GRAM

SERIES
FC
100 / 200 / 2000 / 5000

EN

CE

OPERATION MANUAL

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ENGLISH

SAFETY INFORMATION

To avoid unnecessary demage to the balance, please pay attention to the following tips:

- Please do not use this balance in dangerous área.

- Please turn off the power of the balance before connect it or disconnect it with other facilities.

- If the environment requires a higher safety standard, please follow the relevant installation instructions.

- Excessive electromagnetic interference will make the displayed value in this balance change. Once the interference is dismissed, the balance could operate in normal way.

- Please avoid any liquid on the surface of the balance. A piece of lightly damp cloth is allowed to wipe the balance.

INSTALLATION

- Please make sure the local voltage is in line with the rated voltage on the name board

- Please pay special attention when use RS-232 as the pins location might be incompatible with our facilities. Please check the pins locations before the connection and turn off the connection of different configuration.

- If the facility or the power cord has apparent damage, please turn off the power, put it or them in a safe place and do not use it or them before they are fixed.

- This balance could only be connected to our accessories or optional fittings. We are not responsible for any modification the operator makes to our balance, including using the facilities and cable which are not supplied by us. However, we are always ready to offer the operation norms information.

- If the balance does not work well, please contact your local distributor or our customer service center.

PREPARATORY BEFORE USING

STORAGE

This balance requires an environment which is free from excessive high or low temperature, corrosive, vibration, air current and collision.

UNFOLDING THE PACKAGE

- Unfold the package and check if there is any outer damage of the balance.

- If there is outer damage, please refer to section routain maintenance and troubleshooting

- Please keep all the package for possible transportation in the future. When pack the balance, please remove all the cables to avoid unnecessary damagre.

PACKAGE LIST

- The balance.

- Weighing pan.

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- Pan support.

- Power adapter.

- User manual.

INSTALLATION OF THE BALANCE

Put it in a proper place, please avoid the following situations:

- Much heat and direct sunlight.

- Air currents and vibrations.

- Excessive moisture.

Usage Conditions

Please do not lay the balance in a quite damp palce for a long time. If the balance is transferred from a lower temperature environment to a higher temperature environment, please lay it there with power off foraround 2 hours.
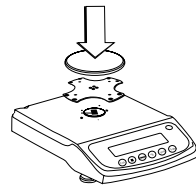
Install the balance with wind shield

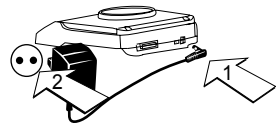- Assemble the parts in the indicated order.
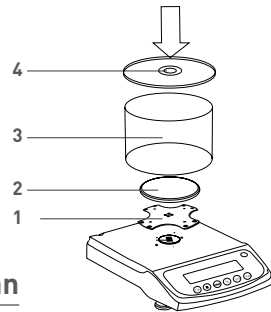
Install the balance with round weighing pan

- Installation Sequence.

- Pan support.

Connect the Power Adapter

- Connect the power adapter to the balance.

- Connect the power adapter to the power socket.

Install the External Facilities

Turn off the balance before connect it or disconnectit with external facilities such as the printer or the computer).

Warm-up Time

To assure the measure accuracy, the balance must be warmed up for 30 minutes before normal operation.

Adjust the Level GaugePurpose:

- Adjust the level guage of the balance. The level guage needs to be adjusted once its place is changed.The two front bottom bolts are used to adjust the level guage.

- Spin the two bolts as shown in the figure until the bubble in the level gauge is in the ceter of the circle.

