



# TBF-521 BODY FAT MONITOR/SCALE


## Instruction Manual

Read this Instruction Manual carefully and keep it for future reference.



Table of Contents

**Introduction** . . . . . 1

 Safety Precautions

Important Notes for Users

**Principles of Estimating**

**Body Fat Percentage** . . . . . 2

What is Body Fat Percentage?

Body Fat Range

The BIA Method

Body Fat Percentage Fluctuations in a Day

Advantages of the Tanita TBF-521

**Package Components** . . . . . 3

Features and Functions

Measuring Platform

Display Unit

Accessories

**Useful Features of the TBF-521** . . . . . 4

Switching the Weight Mode (lb, kg, st-lb)

**Preparations Before Use** . . . . . 4

Inserting the Batteries

Positioning the Monitor

Attaching the Support Feet

Installing the Display Box . . . . . 5

**Handling Tips** . . . . . 5

**Operating the TBF-521** . . . . . 6

**Getting Accurate Readings** . . . . . 7

Replacing the Batteries

**Troubleshooting** . . . . . 8

**Specifications** . . . . . 8

**Warranty** . . . . . 9

Federal Communications Commission 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. 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.

# Introduction

Thank you for selecting the Tanita Body Fat Monitor/Scale TBF-521. This product uses the BIA (Bioelectrical Impedance Analysis) technique, a state-of-the-art technology for body fat assessment.

## Safety Precautions

- **Persons with implanted medical equipment, such as a pacemaker, should not use the TBF-521. This Body Fat Monitor/Scale passes a low-level electrical signal through the body, which may interfere with the operation of a pacemaker.**
- The Tanita Body Fat Monitor/Scale TBF-521 is intended for home use only. This unit is not intended for professional use in hospitals or other medical facilities; it is not equipped with the quality standards required for heavy usage experienced under professional conditions.
- Do not use this unit on slippery surfaces such as wet floors.
- Disabled people should be assisted by someone else, or use a handrail when using the TBF-521.

**Note:** Body fat percentage estimates will vary with the amount of moisture in the body, and can be affected by dehydration or overhydration due to such factors as alcohol consumption, menstruation, illness, intense exercise, etc.

## Important Notes for Users

The TBF-521 is intended for use by adults and children with moderately active to inactive lifestyles and by adults with athletic body types.

Tanita defines “athlete” as a person involved in intense physical activity of at least 10 hours per week and who has a resting heart rate of approximately 60 beats per minute or less. Tanita’s athlete definition includes “lifetime of fitness” individuals who have been fit for years but currently exercise less than 10 hours per week.

Tanita’s athlete definition does not include “enthusiastic beginners” who are making a real commitment to exercising at least 10 hours per week but whose bodies have not yet changed to require the Athlete mode.

Body fat percentage estimates may be slightly lower or higher for the following categories of people:

- Adults seventy years old or older
- Persons undergoing dialysis
- Persons suffering from edema

Body fat percentage estimates for these persons should not be treated as absolute values, but may be used as relative values for checking body fat percent variations over a period of time.

**The TBF-521 is not intended for pregnant women, professional athletes or bodybuilders.**

Recommendations for exercise programs or diets based on calculated data should be determined by a doctor or licensed medical professional. Do not attempt to evaluate the data by yourself.

Tanita takes no responsibility for any kind of damage or loss caused by these units, or any kind of claim made by a third person.

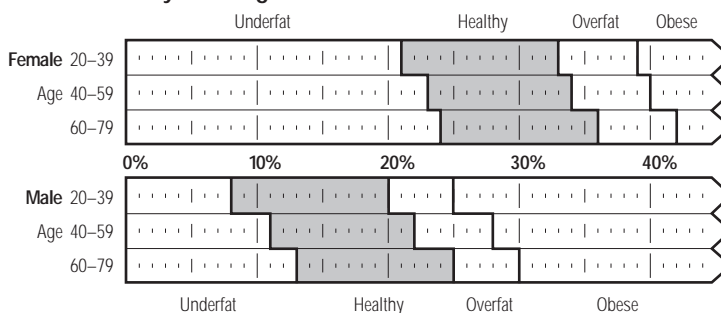
# Principles of Estimating Body Fat Percentage

The Tanita Body Fat Monitor/Scale TBF-521 allows you to estimate your body fat percentage at home as easily as you measure your weight.

