Symmetry PL Series
Precision Toploading Balances
USER MANUAL

CONTENTS

1.0 INTRODUCTION

- The OEM Weighing scales are supplied with a power supply adapter, to charge the internal rechargeable battery operation.

- Four models: 3kg X 0.1g, 6kg X0.2g, 15kg X 0.5g, 30kg X 1g

- Large LCD with backlight

- 5 weighing units: g, kg, lb, oz, and a user set custom unit

- Indicators for Stable, zero, net weight, and low battery functions

- Stainless steel pan with ABS case and pan support

- Sealed Membrane keypad

- Overload Protection

- Spirit level and leveling feet

- Auto calibration, zero tracking and tare

2.0   SPECIFICATIONS

Model	Weighing 3kg x 0.1g	Weighing 6kg x 0.2g	Weighing 15kg x 0.5g	Weighing 30kg x 1g
capacity	3Kg	6Kg	15Kg	30Kg
Readability	0.1g	0.2g	0.5g	1g
Repeatability	0.1g	0.2g	0.5g	1g
Linearity ±	0.2g	0.4g	1g	2g
Units	kg / g / lb / oz / custom unit			
Stabilization time	2s	2s	2s	2s
Operating temperature	0ºC to 40ºC 32ºF to 104ºF			
Power supply	12VDC @ 800mA adapter 6V4.5Ah rechargeable battery			
Calibration	External calibration			
Calibration Weights	1kg,2kg,3kg 2lb/4lb/6lb	2kg,4kg,6kg 4lb/8lb/12lb	4kg,8kg,15Kg 10lb/20lb/25lb	10kg,20kg,30kg 20lb/40lb/60lb
Display	6 digits 24mm LCD			

3.0   SAFETY PRECAUTIONS

Caution:

Please use only the original DC adapter supplied with the scale. Other cords or adapters may damage the scale.

Notice:

- Avoid extremes of temperature. Do not place in direct sunlight or near air conditioning vents.
- Battery should be removed if the scale is not used for a long period of time.
- Do not stack material on the scale when it is not in use.
- Avoid high humidity that might cause condensation, and keep away from direct contact with water.
- Static may influence the weighing result. To reduce the static wipe the pan and the scale with anti-static wipes.
- When the battery is lower than 5.7v, the battery symbol 🔋 will show to indicate the low battery; when it is lower than 5.4v, the scale will turn off automatically.

4.0   SET UP

4.1   *ASSEMBLING OF SCALE*

- Put the scale on a stable and even table.
- Adjust the height of the feet to level the scale; the spirit level bubble should be in the center of the spirit level.
- Put the pan support in place, inserting the pan support pins into the holes on top of the scale. Place the stainless steel pan on the support.
- Don't press the scale with great force or the load cell could be damaged.

4.2   *ASSEMBLING OF BATTERY AND POWER*

In some cases the rechargeable battery must be shipped separate from the scale.   In this case the user must install the battery.

Remove the battery cover under the scale and put the 6v 4Ah rechargeable battery provided in to the battery compartment. Connect the battery to the cable paying attention to the polarity. The red connector goes to the (+) positive terminal on the battery, the black connector goes to the (-) negative terminal on the battery.

The adapter provided with the scale is used to charge the battery. Make certain the adapter matches the voltage of the location you are using the scale in.

5.0   WEIGHING

5.1 BEFORE WEIGHING

Check the setting of the auto shut off function, see section 6.2. If the auto shut off function is on, the scale will shut off after a period of time if the scale is not used and it has a stable reading.

5.2   WEIGHING

- **Press [On/Off] to turn on the scale.** The display will show the software revision then show the battery voltage **"X.X vol"** .Then it will begin it's self-checking test from 0 to 9. When reading is stable, the display will show **"0.00"**, stable symbol, zero symbol, and the weighing unit used the last time the scale was used.

- **Press [Units/↓] to select units.** Press **[Units/↓]** to select units from "g" / "Kg" / "lb" / "oz"/"CUS". Only the weighing units enabled will be displayed, See section 6.9.

- Check if the reading is **"0.00"**, if not, press **[Zero/ᴇsᴄ]**. **"0.00"** and the zero symbol will be displayed.

