



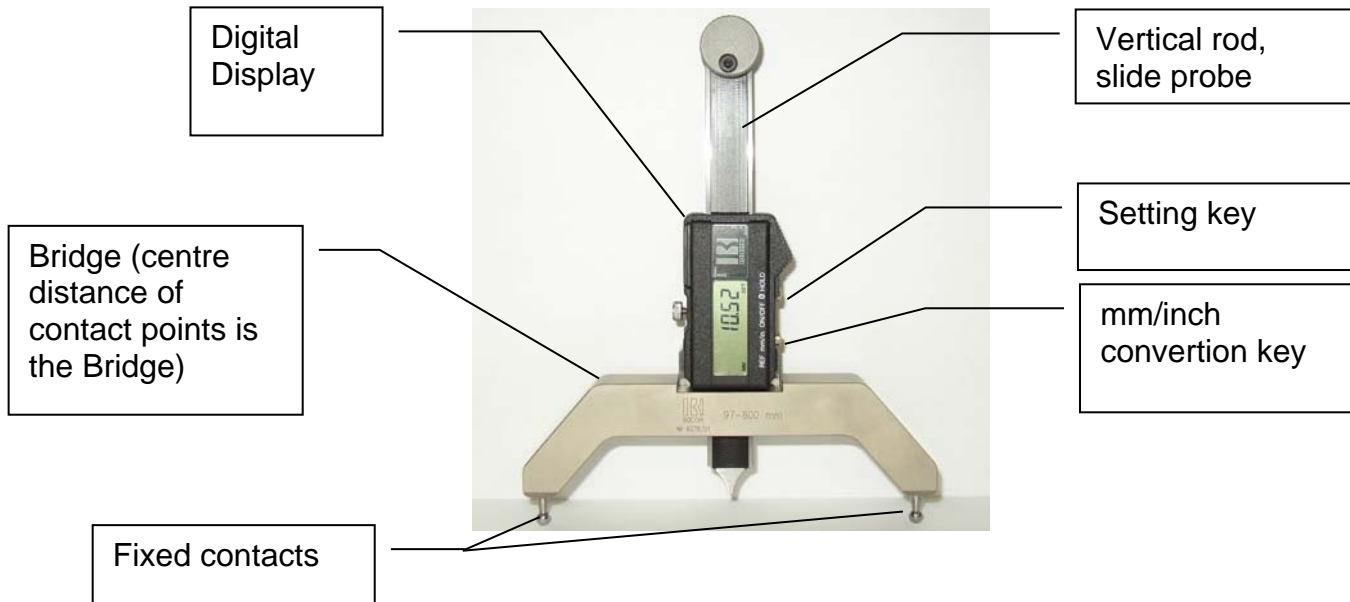
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SISTEMI DI MISURA E CONTROLLO

Handbook of use for digital radius gauge with direct measure
Item 0810.05





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DIGITAL RADIUS GAUGE



The Digital radius measuring instrument is suitable to the measure of the curving radius. It concurs a remarkable saving of material, during the search of the curving radius, because is enough to bend one fragment of material having the length of the used bridge, in order to know the radius of curving obtained. Such instrument offers the solution to problems of complex and particular measurements, which the determination of external and internal diameters, also on workpieces of great dimensions. To second of the radius measuring, the display can easily be taken apart and be mounted on the suitable base. The bases and the range available are:

- Base with centre distance of contact points of 130 mm \Rightarrow radius range 97÷800 mm
- Base with centre distance of contact points of 300 mm \Rightarrow radius range 470÷2000 mm
- Base with centre distance of contact points of 500 mm \Rightarrow radius range 1270÷10000 mm

the display is equipped of output "OPTO-RS232" to be connected directly to PC through appropriate cable of connection.

Setting to zero



After switch on the instrument, put the two fixed contact points on a surface plate (a well worked surface or one base supplied along-with the instrument can be used) and bring the measuring head in contact to the surface plate. Push the setting key.



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Outside radius measurement



Put the two fixed points in contact with the outside curve, put the probe in contact with the surface of the curve and read on the display the *“direct value of the radius”*.

Please make attention to make the measurement on a clean surface without damages.

