Manufacturer's Declaration of Conformity

This product has been manufactured in accordance with the harmonized European standards, following the provisions of the below stated directives:

Electro Magnetic Compatibility Directive 2014/30/EU

Low Voltage Directive 2014/35/EU

FCC CLASS B Declaration of Conformity

This device complies with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules

Manufactured by:

Charder Electronic Co., Ltd.
No.103, Guozhong Rd., Dali Dist.,
Taichung City, 412 Taiwan (R.O.C.)

IN-00011 [REV002] 02/2018

charder®

MS3450
Medical Scale
USER MANUAL

Please keep the instruction manual at hand all the time for future reference.

TABLE OF CONTENTS

PREFACE 2
GENERAL INFORMATION 2
SAFETY INSTRUCTION 2
ELECTROMAGNETIC COMPATIBILITY 3
WARRANTY-LIABILITY 3
DISPOSING OF THE SCALE 4
SPECIFICATIONS 5
PANEL 6
KEY FUNCTIONS 6
LCD DISPLAY SYMBOLS 7
SYMBOLS information 8
OPERATION 8
SETTING-UP 13
PRINT function and data transmission 14
STANDARD ACCESSORIES 18
SCALE ASSEMBLY 19
ASSEMBLE WITH HM201M HEIGHT ROD 22
INSTRUCTION OF USING HM201M 23
INSTRUCTION FOR CHARGING AND CONNECTING 25
INSTRUCTION FOR REPLACING BATTERIES 26
ERROR MESSAGE 27
TROUBLESHOOTING 28

NOTE

3. Connection failure for data transmission to PC or printer

- Wrong connection wires or faulty wires for transmission between the digital indicator & load cells.
- Wrong indicator models
- Wrong internal wiring or wire broken

In case of the following defective mode occurs, it is suggested to contact your nearest Authorized Dealer for further technician service & repair:

1. Power Switch-on failure :

- Push-button faulty
- Short circuit wires - Wire broken
- Safety fuse burnt out
- Wire connection problem
- Main power adaptor faulty – Parts Replacement

2. LCD display faulty

- Possible hardware defects include: Uneven brightness in the LCD display screen & texts color blurred, smeared rainbow screen, incorrect decimal display
- LCD PIN broken or short circuit
- PCB cooper foil broken & loosed welding
- Unable to save or read data – IC or transistor faulty, internal parts broken.
- LCD showing “ERRL” after switch on - Load cell damaged
- Overload may cause the weigh to malfunction.
- Software system crash
- Resonator faulty
- Load cells with faulty grinding standard.
- Key buttons failure - Front key panel damaged or disconnected

3. Buzzer malfunction

- Wrong welding of PVC wire
- Key buttons & control panel damaged or disconnected.

PREFACE

Thank you for choosing CHARDER MEDICAL product. All features of this product were designed to state of the art and are optimized for simple and straightforward use. If you have any queries or experience any problems not addressed in the operating instructions, please contact your CHARDER MEDICAL service partner, or visit us on the Internet at **www.chardermedical.com**

GENERAL INFORMATION

We strongly recommend you use the scales on flat and hard surface. Any soft surface, like carpet will cause inaccuracy.

SAFETY INSTRUCTION

⚠Before putting the device into use, please read with care the information given in the Operating Instructions. They contain important instructions for installation, proper use and maintenance of the device.

The manufacturer shall not be liable for damages arising out of failure to heed the following instructions:

- When using electrical components under increased safety requirements, always comply with the appropriate regulations.
- Improper installation will render the warranty null and void.
- Ensure the voltage marked on the power supply unit matches your mains power supply.
- This device is designed for use indoors.
- Observe the permissible ambient temperatures for use
- These batteries should be kept away from small children. If swallowed, promptly seek medical assistance.
- Expected Service Life: 5 years
- The device meets the requirements for electromagnetic compatibility. Do not exceed the maximum values specified in the applicable standards.

If you have any problem, contact your local CHARDER MEDICAL service partner.

ELECTROMAGNETIC COMPATIBILITY

⚠ ADVICE TO THE USER

This product is a sensitive electronic instrument and as such it may temporarily be affected by Radio Transmitting Devices being used in close proximity to it (such as Mobile Phones, Walkie Talkies, CB Radios, and Radio Model Controllers). If it does exhibit symptoms such as the display of erratic or erroneous data, try moving this product away from the source of interference or switching off that source of interference whilst you are using this product. If the problem persists then contact your local agent.

WARRANTY-LIABILITY

- If a fault or defect is present on receipt of the unit which is within CHARDER MEDICAL's scope of responsibility, CHARDER shall have the right to either repair the fault or supply a replacement unit. Replaced parts shall be the property of CHARDER. Should the fault repairs or replacement delivery not be successful, the statutory provisions shall be valid. The period of warranty shall be two years, beginning on the date of purchase. Please retain your receipt as proof of purchase. Should your scale require servicing, please contact your dealer or CHARDER MEDICAL Customer Service.
- 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, changes or modifications, incorrect or negligent handling, overuse, chemical, electrochemical or electrical interference or humidity, unless this is attributable to negligence on the part of CHARDER MEDICAL.
- If operating, climatic or any other influences lead to a major change in conditions or material quality, the treaty for perfect unit functioning shall be rendered null and void. If CHARDER provides

TROUBLESHOOTING

Troubleshooting for defective modes:

Original purchaser can enjoy the benefits under the effective Warranty against functional defects in material and workmanship subject to the terms and conditions listed in our Warranty Program & Return Policy.

