IM Series

Counter Service Scales

Service Instructions

ENGLISH

Trademarks and acknowledgements

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IMPORTANT

When programming or configuring the equipment you must ensure that you comply with all relevant standards and legislation. The example settings given in this book may not be legal for trade with the public.

Contents

Safety and Warnings

1

This chapter contains information about possible hazards and precautions you should take.

Contents

1.1 Warnings

1.1.1 Installation and service

THE EQUIPMENT CONTAINS NO USER SERVICEABLE COMPONENTS.

Installation and maintenance of the equipment must only be carried out by trained and authorised personnel.

1.1.2 Electrical installation

The mains lead must be connected to a supply outlet with a protective earth contact. The electrical supply at the socket outlet must provide over current protection of an appropriate rating.

Pluggable equipment must be installed near an easily accessible socket outlet. Permanently connected equipment must have a readily accessible disconnect device incorporated in the fixed wiring.

USA

If the scale is connected to a 240V supply, the receptacle must be protected by a 15 amp circuit breaker.

1.1.3 Risk of electric shock

To avoid the possibility of electric shock or damage to the machine, always switch off the machine and isolate from the power supply before carrying out any routine maintenance.

Always completely isolate from the power supply before:

- removing the machine cover(s)
- performing any routine maintenance
- cleaning the machine.

1.1.4 Safe handling

To avoid the risk of the machine falling, where applicable, ensure that it is placed securely on a flat and level surface.

When lifting, moving or supporting the machine, take its weight into consideration.

1.1.5 Additional service precautions

- When the covers are removed, do not apply power to the unit unless specifically instructed to do in this handbook.
- When working on live equipment, exercise great care, use insulated tools and test equipment, and do not work alone.
- When testing or fault finding, exercise extreme care. Ensure that any test equipment used is in good condition and capable of withstanding the existing voltages.

- All tools used must have insulated handgrips. Test probes and jumper leads must be in good condition with adequate insulation. Test probes with claw ends and jumper leads must not have insecure parts that may fail during use.

1.1.6 Replacing batteries

CAUTION: Risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to instructions.

1.1.7 Cleaning the machine

CAUTION: Harsh abrasives, solvents, scouring cleaners and alkaline cleaning solutions, such as washing soda, should not be used especially on the display windows. Under no circumstances should you attempt to wipe the inside of the machine.

The outside of standard products may be wiped down with a clean cloth moistened with water containing a small amount of washing up liquid. The outside of products waterproofed to IP65, IP66 and IP67 may be washed down with water containing a small amount of a proprietary detergent.

Cleaning the print head

CAUTION: Do not use metallic objects on the print head. Only use the recommended print head cleaning kit.

1.1.8 Training

To avoid the risk of RSI (Repetitive Strain Injury) it is important to ensure that the machine is placed on a surface which is ergonomically satisfactory to the user. It is recommended that frequent breaks are taken during prolonged usage.

1.1.9 EMC compliance

The following warning may be applicable to your machine.

WARNING:

This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Installation 2

IM300 and IM500 models have additional installation instructions. You should read the relevant instructions before installing those models.

CAUTION: IM300 and IM500 models should **not** be installed by one person alone.

Contents

2.1 Installation

2.1.1 Check list

Kit List
Scale
Power supply
Documentation CD
Quick User Guide
Self service keyboard (IM300 only)
Installation Instructions (IM300 and IM500 only)

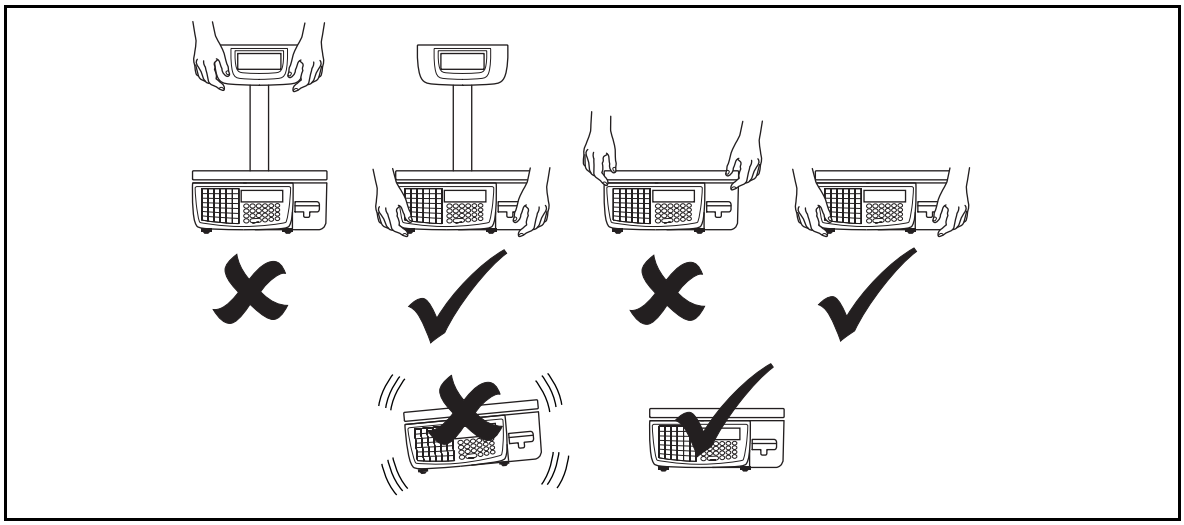
2.1.2 Location

Make sure that the work surface or counter is:

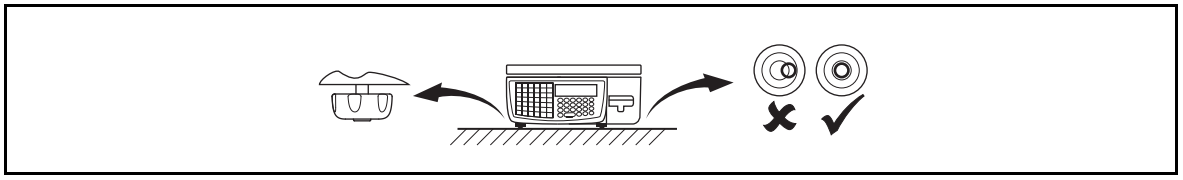
- strong enough to support the weight of the scale
- stable, steady and free from draughts and vibrations.

2.1.3 Handling

Mis-handling of the scale can affect the scale's ability to weigh accurately.



2.1.4 Levelling



2.2 Cable management

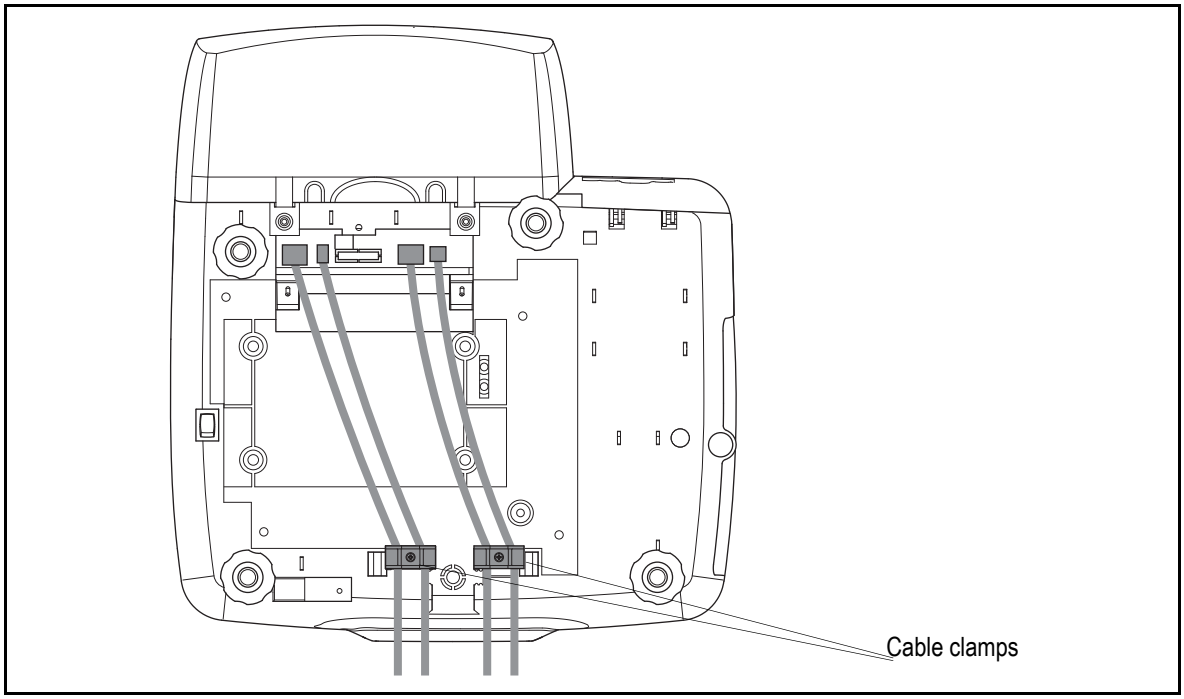


Figure 2.1 External cable routes

2.3 Self service keyboards (IM300)

Single and twin keyboard models

The self service keyboard is supplied as a separate item. It must be connected before the scale will operate.

Follow the installation instructions (part number AWT35-000308) supplied with the IM300 kit.

CAUTION: Do not attempt to fix the self service keyboards by yourself. Get assistance from a second person.

Note: *After installation you may need to configure the keyboard from within Manager Mode.*

Refer to the User Instructions for further information.

Displays and keys

3

This chapter describes the keyboard and basic key functions.

Contents

3.1 Display

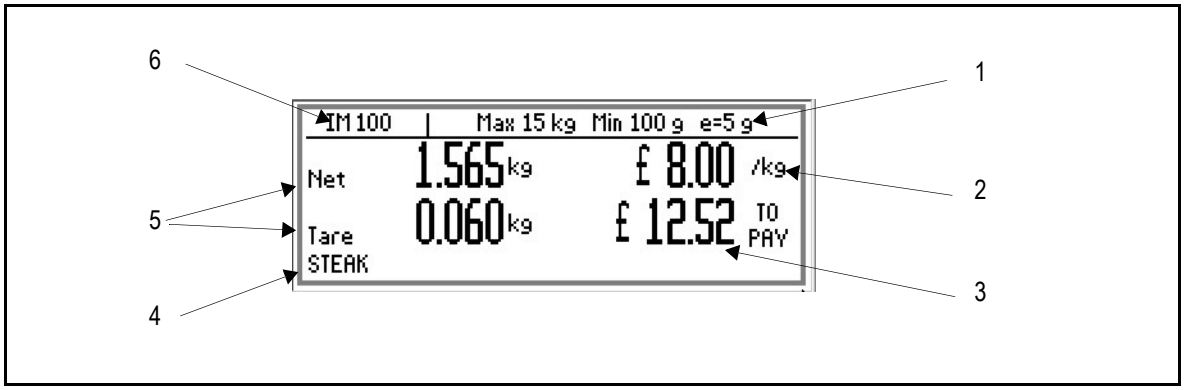


Figure 3.1 Typical weighing display

1. **Metrological information**
2. Price per unit
3. Price of goods
4. Product description (PLU text)
5. Weight information (net/tare weight)
6. Model number

3.2 Keyboard overlay

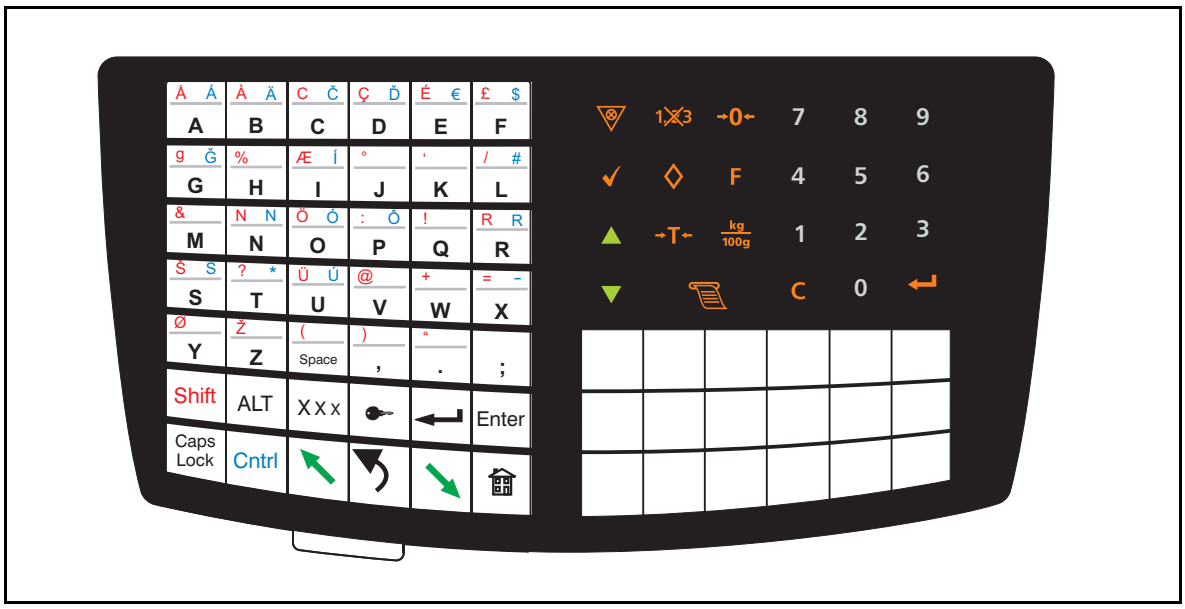


Figure 3.2 IM202 programming overlay

3.2.1 Keys

Reset the weight display to zero

Subtracts the weight of the container when weighing goods.

In **receipt** mode, retains the PLU until the transaction is entered.
Retains a tare, if in operation, until it is cancelled.
In **label** mode, the PLU is retained until it is cancelled.
Sets the scale to pre-pack if the machine configuration allows it.

Cancels a PLU or hand entered price.
Depending on the function in use, clears messages or characters from the display.

Totalises transaction.

In **receipt** mode, when the subtotal is displayed, prints a receipt.

In **label** mode, prints a label.

Confirms data entry.
Enables you to change the number of items when serving non-weighed items.

Override the programmed price of a PLU.

Cancels an unwanted transaction from an operator subtotal.
In **label** mode, when set to print totals labels only for ADD key transactions, it cancels an unwanted transaction from the subtotal.

Depending on machine configuration, allows totals labels or totals and individual labels to be printed.

Initiates a display test sequence.
Pressed again during the test sequence prints a test report.
Press operator key and type in PIN during test sequence to gain access to Manager Mode.

Double zero key.

Move to the item above in the displayed list

Move to the item below in the displayed list

Service mode

4

CAUTION: When programming the scale you must ensure that you comply with all relevant standards. The example settings given in this book may not be legal for trade.

Contents

4.1 Service mode overview

Setting the scale into service mode allows you to configure many aspects of the scales functionality.

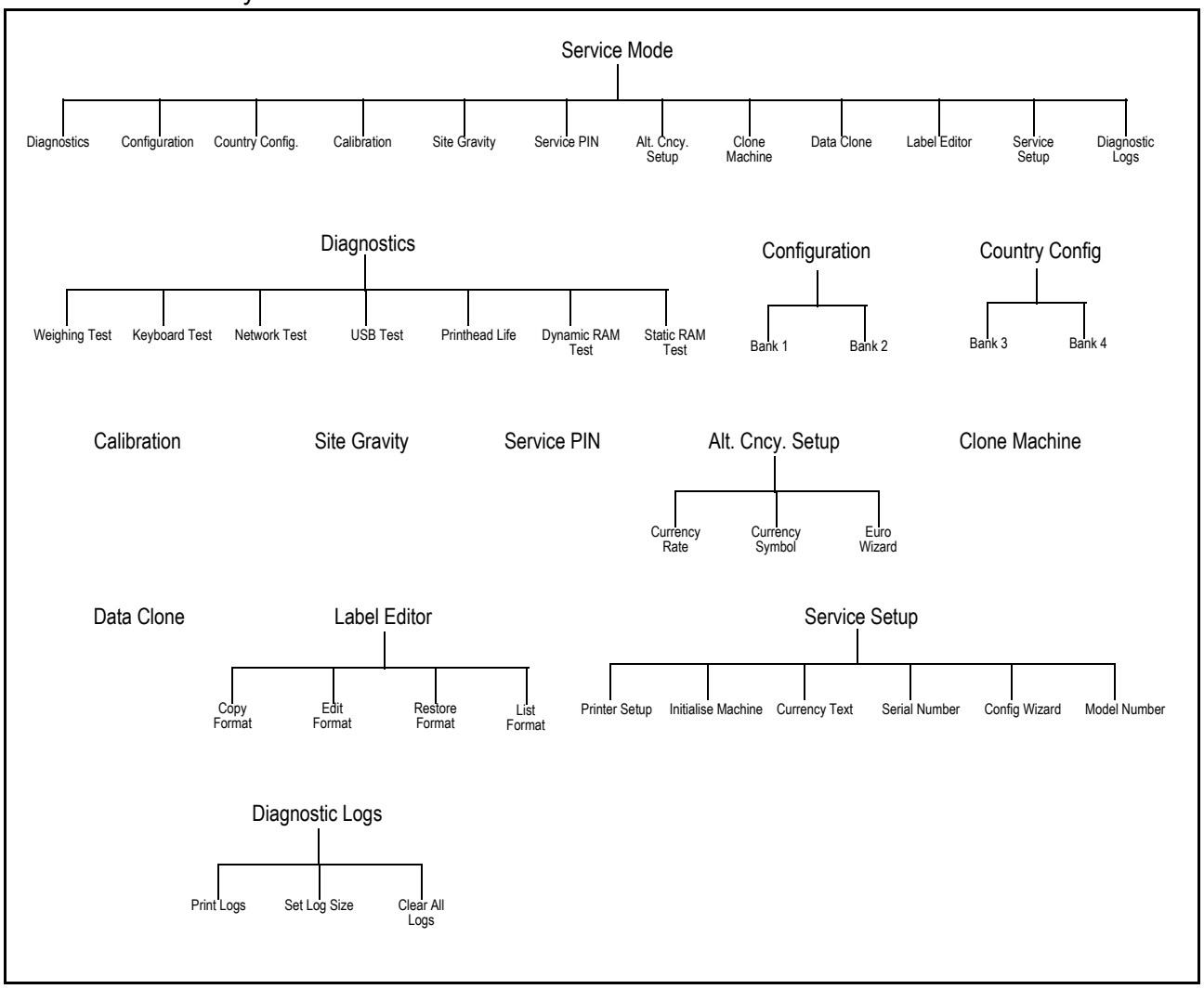


Figure 4.1 Service mode menu structure

4.2 Enter/Exit service mode

There are two levels of service mode available.

- **Full service access**

  Full access to all service options including calibration.

- **Restricted service access**

  Limited access to certain service options. Calibration is not available.

Note: *For all service options, you will need the programming overlay on the keyboard.*

4.2.1 Full service access

Full service mode allows unrestricted access to the service mode configuration menus.

To enter full service mode:

1. Switch on the scale.
2. On the underside of the scale, locate the access hole for the service switch.
3. Carefully insert a narrow bladed screwdriver until it just touches the service switch

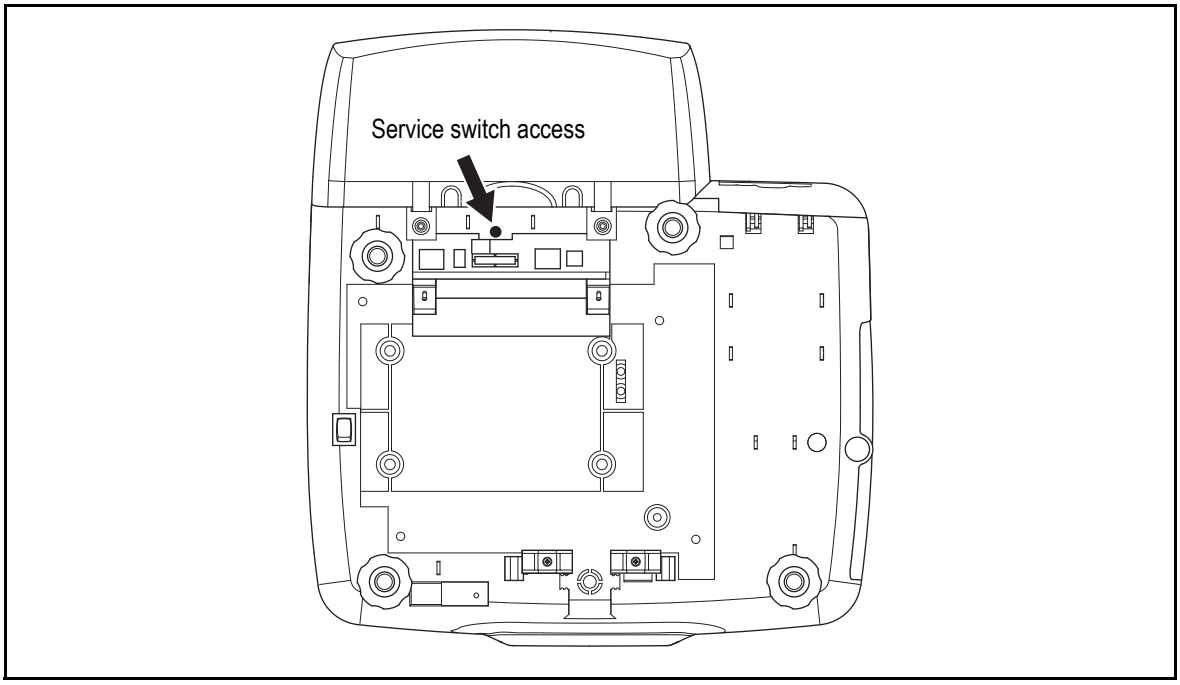


Figure 4.2 Location of service switch access hole.

4.2.2 Restricted service access

Restricted access limits the changes you can make to the scale.

Restricted access **excludes** the following:

1. Changing the capacity
2. Changing the gravity zone compensation
3. Calibrating the scale.

To enter restricted service mode:

1. Switch off the scale and then switch it on again.
2. During the display countdown, enter the service PIN. (Default PIN is 9467.)

Note: *To change the service PIN see* *Service PIN on page 33*

4.2.3 Exit service mode

To return to manager or sales mode

Press  to return to manager mode.

Press  twice to return to sales mode.

