CH-150KP

INSTRUCTION MANUAL

Instruction-CH-150KP-v.1.b-6/99

Digital Personal Scale

A&D MERCURY PTY. LTD.

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1. Introduction

Thank you

We thank you for purchasing this Australian made personal scale. We are sure you will get years of reliable and accurate weighing from this product and look forward to your continuing support in the future.

General

When using dry batteries as the power source this equipment functions as a fully portable scale capable of around 200 hours continuous use. It is also possible to use this equipment with an optional AC adaptor connected to a mains power source.

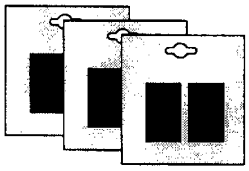
Because this scale employs a load cell that has damp and splash proofing characteristics it can safely be used outside and for weighing in damp conditions.

2. Preparation for Use

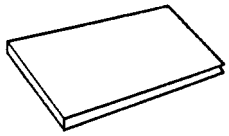
2-1 Unpacking

Open the carton and ensure that the following items are present.

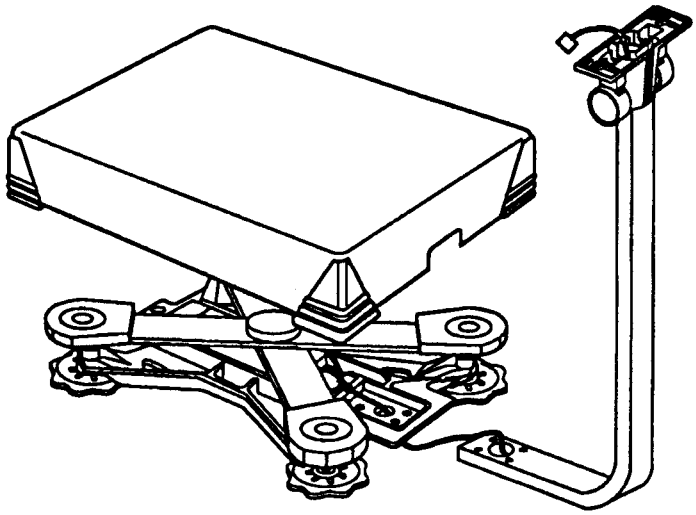
Batteries



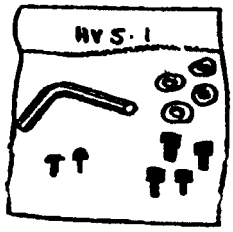
Instruction Manual



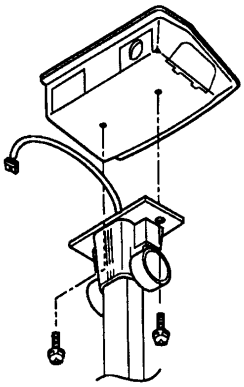
The partially assembled scale



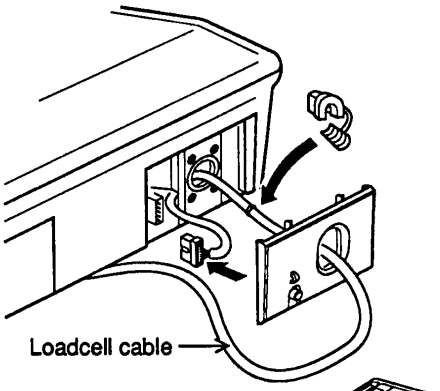
The column screws and wrench kit



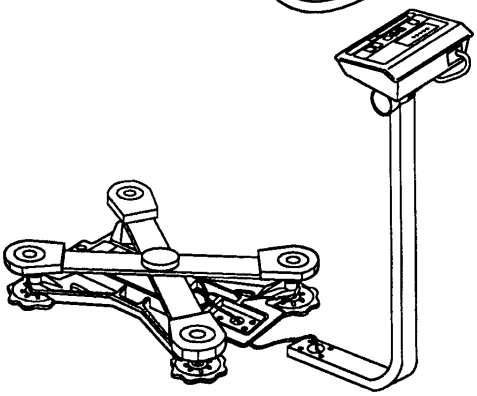
2-2 Assembly



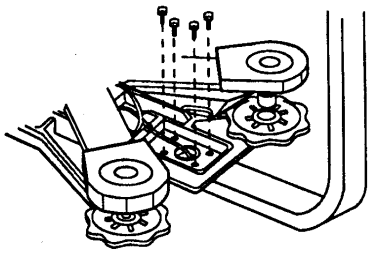