Our warranty service program includes the following:

1. Technician repair service under warranty or at a service maintenance charge depending on the workmanship for the defective functionality or cause of damage covered by the warranty.
2. Parts replacement from the manufacturing factory under the warranty or at a certain cost for the replaced parts plus the workmanship charge if not covered under the warranty.

Before you contact our Authorized Dealer in your country for technician repair service, please read through the following section carefully:

Self-checking Tips:

Some functional defects can be identified and maintained by users as listed below:

1. Power-on failure

- Check if the main power adaptor has not plugged onto the scale properly
- Check if the battery power is running low – Replace with new batteries.

2. Indicator showing "0000" ZERO SPAN out of range

- Incorrect weighing result - Avoid damages by external environment force such as free-drop to the ground, collision by external objects, etc.
- Proper re-calibration procedure required to correct the setting of weighing accuracy.
- Interference due to RF disturbance, ground vibration…etc.
- Unstable platform feet adjustments according to bubble level indication
- Incorrect position or other external objects within weighing area
- The weighing-scale is not put in a solid & firm ground area, such as carpet floor or lawn.

ERROR MESSAGE

ERROR MESSAGE	REASON	ACTION
	Low Battery: This warning shows that the voltage of battery is too low to use	Please replace a new battery or plug the AC adaptor for operation.
	Overload: The total load exceeds the maximum capacity of scale	Please reduce the loading and try again.
	Counting error (too high): Indicates that the signal from the load cell/s is too height	This error is normally caused by a serious fault on the scales such as a faulty load cell or wiring. Please contact the local service representative.
	Counting error (too low): Indicates that the signal from the load cell/s is too low	This error is normally caused by a serious fault on the scales such as a faulty load cell or wiring. Please contact the local service representative.
	Zero count over calibration zero range +10% while power on	Please re-calibrate the instrument.
	Zero count under calibration zero range –10% while power on	Please re-calibrate the instrument.
	EEPROM Error: Indicates that there is a fault with the scales software	This error is normally caused by a serious fault on the scales such as a faulty load cell or wiring. Please contact the local service representative.

and individual warranty, this means that the unit supplied will be free of faults for the length of the warranty period.

DISPOSING OF THE SCALE

- This product is not to be treated as regular household waste, but should be handed into an electrical/electronic equipment recycling centre.
- You can obtain further details from your local council, your municipal waste disposal company or the firm which you purchased the product.

SPECIFICATIONS

Model	MS 3450
Capacity	300 kg x 0.1 kg
Accuracy	±200g
Weight Unit	Kg/lb
LCD Display	1.4” LCD digital display
Dimension	Platform size: 310 x 310 mm Column Height: 900mm
Key Functions	UNIT,  TRANSFER, ON/OFF/ZERO, HOLD/BMI, TARE/BSA
Optional Accessories	HM201M height rod 60 ~ 210 cm / 6ft 10inch
Operating Temp. & Humidity	+ 5°C ~ + 35°C 15% - 85% RH
Transport and Storage Temperature & Humidity	- 20°C + 60°C 10% - 95% RH
Power Supply	12V adapter 1.5V AA battery * 6

INSTRUCTION FOR REPLACING BATTERIES

1. Open the battery housing cover

2. Take out the battery housing

3. Place the batteries

4. Make sure that the battery housing pins will touch the right points

5. Re-install the battery housing

6. Close the battery housing cover.

INSTRUCTION FOR CHARGING AND CONNECTING

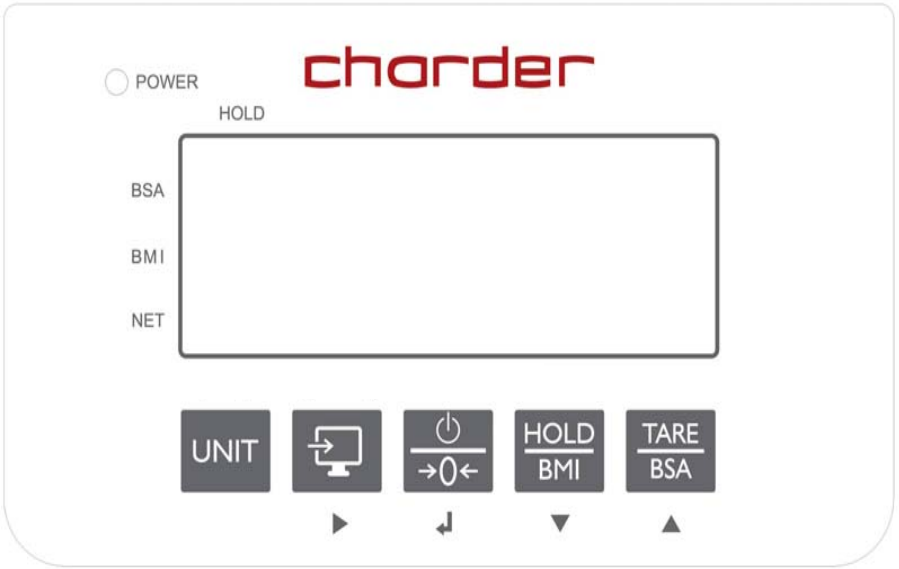
If Lo prompt displays on the LCD, please charge the scale with MS 3450 exclusive adaptor or replace the batteries.
Locate adaptor plug-in at the back side of indicator.

