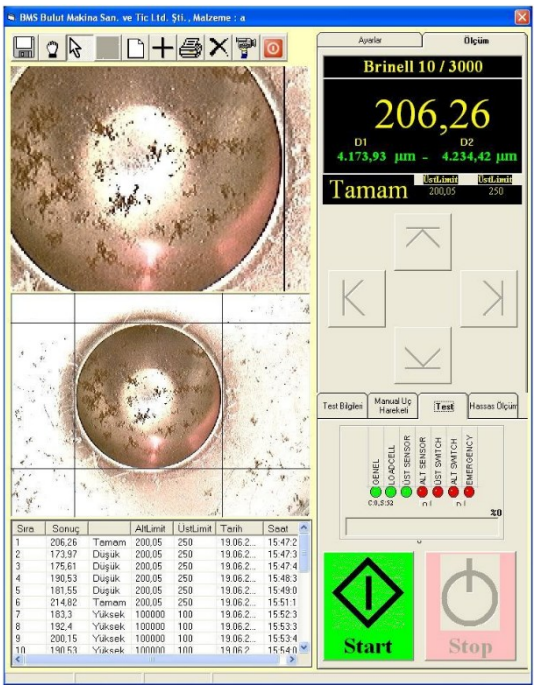
OPERATION MANUAL

BMS 3000 OBPC-M

BRINELL HARDNESS TESTER -CLOSED LOOP&TOUCH SCREEN WITH MOTORISED ELEVATING SCREW



BMS Bulut Makina Sanayi ve Ticaret Ltd. Şti.

Kocaeli KOBİ Organize Sanayi Bölgesi

Köseler Mahallesi, 6.Cadde No: 20/2 Dilovası / KOCAELİ / **TURKEY**

Phone: +90 262 502 97 73-76 / +90 262 503 06 51

web : www.bulutmak.com e-mail : bms@bulutmak.com

IMPORTANT

Please read this manual carefully before commissioning and running the equipment

In manual, there are several warning notices which to be paid attention.

And their meanings to be explained accordingly.

In case of facing problems, please get in touch with us. We will be pleased to solve your problems.

A –Your company name, address, phone, fax number, type of equipment, serial number

B –Problem to be explained clearly

Above notices will be helpful to assist you.

1 TECHNICAL SPECIFICATIONS

1.1 TECHNICAL SPECIFICATIONS

Test Loads (kgf) : 62, 5-3000
Load Selection : Automatic
Test Method : Brinell
Load Application : Automatic
Measuring system : 5MP, CMOS Digital camera
Depth of Throat : 200 mm
Max. Test height : 400 mm
Power supply : 220V, 50Hz
Machine Dimensions : 1500 x 810 x 485 mm
Case Dimensions : 1800 x 1000 x 700 mm
Weight (net/gross) : 420 / 500 kg
Closed-loop system
Video Imaging
Windows based
15” Full Color Touch screen

1.2 FEATURES OF OPTOBUL SOFTWARE

Test methods, name of customer and user, part no (automatic when required), part name, upper and lower tolerances, mean value, clearing records according to month and part number, conversions, very sensitive testing using up-down keys on screen when required, RS 232 output, printing reports (ball indentation view can also be printed out), graphic, standard deviation, user calibration, factory settings, internet connection, user friendly

1.3 STANDART ACCESSORIES:

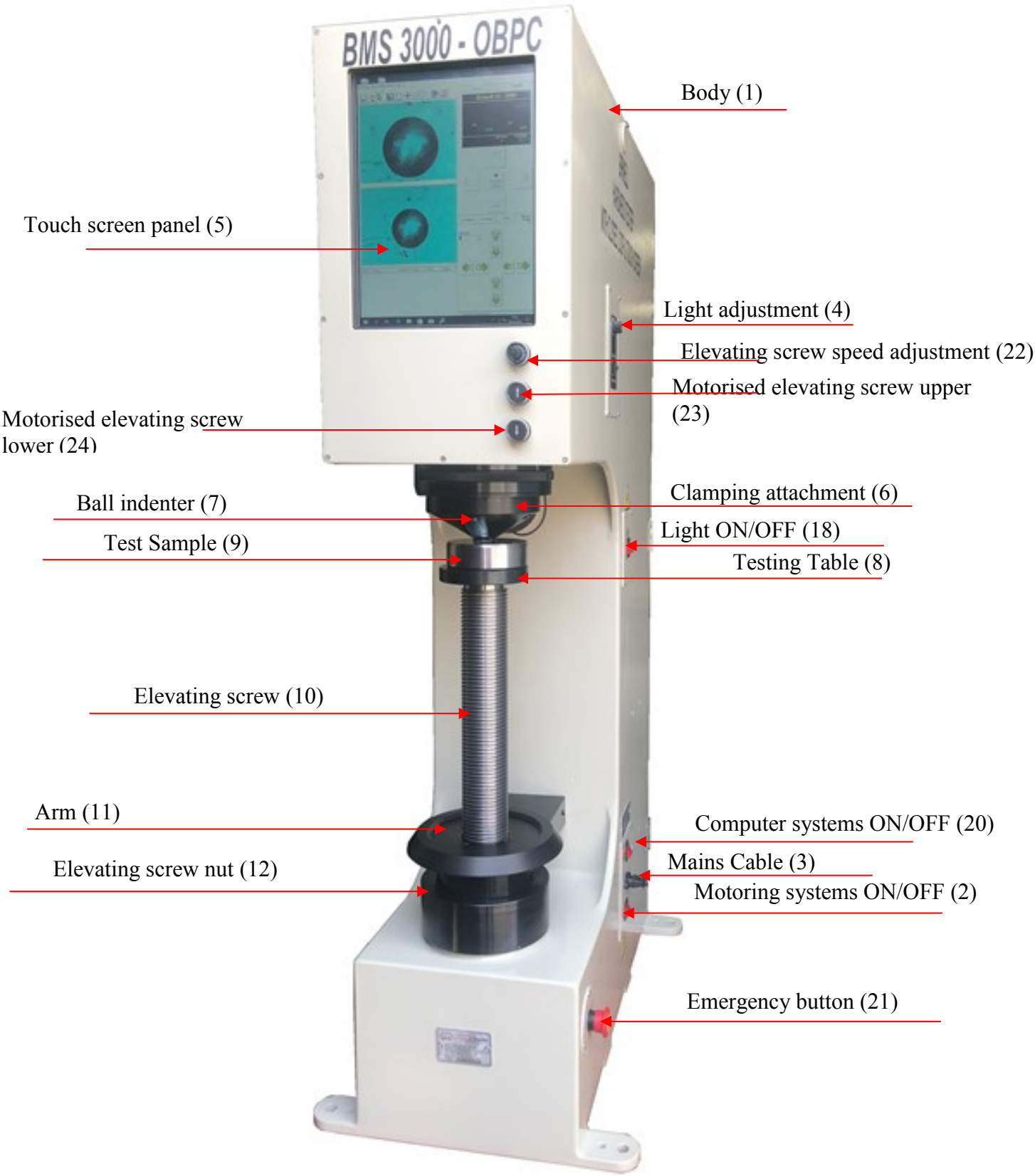
5 and 10 mm ball indenters : 1
HB 5 / 750 and 10 / 3000 test blocks : 1
Flat Testing Table : 1
V Testing Table : 1
Hardness Conversion Table : 1
Case for Accessories : 1
Set of allen spanners : 1
Instruction Manual : 1
Calibration Certificate : 1

