AP30 MkII

Postal Scale
INSTRUCTION MANUAL

Dual Range
2kg x 0.001kg / 30kg x 0.01kg

A&D MERCURY PTY. LTD

Contents

1. Compliance

1.1 Compliance with ‘C’ Tick

This equipment complies with the requirements of the Radiocommunications (Compliance and Labelling - Incidental Emmissions) Notice made under the Radiocommunications Act 1992 and is marked accordingly.

1.2 Compliance with National Standards Commission

This equipment has been tested and found to comply with the requirements of N.S.C. Document 100.
Certificate number 6/4C/210 has been issued to show approval by the Commission.

2. Outline and Features

- The AP30MKII postal scale is a dual range scale designed to accurately weigh letters and parcels.

- The lower scale range weighs up to 2kg with a resolution of 0.001kg.

- The upper scale range weighs up to 30kg with a resolution of 0.01kg.

- The scale provides dual liquid crystal displays, one for the operator, the other for the customer.

- The operator is provided with two control push buttons, one to turn the scale on and off, the other to zero the reading.

- The scale provides, as standard, two serial data outputs to connect to EPOS or PC systems.
  The scale also provides an additional output for connection to a remote display.

- The scale is powered by an a.c. mains adaptor to suit local requirements.

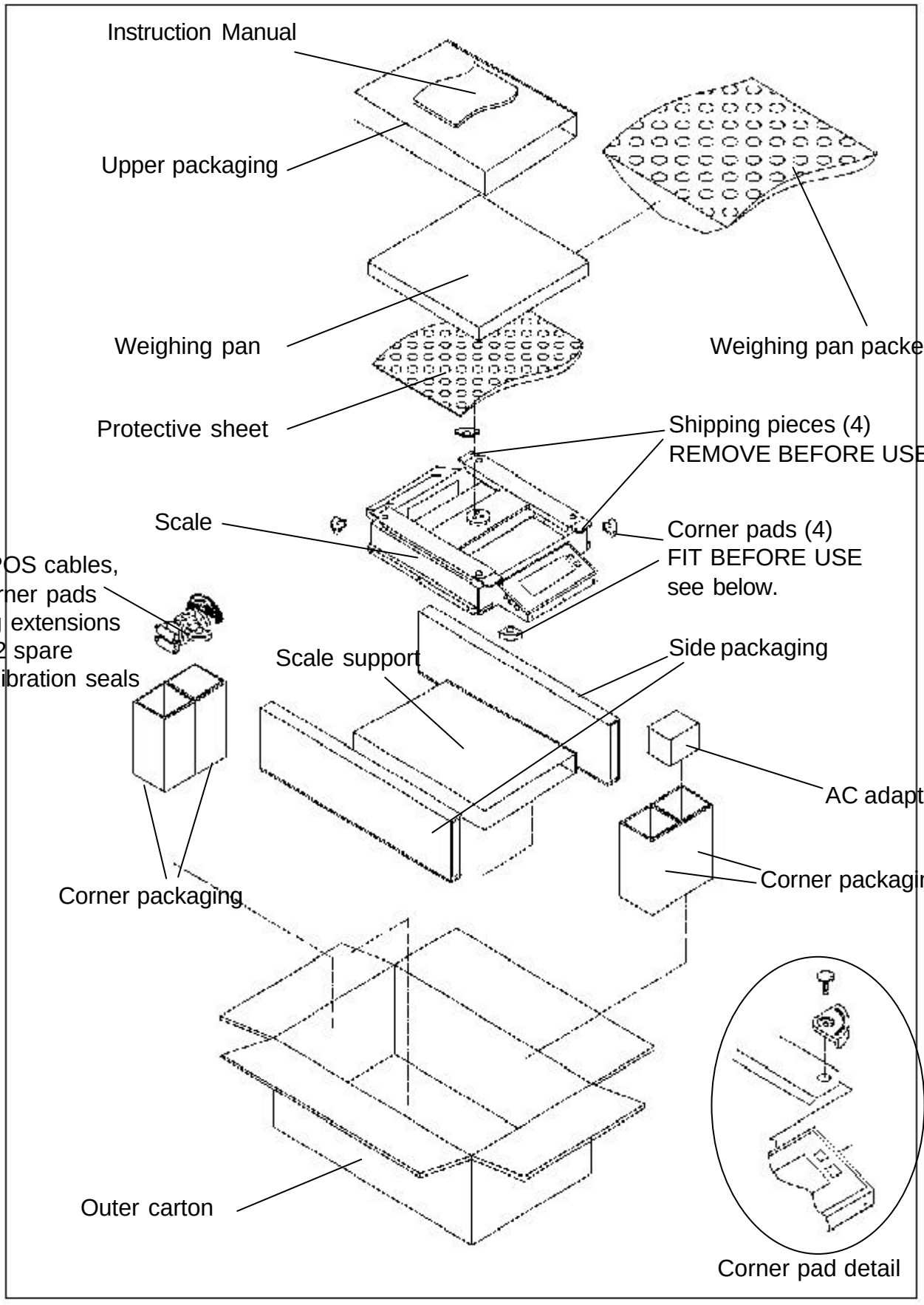
- The scale may be optionally powered by dry cell batteries by fitting them to the internal battery holder.

- The scale may be fitted above or within the postal sales counter.

- The weighing platform height may be adjusted by use of the included levelling leg extension pieces.

- The scale platform may be set level by using the level bubble and adjustable levelling legs during installation.

3. Unpacking


Instruction Manual
Upper packaging
Weighing pan
Weighing pan packet
Protective sheet
Shipping pieces (4)
REMOVE BEFORE USE
Scale
Corner pads (4)
FIT BEFORE USE
see below.
EPOS cables,
corner pads
leg extensions
& 2 spare
calibration seals
Scale support
Side packaging
AC adaptor
Corner packaging
Corner packaging
Outer carton
Corner pad detail

3.1 Accessories and Options

Accessories.

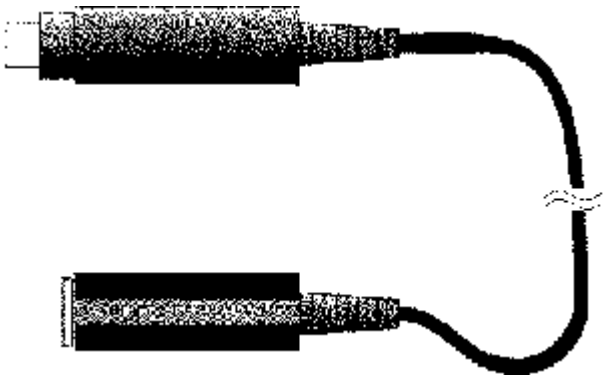
The following accessories are supplied with each scale.

a) AC adaptor to suit the local mains supply.
b) 2 x interface cables to connect the scale to the EPOS.
c) This instruction manual.
d) 4 x levelling leg extension pieces.
e) 2 x calibration cover seals.