Along-with the instrument, a configuration software is supplied that concurs to connect the instrument to a PC, so as to easily insert the necessary coefficients to obtain the direct measure of the radius. The software will have to be used to every change of base or the passage from *external- internal* measurements.

Inside radius measurement



Put the two fixed points in contact with the inside curve, put the probe in contact with the surface of the curve and read on the display the *“direct value of the radius”*.

Please make attention to make the measurement on a clean surface without damages.

Along-with the instrument, a configuration software is supplied that concurs to connect the instrument to a PC, so as to easily insert the necessary coefficients to obtain the direct measure of the radius. The software will have to be used to every change of base or the passage from *internal-external* measurements.

The complete composition consists in: a base with centre distance of contact points of 130 mm with mounted the digital display, a base with centre distance of contact points of 300 mm, one base with centre distance of contact points of 500 mm, configuration software, cable of connection to PC, handbook of use, the all supplied in box.

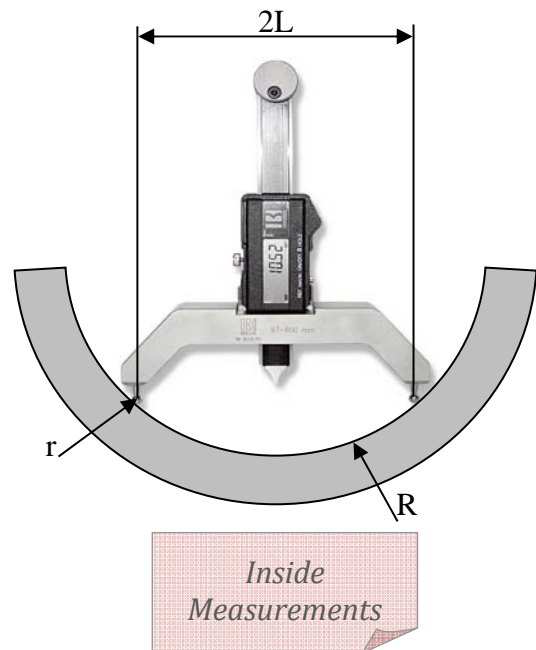
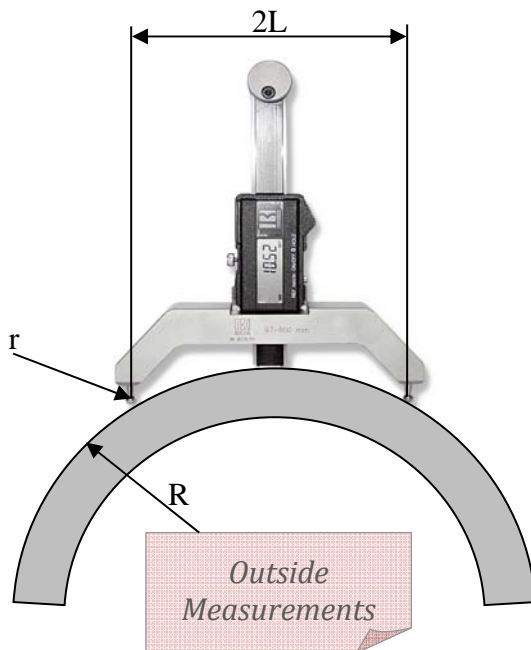
The bases can be acquired separately.



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Preliminary

The digital radius gauge is an instrument that concurs the determination of the radius of curving or the radius of cylindrical or spherical workpiece. In order to make so that on the display of the instrument you can read the direct value of the radius, the instrument must carry out a mathematical calculation employee from three coefficients that we will call A, B and C that vary to second of: *external or internal* measurements, to second of the radius “r” of the contact points of the instrument and to second of the length “2L” of the base that is being used. In order to facilitate the set, into the instrument, of this coefficients it has been developed an appropriate software of configuration, than of continuation we will go to illustrate.



	Outside Measurements	Inside Measurements
Calculation Formula	$R = Ax + B + Cx^{-1}$	
Coefficient A	0,5	-0,5
Coefficient B	-r	r
Coefficient C	$(L)^2 / 2$	$-(L)^2 / 2$
Setting position x=0	Made on surface plate	
Over-range	"ERR2"	

“x” corresponds to the value of the movement regarding the zero setting position.