2 ABOUT MACHINE

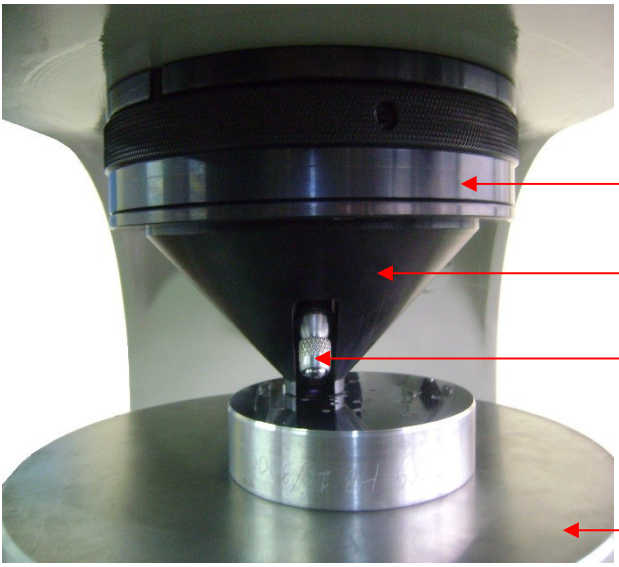
2.1 PART LIST

1. Body
2. Motoring Systems On / Off
3. Mains Cable
4. Light Adjustment Button
5. Touch Screen Panel
6. Clamping Attachment
7. Ball Indenter
8. Testing Table
9. Test Sample
10. Elevating Screw
11. Arm
12. Elevating Screw Nut
13. Volt, 10 Watt Halogen Lamp
14. Step Motor Spindle
15. Driver For Step Motor
16. Power Supply For Driver Of Step Motor
17. Load Cell İndicator
18. Light On/Off
19. Computer System ON/OFF
20. Emergency Button
21. PC System
22. Elevating screw speed adjustment
23. Elevating screw movement upper
24. Elevating screw movement lower

2.2 PICTURES OF EQUIPMENT



PICTURE-1



PICTURE-2

3 GENERAL INFORMATION

3.1 BRINELL HARDNESS TESTING (EN 6506-1, ASTM E10)

Brinell hardness testing method is actuated by balls with several sizes depending on material type, thickness and loads applied. Diameters of ball indentations can be evaluated by optical system built-in hardness tester.

Relations with thickness of specimen, ball dia and material shown in related the table

Thickness of material (mm)	Ball dia(mm)	P=30D2 Steel, iron, cast iron	P=10D2 Brass, Bronze, Cupper, Aluminyum	P=D2 Soft cupper	P=5D2 Lead
6 mm and up	10	3.000 kgf	1.000 kgf	500 kgf	250 kgf
3 mm and up	5	750 kgf	250 kgf	125 kgf	62,5 kgf
1,2 mm and up	2,5	187,5 kgf	62,5 kgf	31,25 kgf	15,625 kgf

Table 1

3.2 PRIOR TO TESTING

First switch on computer systems, after then, switch on touch screen panel
Later, switch on, motoring system.
Run OPTOBUL Software on touch screen panel. Equipment optical positioned automatically.
Locate suitable ball indenter into indenter holder using Table 1

3.3 CHOOSING THE TESTING METHOD & OBSERVING SURFACE

Choose Brinell hardness testing method in settings (ball/load)
See OPTOBUL software
Locate, sample on testing table.
Raise, elevating screw until clamping attachment touches on the surface of sample.
At this time, observe, surface of sample on touch screen panel.

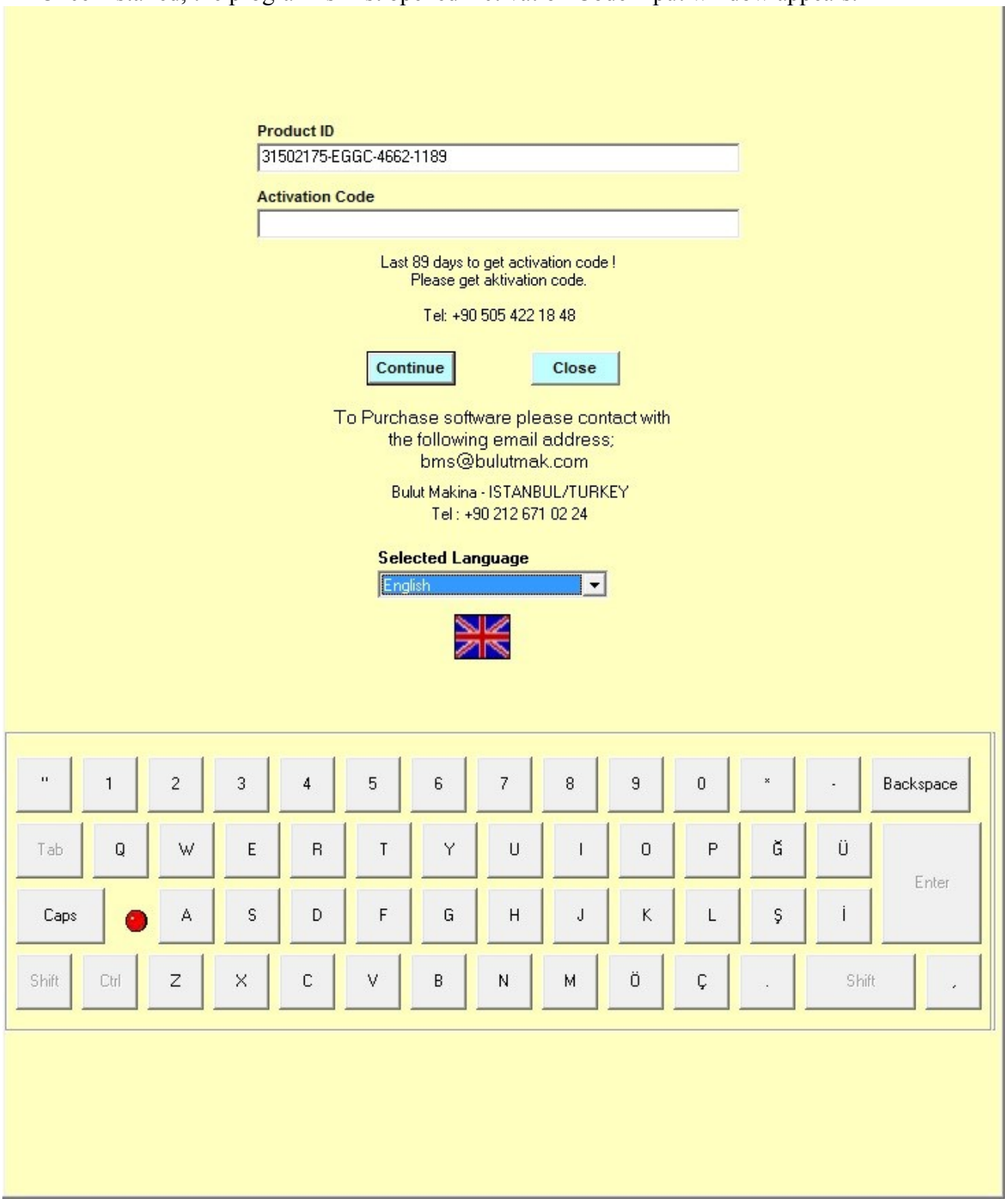
3.4 TESTING

Press to the START
Swiveling starts from the optical position to loading position & test loading begins.
When load application, dwelling starts and when it is over, device automatically swiveled to the optical position.
In the meantime, ball indentation shown in the screen.
Please follow OPTOBUL program.
Measurement to be made clean and smooth surfaces must be measured in terms of health.

