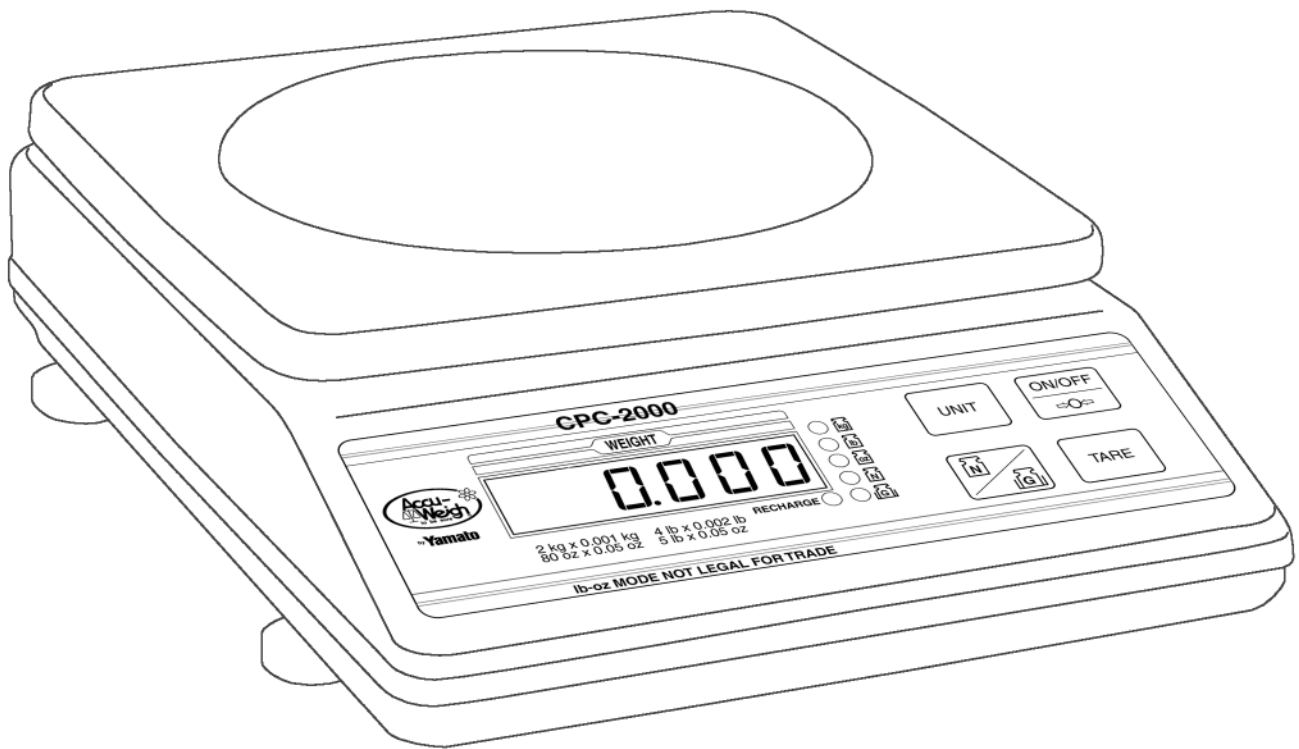


CPC-2000

Technical Manual



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YCO-1094-04-02

Table of Contents

I. Introduction	1
II. Setup	1
Technician Setup Mode	
Setting the Keywords	
Calibrating the Scale	
III. Troubleshooting	6
IV. Wiring Diagram	7
V. Parts List	8

SAFETY INSTRUCTIONS

Before using the scale, carefully read, understand, and follow the "Safety Instructions" described in this manual. Observe the advice given in the Operation Manual to ensure proper operation. Keep this manual handy for reference.