- Put the item to be weighed on the pan. When the reading is stable, the net weight will be shown.

If a container is used, put the container on the pan and press the **[Tare/↵]** key when the reading is stable. The display will show **"0.00"** and the zero symbol. If the container is more than 2% of the capacity, the NET symbol will be on. Load the container or remove material from the container, the scale will show the net weight of the material added or removed.

5.3   USER FUNCTIONS

The parts counting, percent weighing and calibration functions can be accessed using the **[Func/→]** key, if the functions have been enabled as described in section 6.0.

If the function is turned off the function will not be available. Only functions that have been turned on can be accessed.

5.3.1 PARTS COUNTING FUNCTION

- In normal weighing mode, press **[Func/→]** key to move to the first available function, usually the parts counting mode.
- The display will show **"PC—10pcs"**, press the **[Hold/↑]** key to go through the preset sample piece values of 10, 25, 50 or 100 pieces. For example if you selected PC-25pcs, hand count out 25 pieces and put them on the scale.
- Press the **[Tare/↵]** key once the stability indicator comes on to confirm the entered value. The display will show the number of pieces placed on the pan.
- If more items are put on the pan, the increased count value will be shown.
- Press **[Zero/ᴇsᴄ]** to exit and go back to the normal weighing mode.

5.3.2 PERCENTAGE WEIGHING

- In the weighing mode, press **[Func/→]** key twice to access the percentage weighing mode, the display will show **"PEr".**
- Press the **[Tare/↵]** **key** to set the reference sample value, the display will show **"SEt".**
- Place the item to be set at 100% on the pan, and press the **[Tare/↵]** Key when the stability indicator comes on.

- The display will show **"100.0%"**.

- When another item with a different weight value is put on the pan, the relative % value would be shown against the initial reference sample value.

- Press the **[Zero/ᴇsᴄ]** key to exit and go back to weighing mode.

5.3.3 CHECK WEIGHING

- When in normal mode, press **[Func/→]** three times to move to the check weighing mode.

- The display will show **"CHECK"**.

- Press **[Tare/↵]** to set the high limits. The display will show the **"000000 HI"** with one digit flashing.

- Press **[Hold/↑]** to increase the flashing digits;

- Press **[Units/↓]** to decrease the flashing digits;

- Press **[Func/→]** to select the digit;

- Press **[Tare/↵]** to accept the value and move to set the low limits. The display will show **"000000 Lo"**

- Use the same method the set the low limits and press **[Tare/↵] to** enter the buzzer setting section,

- Press **[Hold/↑]** to change the display to **"H-L"** or **"- - 0 - - "** or **"OFF"** to have beeper sound when the weight is outside the limits, between the limits or off.

- Press **[Tare/↵]** to start the check weighing.

- Put the item on the pan, if the weight is below the low limits, the scale will show **"xxxxx.x Lo"**; if it is higher than high limits, the scale will show **"xxxxx.x HI"**. Otherwise the scale will show **"xxxxx.x OK"**。

- Press the **[Tare/↵]** key to exit and go back to weighing mode.

5.3.4 HOLD FUNCTION

- When in weighing mode, press **[Func/→]** four times until the display shows **"5 HOD"**
- Press the **[Hold/↑]** key to go through the holding time of 5、10、20、30, AUTO or Manual.
- If AUTO is selected the weight will be automatically held (locked on the display) when stable until the **[Hold/↑]** key is pressed. If a numeric value is selected the weight will be held only when the **[Hold/↑]** key is pressed and it will be held for the number of seconds selected.
- For example if you selected 5, the display will lock for 5 seconds after the **[Hold/↑]** key is pressed. If you selected AUTO, the scale will lock when stable and hold the value until you press the **[Hold/↑]** key.
- If Manual is selected the **[Hold/↑]** key will toggle the display to hold or release the value when it is pressed.
- Press **[Tare/↵]** to confirm the value and start hold weighing function.

5.3.5 CALIBRATION

- Refer to section 7 for details

6.0   FUNCTION SETTING

6.1 ENTERING THE FUNCTION SETTING MODE

- Press **[On/Off]** to shut off the power.
- Hold **[Func/→]** and press **[On/Off]** to turn the scale on.
- Continue to press the **[Func/→]** key until the auto shut off mode function is shown.
- The display will show **"OFF PWR"** or **"x PWR"** (x is the number of minutes before the scale would shut off automatically if it has remained unused for the set amount of time).

