

Force Gauges

PCE-PTR 200

Fruit firmness tester which helps determine the ripeness of fruit

The PCE-PTR 200 fruit firmness tester, also known as a fruit pressure tester, is a penetrometer that measures fruit firmness and provides a quick, easy and accurate method to determine the ripeness of fruit. Contrary to other analogical penetrometers, this digital fruit firmness tester will offer you high levels of accuracy and resolution in its measurements. With this tester you will obtain very valuable information, for example, the date of harvest, the condition of the fruit during storage, transport and at point of sale. This fruit firmness tester can be used as either a handheld instrument or mounted on an optional test stand for more precise measurements.

- Combines 3 penetration probes
- kg/cm² conversion table
- Sotores MAX value
- Zero reset
- Peak Hold and recall MAX value
- Auto shut-off
- Low battery indicator
- Overrange protection = 150 %
- RS-232 interface
- ISO Certificate (optional)



Technical specifications

Model	PCE-PTR 200
Measurement ranges	0 to 20 kg / 0 to 196 N
Accuracy	±0.5 %, ±2 of reading
Resolution	10 g / 0.05 N
Units of measurement	grams / Newton
Overload capacity	30 kg
Interface	yes
Software	yes, (optional)
Memory	-
Functions	push / pull measure. with Peak Hold
Display	5 digit LCD; 10 mm
Power	6 1.5 V batteries or adaptor
Enclosure	ABS plastic
Dimensions	227 x 83 x 39 mm
Weight	550 g



Contents

PCE-PTR 200 fruit firmness tester, 3 penetration probes (Ø6, Ø8, Ø11 mm), 2 stop washers, conversion table, carrying case and user's manual

Model No.	Description
PCE-PTR 200	Fruit firmness tester

Optional accessories

SOFT-LUT-D	Software in English with data cable included
RS232-USB	RS232 to USB adaptor
CAL-FG-II	ISO Certificate for PCE-PTR
NET-300	Net adaptor

optional teststands on pages 28 / 29

Serie PCE-FM

Force gauge (5 kg and 20 kg) with RS-232 interface and optional software and test stand for serial measurements

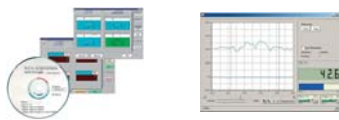
PCE-FM series force gauge with quick and precise reading of push and pull measurements. The display can be rotated 180 ° to allow for the gauge to be in the correct position to take an accurate measurement. This force gauge can be used as either a handheld instrument or mounted on an optional test stand for more precise measurements.

- Two models available: 5 kg and 20 kg
- RS-232 interface
- Software (optional)
- Hold function for tension / compression maximum values
- Zero reset button
- Peak Hold and maximum value recall
- Auto shut-off
- Overrange protection = 150 %
- Holes for test stand mounting
- Test stand (optional)
- ISO Certificate (optional)



Technical specifications

Model	PCE-FM50	PCE-FM200
Ranges	0 to 5 kg / 0 to 49 N	0 to 20 kg / 0 to 196 N
Accuracy	±0.4 %, ±1 dgt	±0.5 %, ±2 dgt
Resolution	1 g / 0.01 N	10 g / 0.05 N
Unit	grams / Newton	grams / Newton
Overrange capacity	7.5 kg	30 kg
Interface	yes	
Software	yes, (optional)	
Memory	-	
Functions	push / pull measure with Peak Hold	
Display	5 digit LCD; 10 mm	
Power	6 1.5 V batteries or adaptor	
Enclosure	ABS plastic	
Dimensions	227 x 83 x 39 mm	
Weight	550 g	



Contents

Force gauge (one of our models), flathead, hook, cone and chisel adaptors, extension rod (120 mm), carrying case and user's manual

Model No.	Description
PCE-FM50	Force gauge up to 5 kg
PCE-FM200	Force gauge up to 20 kg

Optional accessories

SOFT-LUT-D	Software in English with RS-232 cable
RS232-USB	RS232 to USB adaptor
CAL-FG-I	ISO Certificate for the PCE-FM50
CAL-FG-II	ISO Certificate for the PCE-FM200
NET-300	Net adaptor

optional teststands on pages 28 / 29

PCE-FM1000

Force gauge with external load cell, RS-232 interface and optional software

Force gauge that measures tension and compression up to 100 kg (981 N). The external dynamometric cell can be hung or hooked with a bracket (included in the delivery) that can be unscrewed and separated from both sides of the cell to fasten onto test stands and bench tests.

