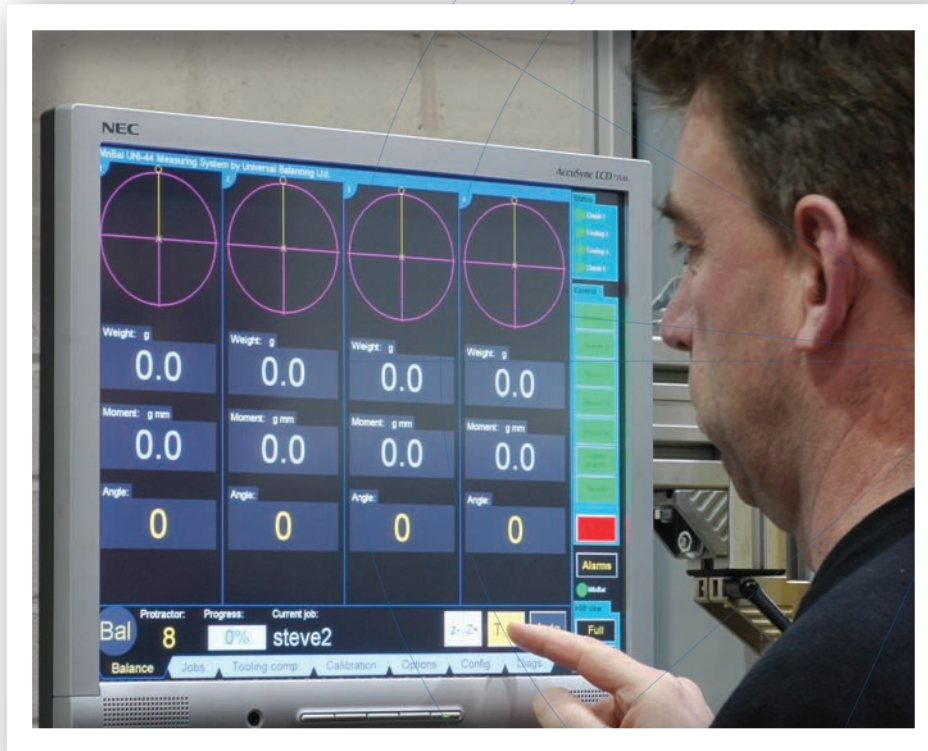


# UNIVERSAL BALANCING



Windows-based touch screen computer measuring system

A major element of any balance machine is the measuring system and the following features make the Universal Balancing UNI-44 the fastest, most configurable, accurate and easy to use:



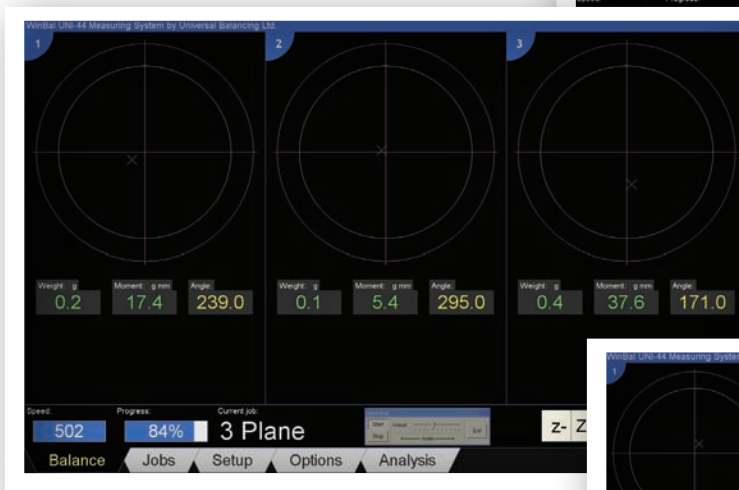
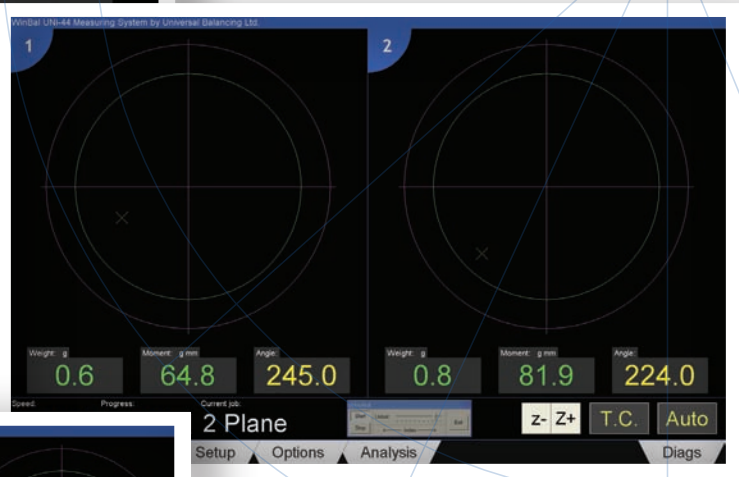
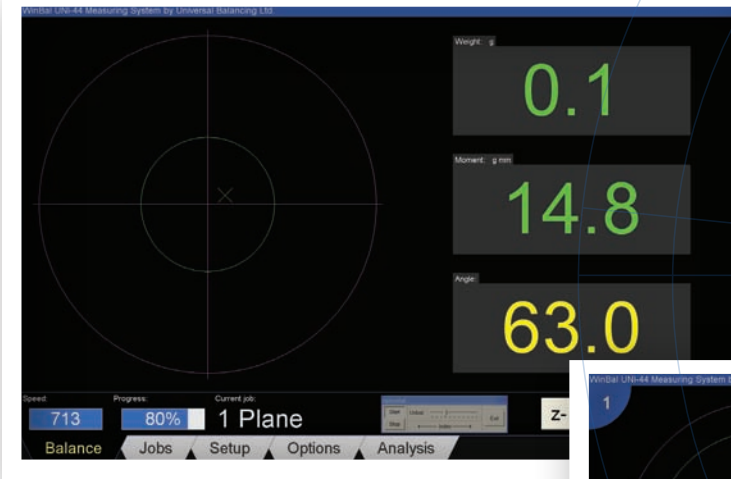
- Uses the latest digital sinewave demodulation techniques. All electronic components are surface mounted on a single board, which produces impeccable reliability.
- Communicates to virtually any type of PC via RS232/Ethernet/USB protocols. A choice of 15, 17, and 19-inch touchscreens are available, depending on the application.
- An ideal measuring system for any level of machine from manual to fully automatic.
- Has the ability to control other pre or post processes with all data being stored and analysed how and where you want.
- Can be used to transform virtually all other manufactured machines.
- The Winbal software runs on Windows XP or Vista and is touchscreen operated with on screen prompts for all operation and setup routines, making the UNI-44 one point of operation for the whole machine. Using Windows 'drag and drop' all data, files, folders can be backed up or exchanged. Remote diagnostics and online assistance can be easily achieved.



**Windows-based touch screen computer measuring system**

# UNIVERSAL BALANCING

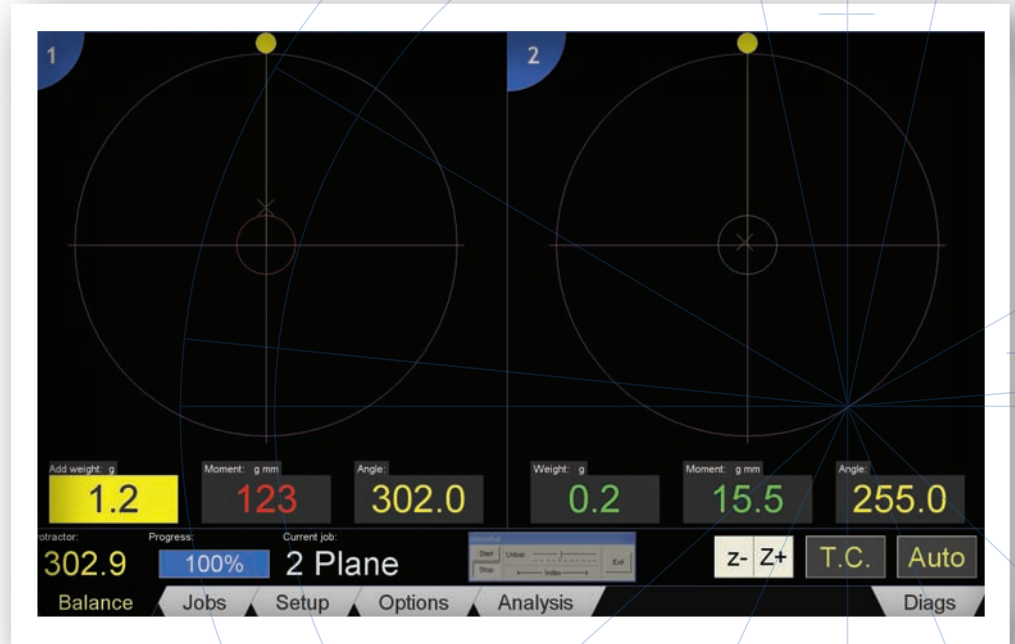
The UNI-44 and Winbal software is configured for ALL types of balancing machines from single plane vertical to 4-plane propshaft. The screen shots below show the 'balance folder' polar displays in 1, 2, 3 and 4 planes. The UNI-44 is an excellent choice for static vertical, dynamic vertical, dynamic horizontal, horizontal spindle, crankshaft, propshaft – and many other types of manual or automatic machines.