4 DIRECTIONS

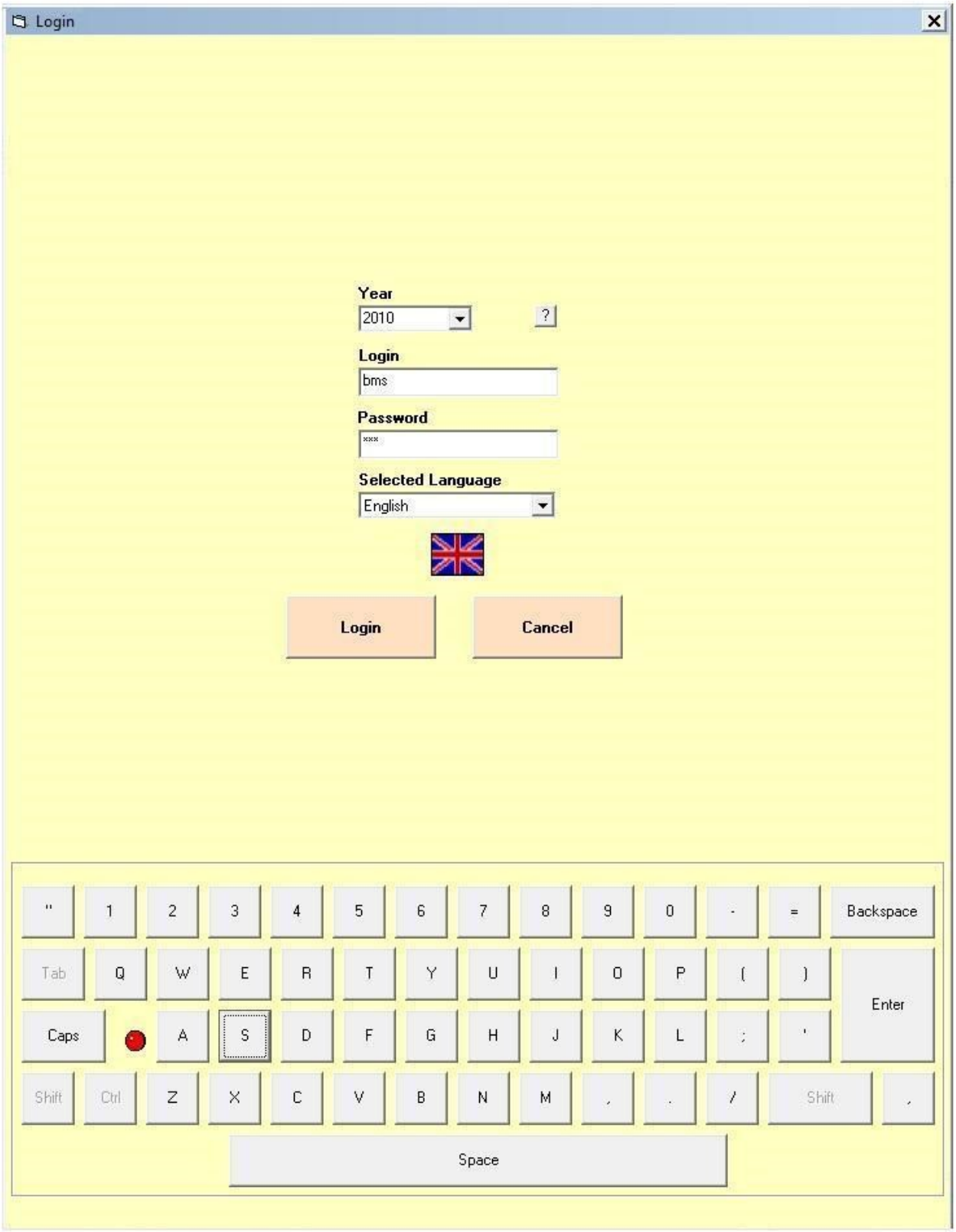
Hardness Tester software OPTOBUL3

Once installed, the program is first opened Activation Code input window appears.



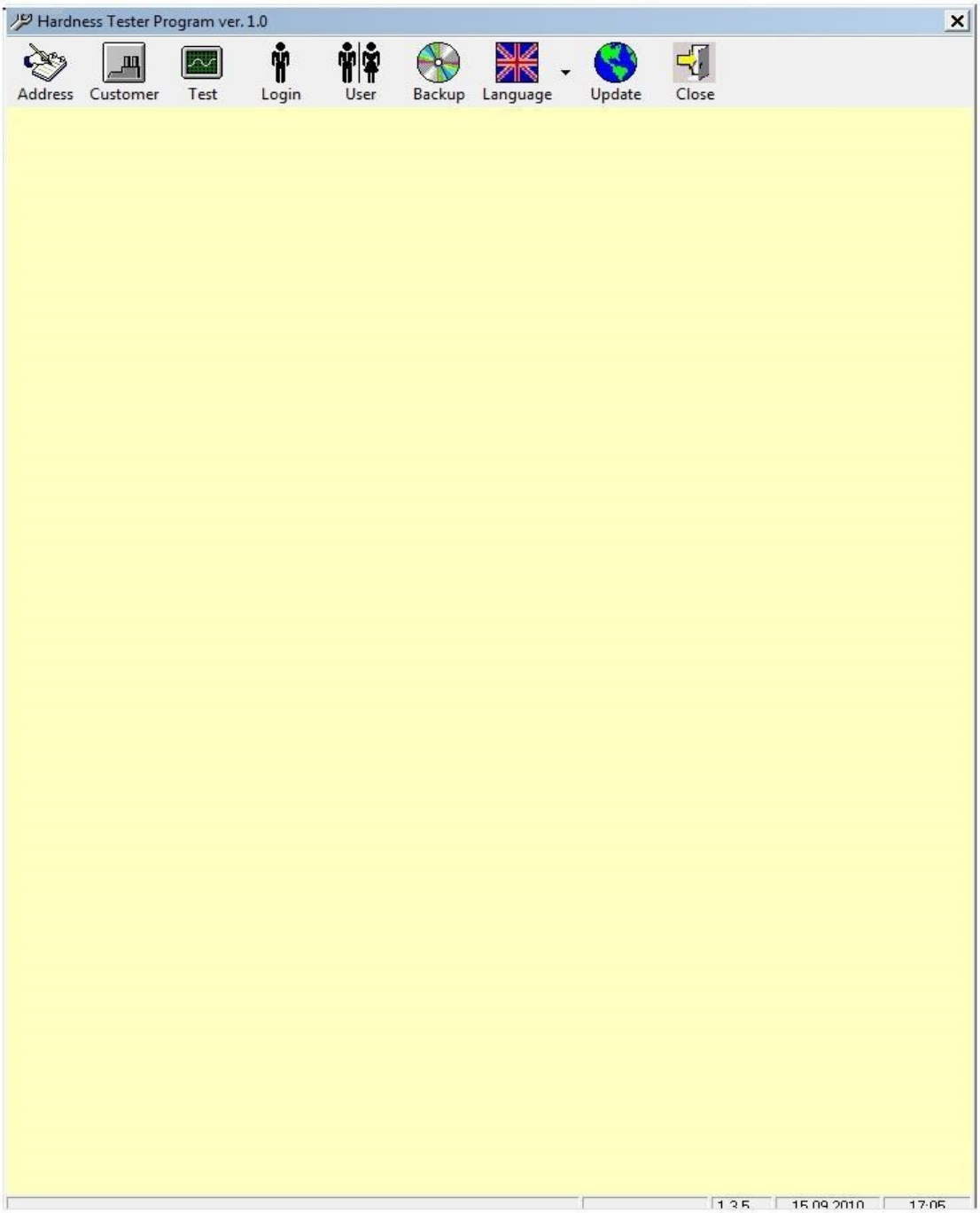
After entering this code "Continue" button.

Login window, the first user to setup the following window: BMS, Password: Enter BMS. (In later entries, pre-defined user name and password to enter).



Main Window the following menu headings Optobul3 are common;

1-Address information
2-Customer Information
3-Hardness Test procedures,
4-Logged; program user,
5-User management,
6-Database Backup and Restore
7-Language Selection,
8-Program update,
9-Program exit