## What is Body Fat Percentage?

Body fat percentage is the percentage of fat in your body. Until now, your absolute weight has determined whether or not you were considered overweight or obese. In recent years, the definition of obesity has been refined to mean the presence of excess body fat. Too much body fat has been linked to conditions such as high blood pressure, heart disease, diabetes, cancer, and other disabling conditions.

**Body Fat Ranges for Standard Adults<sup>1,2</sup>**



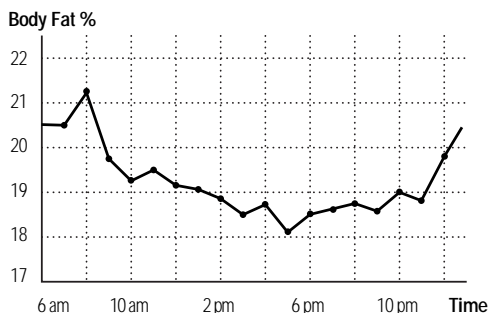
<sup>1</sup> Based on NIH/WHO BMI Guidelines.

<sup>2</sup> As reported by Gallagher, et al., at NY Obesity Research Center.

To determine the percentage of body fat that is appropriate for your body, consult your physician.



Tanita's patented "foot-pad" design sends a safe, low-level electrical signal through the body to determine its composition.



Daily fluctuations in body fat percentage based on the BIA technique.

## The BIA Method

The TBF-521 uses the BIA (Bioelectrical Impedance Analysis) technique. In this method, a safe low-level electrical signal is passed through the body. It is difficult for the signal to flow through fat in the human body, but easy to flow through moisture in the muscle and other body tissues. The difficulty with which a signal flows through a substance is called impedance. So the amount of fat in the body can be accurately estimated by measuring the impedance. The signal used is very low, making it safe and imperceptible.

The illustration on the left shows how the signal travels through the body.

## Body Fat Percentage Fluctuations in a Day

Hydration levels in the body may affect body fat readings. Readings are usually highest in the early waking hours, since the body tends to be dehydrated after a long night's sleep. For the most accurate reading, a person should take a body fat percentage reading at a consistent time of day under consistent conditions.

Besides this basic cycle of fluctuations in the daily body fat readings, variations may be caused by hydration changes in the body due to eating, drinking, menstruation, illness, exercising, and bathing. Daily body fat readings are unique to each person, and depend upon one's lifestyle, job and activities.

