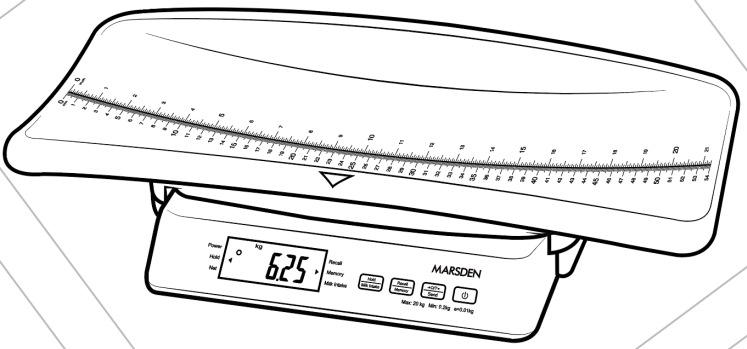
MARSDEN

USER MANUAL

M-320

Infant Scale

Please take time to read these instructions before starting to use the scale



Please keep the instruction manual at hand and follow instruction for use.

Contents

Thank you for purchasing a Marsden professional medical scale. This is a precision Weighing Instrument and considerate use will result in many years of accurate weighing.

Product Specification

Model	M-320
Capacity/Division	0-20 kg x 10g
Accuracy	±10g [Class 3]
LCD Screen	1.0-inch LCD screen (5 digits)
Units of Measure	kg
Function Keys	On/Off, Zero/Tare/Send, Recall/Memory, Hold/Milk Intake
Operation Environment	+5℃~+35℃ 15%~85% RH 700 hPa ~1060 hPa
Power Supply	4 AA batteries
Dimensions	w/o Tray：313(W) x 300(D) x 80(H) mm w / Tray：560(W) x 308(D) x 140(H) mm
Device Weight	1.7 kg (without tray) 2.56kg (20kg capacity model)
Standard Accessories	User manual*1 / USB Type - C*1
Optional Accessories	Carrying bag

Safety Notes

General Information

Thank you for choosing this Marsden Medical Scale. It is designed to be easy and straightforward to operate, but if you encounter any problems not addressed in this manual, please contact your local Marsden service partner.

Before initial operation of the device, please read this user manual carefully, and keep it in a safe place for reference. It contains important instructions regarding installation, proper usage, and maintenance.

Intended Purpose

- This scale is intended for use to determine the weight of patients, supported by professional personnel and in rooms intended for carrying out healthcare. The weighing value can be read after a stable weighing value has been obtained. Before use, the scale must be checked by an authorised person to ensure it's in a suitable condition.
- Device is intended to measure one subject at a time.

Clinical Benefit

Measurement results can be used by professionals to monitor and aid in the diagnosis of weight-related issues.

Intended medical indications / contraindications

Measurement: patient's body weight. No known contraindications to measurement of body weight.

Intended patient profile

(a) Age: no restrictions (subject to size limitations of device and maximum capacity)

(b) Weight: no restrictions within device weight capacity

(c) Patient Conditions: require measurement of body weight. Can fit upon device.

Intended user profile

(a) At least 18 years old

(b) Minimum knowledge:

- To be able to read at a high-school level and understand Arabic numerals (e.g. 1, 2, 3, 4...)
- Basic hygiene knowledge
- Trained in device's operation
- Read the instruction manual

(c) Language

- Able to read the language of instruction manual and on-screen instructions

(d) Qualifications

- No special certifications or qualifications required

Residual Risk Evaluation

(a) All foreseeable risks have been evaluated and considered acceptable. Generally speaking, the most likely risk caused by incorrect usage of the device is less accurate measurement (or inability to use device to acquire measurement), which does not pose imminent physical risk to patient or user.

(b) The benefit-risk ratio is considered acceptable. Infant scales are an important option for measuring patients. Usage of device is unlikely to result in harm to user or patient.

General Handling

- Ensure all parts are properly secured before operating the device.
- Measurement accuracy requires the subject's feet, back, and head to be straightly aligned. Please note that height can vary throughout the day
- **CAUTION**: Do not use next to equipment that may cause electromagnetic or other types of interference.