Options.

OP-01 Serial data adaptor cable.

This adaptor cable is available as an optional extra to enable existing inter-connecting cables to be used with the MkII version of the postal scale.



4 Caution

4.1 Precautions for installing the scale

- ☠ Do not handle the ac adaptor with wet hands.
- ☠ The ac adaptor is not water resistant. Do not install it in a wet area.
- ☠ Do not install the scale where flammable or corrosive gas is present.
- ☠ Do not pull or strain the cables connecting the scale to the EPOS.

When installing the scale consider the following to get the most from your scale.

- ☺ Choose a place where the scale is not in direct sunlight.
- ☺ Choose a place where the scale is not affected by air conditioners, heaters, fans etc.
- ☺ Choose a place where the scale is not affected by magnetic fields.
- ☺ Choose a place where the scale will not be subjected to high electro-static discharge.

4.2 Precautions for operating the scale

- ☺ Periodically check the scale’s accuracy with a known mass.
- ☺ Calibrate the scale after installation and after moving it to another location.
- ☠ Do not overload the scale by placing more than 30kg on the pan.
- ☠ Do not drop anything onto the weigh pan.
- ☺ Use only your finger to operate the switches. Never use a sharp implement like a pencil or ball point pen.

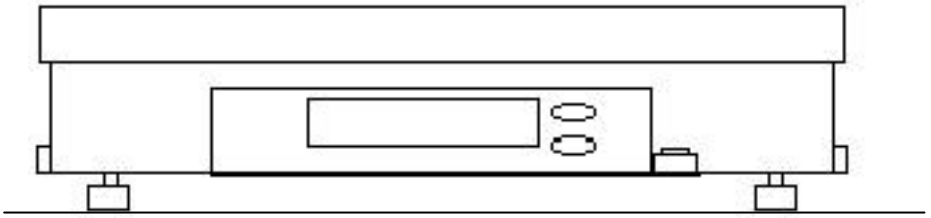
4.3 Precautions for storing the scale

- ☠ Do not disassemble the scale.
- ☠ Do not use solvents to clean the scale.
- ☺ Clean the scale with a lint free cloth, one that is dry or moistened with warm water and a mild detergent.

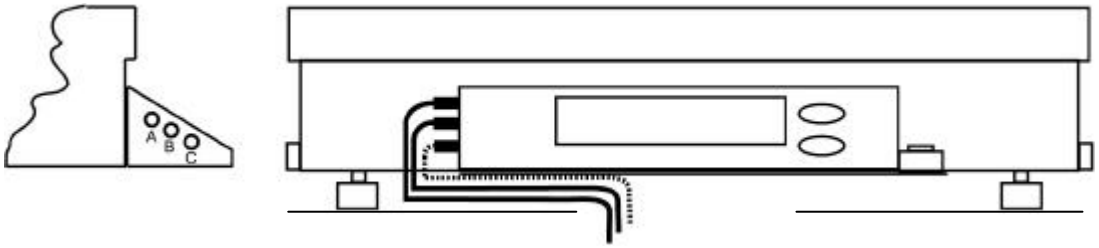
5 Installing the scale

5.1 On Bench Top Installation

Place the scale onto the bench top in the required position with the operator display on the operator's side of the bench.

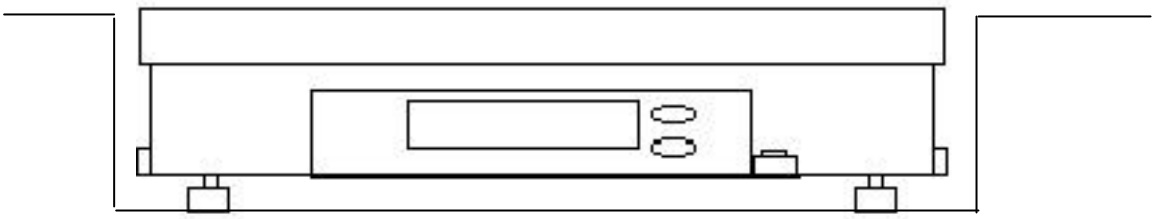


If the scale is to be connected to an EPOS system locate the free end(s) of the EPOS data cable(s), and carefully plug the cable connector(s) into the mating socket(s) on the side of the operator's display. Sockets A and B are for EPOS connection. Socket C is for connection to a remote display. Push any excess cable length down through the benchtop access hole.

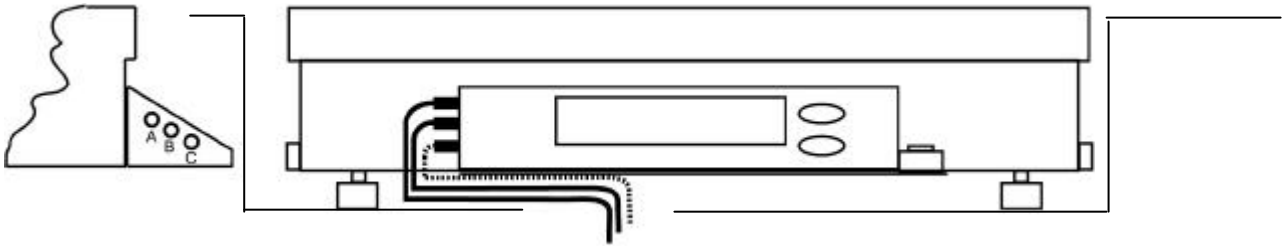


5.2 Below Bench Top Installation

Place the scale into the prepared cutout in the bench top with the operator display on the operator's side of the bench.

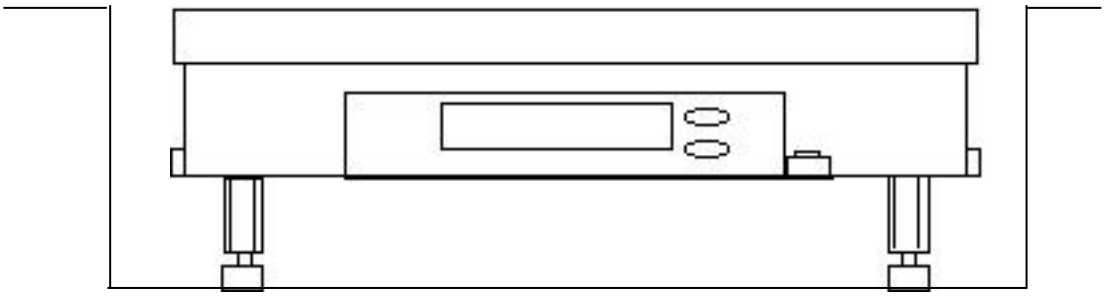


If the scale is to be connected to an EPOS system locate the free end(s) of the EPOS data cable(s), and carefully plug the cable connector(s) into the mating socket(s) on the side of the operator's display. Push any excess cable length down through the benchtop access hole.