- Normally, it needs to be adjusted repeatedly.
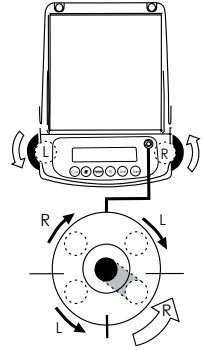
DISPLAY AND KEYS DESCRIPTION
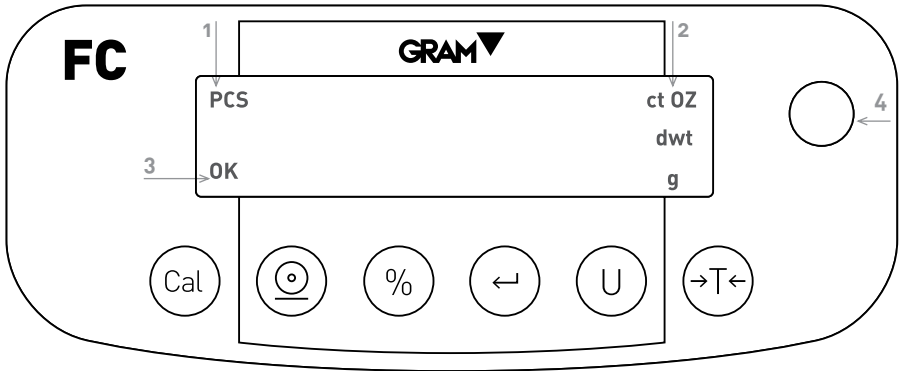
1. Count sign.
2. Weighing units.
3. Stability sign.
4. Level gauge.

OK -   Reading shown is stable.

g -   Reading shown is given in grams.

OZ -   Reading shown is given in ounces (1g = 0.03527396200 oz).

ct -   Reading shown is given in carats (1g = 5.0000000000 ct).

dwt -   Reading shown is given in pennyweight (1g = 0.64301493100dwt)

% -   Reading shown is given in percent weight.

PCS -   Reading shown is given in as a counting.

-------   The balance is developing a stable reading.

UNABLE - Error operation.

HHHHH -   The weight on the pan excedes the capacity of the balance.

LLLLLL – The pan is not properly seated or has been removed.

(Cal)   Calibration / Adjustment key

(◎)   Print / Output key

(%)   Percentage key

(↵)   Count / Function confirmation key

(U)   Unit conversion key

(→T←)   Touche Fonction Tare

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POWER ON / POWER OFF THE BALANCE

Procedure

1. Press the (→T←) key to power on the balance.

2. Press and hold the (→T←) for 5 seconds to power off.

TARE FUNCTION

Procedure

1. Put a container on the weighing pan.

2. Press the (→T←) key, the balance will auto tare.

3. Put the object you want to weigh into the container, the balance will display the weight of the object.

COUNTING MODE

Procedure

1. To choose the reference object's quantity, press the (↵) key and then the (U) key.

2. Put the empty container on the weighing pan and press the (→T←) to substract his weight.

3. Press the (↵) key, the display will show ˝10˝, then press the (U) key, the reference quantity will change to ˝20, 50,.......1000 pièces˝.

4. Press the (↵) key to confirm the selected reference quantity.

5. Press the (↵) for 3 seconds, the reference quantity will flicker, put the same quantity objects into the container and then press again the (↵) key. The reference quantity will be stable, the balance enters into count mode.

6. Put the rest of objects into the container, the balance will display the total quantity.

7. Take off the objects, you can repeat this action to count another objects.

8. To finish and come back to normal weighing mode, press the (↵) key.

PERCENTAGE MODE

Procedure

1. Press the (%) key to 3 seconds. The message "100%" will flicker on the display.

2. Put the reference object on the weighing pan and then press the (%) key again.

3. The "100%" message will be stable, the balance enters into percentage mode.

4. Take off the reference object, the balance displays "0%", then put the compare object on the weighing pan.

5. The display will show the percent value relative to the reference weight object.

6. To return to normal weighing mode press the (%) key.

WEIGHING UNITS

Procedure

Press the key (U) to select the desired unit weight (g, oz, dwt).

CALIBRATION

Procedure

To decide the accuracy of the balance through test the difference between thereading and the actual weight of the object on the weighing pan.

1. Adjust the level bubble and warm the balance for 30 minutes.

2. Ensure no object on the pan.

3. Press the (Cal) for 5 seconds, the display will show ˝cal -----˝ and then the calibration value.

4. According to the calibration value on the display, put the same weight on the pan, the balance will display the weight, the calibration is over.

