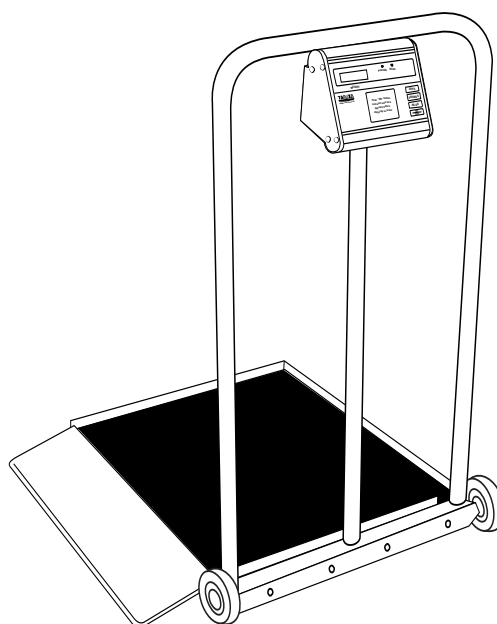


# TANITA

Monitoring Your Health

## Model 4500 Wheelchair Scale

## OPERATOR'S MANUAL



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**T**anita Corporation's Pro Plus line of electronic scales uses the most sophisticated microprocessor technology available. Each precision instrument is designed to provide accurate, reliable and repeatable weight measurements, as well as many other features that make the weighing process simple, fast and convenient.

This operation manual contains instructions for use. In order to achieve satisfactory results, the operator must read this manual thoroughly before using this scale. If any questions arise regarding this scale or its use, please contact Tanita Corporation of America Inc.

## **CAUTIONS AND WARNINGS**

### ***Cautions***

- To ensure proper operation of the 4500 electronic scale, this operator's manual should be reviewed carefully before operation. Keep this manual available for future reference, and also for use in the orientation of new personnel.
- Use only the appropriate connecting cable designed specifically for use with this monitor. If the cabling provided with this unit becomes cracked or damaged, it should be repaired or replaced immediately.
- If the scale becomes damaged, it should not be operated until properly serviced. All repairs should only be performed by authorized Tanita Corporation service personnel.
- Scales are designed for static weighing of patients only. **No scale should be used for patient transfer. Tanita Corporation assumes no responsibility for patient injury or scale damage should this caution be ignored.**
- **Do not leave patients unattended on the scale.**

### ***Warnings***

Failure to comply with the following will void scale warranty:

- Do not gas sterilize or autoclave the scale.
- Do not place liquids on top of the scale read-out console.
- Do not exceed recommended weight limit of **800 lb./363 kg.** for this scale.
- Scales contain delicate sensors. Do not bang into doors, elevators, etc., as damage may result.

## ASSEMBLY INSTRUCTIONS

### Before Assembly

**NOTE:** Carefully inspect all cartons for shipping damage before unpacking. If damage is found, contact your shipper or Tanita Corporation immediately. Claims must be filed with the shipper as soon as possible after receipt of the damaged package.

**One carton containing:** Handlebar with wheels, platform, and 2 parts boxes. (Model 4500 only—separate insert with ramp and front and side rails.)

**One parts box containing:** AC adaptor and storage bracket, C-clamp, twelve (12) locknuts, three (3) cable clamps, hex key, hex bolts, and sheet of adhesive labels.

**Another small box containing:** The electronic control panel box.

**IMPORTANT:** After assembling the scale, charge the battery in the control panel box using the procedure under "Charging the Battery" on page 3. This will restore any power lost during storage and shipment.

**Tools Needed:** Adjustable wrench or 7/16" socket or open-end wrench.

### Assembling the Scale

1. Place the platform on the floor near a table or chair and turn the platform up on its front edge with the platform top (matted surface) facing the table or chair.  
**NOTE:** The front edge of the platform is the 24" side *without* the large hole.
2. Thread the control cable with connector (63826) through the large hole in the back edge of the platform so that the cable is on the outside of the platform.
3. While resting the top portion of the handlebar on the table or chair, fasten the handlebar to the platform with eight 1/4-20 x 5/8" bolts and nuts. (Fig. 1)
4. Screw a leveling foot into each corner of the platform bottom. Leave 1/4" of thread showing.
5. Put the scale back on its feet.

