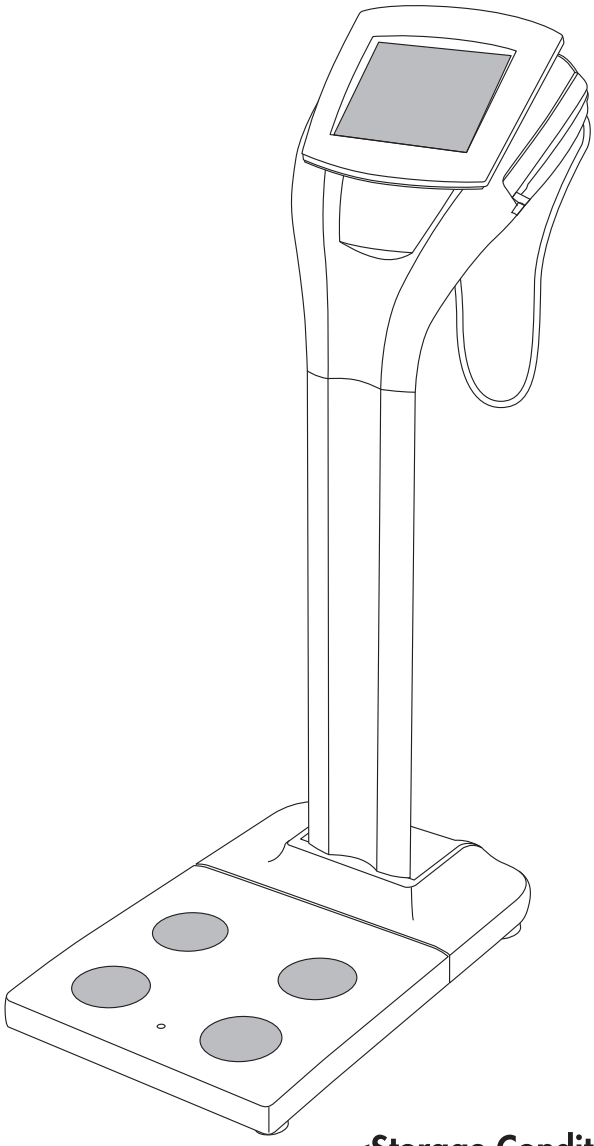
TANITA®
Monitoring Your Health

BODY COMPOSITION ANALYZER

MC-980U plus

Instruction Manual



<Usage Conditions>

Temperature Range	: **41 to 95˚F / 5 to 35˚C**
Relative Humidity Range	: **30 to 80%** (non-condensing)
Max Altitude	: **6,500ft ASL (2,000m ASL)**
Atomospheric Pressure Range	: **86 to 106kPa**

<Storage Conditions>

Temperature Range	: **14 to 140˚F / -10 to 60˚C**
Relative Humidity Range	: **10 to 90%** (non-condensing)
Atmospheric Pressure Range	: **70 to 106kPa**

To avoid malfunctions, avoid storing the equipment in a place with direct sunlight, significant temperature changes, a risk of dampness, a large amount of dust or a risk of vibration or impact, or in the vicinity of flames.

Please read this Instruction Manual carefully and keep it for future reference.

Intended Use

Tanita Body Composition Analyzers have been clinically proven to be accurate, reliable and provide highly repeatable results. Our Analyzers are used worldwide by health, research and medical professionals primarily in the following fields:
- medical screening and health assessments of adults and children
- monitoring the progress of weight loss during medical treatment relating to lifestyle diseases such as diabetes, hyperlipidemia, bariatric surgery, hypertension and fatty liver disease.
- monitoring increases of muscle mass, reduction of body fat and hydration levels as part of a fitness or training program
- assessing the true effectiveness of nutrition and physical activity programs where body mass index cannot identify key changes in body composition
- collating subject data for large cohort research studies

The Tanita Body Composition Analyzer is indicated for use in the measurement of weight and impedance, and the estimation of body mass index (BMI), total body and segmental fat percent and weight, total body water percent and weight, intracellular and extracellular water weight, total body and segmental muscle mass, physique rating, bone mass, visceral fat rating with healthy range, basal metabolic rate (BMR), and fat free mass (FFM), using BIA (Bioelectrical Impedance Analysis).
The device is indicated for use for healthy children 5-17years old and healthy adults with active, moderately active, to inactive lifestyles. For subjects 17years old and younger, only fat % is displayed.

Efficacy

This product has been specifically designed to be simple to use and required no additional user assistance to take a measurement.
Measurements can be taken in under 30 seconds for maximum convenience.

Contents

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Before Use

How to Use

Other Information

For Your Safety

Below are precautionary measures to be taken to avoid injury to the users of this device and others, and to prevent damage to property. Please familiarize yourself with this information to ensure the safe operation of this equipment.

⚠Warning	**Failure to follow instructions highlighted with this mark could result in death or severe injury.**
⚠Caution	**Failure to follow instructions highlighted with this mark could result in injury or damage to property.**
⃠	**This mark indicates actions that are prohibited.**
❗	**This mark indicates instructions that must always be followed.**

⚠ Warning

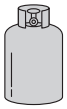
Prohibited

This device must not be used on subjects with pacemakers or other mechanical implants.

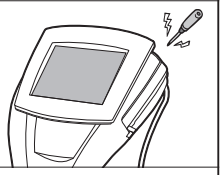
This device passes a weak electrical current through the body which could interfere with and cause the malfunction of electrical medical implants, with serious consequences.

Do not handle the plug with wet hands.
This may result in electric shock, fire, or current leakage.

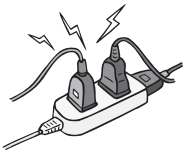
Keep this equipment away from flammable gas and oxygen-rich environments.



Do not modify this equipment.
There is a risk of electrocution or injury, and precise analysis cannot be guaranteed.



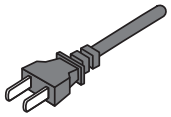
Do not use multiple adapters.
This may result in fire.



Required

Use only a correctly wired outlet.
Only genuine cables and equipment can be used.

The power cord must be connected to a type A plug (with a ground terminal).
Failure to do so may result in an electric shock or current leakage.



⚠Caution

Prohibited

Do not allow the equipment to get wet.

Avoid using on subjects with allergies to metals.
Allergic reactions may be caused by the stainless steel used in the electrodes of this device.

Do not jump on the equipment.

Do not lean on the equipment.

Do not use this equipment near other products that emit electromagnetic waves.

Do not insert fingers into any of the gaps or holes.

Do not apply force to the display.
The screen may break and cause injury.

Do not place items sensitive to magnetic forces near the equipment.
The magnet of the impedance meter may corrupt data on devices such as USB memory sticks if these are placed near the equipment.

Assist persons with disabilities.
Another person should assist persons with disabilities who may not be able to take a measurement alone.

Required

Clean the scale platform with appropriate disinfectant after each use.

Stand clear of the subject during measurement to ensure accuracy.

Continually monitor both the subject and the equipment for anomalies.
If an anomaly in the subject or equipment is discovered, take appropriate action, such as stopping the equipment, while ensuring the safety of the subject.

Use the included AC cord.

Do not lean against the equipment.

Unplug the AC cable from the equipment when moving it.

Tighten the adjustable feet when moving the equipment.

Interpretation of analysis results (e.g. evaluation of measurements and formulation of exercise programs based on results) must be performed by a professional.
Weight loss measures and exercise based on self-analysis could be harmful to your health. Always follow the advice of a qualified professional.

This equipment is designated a Class B IT device (mainly for systems intended to be used in indoor environments) and is CE (EMC) certified, but it may affect devices that are sensitive to electromagnetic waves.

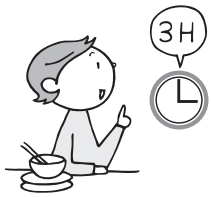
If connecting a computer or peripheral devices to this equipment, please use a device complying with IEC60601-1 (EN60601-1). Power must be supplied from a medical isolation transformer for IEC60950 (EN60950) devices. Keep a distance of 1.5m between units during operation. Failure to do so may cause electric shock to subjects or malfunction.

For Accurate Measurements

Prohibited

Avoid measuring after strenuous exercise.
This may cause inaccurate measurements. Please take measurements after sufficient rest.

Avoid measuring after over-eating or over-drinking, or when severely dehydrated.
This may cause inaccurate measurements. For greater accuracy, avoid using directly after waking up. Use at the same time of day each time, at least three hours after the last meal.



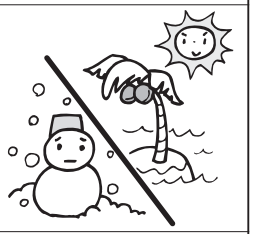
Ensure arms are not touching sides and inner thighs are not touching each other during measurement. If necessary, place a dry towel between arm and side and/or between thighs.

Do not take measurements while using transmitting devices such as mobile phones, as these may affect readings.

Required

Use the equipment under the same conditions and in the same position as much as possible for accurate tracking of changes.
Readings are affected by the level of hydration and position of the body. Please use at the same time of day each time, under the same conditions and in the same body position.

Avoid measuring in multiple locations with greatly differing temperatures.
This may cause inaccurate measurements. Allow the equipment to stand for at least 2 hours before using if it is moved to a new location with a temperature difference of ±68˚F/±20˚C or more.



Make sure the soles of the feet are free of excess dirt, as this may block the mild electric current.

Always take measurements with both arms straight down to prevent measurement errors such as underestimation of body fat.

Feet should be bare and placed correctly on the electrode platform. Arms should be straight down during measurement.

Use in a stable location.
Errors in measurements may occur if the device is used in an unstable location.

Regular Maintenance

Required

TANITA recommends that each facility conduct periodic checks of each unit.

1. Check the following at least daily:
   - Check that the unit is on a stable and level surface, e.g. on firm flooring, not on a thick carpet
   - Date and time settings
2. Visually inspect the following at least weekly:
   - Inspect the display for any damage or contamination
   - Inspect all cables, cords, and connector ends for damage or contamination
   - Inspect all safety-related labeling for legibility
   - Inspect all accessories (sensors, electrodes, etc.) for wear or damage
3. Visually inspect the following at least monthly:
   - Mounting screws on stand

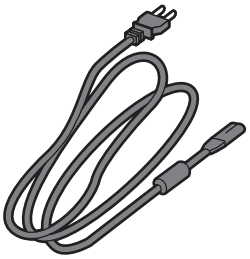
Update settings, replace items, or call for service as necessary according to the results of the visual inspections. Do not use the unit if you see any signs of damage. Equipment that has been damaged must be checked for proper operation by qualified personnel before using again.

Part Names & Connection Procedure

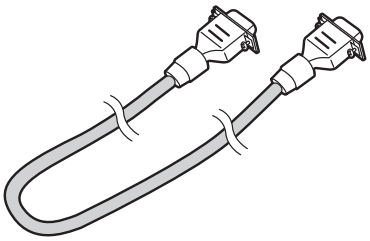
Accessories

☑ Instruction manual (this manual)
☐ Assembly guide

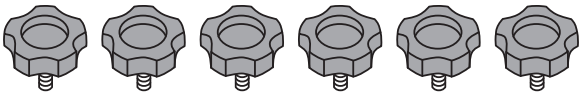
☐ Power supply cord



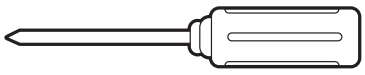
☐ AC cord



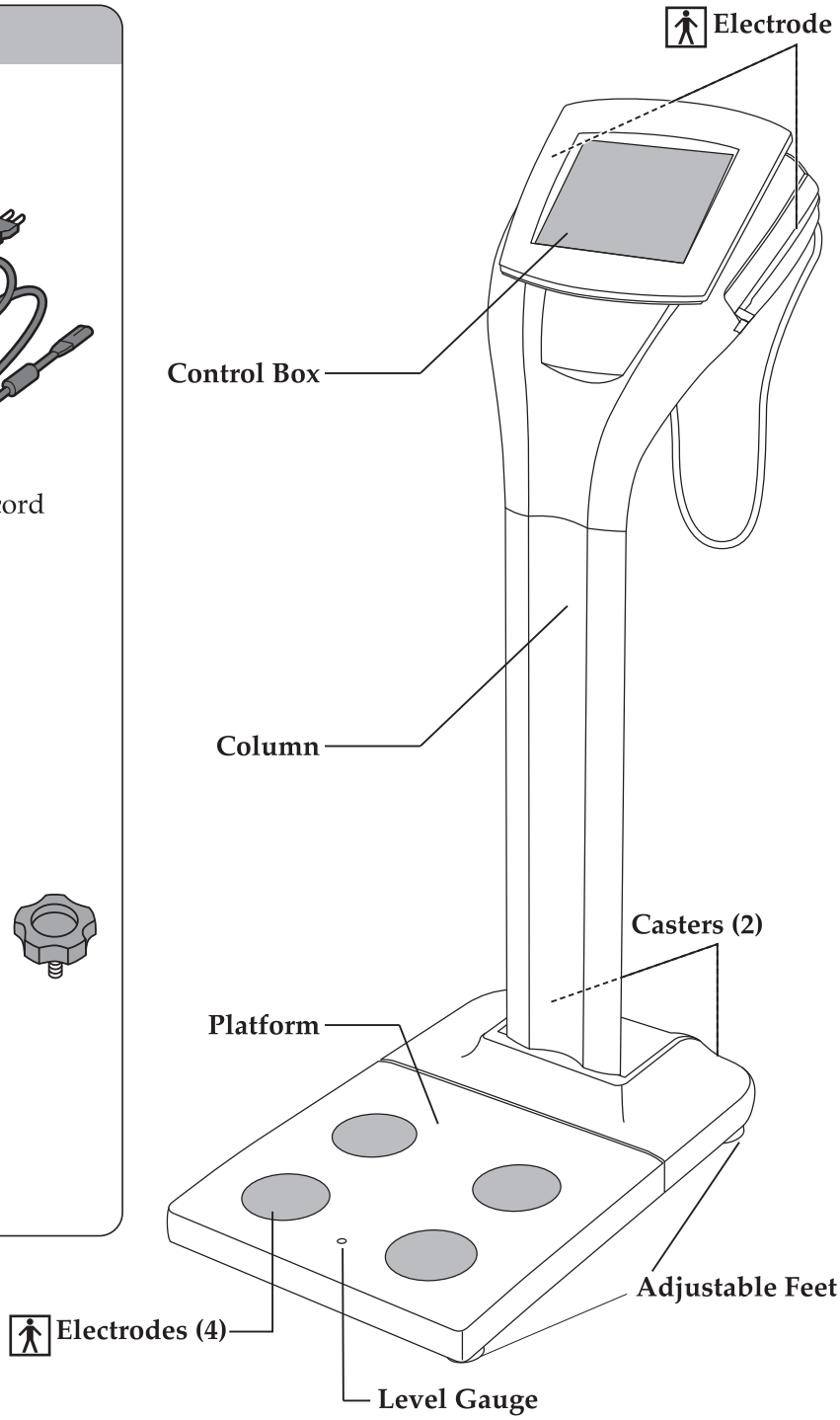
☐ Communication cable



☐ Screws (6)

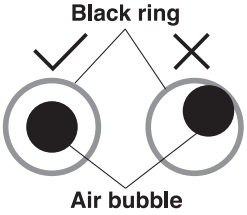


☐ Screwdriver



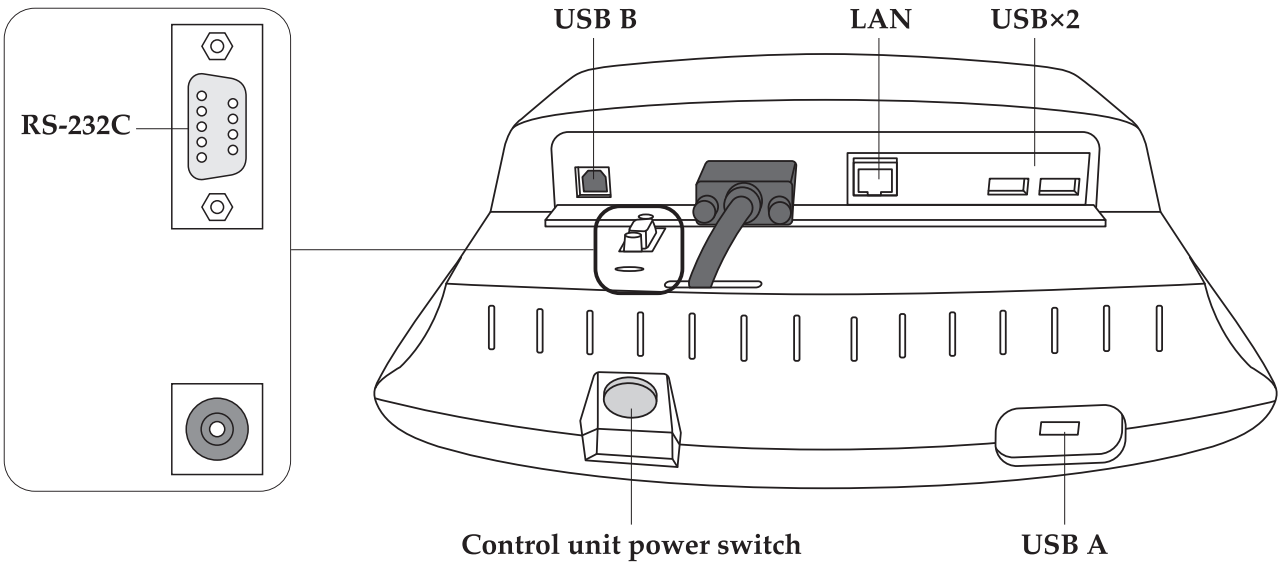
Checking that the equipment is level

* For accurate measurement, place the machine as level as possible.
* Rotate the adjustable feet (4 positions for adjustment) so that the bubbles of the level gauge reach the center.

