FEATURES AND SPECIFICATIONS

Model	WS6-3	WS6-7.5	WS6-15	WS6-30
Capacity (Kg)	3	7.5	15	30
Division (Kg)	0.0002	0.0005	0.001	0.002
Display Resolution	1/15000 (internal resolution 1/300,000)			
Calibration weight	User defined			
Pan size	Rectangular 300 x 225mm S/S			
Selectable Units	Kg, lb, pcs			
Power Source	110v/240vAC or 6V DC rechargeable battery 20 – 30hrs operation			
Overall size	300 x 330 x 110mm			
Display Type	3 x LCD displays18mm high			
Calibration	Simple calibration using front panel controls and a calibration weight (not supplied) (sell them one)			
Protection	Double overload protection			
Counting	10 preset unit weights, totalising up to 99 times,			
Hi Limits	Quantity or weight preset			
Unit weight	Auto recalibration if unit weights exceed 10% of last calculated			
RS232	RS232 interface or Serial printer output option			
Display Back light	Standard			
Tare	100%			
Tare Adding	Yes			
Tare Subtraction	Yes			

<u>**FEATURES – WHAT THEY DO AND HOW THEY WORK**</u>

WHAT IS IT

This is a counting scale that can also act as a basic weighing scale, although it is more accurate than most basic weighing scales. This model uses a basis resolution of 1: 15000.

SITING THE SCALE

Locate the counting scale on a firm stable bench. Avoid area of vibration or winds. Make sure the Counting Scale is level, use the adjusting feet to bring the level bubble inside the inner ring.

POWER

The unit is dual powered, it can be operated on its internal rechargeable battery or operated from the mains Recharging the battery is done simply by plugging into the mains.   A fully charged battery will last 20 – 30 hours before auto shut off to save the battery. The scale has a charging lights and a low battery symbol warning on screen

COUNTING

This is a basic function of the Counting Scale. The unit can count using a known piece weight or can work out a piece weight by knowing how many pieces are on the scale. The weight of any container can be cancelled by placing the empty container on the scale pan and pressing the TARE key.   The weight display will then show 0.000 and a minus value when the container in removed from the pan.

UNIT WEIGHT CALCULATION

Place a known number of pieces (10 – 15 is usually enough) on the pan. Key in the number on the pan and

press the SAMPLE key   .   You have about 4 seconds to do this once the number has been keyed in.

Once the display stabilises it will show the total weight, unit weight and quantity.   Now add the rest of the pieces for a final count. Read the section on Auto Unit Weight Calibration to enhance the count accuracy.

ENTER PRE-DETERMINED UNIT WEIGHT

The unit weight can be entered directly. Simply key in the unit weight and press the UNIT WEIGHT key

 . Now add the pieces to be counted and read the quantity.

AUTO UNIT WEIGHT CALIBRATION

This unit has an option of Auto Unit Weight Calibration. When enabled this allows the unit to fine tune the unit weight as additional pieces are added to the pan. Once the initial unit weight has been determined add a further small quantity, say around 10 and wait. The unit will recalculate the unit weight and give a beep. This feature is excellent where there are some variations in individual piece weights.   No beep after a few seconds means no change was required.

SAVE AND CALL UP A UNIT WEIGHT OR QUANTITY AS A PRESET

Simple

With the both the QTY and UNIT WEIGHT displays showing Zero, Pressing either the Unit Weight or QTY key will recall the last piece weight.

Pre-set Memory

Up to 10 Unit or Piece weights can be stored to memory. With the displays reading Zero, key in the unit weight and Press the PRESET UNIT WEIGHT [U.W. PST] key. Press the PRESET UNIT WEIGHT key again and press any number 0 ~ 9 to save the unit weight in its store.

The Preset unit weight can be recalled by pressing the PRESET UNIT WEIGHT key followed by the appropriate 0 ~ 9 key.

ACCUMULATING TO MEMORY

Quantities can be accumulated to memory up to 99 times before the memory needs to be cleared. In counting mode and with a unit weight set, place the quantity of product on the scale and press the M+ [key]

key. The scale will add accumulate the weight, quantity and number of accumulations.   The scale will also accumulate weight, In simple weighing mode place the product on the scale and press the M+ key. As no unit weight has been set the scale will accumulate the weight and number of accumulations. T

With both the weight and unit weight reading zero the memory can be recalled by pressing the M+ key.