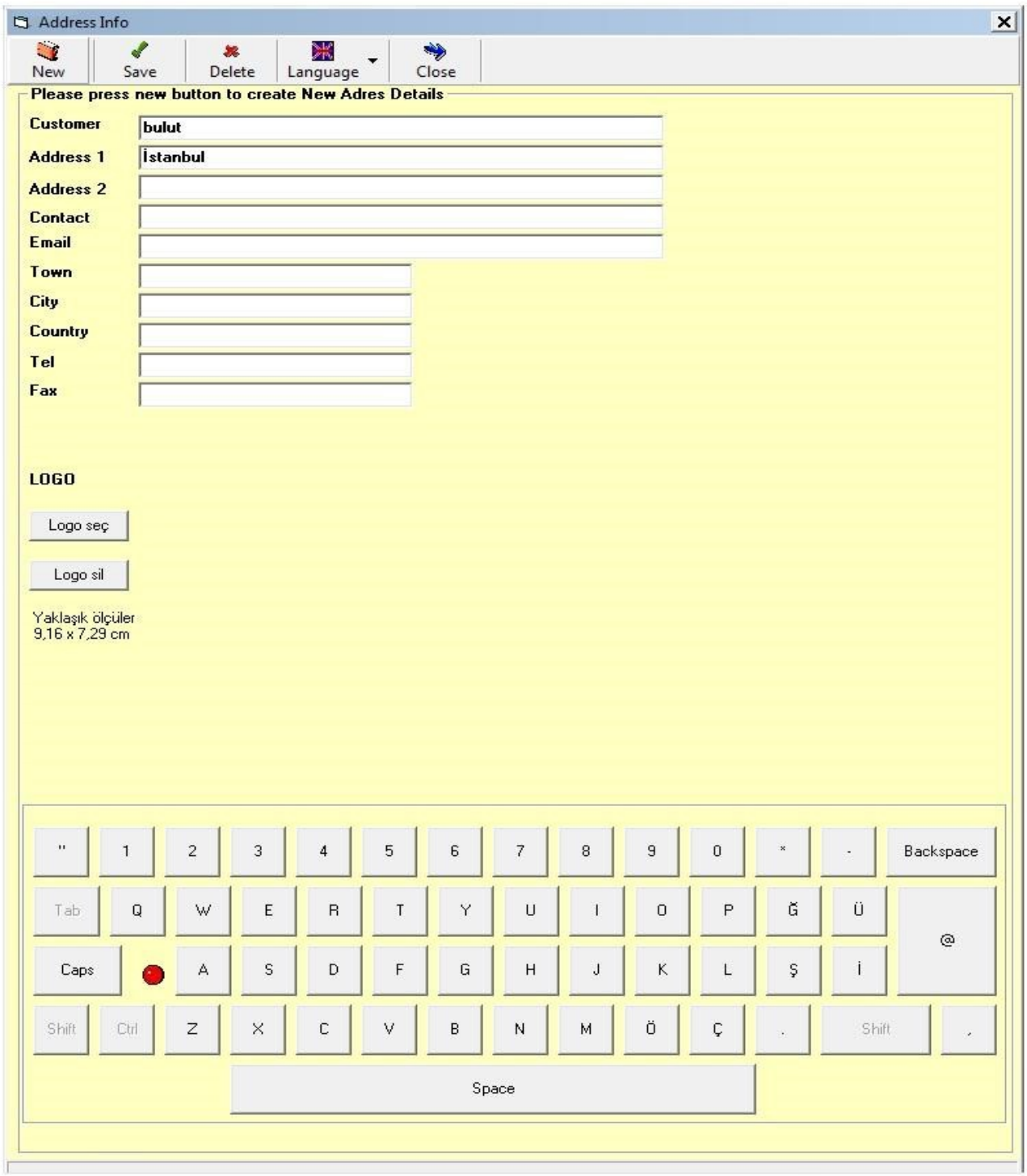
The first step, go to Main Window from the user and the program will use the item of the menu descriptions of people do. Name and Surname details will be written here, test reports "test," information will be used as.

To define a new user, press new button once, then Login, Password, Name and Last Name boxes to fill. User rights determine and record button.

To change a user's information registered in the list below select the name you want and make changes and save them press.

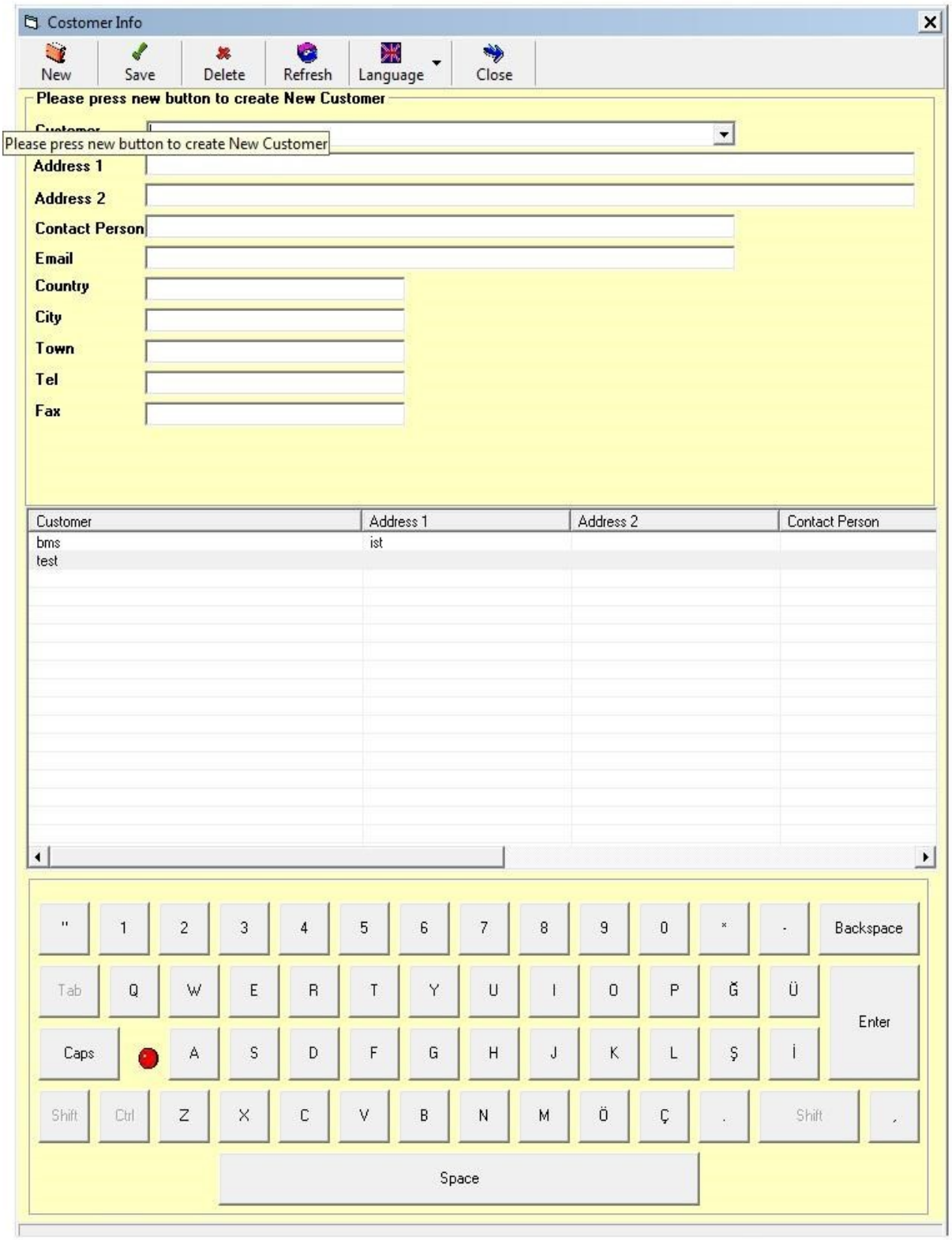
4.1 ADDRESS:

From the main menu by pressing the Address button, enter your company address information. First, press the New button, fill in the blank field and press the Save button.