Safety Instructions

Before putting device into use, please read this user manual carefully. It contains important instructions for installation, usage, and maintenance of the scale.

The manufacturer shall not be liable for damages caused by failure to heed the following instructions:

- The scale has an expected service life of 8 years when correctly handled, serviced, and periodically inspected in accordance with manufacturer's instructions.
- Improper installation will render the warranty null and void.
- Observe permissible ambient temperatures for use

Maintenance

- Please contact your local Marsden distributor for regular maintenance and calibration, regular checking of accuracy is recommended; frequency to be determined by level of use and state of device.

Cleaning

Device surface should be cleaned using alcohol-based or Chlorhexidine-based Wipes.

Warranty / Liability

- The period of warranty shall be 8 years, beginning on the date of purchase. Please retain your receipt as proof of purchase.
- No responsibility shall be accepted for damage caused through any of the following reasons: unsuitable or improper storage or use, incorrect installation or commissioning by the owner or third parties, natural wear and tear, changes or modifications, incorrect or negligent handling, chemical, electrochemical, or electrical interference, unless damage is attributable to negligence on the part of Marsden.
- This device does not contain any user-maintained parts. All maintenance, technical inspections, and repairs should be conducted by an authorised Marsden service partner, using original Marsden accessories and spare parts. Marsden is not liable for any damages arising from improper maintenance or usage. Dismantlement of the device will void the warranty.

Incident Reporting

Any serious incident that has occurred in relation to the device should be reported to the manufacturer, EU representative (if device is used in EU member state), and competent authority of user/subject's member state.

Explanation of Graphic Symbols on Label / Packaging

Text / Symbol	Meaning
	Caution, consult accompanying documents before use
	Separate collection for waste of electrical and electronic equipment, in accordance with Directive 2002/96/EC. Do not dispose of device with everyday waste
	Name and address of device manufacturer, and year / country of manufacture
	Carefully read user manual before installation and usage, and follow instructions for use.
	Medical electrical device, Type B applied part
	Medical electrical device, Type BF applied part
REF	Device catalogue number / model number
EC REP	Name and address of authorized representative in the European Union
MD	Device is a medical device. Text indicates device category type
LOT	Manufacturer's batch or lot number for device
SN	Device's serial number
UDI	Device's Unique Device Identifier
e	Verification Scale Interval. Value expressed in units of mass. Used to classification and verification of an instrument.
CE 2460	Device conforms to (EU) 2017/745 Regulation on Medical Devices Four digit number is identifier for medical device Notified Body

Text / Symbol	Meaning
CE M 20 0122	Device complies with EC directives (verified models only) M: Conformity label in compliance with Directive 2014/31/EU for non-automatic weighing instruments 20: Year in which conformity verification was performed and the CE label was applied. (ex: 16=2016)
	Device is a Class III scale in compliance with Directive 2014/31/EU (verified models only)
	Name and address of entity importing device (if applicable)
	Name and address of entity responsible for translating Information For Use (if applicable)
CON.	Event counter confirming how many times device has been calibrated (if applicable)
	Device conforms to Taiwan National Communications Commission (NCC) approval
	Device conforms to U.S. Federal Communications Commission regulations
UK CA M 20 8506	Device complies with UK non-automatic weighing instruments regulations 2016 (verified models only) M: Conformity label in compliance with Non-automatic Weighing instruments Regulations 2016 20: Year in which conformity verification was performed and the UKCA label was applied. (ex: 20=2020) 8506: Identifier for metrology approved body
UK CA	Device complies with all UK applicable product legislation
	Device's polarity of power.
	Non-ionizing radiation

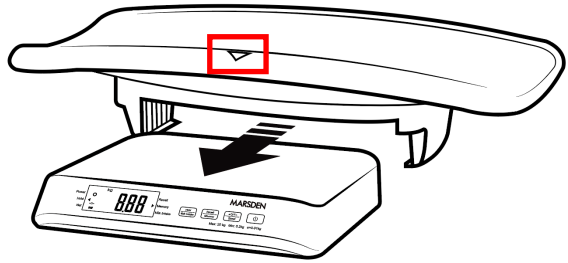
"In case of differences, icon on device itself takes precedence"