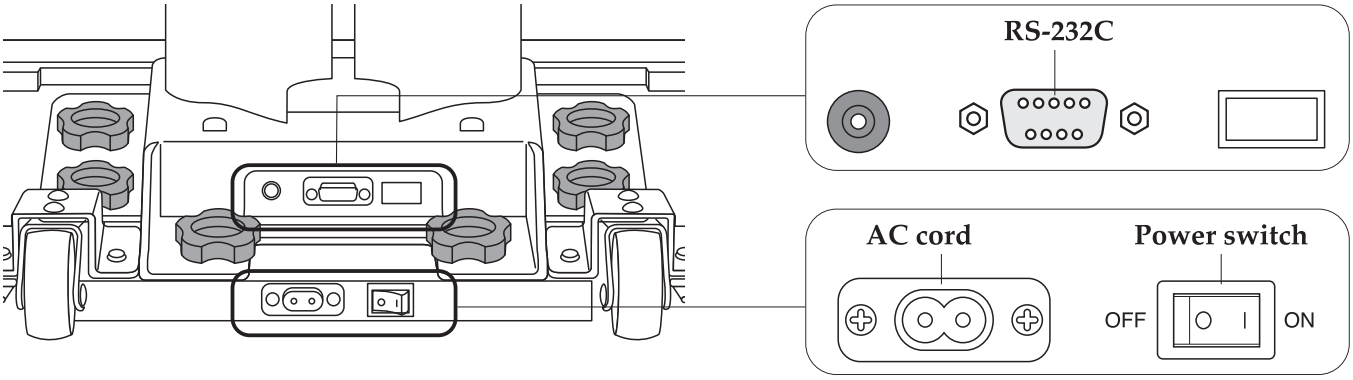


Status when the level gauge is viewed from above

Connection of Plugs on Control Unit



Connection of Plugs on Platform

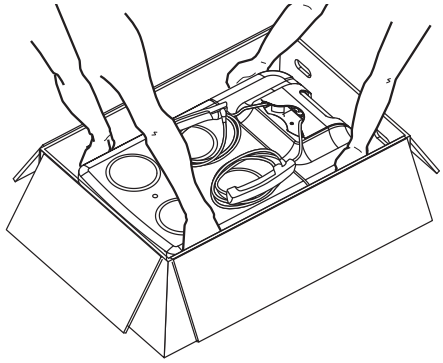


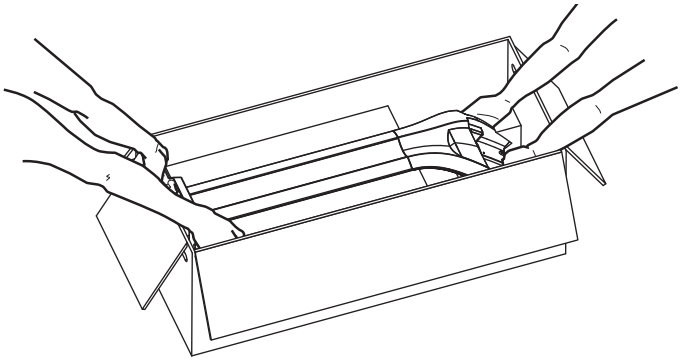
Symbols and their Meanings

	Display Unit On.	~	Alternating current		Class II Equipment
	WEEE- WasteElectrical and Electronic Equipment Directives		Date of manufacture		Input, Output
	Caution Refer to the attached notes.		Type BF applied part - Grips and platform		For indoor use only
	Polarity of DC power connector		Computer network		
	Direct current		Serial interface		

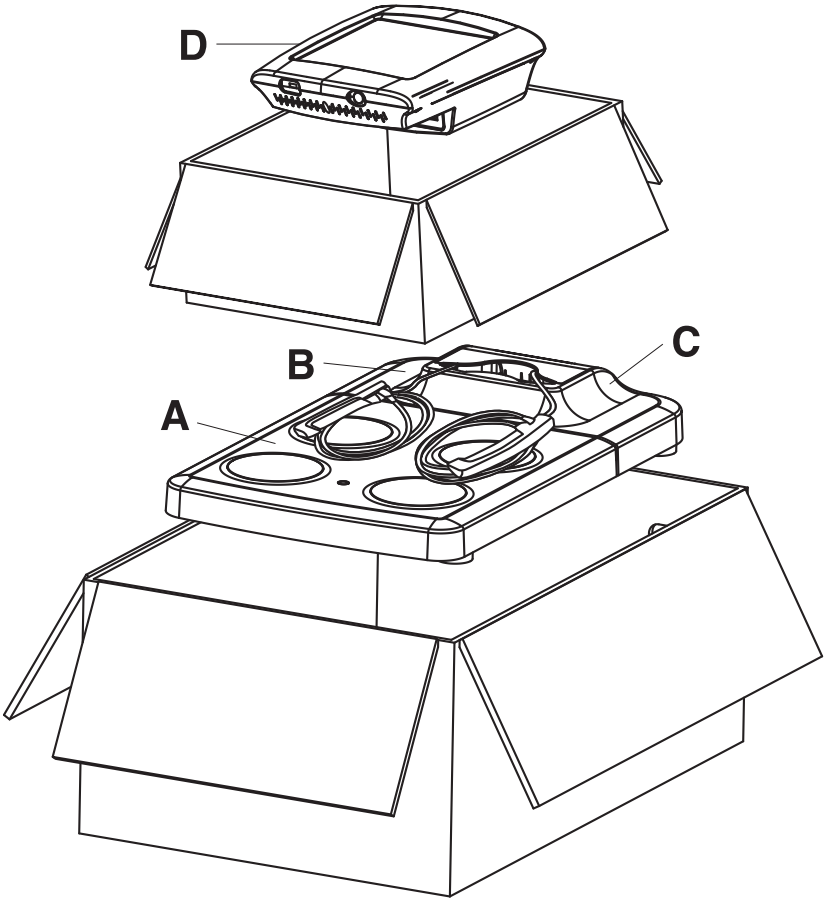
Preparation Setting up the main unit

⚠ Caution 2 people should unpack the equipment



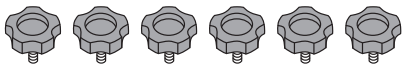


Platform / Control Box



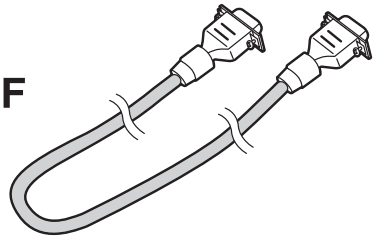
☑ Instruction manual (This manual)
☐ Assembling guide

E



☐ Screws (6)

F

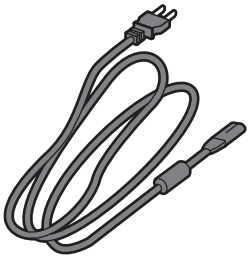


☐ Communication cable

G

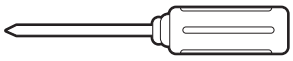
☐ Power supply cord

H



☐ AC cord

I

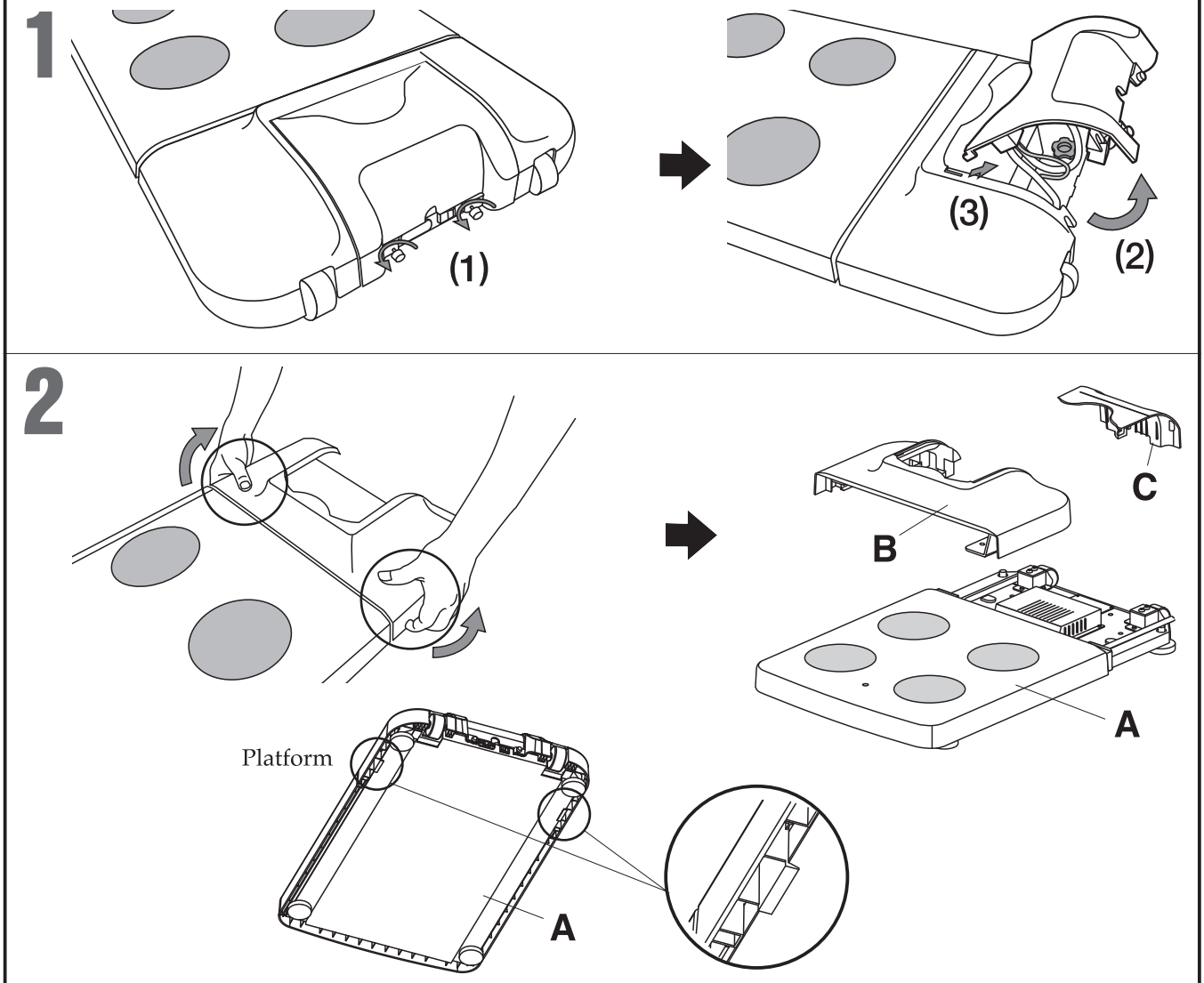


☐ Screw driver

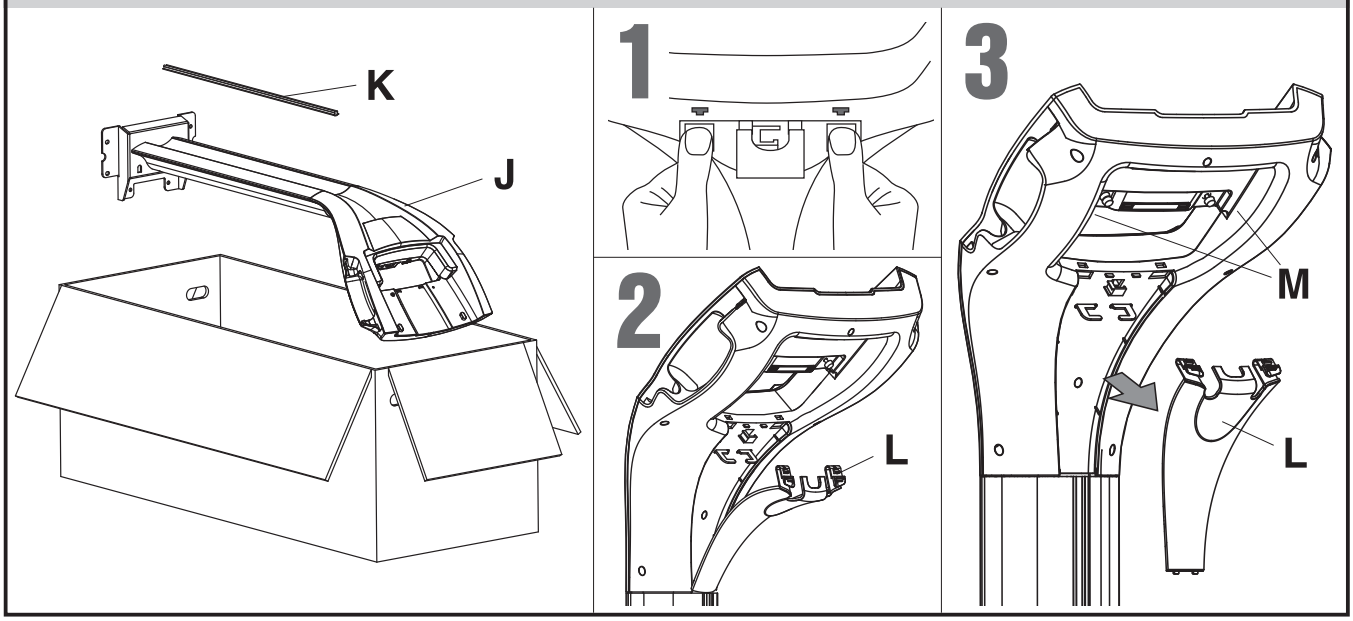
M

☐ Clamp
*Already installed

Platform / Control Box (continued)