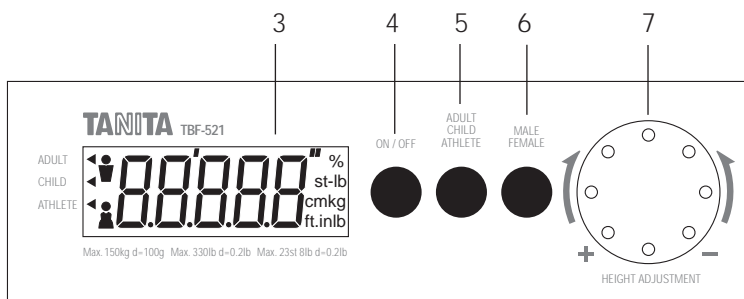
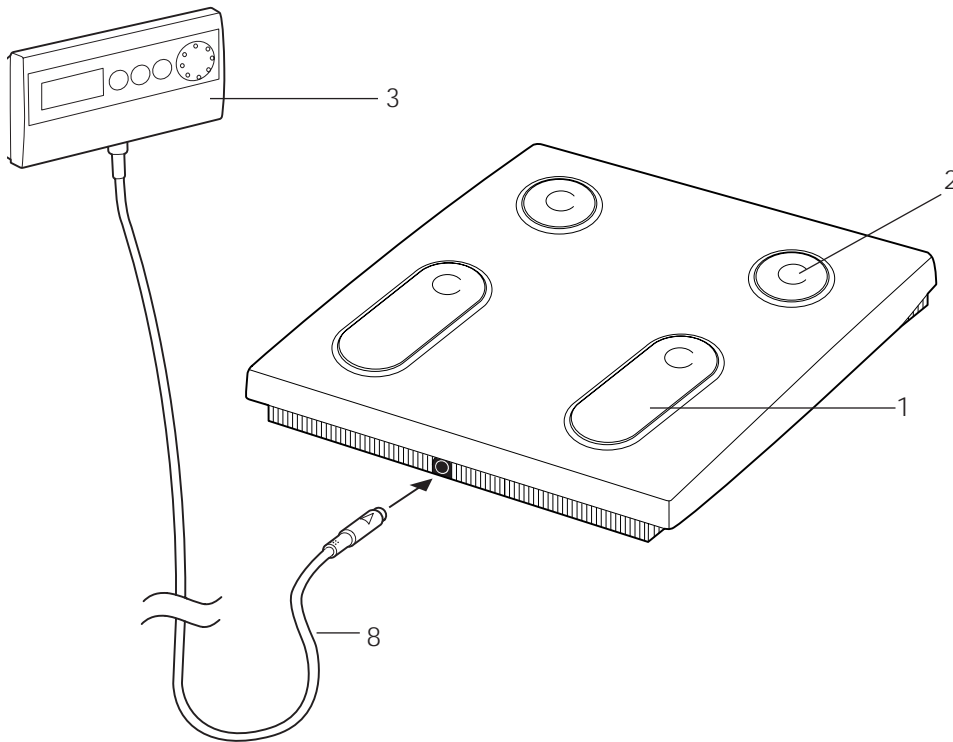
## Advantages of the Tanita TBF-521

Previously, body fat percentage was determined by measuring the thickness of subcutaneous fat by pinching it with calipers, or by laying a person on a scanning bed and passing a current from hand to foot. However, these methods present problems—professional skills are required, the procedures take time and are often invasive, and measurement values vary. Currently, the gold standard methods of fat percentage measurement are DEXA (dual energy x-ray absorptiometry) and Hydrodensitometry (underwater weighing).

Tanita's BIA method uses equations derived from large, multi-ethnic population studies to predict body composition. Readings taken with Tanita's TBF-521 correlate highly with both DEXA (Tanita's reference model) and Hydrodensitometry.

# Package Components

- Measuring Platform
- Display Box
- Connector Cable
- Wall Mounting Bracket
- Support Feet (4)
- Batteries (6)
- Screws for Bracket (2)



## Features and Functions

### Measuring Platform

1. Ball-of-Foot Electrodes
2. Heel Electrodes

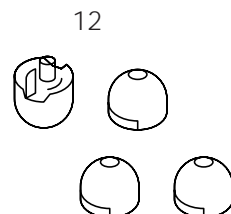
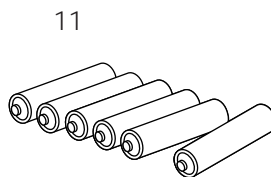
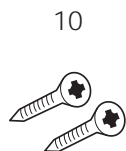
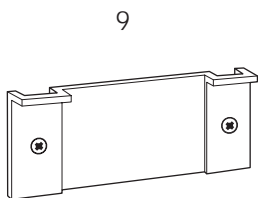
### Display Unit

3. Display Screen
4. On/Off Button
5. User Mode Button
6. Gender Button
7. Height Dial
8. Connector Cable

### Accessories

9. Wall-Mounting Bracket
10. Screws for Bracket
11. Batteries
12. Support Feet

*Only needed if platform is placed on carpet. Do not use these feet on hard flooring.*

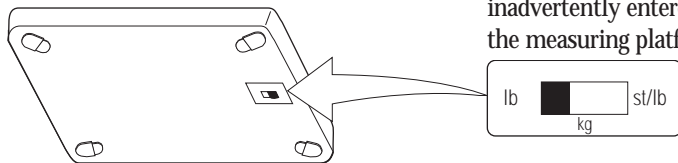


## Useful Features of the TBF-521

- The TBF-521 allows you to measure both weight and body fat percentage simultaneously as easily and simply as stepping on a scale.
- The TBF-521 can be set for an Child, Adult or Athlete, Male or Female, increasing the accuracy of the reading.
- This two-piece unit eliminates the need to bend down to enter data or read results. All data can be entered, and all results can be read from the remote display unit.

