

CITIZEN CZ

series

Precision Balances



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SECTION 1 INTRODUCTION

CITIZEN'S CZ series of Precision balances provides an accurate, fast and versatile series of general purpose balances.

There are 10 models in this series, with capacities from 500g~6000g, resolution from 5,000 to 120,000.

They all have stainless steel weighing pan on an ABS base assembly.

All the keypads are light touch switches and the displays are large easy to read liquid crystal type displays (LCD). The LCD's are supplied with a white color LED backlight and have loading bar graph.

All units include automatic zero tracking, and an accumulation facility that allows the count to be stored and recalled as an accumulated total.

SECTION 2 SPECIFICATIONS

2.1 CZ series [NTEP APPROVED]

No	NTEP Model	Capacity	Pan size	e	d	n max
1	CZ502	500 g	4.7" / 120 mm dia.	0.1 g	0.01 g	5000
2	CZ 501	500 g	4.7" / 120 mm dia.	0.1g	0.1 g	5000
3	CZ601	600 g	5.5 x 5.9 " / 140 x 150 mm	0.1g	0.1 g	6000
4	CZ 602	600 g	4.7" / 120 mm dia.	0.1 g	0.01 g	6000
5	CZ 1202	1200 g	4.7" / 120 mm dia.	0.1 g	0.01 g	12000
6	CZ1200	1200 g	5.5 x 5.9 " / 140 x 150 mm	0.1 g	0.1 g	12000
7	CZ5000	5000 g	5.5 x 5.9 " / 140 x 150 mm	1 g	1 g	5000
8	CZ 5000H	5000 g	5.5 x 5.9 " / 140 x 150 mm	1 g	0.1 g	5000
9	CZ6000	6000 g	5.5 x 5.9 " / 140 x 150 mm	1 g	1 g	6000
10	CZ 6000H	6000 g	5.5 x 5.9 " / 140 x 150 mm	1 g	0.1 g	6000

2.2 Common Specifications

Accuracy Class	II
Interface	Optional RS-232 Output
Stabilisation Time	2 Seconds typical
Operating Temperature	10°C~25°C / 50°F~77°F
Power supply (external)	9V/800mA AC adapter or built-in rechargeable battery
Calibration	Automatic External
ADC	Sigma delta
Internal counts	600,000 or 1,200,000
Display	15 mm digits high 6 digits LCD with white color LED backlight and loading bar graph
Balance Housing	ABS Plastic, Stainless Steel pan
Overall Dimensions (wxdxh)	180mm x 220mm x 85mm
Gross Weight	2.6kg(include rechargeable battery)

SECTION 3 INSTALLATION

3.1 GENERAL INSTALLATION

The scales should be sited in a location that will not degrade the accuracy.

Avoid extremes of temperature. Do not place in direct sunlight or near air conditioning vents.

Avoid unsuitable tables. The tables or floor must be rigid and not vibrate. Do not place near vibrating machinery.

Avoid unstable power sources. Do not use near large users of electricity such as welding equipment or large motors.

Avoid high humidity that might cause condensation. Avoid direct contact with water. Do not spray or immerse the scales in water.

Avoid air movement such as from fans or opening doors. Do not place near open windows.

Keep the scales clean.

Do not stack material on the scales when they are not in use.

3.2 INSTALLATION of CZ SERIES

Level the scale by adjusting the four feet. The scale should be adjusted such that the bubble in the spirit level is in the centre of the level and the scale is supported by all four feet. If the scale rocks readjust the feet.


Attach the adapter to the connector on the side of the scale. Please use the power as the label.


For capacity lower than 600g model, it will attach with a wind shielding, the wind shielding include one frame and one cover, put the frame on balance, then add cover. When weigh something, remove the cover, put weight on the pan, then add cover.

SECTION 4 KEY DESCRIPTIONS

Zero or 

Set the zero point for all subsequent weighing. The display shows zero.

A secondary function  , of "Enter" key when setting parameters or other functions.

Tare or 

Tares the scale. Stores the current weight in memory as a tare value, subtracts the tare value from the weight and shows the results. This is the net weight.

ESC
PRINT

MULTI Function.Key

Primary function (**ESC**) ,is to return to normal operation when the scale is in a parameter setting mode. OPTIONAL To print the results to a PC or printer using the optional RS-232 interface . [N.A.]

MODE
UNIT

This key will select either grams, pounds, carat ,ounce etc. for the weighing unit when weighing mode.