CAUTION:

Always connect the AC adaptor with the indicator before connecting to the mains power supply.

Please disconnect the adaptor from main power supply before taking out the AC adaptor pin from indicator.

PANEL



KEY FUNCTIONS

Description:

TARE TARE BSA

Tare the weight of excess object in advance so that the user can measure the net weight of the object / person at ease without removing the tare object again.

BSA TARE BSA

The total surface area of human body. For many clinical purpose,BSA is the better indicator of metabolic mass than body weight,because it is less affected by abnormal adipose mass. BSA is commonly used in medicine, particularly to calculate doses of chemotherapeutic agents and index cardiac output.

ON/ZERO/OFF

Key to power scales ON, OFF and ZERO.

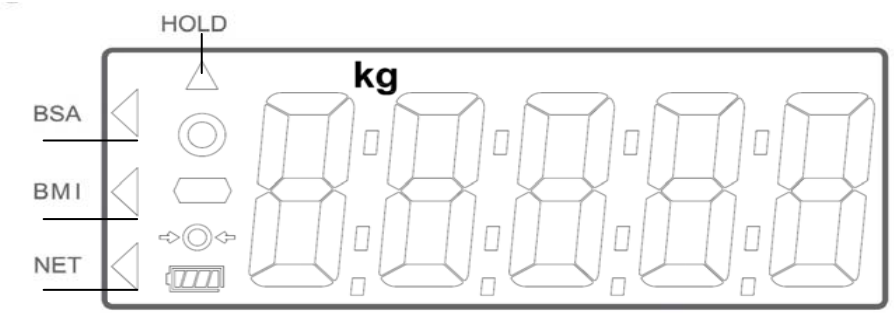
UNIT UNIT

Key to switch kg or lb, and to change height value under BMI mode.

HOLD/BMI HOLD BMI

HOLD key and BMI (Body Mass Index) key

LCD DISPLAY SYMBOLS



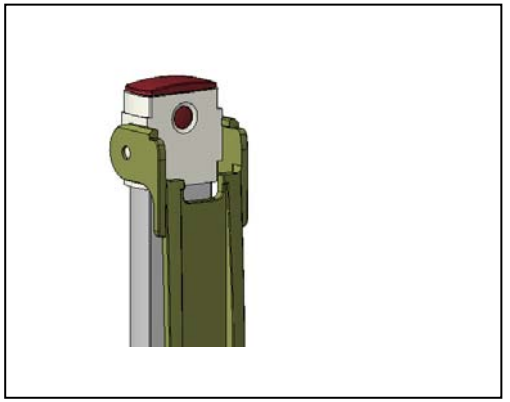
BSA : Body surface area is activated

BMI : Body Mass Index is activated

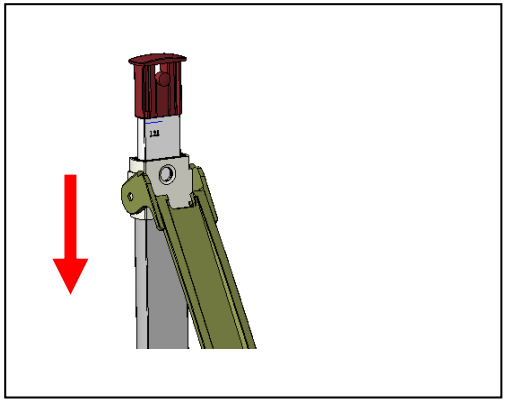
NET : Net weight appears after press tare button