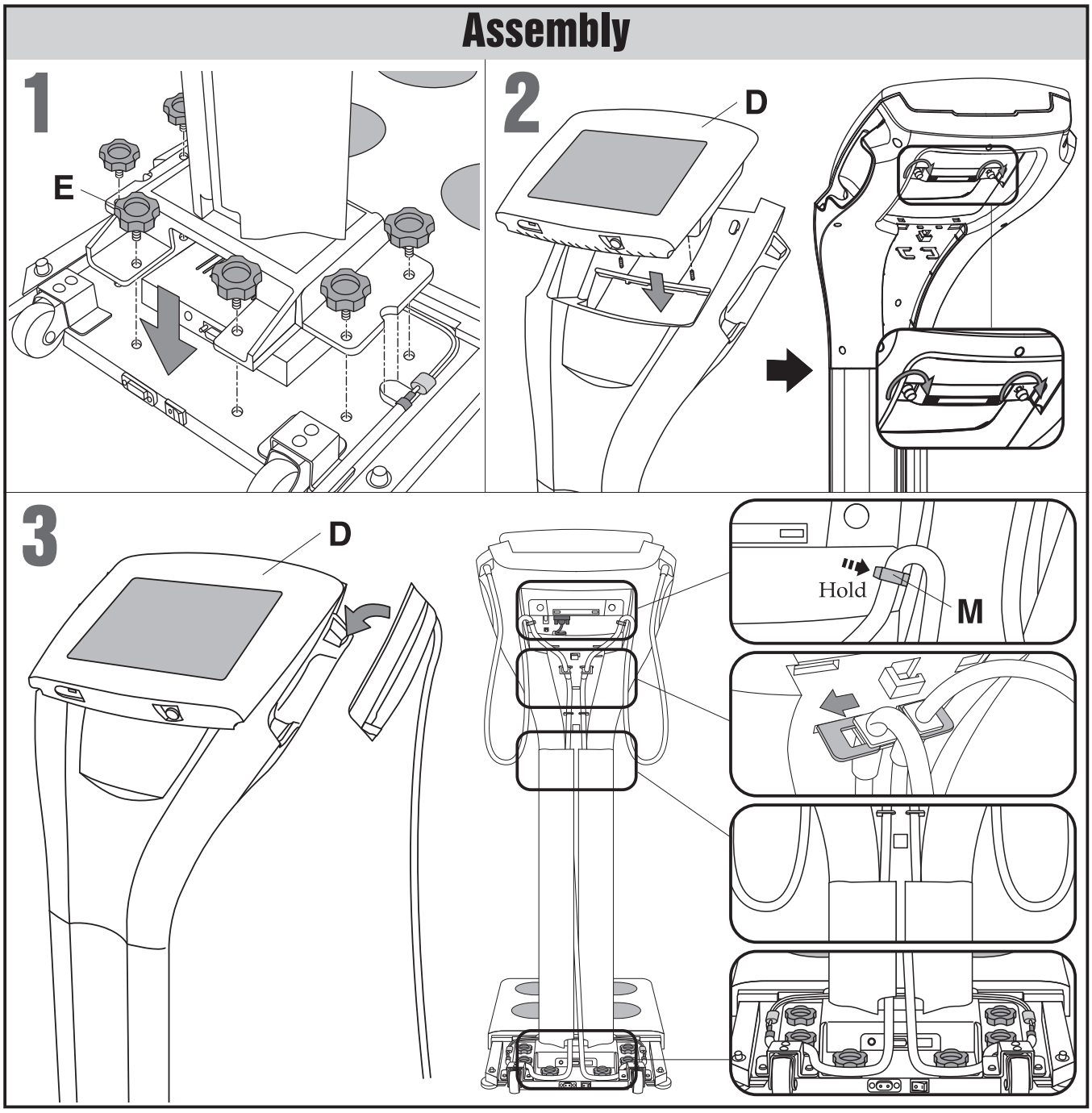


Column Unit

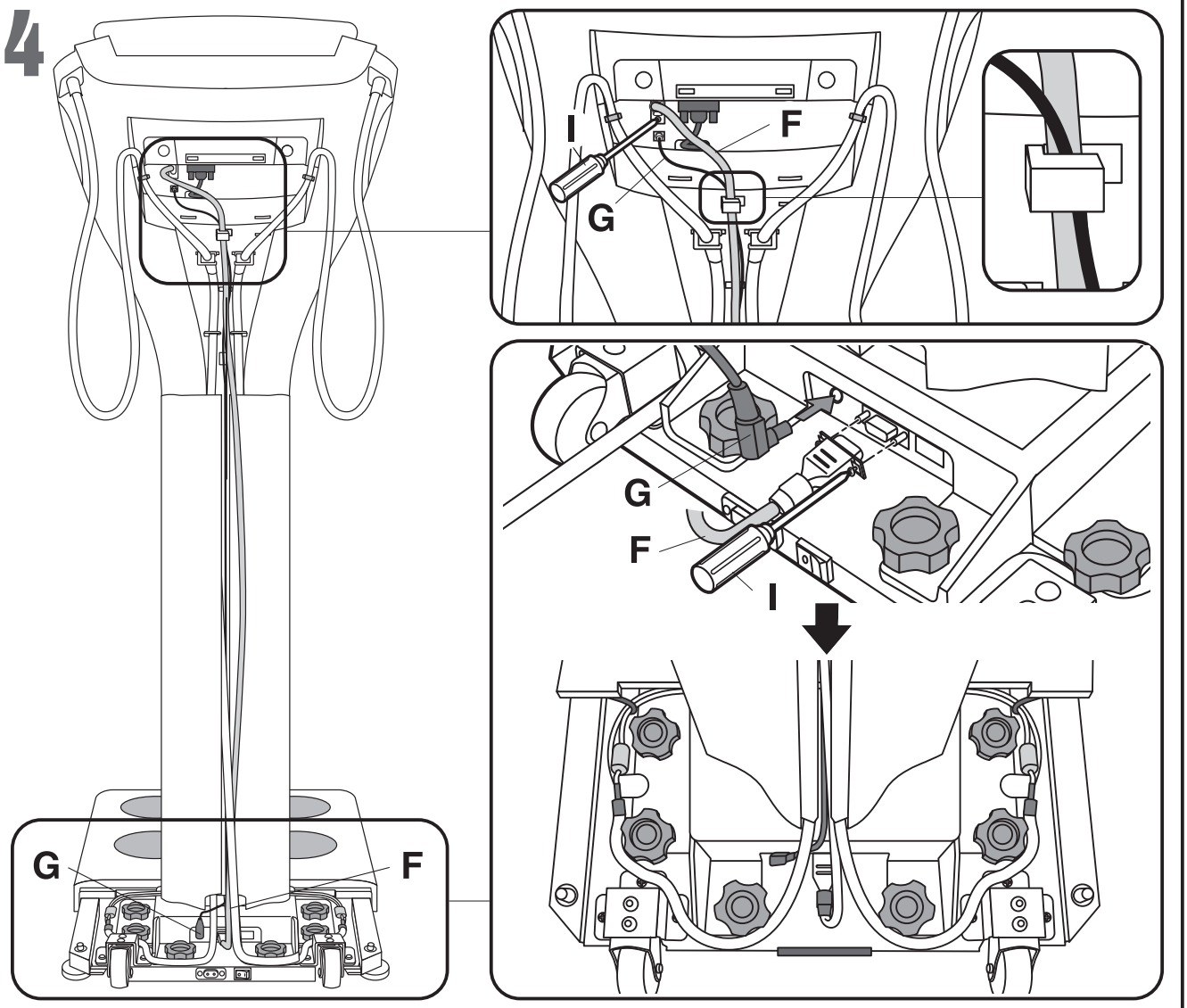


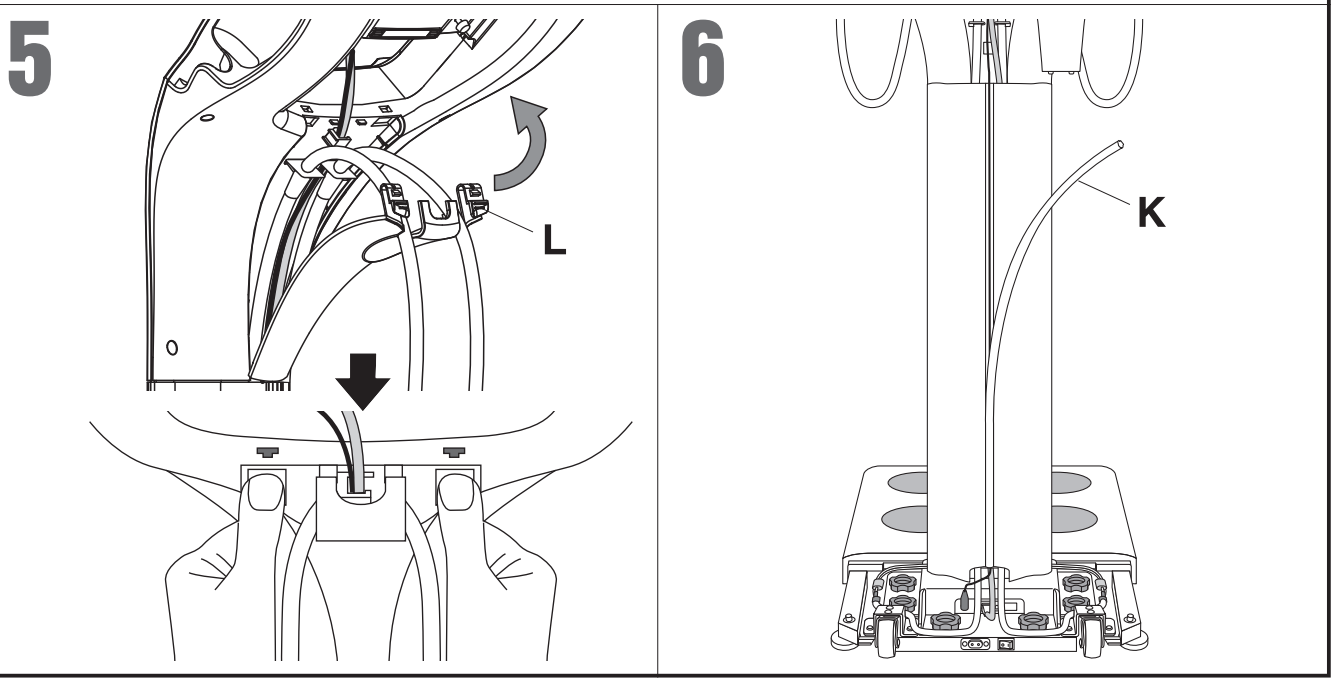
Preparation (Setting up the main unit (continued))

Assembly

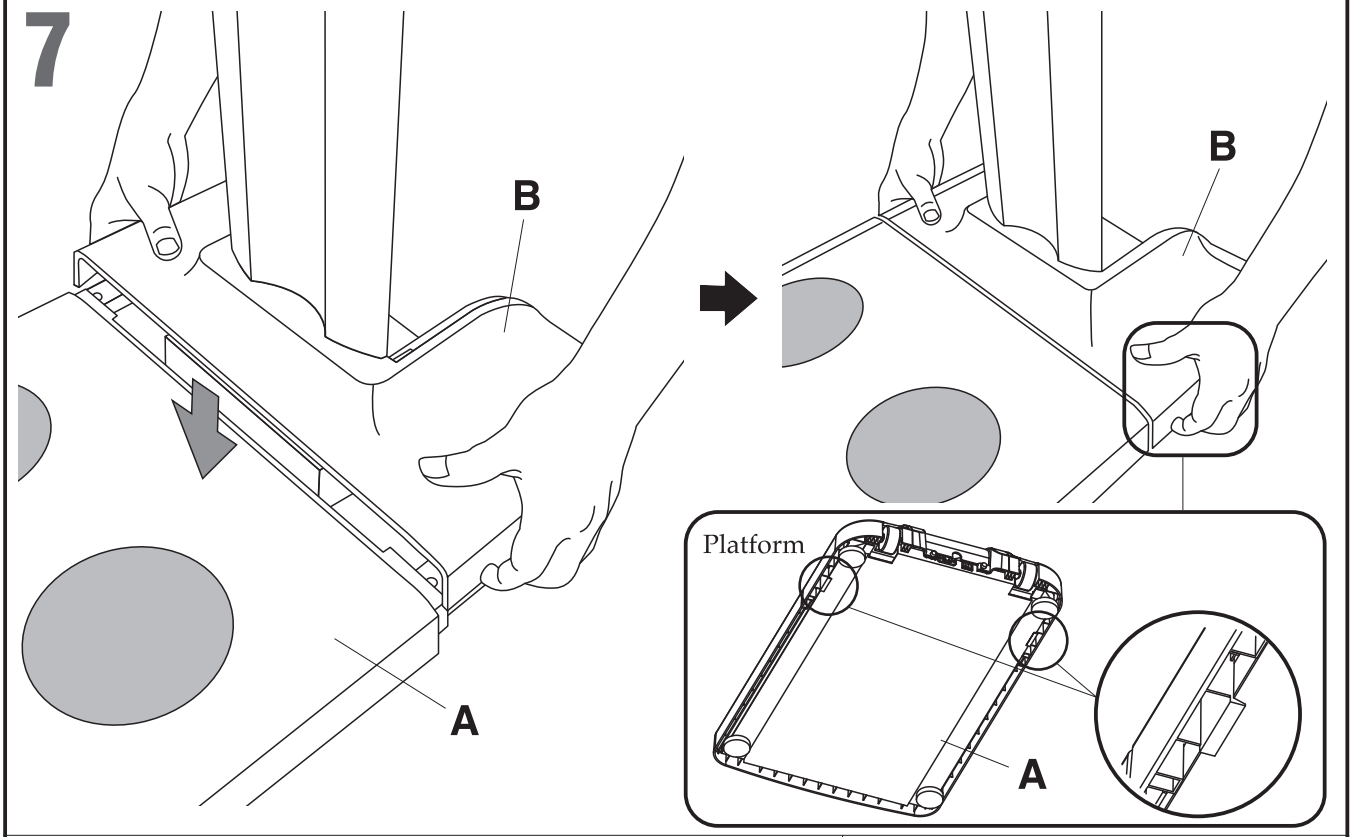


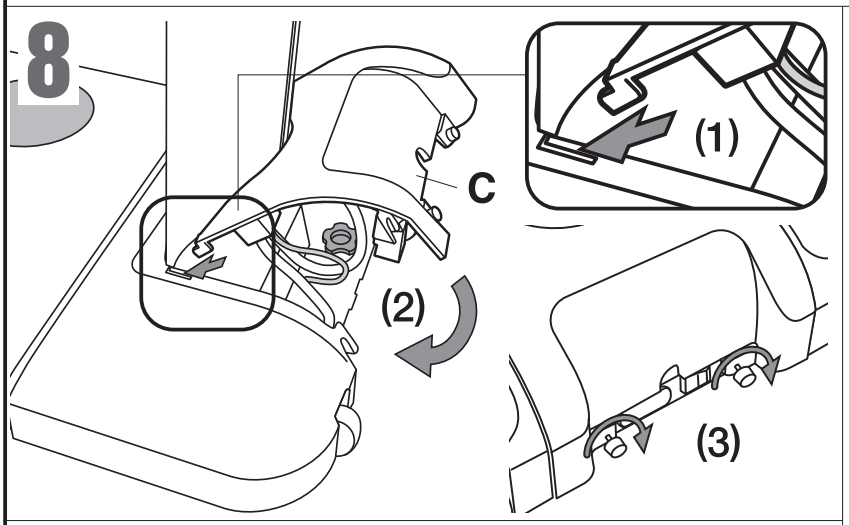
Assembly (continued)

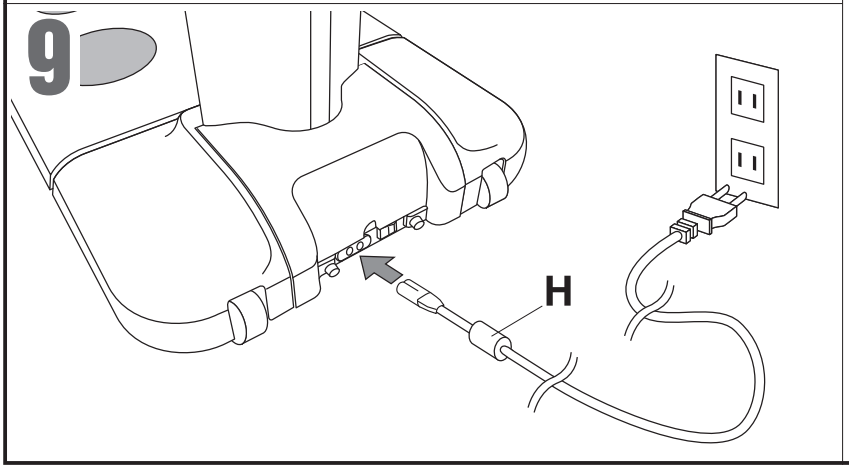


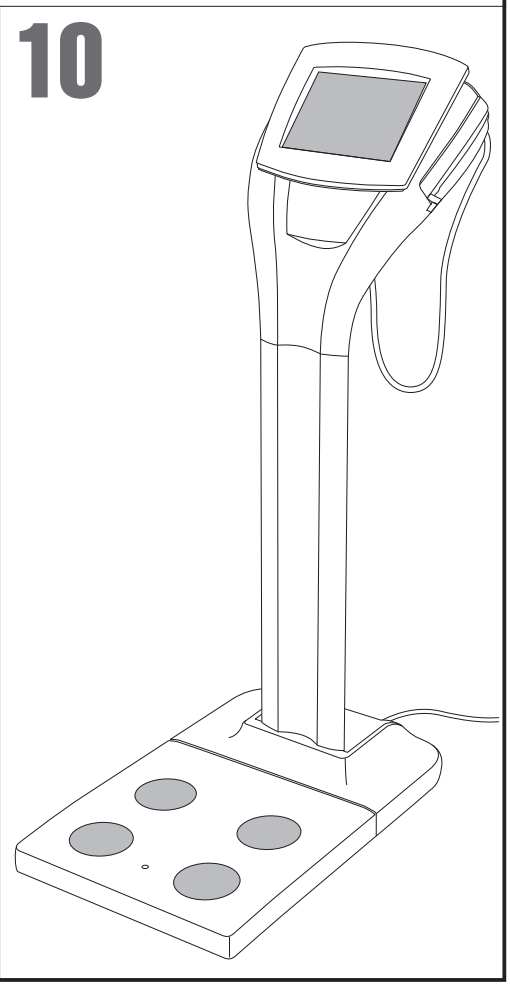


Assembly (continued)





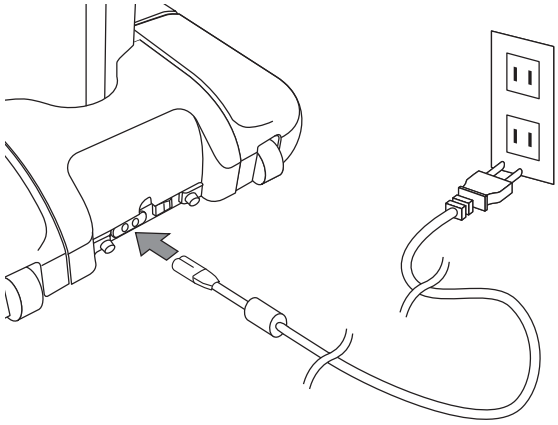




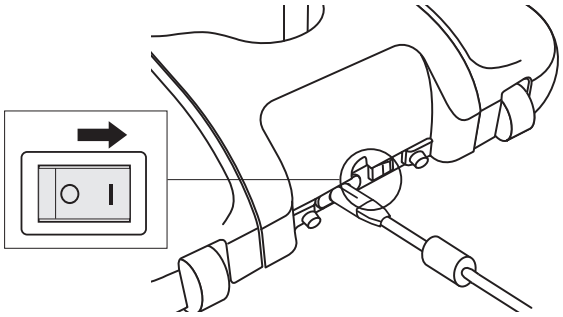
Power Supply

Turning On the Power

1 **Connect the cable to the platform and plug it in to power outlet.**

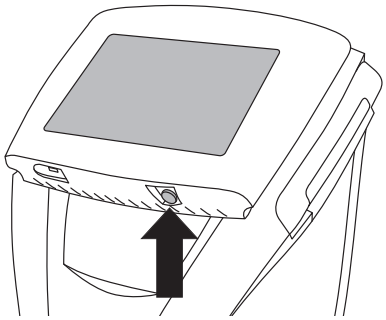


2 **Turn on the power of the platform.**



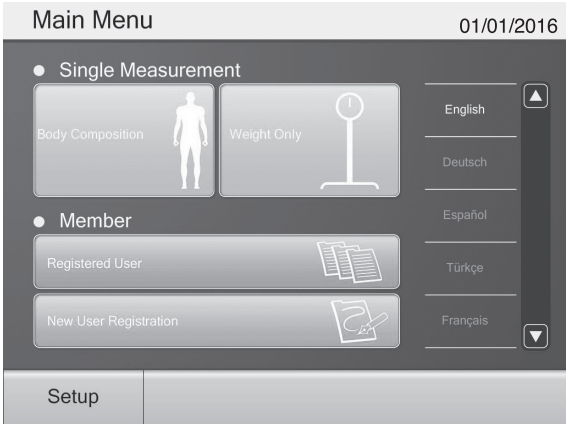
Then turn on the power of the control box.

*Be sure to turn on the power of the platform first.



3 **The initial screen is displayed.**

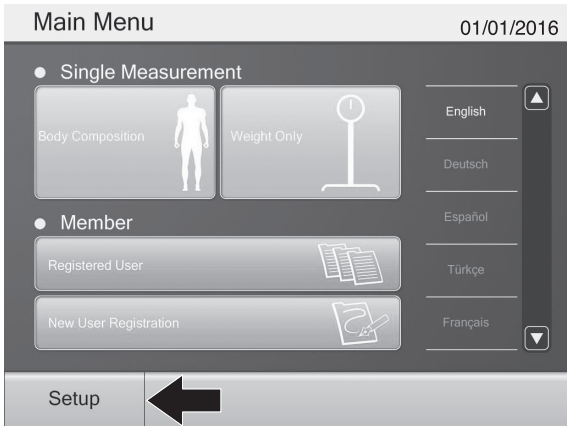
(Initial screen)



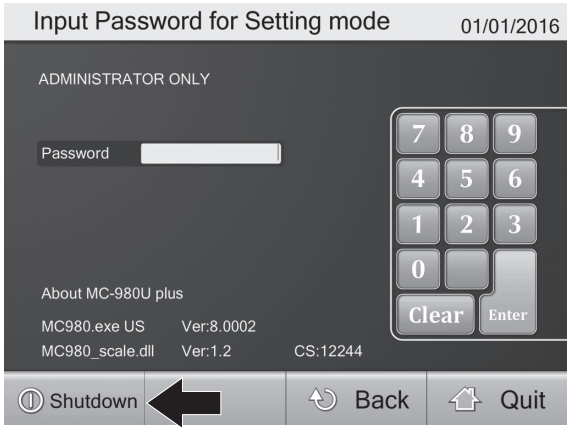
Initial settings (☞ page 19)
Various settings (☞page 20)
Database management settings (☞ page 25)

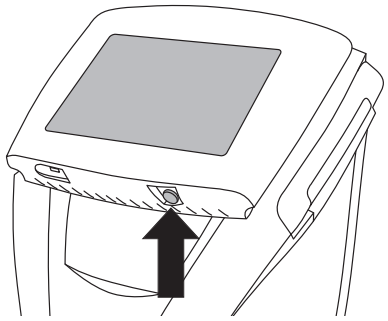
Turning Off the Power

1 Select "Setup" and then select “Shutdown”

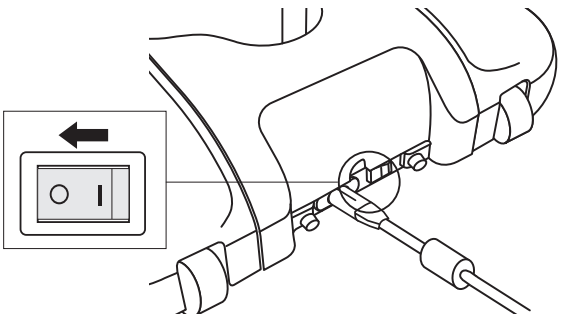


or press the switch on the control box to turn off the power.



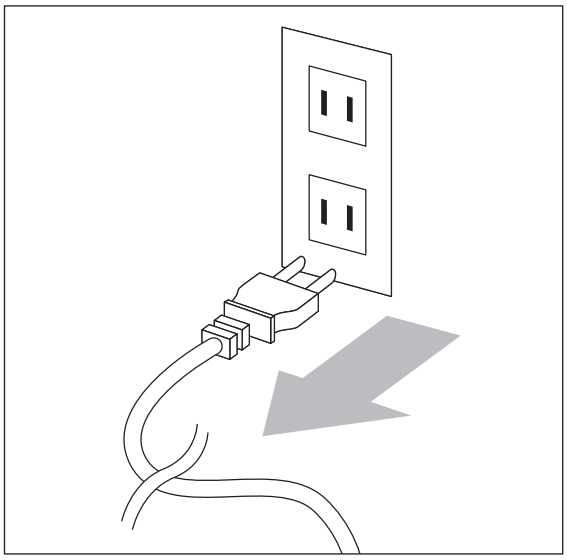


2 Turn off the power of the platform.



Emergency Shutdown

The power can be turned off immediately in an emergency by removing the plug from the power outlet. Make sure that there are no obstructions around the power outlet when using this equipment.

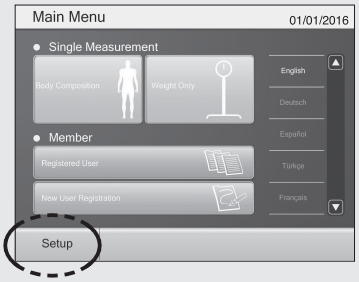


Note

Do not turn off the power by removing the plug from the power outlet except in an emergency.

Setup Flowchart

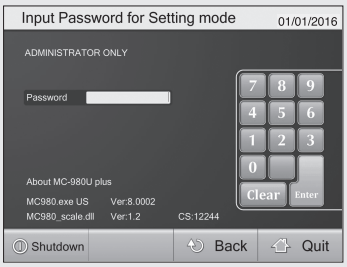
Select "Setup"



Page 21: Step 1

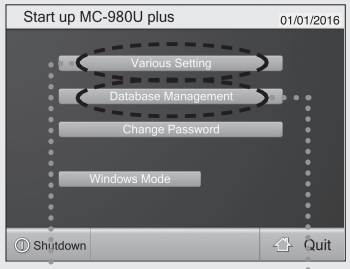
Input Password

Initial password "9999"
Input the password and select "Enter."



