

# GY Series Fruit Penetrometer

## User's Manual

### I. Function

Fruit Sclerometer has 3 models: GY-1, GY-2, GY-3 and GY-4, it is designed for testing the hardness of apples, pears, strawberries grapes and other fruits. It is suitable for the scientific research department, fruit company, fruit tree farm, colleges and so on, to cultivate the improved variety, reap and store, the export is transported and processed, etc, the detection of the hardness of fruit, thus judge the ripeness of the fruit. This instruments is small, light, reading is ocular, it is also convenience to carry, especially suitable for measuring at the scene. Can also assemble and use in forming a complete set in the special-purpose testboard and improve the precision while testing, suitable for measuring and using in the laboratory.

### II. Principle

The hardness of fruit is the meaning of the pressure(N)at Square measure(S)the fruit can bear, the ratio defined is the hardness of fruit(P).

$$P = N / S$$

P: the hardness value of the fruit  $10^5$ Pa Or kg /  $cm^2$  which is be tested.

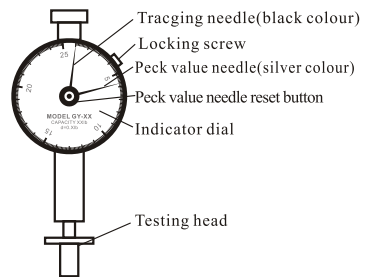
N: the testing head is act on the surface's force (N/KG) of the fruit

S: The bearing pressure of the Square measure of the fruit

### III. Operation

Before testing: put the sclerometer uprightly, then turn the needle to the initialization value ( GY-1 is 2, GY-2 is 0.5, GY-3 is 0.5 ). And then use knife to husk the fruit about 1cm. Testing: hold the scerometer in right hand, and put the peak value needle to the right of the tracking needle, make the sclerometer uprightly and on the surface of the fruit, under a homogeneous force pressure head pressed into the fruit, then starting to turn the needle, when the pressure head pressed to the indicator line (press to 10mm)stopped that is the hardness value of measurement.

After testing turn the Peak value indication reset button, make the peak value needle back to the right of tracking needle, waiting for the testing next time.



### IV. Parameter

Model:	GY-1	GY-2	GY-3		GY-4
Capacity:	2-15kg/cm <sup>2</sup> (x10 <sup>5</sup> Pa)	0.5-4kg/cm <sup>2</sup> (x10 <sup>5</sup> Pa)	0.5-12kg/cm <sup>2</sup>	1-23kg/cm <sup>2</sup>	0.2-10kg/cm <sup>2</sup> (x10 <sup>5</sup> Pa) 0.4-20kg/cm <sup>2</sup> (x10 <sup>5</sup> Pa)
Resolution:	0.1kg/cm <sup>2</sup>	0.02kg/cm <sup>2</sup>	0.1kg/cm <sup>2</sup>	0.2kg/cm <sup>2</sup>	0.005kg/cm <sup>2</sup>
Pressure Diameter:	φ3.5mm	φ3.5mm	1# φ11.1mm	2# φ7.9mm	1# φ11.1mm 2# φ7.9mm
Accuracy:	±2%				±1%
Show Mode:	Analog				Digital
Out-size:	L150XW55XH30(mm)				L260XW60XH36(mm)
Weight:	0.3kg				1kg
Pressure Depth:	10mm				

Note : GY-3 is double range model, the testing range is 0.5-12kg/cm<sup>2</sup> when using No.1 testing tip (diameter is φ11.1mm) the testing range is 1-23kg/cm<sup>2</sup> When using No.2 testing tip(diameter is φ7.9mm)

IIV.The fruit sclerometer test should be according to JJG450-1986,testing cycle is for 2 year generally.