(1) Attach the indicator to the bracket on the top of the pole using the 2 round head screws in the fixing kit. Take care not to trap the load cell cable and ensure that it exits at the rear of the indicator. Also ensure that the indicator display is facing the short arm of the pole.



(2) Connect the load cell cable to the indicator by first removing the display pod rear cover, then passing the cable through the holes, around the internal plate and then making the connection.



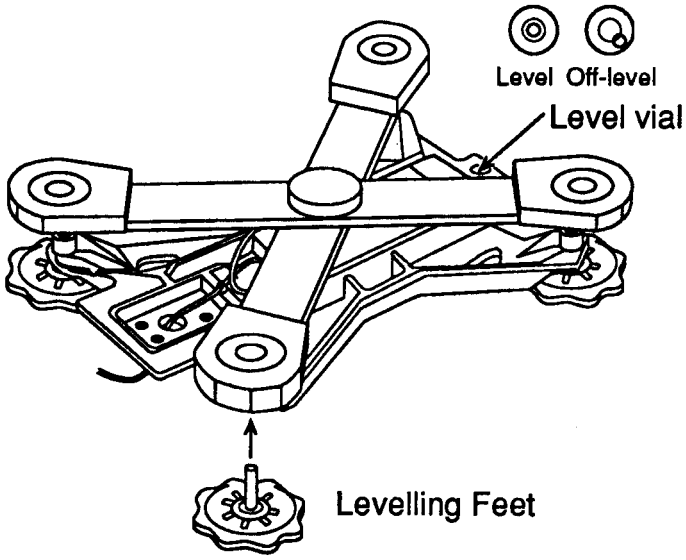
(3) Insert the surplus load cell cable into the lower part of the pole base.

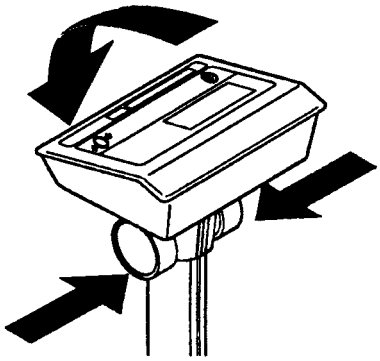


(4) Attach the pole to the base using the 4 cap head screws provided. Tighten with the hexagonal wrench.

2-3 Installation

1. Install the scale in a level location that is not affected by vibration or wind.
2. Avoid locations that receive direct sunlight.
3. Avoid power source noise, strong electrical waves and magnetism etc.
4. Rotate the level adjusting feet to centre the bubble on the level indicator.
5. Depress the caps at the top of the column to adjust the viewing angle for the user.





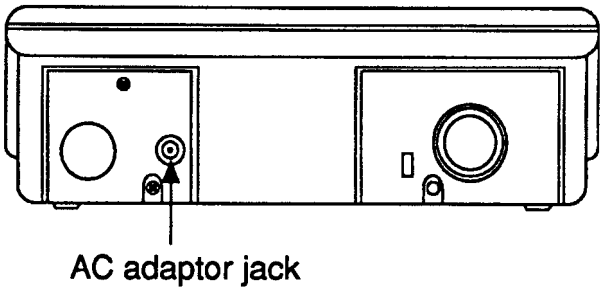
Although the load cell of the CH-150KP scale has excellent water proofing and may be washed, do not scrub or scour with a brush, etc. as there is a possibility of damaging the waterproof layer. After washing wait for a short time before using the scale.