HOLD : Weight lock function is activated

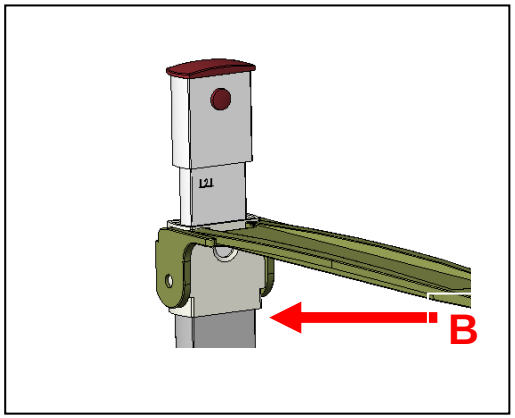
MEASURING UNDER 121 cm



1. Fold the plate and press the buckle.



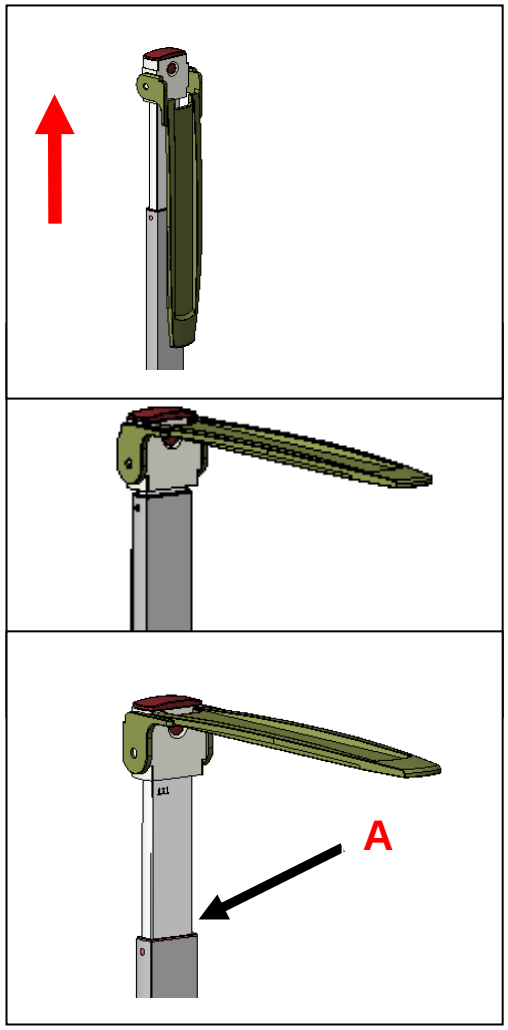
2. Pull down head piece while buckle is pressed



3. Height reading can be taken at **B** point.

INSTRUCTION OF USING HM201M

MEASURING OVER 121 cm

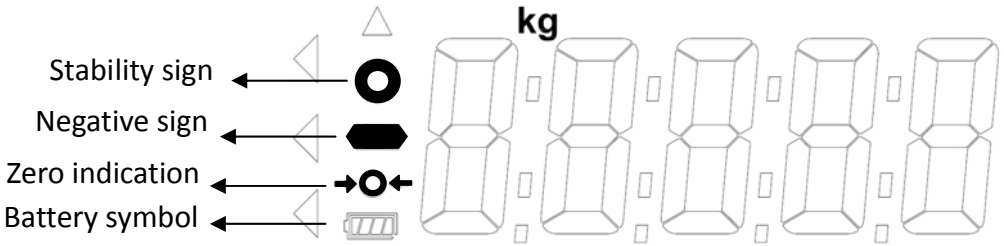


1. Pull out the rod.

2. Position the head piece to horizontal position

3. Height reading can be taken at A point.

SYMBOLS information



Symbol	Information	Remark
	Stability sign	Mark appears when weight is stable
	Negative sign	When weight value is negative
	Zero indication	When scale is set to zero
	Battery symbol	Indicate 5 level of battery power.

OPERATION

1 Switching on/off

Switching on

Press  to switch scale on

For a few seconds the devices shows a start-up screen with the full segmental LCD display, software version and then 0.0 kg

Switching off

Press  and hold for 3 seconds to switch scale off

Zero the scale

Press  while scale is on to zeroing the scale

2 Straight weighing

1. Place weighing object/person on the scale

2. Wait until the stability sign appears
3. Read the weighing result

3 Weighing with hold

This device is provided with the integrated hold function (determination of average value). It enables people to be weighed accurately although they are not still on the scale plate. Once the HOLD key is pressed, the weight reading will remain on the display after the item has been removed from the scale so the reading can easily be read.

Note

- Determination of average value is not possible when a person moves too much.
- HOLD function won't work if the weight is under 2 kg.

1. Switch on the scale. The diagnostic self-checks is performed. The scale is ready for weighing when the „0.0 kg" displays on the screen.
2. Place object/person on the scale.
3. Press HOLD/BMI key. When the triangle is flashing on the display, the scale records the fluctuating weight values and then calculates average weight and displays the result on the screen.
4. Remove object/person from the scale. The weight reading will remain on the display.
5. Press HOLD/BMI key again to return the scale to the normal weighing mode.
6. HOLD function can be activated before or after place the weight on the SCALE.

