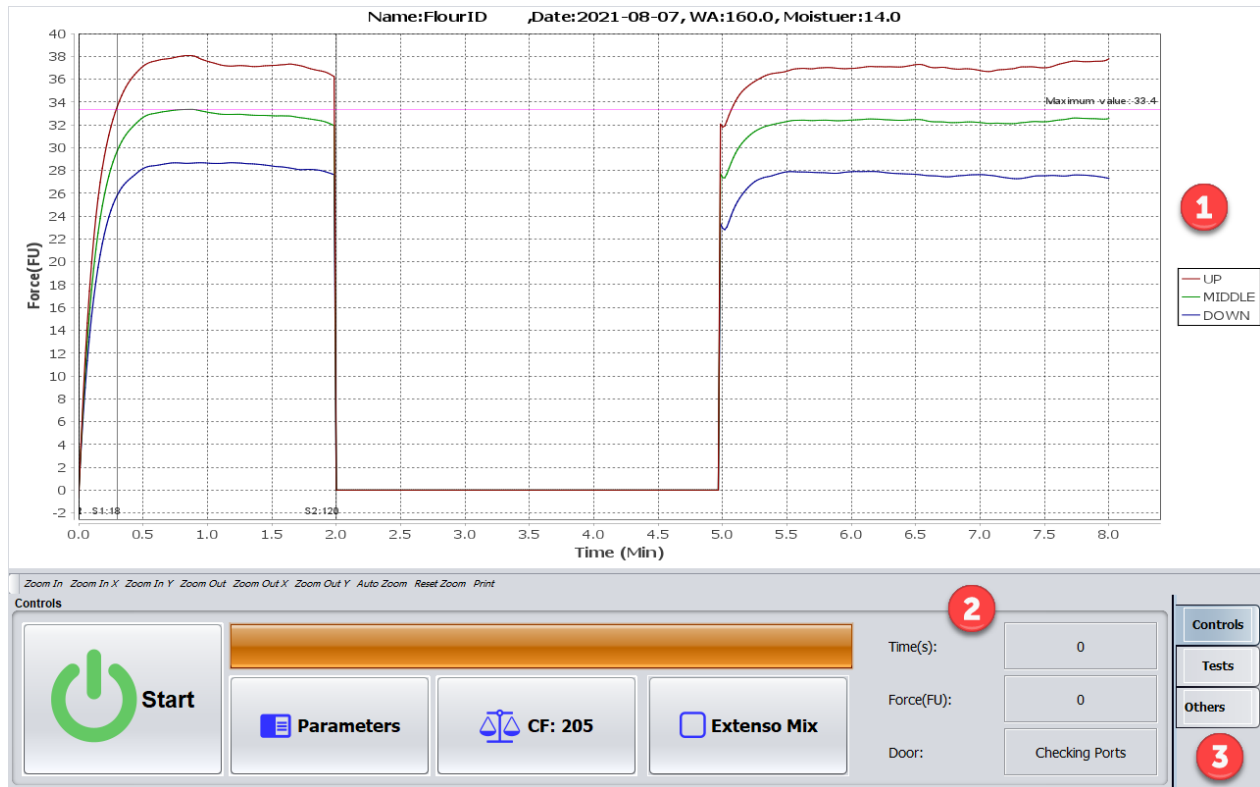
Numbered callouts indicate the following steps:

- 1: Click on the User dropdown menu.
- 2: Click on the Password field.
- 3: Click on the top input field.
- 4: Click on the OK button.

At the bottom of the interface, there is a "Controls" section with the following elements:

- Start:** A green power button icon.
- Parameters:** A button with a document icon.
- CF: 205:** A button with a scales icon.
- Extenso Mix:** A button with a square icon.
- Time(s):** A numeric input field set to 0.
- Force(FU):** A numeric input field set to 0.
- Door:** An empty input field.
- Navigation:** Buttons for "Controls", "Tests", and "Others" on the right side.