2-4 Power Sources

The power for the scale can be provided by using dry batteries, an optional AC adaptor or an optional rechargeable battery pack AD-1681. The scale is provided with your first set of batteries. The batteries used are 6 x 'C' cells and are readily obtainable throughout Australia.
The AC adaptor and the AD-1681 are options that may be purchased through your A&D Mercury Authorised Dealer.

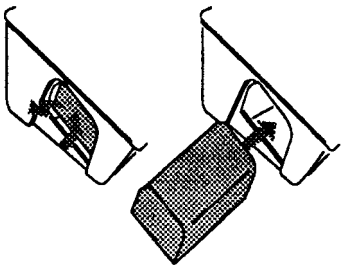
When using the AC adaptor:-

If the power source is unstable and liable to momentary power cuts then this may cause misoperation of the scale. To avoid this problem use a stable mains supply or a mains conditioner.
When using the AC adaptor the batteries are automatically disconnected. To avoid corrosion problems please remove the batteries from the case if using mains power for an extended period.



When using dry cell batteries:-

Insert the batteries into the holder and then push the holder into the indicator pod. The battery container is shipped in the pod. To remove it first remove the cover and then press the battery holder in and up to allow it to slide out of the pod. Check for correct polarity when inserting batteries into the holder.



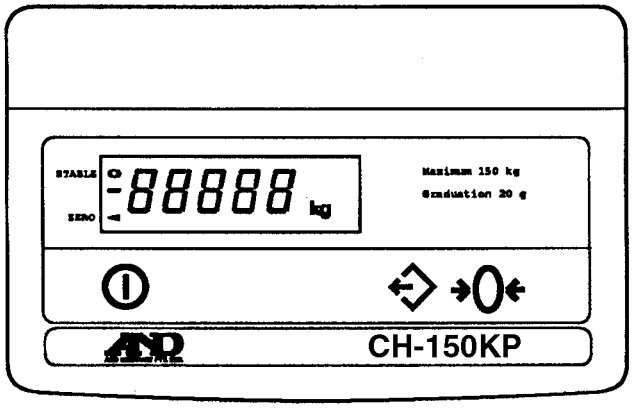
When using the AD-1681 NiCd battery Pack:-

Insert the AD-1681 in place of the standard battery holder.
To recharge the AD-1681 remove it from the pod and connect to the charger supplied with the AD-1681. A discharged battery will take approximately 15 hours to fully charge.

Note - Be sure to use the charger provided with the AD-1681.

3. Controls & Indicators

3-1 Front Panel



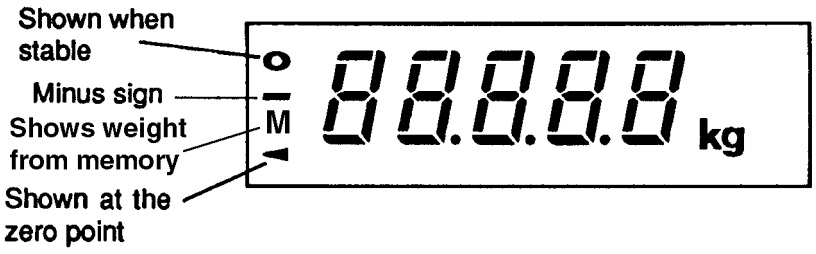
Power ON/OFF switch
After power on, if zero continues to be displayed for about 3 minutes, this scale will automatically switch off. This automatic power off function can be disabled using the function settings.

RE-ZERO switch

With an empty or loaded platform, pressing this switch sets the display to zero.
This switch will only work when the stable mark is displayed.