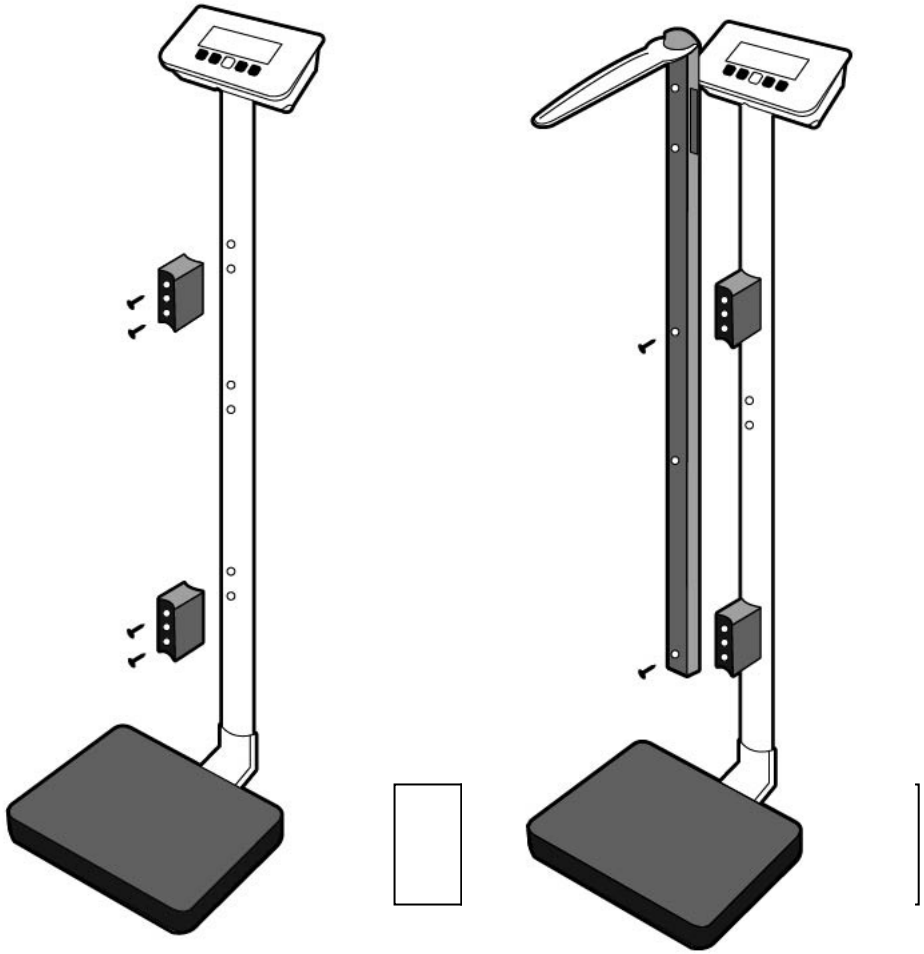
4 Weighing with tare

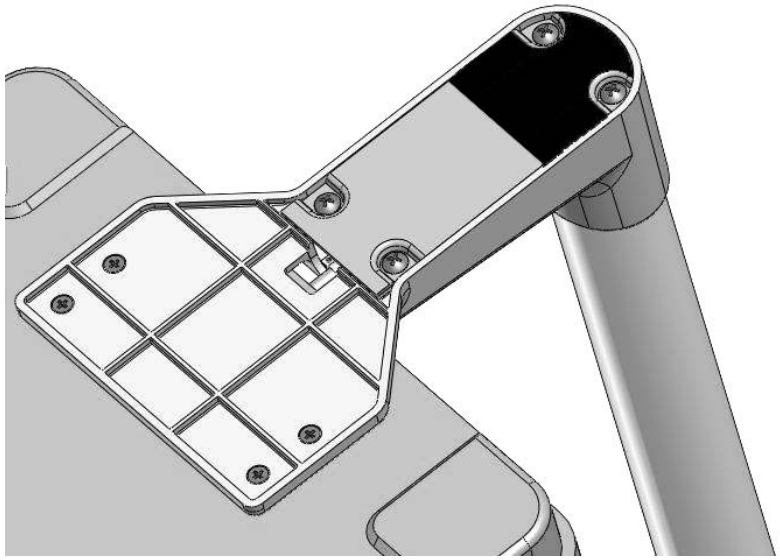
Tare function allows the user to deduct the excess weight of a single tare object value (additional loads or clothes) from the display reading, thus calculate the actual net weight of the object/ person.

4.1.1 Taring

Place tare object (additional loads or clothes) on scale and press TARE/BSA to tare the weight of object.

ASSEMBLE WITH HM201M HEIGHT ROD





5. Complete

- The zero display and the symbol NET appear.
- The tare weight remains stored until it is cleared.

4.1.2 Clear the tare

Press →0← to clear tare weight

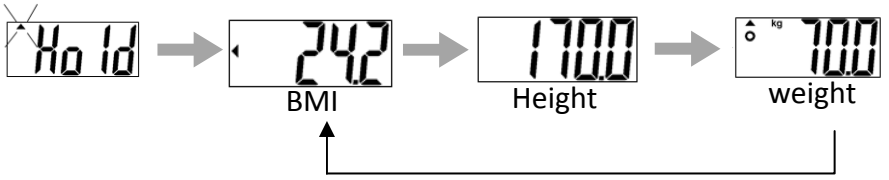
- The symbol NET disappear
- The gross weight appears in the display.

5 Weighing with BMI

For BMI calculation, height is needed, therefore it is recommended to measure the height of subject before starting weighing procedure.

1. Switch on the scale.
2. Place object/person on the scale.
3. Press HOLD/BMI key and hold for 3 seconds. First, display will show “HOLD” and lock weight then display show “height value”.