4.3 Navigating service mode menus

Use the following keys to navigate the menus:

 or 	**Enter** Select the item Enter a value
	**Back** Move up one menu level
	**Previous** Select previous item
	**Next** Select next item
	**Quick save** Save data entered up to this point
	**Home/Exit** Return to manager mode Exit service mode
	**Numeric keypad** Select numbered menu item

4.4 Diagnostics

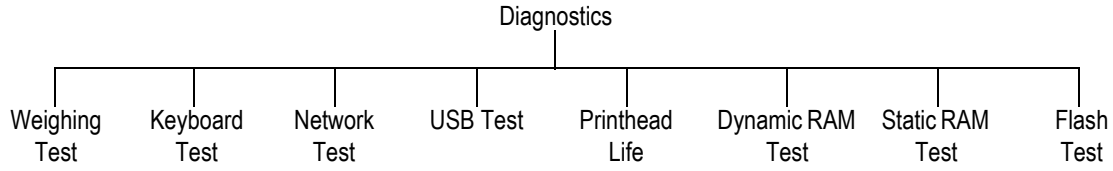
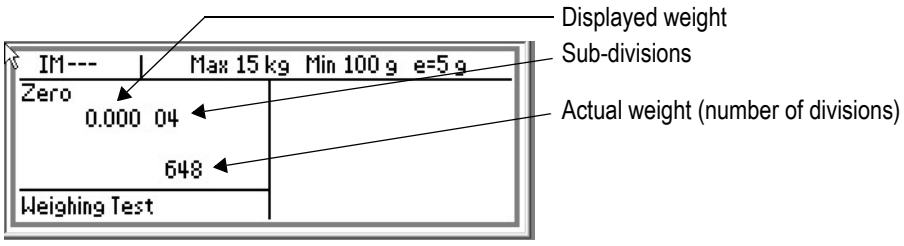


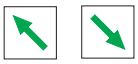
Figure 4.3 Diagnostics menu

The diagnostics menu allows you to perform a number of tests.

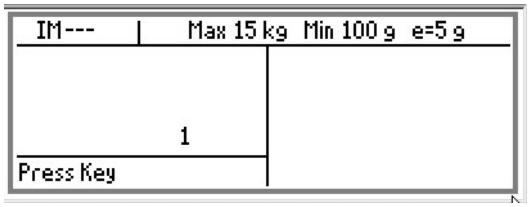
4.4.1 Weighing test



4.4.2 Keyboard test



Select keyboard size
65 - Standard.
84 - Large
TK keyboard 1
TK keyboard 2



- Press each key on the keyboard in turn starting from the top left and working towards the right for each row of keys.
- Press the same key three times to exit test.

4.4.3 Network test

This tests that the scale's network is working correctly.

The scale will talk to another device on the network over a number of cycles. A successful test indicates that the network configuration is working correctly.

4.4.4 USB test

This hardware test checks that the USB port is working correctly.

4.4.5 Printhead life

This is for factory testing purposes only.

4.4.6 Dynamic and static RAM, and Flash test

Checks that the memory is functioning correctly.

4.5 Configuration

The configuration tables determine many of the scale's operating parameters.

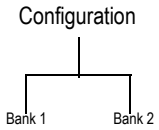


Figure 4.4 Configuration display

Software version 7.0

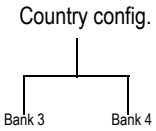
Bank 1		
Digit		
1	**Capacity (Not available in restricted access mode)**	
	0 Not used 1 Not used 2 30lb x 0.01 3 50lb x 0.01 4 6kg x 1g 5 Not used 6 6kg AVR 7 Not used	8 15kg x 5g 9 15kg AVR A Not used B 30kg x5g C Not used D 30lb/15kg E - T Not used
2	**Tare system**	
	0 Free 1 Free, Graduated 2 Free, Cumulative, Graduated 3 Free, Cumulative, Graduated, Proportional	4 Free, Stored 5 Free, Graduated, Stored 6 Free, Cumulative, Graduated, Stored 7 Free, Cumulative, Graduated, Proportional, Stored
3	**Tare display**	
	0 No tare display 1 Negative weight display	2 Separate tare display only 3 Separate tare and negative weight
4	**Minimum weight disturbance**	
	0 1 division 1 4 divisions	2 10 divisions 3 20 divisions
5	**Bleep behind zero, over range and balance lost**	
	0 Disabled	1 Enabled
6	**Numeric entry timeout**	
	0 Disabled	1 Enabled
7	**PLU auto recall timeout**	

Bank 1		
	0 None 1 0.6 seconds 2 1.0 seconds 3 0.3 seconds 4 0.4 seconds	5 0.5 seconds. 6 2.0 seconds 7 3.0 seconds 8 4.0 seconds 9 5.0 seconds
8	**Receipt tax printing**	
	0 None 1 Totals tax	2 Itemised tax
9	**Weight filter type**	
	0 Settling time 0.2s (71.2Hz) 1 Settling time 0.5s (71.2Hz) 2 Settling time 1.0s (71.2Hz) 3 Settling time 1.9s (71.2Hz)	4 Settling time 0.2s (81.2Hz) 5 Settling time 0.5s (81.2Hz) 6 Settling time1.0s (81.2Hz) 7 Settling time1.9s (81.2Hz)
10	**Price base**	
	0 Single price base (lb/kg) 1 Single price base (1/4lb/100g)	2 Dual price base (lb/kg) 3 Dual price base (1/4lb/100g)
11	**Printer type**	
	0 None 1 Receipt only	2 Label only 3 Label and Receipt
12	**Default sales mode and machine type**	
	0 Hand price mode, weighing 1 PLU price mode, weighing	2 Hand price mode, non-weighing 3 PLU price mode, non-weighing
13	**Add function**	
	0 None 1 Transaction + total 2 Total only	3 Receipt only 4 Transaction and receipt
14	**Date type**	
	0 Numeric	1 Alpha
15	**Date format**	
	0 DD MM YY 1 MM DD YY 2 YY MM DD	3 DD MM YYYY 4 MM DD YYYY 5 YYYY MM DD
16	**Maximum transaction sequence number**	
	0 999999 1 99999 2 9999	3 999 4 99 5 9

Bank 2				
Digit				
1	**Dummy zero in unit price)**			
	0 6 digit UP, 6 digit TP, no dummy zero 1 6 digit UP, 6 digit TP, dummy zero		2 5 digit UP, 6 digit TP, no dummy zero 3 7 digit UP, 7 digit TP, no dummy zero	
2	**Transaction rounding**			
	0 Round to nearest 1 1 Round to nearest 5 2 Round to nearest 10		3 Round to nearest 25 4 Round to nearest 50	
3	**Number of decimal places**			
	0 No decimal places 1 1 decimal place 2 2 decimal places		3 3 decimal places 4 0 on unit price, 1 on total price 5 Thousands separators	
4	**Punctuation**			
	0 Decimal point 1 Comma		2 Inverted comma	
5 & 6	**Currency symbol**			
	00. User defined 01. £ 02. $ 03. R 04. F (French) 05. Kr 06. DM 07. S 08. Fr 09. f 10. Lit 11. P 12. E 13. K 14. M	15. D 16. RM 17. L 18. N$ 19. Esc 20. Pta 21. Rp 22. mk 23. PX 24. SR 25. zt 26. Kc 27. SK 28. kr 29. DHS	30. Won 31. bt 32. Pts 33. EEK 34. Lt 35. € 36. Eur 37. R$ 38. B 39. C 40. Q 41. TL 42. F (Belgian) 43. BD 44. LE	45. JD 46. KD 47. LL 48. RO 49. QR 50. SR 51. YR 52. Ft 53. kn 54. Lm 55. Ksh 56. RON 57. ROL 58. LEI
7	**PLU auto recall timeout**			
	0 None 1 0.6 seconds 2 1.0 seconds 3 0.3 seconds 4 0.4 seconds		5 0.5 seconds. 6 2.0 seconds 7 3.0 seconds 8 4.0 seconds 9 5.0 seconds	
8	**Receipt tax printing**			
	0 None 1 Totals tax		2 Itemised tax	
9	**Weight filter type**			

Bank 2		
	0 Settling time 0.2s (71.2Hz) 1 Settling time 0.5s (71.2Hz) 2 Settling time 1.0s (71.2Hz) 3 Settling time 1.9s (71.2Hz)	4 Settling time 0.2s (81.2Hz) 5 Settling time 0.5s (81.2Hz) 6 Settling time1.0s (81.2Hz) 7 Settling time1.9s (81.2Hz)
10	**Price base**	
	0 Single price base (lb/kg) 1 Single price base (1/4lb/100g)	2 Dual price base (lb/kg) 3 Dual price base (1/4lb/100g)
11	**Printer type**	
	0 None 1 Receipt only	2 Label only 3 Label and Receipt
12	**Default sales mode and machine type**	
	0 Hand price mode, weighing 1 PLU price mode, weighing	2 Hand price mode, non-weighing 3 PLU price mode, non-weighing
13	**Add function**	
	0 None 1 Transaction + total 2 Total only	3 Receipt only 4 Transaction and receipt
14	**Date type**	
	0 Numeric	1 Alpha
15	**Date format**	
	0 DD MM YY 1 MM DD YY 2 YY MM DD	3 DD MM YYYY 4 MM DD YYYY 5 YYYY MM DD
16	**Maximum transaction sequence number**	
	0 999999 1 99999 2 9999	3 999 4 99 5 9

Country configuration



Bank 3		
Digit		
1	**Balance key range**	
	0 ± 2%	1 ± 5%
2	**+15% -5% Balance at power up**	
	0 Disabled	1 Enabled
3	**Large step behind zero**	
	0 Disabled	1 Enabled

Bank 3		
4	**Reduced zero tracking**	
	0 Disabled	1 Enabled
5	**Retained tare mode**	
	0 Disabled	1 Enabled
6	**Manual tare calculation**	
	0 None 1 tare key	2 Zero key 3 Tare and zero key
7	**Price interlock/NTEP operation**	
	0 Disabled 1 Price and tare	2 NTEP operation.
8	**Fix tare options**	
	0 Fix tare and unit price	1 Fix tare only
9	**Open cash drawer with zero total**	
	0 Disabled	1 Enabled
10	**Price 1/price 2 swap positions on label**	
	0 Disabled	1 Enabled
11	**Receipt total currency symbols**	
	0 Disabled	1 Enabled
12	**Minimum prepack weight**	
	0 1 division	1 20 divisions
13	**Prepack allows stored/grad tares**	
	0 Disabled	1 Enabled
14	**Triple zero key**	
	0 Disabled	1 Enabled
15	**Tax system**	
	0 Inclusive 1 Exclusive	2 Inclusive, PoS only 3 Exclusive, PoS only
16	**Tax reference in description**	
	0 Disabled	1 Enabled

Bank 4		
Digit		
1 & 2	**Language**	
	00 English (UK) 01 Spanish 02 RSA 03 French 04 German 05 Italian 06 Dutch 07 Danish 08 Polish 09 Czech 10 Portuguese 11 Finnish 12 Norwegian 13 Turkish	14 Greek 15 Croatia 16 Hungary 17 Sweden 18 Arabic 19 English (US) 20 Romanian 21 Estonian 22 Bulgarian 23 Russian 24 Ukrainian 25 English (Arabic)
3	**Sales key layout**	
	0 IM All markets Price Base	
4	**Manager key layout**	
	0 IM European 1 IM Greek	2 IM Arabic 3 IM Cyrillic
5	**Receipt algorithms - transaction count on receipt / display per transaction assigned**	
	Algorithm / Weighed / n x (+ve non-weighed) / n x (-ve non-weighed) 0 A 1/1 1/1 0/1 1 B 1/1 1/1 1/1 2 C 1/1 n/1 0/1 3 D 1/1 n/1 n/1 4 E 1/1 n/1 0/0	
6	**Receipt formats**	
	0 Receipt format 0 - Italian format which includes tare weight	
	1 Receipt format 1 - No symbols line, symbols printed with transaction data. First line contains text and total price. Second line contains weight/multiplier and unit / item price.	
	2 Receipt format 2 - As receipt format 1 except total price printed on third line for weighed.	
	3 Receipt format 3 - Symbols line. First line contains text. Second line contains weight/multiplier, unit / item price and total price.	
	4 Receipt format 4 - Each transaction contains its own symbols line.	
	5 Receipt format 5 - USA receipt format. Identical to format 1 except that 'X' and 'Items' is replaced by '@'	
	6 Receipt format 6 - Australian receipt format. Identical to format 5 except description not allowed to encroach on the total prices column.	
7	**Condensed format**	
	0 Disabled	1 Enabled
8	**Change calculation**	
	0 Disabled	1 Enabled
9	**Direct entry prepack**	
	0 Disabled	1 Enabled

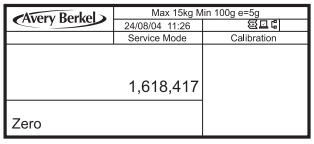
Bank 4		
10	**Net weight**	
	0 Grams	1 oz - lb/oz
11	**USA total price legend**	
	0 Disabled 1 Using net weight (per 100g) 2 Using actual weight (Danish)	3 Using net weight (per kg) 4 By product type
12	**Back calculation of unit price**	
	0 1 division	1 20 divisions
13 & 14	**Country**	
	00 UK 01 Spain 02 South Africa 03 France 04 Germany 05 Italy 06 Netherlands 07 Denmark 08 Poland 09 Czech Republic 10 Portugal 11 Finland 12 Norway 13 Turkey 14 Greece 15 Croatia 16 Hungary 17 Sweden 18 Saudi Arabia 19 General Export 20 Indonesia	21 Australia 22 New Zealand 23 USA 24 Ireland 25 UAE 26 Canada 27 Malaysia 28 Zimbabwe 29 Lithuania 30 Estonia 31 Egypt 32 Mexico 33 Panama 34 Belgium 35 Switzerland 36 Austria 37 Tunisia 38 Romania 39 Bulgaria 40 Russia 41 Ukraine
15	**Frequent shopper algorithm**	
	0 Compute frequent shopper price from printed weight 1 Compute frequent shopper price from back-calculated weight	2 Compute frequent shopper price from saving and back-calculated weight 3 Frequent shopper price scheme 3
16	**Not used**	

4.6 Calibration

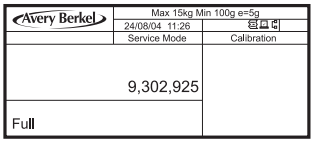
1 Ensure you are in full service mode - see page 19.
2 Select **Calibration** from the available options.

3 If the site and factory gravity factors differ, then you will be prompted to enter the factory gravity factor. Refer to the local authority for details.
Use the left/right arrows to set the decimal point.

4 Calibrate with zero load.
Ensure there is no weight on the scale, then press ENTER.



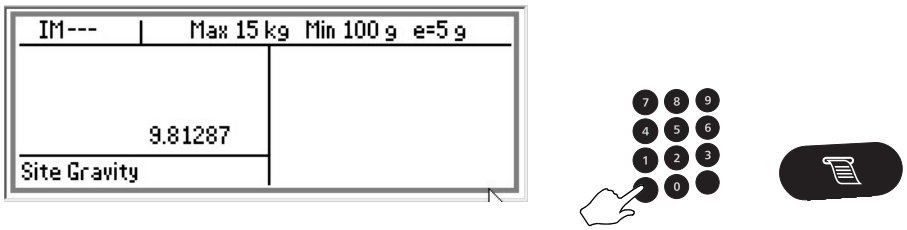
5 Calibrate with full load.
Place a full load on the weighplate, then press ENTER.



Note: the last 3 digits will be unstable.

4.7 Site gravity

If the scale has been moved to a different gravity zone, enter the site gravity compensation factor. Refer to the local authority for details.



Note: *This is the gravity factor for the location where the scale is to be used*

4.8 Service PIN

You can change the four digit restricted service access PIN from this menu. Only change the PIN if you think that the user knows the service PIN and is tampering with the machine's configuration.

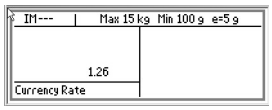
4.9 Alternative currency setup

4.9.1 Currency rate and symbol

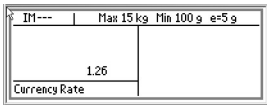
The currency rate and symbol setup options are used to configure a second currency.

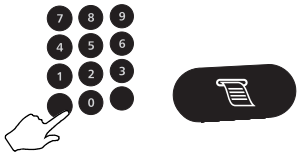
1 Ensure you are in full service mode - see page 19.
2 Select **Alt. Cncy Setup** from the available options.

3 Press  to select **Currency Rate**.



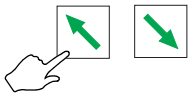
4 Enter the required value for the currency.

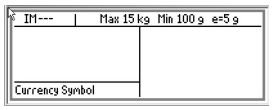




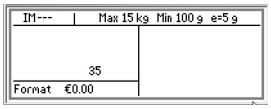
Note: Use the ‘Previous / Next’ arrows to position the decimal point.

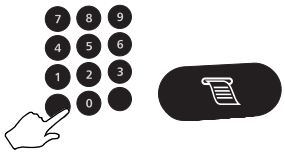
5 Use the ‘Previous / Next’ arrows to select **Euro Symbol**.





6 Enter the value for the Currency Symbol.
35 = € (See configuration bank 2, digits 5 & 6 for details)





4.9.2 Euro wizard

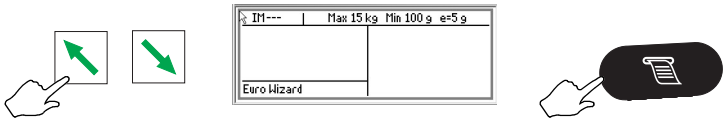
This converts the PLU file from the local currency to Euro currency. The scale will then use the Euro as its **primary currency**.

CAUTION: Only a factory reset can undo this operation.

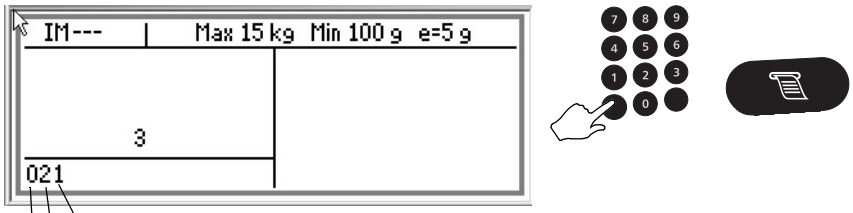
Euro rate and symbol procedure

1 Ensure you are in full service mode - see page 19.
2 Select **Alt. Cncy Setup** from the available options.

3 Use the 'Previous / Next' arrows to select **Euro Wizard**.



4 Set how the Euro will appear on the display / labels.

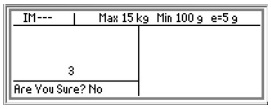


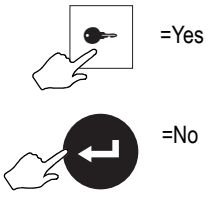
Label 0 = 2nd price field shows alternative currency
1 = 2nd price field shows promotional value

Barcode 0 = Barcode price printed as Euros
1 = Barcode prints alternate currency

Label/ Display 0 = Euro symbol
1 = Euro text

5 Select Yes to complete the process or No to abort.





=Yes

=No

4.10 Clone machine

This function allows you to update another machine on the network so that it is functionally identical to the one you are using.

The clone function will copy the following information:

- Executable files (application program)
- PLU file
- Label formats
- Logos
- Configuration and keyboard layouts

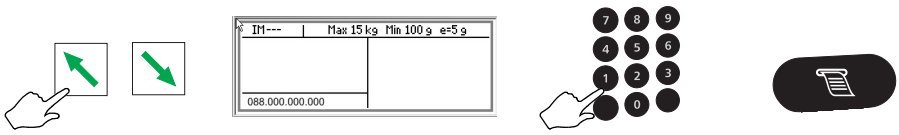
Note: *Machine specific information is excluded. (e.g. capacity, calibration data or gravity compensation factors)*

Network ID restrictions

- Application program - can be cloned irrespective of the network IDs of the two machines.
- Data - can be cloned only if both machines are using the same network ID

Clone procedure

1	Ensure you are in full service mode - see page 19.
2	Select **Clone Machine** from the available options.
3	Enter the IP address of the target machine.



4.11 Data clone

Data clone allows you to transfer all the data in one machine to another machine (or machines) on the network.

The data clone function will copy the following information:

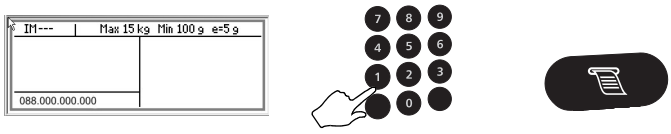
- PLU file
- Label formats
- Logos
- Configuration and keyboard layouts

Network ID restrictions

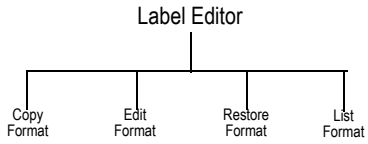
- Data - can be cloned only if both machines are using the same network ID

For more information see *Scale groups (Network ID)* on page 93.

Clone procedure

1 Ensure you are in full service mode - see page 19. 2 Select **Data Clone** from the available options.
3 Enter the IP address of the target machine. 

4.12 Label editor menu



The scale has 12 (0 - 11) standard label formats and four (12 - 15) nutritional label formats. This menu allows the label formats to be edited as required. Each label can have up to 26 fields on it.

Note: *The maximum printable area on a label is 160mm x 60mm.*

4.12.1 Copy Format

Copy format allows you to create an identical copy of an existing label format. The copy can then be modified using the Edit Format option (see below).

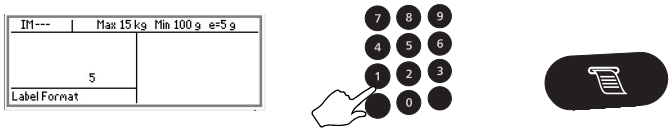
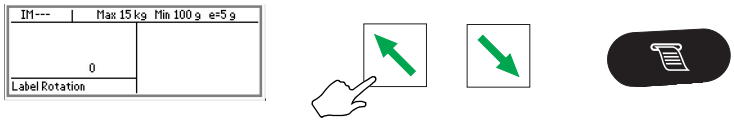
4.12.2 Edit Format

This allows you to edit the label formats.

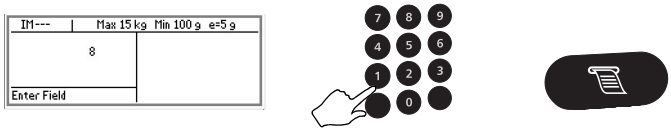
At any time you may:

- Use the ‘List Format’ function to print the current settings.
- Use the ‘Test’ key to print a sample layout.

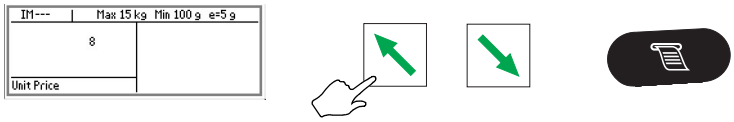
Use the `List Format’ function to print the current settings.