5.3 Adjusting the Height of the Weighpan

The height of the weigh pan can be raised, when used in below bench top installations, to align the weigh pan with the bench top. This is accomplished by using the included levelling leg extension pieces. First carefully invert the scale and place onto a suitable bench top. Now unscrew the 4 levelling legs and place to one side. Locate the levelling leg extension pieces and screw them into the threaded holes vacated by the levelling legs. Now screw the levelling legs into the threaded holes on the extension pieces.
Finally invert the scale and place into the required position.

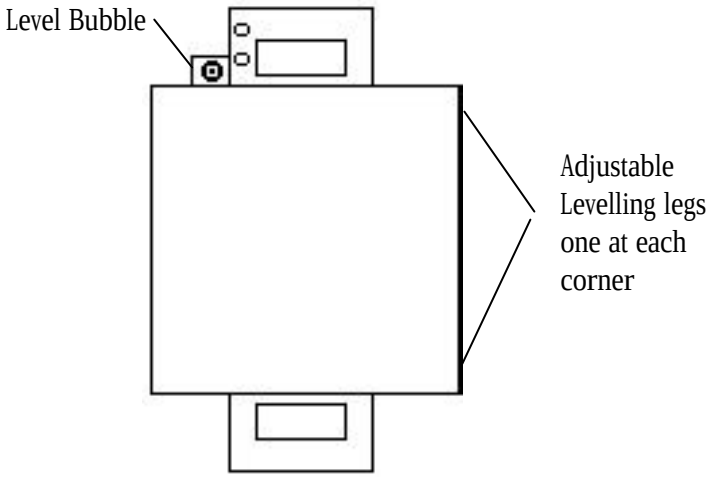


5.4 Levelling the Scale

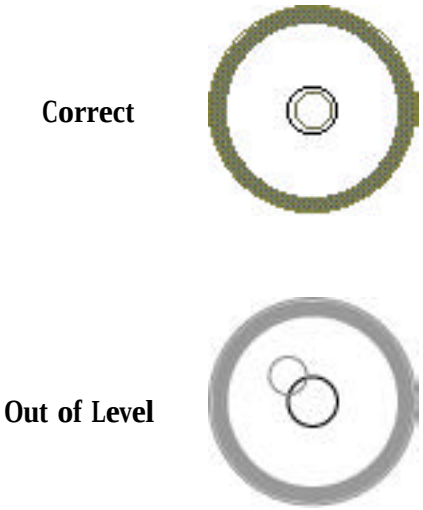
The AP30MkII scale is provided with a level bubble and 4 adjustable levelling legs to enable the scale to be made level after installation. The level bubble is situated on the side of the operator's display pod.

☺ To get the best accuracy from your scale please ensure it is levelled during installation and after moving the scale to a different bench position.

You will be able to see the level bubble on the side of the operator's display pod.



Observe the position of the bubble in the level window and adjust the levelling legs to position the bubble in the middle of the window.



5.5 Fitting the Batteries

The batteries provide an alternative source of power for the scale.
Batteries are intended to be used in areas where there is no reliable power source.
The batteries to be fitted are 6 x ‘C’ cells and are to be purchased by the user.
The battery holder is fitted internally to the scale and is connected to the logic board.

Fitting Method.

Step 1

Ensure that the AC adaptor supply is switched off and the power lead is removed from the DC input connector on the scale.

Step 2

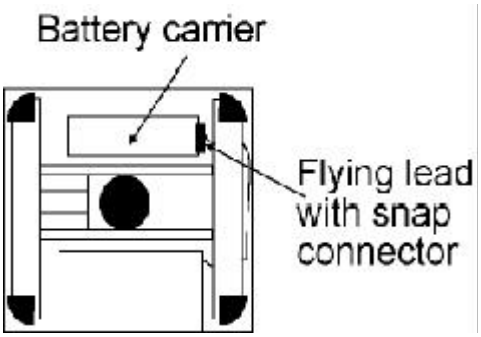
Remove the weigh pan from the top of the scale.

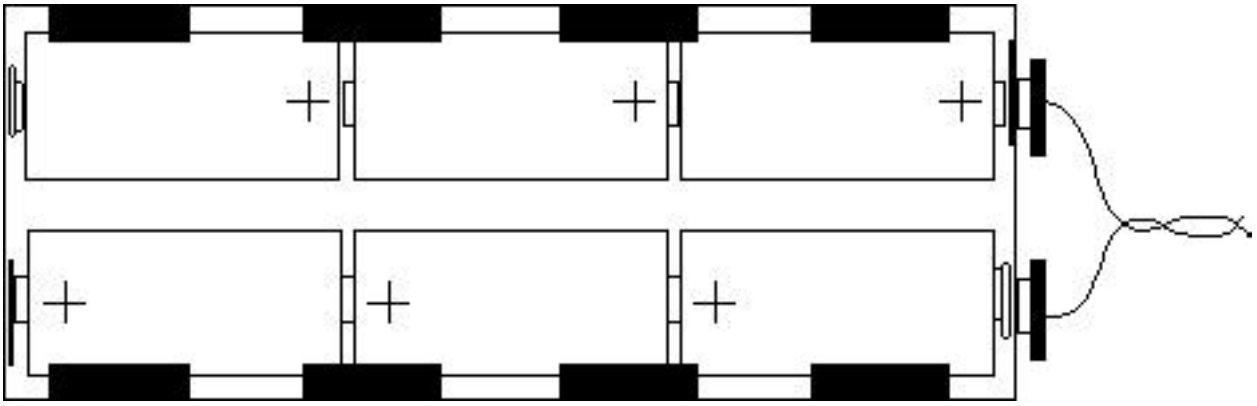
Step 3

Fit the 6 dry cell batteries into the carrier taking particular care to get the polarity of each cell correct.