### Switching the Weight Mode (lb, kg, st-lb)

The TBF-521 can measure weight in three different modes: lb (pounds), kg (kilograms) or st-lb (British stone-pounds). The default setting (the setting at which Tanita products are shipped) is lb. If you would like to change that setting, or if at any point another setting has been inadvertently entered, select your preferred weight mode by using the switch on the back of the measuring platform (see illustration, left).



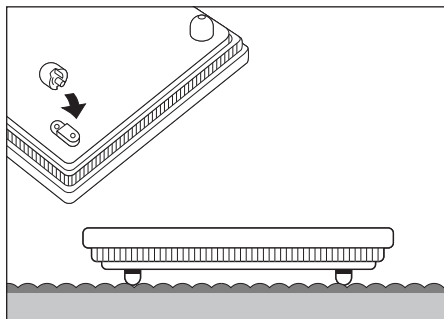
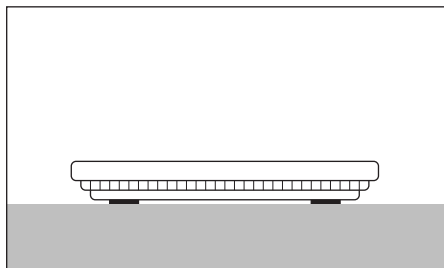
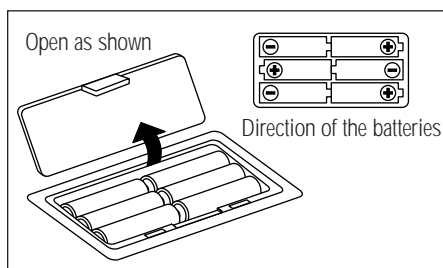
**Note:** If weight mode is set to pounds or stone-pounds, the height programming mode will be automatically set to feet and inches. Similarly, if kilograms is selected, height will be automatically set to centimeters.

### Automatic Shut-Down Function

The automatic shut-down function shuts off the power automatically in the following cases:

- If you interrupt the measurement process. The power will shut down automatically within 10 to 20 seconds, depending upon the type of operation.
- If an extraordinary weight is applied to the platform.
- If you make a mistake during measurement or a key or button operation.
- After you have completed the measuring process.

**Note:** If the power shuts off unexpectedly, repeat the measuring process.



## Preparations Before Use

### Inserting the Batteries

1. Locate the battery cover on the back of the measuring platform. Press the tab to release the cover as shown.
2. Insert batteries as indicated.

**⚠ Note:** Be sure that the polarity of the batteries is set properly. If the batteries are incorrectly positioned, the fluid may leak and damage floors. If you do not intend to use this unit for a long period of time, it is advisable to remove the batteries before storage.

### Positioning the Monitor

Place the monitor on a hard, flat surface where there is minimal vibration to ensure safe and accurate measurement.

**⚠ Note:** To avoid possible injury, do not step on the edge of the platform.

### Attaching the Support Feet (Carpet Use Only)

Insert the support feet into the holes at the four corners on the bottom of the measuring platform.

**Note:** Do not use the monitor on any carpeting that is more than 0.8" (20 mm) in thickness.

**⚠ Do not use the support feet on hard, flat surfaces, as the unit may tip over.**

## Installing the Display Box

The display box can be set on a table or mounted on a wall.

**Note:** Avoid holding the display unit in your hands while measuring yourself, because its weight (0.6 lb or 0.25 kg) would be added to your weight.