A secondary function, change current value for parameters or other functions.

S

No function.

P

No function.

ON/OFF or 

Use this key to turn on or turn off the power.

SECTION 5 OPERATION

5.1 ZEROING THE DISPLAY

You can press the **ZERO** key at any time to set the zero point from which all other weighing and counting is measured, within 10% of power up zero. This will usually only be necessary when the platform is empty. When the zero point is obtained the display will show the indicator for zero.

The scale has an automatic rezeroing function to account for minor drifting or accumulation of material on the platform. When the weight goes over 20 % of the full capacity, "read zero" function is obsolete.

5.2 TARING

Zero the scale by pressing the **ZERO** key if necessary. The zero indicator will be on.

Place a container on the platform, a value for its weight will be displayed.

Press the **TARE** key to tare the scale. The weight that was displayed is stored as the tare value and that value is subtracted from the display, leaving zero on the display. The NET" indicator will be on. As product is added only the weight of the product will be shown. The scale could be tared a second time if another type of product was to be added to the first one. Again only the weight that is added after taring will be displayed.

When the container is removed a negative value will be shown. If the scale was tared just before removing the container this value is the gross weight of the container plus all product that was removed. The zero indicator will also be on because the platform is back to the same condition it was when the **ZERO** key was last pressed.

5.3 WEIGHING A SAMPLE

To determine the weight of a sample first tare the empty container then place the sample in the container. The display will show the weight and the units of weight currently in use.

5.4 COUNTER

5.4.1 Audit operation counter


Press S key during selfchecking, display will show Audit operation times

5.4.2 Calibration counter

Press P key during selfchecking, display will show calibration times

When counter full, it will back to 0 automatically.

SECTION 6 BATTERY OPERATION

When the battery needs change the  indicator will turn on. Please change battery or use AC adapter after this indicator on.

The scales can be operated from the battery if desired. The battery life is approximately 50 hours.

To charge the battery simply plug into the mains power. The scale does not need to be turned on.

The battery should be charged for 12 hours for full capacity.

In the LCD display has an battery indicator to indicate the status of battery charging. When the scale is plugged into the mains power the internal battery will be charged. When turn on the indicator, if the battery indicator is full then the battery has a full charge. If it is half then the battery is nearly discharged and empty indicates the battery should be charged.

As the battery is used it may fail to hold a full charge. If the battery life becomes unacceptable then contact your distributor .

SECTION 7 PARAMETERS

NOTE: If the user wants to enter into the technical parameter, the jumper K1 on the main board must be short firstly.

The scale has 8 parameters that can be set by the user plus a method of entering the calibration section.

To set parameters press the MODE key during self checking

The display will show the first function, "F1 UNT".

Pressing the **MODE** key will cycle through the other functions.

Pressing **ZERO** key will allow you to set the function. Use the PRINT/ESC key to leave a parameter unchanged.

Attached: When display shows "TECH", press ZERO key to enter, display shows "PIN", press S, PRINT, TARE key, and press ZERO key to enter technical parameters setting mode.

Parameters table.

FUNCTION	DESCRIPTION
F1 UNT	Sets the which units want to use: g / ct / lb / oz / dr / ozt / dwt, use MODE to switch (ON/OFF), use ZERO key to sure.
F2 Bl	Set the backlight to be on, automatic or off, EL on: EL backlight always on EL Au: EL backlight automatically turn on EL off: EL backlight always off Use MODE key to switch, use ZERO key to sure
F3 cal	Normal calibrate After enter cal mode, the display will show "unLoAd". Remove all weight from the pan and wait for stable After stable, balance will show load c, put put calibrate weight on the pan, here is the useable weight list Balance capacity 500g: calibration weight 500g Balance capacity 600g: calibration weight 500g Balance capacity 1200g: calibration weight 1000g Balance capacity 5000g: calibration weight 5000g Balance capacity 6000g: calibration weight 5000g after stable, display will show pass, calibrate complete. No need press any key during calibrate.
TECH	Pin Enter the programming and calibration menus by entering the correct password (S, Print, TARE) and press ZERO key to enter.