The totals can be cleared either by pressing the MEMORY CLEAR [key] key or switching the scale off.

SETTING A HI LIMIT

Both a quantity and a unit weight limit can be set. When the scale reaches the limit set the scale gives a warning beep and 9ᴸᵞ or ᵁᴾ5ᴸ will blink in the display window.   Quantity limit is set by pressing the QTY PRESET key [⊘] , entering the required quantity, press the SAMPLE key and then press the QTY PRESET key to return to counting mode. The Unit Weight limit is set by pressing the QTY PRESET key, enter the unit weight complete with decimal points, press the UNIT WEIGHT key followed by the QTY PRESET key to return to counting mode. Both limits can be cleared by entering 0 as either the Qty or as Unit Weight in the appropriate field.

Setting and clearing preset limits can be done with or without an object on the pan.

SIMPLE WEIGHING

Use the CE key to set the scale to weighing mode or clear unit weights. The scale then functions as a standard weighing scale.

AUTO POWER OFF

When running on battery only, the scale will automatically switch off after a period of non use. It will also switch off when the battery voltage falls too low in order to protect the battery from excessive discharge.

TARE

This function is used to subtract the weight of container or to subtract the weigh of product already on the pan. When the weight or count is stable press the tare key. The display will show 0.000 (decimal places depend on the model). Tare can be used either in Qty or weighing mode. Clear the tare by emptying the pan and pressing the Tare key.

PRE-SET TARE (THE WEIGHT OF THE CONTAINER IS KNOWN)

The known weight of the container can be directly entered. This is useful to prevent having to first empty the container.   With nothing on the pan press the TARE key, key in the weight of the container and press the TARE key again. This Tare can be cleared by emptying the pan and pressing the TARE key. Note: the scale can be set to allow a preset tare with items on the scale pan. This is a user mode function.

TARE ADDING

A useful function often used to make up a recipe of ingredients. Here each ingredient is added to the pan/container to the required weight. Once at the required weight and the weight is stable press the tare button to zero the weight reading. Repeat the process with each ingredient in turn.

TARE SUBTRACTION

This works in a similar way to Tare Adding except the product is being removed from the container in sub amounts. For example the operator may need to take out eight lots of 10g of product from a bulk container of a greater amount. This function aids the measuring process.

RS232

This unit can be fitted with an optional RS232 comms board to connect to either a PC or a printer.

SIMPLE CALIBRATION

This Counting Scale can be simply calibrated by the customer using a suitably accurate weight and the front panel controls. There is no need to open up the Counting Scale to access calibration locks. This calibration is a single point calibration and assumes the linearity, Gravity value, and temperature calibration are OK. The Counting Scale should be On, level and warmed up before this process.   To activate press and hold the **decimal point** key followed by the **unit weight preset** until the Counting Scale flashes the required calibration weight.

COUNTING ACCURACY

All counting scales use the same principles of achieving counting accuracy.   The best counting accuracy is a function of an accurate unit weight. This is either established on a precision balance or by the counting scale itself. The larger the sample size the more accurate the unit weight is a basic precept of all counting scales. As minimum the sample should be at least ten and at least one scale division. Another important consideration is the amount the unit weight varies between individual pieces. Variations of more than 0.25 Unit weight will be unlikely to produce accurate counts. However utilising the auto unit weight calibration

function will refine the unit weight and largely negate the unit weight variations.

It is important to select the smallest capacity counting scale that will do the job. This is especially important when the product being counted has a low unit weight. It is unreasonable to expect accurate counts from a 30kg capacity scale when the product unit weight is much less than a scale division. Better to use a lower capacity scale with a lower resolution.

HOW DOES IT PERFORM

Very well. It is not a high end machine but it is a strong performer and is among the top group within its price class. I tested a 15kg x 1g machine taken from the store at random.   Repeatability was very good as was accuracy. I tested counting using M4 x 10mm machine screws with a unit of weight of approximately 1.4g. I made use of the Auto unit weight recalibration feature and got excellent counting accuracy. We used a 30kg example for stocktake with good results.

The Auto Unit Weight Recalibration is an excellent feature not present in many other models. Simply work out an initial unit weight from a known count, add two or three small quantities, 5 – 15 each time is enough and it is not necessary to count them, and let the auto feature refine the unit weight. Then apply the rest.

APPLICATIONS

Warehouses, factories, shops, packing companies, distribution.