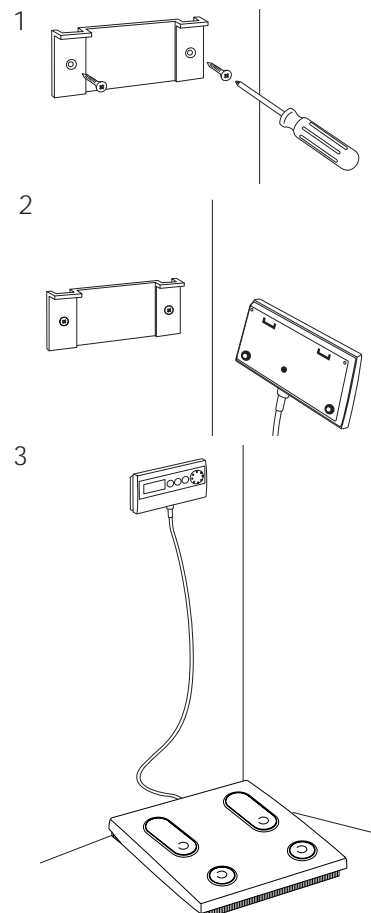
To attach the display box to a wall, follow the steps below.

1. Using a screwdriver, attach the bracket to a wall by inserting the two screws into the holes in the bracket—you may need to pre-drill two holes in the wall.
2. Attach the display box to the bracket by inserting the tabs on the bracket into the holes on the back of the display box.
3. Be sure that the display box is fixed firmly on the bracket. Unless securely attached, the display box may fall off.

## Handling Tips

This monitor is a precision instrument utilizing state-of-the-art technology. To keep the unit in the best condition, follow these instructions carefully:

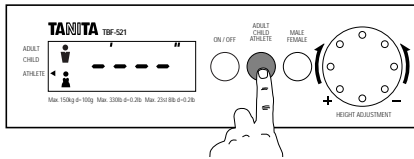
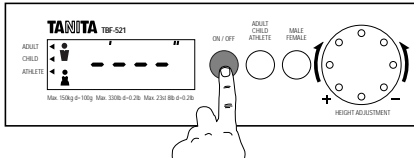
- Do not attempt to disassemble the measuring platform. (Note: this may also void the product warranty)
- Store the platform horizontally, and place the display unit in its wall-mounted bracket, or in another area where it will not be dropped or stepped upon.
- Avoid excessive impact or vibration to the product.
- Place the product in an area free from direct sunlight, heating equipment, high humidity, or extreme temperature change.
- Never submerge the product in water. Use alcohol to clean the electrodes and glass cleaner to keep them shiny, applied to a cloth first; avoid soaps.
- When you change the batteries, exchange all six at the same time with new AA-size batteries.
- Do not place the connector cord in an area where it may be stepped on or accidentally pulled.



# Operating the TBF-521

## 1. Turn on the Power

Press the On/Off button to turn the unit on. The display screen items will appear and the display will flash.



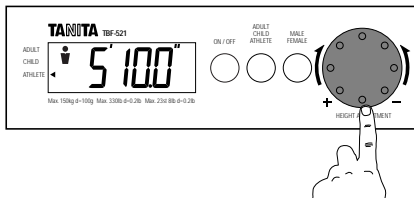
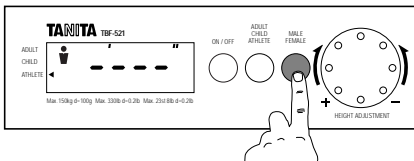
## 2. Select the User Mode: Adult, Child or Athlete

Press the Adult/Child/Athlete button to select the mode that is right for your body type. The arrow on the left side of the display screen will move each time you press the button. Press the button until the arrow points to the appropriate selection.

**Adult:** age 18 or older, with moderately active to inactive lifestyle.

**Child:** up to the age of 18, over 3' 4" (102 cm), with moderately active to inactive lifestyle.

**Athlete:** adult involved in intense physical activity of at least 10 hours per week and who has a resting heart rate of approximately 60 beats per minute or less. (See page 1 for the complete definition of "athlete.")



## 3. Select Male or Female

Press the Male/Female button to enter the appropriate gender.

**Male:**

**Female:**

## 4. Specify the Height

Select the height by turning the height dial.

The display screen should now display "0.0". At this point the unit has been programmed, and is ready to take the readings.

**Note:** The unit has an automatic shut-down function—if you do not step on the platform within 30 seconds of entering your data, the unit will automatically shut off.