Installation

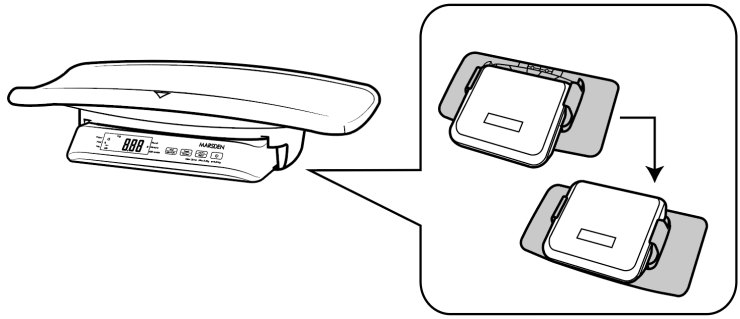
A. Attaching tray

1. Slide tray onto device (arrow facing front).

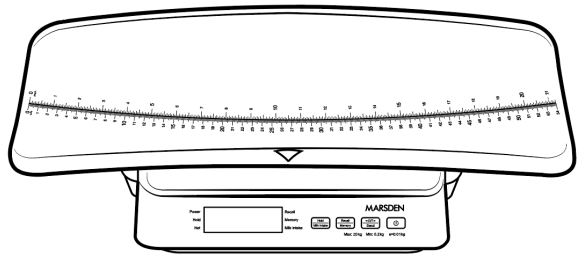
Note: The infant scale can be used in a standing position after removing the tray.



2. Secure protruding tab of tray into slot in platform

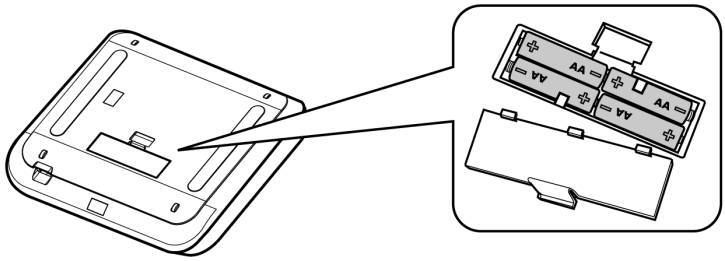


3. Assembly complete



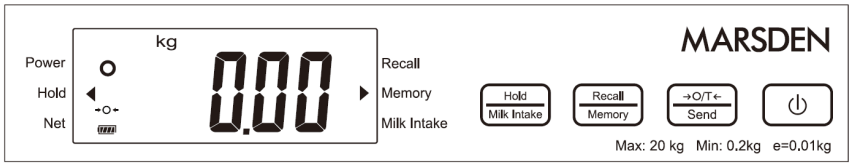
B. Using Battery

The device can be powered by 4 AA alkaline batteries.



Indicator

A. Indicator and Key Functions



Key Function

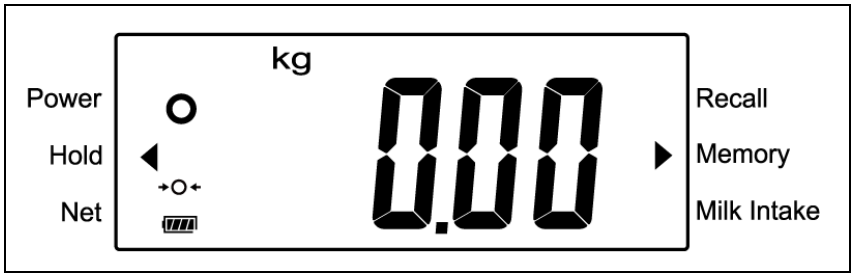
Power on or power off.

Reset display to 0.00 kg.
*(Press and hold) Send data

(Press once) Recall saved weight (Press and hold) Save current weight

(Press once) Hold (lock) weight
(Press and hold) Activate Milk Intake function

B. Display layout



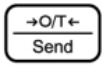
[Power]	◀ when device is powered by USB port	
[Hold]	◀ when Hold function is active	
[Net]	◀ when Net weight is displayed	
when saved weight is recalled for viewing ▶		[Recall]
when weight has been saved ▶		[Memory]
when milk intake result is being displayed ▶		[Milk Intake]

O	Weight stable indicator
→O←	Zero
	Battery status: 100% 80% 60% 40% 20% Lo Low Battery When the display shows Lo, the device will turn on and then immediately turn off. To prevent faster wear on the device, avoid letting the battery level drop to the lowest point before replacing.