Windows-based touch screen computer measuring system

**Winbal software**

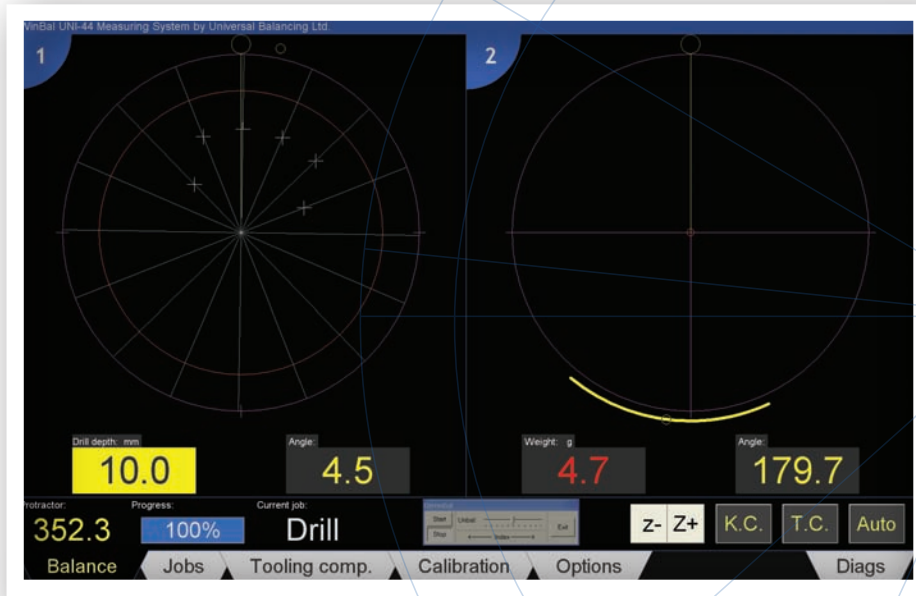
This is a normal 'balance' display screen indicating amount and angle in numeric and polar formats in 2 planes (dynamic). The red circle on the left-hand side represents the unbalance tolerance (red indicates the unbalance is outside the limit). Once inside the tolerance, the circle turns green, as shown on the right-hand side of the display.



When the part is rotated, the cursor rotates until the correct angle of unbalance is highlighted at the reference point i.e. 12 o'clock. This encoder tracking function means there is no need to guess the angle. This clean simple visual display allows operators to see exactly what is happening in a very natural way, which improves understanding of the process.