## 5. Step On the Platform

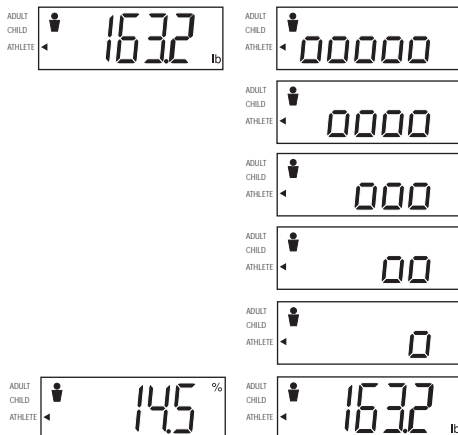
Wait until "0.0" appears on the display screen before stepping onto the platform.

You need to be barefoot, and the soles of your feet need to be clean and dry. Be sure that the heel and ball of each foot is directly on top of the electrodes on the measuring platform. Stand erect on the platform. Accurate readings can still be obtained even if your toes overhang the platform.

Your weight measurement will be shown first. Next, "00000" will appear in the display and then the zeroes will disappear one by one while your body fat percentage is calculated.

Continue to stand erect on the platform. The values of body fat percentage and body weight will now be displayed alternately at two-second intervals. If you remain on the platform, the display will continue for about 30 seconds, and then the power will automatically turn off.

If you step off the platform, the alternating display of body fat percentage and body weight will be repeated three times, and then the power will automatically turn off.





## Getting Accurate Readings

To get the most accurate absolute values, readings should be taken without clothing and under consistent conditions of hydration. If you do not undress, always remove your socks or stockings, and be sure the soles of your feet are clean before stepping on the measuring platform. Stand erect on the platform.

**Note:** An accurate reading will not be possible if the soles of your feet are not clean, if your knees are bent or if you are in a sitting position.

It is best to take readings at the same time of day. Try to wait about three hours after rising, eating, or hard exercise before taking measurements. While readings taken under other conditions may not have the same absolute values, they are accurate for determining the percentage of change as long as the readings are taken in a consistent manner. To monitor progress, compare weight and body fat percentage taken under the same conditions over a period of time.

## Replacing the batteries

When the batteries run low, the “Lo” message will appear on the display window. When this message appears, be sure to replace the batteries immediately, since weak batteries will affect the accuracy of your measurements.

Fresh batteries can last for about one year if a family of four uses the unit once every day.

The unit comes with trial batteries. Their service life may be short.



Batteries run low.

## Specifications

TBF-521

### Weight Capacity

330 lb (150 kg) (21 st-6 lb)

### Weight Increments

0.2 lb (0.1 kg) (0.2 lb)

### Body Fat Increments

0.5%

### Power Supply

DC 6V, AA-size batteries (x 6)—included

### Power Consumption

60 mA maximum

### Measuring Current

50 kHz 500  $\mu$ A

### After Sales Service

Please contact the store at which you bought this monitor for any inquiry regarding operation or trouble, request for repair and/or placement of an order for parts or products. Or call 1-800-TANITA-8 (USA and Canada only).

## Troubleshooting

### If the following problems occur... then...

An unfamiliar weight reading appears followed by kg or st-lb.



The unit's "Weight Mode" has been set to measure weight in kilograms or stone-pounds. If you wish to change the "Weight Mode," refer to "Switching the Weight Mode on page 4.

Nothing appears in the display screen after initial display of preset data.

- Check your foot alignment.
- Make sure that "0.0" appears before stepping on the platform.
- Check to see that the batteries are fresh and are in the correct positions.

The body fat percentage reading does not appear after the weight is measured.

Vibration will interfere with the fat percentage reading. Be sure to stand erect and still on the measuring platform. Do not bend your knees. Be sure that shoes and socks are removed and check foot alignment. Step off and repeat steps on page 5.

The body fat percentage reading is extremely low or extremely high.

Be sure you have entered correct data (Child/Adult/Athlete, Male/Female, Height), and that the soles of your feet are clean and properly aligned with the guides on the measuring platform. Dehydration, foot calluses, etc. will interfere with the fat percentage reading. Step off and repeat steps on page 5.