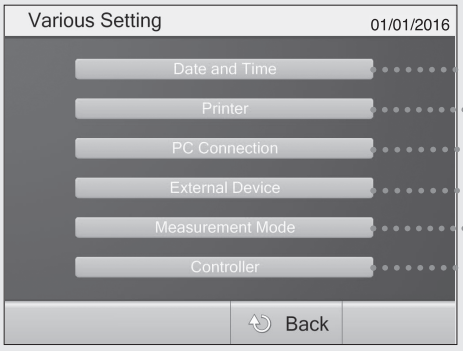
Page 21: Step 2

Select Settings Menu

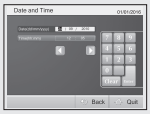
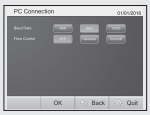
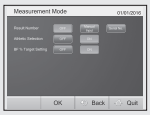


Page 21: Step 3

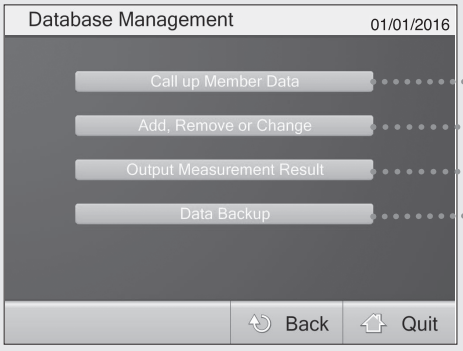
Various Settings



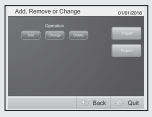
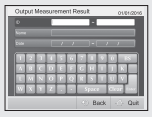
Page 22: Step 2

- **Date and time**  Page 20
- **Printer**  Page 21
- **PC Connection**  Page 21
- **External Device**  Page 22
- **Measurement Mode**  Page 23
- **Controller**  Page 24

Database Management

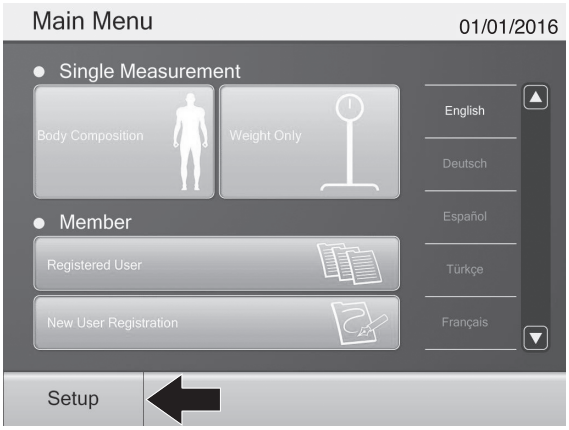


Page 26: Step 2

- **Call up Member Data**  Page 25
- **Add, Remove or Change User**  Page 26
  - *Register New User
  - *Search Registered User
  - *Import User Data
  - *Export User Data
- **Output Measurement Result**  Page 29
- **Data Backup**

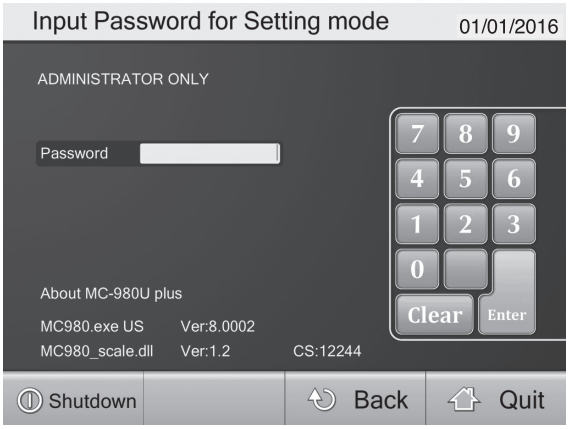
Initial Settings (Configuring the Settings (continued))

1 Select "Setup"



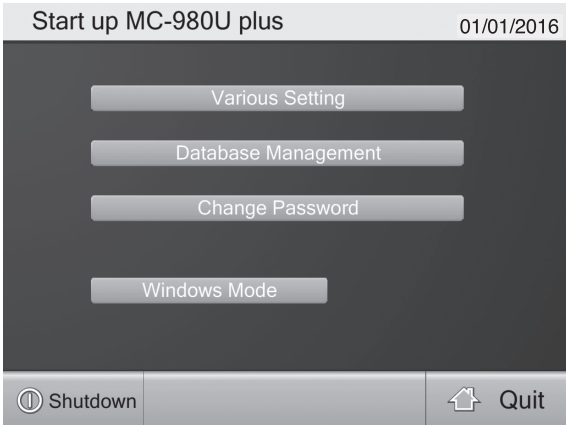
2 Input the password, then select “Enter”

*Initial password "9999"
To change the password (☞ page 39)



3 Select Settings Menu

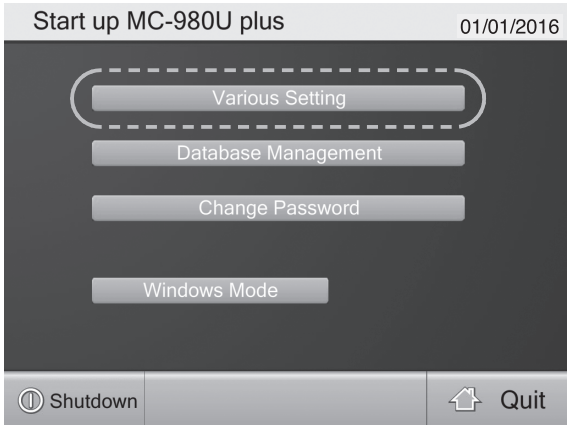
Various Settings (☞ page 20)
Database Management (☞ page 25)
Change Password (☞ page 39)



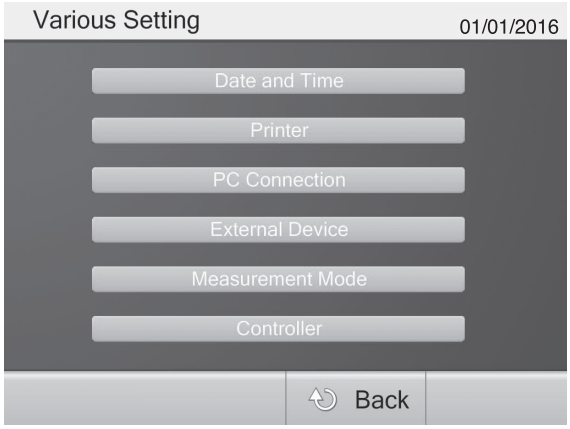
Various Settings (Configuring the Settings (continued))

• Quit ⇨ Main Menu • OK ⇨ Save changes. • Back ⇨ Return without saving.

1 Select "Various Settings"



2 Select Settings Menu



3 1. Select "Date and Time"

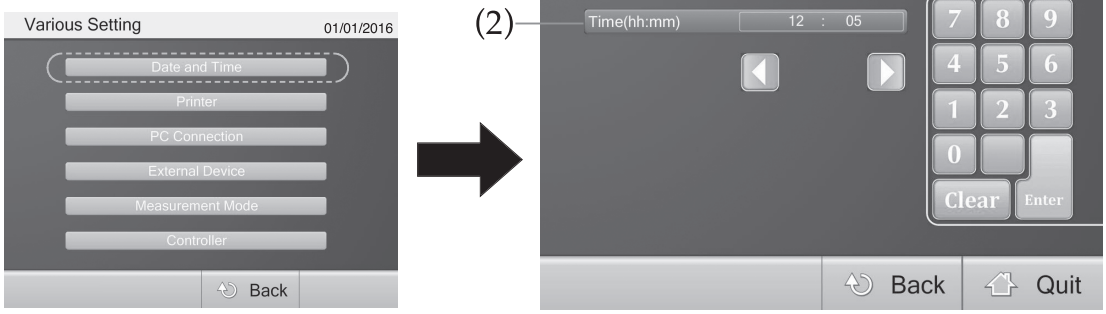
Set date and time.

(1) Date (mm/dd/yyyy): Input date in "month/day/year" format

Example April 1st, 2016 ⇒ 04/01/2016

(2) Time (hh:mm): Input time in "hh : mm" format. Use 24-hour time.

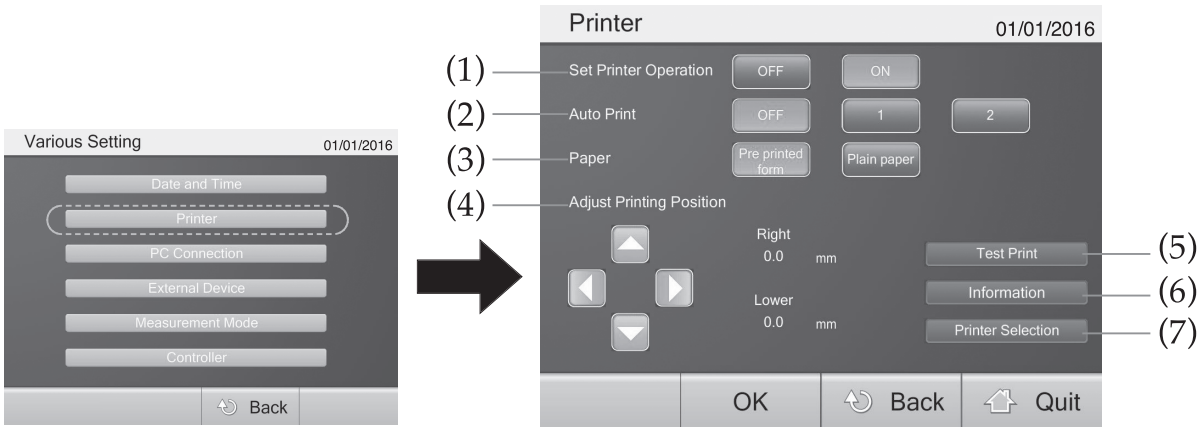
Example 6:05pm ⇒ 1805



2.Select "Printer"

(1) Set Printer Operation: Select ON/OFF for the printing function.
(2) Auto Print: Set the number of pages to be printed.
(3) Paper: Select the printing paper (“Pre printed form” or “Plain paper.")
(4) Adjust Printing Position.
(5) Test print: Check printer operation and printing position.
(6) Information: Print additional information (address, etc.)
(7) Printer Selection: Select your printer.

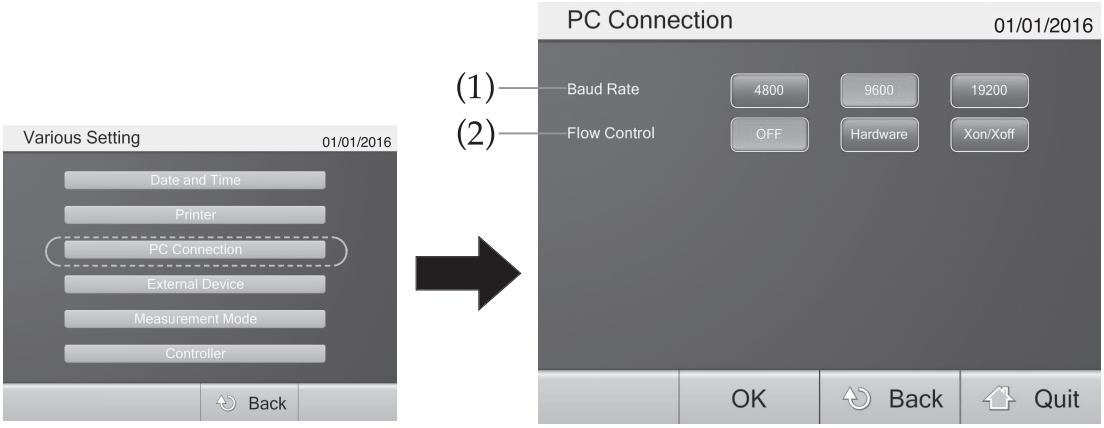
After configuring all settings, press OK.



3.Select "PC Connection"

(1) Baud Rate: Select the baud rate.
(2) Flow Control: Select the flow control.

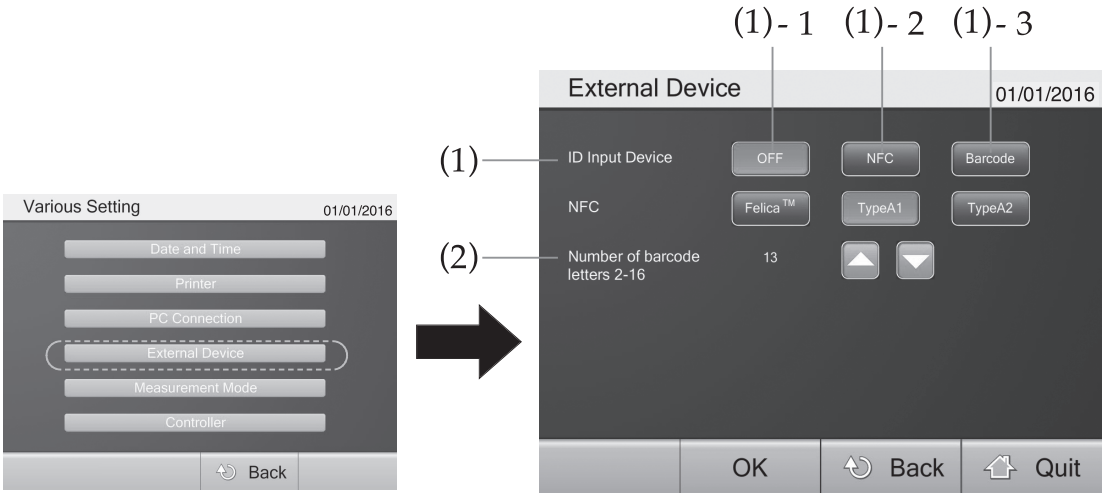
After configuring all settings, press OK.



• Quit ⇨ Main Menu • OK ⇨ Save changes. • Back ⇨ Return without saving.

4.Select "External Device"

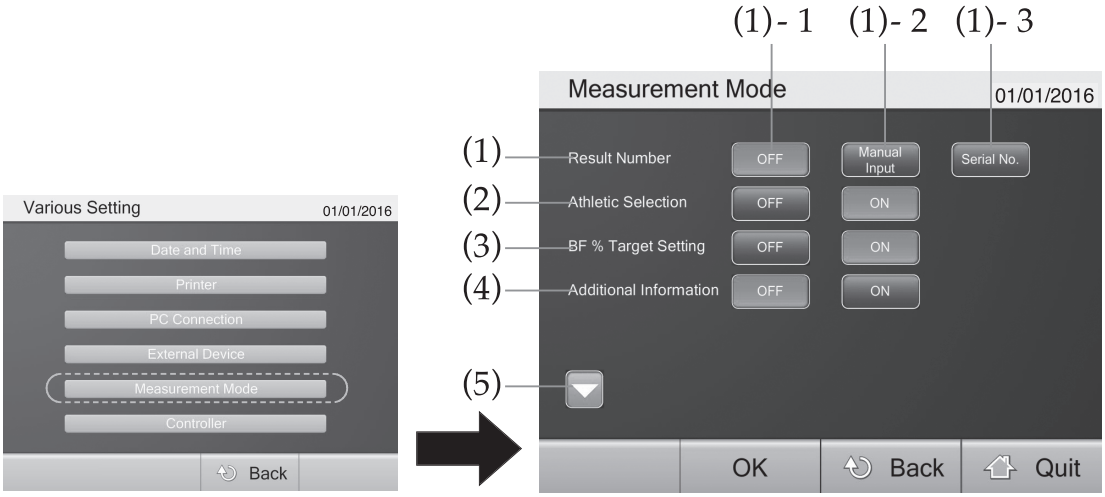
(1) ID Input Device: Select the type of card reader.
(1) - 1 OFF: Input ID from the touch screen.
(1) - 2 NFC: Select this if using an NFC reader. *Optional function.
(1) - 3 Barcode: Select this if using a barcode reader. *Optional function.
(2) Select the number of characters in the barcodes to be used.
After configuring all settings, press OK.



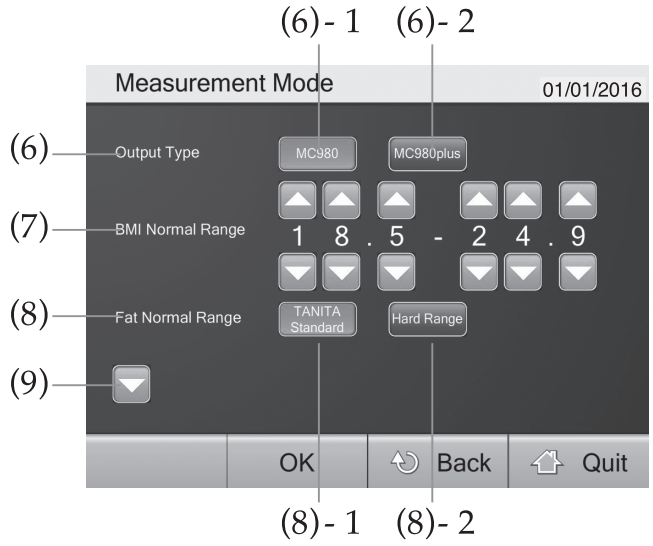
5. Select "Measurement Mode"

Numbering function

(1) Result Number: Select the result data numbering function.
(1) - 1 OFF: Invalid numbering function.
(1) - 2 Manual input: Result numbers up to 16 digits long can be input.
(1) - 3 Serial No.: Automatically enters a serial number after measurement.
(2) Athletic Selection: Set ON/OFF for athletic mode.
*Athletic mode (☞ page 34)
(3) BF % Target Setting: Set ON/OFF for target body fat percentage.
*Target Body fat (☞ page 34)
(4) Additional Information: Select Additional Information.
(4) - 1 OFF: Does not display Additional Information.
(4) - 2 ON: Displays Additional Information.
(5) The screen changes as follows.

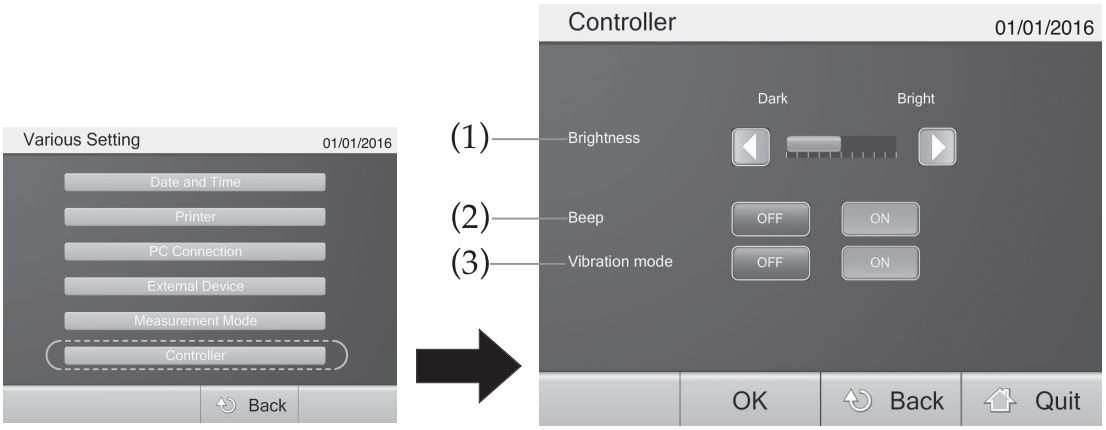


(6) Output type: Select the data output format.
(6) - 1 MC980: Does not output additional information.
(6) - 2 MC980plus: Outputs additional information.
(7) BMI normal range: Enter the normal BMI range.
(8) Fat normal range: Select the normal fat range.
(8) - 1 TANITA Standard: A judgment method using a standard range set by TANITA.
(8) - 2 Hard Range: A judgment range using a negative fat percentage as the standard range.
(9) Returns to the previous screen.