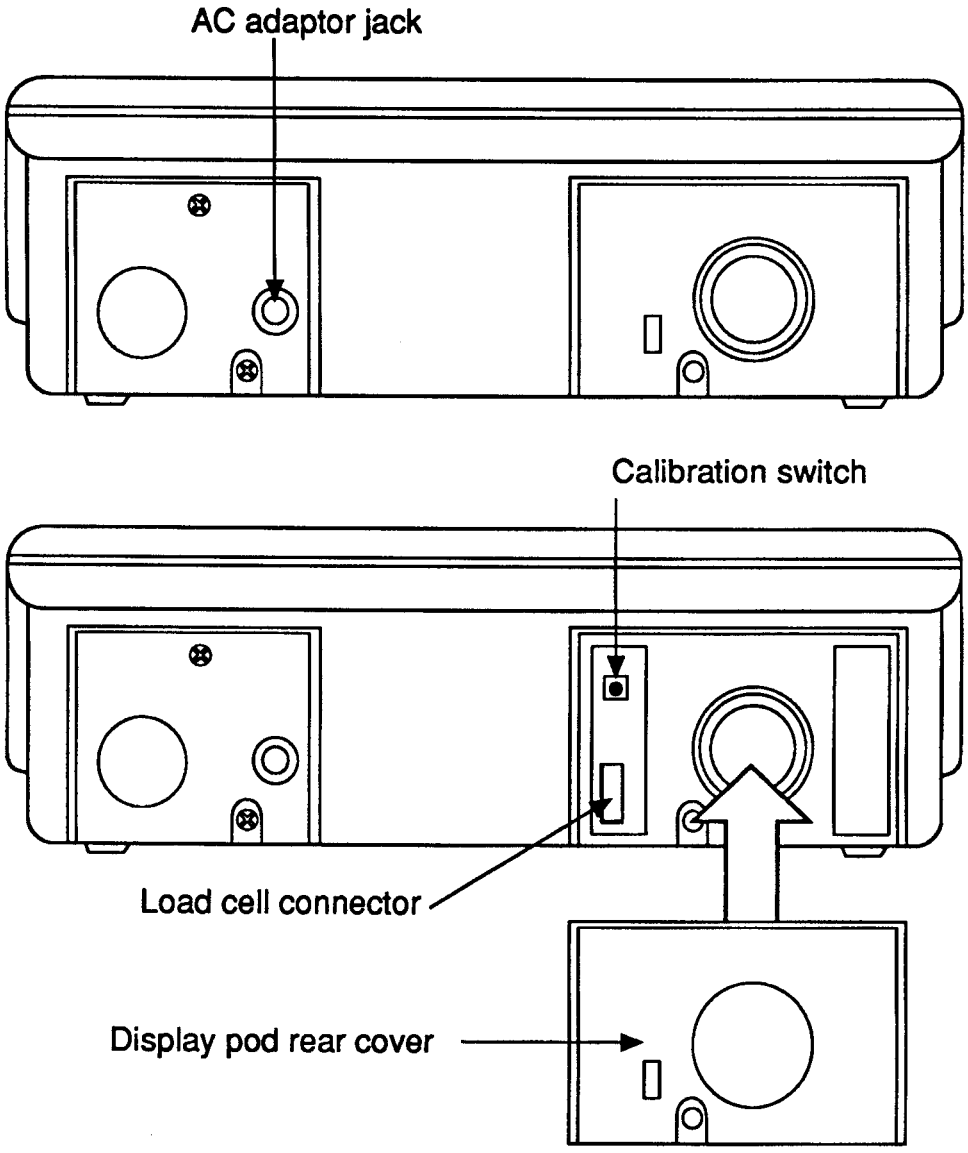
Memory Recall switch
Each time you weigh, your weight is stored into the scale's memory. To recall your weight from memory then simply press this switch.