Step 4

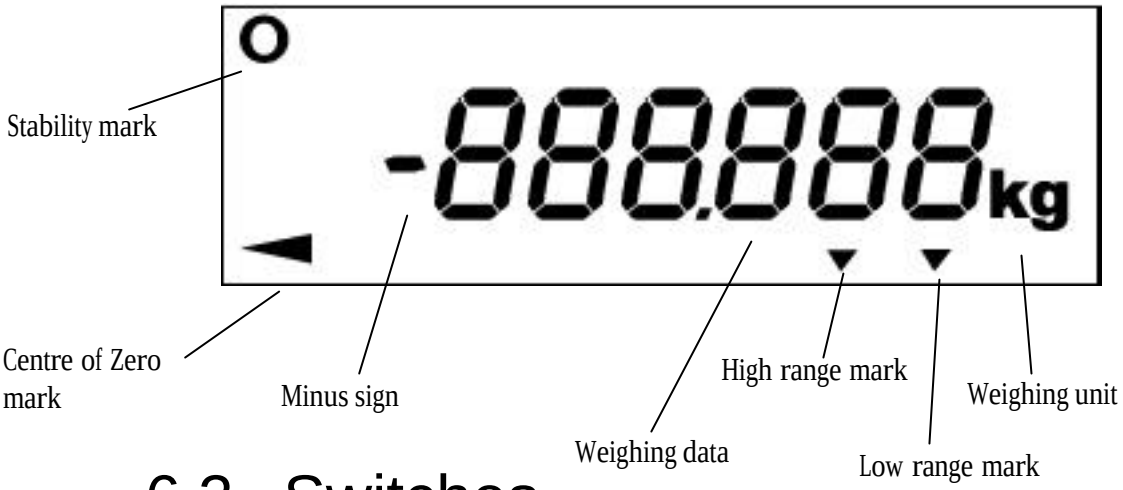
Replace the weighing pan.
The scale can now be switched on using the ON/OFF switch.





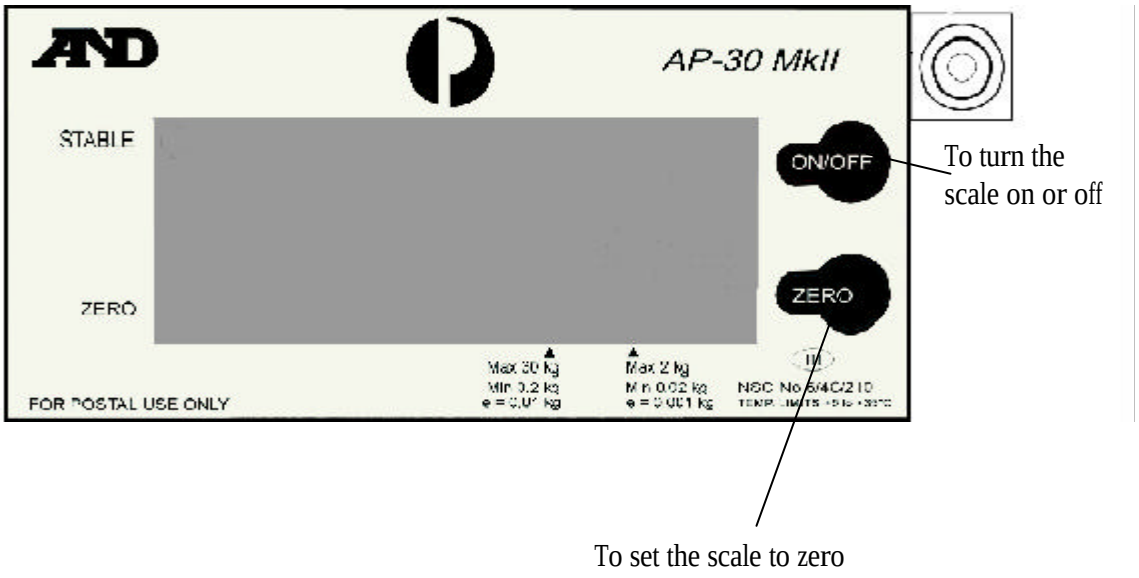
6.1 Displays and Symbols

The operator and customer liquid crystal displays are identical.



6.2 Switches

The operator display pod has two push button switches to control the scale



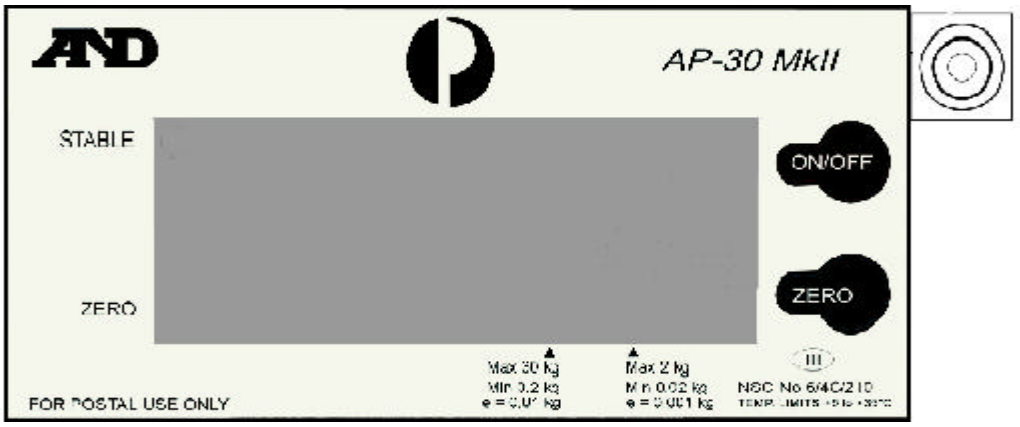
There are no controls on the customer display pod.

7 Operation

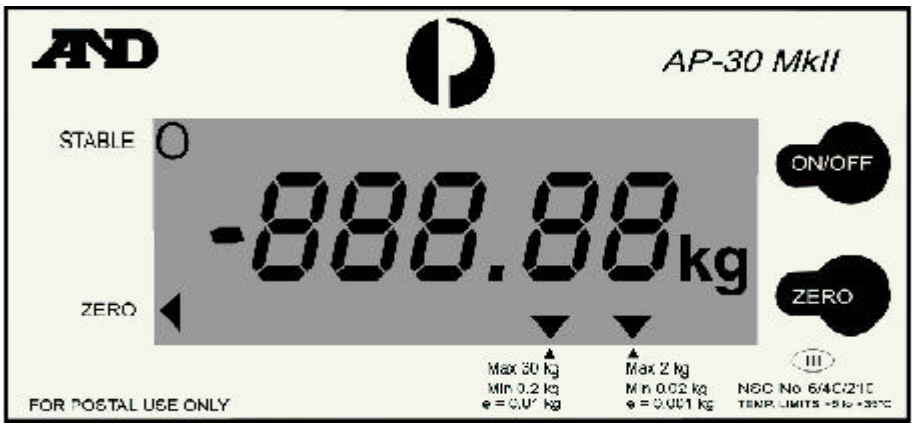
7.1 Turning the Scale On and Off

The power to the scale is provided by an AC mains adaptor or by the internal dry battery option. If appropriate ensure that the AC mains adaptor is plugged in and the mains supply is switched on. Now pressing the ON/OFF button will turn the scale on. The scale will perform a display segment test to allow the operator to ascertain that all numbers and indicator segments turn on, all 8s, and then all turn off again correctly.
The scale will then show 0.000kg.