Basic Operation

1. Place the scale on a flat, even surface

2. Turn on scale by pressing  . When "0.00 kg" appears on screen, device is ready for use.

Note: If "0.00 kg" does not display on indicator, press 

to reset the device to zero before use.

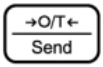
3. Place subject upon measurement platform. After weight has stabilized, "stable" symbol O will appear on screen.

A. Tare

1. Turn on device by pressing  . When "0.00 kg" appears on screen, device is ready for use.

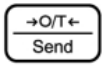
2. Place object that needs to be tared (ex: blanket) onto measurement platform.

3. Wait for stable symbol O to appear on indicator.

4. Press 

. Screen will display "0.00 kg".

5. Place subject (together with tared object) upon measurement platform. (displayed weight will not include tared object's weight)

After removing all objects from measurement platform, press 

to clear.

B. Hold

After turning on the device and placing the weight, the Auto-Hold function will activate automatically.

To deactivate Auto-Hold function, remove the weight from the tray and press the Hold / Milk Intake again.

When the weight is not yet locked, ◀ symbol next to "Hold" will flash.

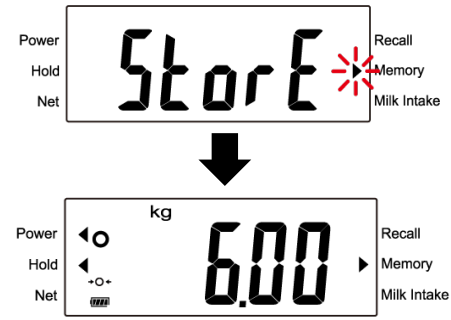
Once the weight is locked, ◀ symbol will remain steadily light.

When the Hold function is activated, if the weight is removed, the locked weight will automatically be released after 1 minute.

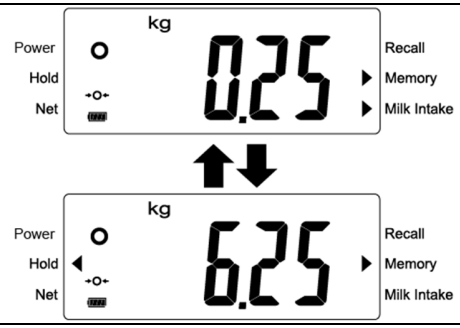
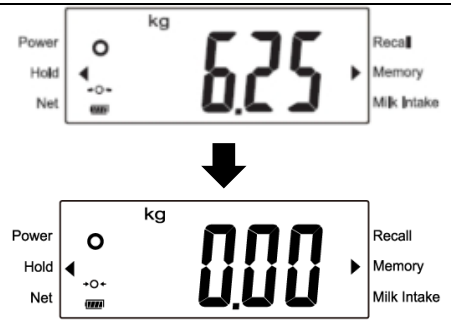
C. Milk Intake

Follow instruction as below for milk intake measurements.

<table>
<tr><th>Instruction</th><th>Display</th></tr>
<tr><td>Gently press ⏻ to turn on device</td><td> 
</td></tr>
<tr><td>Place infant on tray(Example: infant weighs 6 kg before feeding)</td><td> 
</td></tr>
<tr><td>Press and hold Recall / Memory for 3 seconds to saved baby weight.

▶ symbol next to “Memory” will appear if weight of infant has been saved.</td><td> 
</td></tr>
<tr><td colspan="2">Infant can now be removed from scale for feeding.
Device can be turned off in the meantime if needed; saved weight will not be cleared from memory.

If device is turned off, press ⏻ to turn back on.</td></tr>
<tr><td>Place infant on measurement tray after feeding and measure weight
(Example: infant’s weight after feeding is 6.25kg)</td><td> 
</td></tr>
</table>

Press and hold Hold / Milk Intake For 3 seconds Display will switch between milk intake weight (0.25 kg) and infant weight (6.25 kg).	
After the measurement is completed, saved weight needs to be cleared before next measurement.	
Remove all weight from tray, And press Hold / Milk Intake to return to normal mode. Then press →O/T← / Send to back to zero	
Turn device off and on again. Saved weight will be cleared. ▶ symbol next to "Memory" will no longer be marked.	