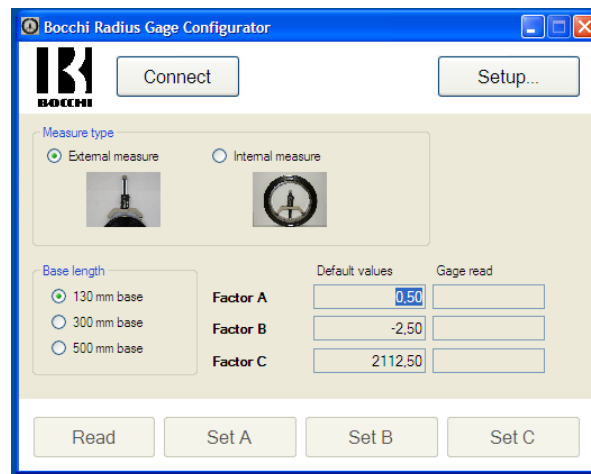


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Configuration Software

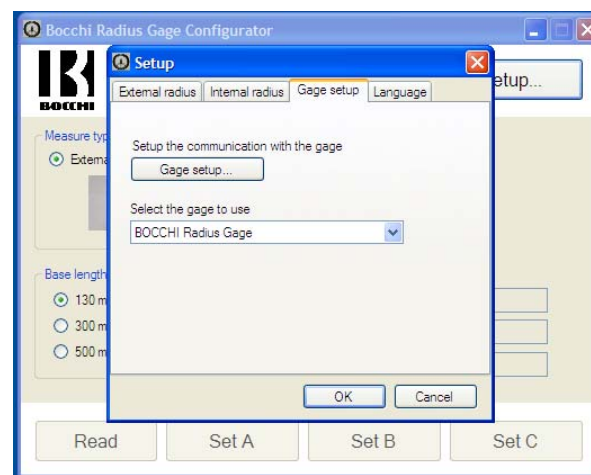
Installation of the software

Load the configuration software on a PC, being launch the set-up file present in the floppy disk in equipment. The software is auto-run. Press on the icon “Radius Gauge Configurator” created on the desktop to finished installation.

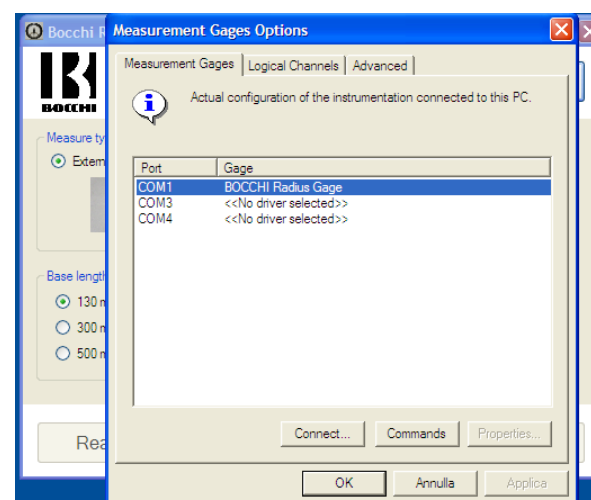


Gage setup

Connect the cable to the instrument and to USB port of the PC.
If it's the first start of software, press before on the push-button “Setup” and then on the push-button “Gage setup”.



Select the adequate port “COM...” and press before “Connect” and then “OK”.