- External load cell with 2 m cable
- Crane hook and adjustable bracket
- Optional software and test stand
- Hold function for push/pull maximum values
- Zero reset button
- Peak Hold and maximum value recall
- Auto shut-off
- Overrange protection = 150 %
- ISO Certificate (optional)

PCE-LTS20 test stand and holder to adjust the unit (optional)



Technical specifications

Model	PCE-FM1000
Range	0 to 100 kg / 0 to 981 N
Accuracy	±0.5 % ± 2 digits / ± 5 N
Resolution	0.05 kg / 0.2 N
Units	grams / Newton
Overrange protection	50 % (max. 150 kg)
Interface	yes
Software	yes, optional
Memory	-
Functions	push and pull with Peak Hold
Display	5 digit LCD (10 mm)
Power	6 1.5V batteries or AC adaptor
Enclosure	ABS plastic
Dimensions	load cell: 130 x 51 x 18 mm unit: 227 x 83 x 39 mm
Weight	external load cell: 380 g unit: 450 g



Contents

PCE-FM1000 force gauge with external load cell and 2 m cable, carrying case and user's manual

Model No.	Description
PCE-FM1000	Force gauge up to 100 kg

Optional accessories

SOFT-LUT-D	Software with RS-232 cable
RS232-USB	RS232 to USB Adaptor
CAL-FG-III	ISO Certificate for PCE-FM1000
NET-300	Net adaptor

optional teststands on pages 28 / 29

PCE-SH 500

Digital push/pull force gauge with internal load cell

This digital push/pull force gauge measures compression and tension forces through an internal dynamometric cell. The force gauge can be used to test the force, compression and tension, fracture force, insertion/withdraw force, adhesive force, and so on. The most important feature of this unit is its high resolution of 0.5 Newton. If you want, you can use the digital push force gauge on the PCE-FTS50 test stand for more precise measurements.

- Display backlight
- N, t and lb units are selected at the push of a button
- Peak or average force
- Overlimit alarm (upper and lower limit)
- Memory to store up to 10 values
- RS-232 interface
- Overrange protection= 120 %
- Force direction displayed
- ISO Certificate (optional)



optional PCE-FTS50 test stand

Technical specifications

Model	PCE-SH 500
Range	0 to 500 N 0 to 51 kg
Resolution	0.1 N
Load cell	internal
Dimensions [mm]	- - -
Accuracy	±0.5 % of reading
Response time	< 0.1 sec
Peak Hold	yes
Real time / Peak mode	yes
Internal memory	10 peak values (recall)
Interface	RS-232
Data transfer	PRINT button
Overrange protection	up to 20% higher
Display	LCD backlight
Power	internal 8.4 V NiHi battery / 1200 mA
Dimensions	225 x 66 x 36 mm
Weight	approx. 460 g

Contents

PCE-SH 500 force gauge, 6 adaptors, battery (internal), battery charger, carrying case and user's manual

Model No.	Description
PCE-SH 500	Force gauge (0 ... 500 N)

Optional accessories

PCE-SOFT-SH	Software with data cable
CAL-FG-III	ISO Certificate PCE-SH 500

optional teststands on pages 28 / 29

Serie PCE-SH

Handheld force gauge with high accuracy

This handheld force gauge measures the tension and compression forces through an external dynamometrical cell with a 2.5 m cable. It can be used to test the force, fracture force, insertion/withdraw force, adhesive force, and so on. The most important feature of this dynamometer is its high resolution and its high measurement range up to 50,000 N (according to the model). You will be able to quickly check the compression force at the press of a button or the hydraulic tension force. It isn't necessary to use additional measurement cells, because with the combined cell "Z" you will be able to measure tension and compression forces.