6. Select "Controller"

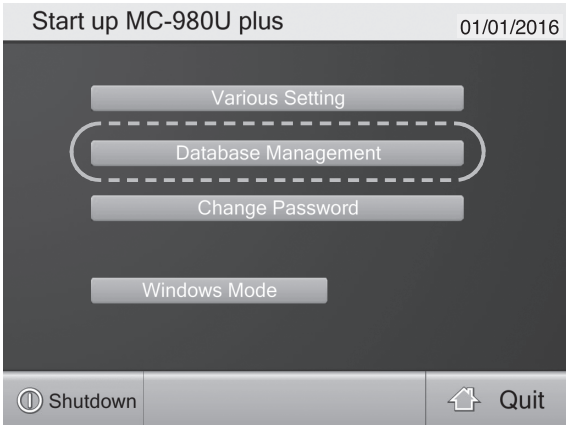
(1) Brightness: Adjust the brightness of the monitor.
(2) Beep: Set the beep sound (ON/OFF).
(3) Vibration mode: Set the touch panel vibration mode (ON/OFF).



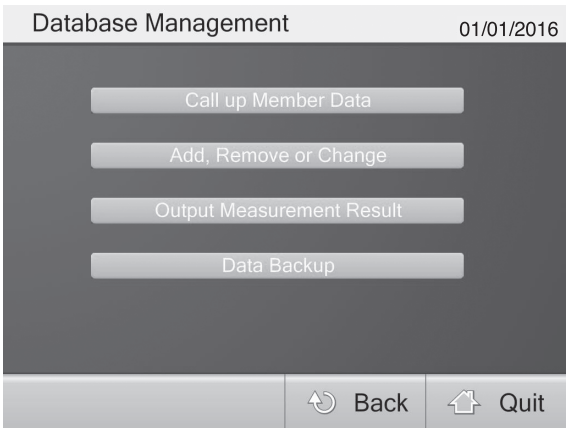
Database Management Settings

• Quit ⇨ Main Menu • OK ⇨ Save changes. • Back ⇨ Return without saving.

1 Select "Database Management"

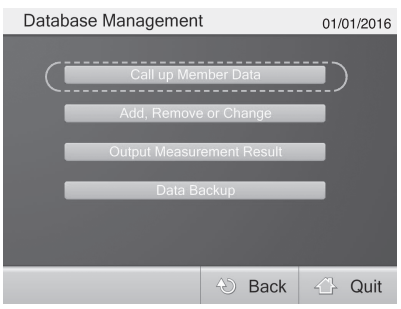


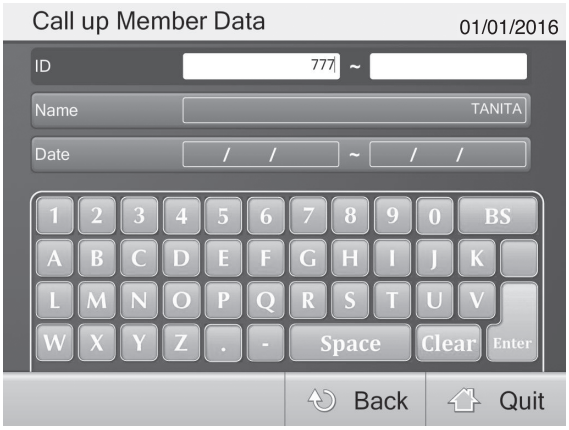
2 Select Settings Menu



3 1. Select "Call up Member Data"

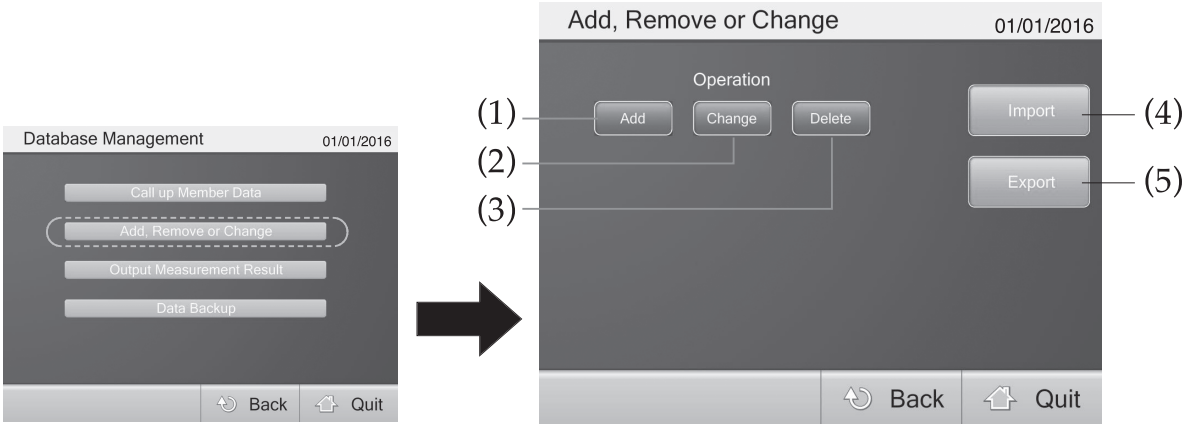
Recall stored measurement result data.
Input a user ID, name or measurement date and press "Search."
*If you search without inputting any data, all stored measurement results are displayed.
*If you enter multiple criteria, data meeting all search condition is displayed.
Select a data item and press "View."





2. Select "Add, Remove or Change"

(1) Add: Register new user data. (☞ page 26)
(2) Change: Change registered user data. (☞page 27)
(3) Delete: Delete registered user data. (☞ page 27)
(4) Import: Import user data from an external file. (☞ page 28)
(5) Export: Export user data. (☞page 28)

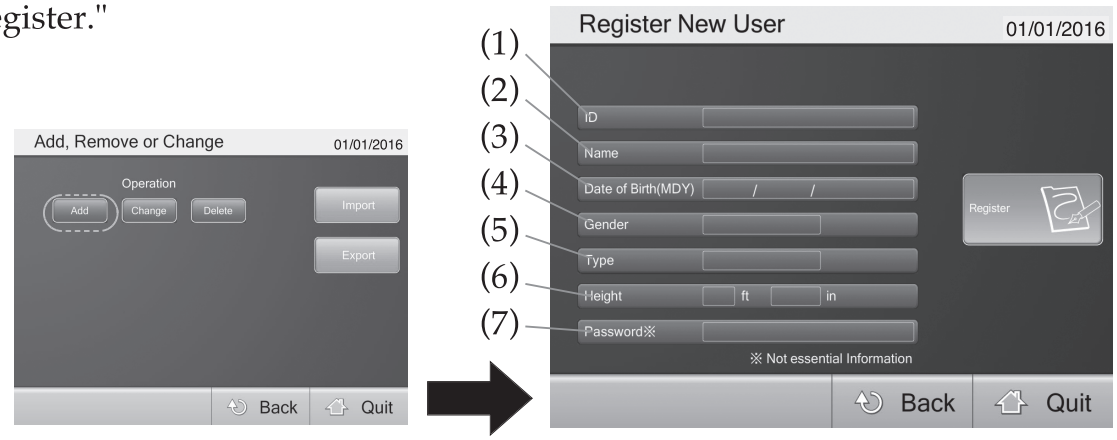


2-1.Select "Add"

Register a new user to the database.
Input a user ID, name and all personal information and press "Register."

(1) ID: Enter a maximum of 16 alphanumeric characters.
Note Duplicate ID numbers are not accepted.
(2) Name: Enter a maximum of 16 alphanumeric characters.
(3) Date of Birth: Input the date of birth in "month/day/year" format.
Example September 24th, 1973 ⇒ 09/24/1973
(4) Gender: Select the gender.
(5) Type: Select Standard mode/Athletic mode. *Athletic mode (☞page 36)
(6) Height: Enter a height between 2.95 and 8.199ft.
(7) Password: Enter a number with a maximum of 10 digits. *Password is optional.

After entering all items, press "Register."



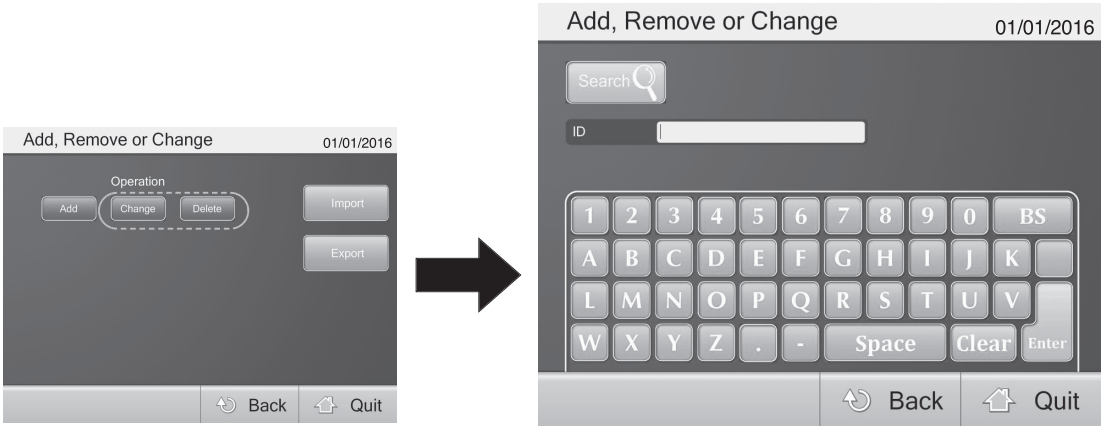
• Quit ⇨ MainMenu • OK ⇨ Save changes. • Back ⇨ Return without saving.

2-2. Select "Change" or "Delete"

Remove/change registered user data.
Input a user ID, user name or measurement date and press "Search."

*If you search without inputting anything, all stored measurement results are displayed.
*If you enter multiple criteria, data meeting all search conditions is displayed.

To delete data: After recalling the registered user details, press "Delete."
To change data: After recalling the registered user details, enter the new personal data and press "Change."



• **Quit** ⇨ Main Menu • **OK** ⇨ Save changes. • **Back** ⇨ Return without saving.

2-3.Select "Import"

Import user data from an external file.(☞ page 30)
Select the CSV file where the user data is stored.
* Refer to the "Export" section for details on data formats.
The format of imported user data is as follows.

(1) User ID:
Maximum of 16 alphanumeric characters

(2) Name:
Maximum of 16 alphanumeric characters

(3) Password:
Maximum of 10 digits (optional)

(4) Date of Birth: mm/dd/yyyy format

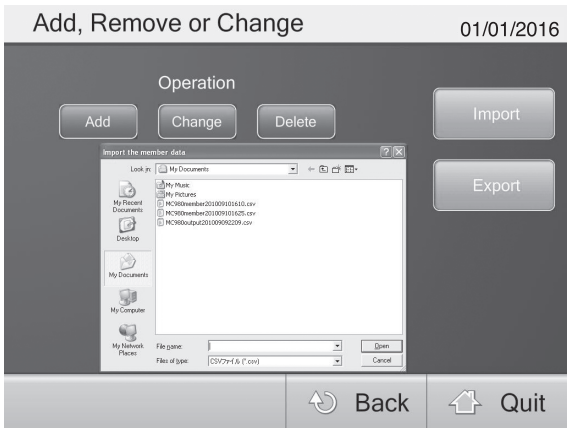
Example September 24th, 1973
⇒ 09/24/1973

Note The date format is different than the format listed onpage 27

(5) Gender: 1. Male 2. Female

(6) Body type:
0: Standard mode 2: Athletic mode

(7) Height (ft): 2.95 to 8.199



2-4. Select "Export"

Export user data to a selected file.
The format of exported user data is as follows.

(1) User ID

(2) Name

(3) Password
Blank if not registered

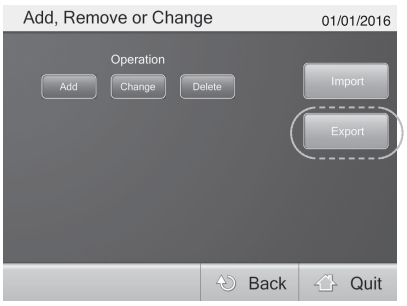
(4) Date of Birth: mm/dd/yyyy format

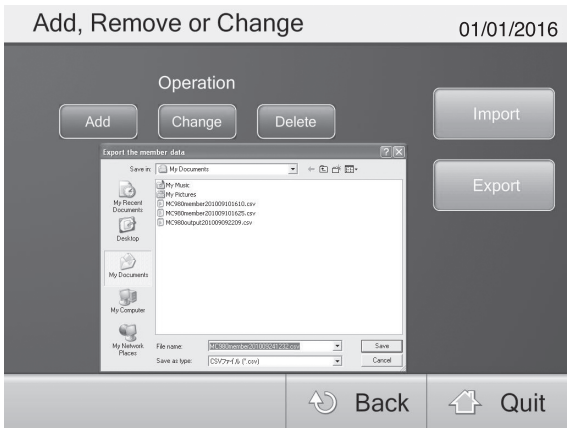
Example September 24th, 1973
⇒ 09/24/1973

(5) Gender: 1. Male 2. Female

(6) Body type:
0: Standard mode 2: Athletic mode

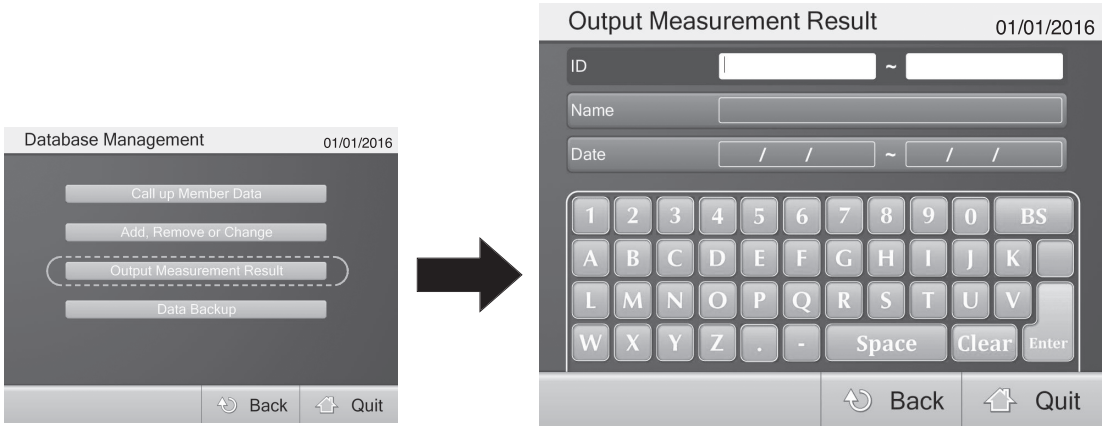
(7) Height (ft): 2.95 to 8.199





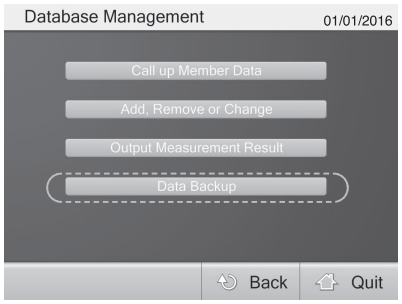
3. Select "Output Measurement Result"

Input a user ID, user name or measurement date and press "Search."
*If you search without inputting any data, all stored measurement results are displayed.
*If you enter multiple criteria, data meeting all search conditions is displayed.
After selecting the data, press "CSV Output."



4. Select "Data Backup"

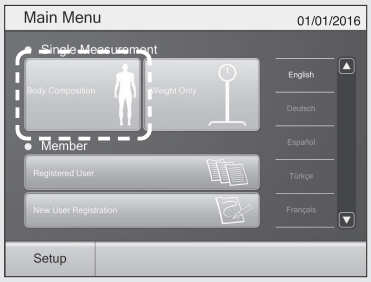
Back up all data to a selected destination file.



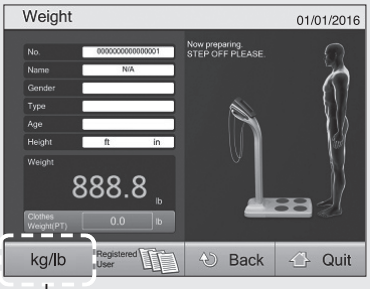
Taking a Measurement

Single Measurement

Select "Body Composition"

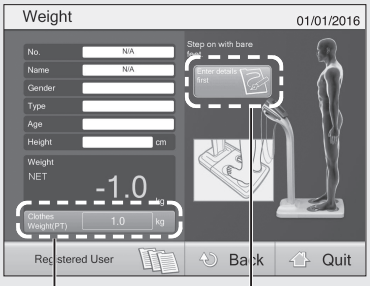


Wait a few moments



The measure shifts from "kg" to "lb" and the measurement units change.