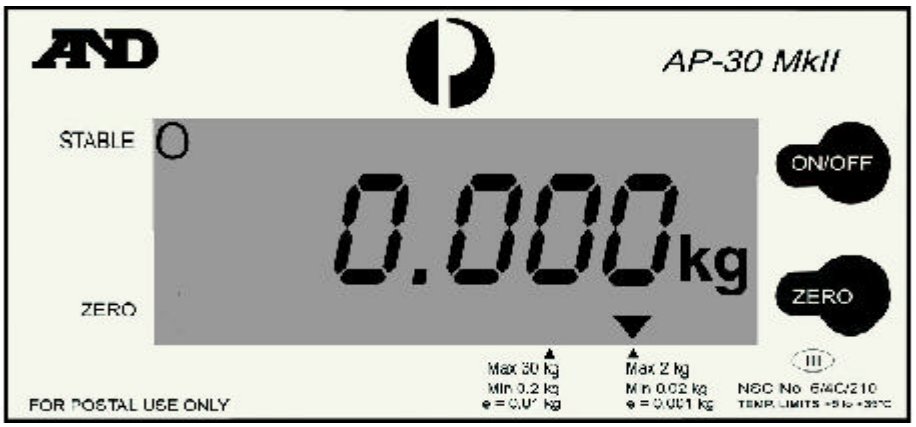
Step 1



Step 2

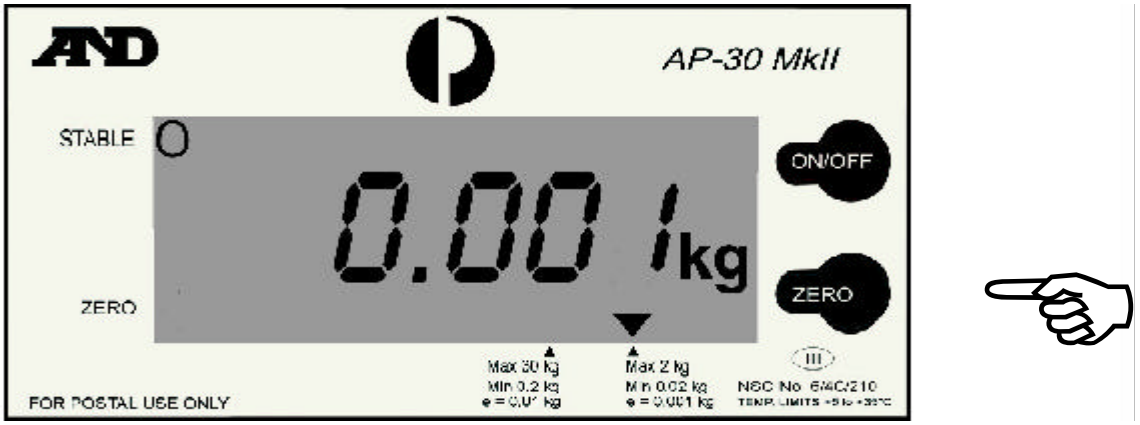


Step 3



7.2 Zeroing the Scale

If at any time the scale is not showing zero when there is nothing on the pan, simply press the ZERO button to restore a true zero.

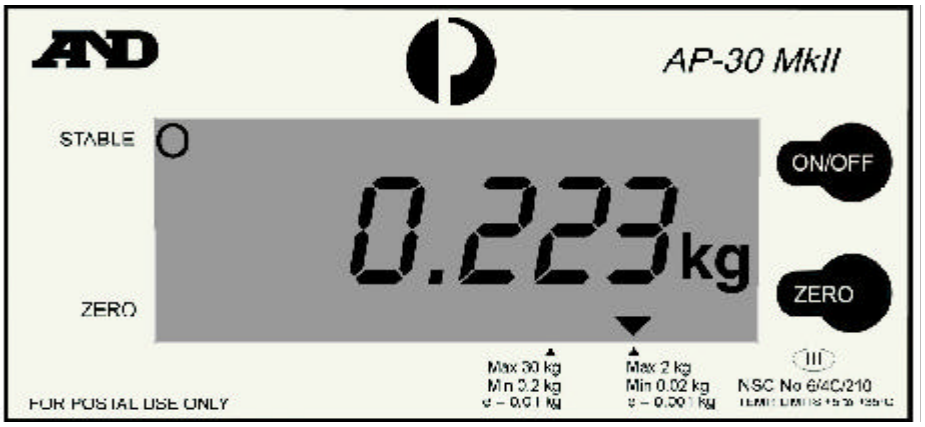


☺ For maximum accuracy ensure that the scale shows 0.000kg and the ZERO mark is lit before commencing to weigh an item.

7.3 Weighing Mail

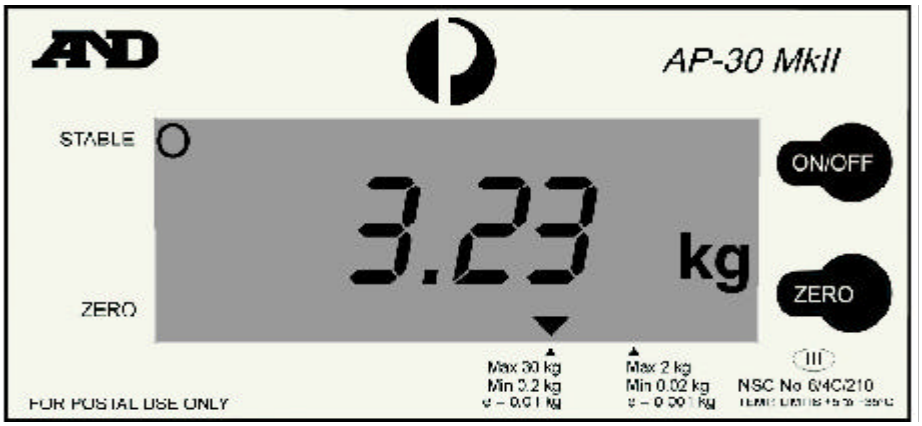
To commence weighing mail firstly ensure that the weigh pan is empty and the display shows 0.000kg with the ZERO mark lit. If not remove items from the pan and press the ZERO button.
Now place the item to be weighed onto the weigh pan.
The true weight will be shown when the STABLE mark is lit.
If the item weighs less than 2kg, for example a letter, then the weight will be displayed with an accuracy of one gram.