- 1) This scale is **not** an explosion-proof model. Do not use the scale in an atmosphere containing flammable gases or explosive fumes. A fire or an explosion can result.
- 2) Do not operate the scale if there is smoke or a burnt smell coming from the scale. Remove the batteries or unplug the AC adaptor immediately. After making sure that there is no danger, consult your dealer. **Never try to repair the scale by yourself.**
- 3) Never step on or sit on the scale. Not only will the scale be damaged, but you may also be injured.
- 4) Place the item to be weighed in the center of the platform. Items placed on the edge of the platform may fall off and cause injury.
- 5) When weighing a heavy, large or unbalanced item, make sure the item is stable on the platform, otherwise, an accident may occur.
- 6) When carrying or moving the scale, be sure to hold it by the bottom of the base with both hands. If you hold it by the platform, the platform may become detached causing the scale to fall. This will damage the scale. The platform is designed for easy removal and clean-up.
- 7) Do not insert your finger into the gap or holes in the scale. You may be injured.

To prevent damage to the scale

- 1) Do not push the indicator or keys with sharp objects. They may break or puncture the switch membrane panel.
- 2) Use the specified power supply and choose a suitable environment. If you do not, the weight readings may be inaccurate and the scale may be damaged.
- 3) The scale is a sensitive weighing instrument, avoid physical shocks. If you drop something on the scale, step on the platform, or drop it, the scale may be damaged and lose accuracy.
- 4) If the scale becomes dirty, wipe it with a soft cloth. For stubborn stains, apply a little neutral detergent and then wipe the scale with a dry cloth. Do not use thinner, benzene, hot water, or chemical agents on non-metallic parts, all of which can cause deformation, discoloration, or deterioration.
- 5) Never remove the case. The fine adjustment section may be damaged and you may be injured by sharp edges on the internal parts.
- 6) Do not place the scale upside down.
- 7) When the low battery indicator appears, recharge the battery. The battery should only be replaced by a qualified scale technician. If the scale will not be used for a long period, have the battery removed.

To keep the scale working efficiently

- 1) Place the scale on a flat stable surface that will support the scale and the load.
- 2) Do not place the scale in an area exposed to direct sunlight or to wind currents from an air conditioner, otherwise, the weights will not be accurate.
- 3) Do not place the scale near machines that create vibrations or electromagnetic disturbance, such as microwave ovens, portable phones, or large motors. This will affect the accuracy.
- 4) The operating temperature range is from -10°C to $+40^{\circ}\text{C}$ (14°F to 104°F). Do not subject the scale to sudden temperature changes; allow the scale to adjust to the new temperature before use.
- 5) This scale is not waterproof or dustproof. Do not expose the scale to splashing water. Do not install the scale in an extremely humid or dusty environment.
- 6) If the scale is sealed, do not break the seal. If you break the seal, the scale will not be considered legal for trade. In this case, contact your dealer.
- 7) Do not disassemble or modify the scale, you will void the warranty. Modified scales will not be legal for trade.

I Introduction

The CPC-2000 is available in a 4 lb (2 kg) model and a 10 lb (4 kg) model. It displays units of kilograms, pounds and ounces (not legal for trade), decimal pounds, and continuous ounces. Any of these units can be enabled or disabled in the technician set-up mode. The kg, lb and oz modes can also be enabled or disabled in the user setup mode. The unit specifications for each of the two capacities are in the following tables.

Capacity	Increment	Accuracy	Maximum Tare
2 kg	0.001 kg	0.001 kg	2 kg
5 lb	0.05 oz	0.05 oz	5 lb
4 lb	0.002 lb	0.002 lb	4 lb
80 oz	0.05 oz	0.05 oz	80 oz

Capacity	Increment	Accuracy	Maximum Tare
4 kg	0.002 kg	0.002 kg	4 kg
10 lb	0.1 oz	0.1 oz	10 lb
10 lb	0.005 lb	0.005 lb	10 lb
160 oz	0.1 oz	0.1 oz	160 oz

The CPC-2000 contains a single 6 V, 4 Ah rechargeable battery good for up to thirty six hours of continuous use. It takes about eight to fourteen hours to recharge the battery with the AC adaptor. The scale may be operated while the battery is recharging. Use only the AC adaptor supplied or an adaptor of the same output characteristics.

The scale has an automatic-off feature which will turn off the scale after two, three, four or five minutes of non-use, unless the feature is disabled. The time delay for the automatic-off, including full disable, is set in the technician set-up mode (see section II.)

