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INTRODUCTION TO CGX COUNTING SCALE

Your CGX counting scale is the most convenient instrument for piece counting. Preparation before counting objects is simply loading 10 or 30 pieces sample on the scale and pressing "10" key or "30" key.

Your CGX does not require any warm up time. Its Tuning-Fork sensor offers you most accurate result even just after energizing.

Your CGX does not require calibration in long term operation. Calibration is required only when it is re-located, not before daily operation.

GENERAL SPECIFICATIONS

Weighing Method : Tuning-fork frequensy sensing method
Tare : Full range, semi-automatic
Zero Tracking : Auto zero tracking, within $\pm$ 3 divisions
Calibration : Semi-automatic calibration with reference weight
Temperature : 0°C to 40°C
Humidity : 80% r.h. or less
Display : Custom LCD of 12.5mm height
Power Source : Exclusive AC adaptor, DC9V/400mA
Built-in rechargeable battery (option)
Functions : Counting (sample quantity selectable, sampling with unit weight improving)
Ordinary weighing
Unit weight display
Weighing Units
Selectable : g, kg, ct, oz, lb
Output : Various outputs are available at option. Listed in page 3.
Standard
Accessories : Operation Manual, AC adaptor, Dust Cover fixed on the scale

OPTIONS

OUTPUTS - to be built in the scale -
CGIJ output : IJ output for Shinko printers.
CGR output : RS232C output, bidirectional.

RECHARGEABLE BATTERY
CG BATTERY : Built-in NiCd battery unit operatble for 48 hours (non-output condition), charged in 12 hours.

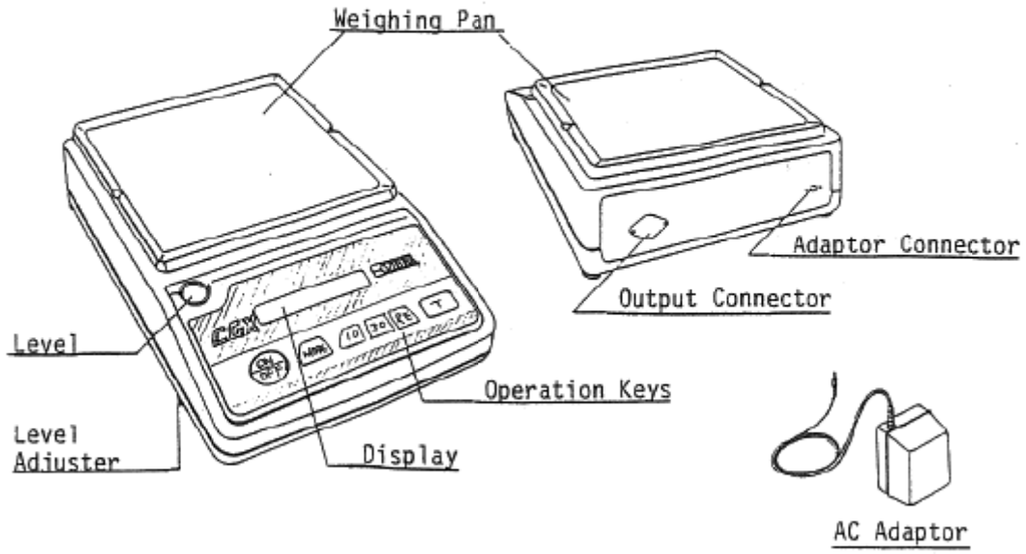
PRINTERS CSP-16 : Operation Micro-Printer for ordinary roll paper.
CSP-193 : Operation Printer for thermal roll paper, printing date.

OTHERS Windshield Kit / Precision Calibration Weights

MODELS

MODELS	CGX-600	CGX-1500	CGX-3000	CGX-6000	CGX-12K
Capacity	600g	1500g	3000g	6000g	12kg
Readability	0.02g	0.1g	0.1g	0.2g	1g
Recommended Smallest Unit weight	10 mg	30 mg	50 mg	0.1g	0.3g
Terminal Smallest Unit Weight	2 mg	5 mg	10 mg	0.02g	0.05g
Display Range in Pieces	0 to 300,000 pcs.				0 to 240,000 pcs
Pan Size	140 mm dia.	190 x 190mm			
Dimensions	208 x 310 x 88 mm				
Weight	2.9kg	3.6kg	3.6kg	3.6kg	3.6kg

EXTERNAL VIEW & NAMES OF PARTS



KEY FUNCTIONS

ON/OFF : ON/OFF key for power.