Display



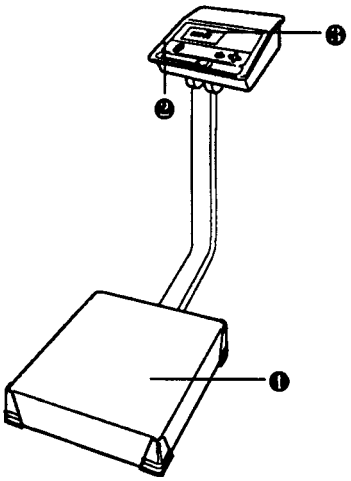
3-2 Rear Panel

Showing :- Calibration switch
Load cell connector
AC adaptor jack



4. Method of Use

4-1 Starting



(1) Ensure there is nothing on the weighing platform.
(2) Switch ON the power.
(Press the ⏻ switch)

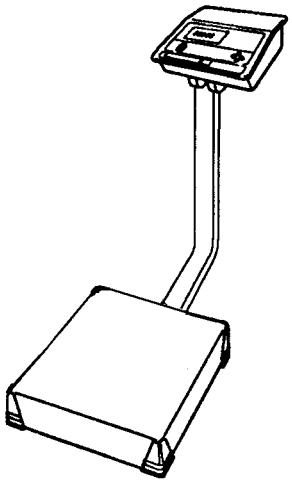
(3)

Display check.
(All the display elements light for 3 seconds)

(4)

The display then shows zero.

4-2 Weighing



(1) Simply stand on the scale.
(2) The display will show a moving 8 digit while the accurate weight is assessed.
(3) Wait until the display stabilises, shown by the “O” symbol lighting.
(4) Your correct weight will now be shown, until you step off the scale, when the display will return to zero.
(5) To recall your weight press the ⇦ key. Pressing the key again will return to normal weighing.

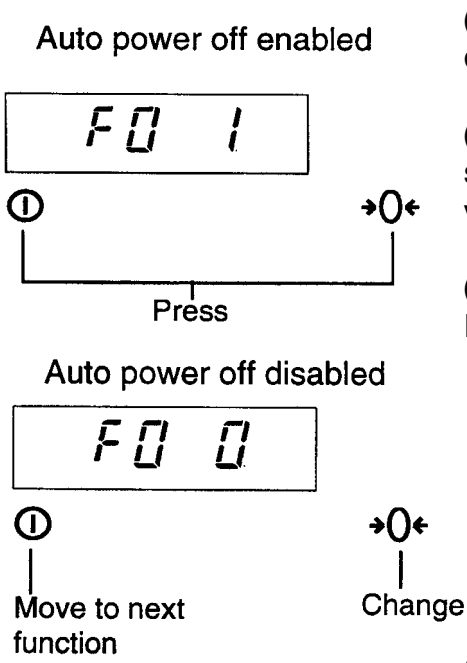
5. Setting the Functions

In the Function Setting mode the following functions can be selected.

5-1 Automatic Power Off.

With this function, if zero is displayed continuously during use for approximately 3 minutes, the power will automatically switch off to conserve the batteries. Using this function the auto power off can be enabled or disabled.

Setting Method



(1) Start with the power off. Hold the →0← switch down and switch on the power.

(2) If the set value is correct then press the ⏻ switch to move on to the next function. The current value will not be changed.

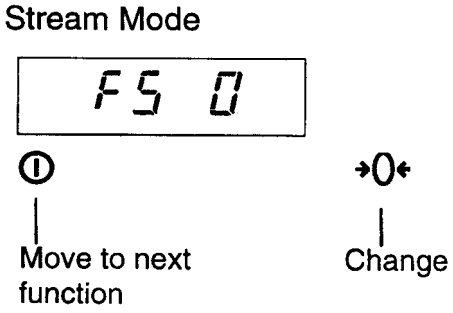
(3) To change the setting press the →0← switch.
F0=0 : Auto power off is disabled
F0=1 : Auto power off is enabled
Select the appropriate setting.

(4) When the setting is completed press the ⏻ switch and the new setting will be stored in memory.