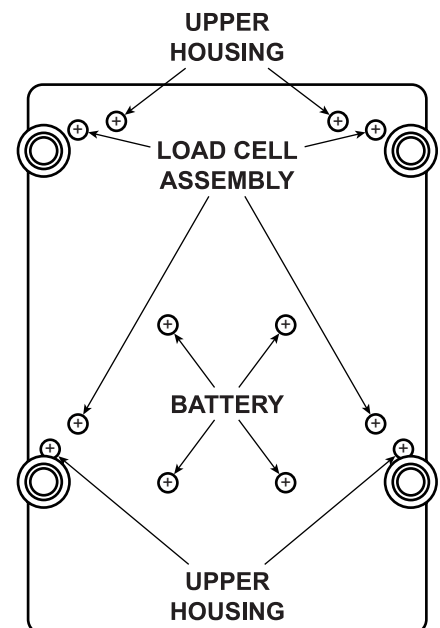
II Setting the Scale Functions

Technician Setup Mode

All of the scale keywords and the calibration software are accessible through the technician setup mode. To enter the mode turn the scale off, remove the scale platform and turn the scale upside down.

WARNING! Do not place the scale on the platform or on the load cell assembly. This can overload and damage the load cell.

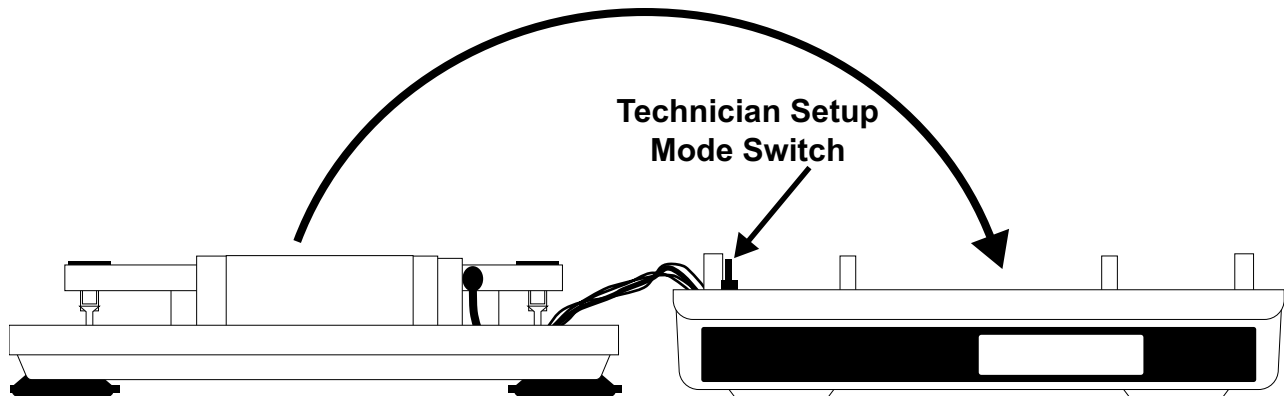
Next, remove the four housing screws. The four housing screws are the outermost two screws to the front of the scale and the innermost two screws to the rear of the scale. Place the scale back on it's feet.




II Setting the Scale Functions

Technician Setup Mode

From the front, rotate the upper housing clockwise (to the right) until it rests on the table. Be careful not to stress the wires that connect the main circuit board (in the upper housing) to the power board and load cell (in the lower housing).



Place the platform back on the load cell assembly, power the scale on and press the technician setup mode switch on the back of the main circuit board. The scale should indicate, "Set" followed by, "Unit".

The scale is now in the technician setup mode. From here, various settings can be altered and the scale can be calibrated as detailed in "Setting Keywords" and in "Calibrating the Scale" below. Exit the technician setup mode at any time by pressing the  key for about five seconds.


After exiting the technician setup mode, remove the platform from the load cell assembly, return the upper housing to the original position taking care not to pinch the wiring between the upper and lower housing. Do not allow the wiring to rub against the upper load cell assembly. Replace the four upper housing screws and firmly tighten them. Place the scale back on its feet and place the platform back on the scale.