MODE : Key for changing display, pcs, weight or unit weight. Also for calling functions, for storing parameters, for setting digits of parameters.

10 : Key for sampling unit weight with 10 samples.

30 : Key for sampling unti weight with 30 samples.

RE : Key for improving unit weight by increasing samples.

T : Key for tare. Also key for election of parameters.

CHARACTERS

g, kg, lb : Weight unit in weighing.

P : Indication of pieces in counting mode.

◀ : Total sample weight on the pan is too light to process an accurate unit weight.

▼ : Indicates battery has run out (option).

M : Indicates the scale is under setting operation, or sampling.

Upper ▶ : Appears when other weight unit than "g", "kg" or "lb" is selected. It is recommended to stick a seal of the weight unit at the mark.

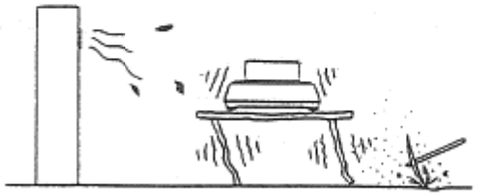
Lower ▶ : Indicates the scale mode is in Unit Weight Display Mode.

INSTALLTION

1. LOCATION

VIBRA CGX scale is very robust, still it is an "precision weighing instrument" which requires gentle operation and handlings with care. Install the unit in good conditions for optimum result. Locations as followings may cause erroneous results.

1. Area having a soft floor to make the scale not level.
2. Area where temperature changes abruptly.
3. Area in high humidity or dusts.
4. On an unstable base or near to a source of vibration.
5. Area exposed to a wind from a fan or a cooler.
6. Area exposed to direct sunlight.



2. UNPACKING

Unpack the container carefully. Examine the packaging and the device for damage, and report to the shipper if any. Don't drop the scale. Check the enclosures as follows:

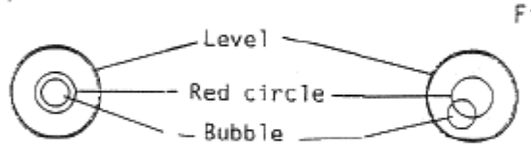
1. The scale
2. The weighing pan and the pan base
3. AC adaptor
4. Operation Manual

3. LOADING WEIGHING PAN

Place the pan base packed with the weighing pan on the scale. Fix it on the shaft by driving the knurled nut in the centre. Place the weighing pan properly on the pan base. See (a).

(a)

(b)



4. LEVELING

Watch if the scale is level. Locate the level in front of the scale, and four adjusting legs beneath it. Drive these legs to centre the bubble in the red circle of the level. Watch if all legs are settled on the table securely. See (b).

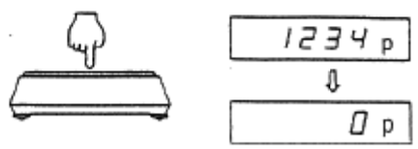
5. PERFORMANCE TEST

(1) Connect the AC adaptor with the rear of the scale, then plug the cord in line outlet.

(2) Press the ON/OFF. All segments and characters will blink as a self test.

(3) Verify that the display changes by touching the pan slightly, and that it returns immediately to the original by releasing it.

* Blinks of weight unit such as "g" indicates unstable situation of data.

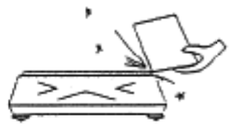


NOTES

* After installation, or after long term use, data displayed may sometimes be erroneous. Calibrate the scale in such cases referring to page 10.

** Load/unload objects gently. An side impact to the scale may sometimes be a cause of damage on the mechanism, in particular.

*** An overload message " o-Err " will appear as warning when the load exceeds F.S. + 9 divisions.



OPERATIONS

* Warming up of CGX scale is almost unnecessary. 4 to 5 minute warming ip will give you optimum result, however.

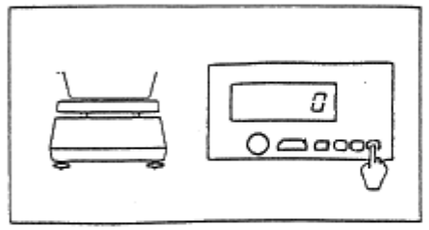
** The CGX scale is available ordinary weighing oepration in 5 different kinds of weighing unit. For selection of a weighing unit from them, see page 8 and 9.