Wait a few moments



"Enter Detail First"

Clothes Weight (PT)

Enter clothes weight (0 to 10.0kg/0 to 20lb)

Measurement body weight

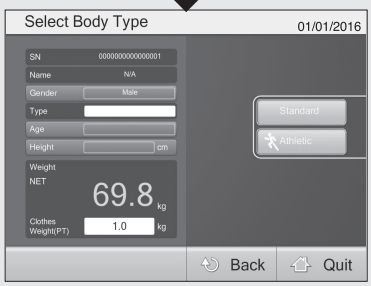
"Registered User"

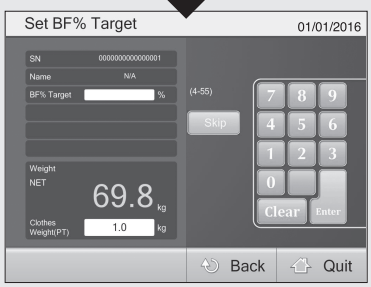
Enter clothes weight "Clothes Weight (PT)"

Enter detail first

Enter detail first

Input personal data

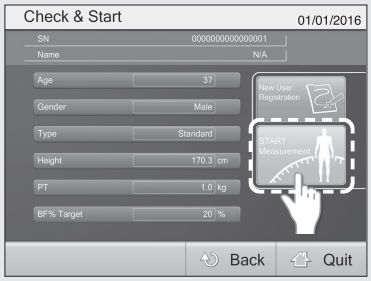




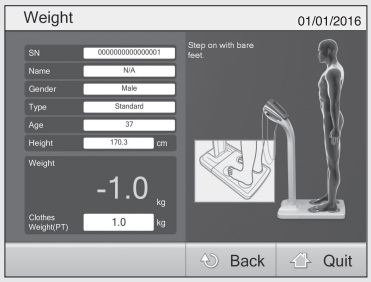
*Target Body Fat percentage (☞Page34)

(Gray arrow): One step flow (Enter detail first), (Black arrow): Two step flow (Measure body weight first)

Check Information and press "Start Measurement"

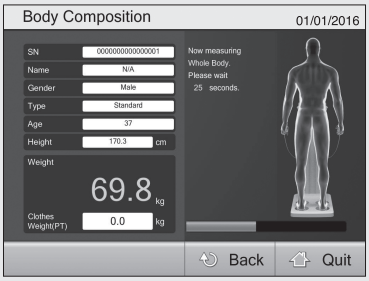


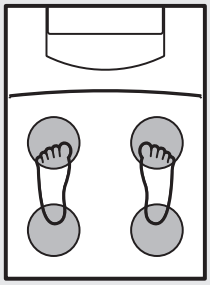
Measurement body weight



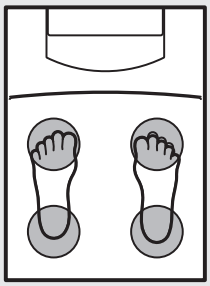
Check Information and press "Start Measurement"

Measurement body composition

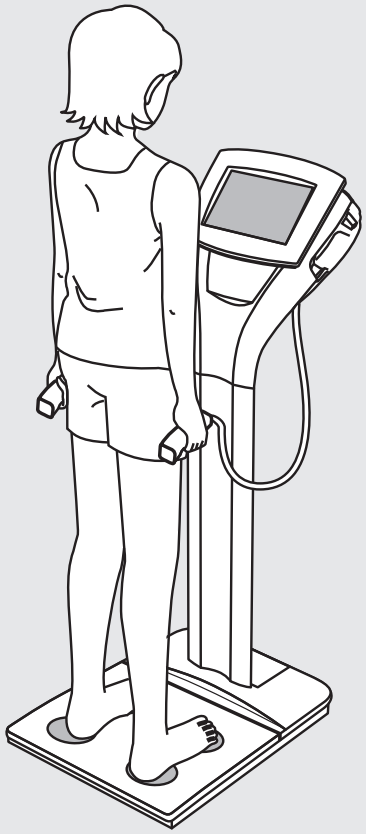




<Child>

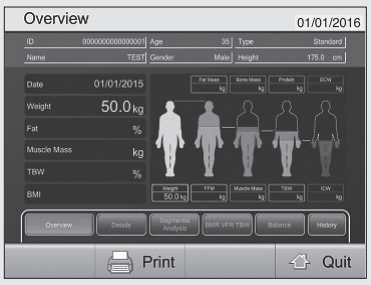


<Adult>



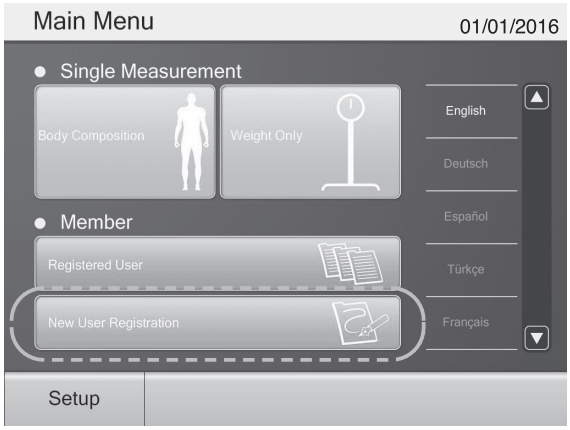
Correct measurement posture

View the measurement results



Taking a Measurement Registering a New User

1 Select "New User Registration"



2 Input a user ID, name and all personal information and press "Register"

(1) ID: Enter a maximum of 16 alphanumeric characters.
Note Duplicate ID numbers are not accepted.

(2) Name: Enter a maximum of 16 alphanumeric characters.

(3) Date of Birth: Input date of birth in "month/day/year" format.
Example September 24th, 1973 ⇒ 09/24/1973
Note The oldest year of birth that can be registered is 1900.
Note Users aged 100 or over are measured as 99 years old.

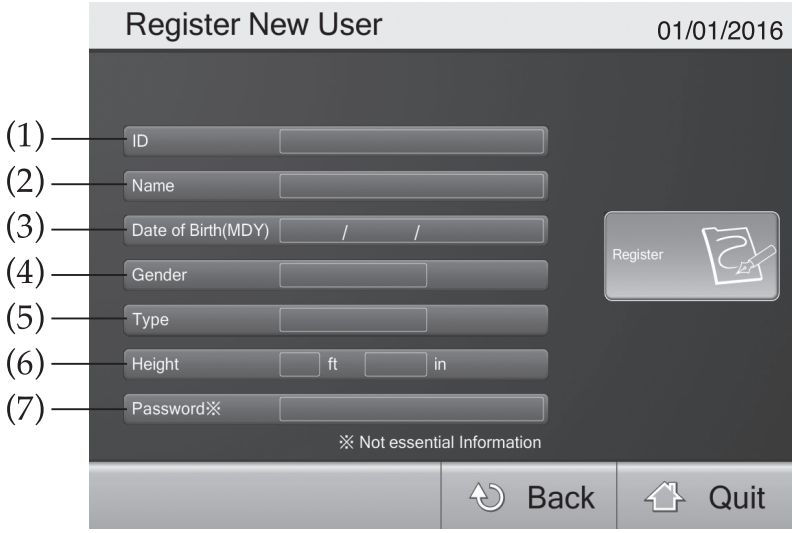
(4) Gender: Select the gender.

(5) Body Type: Select Standard mode/Athletic mode.
*Athletic mode (☞page 36)

(6) Height: Acceptable range 2.95 to 8.199ft(90.0 to 249.9cm)

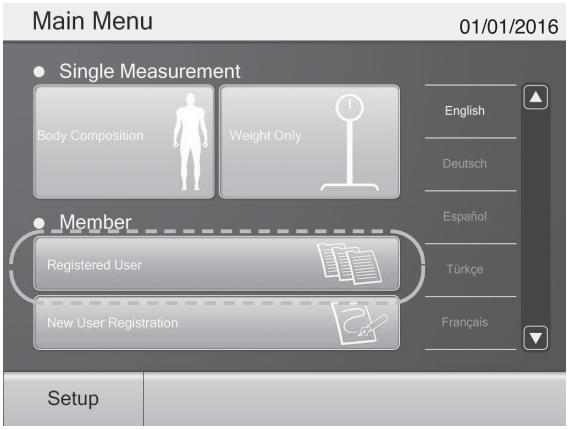
(7) Password: Enter a number with a maximum of 10 digits.
Note Password is optional.

After entering all items, press "Register."



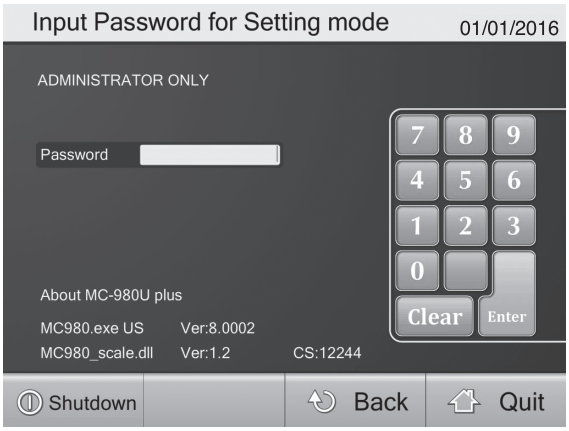
Taking a Measurement (Registered user)

1 Select "Registered User"



2 Enter your user ID and Password

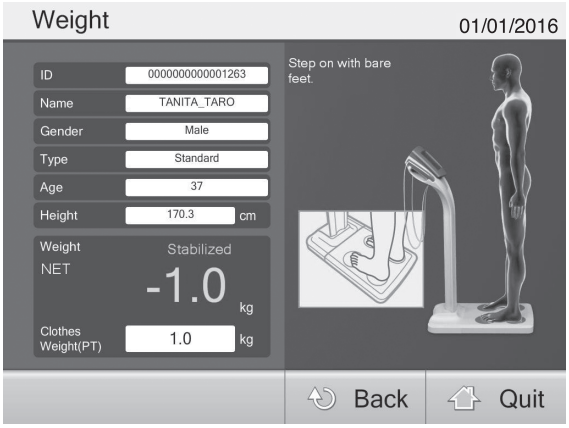
Note Password is optional.



3 Check the displayed information and press "Start Measurement"

Step onto the analyzer with bare feet.

Note You can skip impedance measurement if necessary.



Taking a Measurement

General instructions for measurement body composition

⚠ •Wait for at least two hours before taking measurements if the equipment has been transferred to a location where there is a temperature difference of ±68˚F/±20˚C or more.

Athletic Mode

• **Recommended for those who are 18 years old or older and meet the following conditions.**
- People who carry out 12 or more hours of cardio vascular exercise a week or exercise for 12 hours or more per week.
- People who belong to a sports team or a sporting organization with the aim of participation in competitions, etc.
- Professional athletes.

Target Body Fat

• **Please consult your doctor before starting a weight management program, and set the appropriate personal body fat percentage. TANITA cannot be responsible for setting the appropriate target body fat percentage for specific individuals.**

Important

• **Correct posture when measuring**
- Stand on the electrodes with both feet parallel.
- Stand with straight legs. Do not bend the knees.

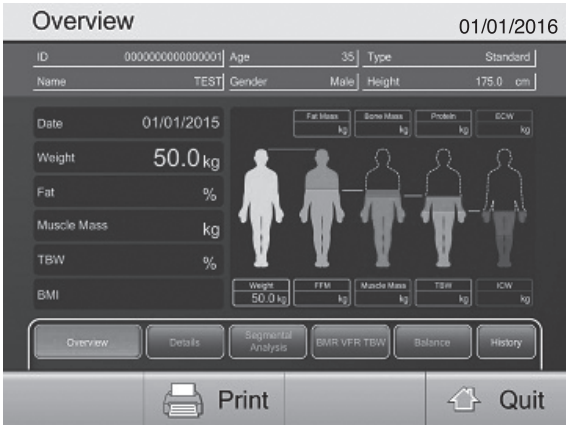
• **The age range is from 5 to 99 years old.**
Enter 99 for those who are 100 years old or older.

Note

• Inaccurate results may occur after excessive food/fluid intake, or after periods of intense exercise.
• If the clothes weight is input, the clothes weight is subtracted from the weight measurements.

Overview

The components of body composition

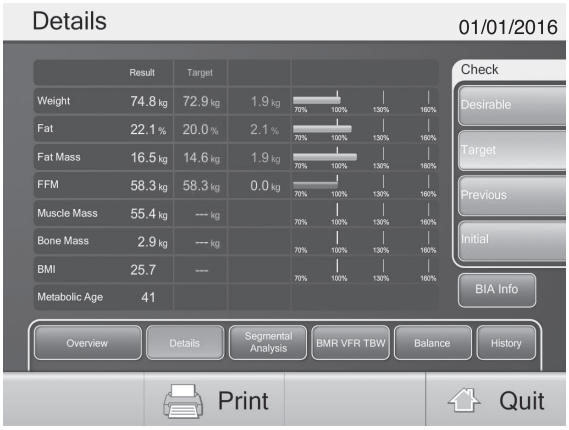


Weight	Measured weight
Fat mass	Total weight of fat in the body
FFM	Fat Free Mass is comprised of muscle, bone, tissue, water, and anything else other than fat that counts towards body mass.
Bone mass *	Entire amount of bone mineral.
Muscle mass	Bone free lean tissue mass (LTM)
Protein **	Amount of protein in muscles.
Total Body Water (TBW)	The amount of water retained in the body
Extracellular Water (ECW)	Water outside the cells, mainly compo sed of interstitial fluid and blood plasma.
Intracellular Water (ICW)	Water inside cells

* Estimated value for persons 18 - 99 years old
** Protein etc. are estimated values

Details

Measurement results are compared with the following values

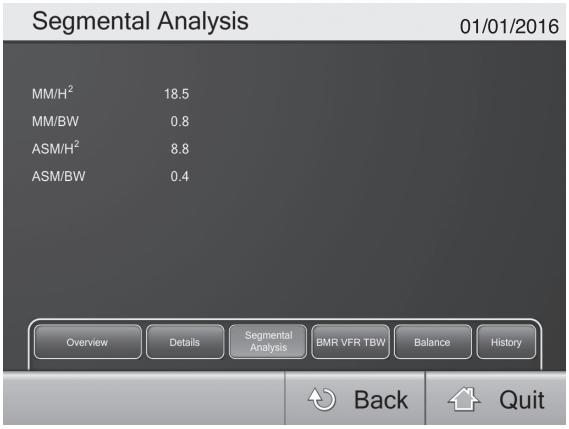


Desirable	The standard value is for the Standard mode. When Athletic Mode is used, the standard value is used for reference.
Target *	Predicted weight and fat mass are displayed according to the set target BF %
Previous **	Displays the difference with the previous result
Initial **	Displays the difference with the initial result

* Only available when the target BF % is set.
** Only available for "Registered User" measurements

Segmental Analysis

Segmental measurement results are compared with the average value
* Only for persons 18 to 99 years old

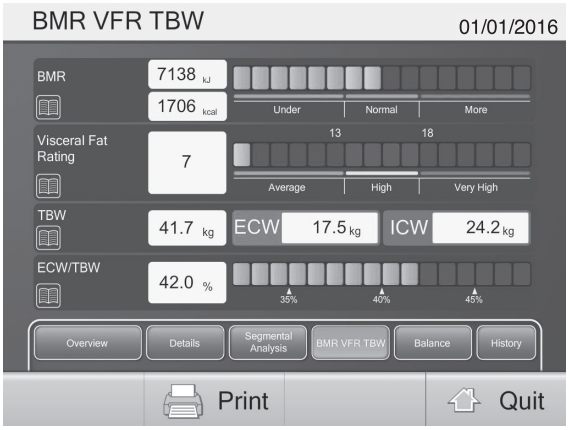


g

MM/H^2	Overall muscle mass (kg)/Height (m)^2
MM/BM	Overall muscle mass (kg)/Body Weight (kg)
ASM/H^2	Total muscle mass value of right arm, left arm, right leg and left leg (kg)/height (m)^2
ASM/BW	Total muscle mass value of right arm, left arm, right leg and left leg (kg)/weight (kg)

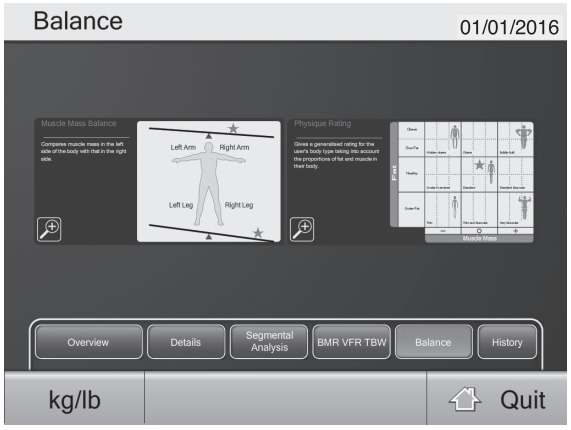
BMR / VFR / TBW

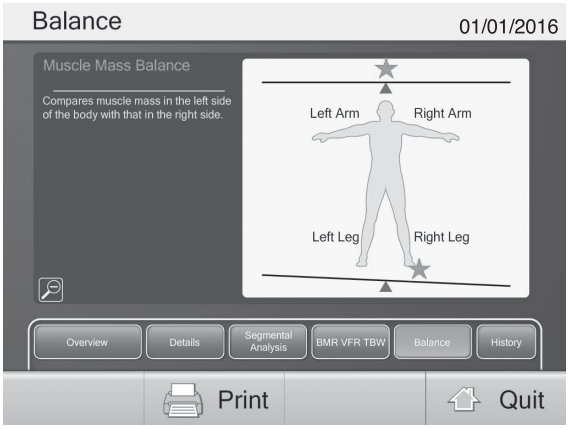
BMR	Basal Metabolic Rate (BMR) is the amount of energy the body consumes in a 24 hour period, when at total rest.
Visceral fat rating	Harmful fat that collects in the internal abdominal cavity, surrounding the vital organs.
TBW	Total Body Water (TBW) is the amount of water retained in the body
ECW / TBW	Percentage of extracellular water in relation to the total body water.



Body Balance [Muscle Mass Balance]

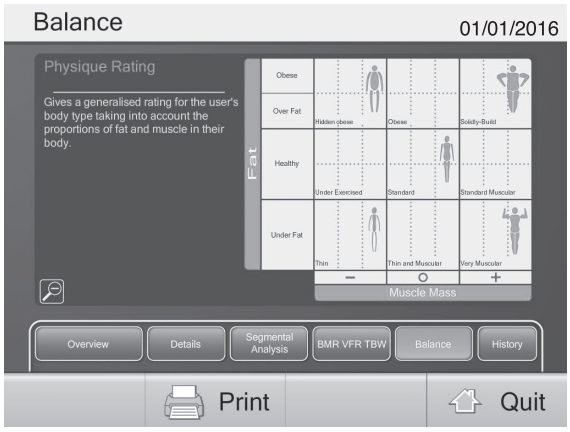
Compares muscle mass on the left side of the body with that on the right side.





Body Balance [Physique Rating]

Gives a rating for the user's body type taking into account the proportions of fat and muscle in their body.

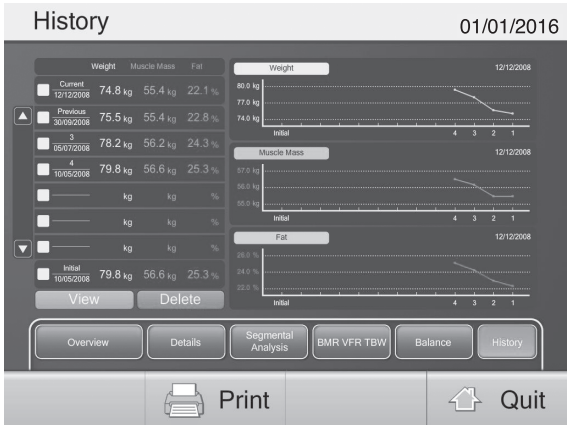


Result History

Displays the measurement result trends.

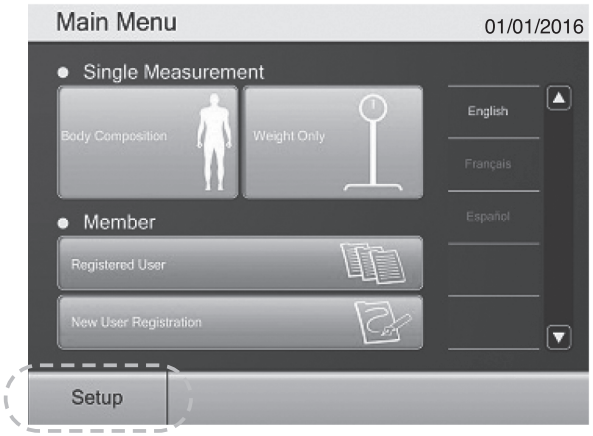
View	Displays the selected data.
Delete	Deletes the selected data.