USER SETUPS

Procedure

Press the (Cal) and (→T←) keys together for 5 seconds to enter into Code Setting State.

Under Setting State the function of keys are as follows:

- Key (Cal) to save the current parameter and enter into the next parameter setup.

- Key (◎) to move to left.

- Key (%) to move to right.

- Key (↵) pressed for several seconds to enter into linearity calibration state.

- Key (↵) to decrease the value.

- Key (U) to increase the value.

PARAMETERS

No	FUNCTION CODE	DISPLAY SYMBOL	DESCRIPTION	SETTING RANGE
1	C00800	Zero-x.x	Zero range	0.0d to 6.0d
2	C00800	Stdy-x.x	Sensibility	0.0d to 6.0d
3	C00800	Sens—X	Internal sensitivity	1,2,3,4,5,6
4	C00800	Filt – X	Filtration Parameter	1,2,3,4,5,6,7 1 is the weakest 7 is the strongest
5	C00800	Speedx	Weighing speed mode	1-basse 1-Low-speed 2-Medium speed 3-Fast speed
6	C00801	LED—X	Display LED brightness	1,2,3, P1,P2,P3
7		BL – X	LCD back light display mode	On, Off, Auto
8		SLEEP	Enter into power saving mode	0 – 9
9		POST	Power-on self-inspection mode	0, 1

10		**BEP**	Buzzer switch	On, Off
11	**C00802**	**Baudxx**	Baud rate	12:1200
12	**C00802**	**Con---xxx**	Communication mode	KEY: PRT key CON: continuous Sty: communication when stable
13	**C01688**	**FLEXxx**	Sensor flexibility compensation, for compensating weighing deviation when the balance is unload	-5 to 5
14	**C01688**	**CrEEP-x**	Sensor creep rating	0, 1, 2, 3, 4, 5
15	**C01688**	**TCrEEPx**	Weight compensation or creep tracking time	0 – 9 seconds
16	**C01688**	**RetZ ---x**	Weight compensation or creep tracking time	0: not back to 0 1 – 9: means speed to back to 0, larger number, faster speed to 0
17	**C01688**	**SSENS-x**	Steady state adjustment factor (generally no need to adjust)	0 – 9. Setting to 0 means canceling this function
18	**C01688**	**SFILT-x**	Steady state filtration parameter	0 – 5. Setting to 0 means cancelling this function
19	**C01688**	**TFILt-x**	Steady state filtration extended time	0 – 60. Setting to 0 means cancelling this function
20	**C01688**	**Trckxxx**	Long-term weight tracking is allowed or not (only HZY has)	0, 1
21		**rEdrSxx**	Compensation way (Remarks: it is not whole point compensation switch)	Only indicates compensation way, it is not the switch if the compensation is on or off
22		**rEdInt**	Whole point compensation enabled or not	0: forbidden 1: enabled

23		**rEdrEP**	Repeatability compensation intensity, larger value with stronger compensation	0 – 9. Setting to 0 means canceling this function
24		**rEdrNxx**	Largest range for whole point or repeatability compensation	0d – 20d

COMMUNICATION WITH A COMPUTER

The balance keyboard functions can be accessed via the RS-232 interface. The following commands are available:

U – (U) **:** Units conversion.

T – (→T←) **:** Tare function.

C – (Cal) **:** Calibration with external standard weight.

P – (◎) **:** Print function.

% - (%) **:** Percent function.

 # - (↵) **:** Instant print.

M – (↵) **:** Counting function.

When a balance is connected to a computer, it is suggested that immediate print # be used. In response to this command the balance will transm it whatever number or message appears on the balance display.

The string format output is shown below:

A B C D E F G H I J K L M

A - +/- : Signs field, usually no display as a space when it is a positive number, - is displayed when it is a negative number.

B – G: Number and decimal field, spaces are used when there are less than six digits.

H – I: Spaces fields.

J: Unit field, it describes the units of the number being transmitted. Your balance will transmit G for grams, O for ounces and C for carats.

K: Stable carácter, it corresponds to the OK indicator on the display. S means the reading is stable, space means the reading is not stable.