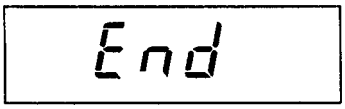
(5) The display will show F5 0 :- the RS232C function, see 5-2 below.

5-2 RS232C Mode

It is possible to fit the RS232C serial data option, OP-03, from the HV/HW range of industrial scales. When using this option either Stream or Command modes can be selected as the RS232C operating mode.
For the differences between the two modes see section 8-1 later in this manual.



(1) If the set value is correct then press the ⏻ switch to move to the next function. The current value will not be changed.
(2) To change the setting press the →0← switch
F5=0 : Stream Mode
F5=1 : Command Mode; Terminator CrLf
F5=2 : Command Mode; Terminator Cr
(3) When the setting is completed press the ⏻ switch and the new setting will be stored in memory.



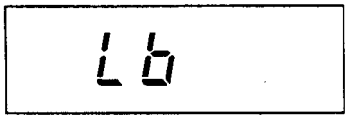
End is displayed when the setting of the function values is completed. Press the ⏻ switch to turn the scale off, then on, to resume weighing.

⏻ →0←

Switch off
then on

6. Changing the batteries

Low Battery Display



If “Low Battery” is displayed during use, discontinue use and either replace the batteries (shown in 2-4) or use the optional AC adaptor.

7. Method of Calibration

Power on display check

Bar Display

Zero Adjustment

It may be necessary to calibrate the scale if the zero point has become displaced. This situation will be shown by a bar display after the power on display check.

(1) Switch on the scale and allow it to warm up for at least ten minutes. Disable the auto power off function or place an object on the pan.

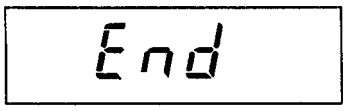
(2) Press the CAL switch (See 3-2 for location). The display will show CAL 0.

(3) Ensure nothing is on the pan, wait for the stable mark, then press the →0← switch. When the zero data has been stored the display will show CAL 1, the span adjusting mode. If only the zero point is to be calibrated then press the CAL switch at this point to leave the routine.

Span Adjustment
To carry out span adjustment of the CH-150KP scale, 150kg of standard masses are required.

Place the 150kg masses onto the pan and wait for the "O" stable mark.

Press the →0← switch to store the calibration data.



After the data has been stored the display will show End.

Switch off
then on

→0← Press the CAL switch to complete the calibration of the scale.

Replace the display pod rear cover previously removed to gain access to the calibration switch.

8. Options & Accessories
For the CH-150KP scale the following options and accessories are available:

(1) HV/HW OP-03	RS232C serial data board
(2) AD-1681	NiCd rechargeable battery pack
(3) TB-124	AC adaptor
(4) AD-8121	Compact statistical printer

8-1 HV/HW RS232C option

This interface is used to connect the CH-150KP scale to the AD-8121 compact printer or to a personal computer. The RS232C has two modes, either of which can be set using the 5-2 Function setting.

(1) Stream Mode
The value being displayed is output normally, and the data transmission speed is four or five times per second. When the AD-8121 printer is to be connected use the Stream mode.

(2) Command Mode
Commands can be sent from a personal computer etc. to the CH-150KP scale, causing the displayed data to be output and to allow zero setting of the scale to be carried out. The commands that can be used are:

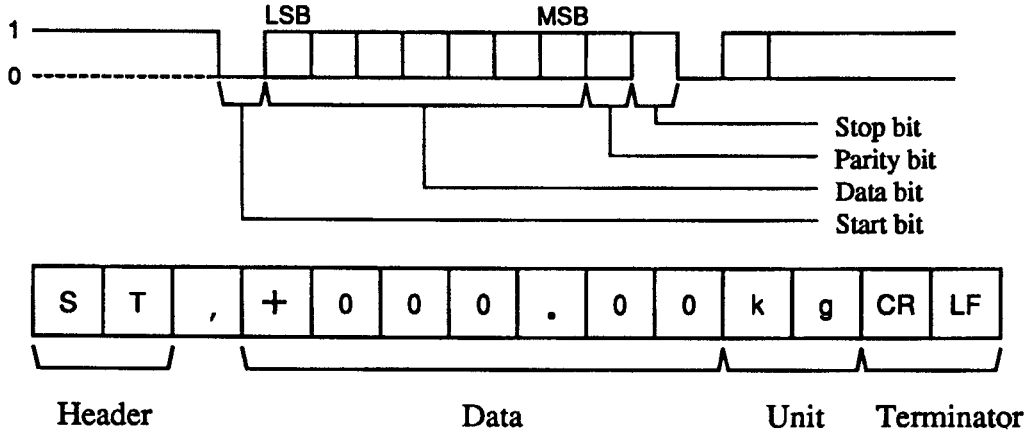
R term: The RE-ZERO operation is carried out only when the display is stable.
Z term: The RE-ZERO operation is carried out only when the display is stable.
Q term: Regardless of stable or unstable display, the displayed weight data is output once.

"term" is the terminator chosen, using the 5-2 Function. This can be set to match the type of personal computer etc. that is connected. When sending commands ensure that there is an interval of 500mSec, minimum, between commands.

(3) Interface Specifications

Output standards:	According to EIA RS-232C
Transmission format:	Start/Stop synchronous transmission
Signal speed:	2400 bps (fixed)
Data bit length:	7 bits
Parity:	1 bit (even)
Stop bit:	1 bit
Code:	ASCII

(4) Data Format



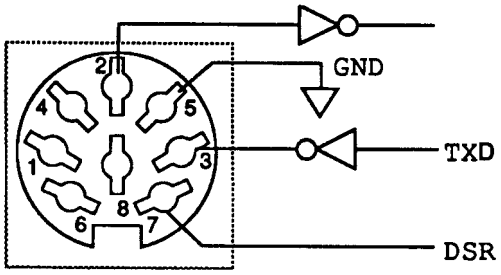
There are 3 possible headers:
ST The data is stable
US The data is unstable
OL The scale is overloaded (the maximum display is exceeded)

The data is 7 figures including the sign and the decimal point.
When the data is overloaded either “+999.99” or “-999.99” will be transmitted.

Note that the terminator will always be CrLf regardless of Function 5 setting.

(5) Interface Circuit

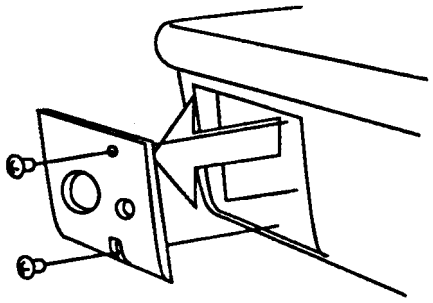
Uses a DIN 8 pin connector



Internal connection diagram

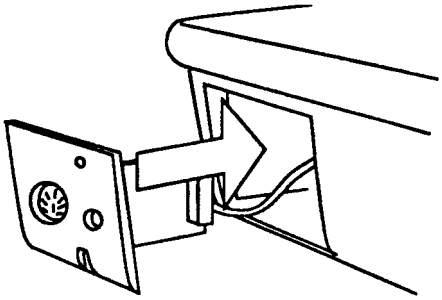
Short RTS & CTS pins of a connected personal computer.

(6) Mounting the HV/HW OP-03 Data Output Board



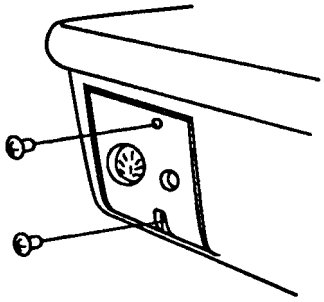
(1) Take out the two screws and remove the cover.

(2) Cut the cable clamp which secures the cable to the cover.