* Only available for "Registered User" measurement



Change Password

1 Select "Setup"



2 Enter the new password

Troubleshooting

If you are experiencing problems, please check the following before asking for repairs.

Problem		Solution
Measuring	Impedance measurement error	•Hold the handgrips and electrodes firmly with fingers and palms. •Stand barefoot on the platform when measuring. •If the soles of the feet are dry, use the attached dropper to drip about 0.5 mL of water onto the platform before measurement. •Reconfirm the input details.
	Zeroing error	•Turn off the power, remove everything from the platform, then turn on the power and try measuring again.
	Weight value does not level.	•Is the analyzer placed on a vibrating surface? •Is the measuring platform tilted? •Is something blocking the gaps in the measuring platform? •Remove any inserted objects.
Display	Nothing is displayed even when the power is turned on.	•Confirm that the power is connected correctly.
	Touch panel screen display is dark.	•Backlight failure. Contact the retailer where you purchased the analyzer.
	"------" is displayed.	•The weight to be measured exceeds the maximum capacity.

Various Criteria

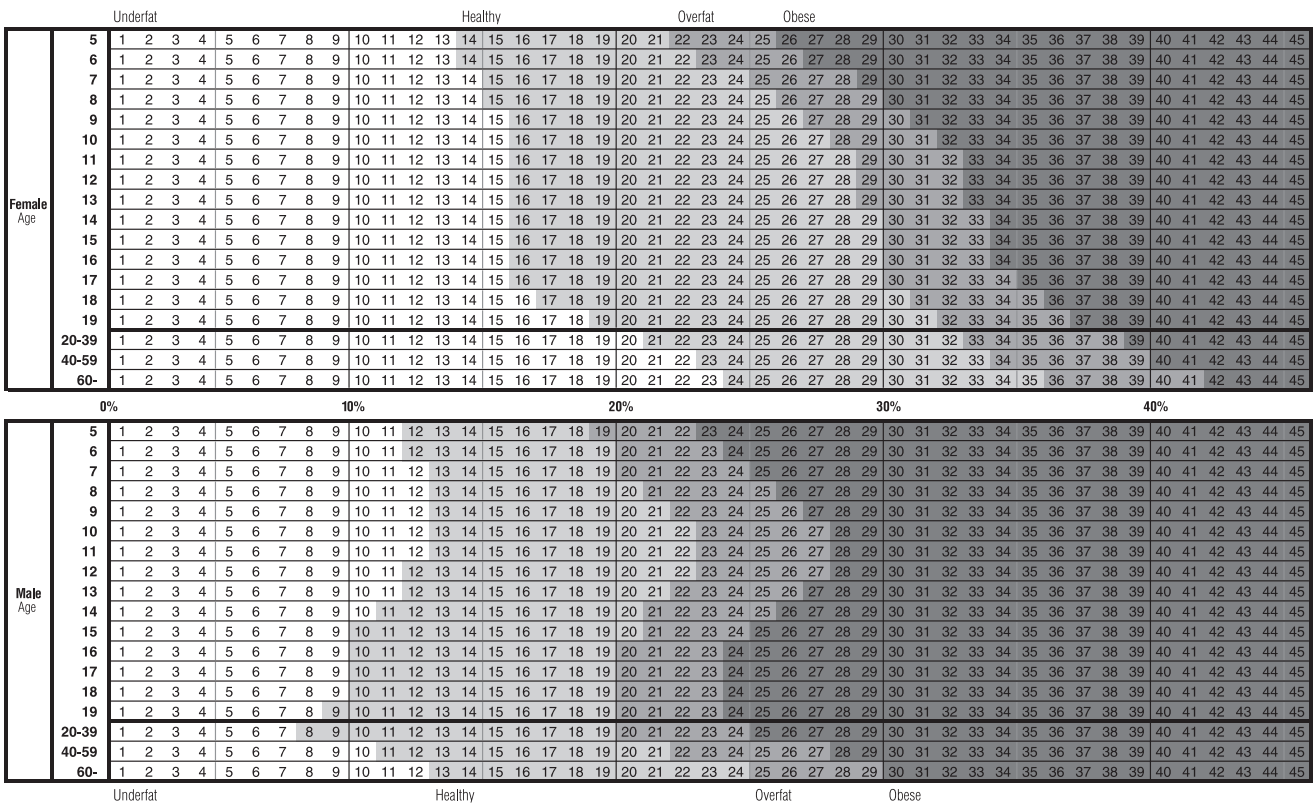
- What is body fat percentage? (Applicable age 5 to 99)

Body fat percentage is the amount of body fat as a proportion of your body weight.
Reducing excess levels of body fat has shown to reduce the risk of certain conditions such as high blood pressure, heart disease,diabetes and cancer. The chart below shows the healthy ranges for body fat.

Body Fat Ranges for Standard Children [1]
Body Fat Ranges for Standard Adults [2]

[1] *Susan Jebb et al. Obesity Reseach[o2] 2004;12:A156-157 "New Body Fat Reference Curves for children"*

[2] *Gallagher D et al. Am J Clin Nutr 2000,72:694-701. "Healthy percentage body fat ranges:an approach for developing guidelines based on body mass index."*



Healthy Range Indicator

Your Body Composition Analyzer automatically compares your body fat percentage reading to the Healthy Body Fat Range chart. After your body fat percentage has been calculated, the LCD on the side of the display will light up, identifying where you fall within the Body Fat Ranges for your age and gender.

+

(+) : Overfat and Obese
Overfat; above the healthy range. Increased risk for health problems.
Obese; high above the healthy body fat range.
Greatly increased risk of obesity-related health problems.

O

(0) : Healthy; within the healthy body fat percentage range for your age/gender.

–

(-) : Underfat; below the healthy body fat range. Increased risk for health problems.

***Note :** Athletes may have a lower body fat range depending on their particular sport or activity.

Various Criteria

- What is total body water percentage? (Applicable age 18 to 99)

Total Body Water Percentage is the total amount of fluid in a person's body expressed as a percentage of their total weight.
Water plays a vital role in many of the body's processes and is found in every cell, tissue and organ. Maintaining a healthy total body water percentage will ensure the body functions efficiently and will reduce the risk of developing associated health problems.

Your body water levels naturally fluctuate throughout the day and night. Your body tends to be dehydrated after a longnight and there are differences in fluid distribution between day and night. Eating large meals, drinking alcohol, menstruation, illness, exercising, and bathing may cause variations in your hydration levels.

Your body water percentage reading should act as a guide and should not be used to specifically determine your absolute recommended total body water percentage. It is important to look for long-term changes in total body water percentage and maintain a consistent, healthy total body water percentage.

Drinking a large quantity of water in one sitting will not instantly change your water level. In fact, it will increase your body fat reading due to the additional weight gain. Please monitor all readings over time to track the relative change.

Every individual varies but as a guide the average total body water percentage ranges for a healthy adult are:
Female : 45 to 60%
Male : 50 to 65%
Source : Based on Tanita's Internal Research

Note: The total body water percentage will tend to decrease as the percentage of body fat increases. A person with a high percentage of body fat may fall below the average body water percentage. As you lose body fat the total body water percentage should gradually move towards the typical range given above.

- What is visceral fat rating? (Applicable age 18 to 99)

This feature indicates the rating of visceral fat in your body.
Visceral fat is the fat that is in the internal abdominal cavity, surrounding the vital organs in the trunk (abdominal) area. Research shows that even if your weight and body fat remains constant, as you get older the distribution of fat changes and is more likely to shift to the trunk area especially post menopause. Ensuring you, have healthy levels of visceral fat my reduce the risk of certain diseases such as heart disease, high blood pressure, and the onset of type 2 diabetes.

The Tanita Body Composition Analyzer will provide you with a visceral fat rating from 1 to 59.

Rating from 1 to 12
Indicates you have a healthy level of visceral fat. Continue monitoring your rating to ensure that it stays within the healthy range.

Rating from 13 to 59
Indicates you have an excess level of visceral fat. Consider making changes in your lifestyle possibly through diet changes or increasing exercise.

Source : 1) Tanita Institute Contract Study. Algorithm Development for Estimating Visceral Fat Rating. SB Heymsfield MD. Columbia University College of Physicians and Surgeons 2004.
2) Wang, Z., et al. Japanese-American Differences in Visceral Adiposity and a Simplified Estimation Method for Visceral Adipose Tissue. North American Association for the Study of Obesity. Annual Meeting. Abstract 518-P. 2004

Note:
- Even if you have a low body fat rate, you may have a high visceral fat level.
- For medical diagnosis, consult a physician.

- What is basal metabolic rate (BMR)? (Applicable age 18 to 99)

What is BMR?

Your Basal Metabolic Rate(BMR) is the minimum level of energy your body needs when at rest to function effectively including your respiratory and circulatory organs, neural system, liver, kidneys, and other organs. You burn calories when sleeping.

About 70% of calories consumed every day are used for your basal metabolism. In addition, energy is used when doing any kind of activity however; the more vigorous the activity is the more calories are burned. This is because skeletal muscle (which accounts for approximately 40% of your body weight) acts as your metabolic engine and uses a large amount of energy. Your basal metabolism is greatly affected by the quantity of muscles you have, therefor increasing your muscle mass will help increase your basal metabolism.

By studying healthy individuals, scientists have found that as people age, their metabolic rate changes. Basal metabolism rises as a child matures. After a peak at the age of 16 or 17, it typically starts to decrease gradually.

Having a higher basal metabolism will increase the number of calories used and help to decrease the amount of body fat. A low basal metabolic rate will make it harder to lose body fat and overall weight.

How does a TANITA Body Composition Analyzer calculate BMR?

The basic way of calculating Basal Metabolic Rate BMR is a standard equation using weight and age. Tanita has conducted in-depth research into the relationship of BMR and body composition giving a much more accurate and personalized reading for the user based on the impedance measurement. This method has been medically validated using indirect calorimetry (measuring the breath composition).*

* Reliability on equation for Basal Metabolic Rate: At 2002 Nutrition Week : A Scientific and Clinical Forum and Exposition Title: International Comparison: Resting Energy Expenditure Prediction Models: The American Journal of Clinical Nutrition

Various Criteria

- What is muscle mass? (Applicable age 18 to 99)

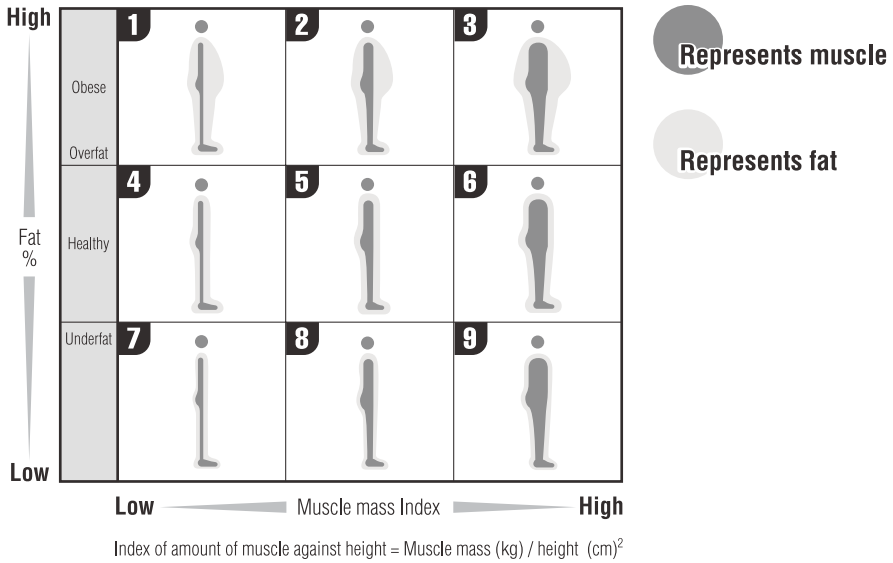
This feature indicates the weight of muscle in your body. the muscle mass displayed includes the skeletal muscles, smooth muscles (such as cardiac and digestive muscles) and the water contained in these muscles.
Muscles play an important role as they act as an engine in consuming energy. As your muscle mass increase, your energy consumption increases helping you reduce excess body fat levels and lose weight in a healthy way.

What is physique rating?

This feature assesses your physique according to the ratio of body fat ad muscle mass in your body.
As you become more active and reduce the amount of body fat, your physique rating will also change accordingly. Even though your weight may not change, your muscle mass and body fat levels may be changing making you healthier and at lower risk of certain diseases.
Each person should set their own goal of which physique they would like and follow a diet and fitness program to meet that goal.

Result	Physique Rating	Explanation
1	Hidden obese	**Small Frame Obese**
		This person seems to have a healthy body type based on physical appearance; however, they have a high body fat % with low muscle mass level.
2	Obese	**Medium Frame Obese**
		This person has a high body fat percentage, with a moderate muscle mass level.
3	Solidly-built	**Large Frame Obese**
		This person has both a high body fat % and a high muscle mass.
4	Under exercised	**Low Muscle & Average Body Fat%**
		This person has an average body fat % and a less than average muscle mass level
5	Standard	**Ave. Muscle & Ave. Body Fat %**
		This person has average levels of both body fat and muscle mass.
6	Standard Muscular	**High Muscle & Ave. Body Fat % (Athlete)**
		This person has an average body fat % and higher than normal muscle mass level.
7	Thin	**Low Muscle & Low Fat**
		This person has both a lower than normal body fat % and muscle mass level.
8	Thin and muscular	**Thin and muscular (Athlete)**
		This person has lower than normal body fat % while having adequate muscle mass.
9	Very Muscular	**Very Muscular (Athlete)**
		This person has lower than normal body fat % while having above average muscle mass.

Source : Data from Columbia University (New York) & Tanita Institute (Tokyo)



Index of amount of muscle against height = Muscle mass (kg) / height $(cm)^2$

- What is bone mass? (Applicable age 18 to 99)

This feature indicates the amount of bone (bone mineral level, calcium or other minerals) in the body. Research has shown that exercise and the development of muscle tissue are related to stronger, healthier bones. While bone structure is unlikely to make noticeable changes in a short period, it is important that you develop and maintain healthy bones by having a balanced diet and plenty of exercise. People worried about bone disease should consult their physician. People who suffer from osteoporosis or low bone densities due to advanced age, young age, pregnancy,hormonal treatment or other causes, may not get accurate estimations of their bone mass.

Below is the result of estimated bone masses of persons aged 20 to 40, who are said to have the largest amounts of bone masses, by weight. (Source : Tanita Body Weight Science Institute)

Please use the below charts as a guide to compare your bone mass reading.

Women : Average of estimated bone mass

Weight (lb)		
Less than 110 lb	110lb to 165 lb	165 lb and up
4.3 lb	5.3 lb	6.5 lb

Weight (kg)		
Less than 50 kg	50 kg to 75 kg	75 kg and up
1,95 kg	2,40 kg	2,95 kg

Men : Average of estimated bone mass

Weight (lb)		
Less than 143 lb	143 lb to 209 lb	209 lb and up
5.9 lb	7.3 lb	8.1 lb

Weight (kg)		
Less than 65 kg	65 kg to 95 kg	95 kg and up
2,66 kg	3,29 kg	3,69 kg

Note: Persons described below may obtain varying readings and should take the values given for reference purposes only.
- Elderly persons - Women during or after menopause
- People receiving hormone therapy

"Estimated bone mass" is a value estimated statistically based on its correlation with the fat-free amount (tissues other than the fat). "Estimated bone mass" does not give a direct judgment on the hardness or strength of the bones or the risks of bone fractures. If you have concerns over your bones, you are recommended to consult a specialist physician.

Body composition measurement by the BIA method.

Introduction

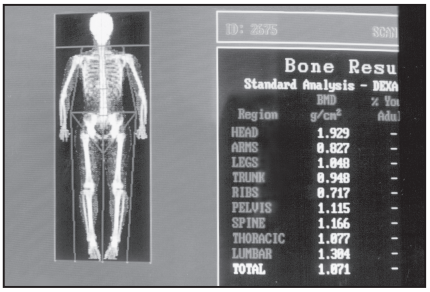
This equipment provides estimated values for each measured value of body fat percentage, fat mass, fatfree mass, muscle mass and bone mass by the DXA method, estimated value for the total body water measured value by the dilution method and estimated value for the visceral fat rating by MRI method using the Bioelectrical Impedance Analysis (BIA method).
For measurement, a mode must be selected based on body type.
1) Standard (for 5 to 99 years of age)
2) Athletic (for Athletic persons who exercise considerably more than non-athlete)
Making a distinction by body type in the measurement mode produces more reliable body composition measurements for athletic persons, whose body compositions differ from those of average persons.

- Principles of body composition measurement

BIA is a means of measuring body composition – fat mass, predicted muscle mass, etc. – by measuring bioelectrical impedance in the body. Fat within the body allows almost no electricity to pass through, while electricity passes rather easily through water, much of which is found in muscles. The degree of difficulty with which electricity passes through a substance is known as the electrical resistance, and the percentage of fat and other body constituents can be inferred from measurements of this resistance.
The Tanita Body Composition Analyzer measures body composition using a constant current source with a high frequency current (50kHz, 90μA). The 8 electrodes are positioned so that electric current is supplied from the electrodes on the tips of the toes of both feet, and voltage is measured on the heel of both feet. The current flows into the upper limbs or lower limbs, depending on the body part(s) to be measured.

- What is the DXA method?

DXA was originally designed to measure bone mineral content, but in the full-body scan mode the body fat percentage, fat mass, and fat free mass of individual body parts (arms, legs, trunk) can also be measured. The image below shows one example of body composition measurement results obtained by DXA.



Body composition measurement results obtained by DXA (Lunar Co., Ltd; DPX-L)

- What is dilution method?

In the dilution method, a labeled substance for a known amount is given and the concentration in equilibrium diffusing evenly is measured to obtain the total amount of the solvent that dilutes the labeled substance.
To measure the total body water (TBW), deuterium oxide (D_2O) is generally used as the labeled substance. Deuterium oxide uses the overall total body water as dilution space so the total body water can be obtained. To obtain the extracellular fluid amount, sodium bromide (NaBr) is used as a labeled substance. Bromine (Br) is said to not enter the inside of cells, and uses extracellular fluid as the dilution space.

- What is the visceral fat?

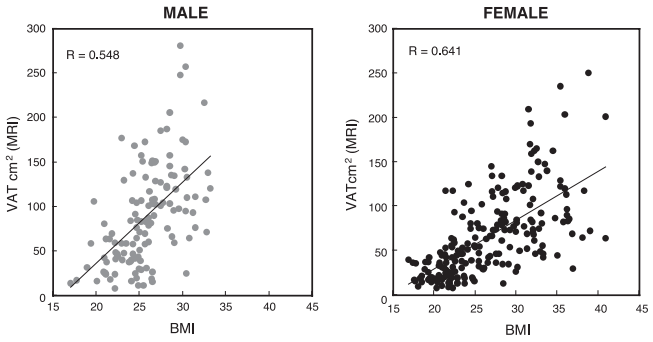
Visceral Adipose Tissue (VAT) has been associated with increased risk of developing lifestyle-related diseases. Accordingly, knowing and periodically checking the estimated VAT accumulation serves as one factor of a number of factors in assessing the prevention of lifestyle related diseases.