1 Ensure you are in full service mode - see page 19. 2 Select **Label Editor** from the available options. 3 Select **Edit Format** from the available options.
4 Enter the number of the label format to be edited. (e.g. 5). 
5 Use ‘Previous’ or ‘Next’ arrows to select the angle of rotation for the text & graphics on the label 

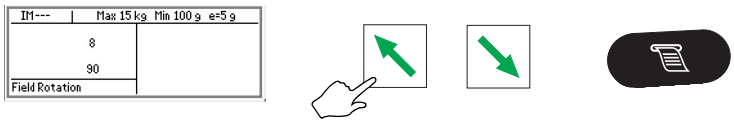
6 Enter the number of the field to be edited. (e.g. 8)



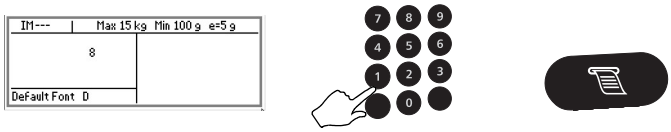
7 Use ‘Previous’ or ‘Next’ arrows to select the information that field is to display. (e.g Unit Price)



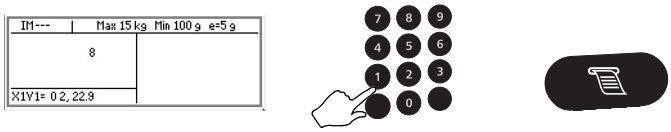
8 Use ‘Previous’ or ‘Next’ arrows to select the angle of rotation for the selected field



9 Enter the number (or letter) for the font to be used

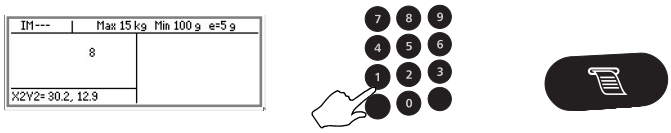


10 Enter the X1 and Y1 distances in mm (See field positioning XX)
(Use ‘Previous’ and ‘Next’ arrow keys to select between X1 & Y1)

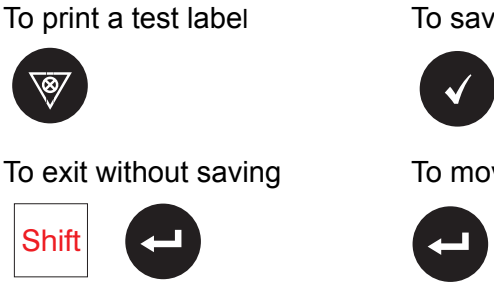


X1 = distance from left
Y1 = distance from top

11 Enter the X2 and Y2 distances in mm (See????) (Use ‘Previous’ and ‘Next’ arrow keys to select between X2 & Y2)



X2 = distance from right
Y2 = distance from bottom



USR - User defined field

STD - Standard default label format

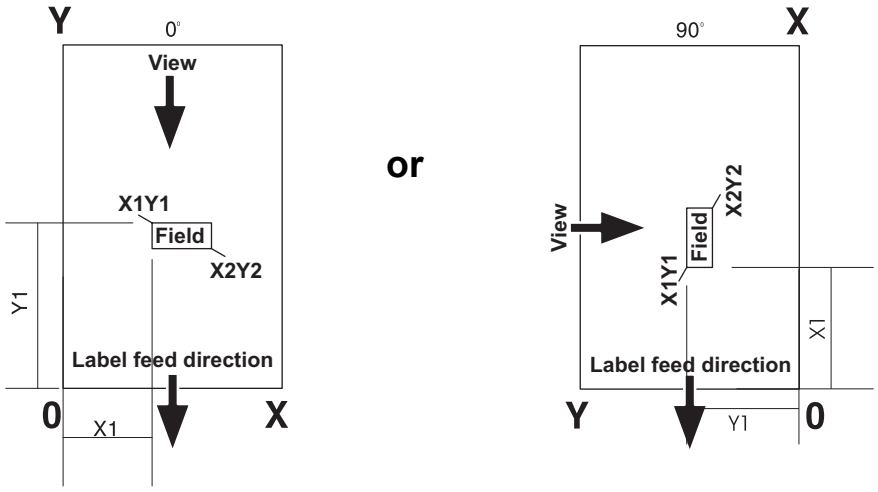
Note: This field appears in this position on all labels

Figure 4.5 Typical label format test print

Field position notes

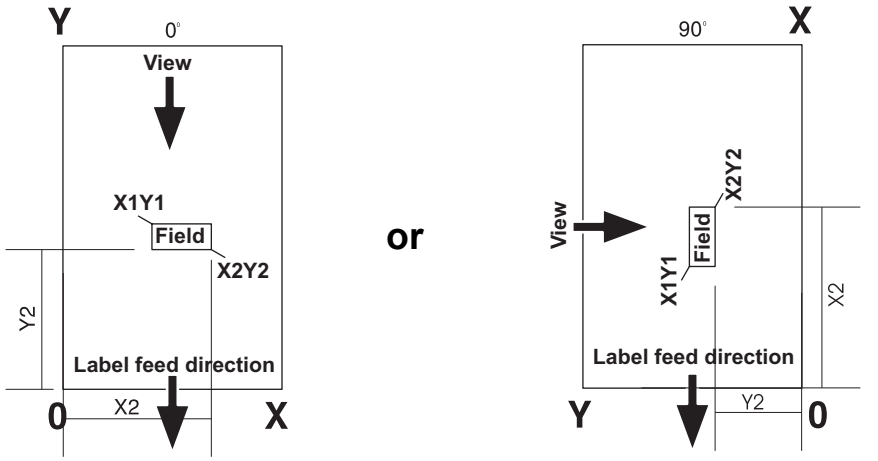
The position of the fields on a label are set by a bounding box. This uses the distances X1, Y1, X2, Y2; illustrated as follows.

X1 & Y1



Field rotation 0° Field rotation 90°

X2 & Y2



Field rotation 0° Field rotation 90°

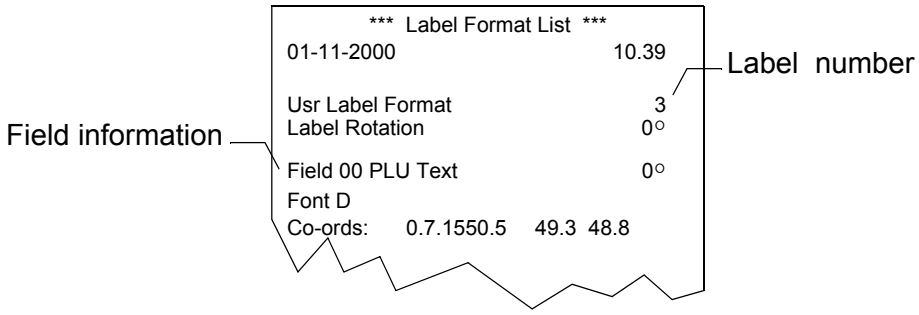
Note: *The distances are entered for the direction in which the label is being viewed.*

4.12.3 Restore format

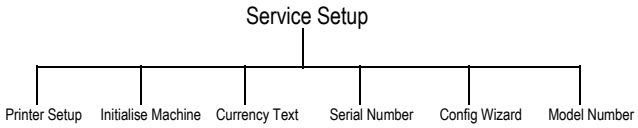
This option allows you to restore the specified label format to its factory default.

4.12.4 List format

This option will print out details about all the fields that are used on the specified label format



4.13 Service setup



4.13.1 Printer setup

Do not adjust these settings unless there is a problem with the printer.

Density

This allows you to set the print density on the print out.

1 = light

9 = dark (default = 5).

If the print quality is poor check that the print head is clean. Poor quality printing can be caused by using inferior quality paper.

Note: *For machines with two printers, set the print density for the receipt (second) printer using the Printer 2 menu option.*

Sensor distance

This allows the parking position distance to be adjusted (mm). Default setting is 48.5mm

Note: *You will need to reset the opto sensor distancefollowing a Factory Reset or replacing the main board.*

Label threshold (10 - 250)

Set the sensitivity of the label gap sensor.

10 = Very sensitive to gaps between labels.

250 = Not very sensitive to gaps between labels.

Default value = 50

Paper threshold (10 - 250)

Set the sensitivity of the paper sensor.

10 = Very sensitive to presence of paper.

250 = Not very sensitive to presence of paper.

Default value = 100

4.13.2 Initialise M/C

This allows you to:

- Restart the machine
- Set up the memory allocations.

The options are:

Warm restart

This is the equivalent of switching off the machine and then switching on.

Cold Start

This will restart the machine and clear all the battery-backed RAM. This will delete **ALL** records except:

Service PIN	Sub net mask
Label formats and logos	Gateway IP address
Configuration banks	Number of receipts and transactions
Euro rate	Print density
IP address	Distance from sensor
Network ID	Diagnostic log size
Host port number	LCD contrast
Calibration and gravity factors	

Factory reset

USE WITH CAUTION!

This will restore the machine to its factory default settings.

Factory reset will delete **ALL** records except for the MAC (Media Access Control) address, calibration constants, gravity factors and bank 1, digit 1 of the machine configuration.

Note: *You will need to reset the opto sensor distance after a factory reset.*

Factory reset values

IP Address	Reset to 88.200.100.5
Network ID	Reset to 0
Host port number	Reset to 3001
Sub net mask	Reset to 255.0.0.0
TCP/IP Gateway Address	Reset to 0.0.0.0 (disabled)
Logos	All (user logos) deleted
Label formats	Reset to default settings
Calibration	Unchanged
Gravity	Unchanged
Configuration banks	Reset to default settings except for digit 1 bank 1
Alt. Cncy. conversion rate	Reset to 1.00
Print density	Reset to 5
Number of receipts and trans.	Reset to 20 receipts and 8 transactions
Distance from sensor to printhead	Reset to 48.5mm
LCD contrast	Reset, but no change until machine is switched off and on.
Service PIN	Reset to 9467
Diagnostic log size	Reset to small
Audit mode	Enabled
Distance printed (mm)	Reset to zero

Delete PLU file

This option deletes all the PLUs stored in the PLU file.

Set Trans Memory

This allows you to set the amount of memory allocated for transactions and receipts.

Memory setting guidelines

Note: *Changing memory settings will induce a cold start and should therefore be done* ***before*** *other (customer) data is set.*

Each machine will store transactions according to the '**Set Trans Memory**' option (selected from within the 'Initialise M/C menu).

You can set the following:

- **Num Receipts** (Default = 20)

  The max number of receipts stored.

- **Num Trans / Recpt** (Default = 8, Max = 99)

  The max number of individual transactions stored for each receipt.

Audit settings

The Trans memory required is closely associated with the Audit settings defined within manager mode. See the separate user instructions for more information.

Trans memory - Client machines

The memory allocated should reflect the requirements of the installation.

Example:*1 - Label*

Example scale requirements:

50 labels per hour (1 transaction per label

8 hours trading required in local mode (network fail)

Memory requirements would be

Num Receipts = 400
Num Trans per receipt = 2

Example:*2 - Receipt*

Example scale requirements:

20 receipts per hour
Average of 4 transactions per receipt
8 hours trading required in local mode (network fail)

Memory requirements would be:

Num Receipts = 160

Num Trans per receipt = 4

Trans memory - Server machines

Settings notes - single servers

For a server, receipts are only stored when live (prior to being totalised). Consequently, the maximum number of receipts stored will be the same as the number of operators using the system at any one time.

Example:*server requirements:*

10 operators on system

Up to 100 live transactions at any one time

(assume equal split between operators)

Memory requirements would be:

Num Receipts = 10

Num Trans per receipt = 10

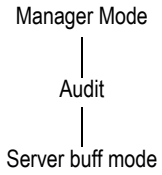
This would also limit the largest receipt, on the system, to 100 transactions (i.e. 10 x 10).

Note: *If an audit trail is required, the number of receipts and transaction stores should be set according to the length of trail required*

Settings notes - dual servers

Linear / Circular Buffer

The server buffer can be set to either linear or circular.



Set to linear - If totals and/or audit trail integrity is vital.

The number of receipt stores and transaction stores will determine how long trading can continue before an ***audit full*** condition is reached.

Set to circular - If the ability to continue trading is more important.

The number of receipt & transaction stores will dictate after how long information will start to be overwritten.

The buffer type is set within manager mode. See the separate user guide for more information on circular / linear buffers.

Consolidation of dual servers

When communications between dual servers breaks down, both will continue as servers, potentially with clients. As trading continues on both, totals, receipts and transactions will be generated. When the servers are reunited, transactions and receipts will be consolidated, so that both servers will now have a complete set of receipts and transactions. Totals data will not be collected. It will be regenerated from the receipt and transaction data.

Note: *For server consolidation, audit mode must be enabled.*

Delete firmware

USE WITH CAUTION!

This option deletes the .uboot file.

Before selecting this option make sure you have a USB memory stick containing the new firmware in the root directory connected to the scale. The firmware must have the filename appimage.uboot.

4.13.3 Currency text

The user defined currency text is 3 digit field that can be used instead of the default currency text (as set in config bank 2 digits 5 & 6). See *Configuration* on page 24 for more information.

Note: *To use this user defined currency text, set config bank 2 digits 5 & 6 to 00.*

4.13.4 Serial Number, Config Wizard, Model Number

Serial number

Factory set scale serial number.

Config wizard.

Enables streamlined Country Configuration on reboot.

Model number

Allows you to enter the three digit model number on the display.

4.14 Diagnostic logs

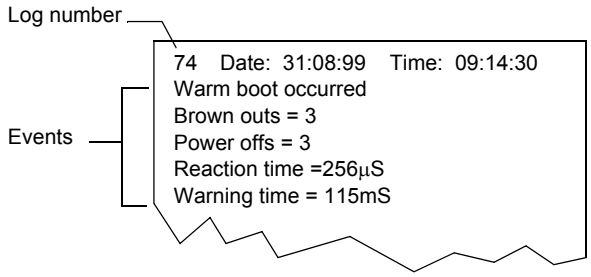
The scale stores a number of logs to record various events. This option is used to print and configure the logs.

Print Logs

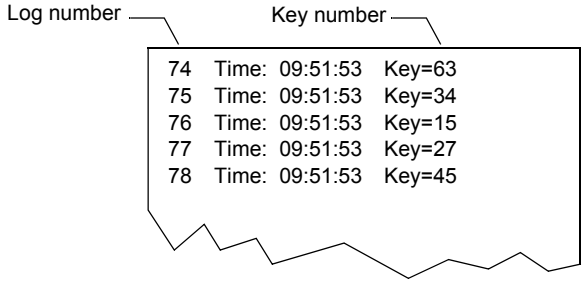
Select from the following

- Print system log
- Print key log
- Printcomms. log
- Print all logs

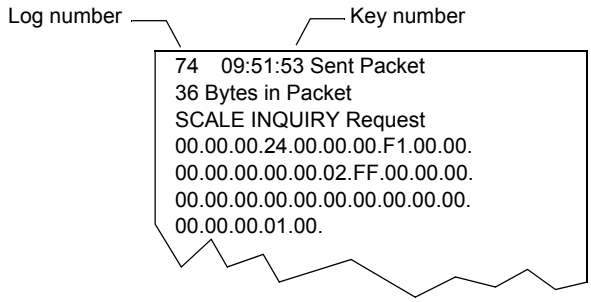
System log: This prints a report showing all the events that have occurred with the machine, including the number of times that the machine has been switched on and off.



Key log: This prints a report showing which keys have been pressed.



Comms log: This prints a report showing the history of the scale network traffic.



Set log size

This option sets the size of the log. If you select a different log size, then you must cold start the machine. Log size options are:

- None - No logs will be stored
- Small - 100 events. (Uses 30K of the available memory)
- Medium* - 500 events. (Uses 160K of the available memory)
- Large* - 1000 events. (Uses 650K of the available memory)

Note: *A larger log size will reduce the amount of memory that can be used for PLUs.*

* These require a RAM expansion board to be fitted.

Clear All Logs

This clears all the data from the logs.

4.14.1 Printhead life

This is for factory testing purposes only.

Service procedures

5

This chapter describes common service and maintenance procedures.

Contents

5.1 Power up/power down

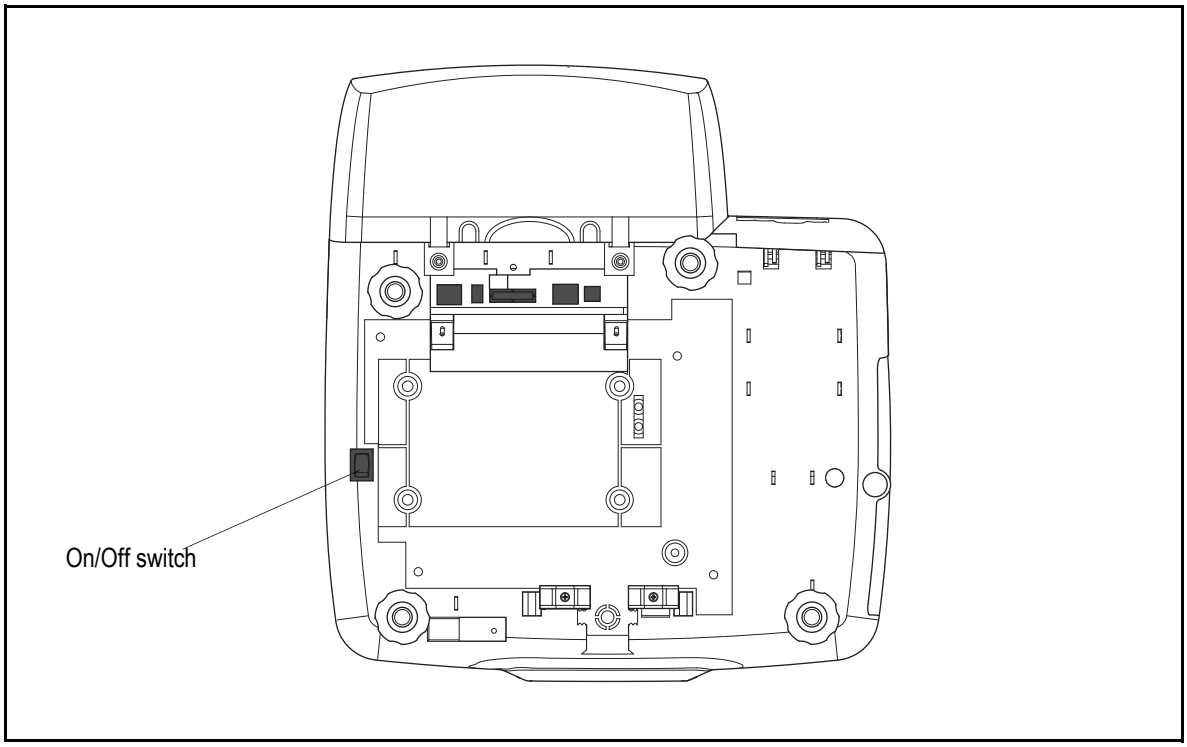


Figure 5.1 Location of On/Off switch

Service notes:

- Power up / down using the switch shown above.

CAUTION: Even when the unit is switched off, mains voltage is still present inside the unit.

5.2 Calibration

For the calibration procedure see *Calibration on page 31*

5.3 Firmware update

The application firmware can be upgraded in one of three ways.

Ethernet connection to MX050

Connect the scale to a PC and select a *.uboot file to be programmed into the scale. Refer to MX050 Service Instructions for more detail.

USB memory stick (scale service menu)

You must have a USB memory stick containing the new firmware to be programmed into the scale. See *Delete firmware*, *section 4.13.2*.

Note: *the new firmware must have a fixed filename of "appimage.uboot", this file must be located in the root of the memory stick*

USB memory stick (service mode switch)

You must have a USB memory stick containing the new firmware to be programmed into the scale.

1. Plug the memory stick into the scale then switch on the scale, whilst holding down the service mode switch on the Main board for 3 seconds.
2. After 3 seconds you can release the switch and the new firmware will be read from the memory stick and burnt into the scale. (The process will take approximately 2 minutes to complete)

Note: *When the update has been successfully completed the scale will reboot and return to the normal weighing display.*

5.4 Weighplate, cross and top cover

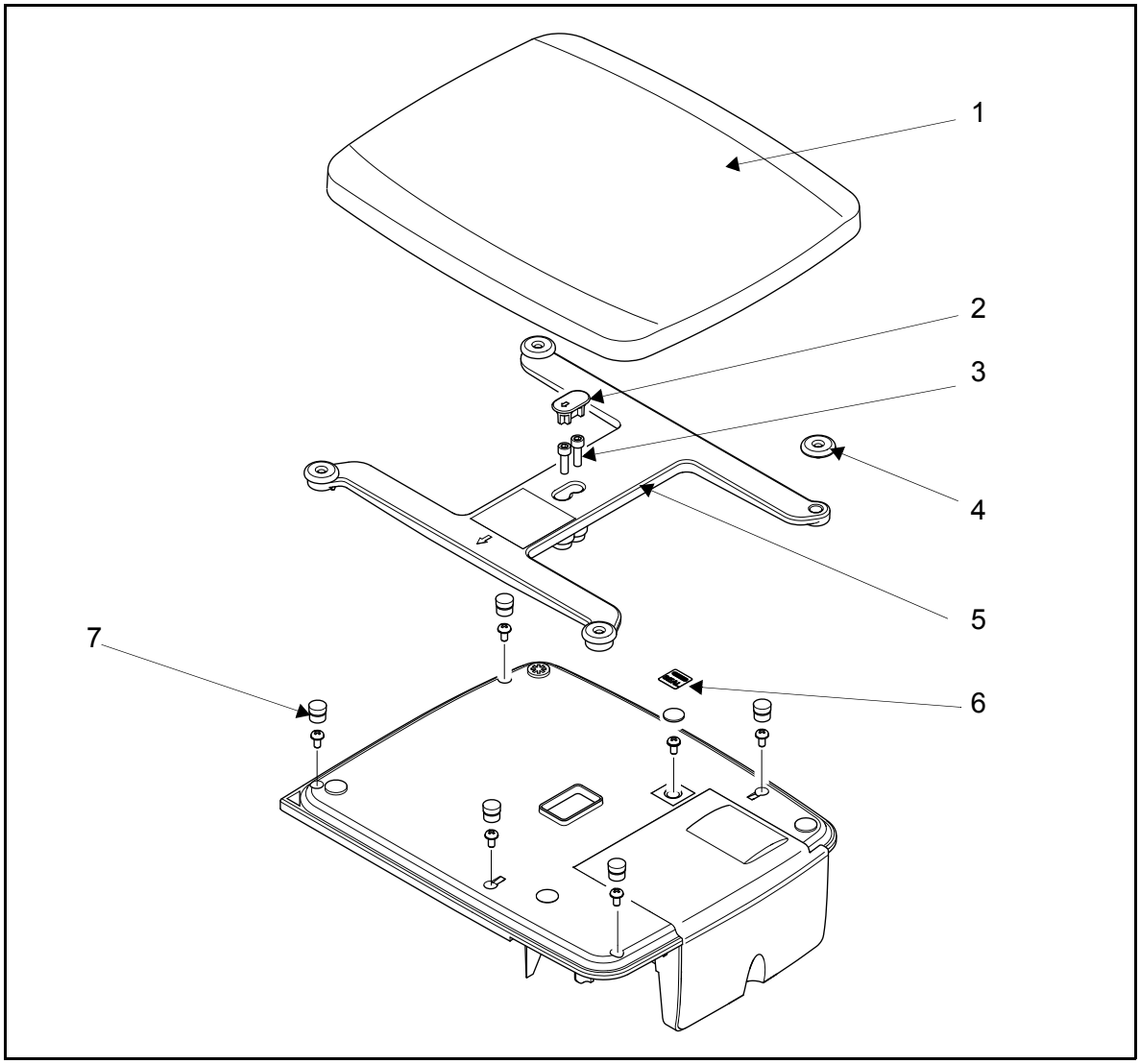


Figure 5.2 Exploded view of plate, cross and top cover

Service notes:

- The cross must be fitted with the arrow pointing to the front of the scales.