Example - less than 2kg



If the item weighs more than 2kg, and less than 30kg, then the weight will be displayed with an accuracy of ten grams.

Example - more than 2kg



8 Calibration

Warning

Calibration is the adjustment procedure to ensure the scale weighs correctly.

There are 2 steps to basic calibration :-

Calibration of the Zero point :-

When there is nothing on the weighing pan the zero calibration routine informs the scale that this is the true zero point.
This zero point is the fundamental starting point to weighing and is shown when the Zero mark is lit.

Span Calibration :-

When a known standard mass is placed onto the scale the span calibration routine informs the scale that this is a known mass.
Afterwards the scale can accurately weigh any mass within the scale's capacity.
For best results use a mass heavier than two thirds of the scale capacity.

Cautions

Calibrate the scale using a certified mass.
Periodically check the accuracy of weighing using a known mass.
Calibrate the scale if it is moved to another location or the environment has changed.

Gravity Correction

If the scale is to be used at a location which has different gravity acceleration to the location where it was calibrated, the gravity correction routine may be used to ensure accurate weighing at the final location. The gravity correction routine is accessible through the calibration sequence and is detailed on page 18.

8.1 Calibration of the Zero point

When there is nothing on the weighing pan the zero calibration routine informs the scale that this is the true zero point.
This zero point is the fundamental starting point to weighing and is shown when the Zero mark is lit.

CAUTION: This procedure must only be carried out by a qualified scale technician.

Step 1

Warm up the scale, by leaving it switched on, for at least 30 minutes before performing this procedure.

Step 2

Reveal the calibration switch by removing, if necessary, the calibration seal.

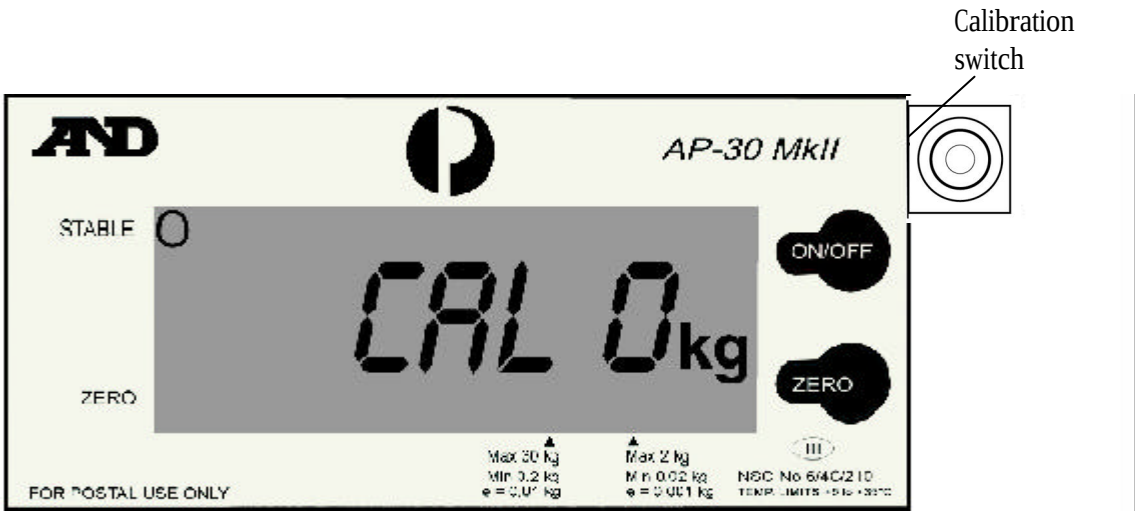
Step 3

With the scale on and nothing on the weigh pan press and hold the calibration switch until the display shows `Cal 0`.

Note: You will need a small implement, such as a screwdriver or nail, to insert into the recess to press the calibration switch.

Step 4

Ensure that the STABLE indicator is lit and then press the ZERO switch.



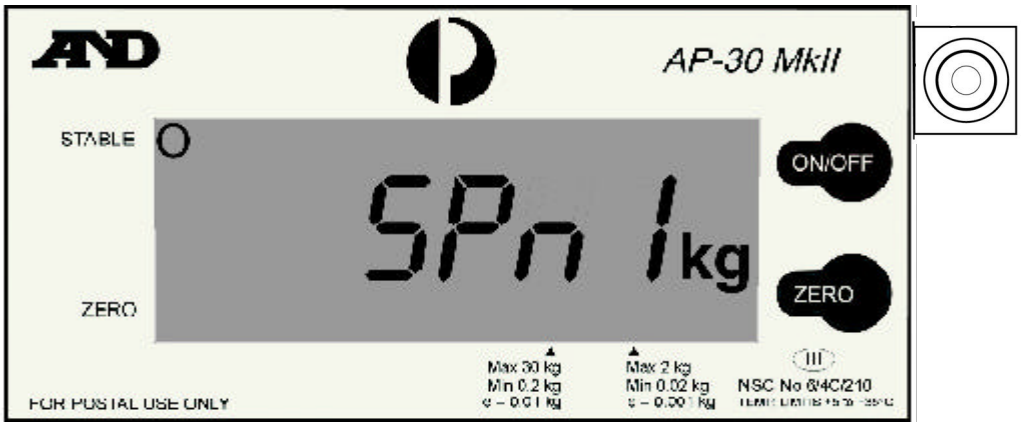
8.2 Calibration of Span

Span Calibration :-

When a known standard mass is placed onto the scale the span calibration routine informs the scale that this is a known mass. Afterwards the scale can accurately weigh any mass within the scale's capacity.
For best results use a mass at least two thirds of the scale capacity.

Step 1

The display will show 5pn 1 for a few seconds and then will show 30.000kg as a suggested calibration mass.



Step 2

If you intend calibrating with less than the maximum mass then press the calibration switch to select from 10.000 / 20.000 / 30.000kg.

Step 3

Place the selected mass onto the weigh pan, wait for the STABLE indicator to light and then press the ZERO switch.

Step 4

The scale will memorise the mass and, if the calibration was successful, will then display End.

Step 5

Remove the calibration weight and turn the scale off then on again to return to normal weighing.

Step 6

Replace the calibration seal using one of the 2 spare seals provided with the scale.

8.3 Calibration Errors

The display may show an error message if a problem occurs during the calibration sequence.

Cal e : The mass on the pan is too large.

This can occur if the pan is not empty when trying to perform a zero calibration.

This can occur if the mass on the pan is too high for the span mass selected. For example if you select 10.000kg as the span mass and then place 30kg onto the pan for the calibration.

-Cal e : The mass on the pan is too small.