4. Adjust height value by using HOLD/BMI (↓) and TARE/BSA (↑) keys.
5. Switch between digits by using ⊡ (→) key.
6. Press →0← to confirm height value.
7. Display will show “HOLD” and lock weight to calculate BMI.



Body Mass Index Categories

Classification of weight for adults over 18 years on the basis of Body Mass Index according to WHO, 2000 EK IV and WHO 2004 (WHO - World Health Organization).

Category	BMI (kg/m^2)	Risk of diseases accompanying overweight
Underweight	< 18.5	low
Normal weight	18.5 – 24.9	average
Overweight	≥ 25.0	
Preobesity	25.0 – 29.9	slightly increased
I degree of obesity	30.0 – 34.9	increased
II degree of obesity	35.0 – 39.9	high
III degree of obesity	≥ 40	very high

6 Weighing with BSA

- Values for Body surface area (BSA) is the measured or calculated surface area of a human body. For many clinical purposes BSA is a better indicator of metabolic mass than body weight because it is less affected by abnormal adipose mass. BSA are commonly used in medicine, particularly to calculate doses of chemotherapeutic agents and index cardiac output.

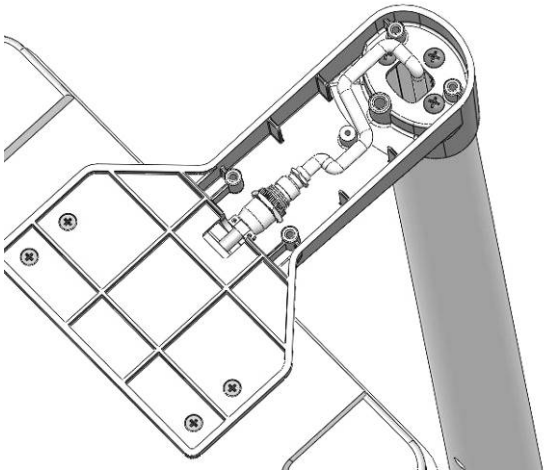
Average BSA for children of various ages, for men, and for women, are taken to be:

Age	BSA
Neonate (newborn)	0.25 m²
Child of 2 years	0.5 m²
9 years	1.07 m²
10 years	1.14 m²
12-13 years	1.33 m²
Women	1.6 m²
Men	1.9 m²

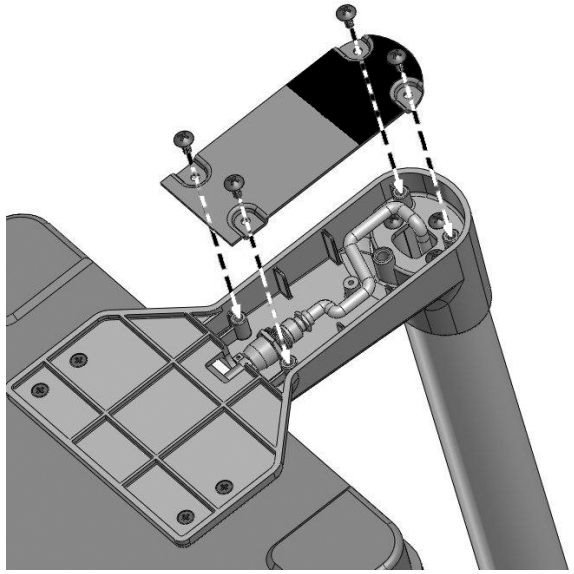
There was an average BSA of 1.73 m² for 3,000 cancer patients from 1990 to 1998 in a European Organisation for Research and Treatment of Cancer (EORTC) database.

During 2005 there was an average BSA of 1.79 m² for 3,613 adult cancer patients in the UK. Among them the average BSA for men was 1.91 m² and for women was 1.71 m².

However, there is some evidence that BSA values are less accurate at extremes of height and weight, where Body Mass Index may be a better estimate.