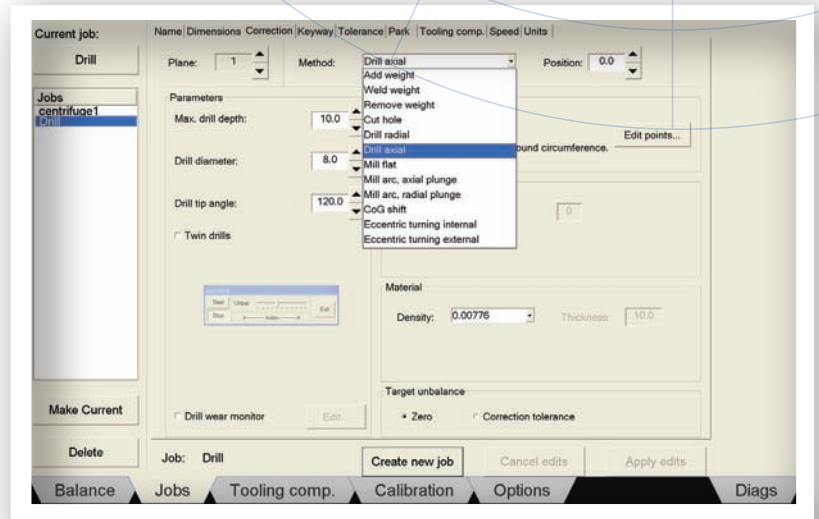


The display shows on the left plane 'segmenting' of drilling points. The drill information is initially entered into the software, then the actual depth and number of holes is displayed once the balance measurement is taken.

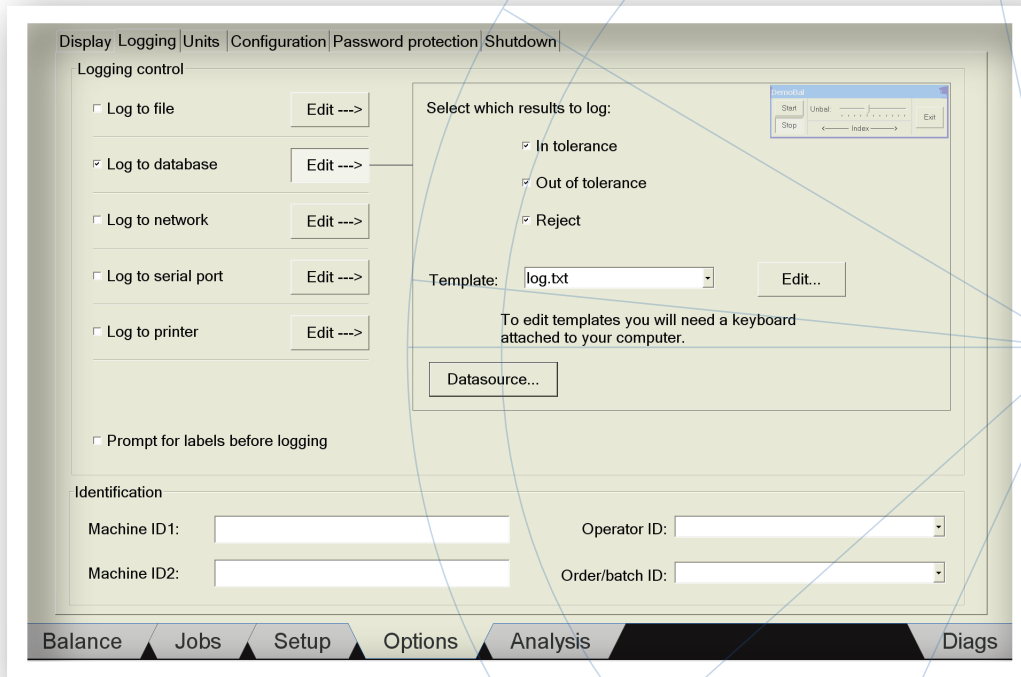


The right plane shows 'arc milling' – once the unbalance measurement has been taken, the actual arc angle of material to be removed is displayed in numeric and polar methods (there are many other correction methods to add/remove mass).