Home app

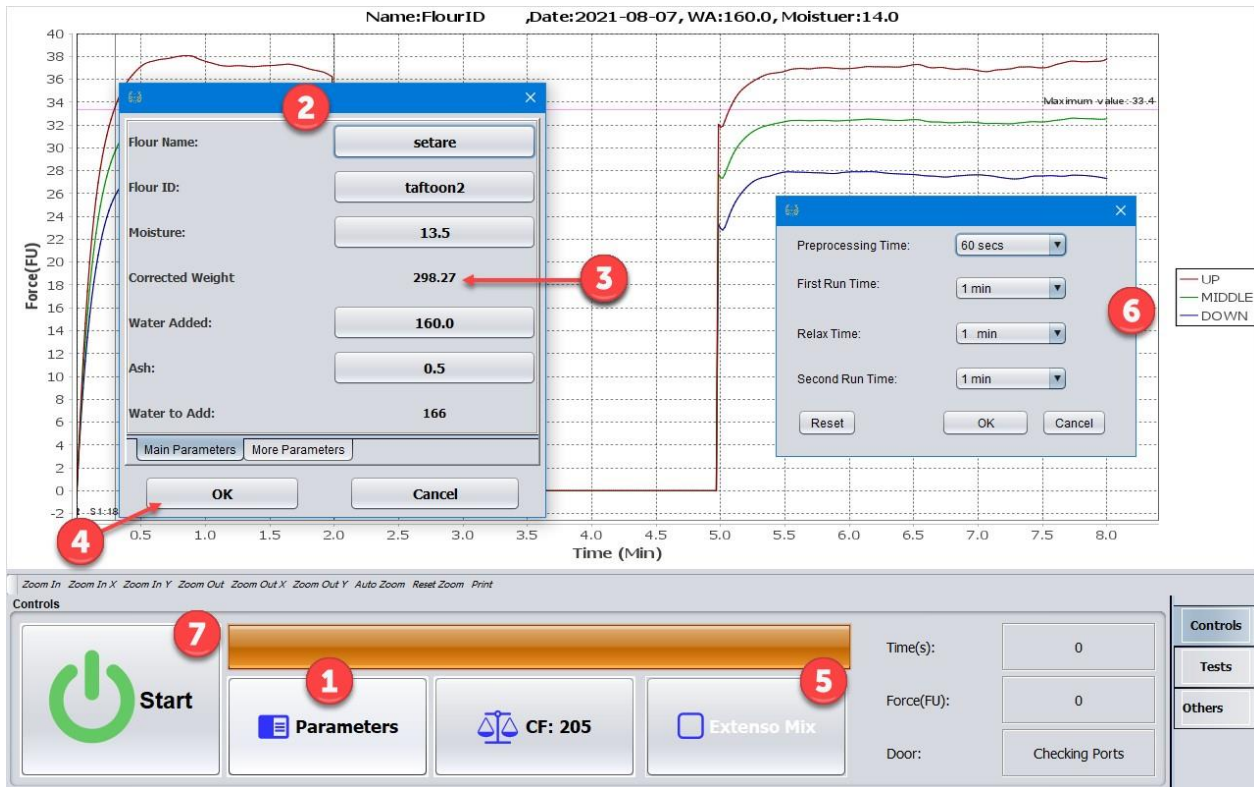


The main page of the program consists of three main sections:

1. Chart panel where the test chart is displayed.
2. Control section where there are buttons for performance control, test control and other items.
3. The languages section, by touching each one, the controls related to that item appear.

Perform an experiment

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1. Click the Parameters button and enter the test parameters.
2. Enter the amount of moisture in the Moisture box. As soon as this is done, the value of Corrected Weight changes.
3. Prepare the desired amount of flour according to the amount shown in Corrected Weight (in grams). Enter the amount of water to be entered in the Water Added box (in millimeters).
4. After entering other parameters, click the OK button.

If your test is to prepare a sample for an extensograph, follow the next steps, otherwise go to step 7.

5. If you want to prepare a sample for the extensograph, click on the Extenso Mix button to open a window for entering specifications, except for a tick appearing in it.
6. Enter the details as follows and click OK:

_Preprocessing Time: This is to specify the aeration time and temperature of the flour and prepare to add water. The default value is 60 seconds.

First Run Time: This is the time during which water is added to the dough. After this time, the



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device stops.

_Relax Time: After the First Run Time expires, the device stops for the time specified in this box and then starts moving.

_Second Run Time: The time of the last move to make the dough.