3. Weigh plate.
4. Rubber seal fitted over cap head screw recess.
5. M6 x 20 cap head screws (2 off).
6. Rubber foot (4 off).
7. Cross.

8. Weights and Measures seal
9. Rubber bung

5.4.1 Removing the weighplate and cross

The weigh plate rests on the four rubber feet on the cross.

1. Remove the rubber seal to gain access to the two cap head screws in the centre of the cross.
2. Remove the two cap head screws retaining the cross and lift off the cross.

5.4.2 Removing the top cover and printer door

1. Remove the five rubber bungs and the screws from the top of the cover and the retaining screw in the printer housing.
2. Remove the Weights and Measures seal and the screw beneath the seal.

Note: *Once this seal has been broken or removed certain procedures, such as calibration or load cell replacement, may require the scale to be re-verified. You should ensure that all procedures comply with local/national weights and measures requirements.*

3. Carefully lift off the top cover.

5.5 Customer display assemblies

5.5.1 IM100

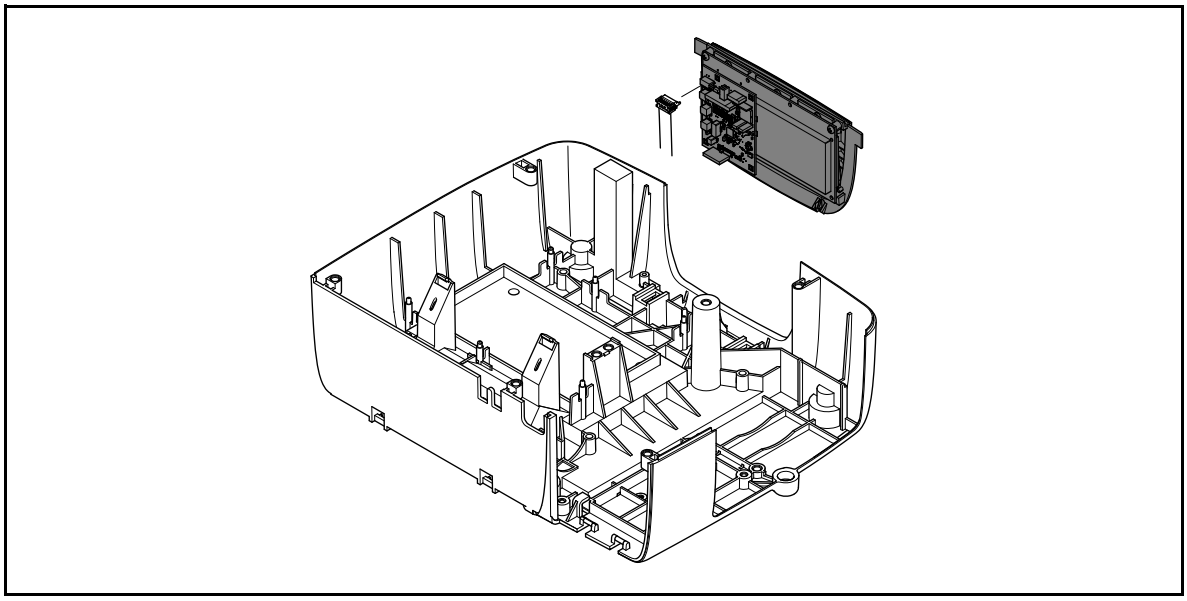


Figure 5.3 Removing the customer display

Service notes:

1. Remove weigh plate, cross and top cover (see *Weighplate, cross and top cover* on pages *54* and *55*).
2. Disconnect the rear display cable assembly.
3. Lift the customer display assembly clear of the base cover.

5.5.2 IM300 keyboard assembly

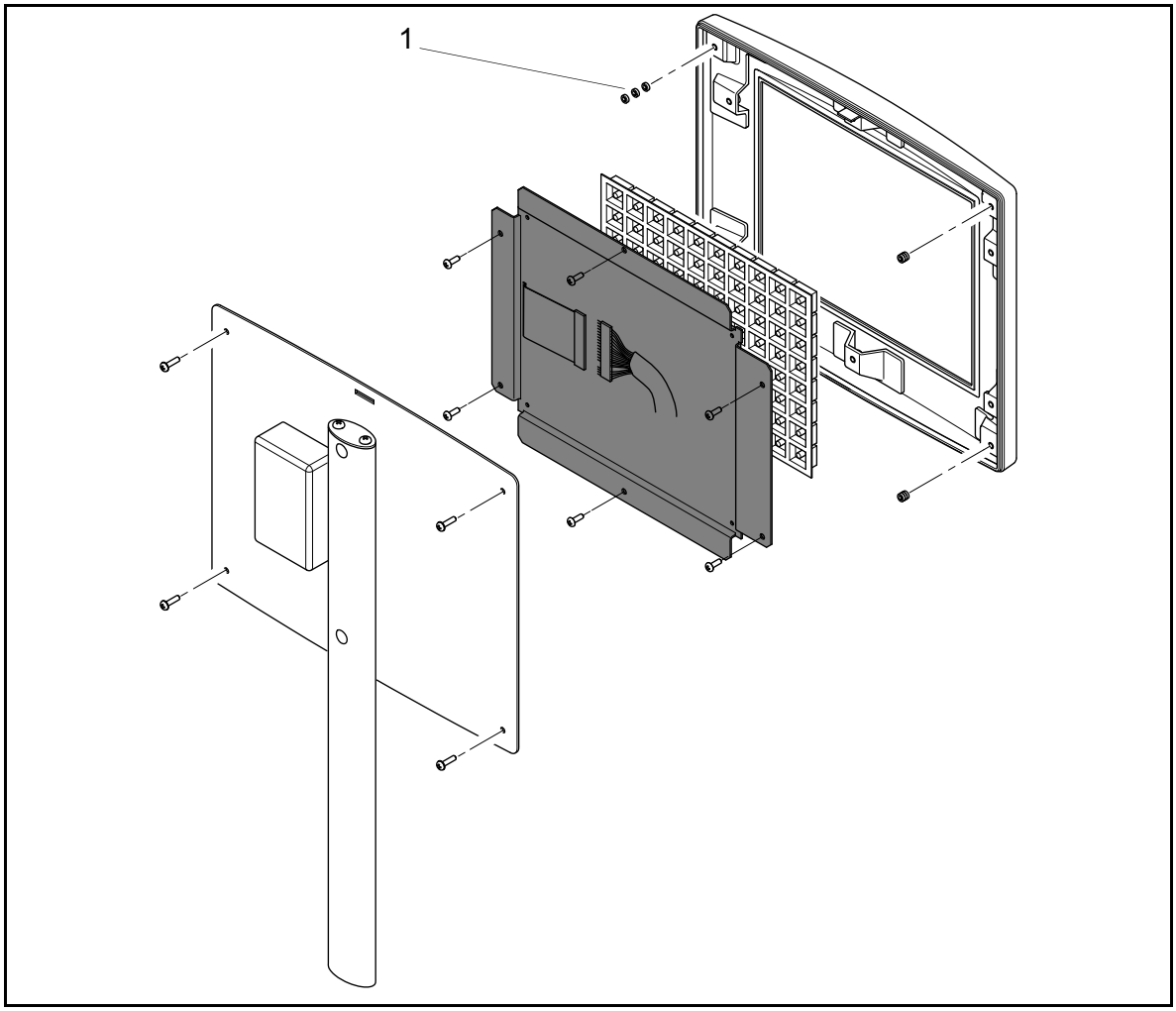


Figure 5.4 Disassembling the self service keyboard

Service notes:

The spacers (1) are an essential part of the assembly and must be replaced when re-assembling the unit.

The connection between the keyboard loom and keyboard tail must be sealed with adhesive tape.

1. Remove the four screws retaining the rear cover support plate.
2. Disconnect the keyboard cable assembly from the rear cover support plate.
3. Remove the six screws securing the keyboard assembly and keyboard mat to the front cover assembly.

Note: *Reverse the procedure to assemble the self service keyboard.*

5.5.3 IM400 customer display

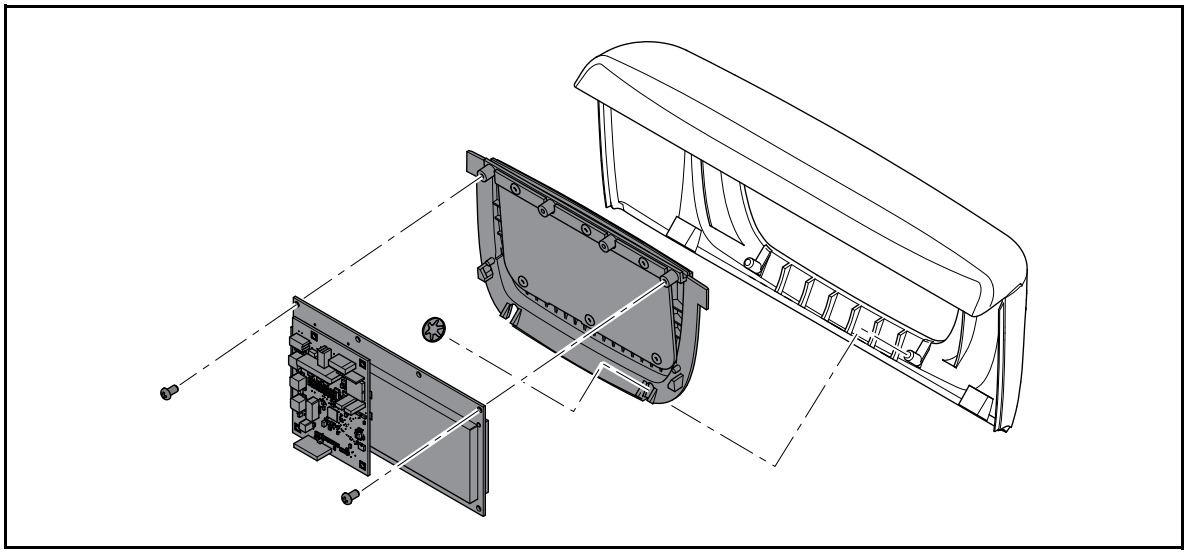


Figure 5.5 Disassembling the customer display

Service notes:

It is not necessary to remove the complete head assembly.

For easier access you can place the scale upside down on a suitable surface with the column and head assembly hanging down over the edge.

1. Remove the two screws securing the lower cover and remove the cover.
2. Disconnect the two display cable assemblies for the display interface.
3. Remove the two screws securing the upper cover and bezel assemblyand remove them from the head.
4. Remove the star washer and unclip the display assembly and bezel from the upper cover.
5. Remove the two screws securing the display interface assembly to the bezel.

Note: *Reverse the procedure to assemble the customer display assembly.*

5.6 Front module/vendor displays

5.6.1 Front module IM100, IM202, IM300

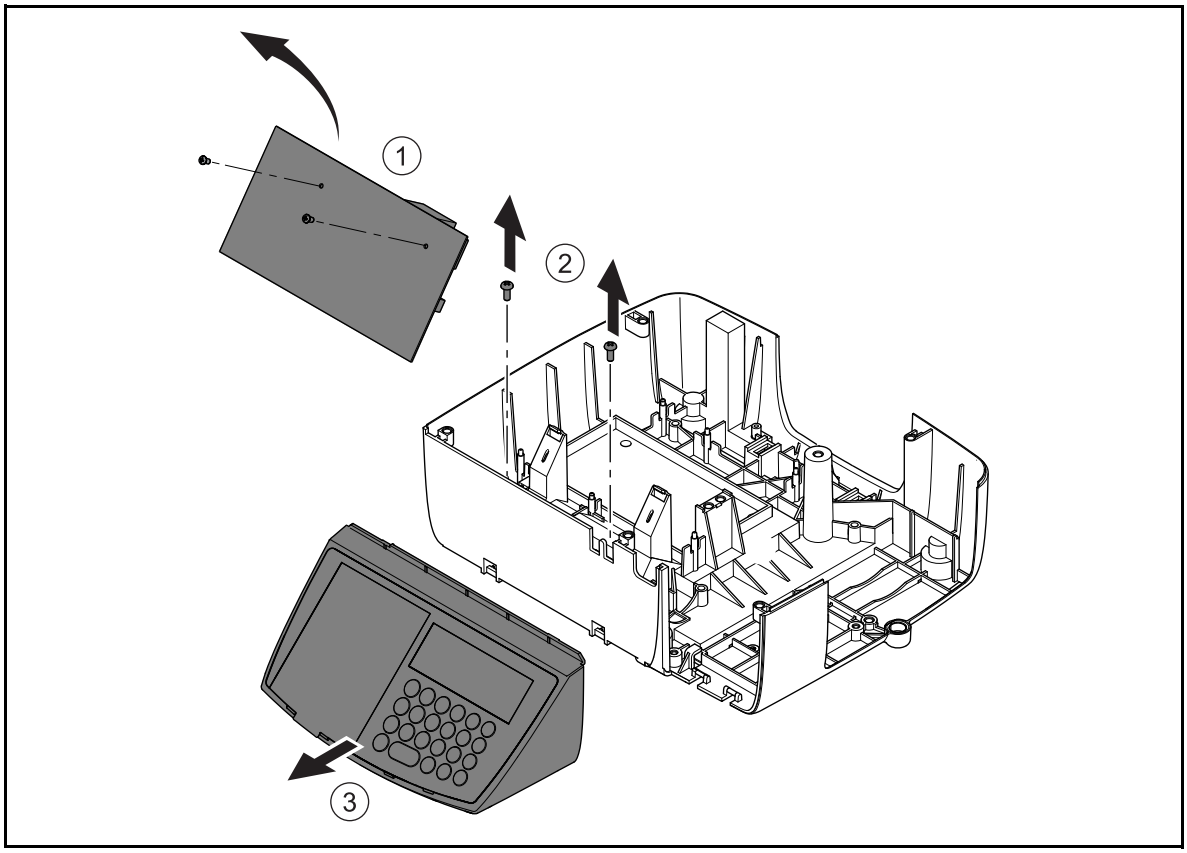


Figure 5.6 Removing the front cover and display interface

Service notes:

Removal of the front cover allows access to the vendor display and keyboard.

1. Disconnect the following cables from the main board:

   Front and rear display cable assemblies

   Power input power assembly

   Earthing strap

   Load cell cable assembly

   USB cable assembly

   Printer assembly cables

2. Carefully free the main board assembly from the two retaining clips and lift it clear.
3. Remove the two screws retaining the front module.

4. Unclip the front module and slide it forward until it is clear of the base moulding.

Note: *It may not be necessary to completely remove the main board before removing the front module. Disconnect the earth strap and the USB cable assembly from the main board then stand the main board up to access the two screws.*

5.6.2 Vendor display and keyboards

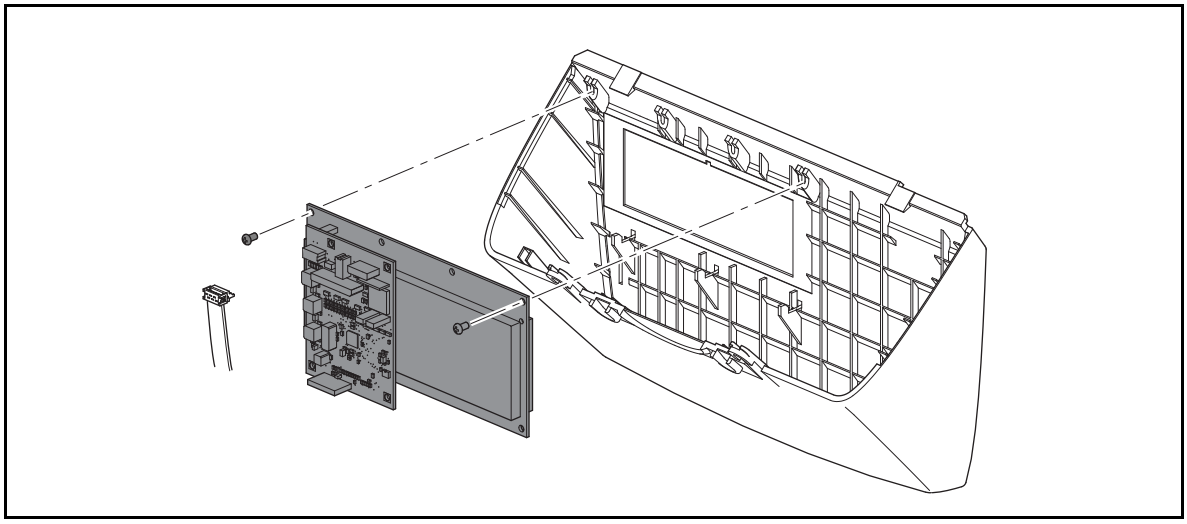


Figure 5.7 Removing/replacing the display interface assembly

Service notes:

Monobloc and tower models

1. Remove weigh plate, cross and top cover (see *Weighplate, cross and top cover* on pages *54* and *55*).
2. Follow steps 1 to 4 of *Front module IM100, IM202, IM300 on page 59*
3. Disconnect the front display cable assembly and the keyboard screen cable assemblies.
4. Remove the two retaining screws and lift the display assembly clear of the front cover.

Two piece models (IM400)

1. Follow steps 1 to 3 on *page 58* to remove the lower cover and the customer display and bezel assembly.
2. Disconnect the display cable assembly, the keyboard and screen cableassemblies.
3. Remove the two retaining screws and lift the display assembly clear of the front cover.

Note: *For better access you can remove the keyboard/display module from the mounting plate.*

1. Remove the two screws and washers securing the module to the mounting plate

2. slide the module off the mounting plate.

5.6.3 Vendor display (IM202)

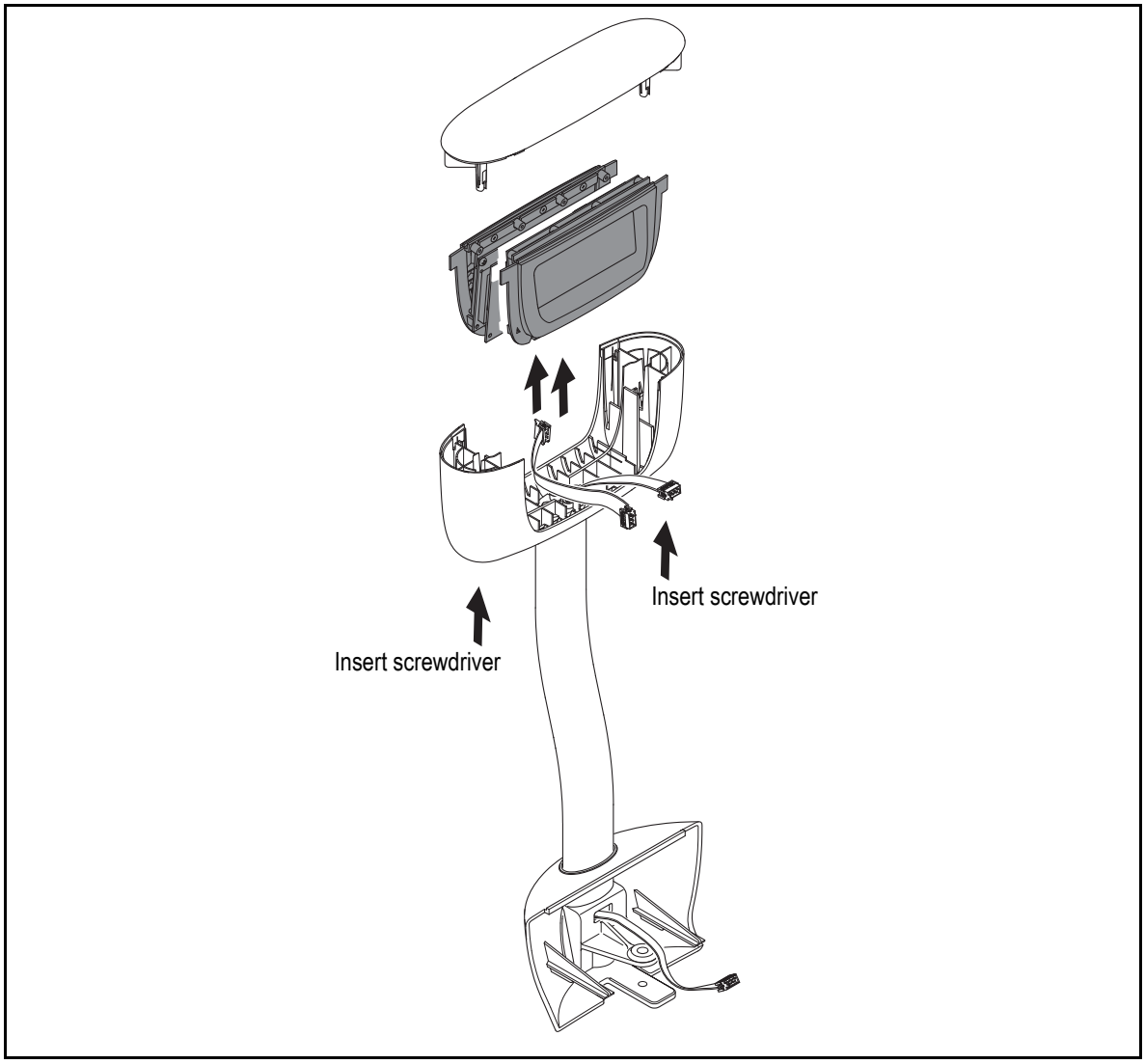


Figure 5.8 Tower display

Service notes:

1. Gently insert a 7mm flat bladed screwdriver into one of the access holes in the lower cover until it locates in the slot in the clip. Turn it hrough 90 degrees and push upwards. Repeat with the other access hole.
2. Lift the upper cover to remove it.
3. Lift out the display interface assembly and disconnect the display cable assembly.
4. To remove the lower cover undo the four socket head cap screws securing it to the column.