Observe the supporting columns of the platform from the front and from the side. If the columns rub against the upper housing, loosen the four upper housing screws, adjust the upper housing so that it does not contact the platform columns and firmly tighten the four upper housing screws.




WARNING! Do not place the scale on the platform or on the load cell assembly. This can overload and damage the load cell.


II Setting the Scale Functions



Setting the Keywords

The scale keywords can be set to select which units (kg, lb, oz or lb-oz) are toggled when the  key is pressed, to change the duration of the auto-off function, to disable the auto-off function and to change the capacity of the scale when a different load cell and front mask are installed. The data transmission keywords “tran” and “t.rate” do not function on the CPC-2000.

The kg, lb and oz modes, and the auto-off function can also be set in the user setup mode. Enter the user setup mode by pressing the  key for about three seconds while the scale is on. The display will briefly show “SET” followed by “UNIT”. Exit the user setup mode by pressing the  key while “END” is selected.

From the “UNIT” indication, use the  key as an ENTER or RETURN key, and use the  key as a SELECT or TOGGLE key. Refer to the setup chart on the following page. Any unit that is selected “ON” will be displayed in sequence during normal operation when the  key is pressed. Mixed units, such as the combined pound and ounce, are not allowed on legal-for-trade scales under NTEP regulations. If your scale is to be used as a legal-for-trade scale, the lb-oz mode must be disabled.






The auto-off setting selects the duration, in seconds, after which the scale will automatically turn itself off if it is not being used. If “OFF” is selected, the auto-off function will be disabled. The “tran” and “t.rate” keywords do not function on the CPC-2000. The “CAP” setting selects the capacity, in kilograms, of the load cell installed in the scale. Only the 2 kg and 4 kg capacities are available on the CPC-2000. Pressing the  key while “END” is displayed will cause the scale to enter the calibration program.

Exit the technician setup mode at any time by pressing the  key for about five seconds. This will turn the scale off. Press the  key again to return to normal operating mode.

II Setting the Scale Functions

Calibrating the Scale

WARNING! Calibration should only be performed by a qualified scale technician. Beware of the hazard of electric shock. Never work on powered circuits.


Enter the technician setup mode, select “END” and press the  key to enter the calibration program. The scale will display raw counts. Press the  key to select either pound or kilogram calibration weights. With an empty platform on the load cell assembly, press the  key. The scale should read “0”. If “0” is not displayed, then press the  key again until “0” is displayed. Place either 2 kg or 5 lb (depending on the units selected above) on the scale platform. Wait for the counts to stabilize and press the  key again. The scale should briefly indicate either 2 kg or 5 lb and then power off. Turn the scale back on and verify that it is reading accurately. If not, then repeat the calibration procedure.


III Troubleshooting

The scale can check various functions automatically. When a problem is detected, the following messages will be displayed. If you take the steps described below but the problem is not fixed, the scale needs to be serviced by a qualified scale technician.

Low battery indication. Connect the AC adaptor to the scale and recharge the battery. This takes approximately 8 to 14 hours. The scale can be used while it is recharging. If the battery does not charge, see a qualified scale technician.

Power on counts are greater than calibrated zero plus 10%.

Remove weight from the platform and press the  key, if necessary. If no weight is on the platform, calibration or service is required.

Power on counts are less than calibrated zero minus 10%. This generally indicates that the platform is not on the scale or that something is wedged between the platform and the scale body. Replace the scale platform, remove any obstructions under the platform and press the  key, if necessary. Otherwise, calibration or service is required.