Device Setup

When the scale is switched off, press and hold ⏻.

You will hear one beep. Without letting go of ⏻, press →O/T← Send 3 times, and release both keys. Screen will display software version, count value, and then"A_OFF" (first option in setting menu).

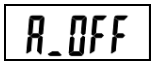
In device setup:

Hold Milk Intake — Previous menu option

Recall Memory — Next menu option

→O/T← Send — Confirm selection / enter submenu

To save changes, toggle menu options using Recall Memory until  is displayed, and press →O/T← Send to exit settings.



Auto Power-Off: Instruct device to shut off automatically after a certain period of time.

Auto off options: 120 sec / 180 sec / 240 sec / 300 sec / off

Press Recall Memory to choose target time. Press →O/T← Send to confirm selection.

Beep: When function is turned on, beeping noise will be made when: indicator is turned on, keys are pressed, and weight is stable.

Beep options: On / OFF

Press Recall Memory to toggle between on/off. Press →O/T← Send to confirm selection

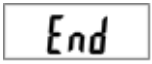
Backlight: Toggle backlight for better visual in low light environment.

Backlight options: Auto / On / OFF

Press Recall Memory to toggle between on/off. Press →O/T← Send to confirm selection.

Auto-Hold: Automatically hold weight results when weighing.

Press Recall Memory to toggle between on/off. Press →O/T← Send to confirm selection.



End: Press →O/T← Send to save setting, device will restart after saving.

Troubleshooting

Before contacting your local Marsden service partner for repair service, we recommend considering the following troubleshooting procedures:

Self-inspection

1. Device will not power on

- If battery power is depleted, replace with new batteries.

2. Indicator showing "00000" ZERO SPAN out of range

- Interference due to factors such as RF disturbance or ground vibration. Relocate device to location without interference and try again
- External objects interfering with measurement platform. Clear platform of objects and try again
- Device may not function properly on soft surfaces such as carpets or lawns. Relocate device to location with solid, stable floor/table.
- If the steps above cannot resolve the problem, re-calibration may be required to correct weighing accuracy
- Please contact your local Marsden Service Partner in cases of Re-verification and / or Re-certification

EMC Guidance and Manufacturer's Declaration

Guidance and manufacturer's declaration-electromagnetic emissions		
The product is intended for use in the electromagnetic environment specified below. The customer or the user of the product should assure that it is used in such an environment.		
Emission test	**Compliance**	**Electromagnetic environment-guidance**
RF emissions CISPR 11	Group 1	The product uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions CISPR 11	Class A	The product is suitable for use in all establishments other than domestic and those directly connected to a low voltage power supply network which supplies buildings used for domestic purposes.
Harmonic emissions IEC 61000-3-2	Class A	
Voltage fluctuations / flicker emissions IEC 61000-3-3	Compliance	

Guidance and manufacturer's declaration-electromagnetic immunity			
The product is intended for use in the electromagnetic environment specified below. The customer or the user of the product should assure that it is used in such an environment.			
Immunity test	**IEC 60601 test level**	**Compliance level**	**Electromagnetic environment-guidance**
Electrostatic discharge(ESD) IEC 61000-4-2	±8 kV contact ±2 kV, ±4 kV, ±8 kV, ±15 kV air	±8 kV contact ±2 kV, ±4 kV, ±8 kV, ±15 kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%
Electrical fast transient/burst IEC 61000-4-4	± 2kV for power supply lines	± 2kV for power supply lines	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	± 1kV line(s) to line(s) ± 2kV line(s) to earth	± 1kV line(s) to line(s) ± 2kV line(s) to earth	Mains power quality should be that of a typical commercial or hospital environment.
Voltage Dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	0% UT for 0,5 cycle 0% UT for 1 cycle 70% UT(30% dip in UT) for 25cycles 0% UT for 5 s	0% UT for 0,5 cycle 0% UT for 1 cycle 70% UT(30% dip in UT) for 25cycles 0% UT for 5 s	Mains power quality should be that of a typical commercial or hospital environment. If the user of the product requires continued operation during power mains interruptions, it is recommended that the product be powered from an uninterruptible power supply or a battery.
Power frequency(50, 60 Hz) magnetic field IEC 61000-4-8	30 A/m	30 A/m	The product power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.
NOTE UT is the a.c. mains voltage prior to application of the test level.			