Replacing a display interface

Take care to replace the display interface in the correct position.The customer and vendor displays are not interchangeable as they have different jumper settings.

5.7 Column mounting

5.7.1 IM202, 400

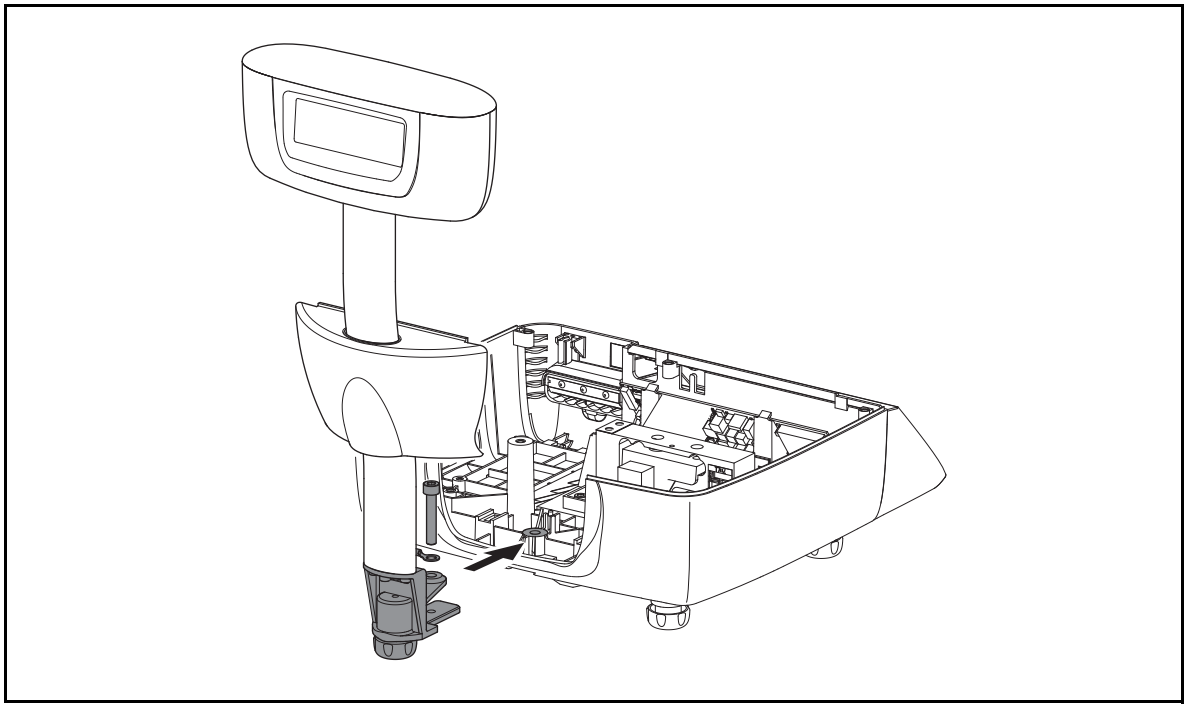


Figure 5.9 Attaching the column mounted display

Service notes:

It is advisable to remove the display pod from the column before attempting to attach or remove the column from the scale body. The display and column assembly is top heavy when separated from the scale body.

1. Remove weigh plate, cross and top cover (see *Weighplate, cross and top cover* on pages *54* and *55*)).
2. Push up the column bracket cowl to unclip it from the base cover.
3. Remove the socket head cap screw and the earth strap.
4. Slide the column support bracket backwards away from the base cover to release it.

1. Remove the four socket screws attaching the column support bracket to the column.
2. Slide the column bracket cowl off the column.

When replacing looms, thread them through from the top of the column and through the holes provided in the column support bracket.

5.7.2 IM300

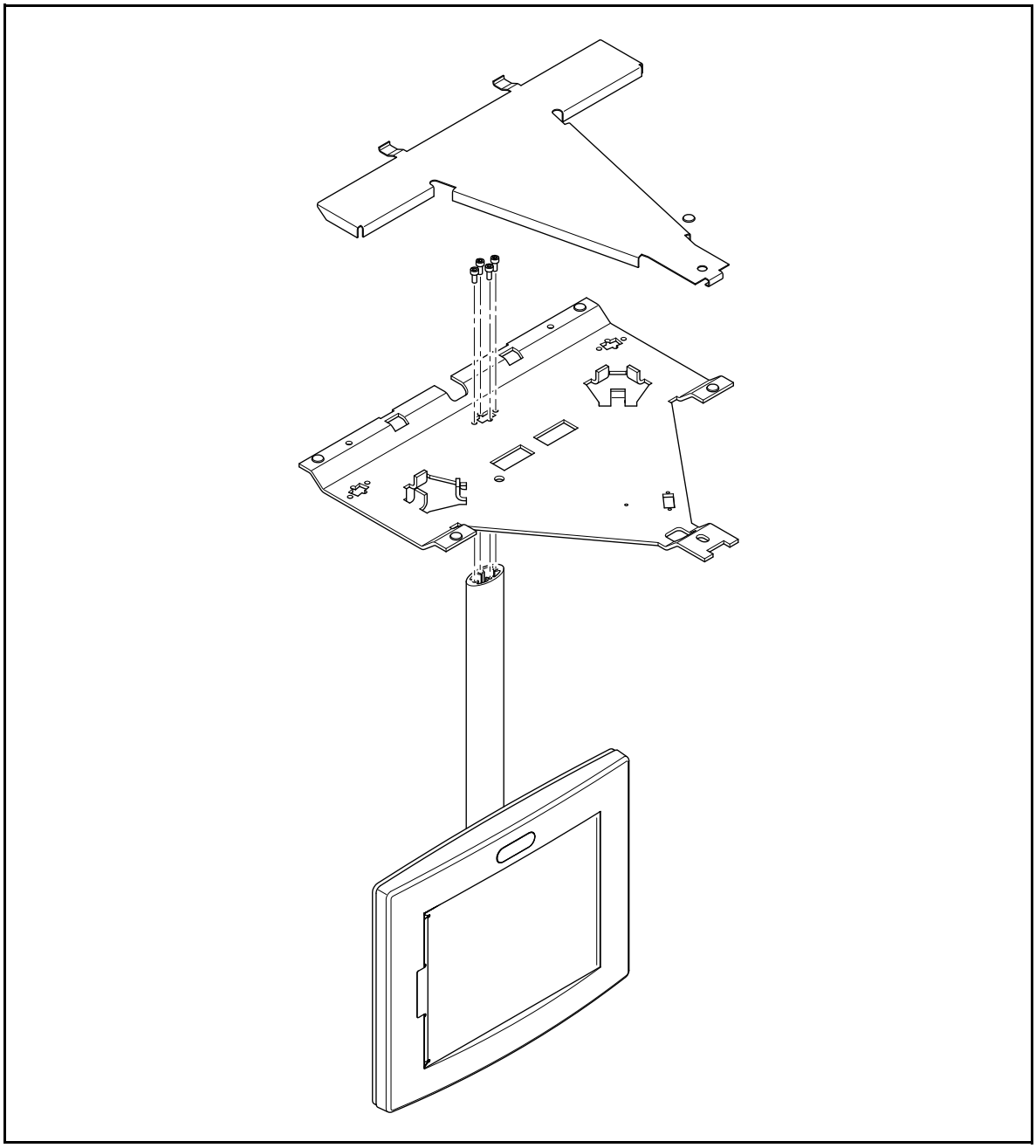


Figure 5.10 Attaching the IM300 column and display (single keyboard configuration)

Service notes:

For details of IM300 twin keyboard configuration and assembly see the IM300 installation kit instructions AWT35-000308

5.8 Main board

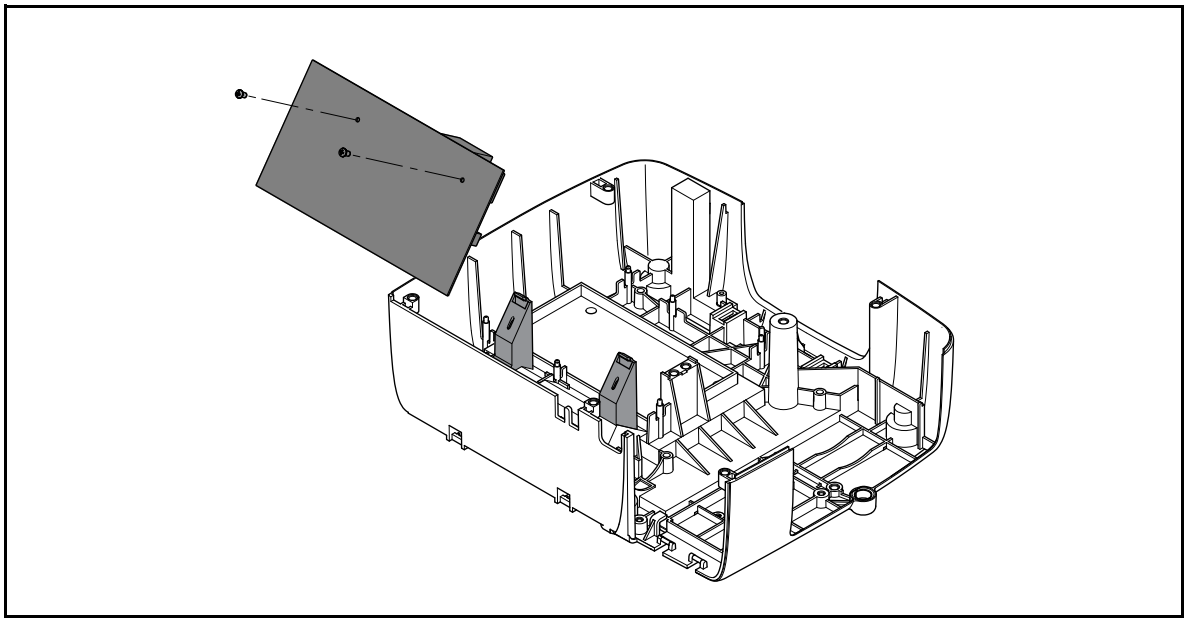


Figure 5.11 Removing the main board.

Service notes:

1. Remove weigh plate, cross and top cover (see *Weighplate, cross and top cover* on pages *54* and *55*)).
2. Disconnect the following cables from the main board:

   Front and rear display cable assemblies

   Power input power assembly

   Earthing strap

   Load cell cable assembly

   USB cable assembly

   Printer assembly cables
3. Carefully free the main board assembly from the two retaining clips and lift it clear.

Note: *The two screws shown are not fitted. Should the retaining clips break, then use two self tapping screws of an appropriate size (M3 or smaller, less than 8mm length) to secure the main board.*

5.9 Loadcell

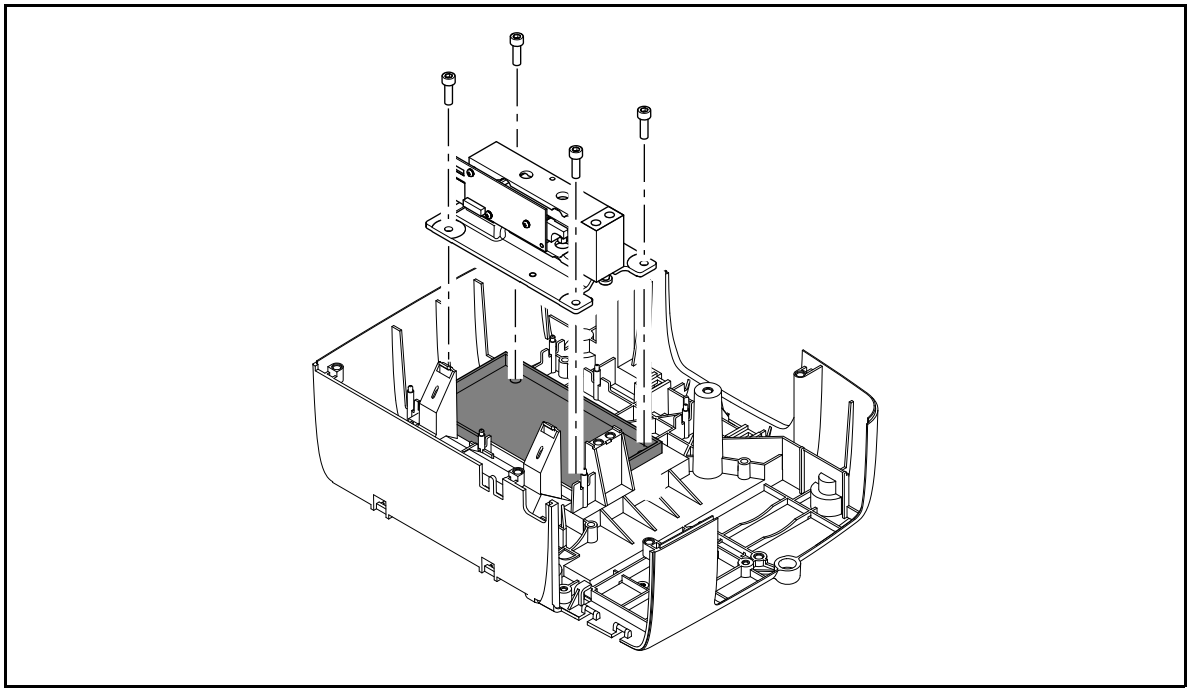


Figure 5.12 Removing the loadcell

Service notes:

1. Remove weigh plate, cross and top cover (see *Weighplate, cross and top cover* on pages *54* and *55*)).
2. Remove the pan head retaining screw and the earth straps.
3. Disconnect the load cell cable assembly from the main board.
4. Remove the four cap head screws retaining the load cell assembly and remove the load cell.

5.10 Printer

5.10.1 Printer assembly

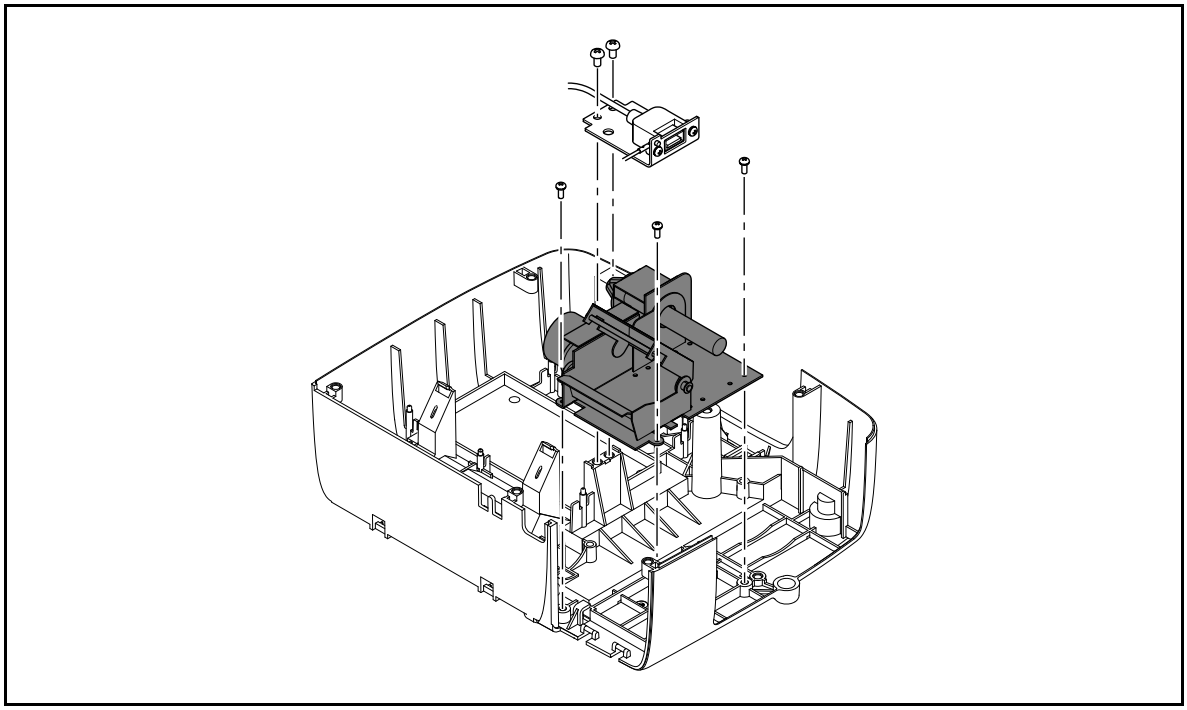


Figure 5.13 Removing the printer

Service notes:

1. Remove the USB support bracket.
2. Disconnect the earth strap from the printer.
3. Disconnect from the main board:
   the printer optical sensor cable assembly
   the printer stepper motor cable assembly
   the printhead interface cable assembly.
4. Remove the three screws securing the printer assembly to the base cover.

Exploded views

6

This chapter contains exploded views of the main assemblies. Full explodes views and part numbers can be found in the IM series Parts List