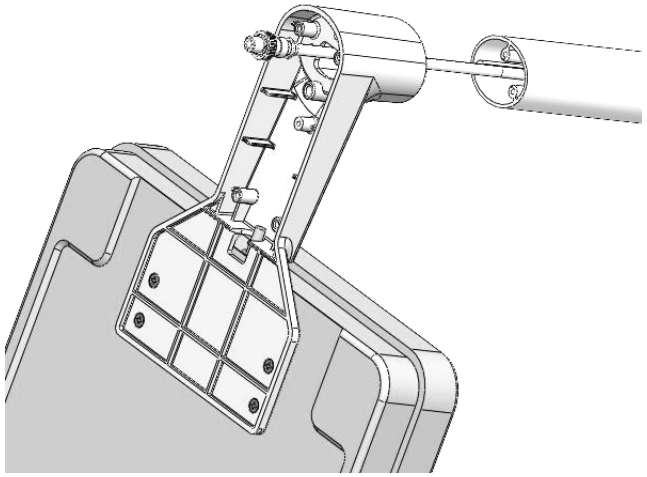


3. Arrange the cable along the gap in the column seat.

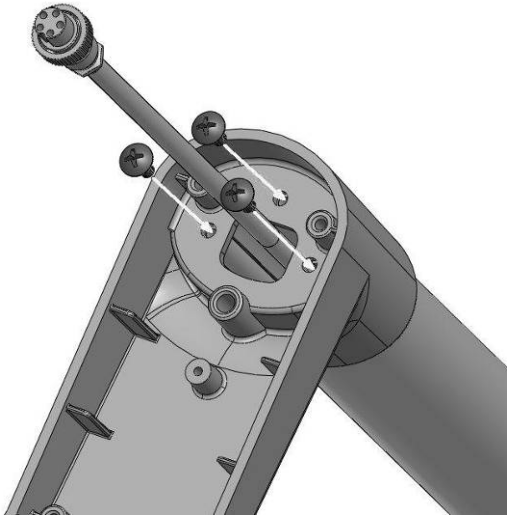


4. Cover the bottom cover and screw in four M4*0.7*8 screws

SCALE ASSEMBLY



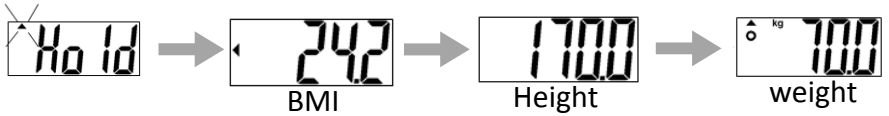
1. Plug the column into the column seat.



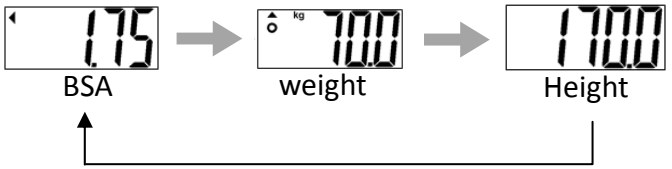
2. Screw in three M4*0.7*15 screws.

6.1.1 Enable BSA in BMI mode

1. Starting with BMI process
2. When BMI, weight and height is playing rotationally.



3. Press TARE/BSA to play BSA value.



4. Press TARE/BSA to return to BMI mode.
5. Press HOLD/BMI to return to normal mode.

SETTING-UP

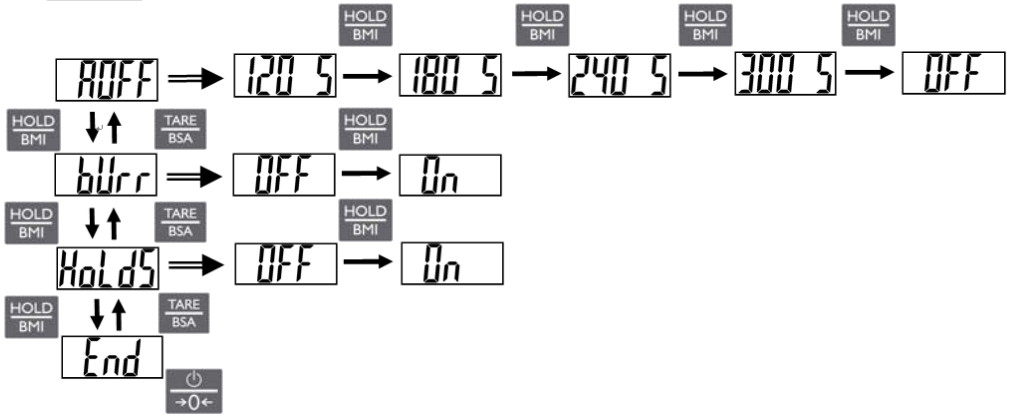
1. Switch on the scale.
2. Press TARE/BSA key and hold for 6 seconds to enable setting mode.
3. LCD shows “SETUP” first and then “A.OFF” appears.

HOLD/BMI ↓ Switch between modes and menu

TARE/BSA ↑ Reverse switch between modes and menu

→0← → Confirm setting.

MENU



AOFF Set auto-off timer between 120/180/240/300/off

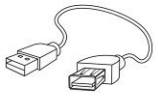
bUrr Set buzzer on and off

HoLdS Set HOLD function release after unload weight ON and OFF.

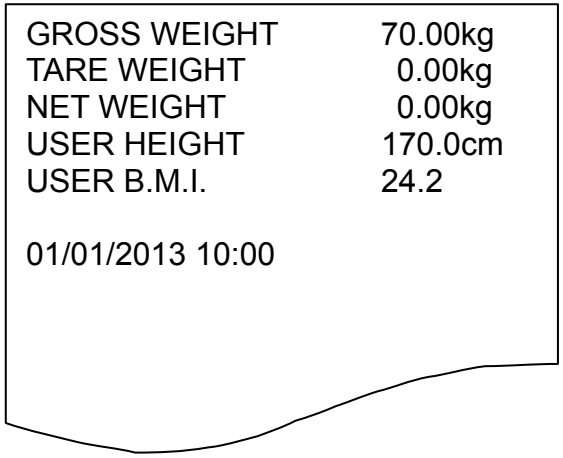
Note

Confirm End in the menu to save all settings.