*If you need further assistance, please visit the Frequently Asked Questions (FAQ) section of our Web site at [www.tanita.com](http://www.tanita.com), or call our toll-free customer service number at 1-800-TANITA-8 (USA and Canada only).*

# Tanita Products Limited Warranty

## Not Valid Without Proof of Purchase

Your Tanita product is warranted to the original consumer only, for three (3) years, to be free from defects in materials and workmanship under normal use. This product is designed **for personal use only**. Tanita Corporation of America reserves the right to nullify the warranty agreement should the product be used in a commercial environment. This warranty is void if the product has been tampered with or mistreated, or if the defect is related to servicing or parts not supplied by us. Our obligation under this warranty is limited solely to the charge of repairing the product, plus the cost of parts or, at the option of Tanita, replacing the product with an equivalent model. There are no express or implied warranties except as listed above.

**Tanita is not liable for incidental or consequential damages for failure or malfunction of the product and any recovery may not be greater than the purchase price paid for this product.** Some states do not allow limitation on how long an implied warranty lasts, or the exclusion or limitation of incidental or consequential damages, so the above limitations may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from state to state. **No person is authorized to change the terms of this warranty.**

### If Product Is Defective or Needs Repair

*Do not return this product to the place of purchase; doing so may delay the processing of your warranty claim.*

Call Tanita at 1-800-TANITA-8 to receive a Return Authorization Number before returning this product. Include \$12.50 for handling, return postage and insurance to the facility listed below. **Proof of purchase must accompany the product.** Because of possible loss, we recommend insuring your product, return receipt requested, when using the mail. If you do not receive a receipt within a reasonable time, start a tracer through the originating post office. It is important that you pack the product carefully prior to shipment to prevent damage in transit and that you include a letter describing in detail the specific condition requiring adjustment or repair.

### Tanita Products Limited After Warranty

All terms and conditions apply as specified above in the original Tanita Limited Warranty **except** for the cost of labor and parts:

- Minimum charge for After Warranty labor is \$30 per hour, plus the cost of parts.
- You will be notified by mail or telephone of the total cost to repair your product to working condition, so prepayment can be arranged.
- Your approval is required before any repair work can be performed on your product.

*Please complete the following information and retain for your records.*

**Model:** \_\_\_\_\_ **Date Purchased:**        /        /

**Purchased From:** \_\_\_\_\_

**Address:** \_\_\_\_\_



*Please send all returns to:*  
**Tanita Corporation**  
2625 S. Clearbrook Drive  
Arlington Heights, IL 60005 USA

QuickMedical is an authorized distributor for Tanita.  
See the full line of tanita at <http://tanitascale.com/>  
Contact QuickMedical at 888-345-4858



[www.tanita.com](http://www.tanita.com)

©2000 Tanita Corporation 7/00 HDI

**Tanita Corporation of Japan**

14-2, 1-Chome, Maeno-Cho  
Itabashi-Ku, Tokyo, Japan 174-8630  
Tel: 03-3968-2123  
Fax: 03-3967-3766  
ISO 9001 Certified

**Tanita Corporation of America Inc.**

2625 South Clearbrook Drive  
Arlington Heights, IL 60005 USA  
Tel: 847-640-9241 Fax: 847-640-9261  
Toll Free: 1-800-TANITA-8  
e-mail: [4health@tanita.com](mailto:4health@tanita.com)

**Tanita France S.A.**

Villa Labrouste  
68 Boulevard Bourdon  
92200 Neuilly-Sur Seine  
Tel: 01 55 24 99 99 Fax: 01 55 24 98 68

**Tanita Health Equipment H.K. Ltd.**

Unit 301-303 3/F Wing On Plaza  
62 Mody Road, Tsimshatsui East  
Kowloon, Hong Kong  
Tel: 852-2838-7111 Fax: 852-2838-8667

**Tanita Europe GmbH**

Dresdener Strasse 25  
D-71065 Sindelfingen, Germany  
Tel: 07031-6189-6  
Fax: 07031-6189-71

**Tanita UK Ltd.**

The Barn, Philpots Close, Yiewsley,  
West Drayton, Middlesex, UB7 7RY, UK  
Tel: 01895-438577  
Fax: 01895-438511