Contents

6.1 IM100 models

6.1.1 Scale body

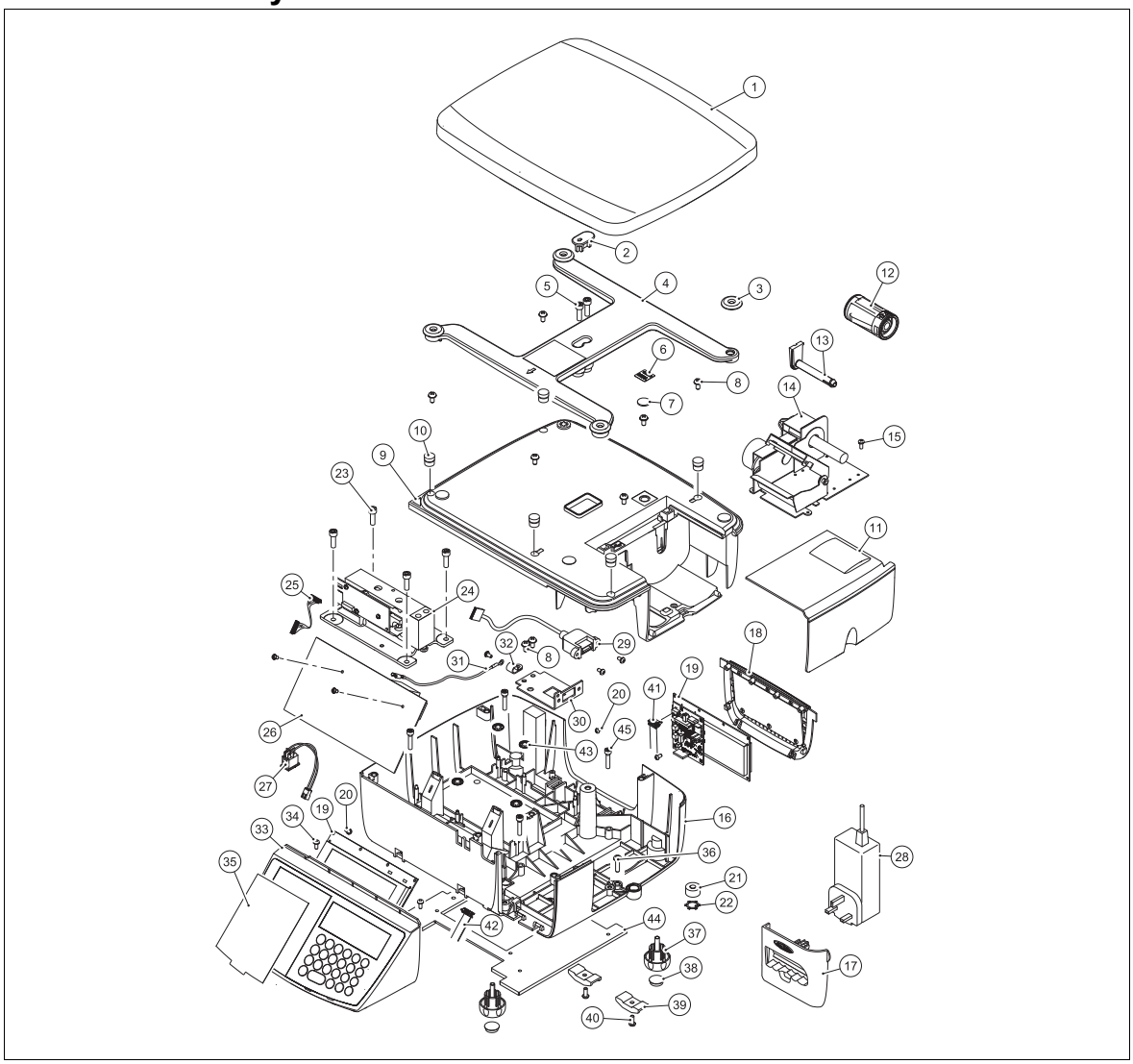


Figure 6.1 Monobloc model scale body

6.2 IM202 models

6.2.1 Scale body

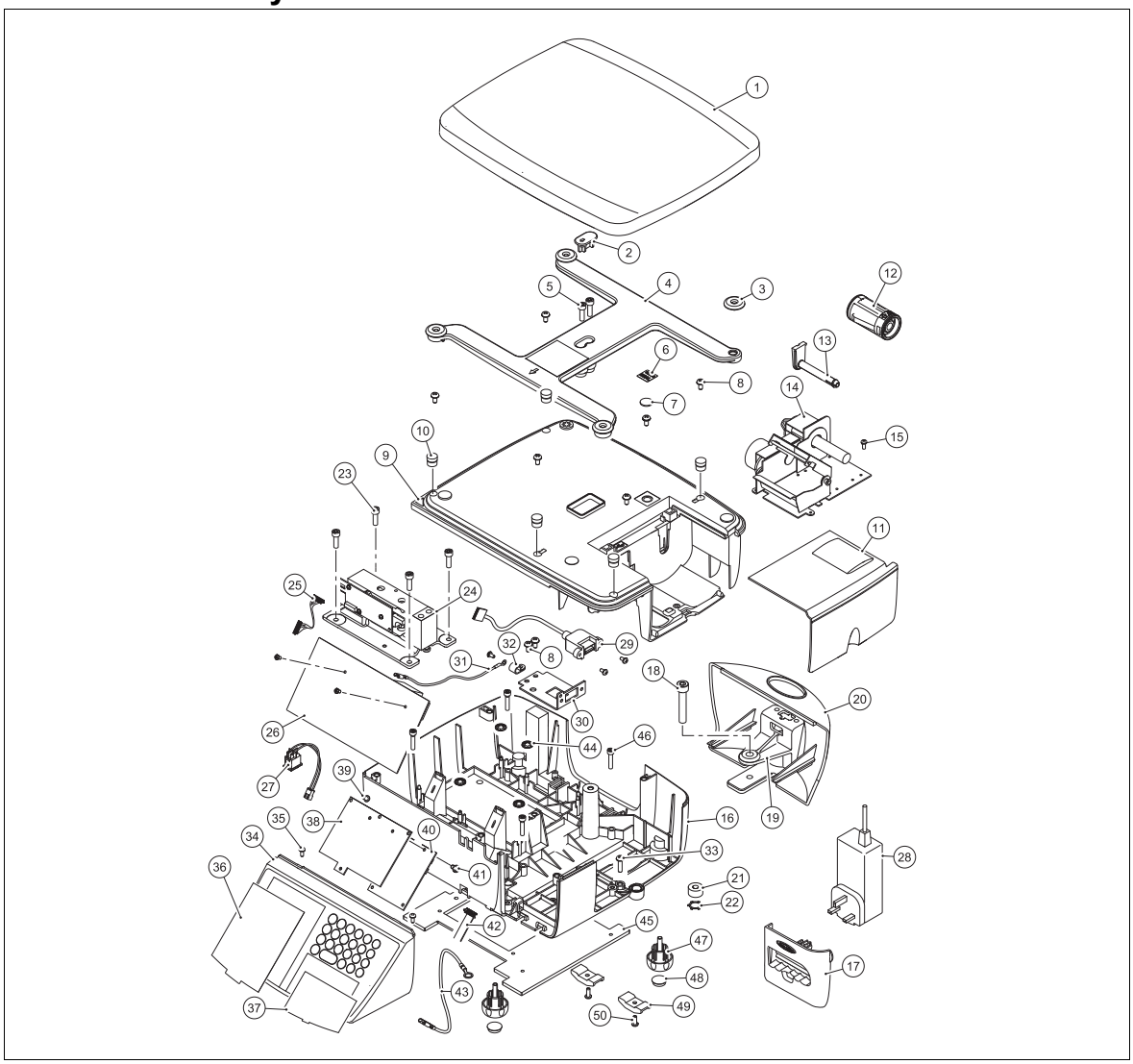


Figure 6.2 Scale body for head up/tower display models

6.2.2 Head up display

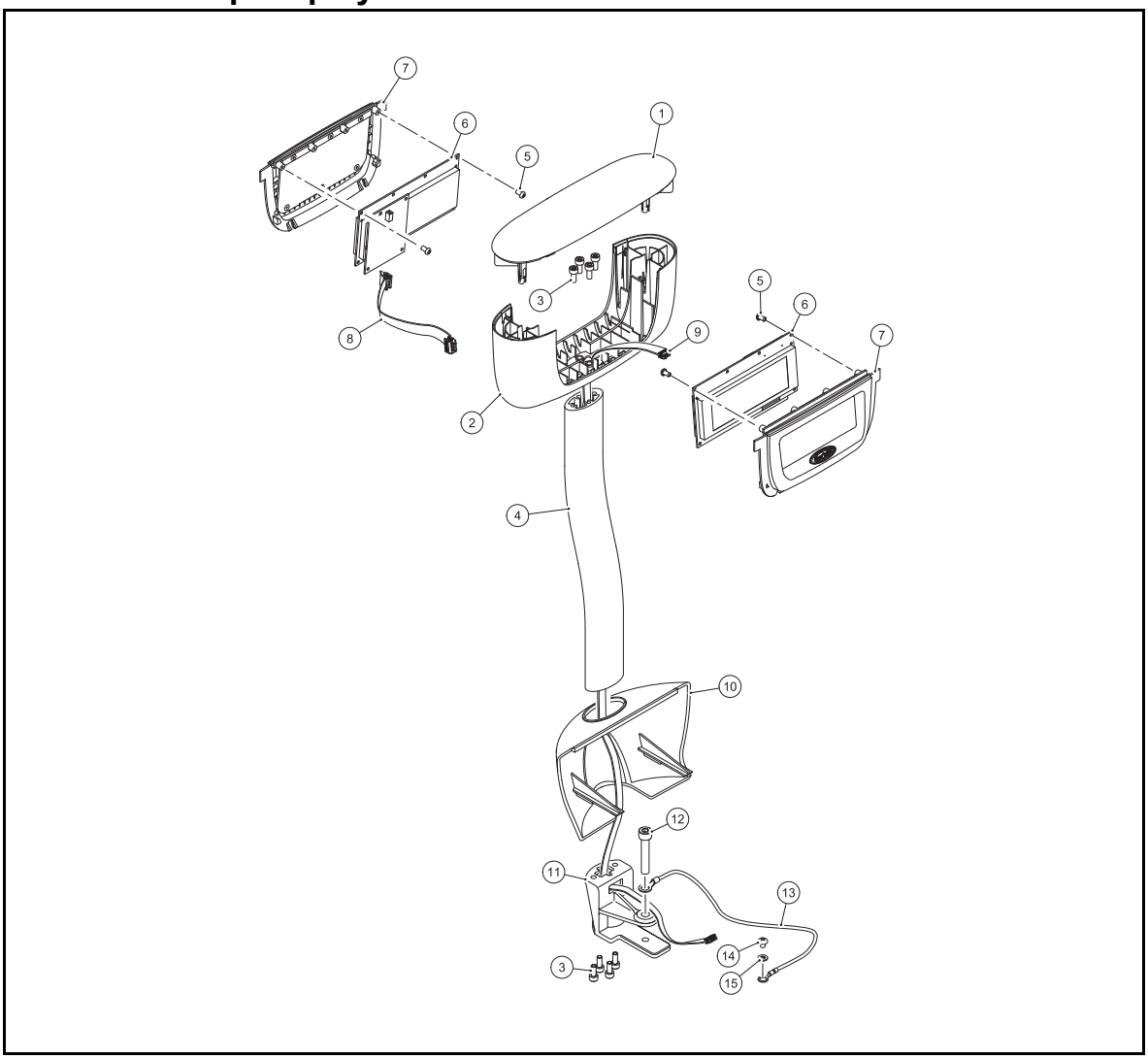


Figure 6.3 Head up/tower customer and vendor display

6.3 IM300 models

This model uses the same scale body as the IM100 except that the rear display interface is replaced by an overlay. (see *Scale body* on page 70)

6.3.1 Keyboard

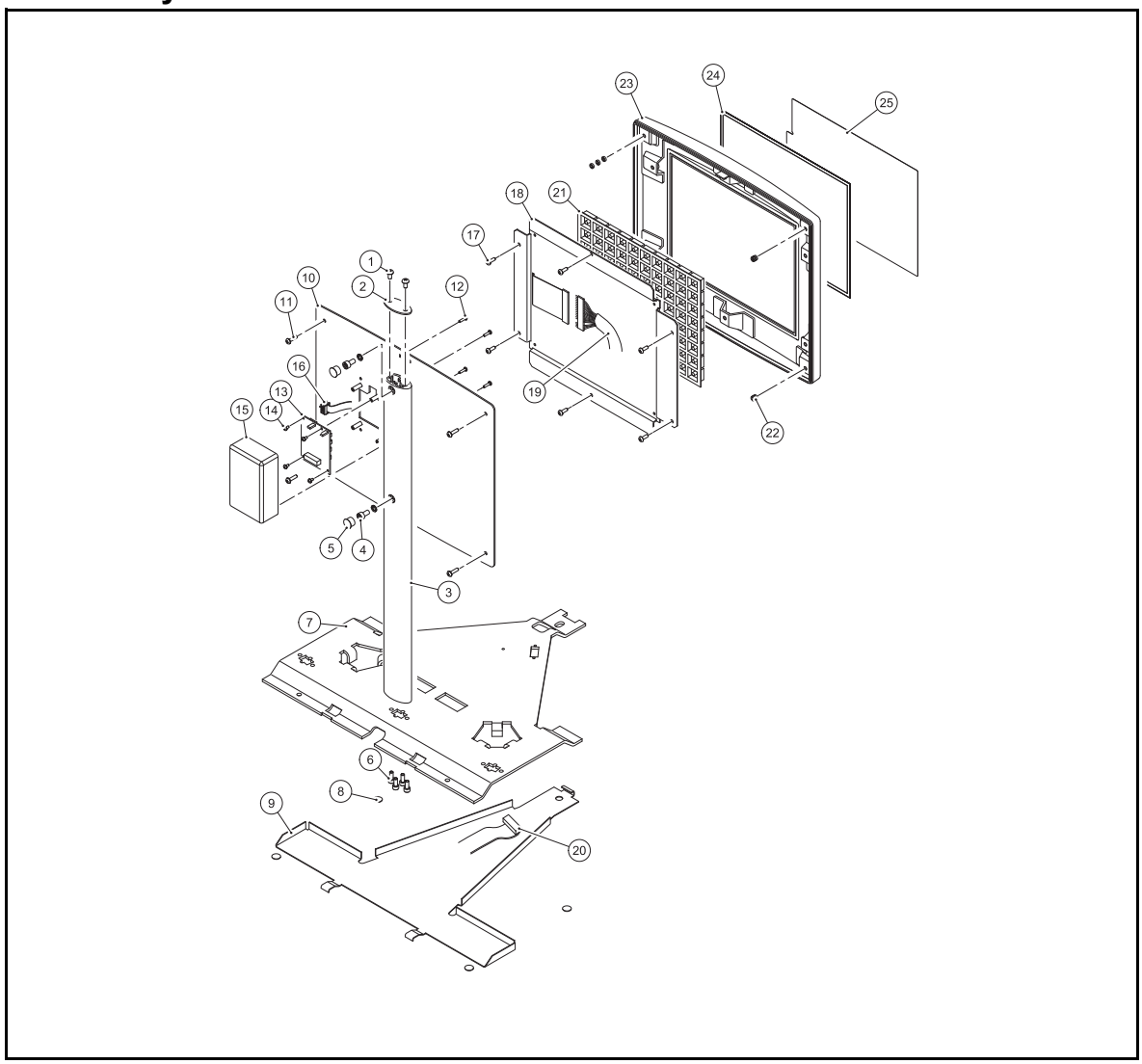


Figure 6.4 Single keyboard configuration

6.4 IM400 models

6.4.1 Scale body

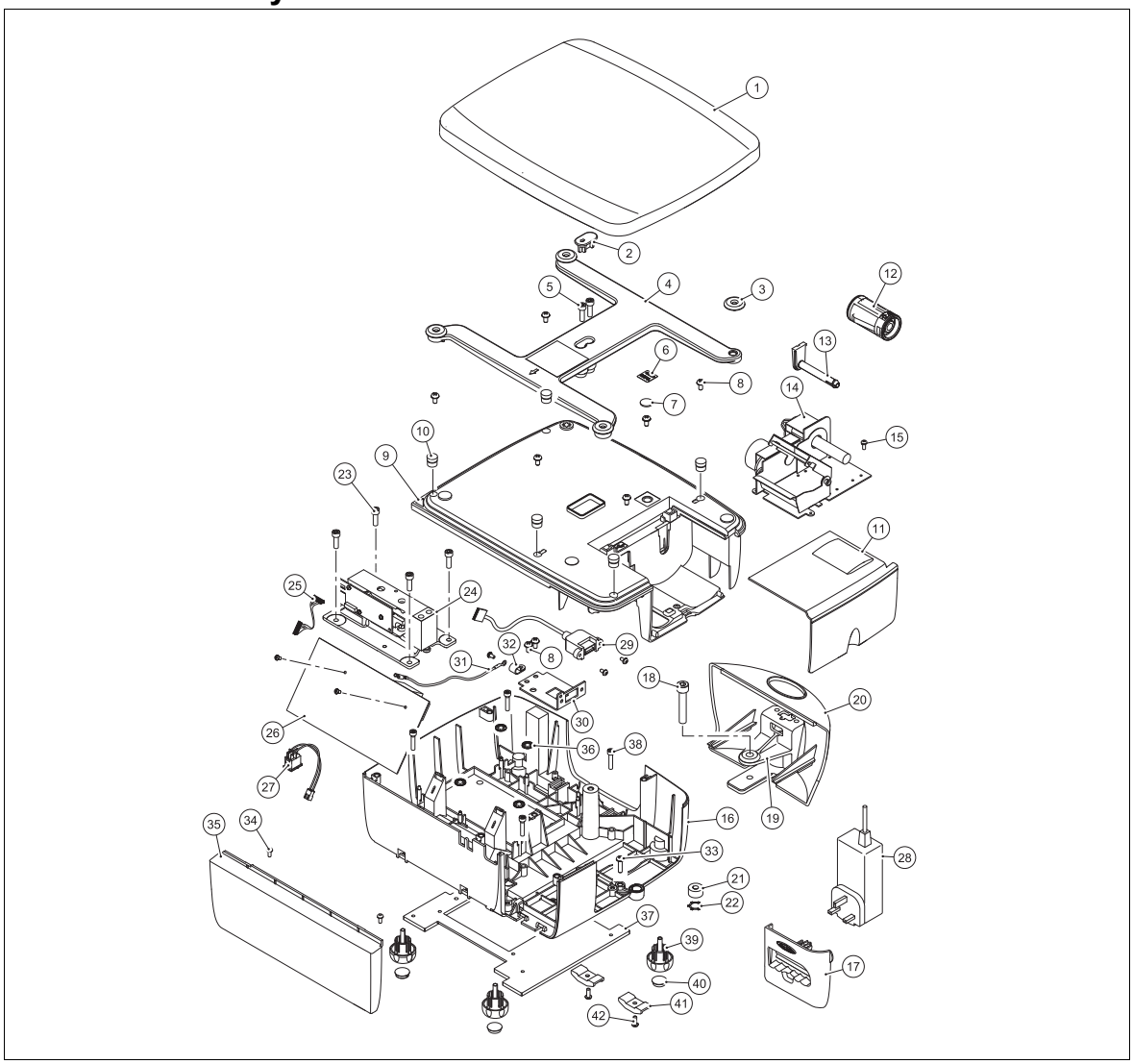


Figure 6.5 IM400 body

6.4.2 Head up display and keyboard

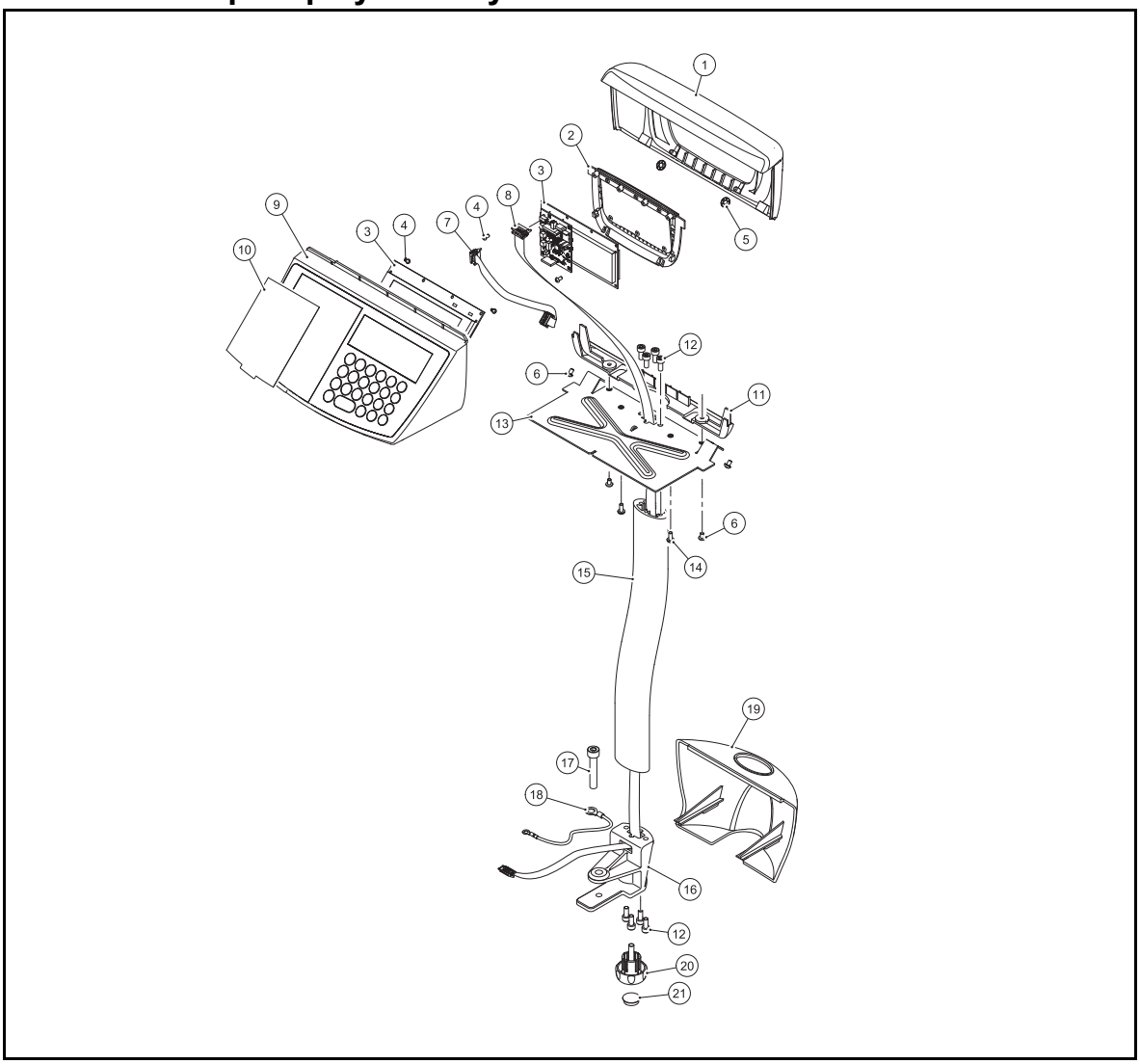


Figure 6.6 IM400 keyboard and vendor/customer display.

Schematics and wiring 7

CAUTION: When programming the scale you must ensure that you comply with all relevant standards. The example settings given in this book may not be legal for trade.

Contents

7.1 External connections

7.1.1 Overview

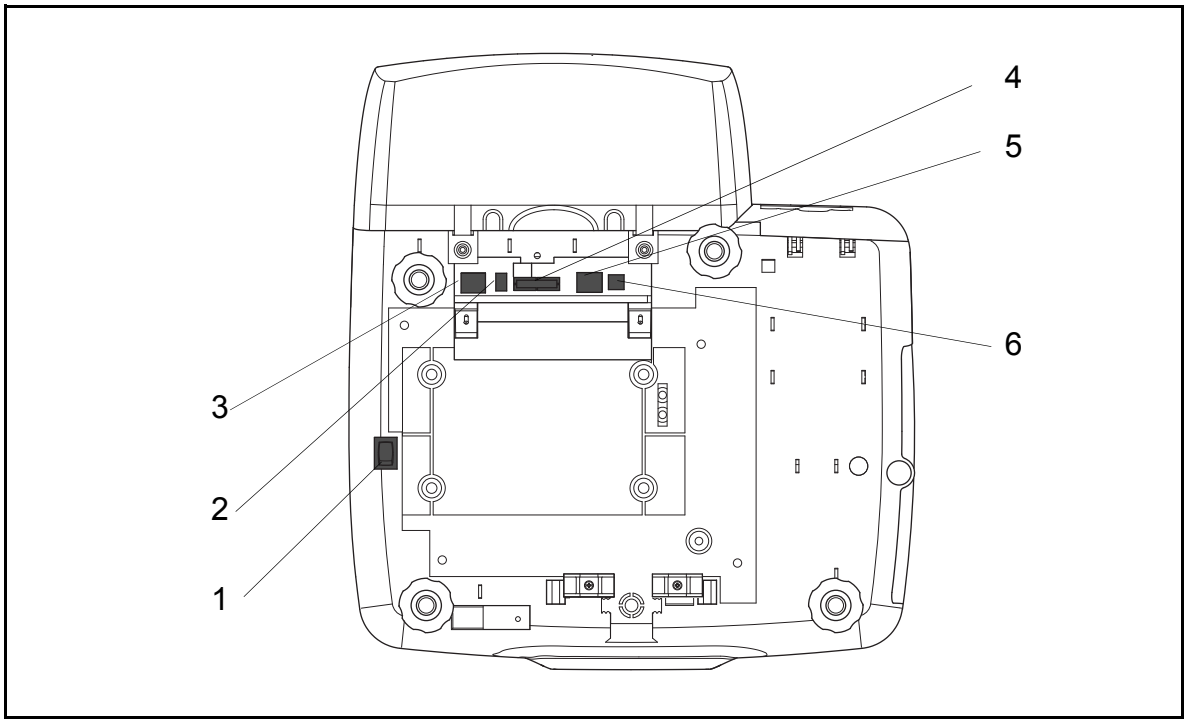


Figure 7.1 Overview of external connections

1. On/Off switch
2. Cash drawer
3. Power supply
4. Expansion interface (Wifi)
5. USB (scanner)
6. Ethernet network connector

7.1.2 Scanner connection

The scanner should be connected to the USB port or the extended USB connector underneath the scale.

Serial setting

- 9600 Baud
- No parity
- 1 stop bit

The scanner must be configured to interpret EAN/UPC family barcodes or Code 39 barcodes. The type of barcode will depend on the application to be used.

Refer to the instructions supplied by the scanner manufacturer for details of how to do this.