6.2 SETTING OF AUTO SHUT OFF FUNCTION

- Press **[Hold/↑]** to change the setting of the function.
- **"OFF PWR"** means that the function is disabled.
- **"x PWR"** means that the auto off function is on. The number is the time in minutes before the scale will shut off automatically.
- To continue to other function settings, press **[Tare/↵]** to confirm the current setting and show the next mode.
- The display will then show **"OFF bL"**, **"On bL"**, or **"AuTo bL"** these are the backlight function settings.

6.3 BACKLIGHT SETTING MODE
- Press the **[Hold/↑]** key to change the state of backlight.
- **"OFF BL"**: the backlight is off all the time.
- **"AuTo bL"**: auto backlight, backlight will come on if the display moves off of zero.
- **"On bL"**: backlight will be on all the time.
- Press **[Tare/↵]** to confirm and move to the next setting. When you enter Hold function mode, it will show "**On   HOD** " or "**OFF   HOD**" .

6.4 HOLD FUNCTION MODE

- Press **[Hold/↑]** to change the state of the function.
- **" OFF HOD "** : Hold function is off all the time and not available to the user to set as in section 5.3.4.
- **" ON HOD"**: Hold function is enabled.
- Press **[Tare/↵]** to confirm and move to the next setting. When you enter parts counting function, it will show **"On   PCS "** or **"OFF   PCS "**.

6.5 PARTS COUNTING FUNCTION

- Press **[Hold/↑]** to switch on or off the part counting function.
- "**OFF   PCS**" :part counting function is off.
- "**ON   PCS**" : part counting function is enabled.
- Press the **[Tare/↵]** key to confirm the setting and move to the next setting. It would enter the percentage weighing when it shows "**On PEr** " or "**OFF   PEr**".

6.6 PERCENTAGE WEIGHING FUNCTION

- Press **[Hold/↑]** key to switch on or off this function.
- **"OFF PEr "**: percentage function is off.
- **"ON PEr"**: percentage function is enabled.
- Press the **[Tare/↵]** key to confirm the setting and move to the next setting. It enters the check weighing when it displays **"On   CHE"** or **"OFF CHE".**

6.7 CHECK WEIGHING FUNCTION

- Press **[Hold/↑]** to switch on or off this function.
- **" OFF CHE "** : check weighing function is off.
- **" ON CHE"** : check weighing function is enabled.

- Press the **[Tare/↵]** key to confirm and move to the next setting. It enters the calibration mode when is shows **"On   CAL"** or **"OFF CAL"**.

6.8 USER CALIBRATION FUNCTION

- Press **[Hold/↑]**to switch on or off the function.
- **"OFF   CAL"**: the user calibration function is off.
- **"ON   CAL"**: the user calibration function is enabled.
- Press the **[Tare/↵]** key to confirm the setting and enter the next setting. It enters unit setting when it shows "**On   g** " or "**OFF   g**".

6.9 SELECTION OF WEIGHING UNITS

Each weighing unit can be set to be either on or off. If it is on it is available when the user presses the **[Units/↓]** key during normal weighing. If it is off the weighing unit is not available during normal use. The grams unit is always on.

- Press the **[Hold/↑]** key to change the unit from on to off.
- On: the unit is enabled.
- Off: the unit is disabled.
- The units will be in the following sequence: "g"/ "Kg" / "lb" / "oz"/"CUS".
- If the custom unit "CUS" is enabled, press **[Tare/↵]** to confirm the setting and go on to set the relation between g and customer unit. The value can be set from 0.00001 to 9.99999.
- Press **[Func/→]** to select the flashing digit;
- Press **[Units/↓]** to decrease the value;
- Press **[Hold/↑]** to increase the value;
- Press the **[Tare/↵]** key to confirm and move back to the first setting.

Turn the scale off and on again to enter the normal weighing mode and save the changes make.