4.2 CUSTOMER:

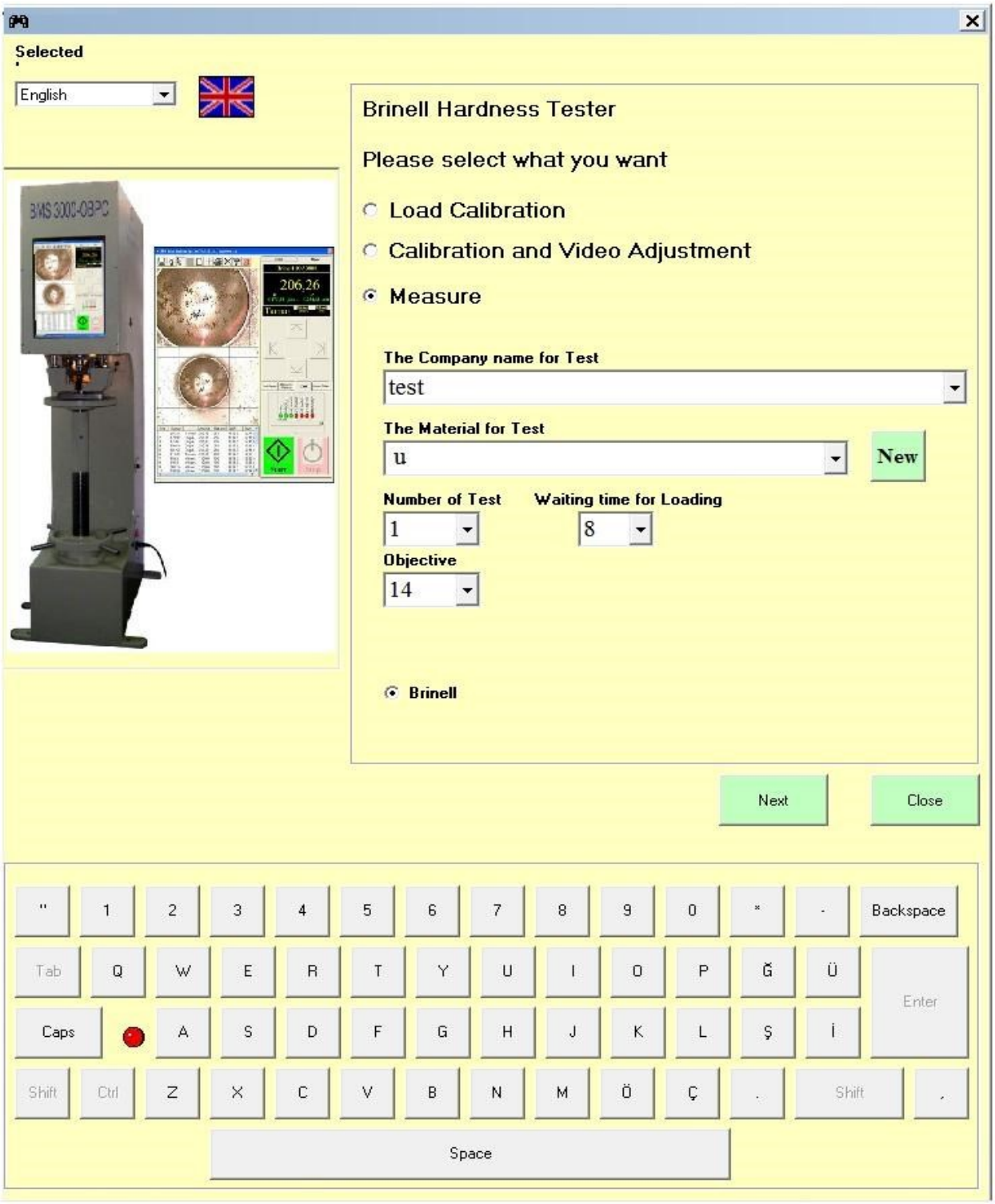
From the main menu by pressing customer, enter the customer address information. First, press the New button, Fill in the blank field and press the Save button.



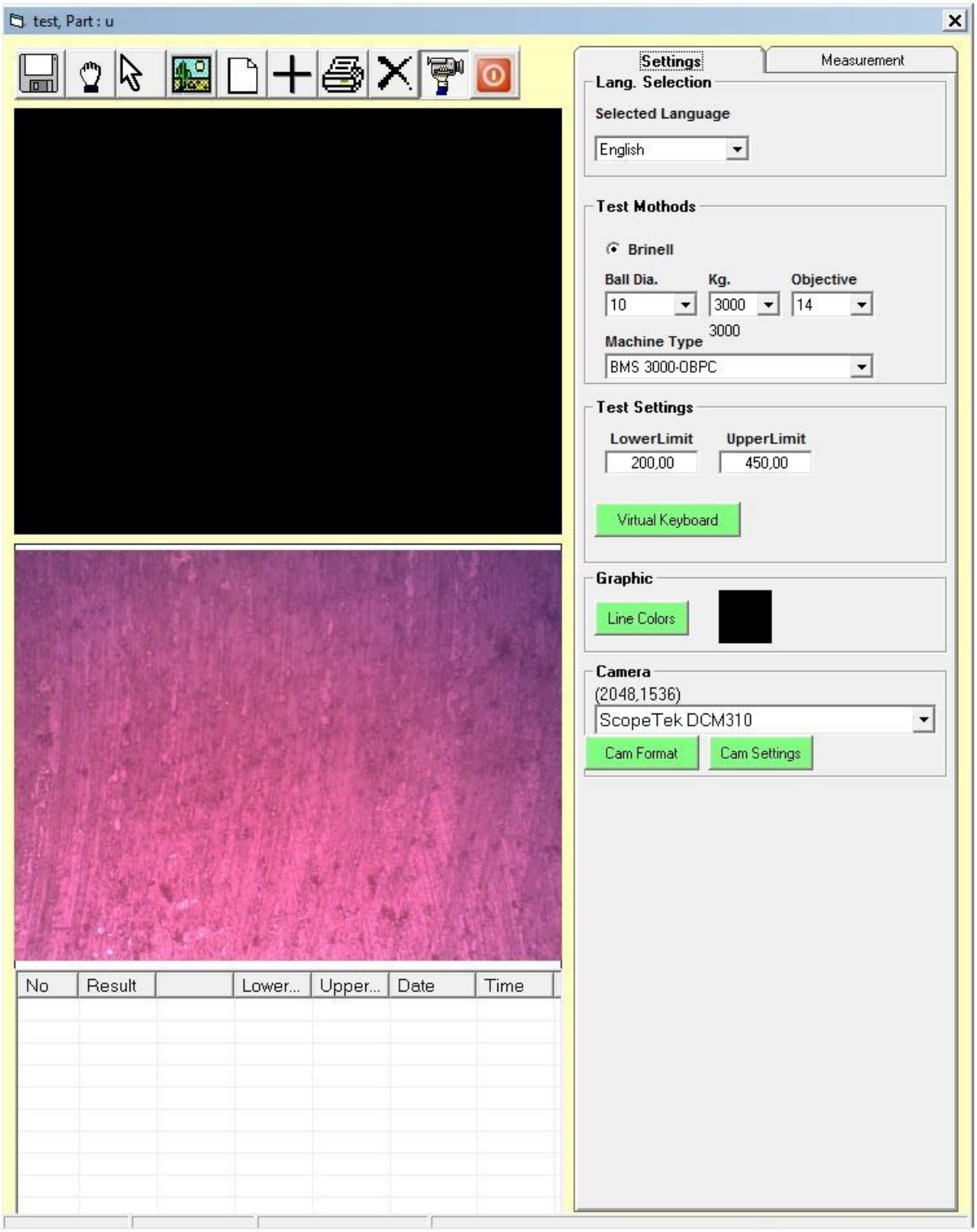
4.3 HARDNESS TEST:

From the main menu, press the test and measurement from the screen you make the transition to the screen the following window fill in the fields and "forward" button.