7.1.3 Expansion Interface (P11)

Pin	Function
1	+VS
2	
3	+3V3
4	0V.
5	EXP I/O pin 1 (SCLK)
6	EXP I/O pin 2 (SDI)
7	EXP I/O pin 3 (SDO)
8	EXP I/O pin 4 (CS_bar)
9	USB serial data+
10	USB serial data-
11	RESET_bar
12	
13	RS232-RXD
14	RS232-TXD
15	RS232-RTS
16	RS232-CTS

7.2 Internal connections

7.2.1 IM100

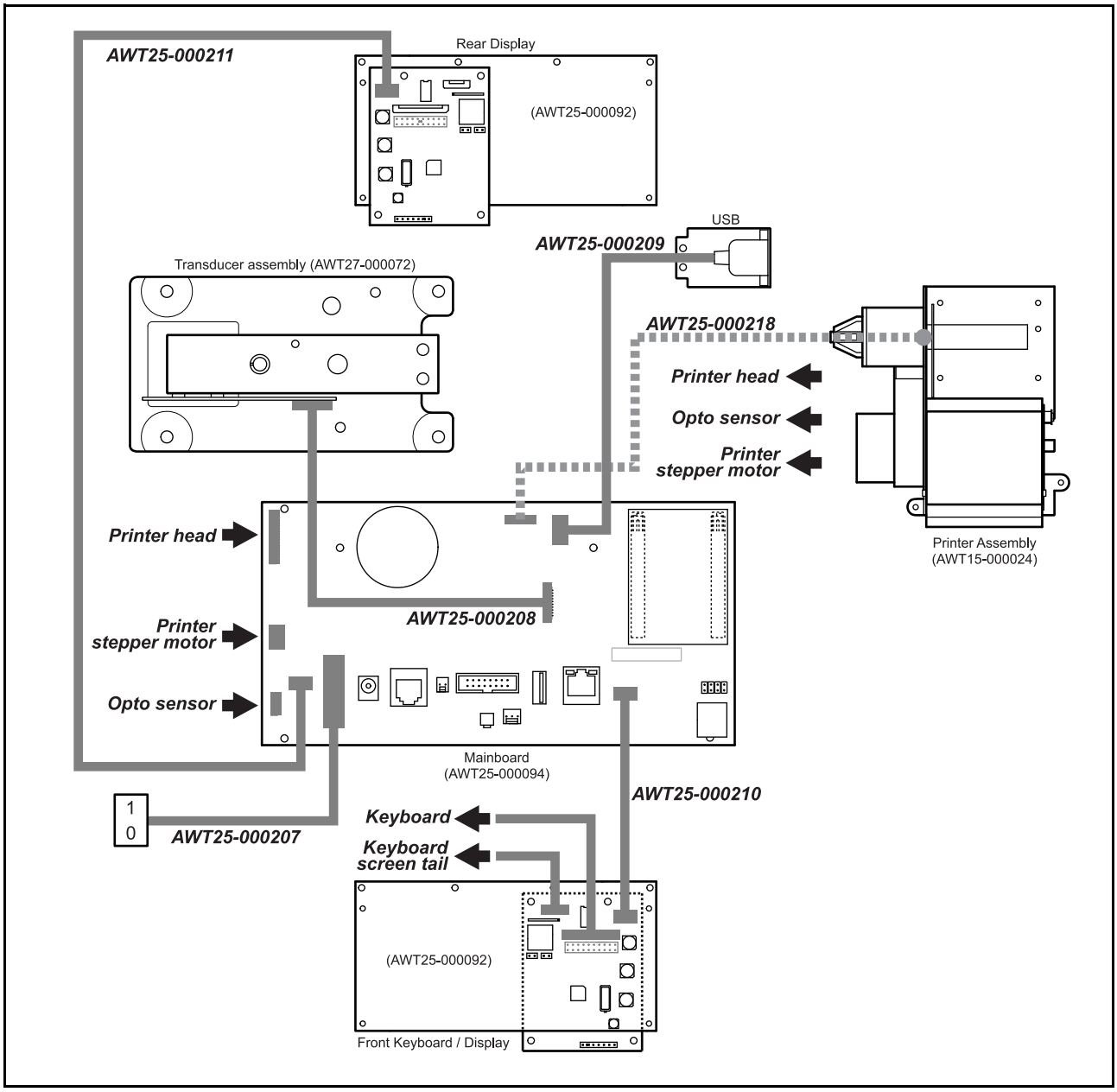


Figure 7.2 Main board, displays, keyboard, transducer and printer

7.2.2 IM202

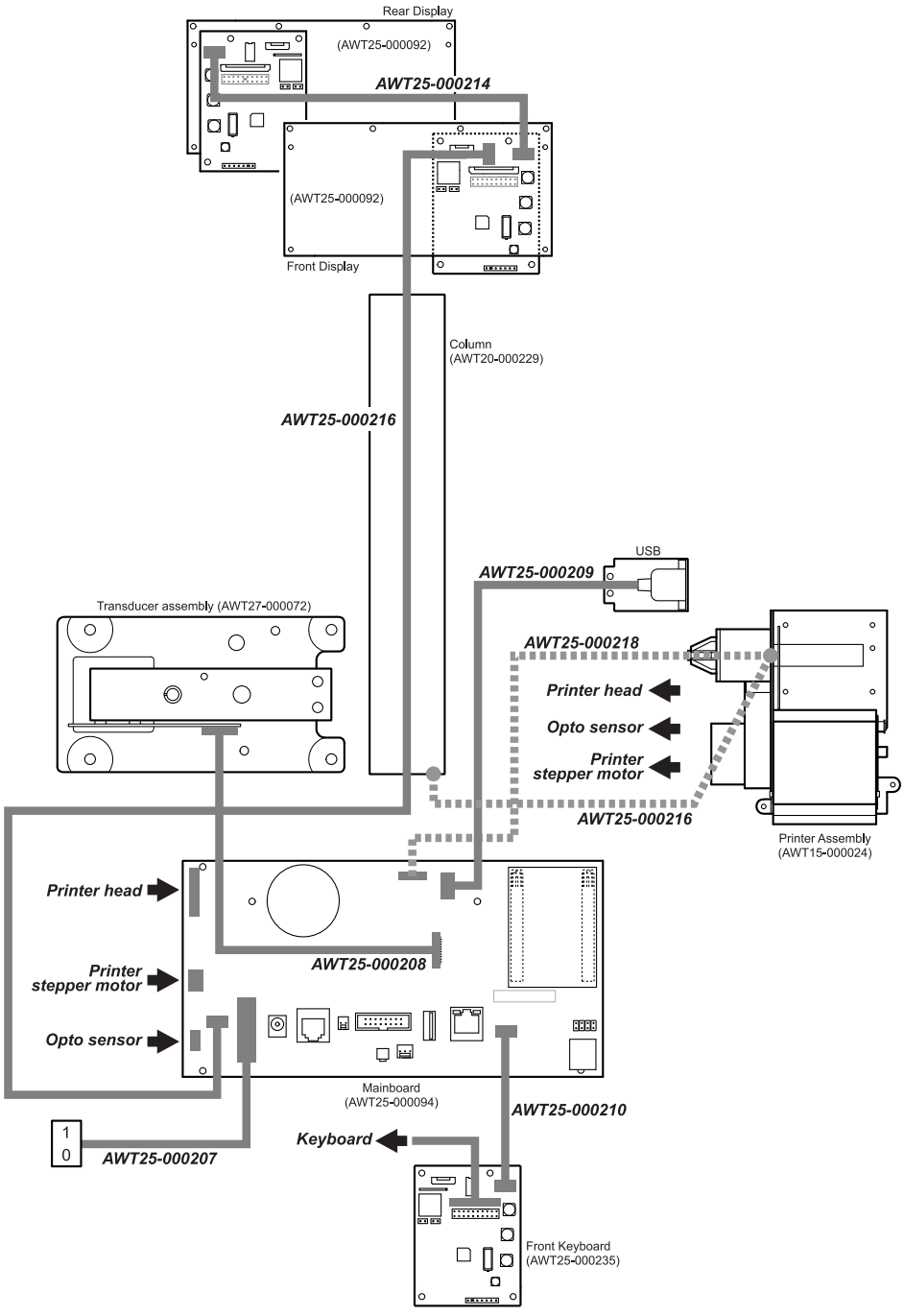


Figure 7.3 Main board, displays, keyboard, transducer and printer

7.2.3 IM300 body

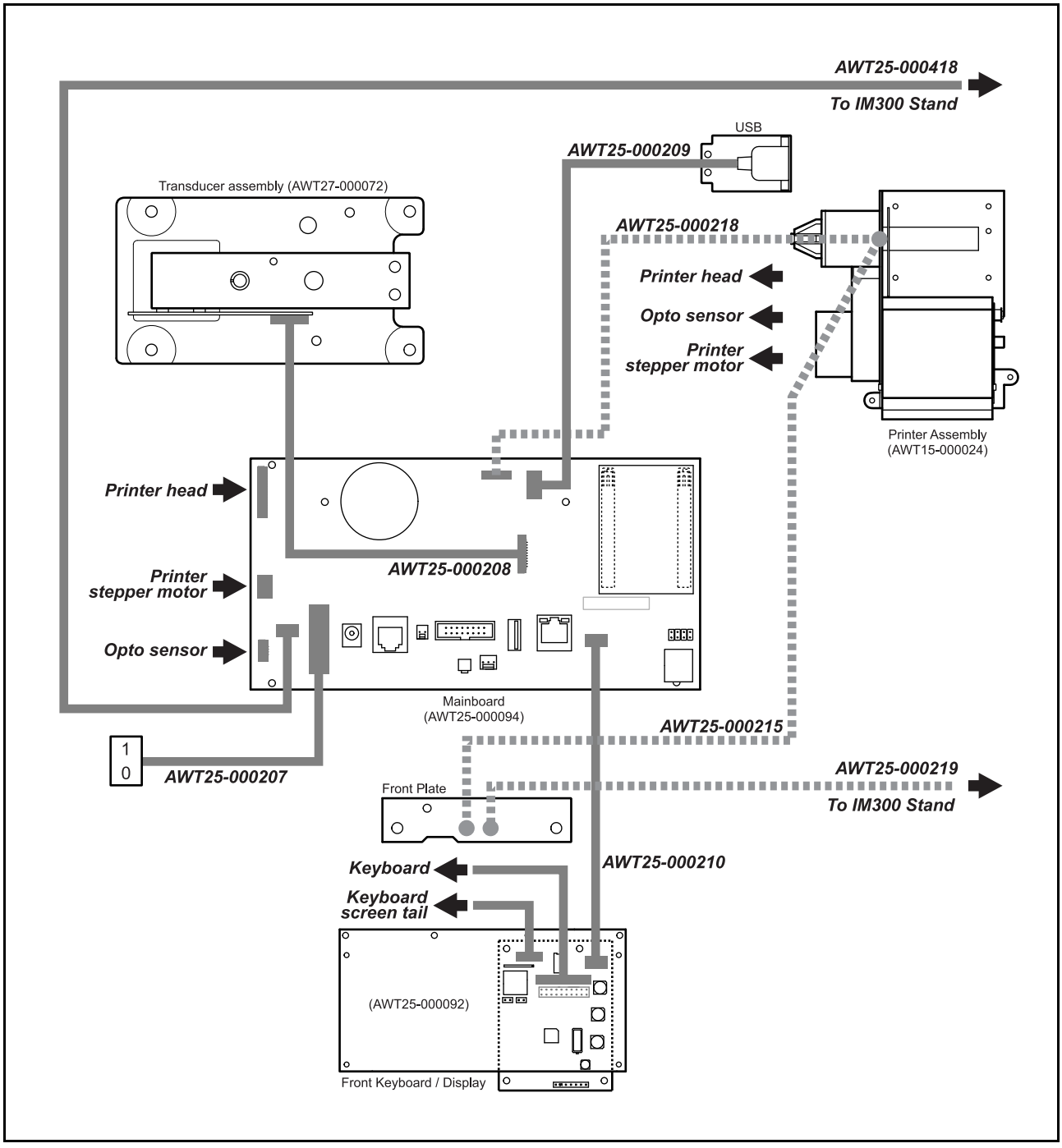


Figure 7.4 Main board, loadcell, front display/keyboard, printer.

7.2.4 IM300 keyboards

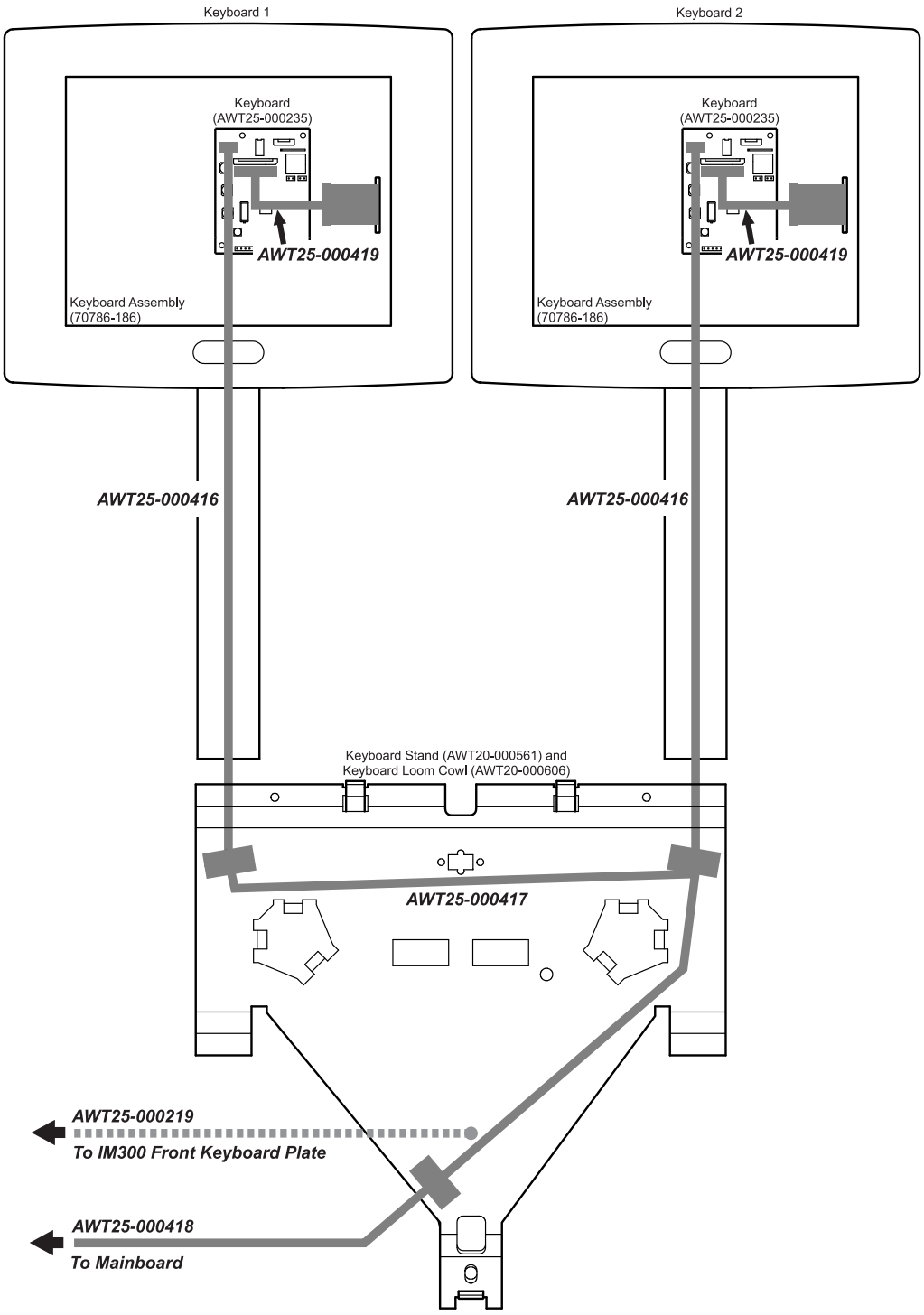


Figure 7.5 IM300keyboards

7.2.5 IM400 loadcell, displays and keyboard

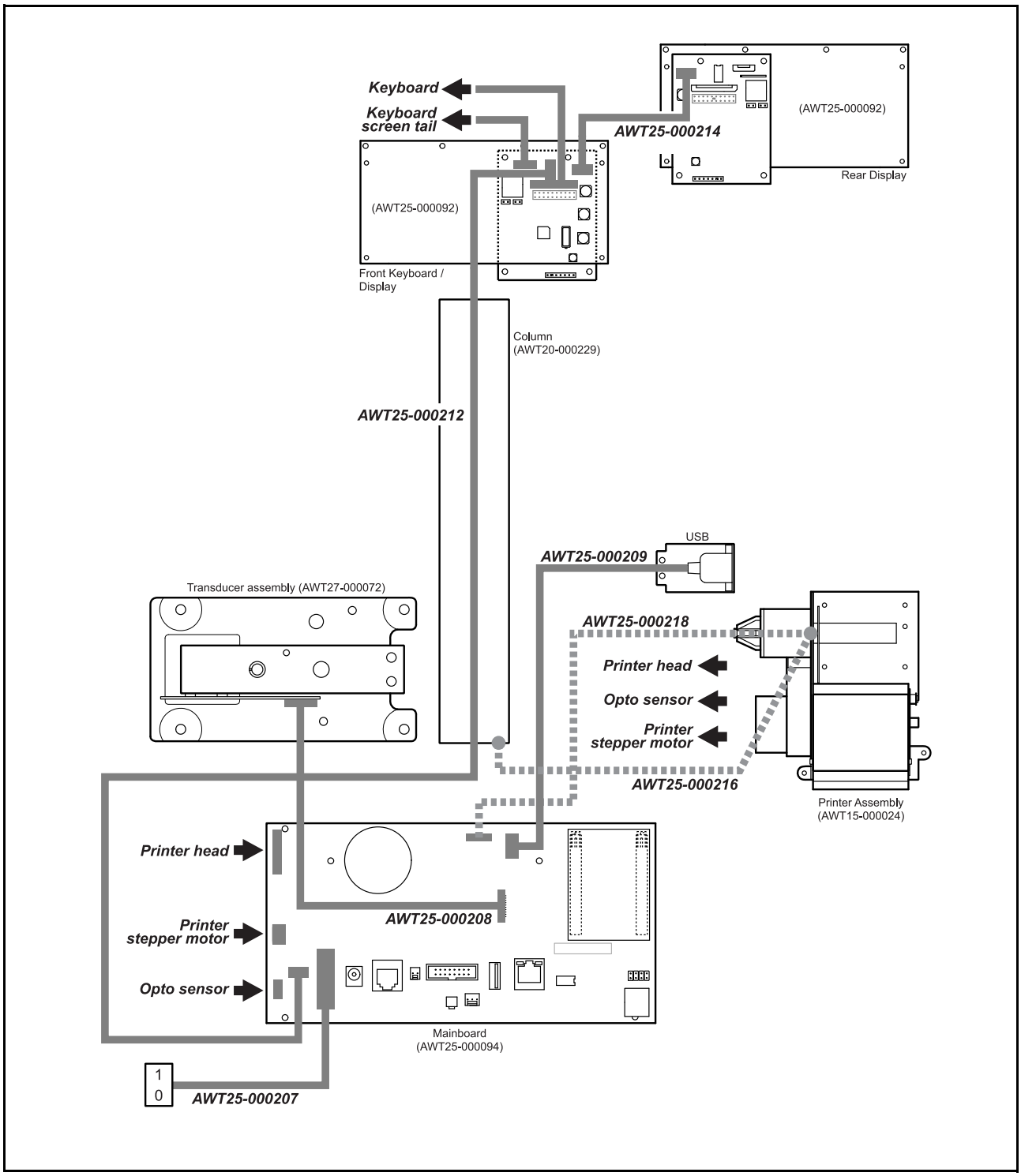


Figure 7.6 Main board, loadcell, displays and keyboard

Module information

8

This chapter contains layout and electrical information for PCBs and hardware within the scale.

Contents

8.1 Main board

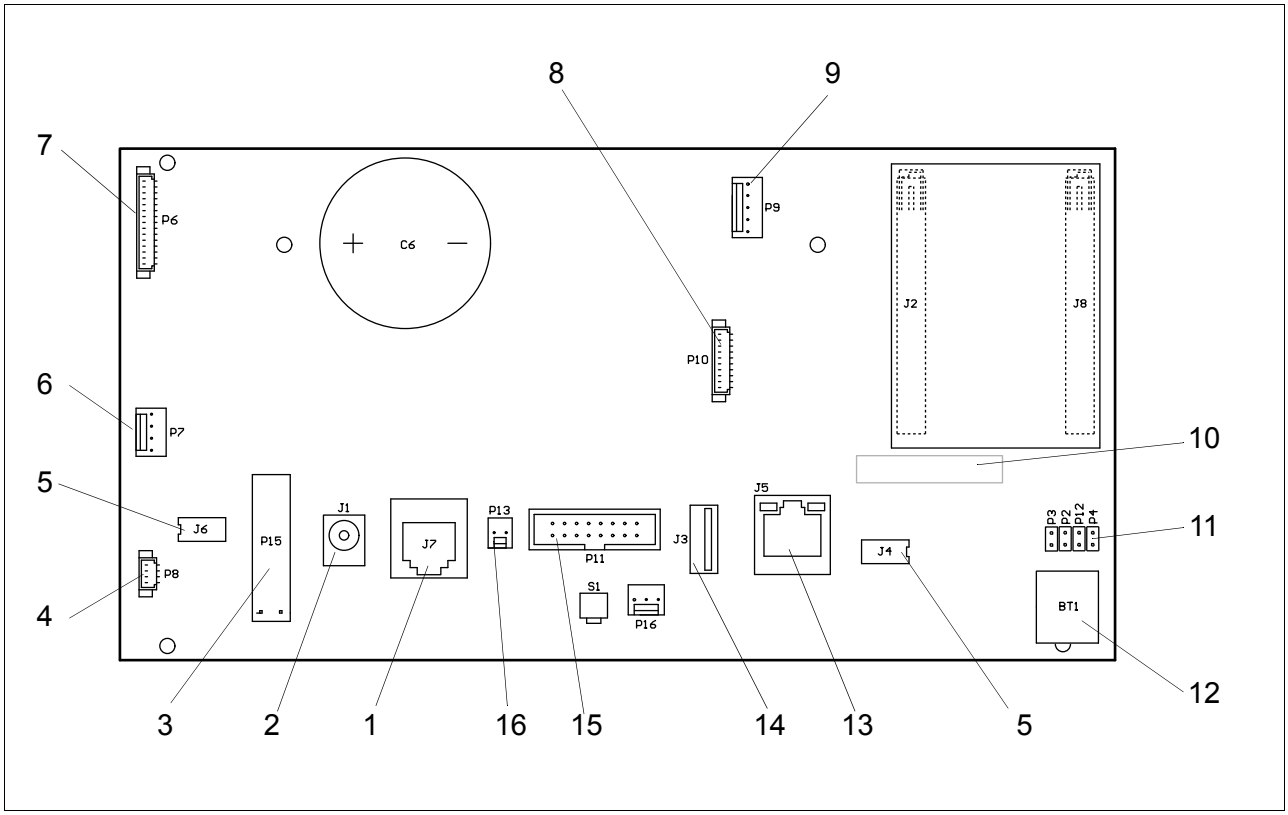


Figure 8.1 AWT25-000094

1. J7 Cash drawer
2. J1 Power supply
3. P15 On/Off switch
4. P8 Printer opto sensor
5. J6, J4 Front and rear displays (interchangeable)
6. P7 Printer stepper motor
7. P6 Print head interface
8. P10 Load cell
9. P9 USB
10. P5 Multi-ICE (not fitted)
11. P3 Battery back-up (normally on)
    P2 Reset (normally off)
    P12 Debug (normally off)

P4 Debug (normally off)

12. BT1 Battery
13. J5 Ethernet
14. J3 USB (usually scanner)
15. P11 Expansion interface (Wifi)
16. P13 Wlan (not used)

8.1.1 Pin outs

Loadcell connector

Pin	Function
1	Load cell power
2	0V
3	Serial data from load cell
4	Serial data to load cell
5	Serial clock to load cell
6	Load cell select

8.2 Display PCB

There are two variants of the display interface depending on whether the interface board is driving screens/screens and keyboard or keyboard only.