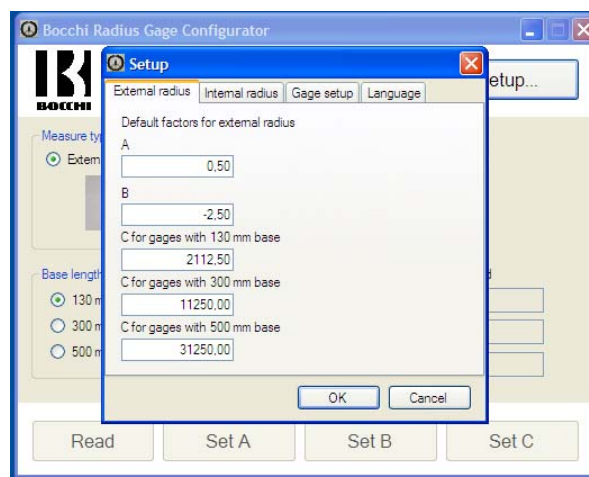




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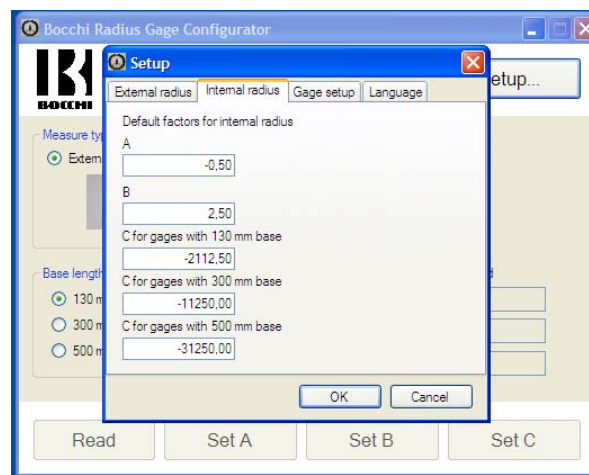
Coefficients A, B and C for external radius

Pressing before on the push-button “Setup” and then on the push-button “External radius” it’s possible to modify the coefficients A, B and C. The software proposes already the “Default factors values” calculates in according to the radius “r” of the contact points of the instrument and to the length of the usable base. It’s any way good thing not to modify this coefficients.



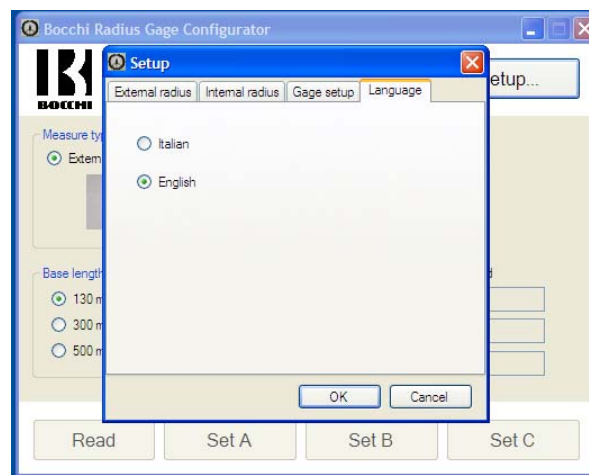
Coefficients A, B and C for internal radius

Pressing before on the push-button “Setup” and then on the push-button “Internal radius” it’s possible to modify the coefficients A, B and C. The software proposes already the “Default factors values” calculates in according to the radius “r” of the contact points of the instrument and to the length of the usable base. It’s any way good thing not to modify this coefficients.



Change of the language

Pressing before on the push-button “Setup” and then on the push-button “Language” it’s possible to modify from the version in *Italian* to the version in *English* and vice versa. It will be necessary to confirm the restart of the software.





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Transmission of the coefficients A, B and C to the instrument

Once connected the instrument and configured the port "COM...", press the button ON/OFF of the caliper, so that to display appear "0,00". Press push-button "Connect" from the main page of the software. Select the type of measure that is desired to execute: *external or internal measure*. Then select the length of the base that is being used: 130 - 300 - 500 mm.

Based on the choice the software will visualize the "Default values".

Press the push-button "Set A", and wait for the message "the gage is configured" then press "OK". Press the push-button "Set B", and wait for the message "the gage is configured" then press "OK". Press the push-button "Set C", and wait for the message "the gage is configured" then press "OK". In this way the three coefficients necessary in order to have the directed measure, have been transmitted to the instrument.

Reading of the coefficients A, B and C set into the instrument

Pressing the push-button "Read" it's possible to visualize the values of the coefficients inserted into the instrument. They will be brought back in the column "Gage read" and could be verified with those of the column "Default values". In the event of a discordance, please repeat the sequence of transmission of the coefficients.

Press the push-button "Log Off" and disconnect the instrument; now the measurements can be carried out on the workpieces.