STANDARD ACCESSORIES

No.	Accessories	Item	Spec	Qty
1		M4 Screw	M4*0.7*15	3
2		M4 Screw	M4*0.7*8	4
3		Bottom Cover		1
4		USB cable		1
5		12V adaptor	AC adapter	1
6		User manual	IN-00011	1

8. Printout Data Through USB/RS232 cable connector
Click OK button to complete the setting. The PC will retrieve the weighing & BMI data from the CHARDER scale and display on the HyperTerminal program similar to the layout below.
While the Hyper Terminal program is running, type “P” KEY on the PC keyboard to transmit a print command to printout from the thermal printer on the CHARDER scale for hard copy of weighing data & BMI.
Or, press the [PRINT] button on the display panel of the CHARDER scale, the printout presented below is the standard format print layout as well as shown on the HyperTerminal computer screen.



PRINT function and data transmission

The Weighing, BMI and Height results can be keep in PC for records using USB interface cable, which is connected to the USB plug at the back terminal.
After complete BMI and BSA process, simply press  key to transfer the results to PC.

HOW TO SETUP USB CONNECTIONS ON PC

1. Make sure the PC hardware device has USB port version2.0 or above compatibility. Users may need to consult with local computer accessories dealer to select the proper USB cable length that is most suitable to work environment for best performance, then connect the cable first between the PC and CHARDER Scale model.
2. Run HyperTerminal program under Windows OS computer and input printer port parameter settings, please refer to the next Section in <Step 7> on how to setup HyperTerminal program in user’s computer for printer port parameters.
3. Once the HyperTerminal setting is ready, make sure the USB cable is connected properly between the user PC’s USB port and the CHARDER Scale Model again. Press PRINT button on the Scale Display Panel for printout of weight & BMI data from thermal printer.

Hyper Terminal setting in PC for printout

Hyper Terminal is a freeware on PC Windows XP SP3 or lower to setup the PC printer com-port with USB or RS232 cable connector transmission.

For use on Windows Vista or higher please download hyper terminal software program from Charder website:

http://www.chardermedical.com/download/dlist-4.htm

4. Start Hyper Terminal

After taking the weight and BMI, run Hyper Terminal program from the PC’s Windows OS with the following steps:

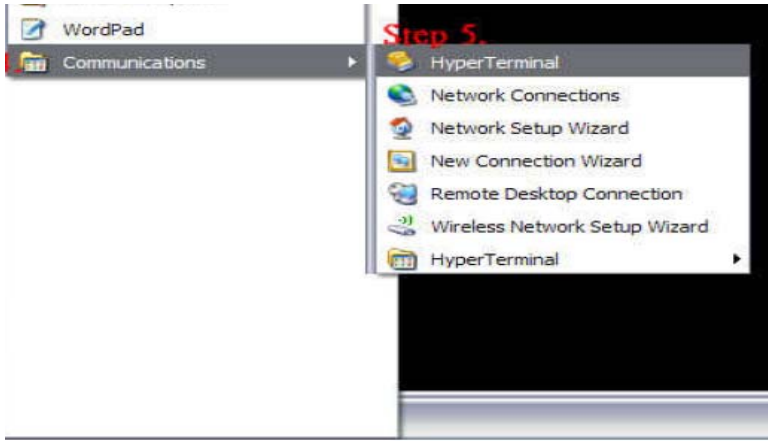
Step.1- Click on Start Button.

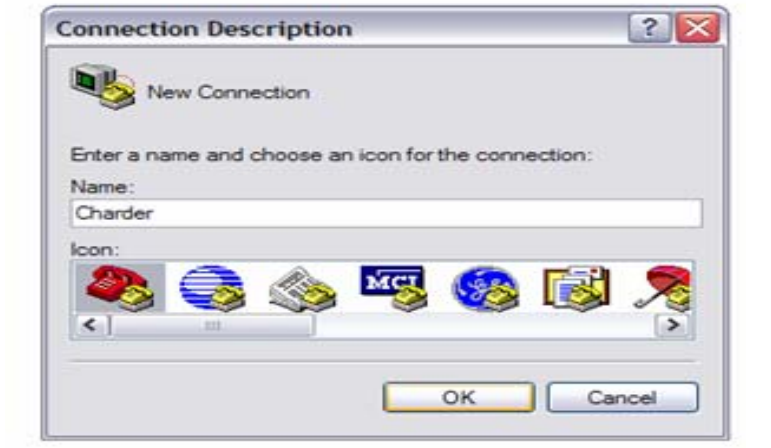
Step.2- Go to All Programs.

Step.3- Select Accessories.

Step.4- Find Communications.

Step.5- In Communications section click on HyperTerminal.





5. New Connection Description
Name the connection and click OK Button

6. Select COM Port on User PC
Click Connect to select COM port on the computer. Select Bluetooth Port for connection. Then click OK.

7. Port Settings for Printout
Set up as below:

- Baud rate: 9600 bps
- Parity check: None
- Data length: 8 bits
- Stop bit: 1 bit
- Handshake: RTS/CTS
- Data code: ASCII