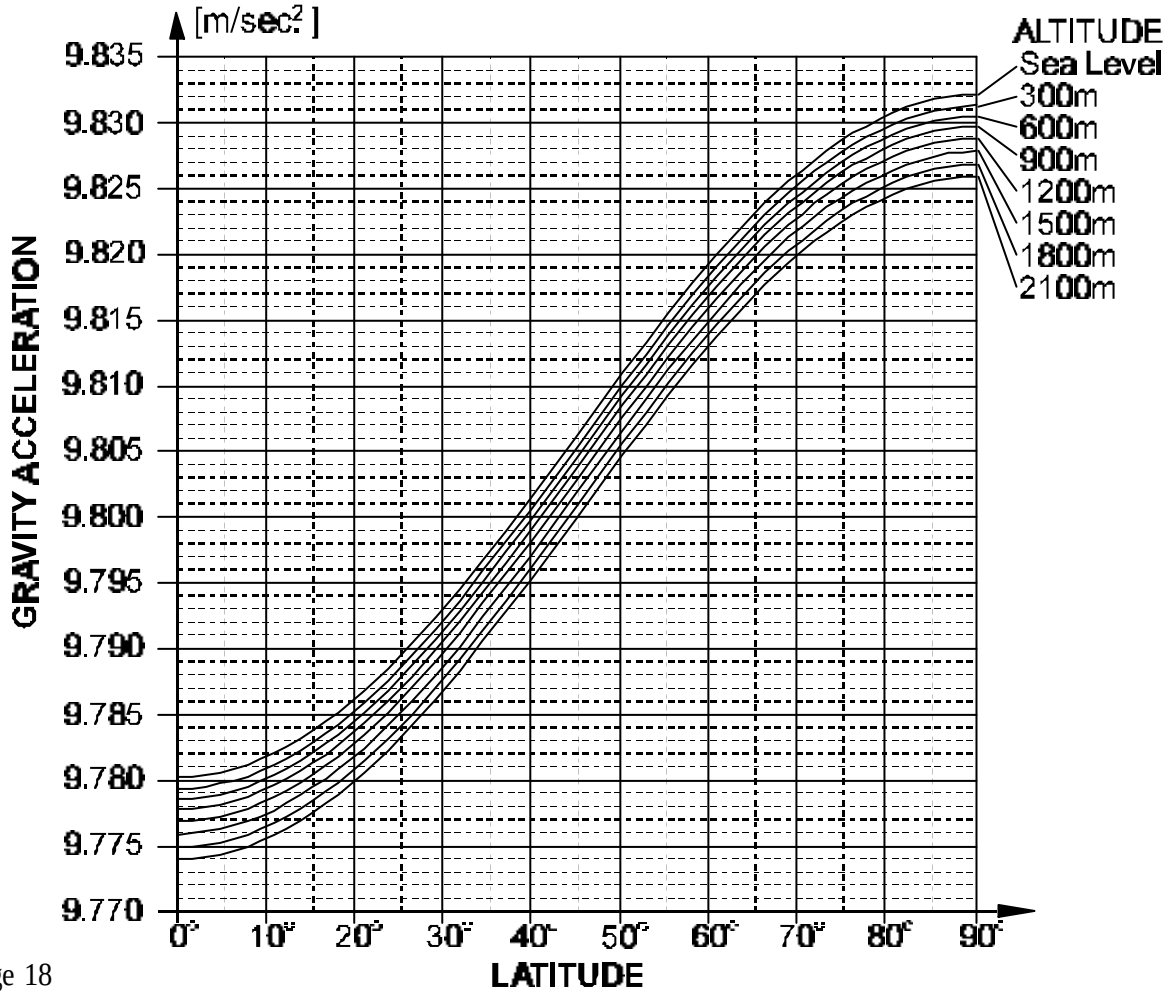
This can occur if you press the ZERO switch, after selecting the desired calibration mass, but before placing the mass onto the pan.

If either of the above error messages appear and the cause is not listed, then call in a service technician.

8.4 Gravity Acceleration

8.4.1 The Gravity Acceleration Table

Amsterdam	9.813	m/s²	Manila	9.784	m/s²
Athens	9.800	m/s²	Melbourne	9.800	m/s²
Auckland NZ	9.799	m/s²	Mexico	9.779	m/s²
Bangkok	9.783	m/s²	Milan	9.806	m/s²
Birmingham	9.813	m/s²	New York	9.802	m/s²
Brussels	9.811	m/s²	Oslo	9.819	m/s²
Buenos Aires	9.797	m/s²	Ottawa	9.806	m/s²
Calcutta	9.788	m/s²	Paris	9.809	m/s²
Chicago	9.803	m/s²	Rio de Janeiro	9.788	m/s²
Copenhagen	9.815	m/s²	Rome	9.803	m/s²
Cyprus	9.797	m/s²	San Francisco	9.800	m/s²
Djakarta	9.781	m/s²	Singapore	9.781	m/s²
Frankfurt	9.810	m/s²	Stockholm	9.818	m/s²
Glasgow	9.816	m/s²	Sydney	9.797	m/s²
Havana	9.788	m/s²	Taiwan	9.788	m/s²
Helsinki	9.819	m/s²	Taipei	9.790	m/s²
Kuwait	9.793	m/s²	Tokyo	9.798	m/s²
Lisbon	9.801	m/s²	Vancouver, BC	9.809	m/s²
London (Greenwich)	9.812	m/s²	Washington DC	9.801	m/s²
Los Angeles	9.796	m/s²	Wellington NZ	9.803	m/s²
Madrid	9.800	m/s²	Zurich	9.807	m/s²



8.4.2 Setting Gravity Acceleration

Notes

To use the gravity compensation you must first set the correct figure for the location in which the scale is to be calibrated. Then you calibrate the Zero and Full Span points. After a successful calibration you finally set the gravity compensation figure for the destination of the scale.

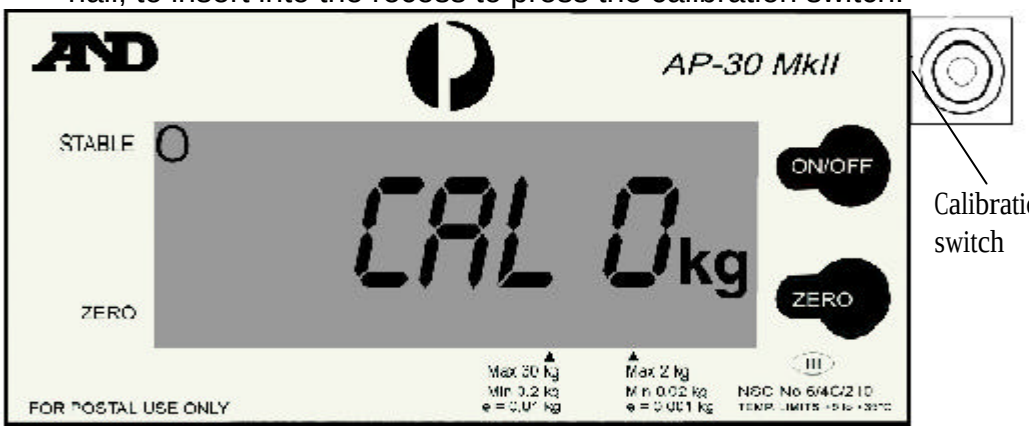
Procedure

Step 1

Reveal the calibration switch by removing, if necessary, the calibration seal.