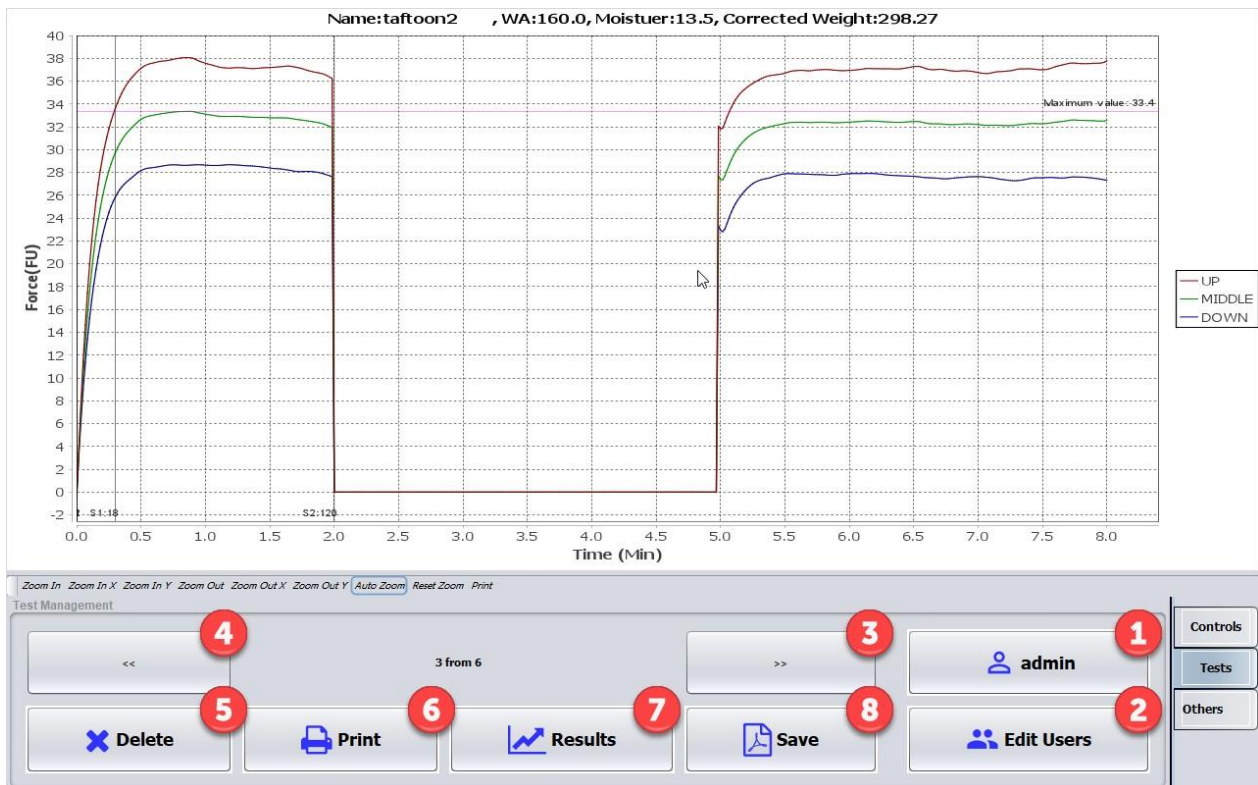
7. Make sure the flour in the tank and the marked water in the container are ready and click the Start button to start the test.

8. The machine starts working and mixes the flour for one minute to enter the air at the same temperature and inside. During this time, time is displayed negatively in the Time box. As soon as the preparation time is over and the time in the Time box is zero, open the water tank valve and add the water specified in step 3 through the grooves on the lid of the device.

From now on, depending on the type of test specified, the device will continue the test and display the results when completed (or whenever the Stop button is clicked).

Tests tab

This tab allows you to manage and display experiments and users. In it you can access the following controls



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1. Shows the current username.
2. The Edit Users button allows users to add, change passwords or delete. This possibility is only available to the laboratory supervisor.
- 3 and 4. Provide the possibility of switching between experiments performed. Each experiment selected in this way, its graph will appear on the screen.
5. The Delete button removes the test displayed on the screen.
6. Print button allows direct printing of test results.
7. Click on the Results button, the test results will be shown on the screen.
8. The Save button allows you to save a test report to a flash drive. Clicking on it opens a window through which you can save the report as a PDF file:

The File Name button, which has a default output value, allows you to rename the output file and clicking on it opens a keyboard. The .pdf extension is added to the specified name.

The Drive to Save In list allows you to select the name of the connected flash drive. If you connect the flash drive to the device after opening this window, by clicking the Refresh button, its name will appear in the list.

The Save button also saves the file with the specified name on the selected flash drive.

Others tab

This section contains the following buttons:



1. The Test Review button opens a window in which you can compare the maximum test by selecting the flour name.
- 2 and 3 and the Backup Tests and Import Tests buttons allow you to back up the performed tests and restore them.
4. Exit button allows you to exit the program.



5. The Restart button turns the device off and on.

4. Accessories with the device

The following table shows the accessories that come with the Farinograph.

Name	Part number
Power cable	1
Stirrer blade	2
Dough tank	1
Lid on dough tank	1
Edible grease	1
Brush	1
paraffin container	1



6- Technical specifications of the device

The following table shows the technical information of Farinograph.

Technical specifications of Farinograph
Metal with oven paint coating body material
10 inch (capacitive touch) touch screen
Embedded computer (for software processing) software controller
Designed board independent of the main controller Independent hardware controller
Anti-scratch stainless steel blade and mixer tank
63 rpm mixer blade speed
Steel material with heating and cooling system and tank water circulation pump related to water temperature holder at constant temperature
With the ability to install on a computer software related to the device
Digital energy meter (Loadcell) Energy meter
Made of hard and silent polyamide with high resistance, small and large gears
12 or 24 volt DC or 220 volt AC electric gearbox
Connect to external storage via two USB outputs / inputs
Via LAN connection, and WiFi internet connection
Connect via USB, and connect to peripherals via Bluetooth
USB printer port Connect the hardware controller to the software controller



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Stainless steel mixer body plate
Lamps and switches
Emergency key - gearbox door sensor, protection and care facilities
Made of stainless steel blade resistant to wear
According to the world standard, graduated burette glass
Fan filter
620 × 520 × 400 mm Dimensions
Weight 46 kg