*** Following to processing unit weight of samples, accurate quantity of optionally loaded mass will be displayed in COUNTING mode. See next page.

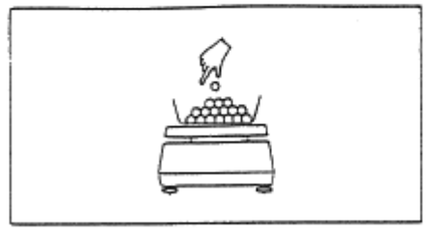
COUNTING OPERATION

1. Tare the scale by pressing [T] key.

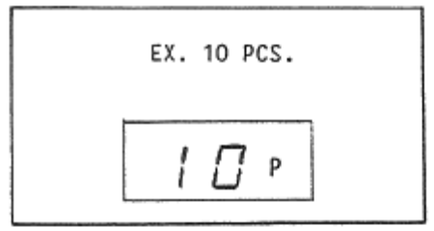
   Display : Exactly 0 p
   If otherwise displayed, press MODE key once or twice to read exactly 0 p.



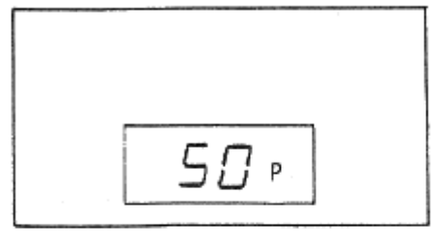
2. Place samples pre-counted, 10 pieces or 30 pieces, on the pan.
   Press [10] key or [30] key, corresponding to the sample quantity.



3. The display turns blank, while lighting small M mark on the left.
   Then a "piece" display, [10p] or [30p], appears, while the M mark disappearing.
   Now, the unit weight is processed and memorized.



4. To improve the accuracy of the unit weight, you may add optional quantity of samples, unnecessary to count, and press [RE] key.
   Allow the scale until a piece display appears after M sign. The unit weight has now renewed/improved by the pieces displayed.
   By repeating this renewal operation, the unit weight is improved to more accurate one.



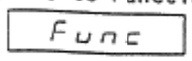
5. Load the rest of objects to be counted, and read the display which indicate the total number of the object on the pan.

FUNCTIONS

HOW TO ACCESS AND CHANGE VARIOUS FUNCTIONS

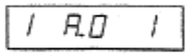
(1) Press [MODE] and release it when "Func" appears showing that the scale is in function mode.

Access to Functions



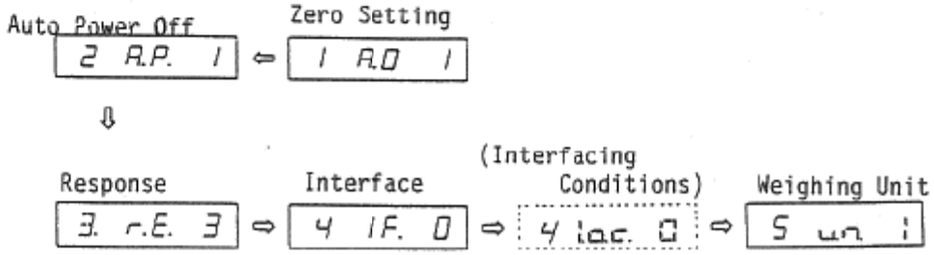
(2) The first mode of the scale " 1. A.0 ⌴ " for Auto-Zero appears.

Auto Zero



To change the parameter at the last digit, hit [T] key. As to contents of parameters, see next page.

(3) By hitting [MODE], the function item will advance successively according to following sequence.



"41.oc.⌴" will be passed depending on setting.

POINTS OF KEY OPERATION

* To advance the function item, hit [MODE] key.
** To change parameter, hit [T] key.
*** To stop setting operation and return to original measurement mode, hit [RE] key.

PARAMETER LIST OF FUNCTIONS

* To change parameters(conditions), see page 8.