7.0   CALIBRATION

- Calibration is recommended for best accuracy. It is suggested that the scale be calibrated when first installed and any time the scale is moved to a different environment.
- To ensure best accuracy calibrate before use.
- Ensure weights are ready before calibrating, the weight should be of a known accuracy, for example OIML class M1 or Class 4 of ASTM E617.
- Do not calibrate the scale if a proper calibration weight is not available.
- Calibration can only be accessed if the Calibration function has been enabled as described in section 6.0.

7.1   *AUTOMATIC EXTERNAL CALIBRATION*

- In the weighing mode, press the **[Func/→]** key to access calibration mode. The display will show **"CAL"**.
- Press the **[Tare/↵]** key, an access code (Pin code) is required to continue, The display will show **"Pin"** .
- Press the **[Func/→]** key then **[Units/↓]** key then **[Tare/↵]** key, and then press **[Zero/ᴇsᴄ]** key to confirm the pin code.
- The display will show the weighing unit last used to calibrate the scale, **"S-Unit kg"**(or **"S-Unit Lb"**) ,press the **[Hold/↑]** key to change to lb's or kg's for the calibration weighing unit value.
- Press the **[Tare/↵]** key to start the zero calibration. The display will show **"CAL 0"** and when the stable symbol is displayed press the **[Tare/↵]** key to confirm.
- The display will now show the calibration mass expected. **"CAL XX Kg "** (or **"CAL XX Lb "**) .Press the **[Hold/↑]** key to change the calibration values if necessary. Each model has 3 different kg and lb calibration selection values.

Calibration selectable values for all model:

Weighing 3kg x 0.1g	Weighing 6kg x 0.2g	Weighing 15kg x 0.5g	Weighing 30kg x 1g
1Kg/2kg/3kg	2Kg/4kg/6kg	5Kg/10kg/15kg	10Kg/20kg/30kg
2lb/4lb/6lb	4lb/8lb/12lb	10lb/20lb/25lb	20lb/40lb/60lb

- Press the **[Tare/↵]** key**,** the display will show **"Load"** then add the selected calibration mass value to the pan.
- After the calibration mass is added, wait for the stable symbol to come on and then press the **[Tare/↵]** key, the display will show "**PASS**", and then return to normal weighing after 3 seconds.

- If it is outside of the previous calibration value by more than 5% ,it will show **"FAIL L"** or **"FAIL H"** indicating the new calibration weight was too low(FAIL L) or too high (FAIL H) in respect to the previous calibration value.

8.0 ERROR MESSAGE

---ADO	A/D counts are too high
---ADL	A/D counts are too low
--ERR-	Wrong operation
------	Overload 9d
Unit-E	All the units are disabled
🔋	Low battery indication

C E

Manufacturer's Declaration of Conformity
This product has been manufactured in accordance with the harmonised European
standards, following the provisions of the below stated directives:
Electro Magnetic Compatibility Directive 2004/108/EC

Low Voltage Directive 2006/95/EC

FCC COMPLIANCE

This equipment has been tested and found to comply with the limits for a Class A digital device,
pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection
against harmful interference when the equipment is operated in a commercial environment. The
equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in
accordance with the instruction manual, may cause harmful interference to radio communications.
Operation of this equipment in a residential area is likely to cause harmful interference in which case
the user will be required to correct the interference at his own expense.

Shielded interconnect cables must be employed with this equipment to insure compliance with the
pertinent RF emission limits governing this device.

Changes or modifications not expressly approved by the manufacturer could void the user's authority
to operate the equipment.

WEEE COMPLIANCE

**Sealed Lead Acid
Battery
Must be recycled
Properly**

PB

Any Electrical or Electronic Equipment (EEE) component or assembly of parts intended to be
incorporated into EEE devices as defined by European Directive 2002/95/EEC must be recycled or
disposed using techniques that do not introduce hazardous substances harmful to our health or the
environment as listed in Directive 2002/95/EC or amending legislation. Battery disposal in Landfill Sites
is more regulated since July 2002 by regulation 9 of the Landfill (England and Wales) Regulations 2002
and Hazardous Waste Regulations 2005. Battery recycling has become topical and the Waste Electrical
and Electronic Equipment (WEEE) Regulations are set to impose targets for recycling.