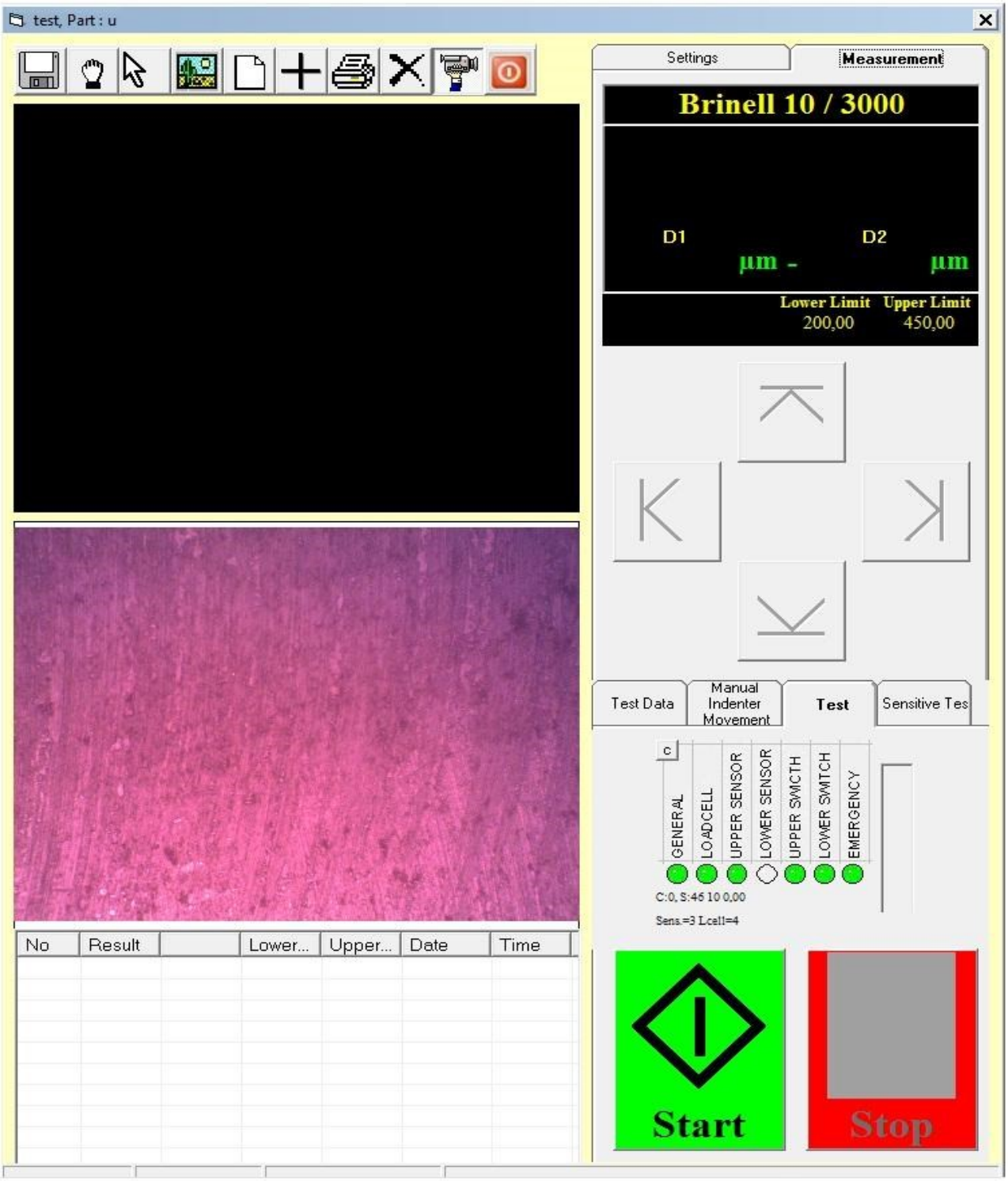
System, load calibration and calibration as will be made with the display settings. Do not need them to do initial setup.



Test Method selection ball-diameter, Load, objective, lower limit and upper limit, check their values.

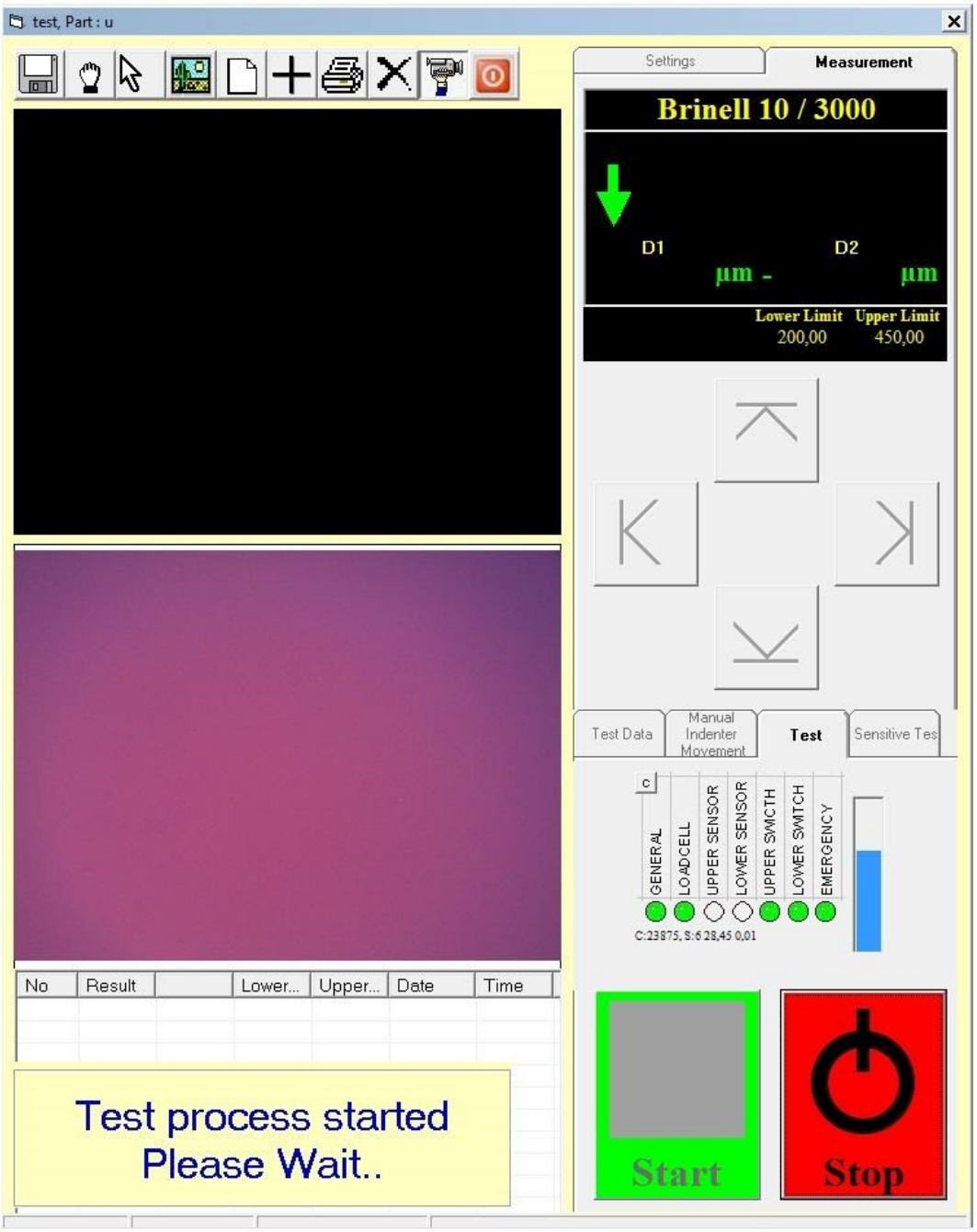


Measurement and Test tab, you can make measurement by pressing Test button. After pressing Test button please wait until the machine completes it process and shows you the figure below.