Tanita has developed the technology for measuring the VAT accumulation risk through bioelectrical impedance analysis (BIA) in comparison with image analysis applied to magnetic resonance imaging (MRI), in addition to the established technology for measuring the percent of body fat. The VAT accumulation risk is calculated by estimating the VAT area by the BIA method on the basis of MRI image processing. This method has a higher correlation than the estimation of the VAT accumulation risk based on BMI or abdominal circumference (waist circumference), allowing estimation that corresponds more precisely to individuals.

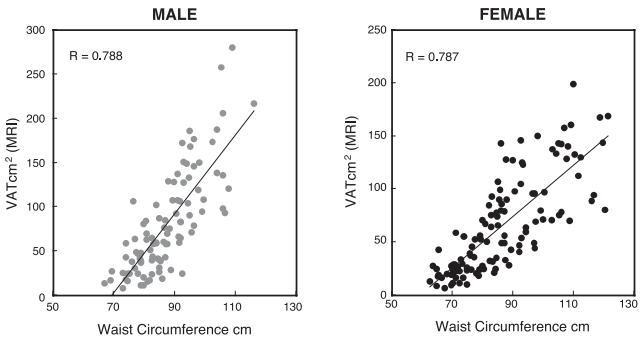
* The VAT area by MRI is calculated by carrying out an image processing of the cross section of the lumber vertebra L4-L5 regions.

(Fig. 1 - Fig. 3: Research results by N. Y. Columbia University and Jikei University Published by the North American Association for the Study of Obesity [NAASO] in 2004.)

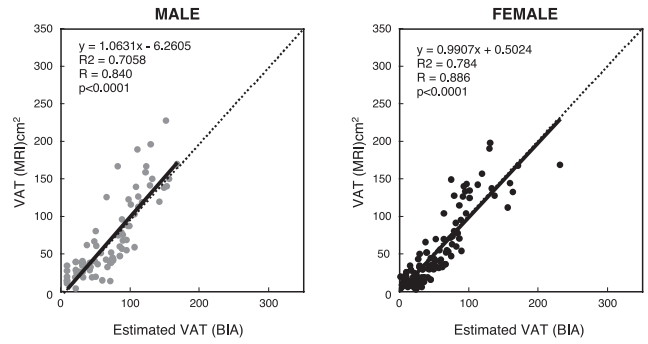
<Fig. 1> Relationship between VAT Area and BMI



<Fig. 2> Relationship between VAT Area and Waist Circumference



<Fig. 3> Relationship between VAT Area by MRI and Estimated VAT Area by Tanita's BIA



- Factors giving errors in measurement

In the BIA method, impedance is measured and the body composition is calculated based on the value. It is known that impedance changes by the amount of the total body water that occupies about 60% of weight and the change in its distribution and temperature change. Therefore, for the purpose of research or for daily repeating of measurements, the measurement conditions must be kept constant. Measurement under the changing conditions of temperature and total body water distribution or blood flow volume of extremities due to exercising, taking a bath, etc., affects the measurement result since the electric resistance in the body also changes.
Therefore, it is recommended to measure under the following conditions for stable measurement.

1) 3 hours have passed after getting up and normal lifestyle activities are carried out during this period. (The impedance transits staying at a high level if you remain sitting after getting up or drive a car, etc.)
2) 3 hours or more have passed after eating. (For 2 to 3 hours after eating, the impedance has a tendency to decrease.)
3) 12 hours or more have passed after vigorous exercise for measurement. (The tendency toward changes in impedance is not stable depending on the type and rigorousness of the exercise.)
4) If possible urinate before taking measurement.
5) For repeated measurements, measure at the same hour as much as possible. (At the same time of measurement of weight, the measurements can be made more stable by measuring at the same time of the day)

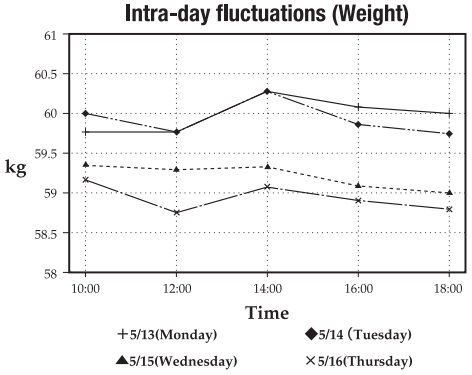
Very stable measured values can be obtained by measuring under the above conditions.
And in the development of this equipment, the following 6 items were set as conditions for the regression equation.

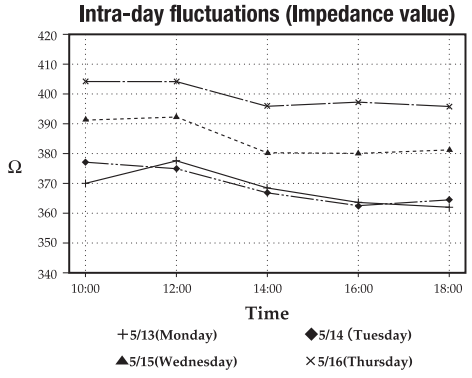
1) Prohibition of alcohol intake for 12 hours before measurement
2) Prohibition of excessive exercise for 12 hours before measurement.
3) Prohibition of excessive eating and drinking the day before measurement
4) Prohibition of eating and drinking for 3 hours before measurement
5) Urination just before measurement
6) Avoid measurements during menstruation (for female)

2) Inter-day changes

The diagrams below offer examples of actual measurements made of inter-day changes. A study was done to determine the degree of change in the impedance between the feet during dehydration; the first two days represent a normal daily routine, while in the latter two days a state of dehydration was induced using a sauna.

No significant inter-day change was measured in body weight, impedance between the feet, or body fat percentage during the normal daily routine. During the dehydrated state, however, a drop in body weight of 1kg was noted, with the impedance between the feet rising approximately 15Ω on the first day of dehydration and 30 to 35Ω on the second day. As a result, body fat percentage was up by around 1% on the first day of dehydration and by 1.5 to 2% on the second day.
As mentioned earlier, impedance increases when body weight is reduced (such as by dehydration), and decreases when body weight is increased through excess consumption of food and drink. The inter-day change in impedance is thus inversely proportional to the change in body weight.





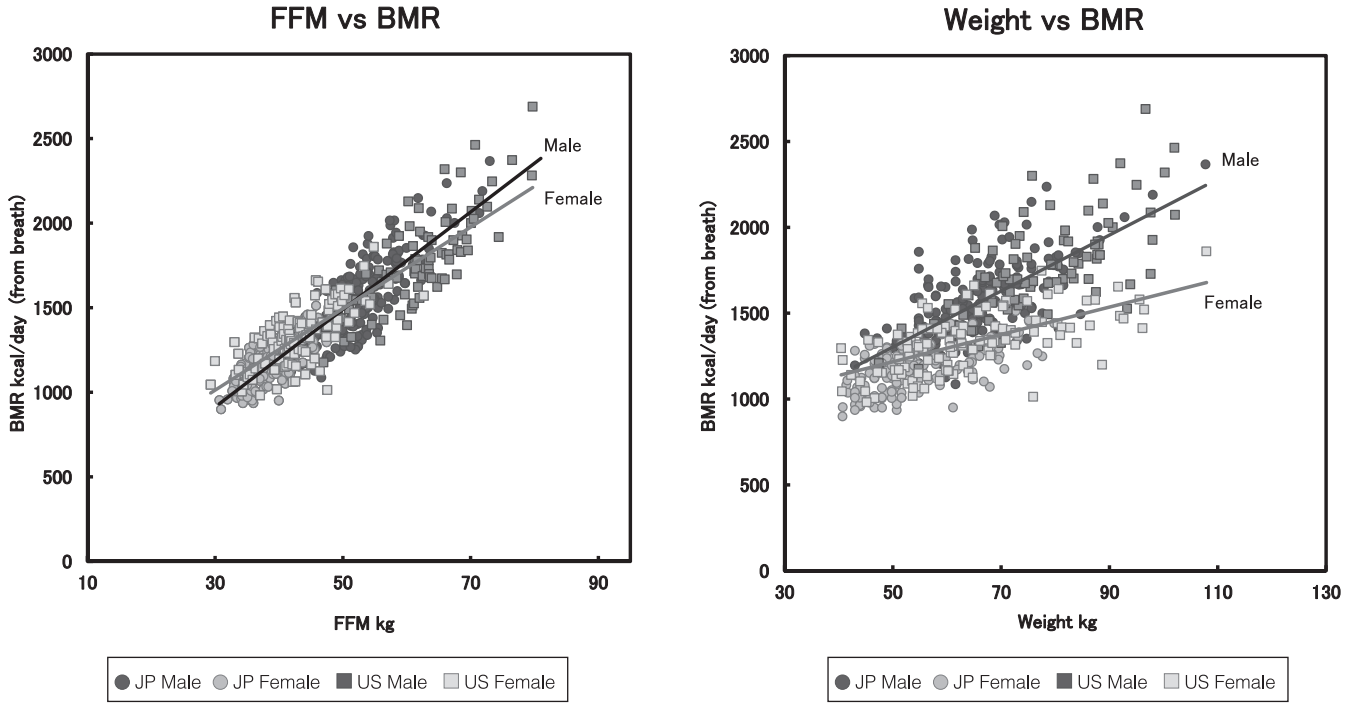
These inter-day changes stem from such causes as:
1) Temporary increases in body weight (total body water) through overeating and overdrinking
2) Dehydration due to heavy sweating during vigorous exercise
3) Dehydration due to alcohol consumption or the use of diuretics
4) Dehydration due to heavy sweating during saunas, etc.

Accordingly, it is recommended that instructions be provided to the subject to help eliminate these causes when accurate measurements are needed.

The Regression Formula for Basal Metabolic Rate (BMR)

The Basal Metabolic Rate (BMR) value is known to be closely related with the Fat Free Mass (FFM). It is also correlated with body weight, but there are issues when it is calculated from the body weight without considering body composition evaluation. This causes a greater error range to occur. In cases where people have the same body weight but different composition, values for obese people that have more body fat are overestimated, whereas those for muscular athletes are underestimated.

Figure 1 shows that the correlation between BMR and FFM is far stronger than the correlation between BMR and weight.

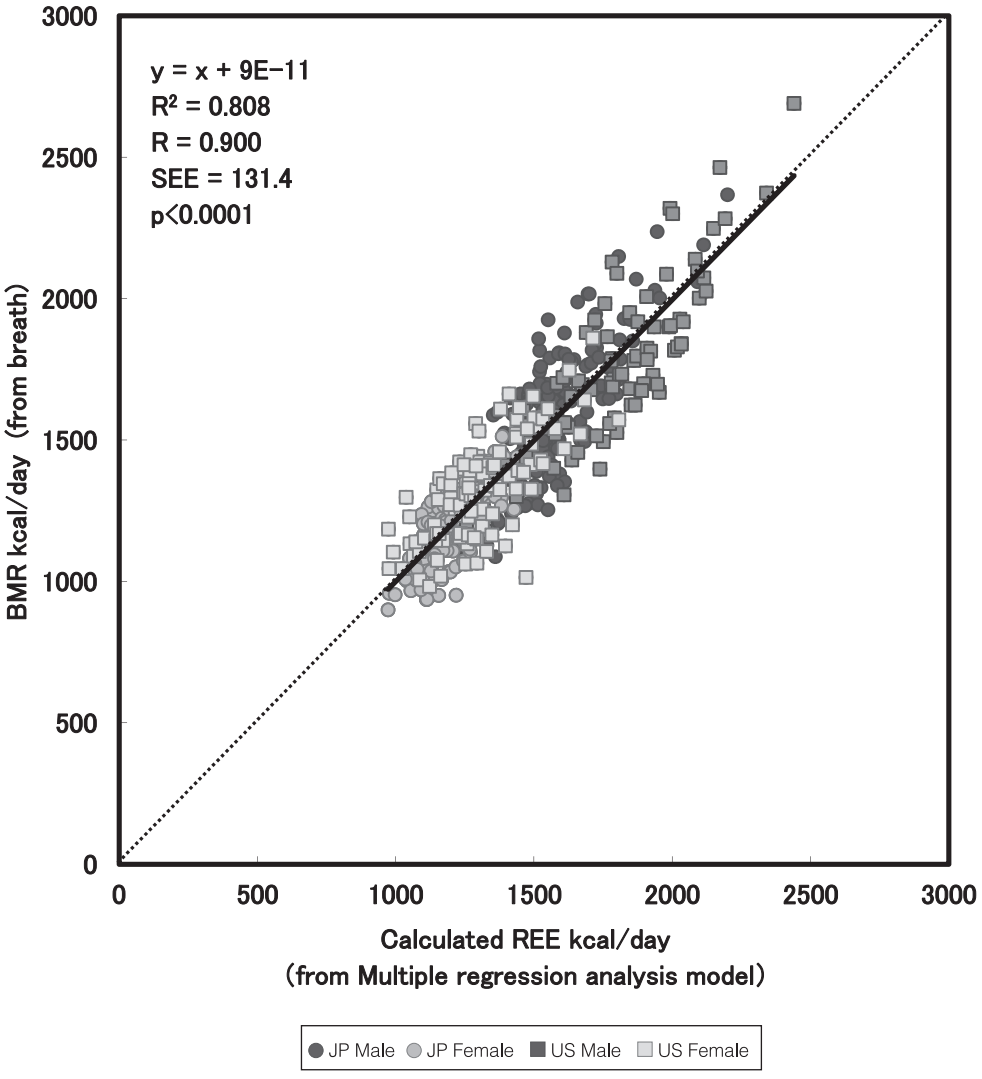


<Figure 1> Relationship of BMR from exhalation analysis with weight and FFM

The estimated regression equation for BMR developed through years of research by Tanita is extremely accurate because it reflects differences in individual body compositions and is calculated from the measured FFM. This estimated regression equation is based on the BMR measured using an exhalation analyzer, and has been checked for statistical validity (Figure 2).

These results were presented at the First Annual Nutrition Week (American College of Nutrition, American Society for Clinical Nutrition, American Society for Parenteral and Enteral Nutrition, North American Association for the Study of Obesity) held in 2002 in San Diego.

NOTE: This model has been calibrated for those between ages of 18 to 84. Those individuals outside of this age range may not obtain accurate readings.



<Figure 2> Relationship of BMR and calculated REE from Tanita multiple regression analysis model
Modified based on data announced at Nutrition Week held in San Diego in 2002)

Specifications

Model number			MC-980U plus	
Power source			120V AC	
Electric current range			0.3A	
Impedance measurement	Measurement System		Multi-Frequency 8 Electrode	
	Measurement Frequency		1kHz/5kHz/50kHz/250kHz/500kHz/1000kHz	
	Measurement Current		90μA or less	
	Electrode Materials		Feet: Stainless steel/Handgrips: plated	
	Measurement Part		Whole body/Right arm/Left arm/Right leg/Left leg	
	Measurement Range		75.0 to 1,500.0Ω(0.1Ωincrements)	
	Accuracy at First Calibration		± 2%	
Weight measurement	Measurement System		Strain Gauge Load Cell	
	Maximum Capacity		660lb (Including Preset tare value)	300kg (Including Preset tare value)
	Minimum Graduation		0.2lb	0.1kg
	Accuracy at First Calibration		±0.4lb	±0.2kg
Display			10.4" TFT color LCD touch panel	
Interface			USB A-type connector (USB host) x3	
			USB B-type connector (Device) x1	
			LAN Port x1	
Usage conditions	Temperature range		41 to 95°F	5 to 35°C
	Relative humidity		30 to 80% (without condensation)	
Product weight			73lb	33kg
Product size	Platform		Platform size:18×19 Height 2.6in	Platform size:450×490 Height 65mm
	Product		Height 48.82in	Height 1240mm
Input items	Single measurement	Clothes Weight	0 to 20lb (0.2lb increments)	0 to 10.0kg (0.1kg increments)
		Serial No.ender	maximum 16 digits	
		Gender	Female/Male	
		Body Type	Standard/Athletic*1	
		Age	5 to 99 years old	
		Height	2.95 to 8.199ft (0.04in increments)	90.0 to 249.9cm (0.1cm increments)
		Target Body fat %	4 to 55%(1% increment)	
	Registered user	Clothes Weight	0 to 20lb (0.2lb increments)	0 to 10.0kg (0.1kg increments)
		User ID	maximum16 alphanumeric characters	
		Name	maximum16 alphanumeric characters	
		Date of Birth	After 1900 (mm/dd/yyyy format)	
		Gender	Female/Male	
		Body Type	Standard/Athletic*1	
		Height	2.95 to 8.199ft (0.04in increments)	90.0 to 249.9cm (0.1cm increments)
		Target Body fat %	4 to 55%(1% increments)	
		Password	within 10 digits	

Model number			MC-980U plus	
Output items	Serial Number		maximum 16 alphanumeric characters	
	Name		maximum 16 alphanumeric characters	
	Gender		Female/Male	
	Body Type		Standard/Athletic*1	
	Age		5 to 99 years old	
	Height		2.95 to 8.199ft (0.04in increments)	90.0 to 249.9cm (0.1cm increments)
	Clothes Weight		0 to 20lb (0.2lb increments)	0 to 10.0kg (0.1kg increments)
	Date and Time		(mm/dd/yyyy hh:mm format)	
	Whole Body Analysis	Weight	0 to 660.0lb (0.2lb increments)	0 to 300.0kg (0.1kg increments)
		Fat %	1.0 to 75.0% (0.1% increments)	
		Fat Mass	(0.2lb increments)	(0.1kg increments)
		FFM	(0.2lb increments)	(0.1kg increments)
		Muscle Mass	(0.2lb increments)	(0.1kg increments)
		BMI	(0.1 increments)	
		Bone Mass*2	(0.2lb increments)	(0.1kg increments)
		Protein (estimated)*2	(0.2lb increments)	(0.1kg increments)
		Basal Metabolic Rate	(1kcal / 1kJ increments)	
		BMR graph*2		
		Visceral Fat Rating*2	1 to 59 (1 increments)	
		Visceral Fat graph*2		
		TBW*2	(0.2lb increments)	(0.1kg increments)
		TBW %*2	(0.1% increments)	
		ECW*2	(0.2lb increments)	(0.1kg increments)
		ICW*2	(0.1kg increments)	
		ECW / TBW*2	(0.1% increments)	
		ECW / TBW graph*2		
	Segmental Analysis	Muscle Mass*2	(0.2lb increments)	(0.1kg increments)
		Muscle Mass Rating*2	-4 to +4 (1 increments)	
		Fat %	(0.1% increments)	
		Fat Mass	(0.2lb increments)	(0.1kg increments)
		Fat Rating*2	-4 to +4 (1 increments)	
	Body Balance Evaluation	Physique Rating*2		
		Muscle Mass Balance*2		
	Result History			
	Others	Bioelectrical data	Reactance/Resistance/Phase Angle	

*1 Athletic mode can only be selected when the age is 18 to 99 years old.
*2 18 to 99 years old

USA and Canada

Federal Communications Commission and Canadian ICES Notice

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules and Canadian ICES-003. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio or television technician for help.

Modifications

The FCC requires the user to be notified that any changes or modifications made to this device that are not expressly approved by Tanita Corporation may void the user's authority to operate the equipment.

Disposal

This equipment is electronic device. Please dispose of this equipment appropriately as electronic equipment, not general household waste. Please follow regional regulations for disposal.

<U.S.A. representative>

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Jan 2016.FA.MC9807671(0)