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P1 LIN	<p>Liner calibrate</p> <p>After you press ZERO key, display will show PIN again, press PRINT, S, P key and ZERO key to enter, display will show UNLOAD, remove all weight from the pan and wait until display show the calibrate weight value.</p> <p>After stable, balance will confirm the zero calibrate and show “load H”, load calibration weight on the pan,</p> <p>Balance capacity 500g: calibration weight 250g Balance capacity 600g: calibration weight 250g Balance capacity 1200g: calibration weight 500g Balance capacity 5000g: calibration weight 2500g Balance capacity 6000g: calibration weight 2500g</p> <p>After stable, balance will confirm the half span calibrate weight and show :LOAD C , put the weight on pan,</p> <p>Balance capacity 500g: calibration weight 500g Balance capacity 600g: calibration weight 500g Balance capacity 1200g: calibration weight 1000g Balance capacity 5000g: calibration weight 5000g Balance capacity 6000g: calibration weight 5000g</p> <p>After stable, display will show “pass”, calibration finished</p>
P2com	<p>Set RS-232</p> <p>At first, select output type: S 232: RS-232, S USB: USB interface</p> <p>Then output mode:</p> <p>P prt connect with mini printer P cont connect with remote display or PC P auto connect with mini printer, auto print (auto accumulation)</p> <p>After you select communication mode, display will show b xxx, this is baud rate, you can select from 600/1200/2400/4800/9600bps,</p> <p>If you select P prt or P auto(work with printer), after set baud rate, display will show tp or LP-50, this is printer mode, you can select normal mini printer (TP) or label printer (LP-50)</p> <p>If you select LP-50, display will show ENG or CHI, this is print out language, you can select Chinese(CHI) or English (ENG)</p> <p>Use MODE key to shift, use ZERO key to sure</p>
P3 CNT	<p>This display will show xxxxxx for indicating the internal counts, you can press Print key to escape</p>
P4 AZN	<p>This option is used to select the auto zero maintain</p> <p>Options : 0.2e, 0.4e, press ZERO key to sure, press PRINT key to escape</p>
P5 Cap	<p>Set the capacity.</p> <p>You can find detail specification in page 2</p>

SECTION 8 APPENDIX

9.1 ERROR CODES

During the initial power-on testing or during operation it is possible the scale may show an error message. The meaning of the error messages is described below.

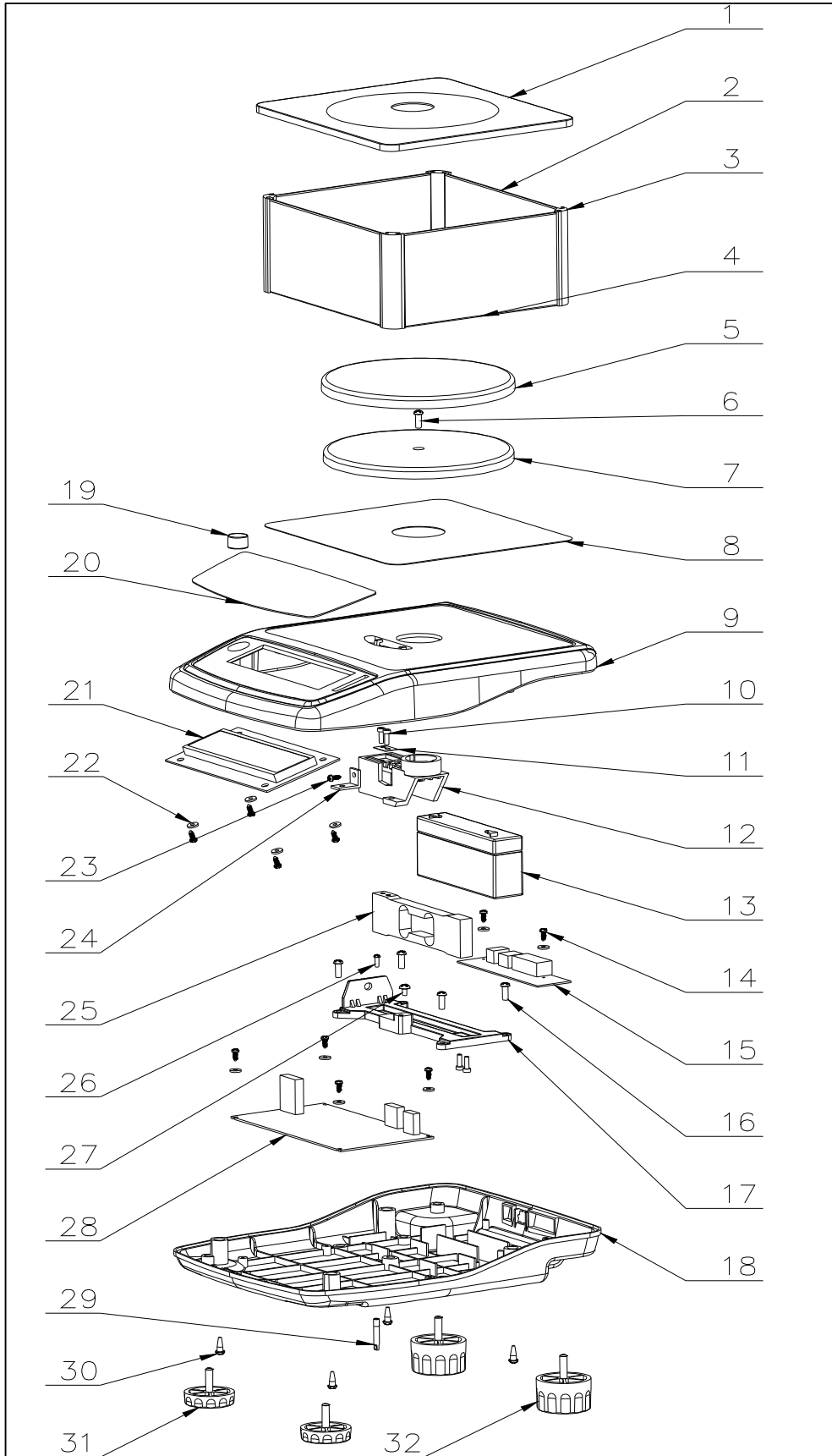
If an error message is shown repeat the procedure that caused the message, turning the balance on, calibration or other functions. If the error message still is shown then contact your dealer for further support.