- LCD backlight
- N, t and lb units are selected at the push of a button
- Peak or average force
- "Overlimit alarm"(upper and lower limit)
- Memory to store up to 10 values
- RS-232 interface
- Overrange protection
- Force direction displayed
- ISO Certificate (optional)



Technical specifications

Model	PCE-SH 2K	PCE-SH 10K	PCE-SH 50K
Range	0 to 2 kN 0 to 204 kg	0 to 10 kN 0 to 1019 kg	0 to 50 kN 0 to 5097 kg
Resolution	1 N	5 N	10 N
Load cell	external	external	external
Dimensions [mm]	76 x 50 x 25	76 x 50 x 25	107 x 75 x 25
Accuracy	± 0.5 % of reading		
Response time	< 0.1 sec		
Peak Hold	yes		
Real time / Peak mode	yes		
Memory	10 peak values (recall)		
Interface	RS-232		
Data transfer	PRINT button		
Overrange	up to 20 % over par value		
Display	LCD backligh		
Power supply	internal battery NiHi of 8.4 V / 1200 mA		
Dimensions	225 x 39 x 60 mm		
Weight	approx. 130 g (without cell)		

Contents

PCE-SH force gauge (depending on model), dynamometric cell with 2.5 m cable, push/pull bolt fastener, rechargeable battery, battery charger, carrying case and user's manual

Model No.	Description
PCE-SH 2K	Dynamometer (0 ... 2.000 N)
PCE-SH 10K	Dynamometer (0 ... 10.000 N)
PCE-SH 50K	Dynamometer (0 ... 50.000 N)

Optional accessories

PCE-SOFT-SH	Software with data cable
CAL-SH2-D	ISO Cert. for PCE-SH 2K (pressure)
CAL-SH2-Z	ISO Cert. for PCE-SH 2K (pulling)
CAL-SH5-D	ISO Cert. for PCE-SH 10K & 50K (pressure)
CAL-SH5-Z	ISO Cert. for PCE-SH 10K & 50K (pulling)

optional teststands on pages 28 / 29

Force Gauges

PCE-FTS50

Test station with digital distance meter for our dynamometers

The PCE-FTS50 test station can be used for our PCE-PTR, PCE-FM50, PCE-FM200 and PCE-SH 500 dynamometers. It is indicated below whether it needs an adaptor or not.

- Range up to 500 N or 50.9 kg
- Maximum distance of 335 mm
- Distance can be read through the digital distance meter
- Operated by way of crank
- The PCE-SH 500 can be attached without adaptor
- The PCE-PTR, PCE-FM50 and PCE-FM200 can be attached with the corresponding adaptor
- The adaptors or the dynamometer are not included in the order



Technical specifications

Ranges	0 to 50.9 kg / 0 to 500 N
Distance travelled	max. 335 mm
Velocity	-
Functions	manual, by way of crank
Power	button type battery for the digital length meter
Dimensions	540 x 210 x 128 mm
Weight	approx. 8.8 kg

Adaptor (optional)

PCE-PTR	PCE-FTS-ADP
PCE-FM50 / PCE-FM200	PCE-FTS-ADP
PCE-SH 500	directly, no adaptor required

Contents

PCE-FTS50 test stand, digital length meter, battery and user's manual

Model No.	Description
PCE-FTS50	Teststand

Optional accessories

PCE-FTS-ADP or PCE-FM200	Adaptor for the PCE-PTR, PCE-FM50
PCE-SJJ05	PCE-SJJ05 clamp
PCE-SJJ11	PCE-SJJ11 clamp
PCE-SJJ13	PCE-SJJ13 clamp



PCE-SJJ05



PCE-SJJ11



PCE-SJJ13

PCE-LTS20

Test station with a large range of force for our dynamometers

The PCE-LTS20 test station can be used for our PCE-PTR, PCE-FM50, PCE-FM200 and PCE-FM1000 dynamometers. One adaptor will be needed for the PCE-FM1000 model of dynamometer. The PCE-LTS20 has a range of force up to 1000 Newton.