(3) Connect the captive flying lead to the data output board.

(4) Insert the data output board into the main unit.



(5) Install the cover and secure with the two screws.

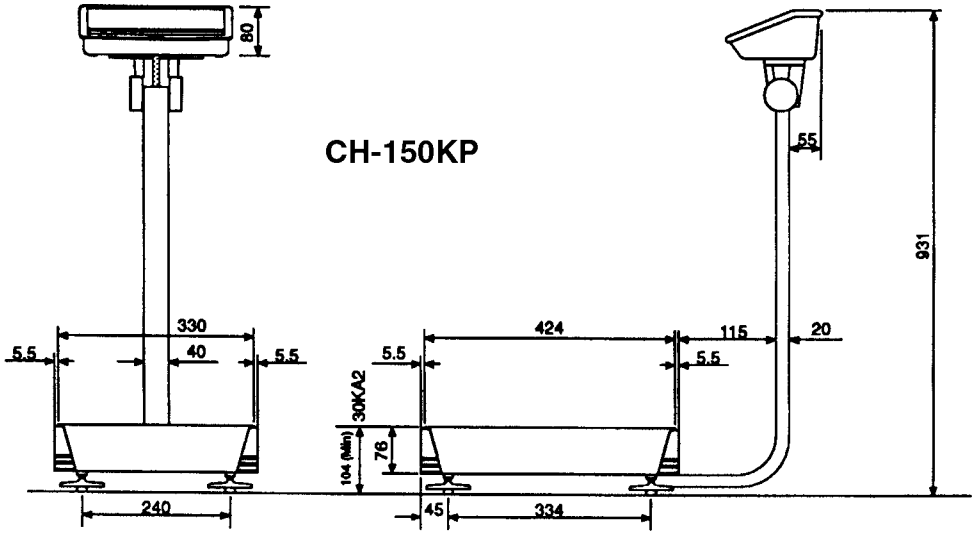
9. Specifications CH-150KP

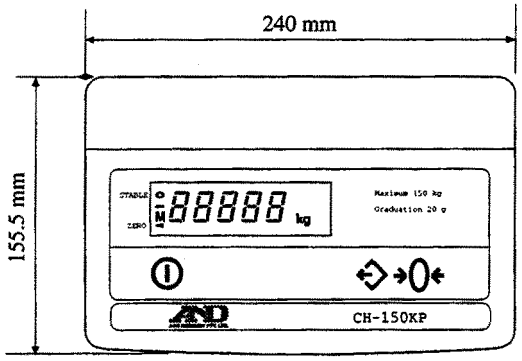
Maximum load = 150kg
Minimum display = 20g
Display type = 7 segment liquid crystal with 22mm high characters
Ambient temperature range = -10°C~+40°C
Ambient humidity range = Maximum 85% relative humidity, non-condensing
Repeatability = +/–40g
Linearity = +/-40g
Span drift = 20 pp/°C (5°C~35°C)
Power source = DC 9 volts; 6 x 'C' size dry cell batteries; AC adaptor; AD-1681 NiCd pack
Battery life = 80 hours approx. with Manganese dry cells
= 200 hours approx. with Alkaline dry cells
Platform size = 330mm x 424mm
Weight = Approximately 15kg

10. Checklist when malfunction is suspected.

Problem	Confirm these points
The instrument does not switch ON.	Are the batteries correctly inserted? Are the batteries dead? Is the AC adaptor properly connected? Is the correct AC adaptor in use?
The display shows 888.88	Is the scale subject to wind or vibration? Is there a generator of electrical noise nearby? Is the platform correctly fitted? Is anything touching the platform? Is the loadcell cable correctly fitted?
The display shows "-----"	Was the scale switched on with a loaded platform? Press the →0← switch.
The weight value is not correct	Is the machine level? Is something touching the platform? Re-calibration may be required.
The display shows -E	Is the platform fitted correctly?

11. External Dimensions





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