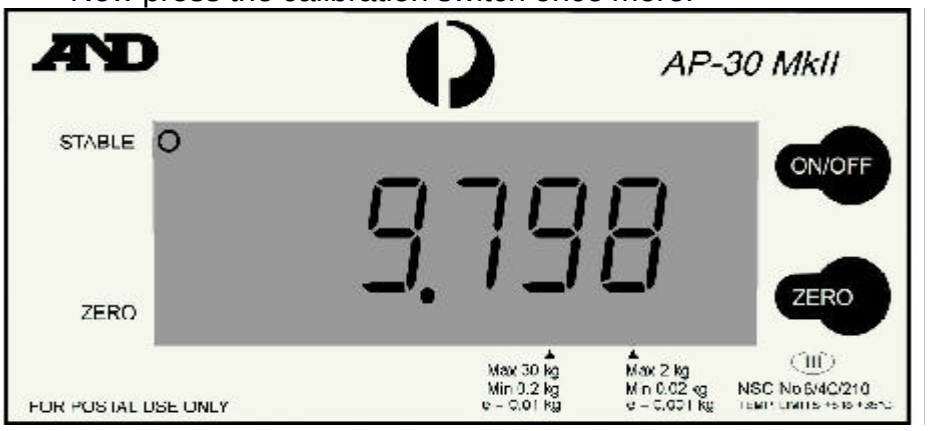
Step 2

With the scale on and nothing on the weigh pan press and hold the calibration switch until the scale shows `Cal 0`.
Note: You will need a small implement, such as a screwdriver or nail, to insert into the recess to press the calibration switch.



Step 3

Now press the calibration switch once more.



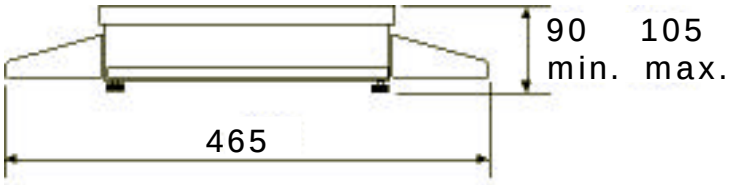
The right hand digit will be flashing.

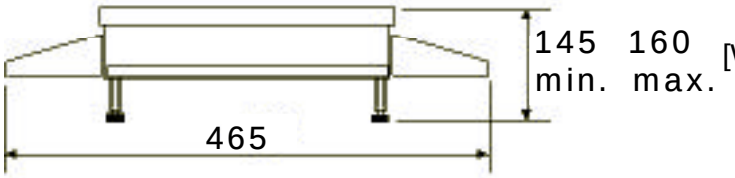
Step 4

Refering to the table on page 18, use the calibration switch to set the digit values and the Zero switch to move to the next digit, set the gravity correction to suit the final location of the scale.
Note that the value will be stored when the Zero switch is pressed with the most left hand digit flashing.

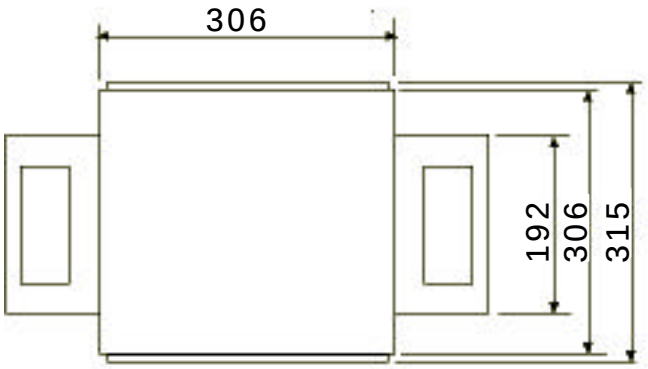
10 Dimensions

All dimensions are in millimetres.





[With leg extensions]



11 Maintenance

Maintenance that is required due to the scale failing to operate correctly will be carried out by the local R.M.C. technicians.

Routine Operator Maintenance.

The operator can carry out general cleaning and maintenance of the scale to ensure long life and good service by adhering to the following instructions.

1. Keep the scale in a good clean condition. You can use a cloth dampened in soapy water to clean marks from the painted surfaces. Do not use thinners or similar substances as these may damage the paint.

2. Ensure that dry batteries are not left inside the scale if the power is obtained from an AC mains adaptor. The batteries may corrode and cause damage to the electronics.

3. Regularly check to see that the weigh pan is not being obstructed by adjacent office equipment.

11.1 Checks before Maintenance Call

Situation	Confirm these Items
Nothing is displayed	Is the AC adaptor connected correctly?
Scale does not turn ON	Are the batteries discharged? Is the battery polarity correct?
The display does not show zero at switch on	Is the pan correctly fitted?
The display of 888888 does not go to 0000 after switching on.	Is there a lot of vibration on the bench? Is something touching the weigh pan?

12 Specifications

Capacity	: 2kg / 30kg dual range
Resolution	: 1g / 10g
Pan material	: Stainless Steel
Pan Size	: 306mm x 306mm
Enclosure	: Painted mild steel
Display type	: Liquid Crystal
Character size	: 25mm high
Operating temperature	: 5°C ~ 35°C
Dimensions	: 315(W) x 465(D) x 90(min) 105(max) (H) standard
	: 315(W) x 465(D) x 145(min) 160(max) (H) with leg extensions
Power requirement	: AC adaptor or optional 6 x 'C' cells
Weight (approx.)	: 10kg
Standard accessories	: AC adaptor, Instruction manual, EPOS cables. Levelling leg extension pieces. Calibration cover seals.

Head office : PO Box 72, Torrensville Plaza S.A. 5031
Telephone : (08) 8352 3033
Facsimile : (08) 8352 7409
Freecall : 1800 241 434

Melbourne office : 4/313 Arden Street, Kensington, VIC 3031
Telephone : (03) 9372 1522
Facsimile : (03) 9372 1193

Sydney office : 4/14 Abbott Road, Seven Hills, NSW 2147
Telephone : (02) 9674 5466
Facsimile : (02) 9674 2544