Model	Description	Module 1	Module 2	Module 3
IM100	Mono scale	Display and keyboard	Display	
IM202	Tower scale	Keyboard	Display	Display
IM300 (1)	Self service scale	Display and keyboard	Keyboard	
IM300 (2)	Self service twin head scale	Display and keyboard	Keyboard	Display
IM400	Two piece scale	Display and keyboard	Display	
IM500	Hanging scale	Display and keyboard	Display	

8.2.1 Display/keyboard variant

This PCB is used for both customer and vendor displays.

It drives the graphics panel and can be connected to a membrane keyboard.

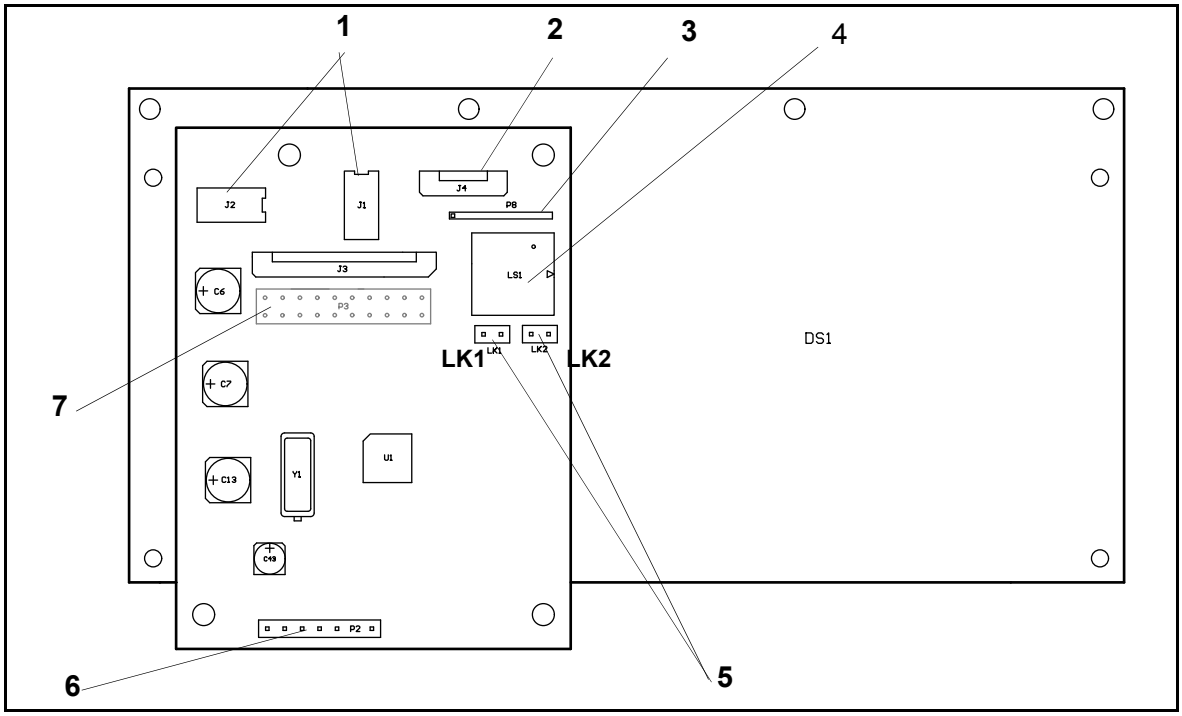


Figure 8.2 AWT25-000092

1. To main board or another display board

   These connectors are interchangeable.

2. Keyboard screen tail
3. Keyboard earth
4. Bleeper
5. Address configuration links (see table)
6. Not fitted (programming - factory use only).
7. Not fitted on display variant.

8.2.2 Keyboard only variant

This PCB can be connected to a membrane keyboard and a self service keyboard. It does not support a graphics panel.

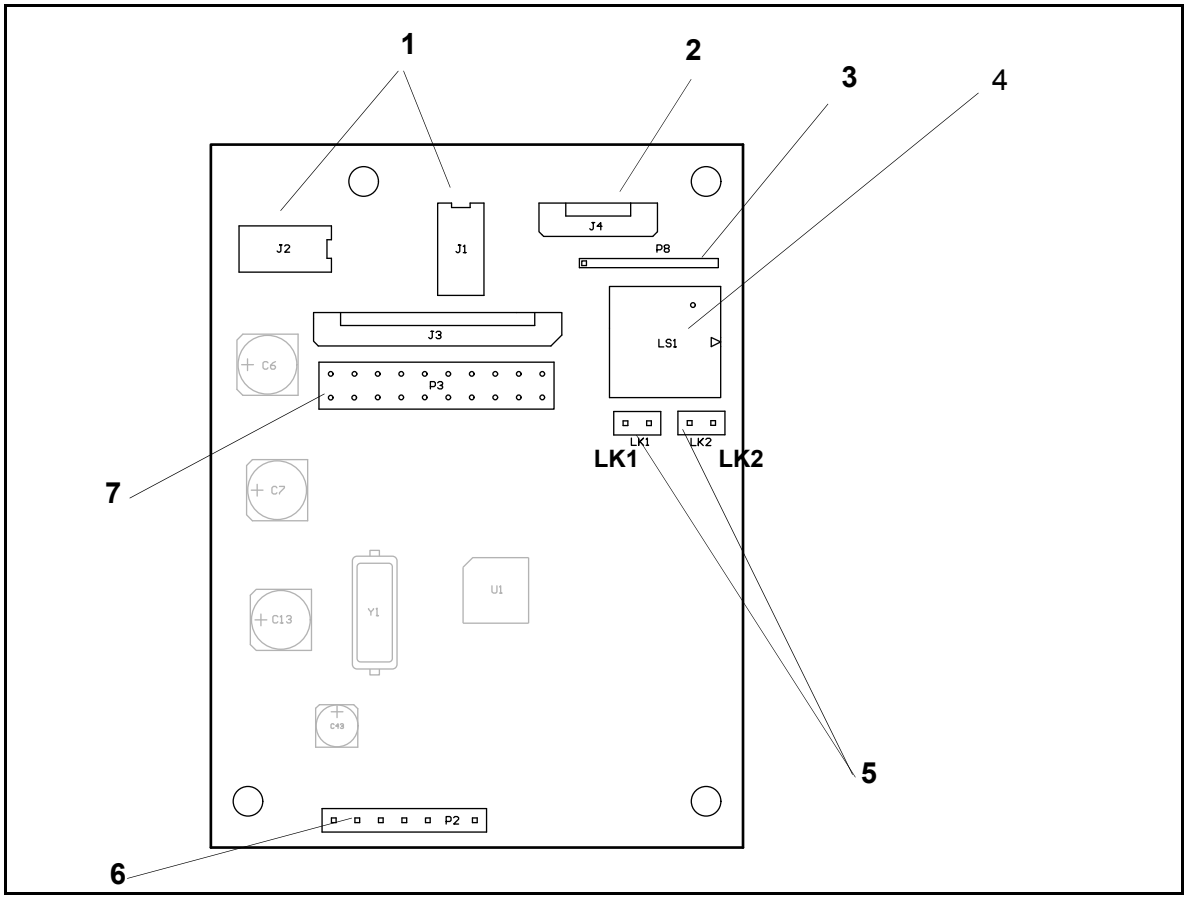


Figure 8.3 AWT25-000235

1. To main board or another display board

   These connectors are interchangeable.
2. Keyboard screen tail
3. Keyboard earth

4. Bleeper
5. Address configuration links (see table)
6. Not fitted (programming - factory use only).
7. Self service keyboard connector (P3).

8.2.3 Link settings for display interface

AWT25-000092

Module 1	LK1		LK2		Resistor link
Front display and keyboard IM100, IM300, IM400	Keyboard on	ON	Front	ON	Not fitted
Front display only IM202	Keyboard off	OFF	Front	ON	Not fitted
Test mode		ON		OFF	Not fitted
Rear display only IM100, IM202, IM400	Keyboard off	OFF	Rear	OFF	Not fitted

AWT25-000235

Module 1	LK1		LK2		Resistor link
Iinternal keyboard IM202	Keyboard 1	ON	Internal	ON	Fitted
Test mode		OFF		ON	Fitted
Self service 1 IM300	Keyboard 1	ON	Self service	OFF	Fitted
Self service 2 IM300	Keyboard2	OFF	Self service	OFF	Fitted

Networking 9

A network allows a number of scales to be connected together. Scales on a network can share resources and information

Contents

9.1 Typical networks

9.1.1 Introduction

A network allows a number of scales to be connected together. Scales on a network can share resources and information (operators, PLUs etc.).

Networked scales are assigned to groups. The network can contain up to 99 groups, each having up to 10 scales. See

The machines can be connected to either one physical network hub or to several hubs.

Two scales can be connected together without the use of a hub. A simple cross cable is used to connect the two machines together.

9.1.2 Multi scale network

Scales are connected together using one or several hubs as required. The number and position of the hubs required is determined by the store layout and the type of hub used.

For example, hub arrangement could be affected by:

- Proximity of machines to each other.
- Number of network inputs available at each hub.

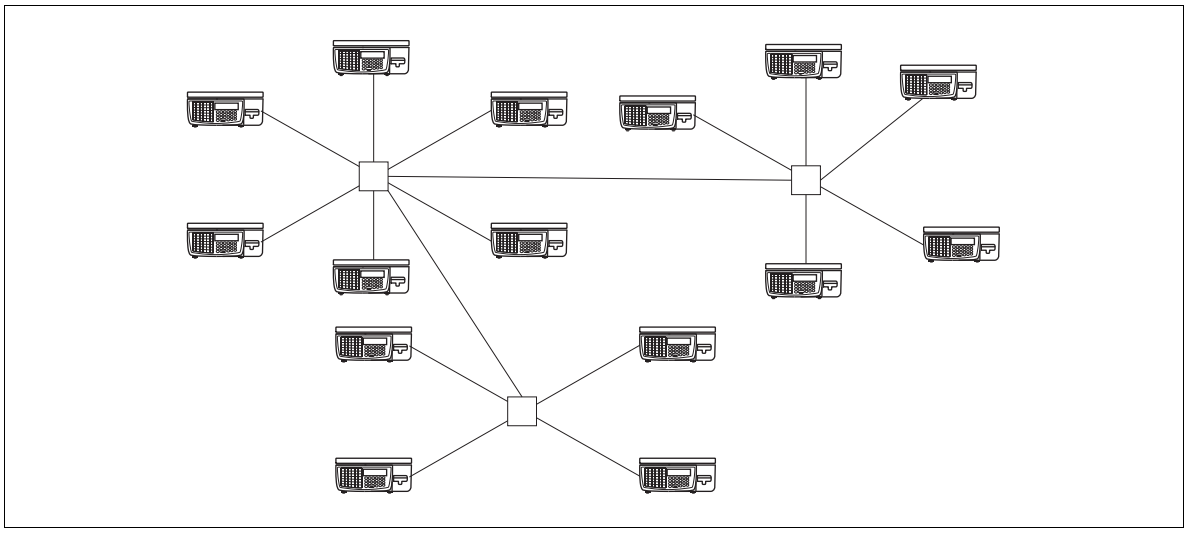


Figure 9.1 Typical multi-scale network

9.1.3 Scale groups (Network ID)

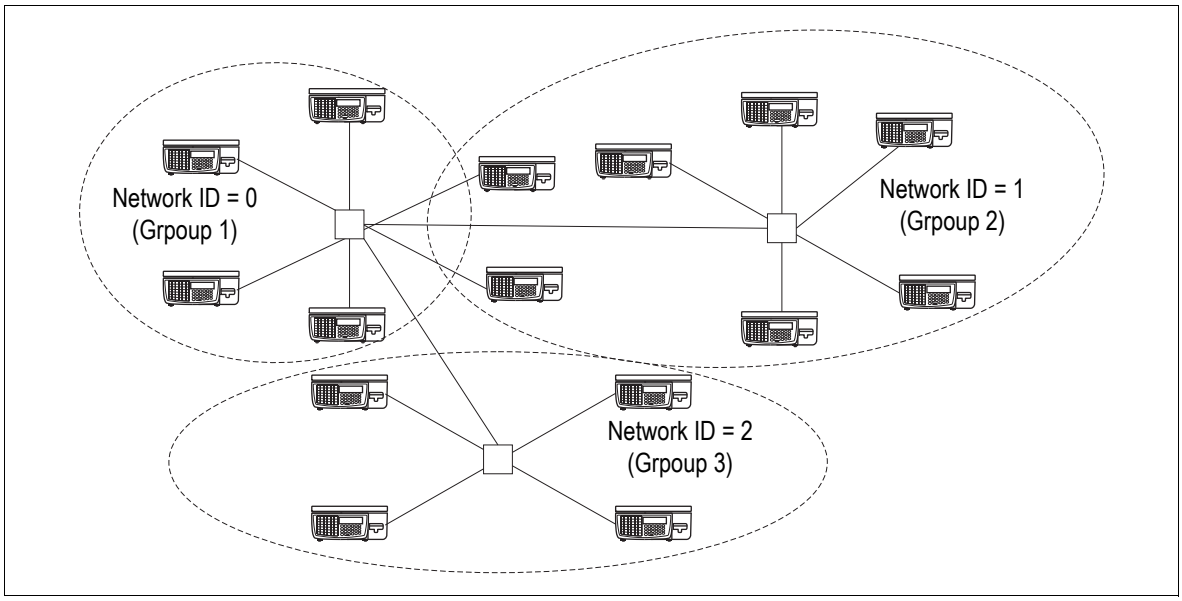


Figure 9.2 Network with scale groups

- Machines can be put into groups of up to ten scales.
- The scale group is assigned by the **network ID** number.
- Up to 99 groups of scales can be connected to a network, giving a total of 990 scales.
- Each group of scales will have a server and a number of client scales.

Note: *For scales to share PLU information etc. with each other, they must be within the same group. (I.E. have the same network ID number*

See *Manual network configuration* on page 96 for details of network ID and other settings.

9.2 Network protocol

IM series scales' network protocol and speed are as follows:

- TCP ICP protocol.
- 10Mbs or 100 Mbs, 10 base T ethernet connection.

9.3 Wiring/terminations

Note: *Before setting up an in-store network, obtain the appropriate IP addresses from the store IT administrator.*

Enter the addresses at the machines before connecting the network. See 9.4, Network setup for more information.

For wiring and termination details refer to the 'Connecting PC networks' book, part number 76102-559.

9.3.1 Cable lengths

The maximum cable length between each machine and the hub is one hundred metres.

Note: *It is usual to allow 5m at either end for the patch cable from the scale to the wall socket. This allows 90m for the cable run between network wall socket and patch panel.*

If the connections between hubs use 10 base T connections, then there should be no more than four hubs in series.

9.4 Network setup

The network settings are configured from within manager mode.

To enter manager mode you can:

1. Enter service mode (see page 19).
2. Press the  key on the programming overlay.

   or

1. From sales mode, press  and enter the manager PIn.
2. Follow the steps on screen.

For more detailed information on the manager menu operation see the separate user instructions.

Set up notes:

- For DHCP networks, set the IP address at each scale to 0.0.0.0.

  IP addresses will then be allocated by the DHCP server for the network.
- For new installations, using Auto Configure to install machines to a network is a very quick way of getting all the machines working.
- Where Auto Configure is not suitable you can manually alter each machine's network settings.

9.4.1 Auto Configure

You can use this function to set up a stand-alone network of scales 'out of the box'.

Auto configure will:

- Detect all the machines that are connected to the network and have the same network ID.
- If there are no servers, it will make the machine that you are using into the server. The machine ID will be made into ID1 or the next available ID number. The server will then find each client machine in turn and give it a machine ID.
- If a server already exists, then the machine you are using will become a client machine and be given the next available machine ID.

Note: *This option will only assign scales within a single group. (i.e up to 10 scales, having the same network ID.*

For greater than 10 scales, only 10 will be auto-configured. The remainder must be manually configured to be in a different group (with a different network ID).

- Machine IDs will be allocated in no particular order, so may not follow any logical pattern.

Auto configuration procedure:

1. Connect all the scales to the network hub and switch on.
2. Ensure that the network ID at each scale is set.
3. At the **server** scale, go to ‘Auto configure’ and press  .

   The scale that you are using will automatically detect the other scales within the group. This machine will become the server and the rest of the machines will be client machines.

Auto configure can also be used to add a new scale into an existing group. When doing this you may need to update the scale's PLU file by performing a network dump.

1. Connect all the scales to the network hub and switch on.
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Auto configure can also be used to add a new scale into an existing group. When doing this you may need to update thescale's PLU file by performing a network dump.

9.4.2 Manual network configuration

For each scale,you may manually configure the settings described in this section.

Machine ID

Used to set the scale’s ID within its group.

Setting	Description
Machine ID	0 = stand alone scale (not networked). 1 - 10 = The machine ID within its group of scales.
Server / Client	Set the scale to be either a server or a client scale.

Before setting a client machine to be a server you should:

- clear all transactions.
- clear all totals.

If a server already exists on the network then:

- the new server becomes the back up server.
- an existing back up server will revert to client status.

- If you change a back up server to be a server, the old server becomes the back up.

Note: *See Backup server operation on page 100, for more information.*

Network dump

For a group of scales (all sharing the same network ID); this option synchronises all data held at the client machines with that of the server.

M/c Setup dump

This option transfers all machine information (not system data) to the specified scale.

9.4.3 Advance settings

If you are installing a scale to an established network, then you must gather information about the network. The easiest way to do this is to use an existing scale to print a test report (press the test key twice). The settings of the new scale must be set so it will communicate with the existing scales on the network.

IP Address / Sub net mask

The IP address of the scale consists of two parts, the network address and the machine address. The network address must be the same as all the other scales on the same network, and the machine address must be different from the other scales on the same network.

The network address depends on which sub-net mask is used, for example for an IP address of 88.1.1.7:

Sub-net mask	255.0.0.0	255.255.0.0	255.255.255.0
Network address	**88**.1.1.7	**88.1**.1.7	**88.1.1**.7
Machine address	88.**1.1.7**	88.1.**1.7**	88.1.1.**7**

For DHCP networks, set the IP address at each scale to 0.0.0.0. IP addresses will then be allocated by the DHCP server for the network.

Note: *When manually setting up a network (i.e. DHCP is not applicable), obtain the IP addresses from the store IT administrator. Enter the addresses at the machines before connecting the network.*

Host name

For networks using DHCP, a unique text identifier may be programmed for each scale on the network.

Gateway IP address

A gateway can be used to bridge between 2 devices with different network addresses.

The gateway will have a network address the same as the scale's and will re-route communications as required.

Network ID

A number 0-99 which is used to assign a scale to a particular group. See *Scale groups (Network ID)* on page 93.

Host port number

The host port number should only be changed if there is a conflict between the scale and some other piece of equipment. All machines in the same network must have the same base port number.

Ping IP Address

Used to test communications between the scale and another known IP address.

Data clone

Clones data from this scale to another within the same group. See *Data clone* on page 37.

9.4.4 Removing a scale

A scale can be removed from the network using the following option:

Manager mode >> Communication >> Machine ID

In brief

To remove a client scale from the network:

- Go to the client to be removed and set the **machine ID** to **0**.

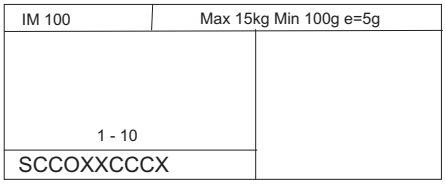
This will remove the client from the network and also inform the server of the change.

To remove a scale that is already off-line (fault reported at the server):

1. Go to the server and view the network map.
2. Press  to accept the map.
3. Press **Yes** to save the change (and clear the fault)

9.5 Network map

The network map shows the status of all the machines in the network group.



S = Server
B = Back up server
C = Client
O = Off-line
E = PLU file error
X = No machine present
L = Local mode

- Press ↵ to accept the map

Note: *If a machine has been removed from the network, pressing 'Yes' to save will remove it from the network map.*

9.6 Backup server operation

The backup server is a backup of the primary server. It is synchronised with the primary and hence contains identical information. It is used as a fail-safe for when the primary server is off line.

- If the primary server goes down, the backup server will become the primary server. When restored, the previous primary server will become the backup server.
- The receipt and transaction memory settings on the backup server must be identical to the main server.
- Although the backup and server continuously synchronise, the system should not be operated for extended periods with one server switched off. If this is the case (e.g. repair) the totals, transactions and the audit list should be cleared before reinstating a second server to ensure that they are synchronised.
- The date and time of synchronisation start and finish is stored in the system log.
- If you attempt to clear totals or transactions with backup off-line, a warning message is given.
- If more than one server is set the server that powers up first will be the primary server with the second set to the backup server.
- In the instance of a communications failure between backup and primary servers, the backup server will become primary, when the cable is reconnected there will be two servers. In this instance the first server to detect this will demote the other to backup server.
- The backup server acts as client in terms of clearing totals etc. i.e. the request is sent to the primary server, the backup server will also perform the request locally.
- If both servers have failed the client will ask if the user wishes to enter local mode. on confirmation all totals and transactions will be cleared from the client local memory. The first transaction or total request, for each operator on the local machine will display a warning to re-enter transactions.

9.7 Local mode

If a client scale becomes disconnected from the server (e.g. because of a network fault). It will operate in local mode.

A machine operating in local mode will generate and store, totals, receipts and transactions locally.

9.7.1 Local mode recovery

When the network is restored, the server will recover transaction data from all machines in local mode, and restore all local machines as clients.

The server will then re-generate the local machine totals using the transaction data collected.

Note: *If the local mode machine fails to store all transactions (e.g. because of insufficient memory) then the totals generated by the server will be incorrect.*

9.7.2 Transaction memory in local mode

For a scale operating in local mode, the transaction memory stores both live and cleared transactions until the server is back on line and able to synchronise the data. It is therefore important that sufficient transaction memory is allocated. See *Memory setting guidelines* on page 45.

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