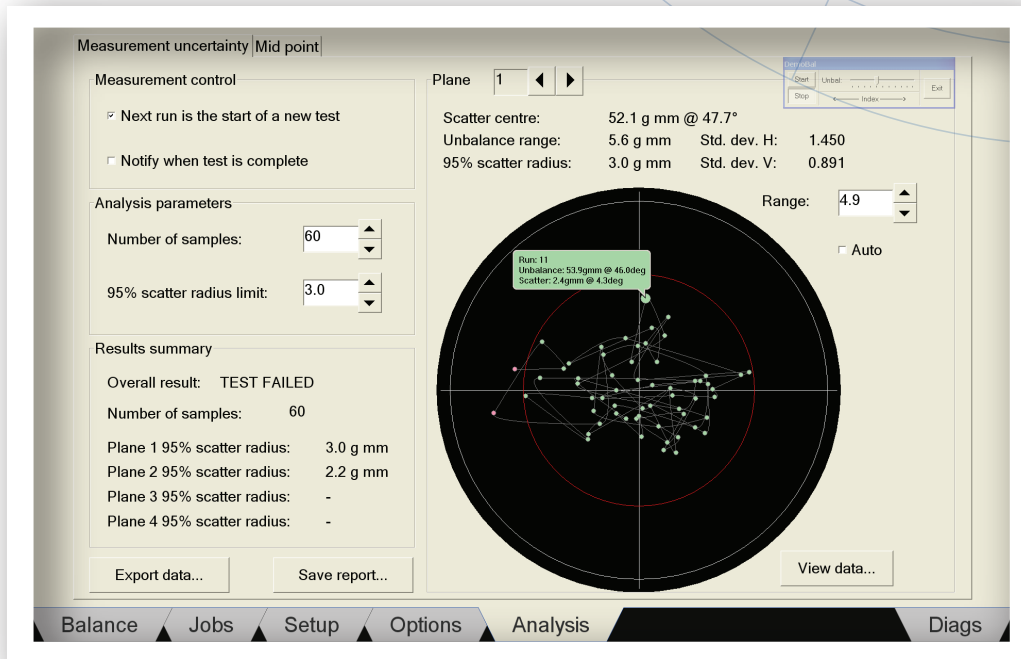
Every job is stored and can be selected for use at the touch of a button, speeding up changeover between each of them. The folder shown on the left of the display lists jobs, which can be recalled when required. The correction page is a drop-down menu enabling you to select which method you are correcting so that the software can calculate the exact material to add/remove ie drilling, milling. Other pages include: name, dimensions, keyway compensation, tolerance calculator, tooling comp, speed and units. This may vary on some applications and pages can be removed when not applicable.



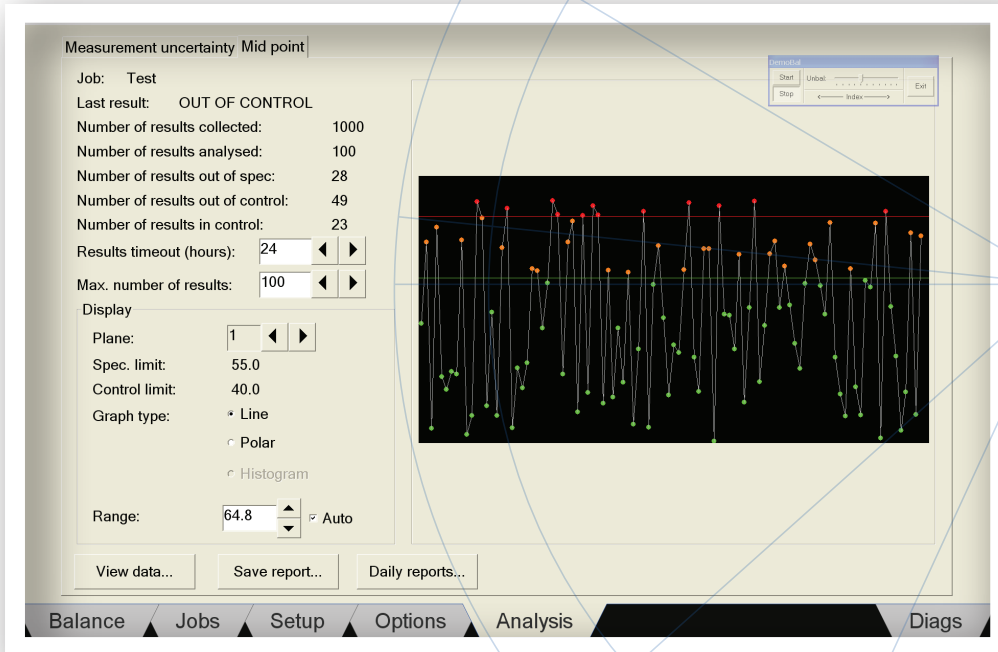
The options folder display page can be configured to display exactly what you want. The comprehensive logging page is set up for logging results to a file/ serial port/printer/network or SQL database.