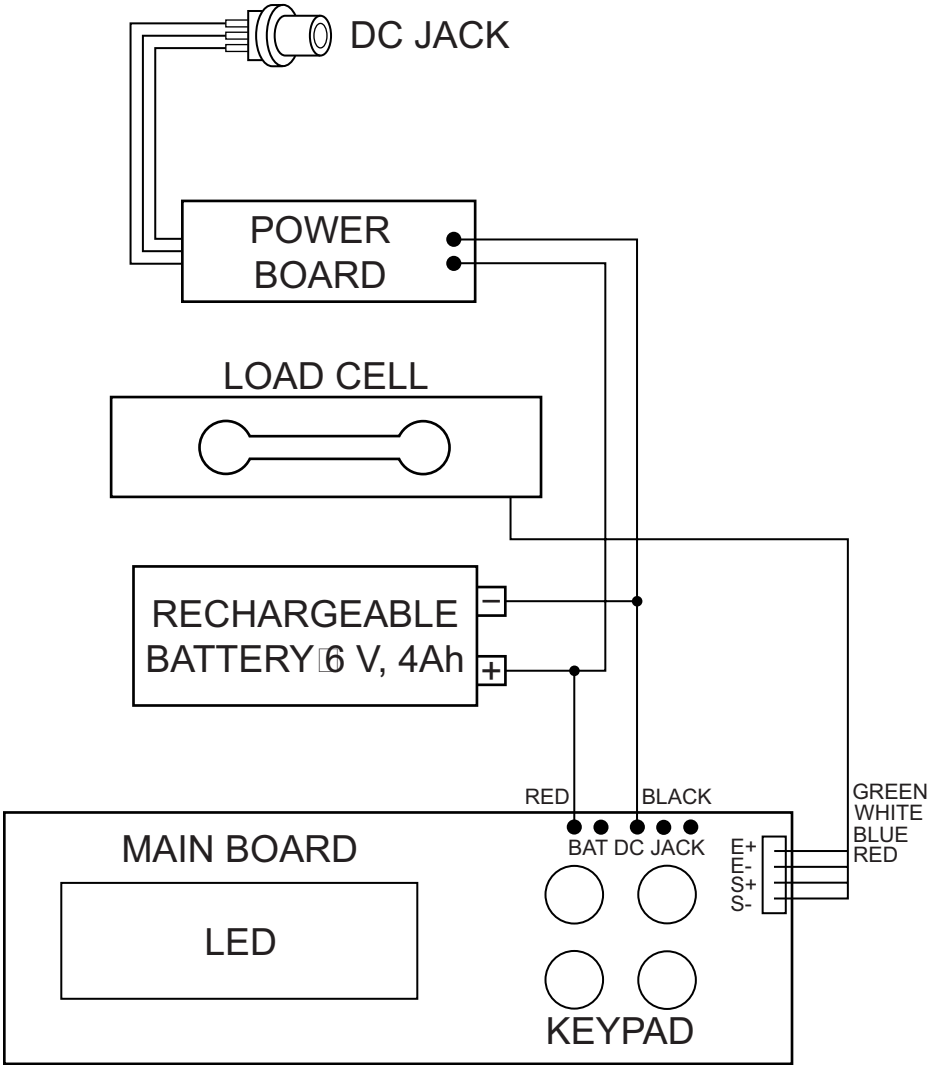
Overload condition. Remove weight that is greater than the scale capacity from the platform. If no weight is on the platform, calibration or service is required.

Underload condition. Generally indicates that something is wedged between the platform and scale body. Remove the obstruction. If there is no obstruction, calibration or service is required.