L: Return character.

M: Line feeds character, it indicates the line feeds.

RS-232 INTERFACE HARDWARE

This balance adopts the transmit and receive lines of standard RS-232.

The data format is:
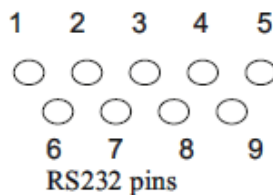> 1 start bit.
> 8 data bits include parity.
> 1 stop bit.

The instruction to connect the balance to external device is as follows:

RS232 pins

PIN DESCRIPTION

2 – TXD - - - Scale transmits data.
3 – RXD - - - Scale receives data.
5 – GRD - - - Signal ground.

Notice: "Handshake" signals, such as "clear to send" (CTS) are not used. The peripheral must have a mínimum buffer (15 characters).

It is suggested that the máximum recommended cable lenght is 15 meters, the load impedance of the device connected should be between 3000 and 7000 ohms with no more than 2500 pf shunt capacitance.

ROUTINE MAINTENANCE AND TROUBLESHOOTING

Troubleshooting

Only the trained professionals are allowed to do repair work. There is a risk for the user if non-professionals do the repair.

Clearance

• Turn off the balance and unplug the data cables.

• Avoid the liquid into the balance.

• Any corrosive cleaner (solvent) is forbidden to use.

• Wipe the balance with a piece of soft cloth.

• Remove the weighing pan before wipe the balance.

• Remove the shield ring and pan support with the weighing pan which helps avoid damage to the weighing system.

Clearing the stainless steel surface

All the stainless Steel components need to clean regularly. Remove the weighing pan and thoroughl clean it with a damp cloth or sponge. The cleaner applicable to stainless Steel are recommended. Wipe the stainless Steel surface of the balance first and then clear the stainless Steel weighing pan. Make sure there is no dirt and then wipe the stainless Steel component again. Dry the balance by air. If necessary, smear the proper oil on the surface as additional protection.

Note: After remove the weighing pan and the pan support, avoid any liquid or solid pellet into the installation hole.

Safety check

If the balance could not work normally:

• Cut off the power immediatelly, keep and do not use it again.

• Keep it in a safe place to make sure it won´t be used for the moment.

• Inform the nearest Service Center or your Distributor. The repairman must have had profesional training.

TROUBLESHOOTING

DISPLAY	REASON	SOLUTION
- - - - - -	The balance could not get a stable reading or the transducer is damaged.	Contact your local service center.

HHHHH	The real weight is 5% higher than its capacity or the transducer is damaged.	Unload or contact your local service center.
LLLLLLL	a) The weighing pan is not on. b) There is wrong connect with the pan. c) The transducer is damaged.	a) Install the right weighing pan and press the →T← key. b) Clear the connect. c) Contact your local service center.
NOCAL	Calibration is unresponsive.	Refer to calibration section, check if it is the right calibration weight.
UNABLE	Lack of data or wrong data with which the balance could not perform the function.	Refer to user manual.
UNSTABLE READING	Unstable the ambient environment (excessive vibration or air current) or there is wrong connect with the pan.	Put the balance in another place. Clear the wrong connect.
NO DISPLAY	No work voltage no connection with transformer.	Check the power supply circuit and the instrument, connect the transformer.

Apparent wrong weighing display	No calibration or the tare weight is deducted.	Calibrate the balance Deduct the tare weight before weighing.

If there is any other trouble, please contact your local distributor or service center.

TECHNICAL CONDITIONS

AC-DC adapter

Input: 220V/110V, **output:** 7.5V (+15% to -20%) 48-60Hz

Power consumption: Maximam=16W, Average=8W

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GUARANTEE

This scale is guaranteed for one year from the delivery date. The guarantee covers any fabrication defect of the material.

During this period **GRAM PRECISION, SL,** covers the manpower and the spare parts necessary for the reparation of the scale.

This guarantee does not cover the failures caused by an inappropriate use or overcharge.

The guarantee does not cover the freight cost (transport) necessary to repair the scale.

NOTES

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