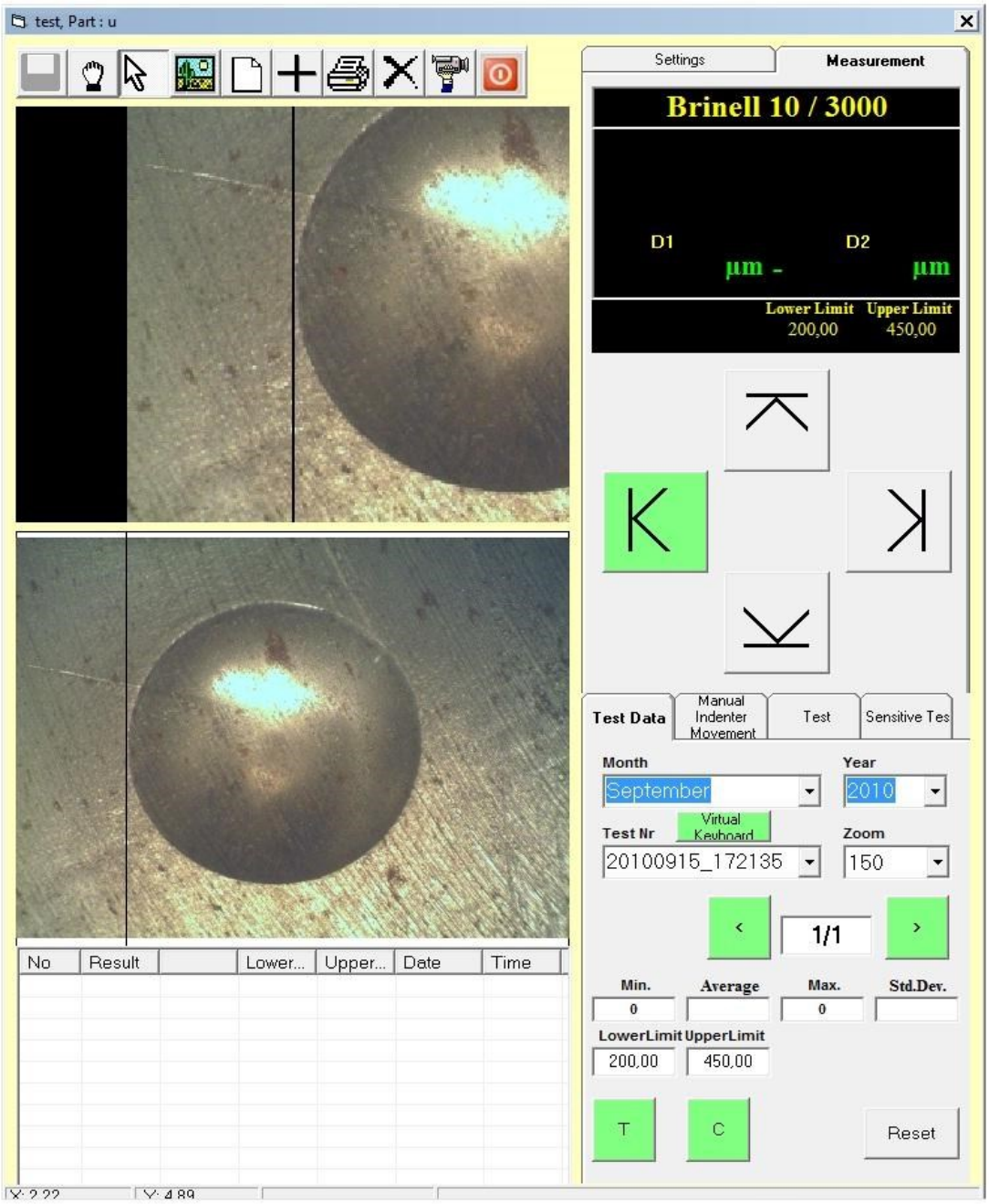


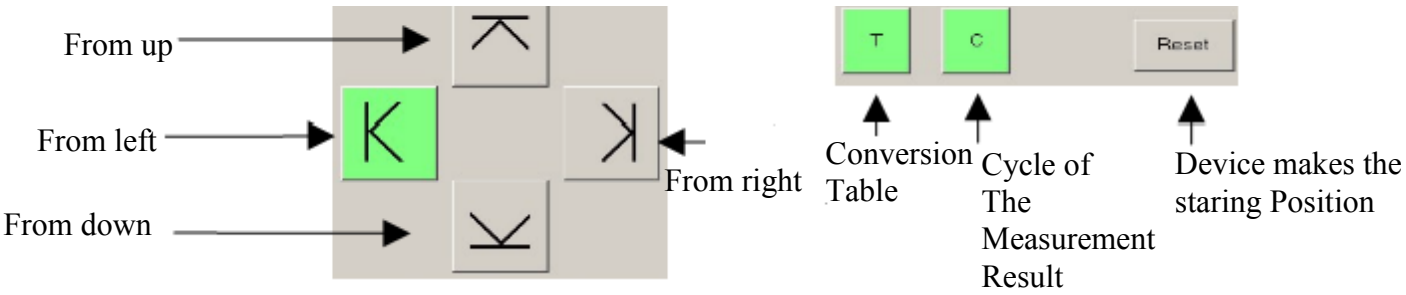
Measurement process starts by creating traces on the material	Monitoring the process of creating a starting position and the device returns to its stops.