Guidance and manufacturer's declaration-electromagnetic immunity			
The product is intended for use in the electromagnetic environment specified below. The customer or the user of the product should assure that is used in such and environment.			
Immunity test	**IEC 60601 test level**	**Compliance level**	**Electromagnetic environment -guidance**
Conducted RF IEC 61000-4-6	3 Vrms 150 KHz to 80 MHz 6 V in ISM bands between 0,15 MHz and 80 MHz 80 % AM at 1 kHz	3 Vrms 150 KHz to 80 MHz 6 V in ISM bands between 0,15 MHz and 80 MHz 80 % AM at 1 kHz	Portable and mobile RF communications equipment should be used no closer to any part of the product including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter.
Radiated RF IEC 61000-4-3	3 V/m 80MHz to 2,7 GHz	3 V/m 80MHz to 2,7 GHz	**Recommended separation distance:** $d = 1,2 \sqrt{P}$ $d = 1,2 \sqrt{P}$ 80MHz to 800 MHz d $= 2,3 \sqrt{P}$ 800MHz to 2,7GHz Where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in metres (m).
			Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey, [a] should be less than the compliance level in each frequency range.[b]
			Interference may occur in the vicinity of equipment marked with the following symbol:
			
NOTE 1 At 80 MHz and 800 MHz, the higher frequency range applies. NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.			

a Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the product is used exceeds the applicable RF compliance level above, the product should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as re-orienting or relocating the product.

b Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3V/m.

Recommended separation distance between portable and mobile RF communications equipment and the product

The product is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the product can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the product as recommended below, according to the maximum output power of the communications equipment.

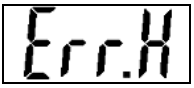
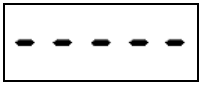
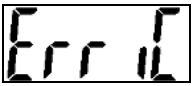
Rated maximum output power of transmitter W	**Separation distance according to frequency of transmitter m**		
	150 kHz to 80 MHz $d = 1{,}2\sqrt{P}$	**80 MHz to 800 MHz** $d = 1{,}2\sqrt{P}$	**800 MHz to 2,7 GHz** $d = 2{,}3\sqrt{P}$
0,01	0,12	0,12	0,23
0,1	0,38	0,38	0,73
1	1,2	1,2	2,3
10	3,8	3,8	7,3
100	12	12	23

For transmitters rated at a maximum output power not listed above, the recommended separation distance d in metres (m) can be estimated using the equation applicable to the frequency of the transmitter, where p is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.

NOTE 1 At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.

NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

Error Messages

Error Message	Reason	Action
	**Low battery warning** Voltage of battery is too low to operate device	Replace batteries, or plug in adapter
	**Overload** Total load exceeds device's maximum capacity	Reduce weight on measurement platform and try again
	**Tilted Angle** Tilt angle exceeds 3%	Carefully place device on a flat and smooth surface.
	**Counting Error (too high)** Signal from loadcells too high	Error normally caused by faulty loadcell or wiring. Please contact distributor
	**Counting Error (too low)** Signal from loadcells too low	Error normally caused by faulty loadcell or wiring. Please contact distributor
	**Negative Value Overload** Negative value exceeds -20d.	Carefully place device on a flat and smooth surface.
	Zero count over calibration zero range +10% while power on	Re-calibration required. Please contact distributor
	Zero count under calibration zero range -10% while power on	Re-calibration required. Please contact distributor
	**Program Error** Fault with device software	Error normally caused by faulty loadcell or wiring. Please contact distributor
	**G-sensor Error** Fault with device G-sensor	Error normally caused by faulty g-sensor or wiring. Please contact distributor

Notes

Notes

MARSDEN

Tel: 01709 916773 / 0800 169 2775

Email: sales@marsdengroup.co.uk

Manufactured by

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Head Office:

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Rotherham, S60 1DX
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