ERROR CODE	DESCRIPTION	POSSIBLE CAUSES
Err 3	Calibrate weight error	Use incorrect calibrate weight
Err 4	Initial Zero is greater than allowed (4% of maximum capacity) when power is turned on or when the ZERO/ENTER key is pressed,	Weight on the pan when turning the scale on. Excessive weight on the pan when zeroing the scale. Improper calibration of the scale. Damaged load cell. Damaged Electronics.
Err 5	Keyboard Error.	Improper operation of the scale.
Err 6	A/D count is not correct when turning the scale on.	Platform not installed. Load cell damaged. Electronics damaged.
Err 17	Unstable Mode	Tare or Zero Key Press Without Stability [Wait For Stability Sign]

9.2 WEIGHING UNIT LISTING

No	Unit mark	Unit name	Conversion (g)
1	G	Gram	
2	Ct	net carat	=0.2g
3	Lb	Lb	=453.59237g
4	Oz	Ounce	=28.349523125g
5	Dr	Dram	=1.7718451g
6	Ozt	troy ounce	=31.1034768g
7	Dwt	penny weight	=1.55517384g

9.3 EXPLODE DRAWING



9.4 PARTS LIST

No	Parts name	qty	material	Spec
1	Wind shielding top cover	1	AL	
2	toughened glass 1	2	glass	152.5x80x3t
3	pole for glass	4	AL	
4	toughened glass 2	2	glass	138.5x80x3t
5	SST pan	1	SUS304	80/120
6	"+" screw	1	S18C	M4x10, 6.8
7	plastic pan	1	ABS	80/120
8	SST cover	1	SUS304	0.5t
9	top cover	1	ABS	
10	internal hexagon screw	4		M3x12,8.8
11	load cell shim	2	SUS304	16x13x1t
12	load cell upper bracket	1	ABS	
13	battery	1	lead acid	6v/1.2Ah
14	self thread screw	10	S18C	3x8, 6.8
15	interface PCBA	1		RS232/USB
16	"+" screw	4	S18C	M4x12, 6.8
17	load cell lower bracket	1	AL	
18	bottom cover	1	ABS	
19	Level bubble	1		14.7mm
20	key panel	1	PC	
21	dislay PCBA	1		
22	insulative washer	10	EDPM	8x3.1x1.5t
23	"+" screw	10	S18C	M3x12,8.8
24	below weighing sheet	1		
25	load cell	1	AL	SPL
26	"+" screw	1	S18C	M3x10, 6.8
27	"+" screw (big head)	1	SUS304	M3x12
28	Main PCBA	1		
29	below weighing screw	1		
30	"+" screw	4	S18C	M4x12, 8.8
31	foot 1	2	ABS	
32	foot 2	2	ABS	