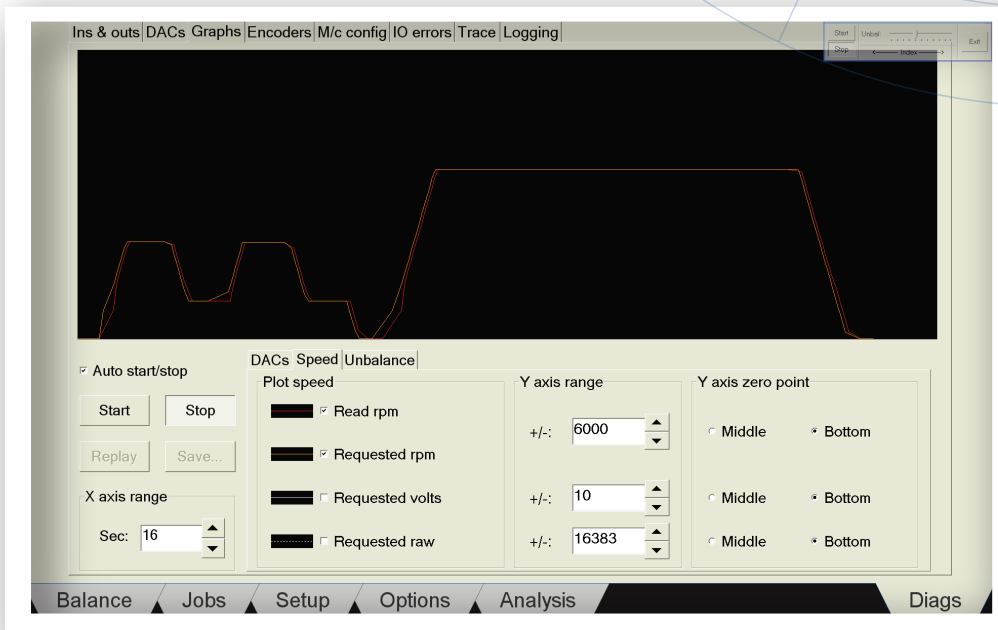
Analysis is available with the UNI-44 and as standard the measurement uncertainty (MU) functionality allows accurate determination of machine, tooling and part repeatability. This automatic process allows results and reports to be logged and exported.



Statistical process control can be used for processes such as tooling relocation repeatability. The data can be displayed in line and polar charts with control limits that can be set to halt the balancing process if the specification is exceeded. Standard off the shelf statistic programs can be used in conjunction with the UNI-44 as data can be streamed to and from any SQL database.



Full diagnostics can easily be used to find any problem or used as a tool to aid complex balancing issues. The trace function is a unique real time log of every event the system sees. Graphs of speed, pickup signals including signal to noise, produce very powerful diagnostics.



## UNI-44 specification

Overview	Flexible and configurable Windows-based measuring system for both hard and soft balancing machines. The highest accuracy and speed of measurement and control is achieved on all types of machines.
Applications	All rotating manual and fully automatic balancers. Horizontal balancing machines Vertical balancing machines Semi and fully automatic vertical balancing machines Crankshaft balancing machines Propshaft balancing machines Rotor and assembly balancing machines Special balancing machines
Technology	Unique Digital Sinewave Demodulation Technology producing super high accuracy super fast through powerful processing.
Data transfer interface	USB peripherals Ethernet network RS232 OPC Other interfaces
Machine display and input interface	15, 17, 19-inch high resolution TFT touch screens
Software compatibility	Microsoft Windows XP Microsoft Windows Vista
Winbal software features	Polar, numeric amount and angle in 1 to 4 planes Job store facility In/out balance tolerance In/out tooling relocation tolerance Encoder angle tracking Logging and reporting of all data by different methods Direct setting machine specific calibration Job specific matrix calibration Rotor averaging and stabilisation adjustment Tooling compensation for any equal or unequal positions Null results proving feature Keyway compensation ISO 1940 tolerance calculator Analysis and SPC Symmetrical & asymmetrical segmenting of points Measurement units selectable options Speed, acceleration, deceleration parameters per job Correction methods i.e. drilling, milling, welding addition Additional analogue & digital measuring ie laser run out Automatic correction adjustment Advanced comprehensive diagnostics features Remote access and online help Intuitive pop-up step by step prompts Job specific servo positions for machine change over
Languages	English, German, French, Spanish, Italian and other
Number of balance channels	4
Number of encoder inputs	2
I/O	Digital and analogue input and output plus full OPC
Standard speed range	141-12000 RPM1
Unbalance measurement range	16 Bit

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**Windows-based touch screen computer measuring system**