- Range up to 1000 N or 101.9 kg
- Maximum distance of 345 mm
- Operated by a crank
- Adaptor is not required for the PCE-PTR, PCE-FM50 and PCE-FM200 models
- The corresponding adaptor is needed for the PCE-FM1000 model
- Adaptors, clamps or dynamometers are not included in the order



Technical specifications

Ranges	0 to 101.9 kg / 0 to 1000 N
Distance travelled	max. 345 mm
Velocity	-
Functions	manually, by way of crank
Power	-
Dimensions	530 x 250 x 230 mm
Weight	approx. 7 kg

Adaptor (optional)

PCE-PTR	directly, no adaptor required
PCE-FM50 / PCE-FM200	directly, no adaptor required
PCE-FM1000	FG-ADP

Contents

PCE-LTS20 test stand and user's manual

Model No.	Description
PCE-LTS20	Teststand

Optional accessories

FG-ADP	Adaptor for the PCE-FM1000
KG-LTS-20	KG-LTS-20 clamp
PCE-SJJ05	PCE-SJJ05 clamp
PCE-SJJ11	PCE-SJJ11 clamp
PCE-SJJ13	PCE-SJJ13 clamp



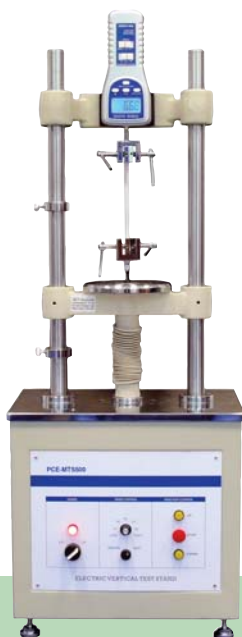
KG-LTS-20

PCE-MTS500

Automated test station for our dynamometers

The PCE-MTS500 automated test station for our dynamometers offers the possibility to quickly test traction. The maximum travel distance is 214mm, taking into account that when disconnected, the measurement is automatically stopped.

- Range up to 5000 N or 509 kg
- Maximum distance 214 mm
- Automatic shut off when completed
- Adjustable velocity (0 to 240mm / min)
- Automatic or manual modes
- Corresponding adaptors for our dynamometer
- Does not include adaptors or dynamometer



Technical specifications

Ranges	0 to 509 kg / 0 to 5000 N
Distance travelled	max. 214 mm
Velocity	0 to 240 mm /min (adjustable)
Functions	automatic or manuel
Power	230 V / 50 Hz
Dimensions	1020 x 400 x 260 mm
Weight	approx. 60 kg

Adaptor (optional)

PCE-PTR	ADP-MTS-500
PCE-FM50 / PCE-FM200	ADP-MTS-500
PCE-FM1000	directly, no adaptor required
PCE-SH 500	ADP-MTS-500
PCE-SH 2K	directly, no adaptor required
PCE-SH 10K	directly, no adaptor required

(Limited to a max. range of force of 509 kg)

Contents

PCE-MTS500 test stand, mains cable and user's manual

Model No.	Description
PCE-MTS500	Teststand

Optional accessories

ADP-MTS-500	Adaptor for one force gauges
PCE-SJJ05	PCE-SJJ05 clamp
PCE-SJJ11	PCE-SJJ11 clamp
PCE-SJJ13	PCE-SJJ13 clamp



PCE-SJJ05



PCE-SJJ11



PCE-SJJ13

PCE-AFG Serie

Analogue force meter with ranges of 30 and 120 kN and a large display

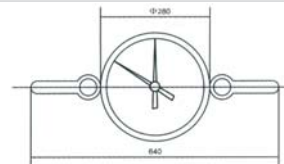
The PCE-AFG series are analogue force meters for measuring traction in Newton. There are two shackles included with the device. This durable model can be used in adverse industrial conditions. These force meters come calibrated from the manufacturer. If an ISO calibration certificate is required for a force meter, one can be ordered separately.

- Analogue, no power supply required
- Light weight for easy transport
- Drag needle to maintain the maximum weight
- Resistant to impacts
- Comes with two shackles (above and below)
- Type of protection: IP 54
- Maximum overload allowed is 200%
- ISO certificate (optional)



Technical specifications

Model	PCE-AFG 30	PCE-AFG 120
Range	0 ... 30 kN	0 ... 120 kN
Accuracy	class 2	class 2
Readability	0,5 kN	2 kN
Minimum load	0,5 kN	2 kN
Unit	Newton	Newton
Tara	full range	
Max. load	up to 200% above nominal maximum	
Display	analogue dial with drag needle	
Ingress protection	IP 54	
Power	---	



Contents

PCE-AFG force meter (various models), 2 x shackle, box and user's manual

Model No.	Description
PCE-AFG 30	Force meter up to 30 kN
PCE-AFG 120	Force meter up to 120 kN

Optional accessories

CAL-PCE-AFG	ISO certificate
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