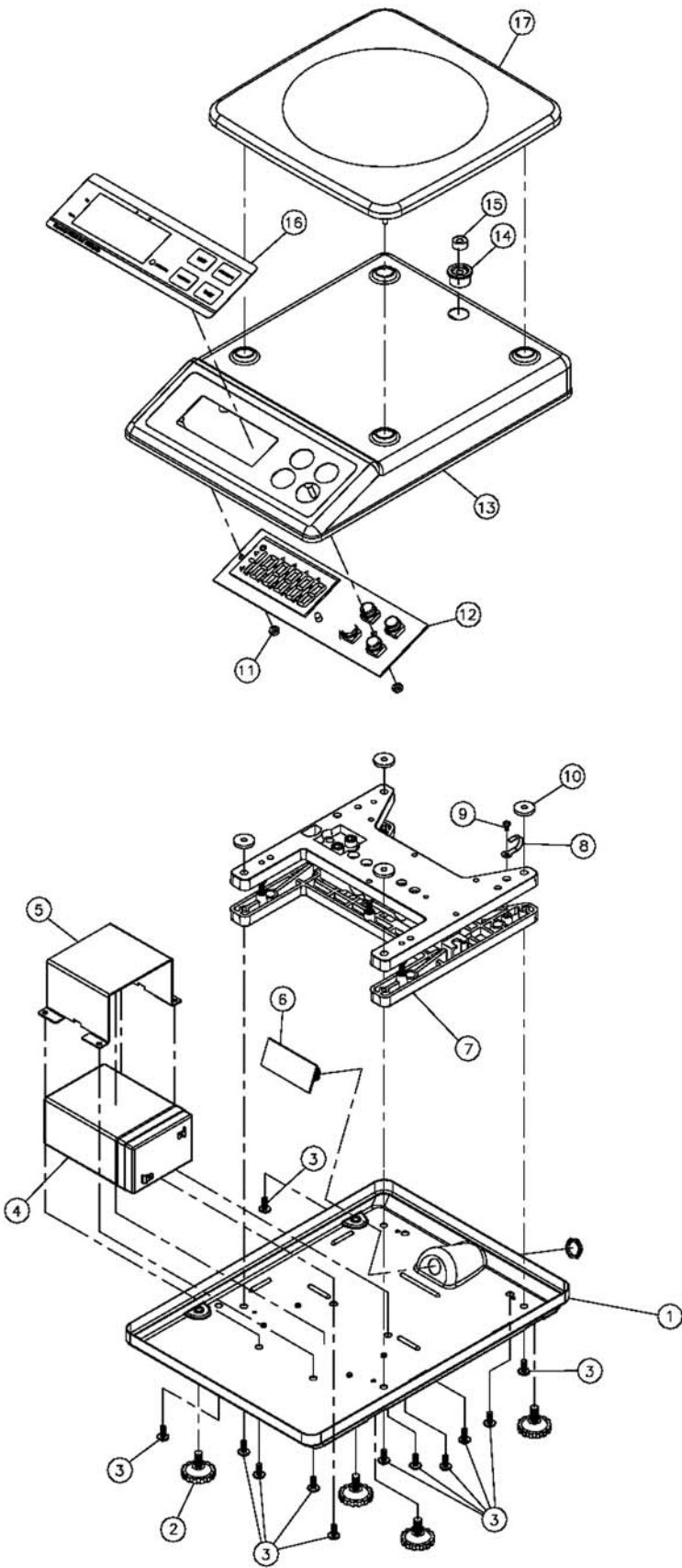
Calibration span is too high. Calibration or service is required.

EEPROM R/W error. Service is required.

IV Wiring Diagram



V Parts List



VI Parts List

ITEM	PART NUMBER	DESCRIPTION	QTY.
1	CHA-1595-000010	Stainless Steel Base	1
2	CHA-1595-000020	Adjustable Feet	4
3	CHA-1595-000030	Screw M4 x10	12
4	CHA-1595-000040	Rechargeable Battery	1
5	CHA-1595-000050	Battery Holder	1
6	CHA-1595-000060	Display / CPU Board	1
7	CHA-1595-000070	Load Cell Assembly 4 lb / 2 kg	1
	CHA-1595-000080	Load Cell Assembly 10 lb / 4 kg	1
8	CHA-1595-000090	Wire Clip	1
9	CHA-1595-000100	Hex Screw M3 x 6	1
10	CHA-1595-000110	Rubber Pad	4
11	CHA-1595-000120	Hex Nut M4	2
12	CHA-1595-000130	Power Board	1
13	CHA-1595-000140	Stainless Steel Upper Housing	1
14	CHA-1595-000150	Holder, Bubble Level	1
15	CHA-1595-000160	Bubble Level	1
16	CHA-1595-000170	Front Mask 4 lb / 2 kg	1
	CHA-1595-000175	Front Mask 10 lb / 4 kg	1
17	CHA-1595-000180	Stainless Steel Platform	1