1. A.0	1 :	Auto-zero adjustment is effective.
	0 :	No zero adjustment.
2. A.P.	0 :	Automatic power off in use of battery(option)-not effective
	1 :	Automatic power off in use of battery(option)-effective
3. r E.	1 :	Stabilization time ↑ Quick ↓ Slow — Stabilization judging range ↑ Wide ↓ Narrow
	2 :	
	3 :	
	4 :	
	5 :	
4. I F.	0 :	No interfacing
	1 :	Constant serial output(6-digit) effective with output option
	2 :	Constant serial output(7-digit) "
41. o.c.	0 :	No output
	1 :	Constant serial output
	2 :	Constant serial output of stabilized data ***
	3 :	- Nil -
	4 :	Automatic output with a load after stabilization ***
	5 :	One output when stabilized (no output with unstable data)***
	6 :	" (random output with unstable data) ***
	7 :	- Nil -
42.b.L.	1 :	1200 bps
	2 :	2400 bps
	3 :	4800 bps
43.PA.	0 :	No parity bit } Available when set at 4. IF. 2
	1 :	Odd parity check }
	2 :	Even parity check }
5. un.	1 :	Weighing unit in "g"
	2 :	"kg"
	3 :	"ct" **
	4 :	"oz" **
	5 :	"lb"

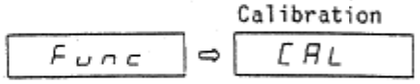
** Other weight units than "g", "kg" and "lb" are indicated by ▶ mark.
It is recommended to stick a label of the unit at the ▶ mark.
*** Setting at these, output of unit weight is impossible.

SPAN CALIBRATION

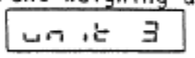
To achieve optimum accuracy from the scale, it should be calibrated in the area it is used, and recalibrated when it is relocated to other area.

The following calibration procedure is simple, not subject to operator errors, but does require a reference weight*of the full capacity of the scale.**

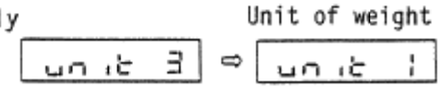
(1) Press [MODE] until "CAL" appears after "Func".



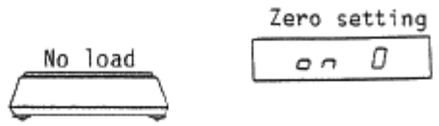
(2) Press [T] key first, then press [MODE] together and release both at the same time. "unit ⌴" appears.



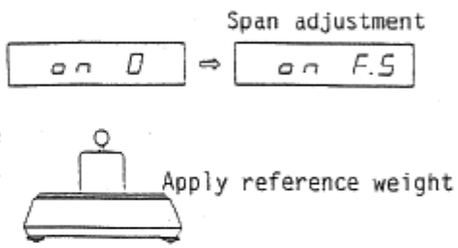
(3) The parameter after "unit" shows weight unit for calibration, currently linked with the set weight unit in "5. un.⌴". See page 9.
If the prepared reference weight* is different from the displayed one, change the display to the prepared one by hitting [T] key. After setting, hit [MODE] key.



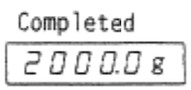
(4) The display will indicate "on 0". Verify that no load is on the pan, as zero adjustment is automatically done.



(5) The display will automatically advance to "on F.S". Apply the prepared reference weight*just in the centre of the weighing pan. The span will automatically be adjusted exactly.



(6) When the calibration is completed, the display will return to the measurment mode.



** The span calibration is available with a reference weight of over 1/2 of the scale capacity. Nevertheless, we recommend to use F.S.

TROUBLESHOOTINGS

SYMPTOMS	CAUSES & REMEDY	
Display is unstable.	* Affected by a wind or oscillation. Check location and response speed. * The installation base is unstable. Check the base. * Weighing pan or tare touches something. Check.	
Erroneous value reads in display	* Wrong taring operation. See page 7. * Scale is not level. See level, page 5. * The weighing pan or the tare touches something. * The span has changed by relocation or after long time lapse. Calibrate the scale referring to page 10.	
Wrong linearity	* Characteristics have changed, or mechanism adjustment has changed by some reason. Contact shipper.	
No display	* Adaptor is not connected, or the ON/OFF switch is turned to OFF. * Battery has been consumed (with battery option). Connect the adaptor, charge the battery. * Power has been turned off automatically by auto-power off fucntion (with battery option). Hit ON/OFF.	
Unavailable weighing upto the capacity.	* Gross weight of the load exceeds scale capacity. Weighing range = Full capacity - Tare value	
b-Err	* Electronic error, by a static electricity or noise. Contact the shipper.	
L-Err	* In counting, the unit weight of samples is too light for the scale division. Countable unit weight is the readability of the scale or over.	
o-Err	* The load exceeds the capacity of the scale. * The tare is too heavy.	
u-Err	* Something contacts the weighing pan to lift it.	
1-Err	* In span calibration	Reference weight is less than 1/2FS.
2-Err		Error exceeds 1%.