Press Start button to start measurement

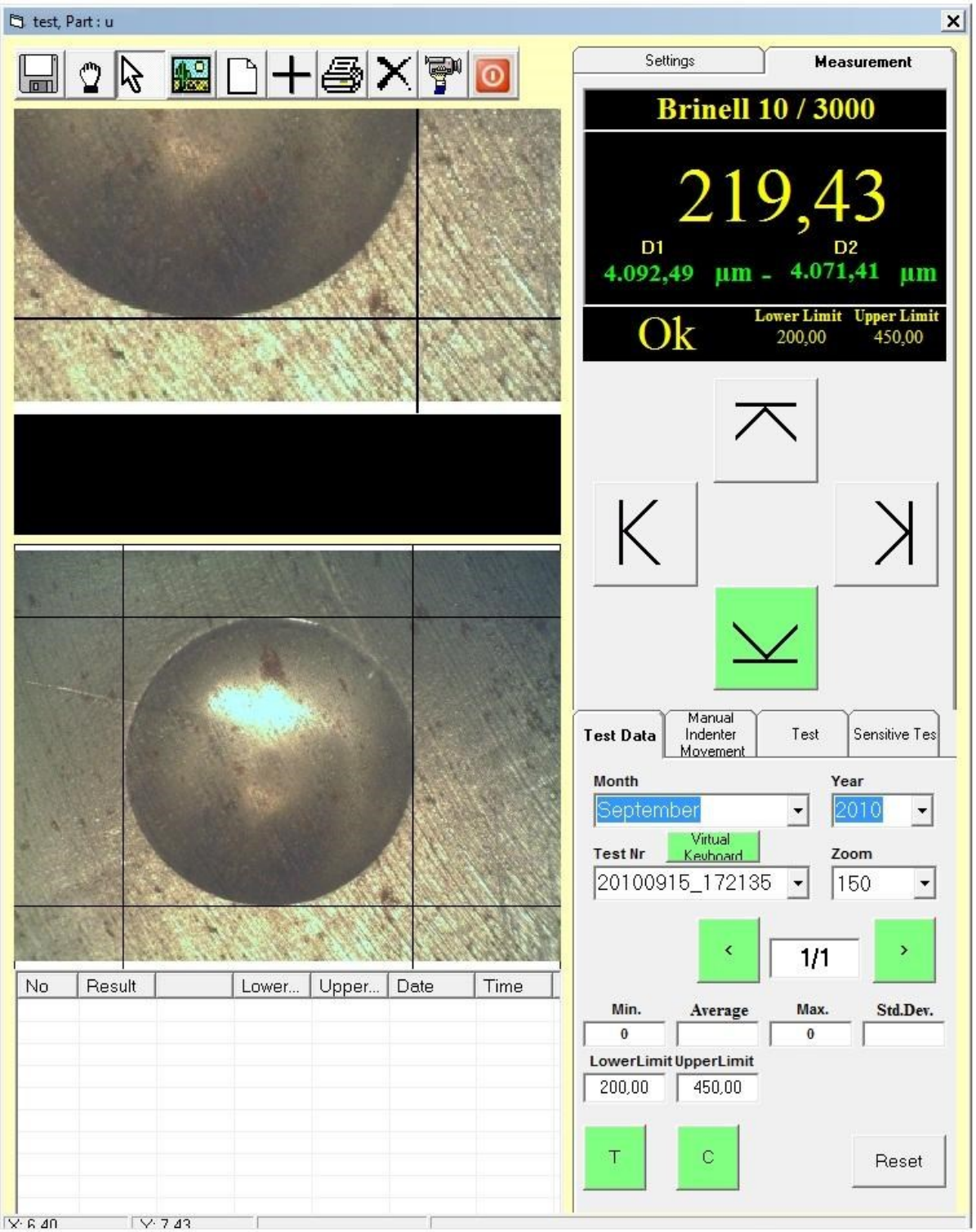


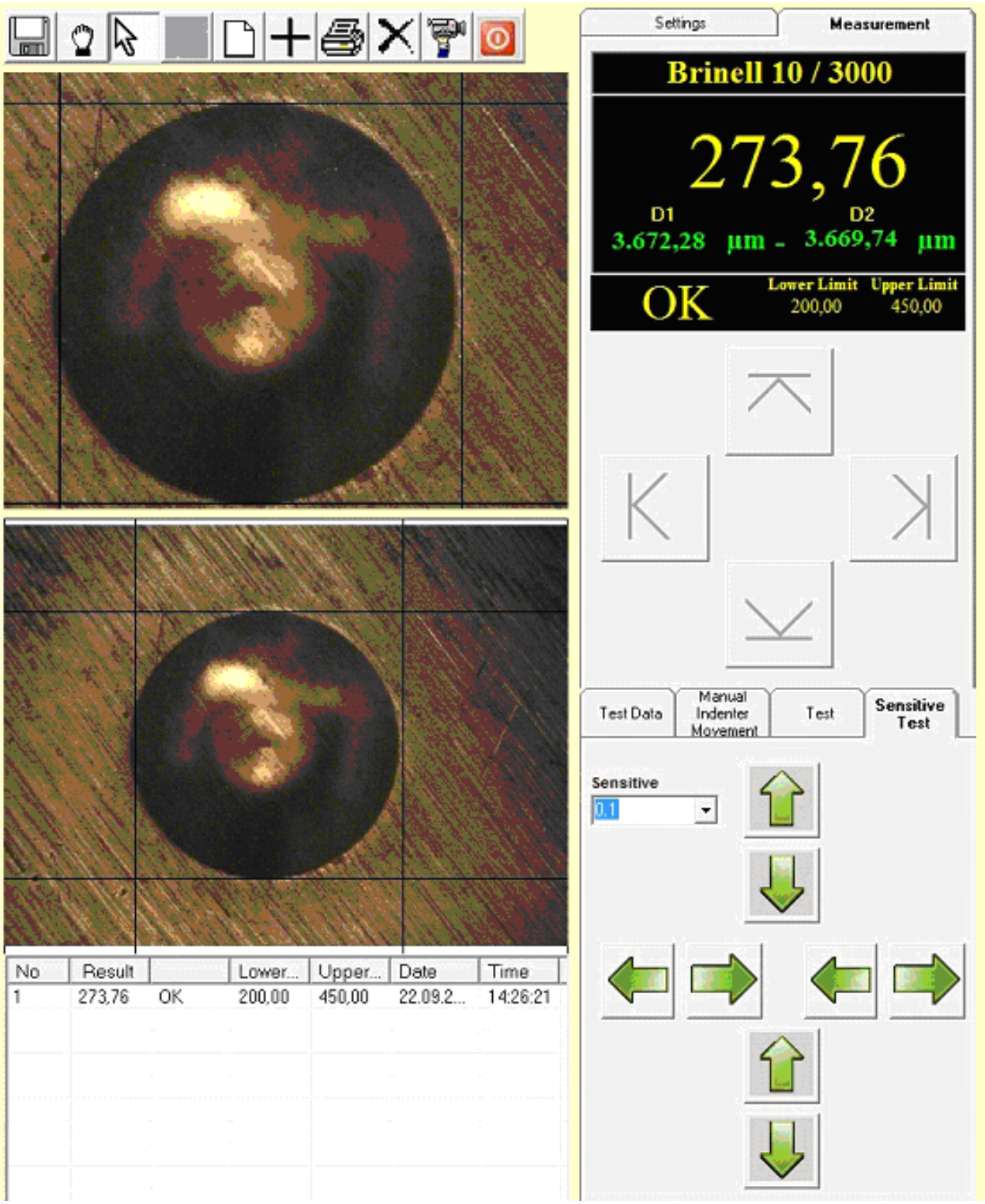
After you create something like the following figure in the window to create the image. From left to right and from top down approach from the buttons to perform the measurement.





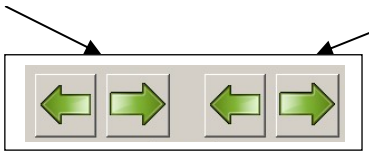
To make precise measurements must be measured normal once, then tab precise measurement precision approach allows you to make more accurate your measurements you can use the button.


test, Part : u
Settings
Measurement
Brinell 10 / 3000
219,43
D1
D2
4.092,49 µm - 4.071,41 µm
Ok
Lower Limit
Upper Limit
200,00
450,00
Test Data
Manual Indenter Movement
Test
Sensitive Tes
Month
Year
September
2010
Test Nr
Virtual Keyboard
Zoom
20100915_172135
150
1/1
Min.
Average
Max.
Std.Dev.
0
0
LowerLimit
UpperLimit
200,00
450,00
T
C
Reset
No
Result
Lower...
Upper...
Date
Time



Precise measurement of the left

Precise measurement from the right



Above approach

Below approach

4.4 REPORTS

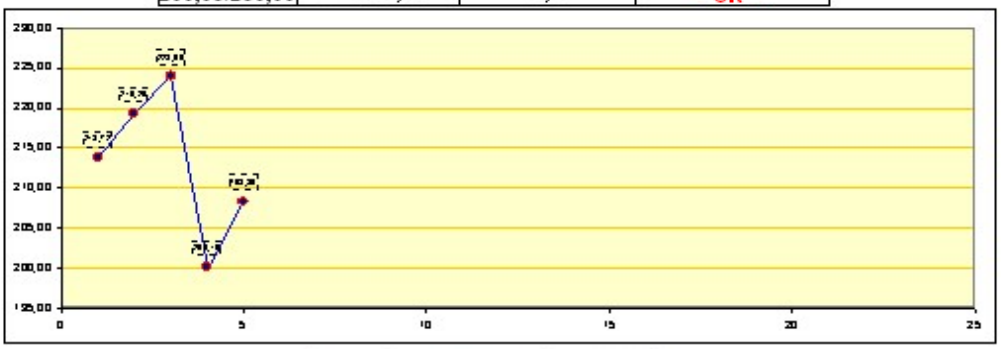
Measuring the job is complete, press the button with the picture above menu printer and prepare your

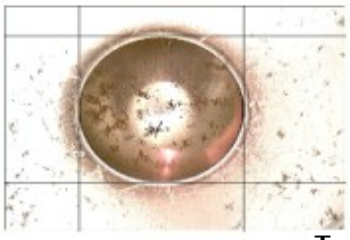
BMS Bulut Makina San. ve Tic Ltd. Şti.

TEST PROTOCOL	
USER	
DATE	06.08.2009
Material	a

TEST RESULTS

Row No	Measurement	Test Method	Result
1	213,72	10, 3000	OK
2	219,29	10, 3000	OK
3	223,90	10, 3000	OK
4	200,15	10, 3000	OK
5	208,35	10, 3000	OK
⊥/⊤ Limit	Average	Std. Devation	Result
200,05/250,00	213,08	9,3	OK





Test From The Signature

Test Approver's Signature

report. In Microsoft excel program if it installed in PC. Otherwise program will show above window to report and you can print out by pressing over print button in this window.

5 CARE INSTRUCTIONS

All maintenance by competent and qualified personnel following periods must be done properly. Any maintenance, electricity must be discontinued before.

Periodic Checks and Treatments:

Daily checks and maintenance:

- Finished using the device to avoid dust on the player into the case.
- The device is not used to remove the plug from the wall outlet.
- After the test measurement and clean tray.

Six-monthly checks and maintenance:

Whether cable or loose connection on the device, please check.

Keep dust from the main shaft, if necessary, thin lubricating oil here.

Annual check:

Once a year to verify the calibration device is required to be calibrated.

6 WARRANTY CONDITIONS

Device, as shown in the manual and use conditions, cleaning, maintenance and repairs performed by authorized persons in the case of the warranty will be inside.

- Warranty starts from the date of delivery of the goods and 1 year.
- In the event of malfunction of the goods during the warranty period, warranty repairs will be added to the elapsed time.
- Repair of the goods up to 30 business day's period.
- Goods within the warranty period, both because of their assembly defects in materials and workmanship as well as in the event of malfunction, labor costs, full cost or amended under any name other repair is done without any charge.

Warranty will be void when:

- Repair to be done on the device, revision of information within our company do not,
- Errors that occurred due to incorrect use of the device
- And maintenance of the necessary control is neglected.
- Test tips, touch screen and computer system, the optical system, camera system, load cell system, the stepper motor system is out of warranty.