**Model 4500 Wheelchair Scale Only:** Follow steps 6-8 to finish assembly of the Wheelchair Scale.

6. Mount the ramp to the platform edge, and secure by inserting the pin on the side of the ramp into the bushing next to the wheel.
7. Mount the front rail by placing the rail's bushing over the other pin on the ramp. Fasten the rail to the platform with three 1/4-20 x 5/8" hex head bolts. (Fig. 2)
8. Fasten the side rail to the platform side opposite the ramp with three 1/4-20 x 5/8" hex head bolts. (Fig. 2)

Fig. 1

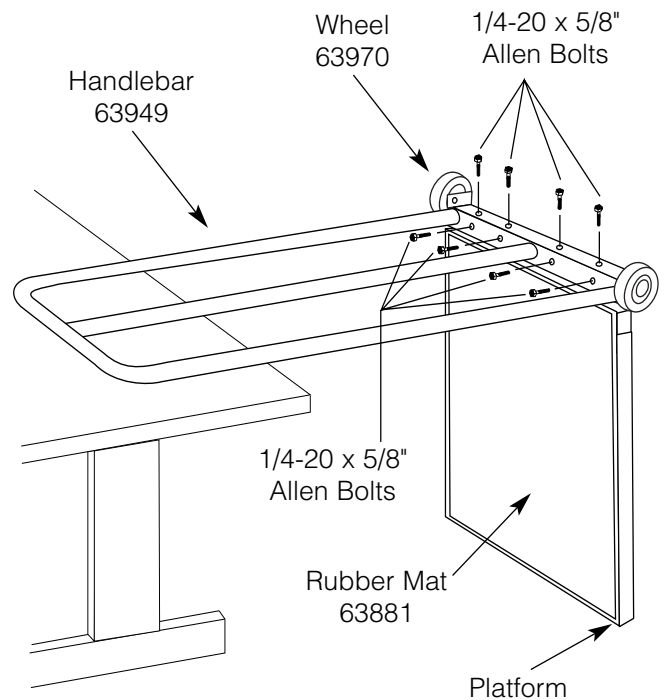
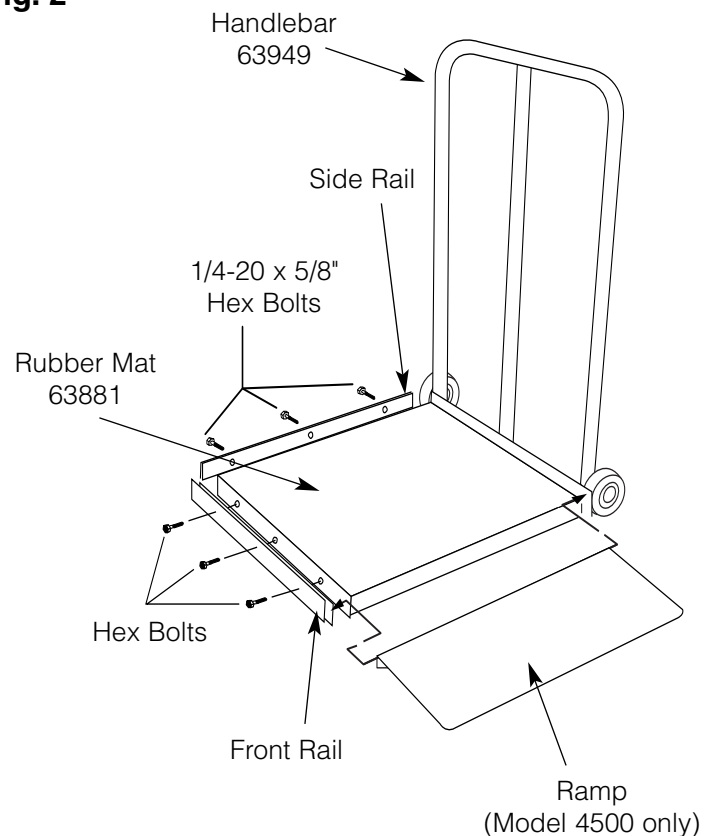
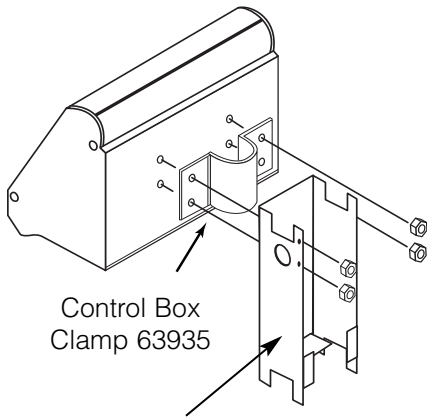


Fig. 2



## Attaching Control Panel Box to Handrail

1. Find the control panel box, transformer bracket, C-clamp and four (4) locknuts.
2. Attach the control panel box to the center handlebar rail using the C-clamp. Also mount the transformer bracket on two of the studs extending through the C-clamp. Secure the control panel box with the (4) locknuts.
3. Attach the cable lead to the 5-prong jack on the side of the control panel box. Secure by turning the knurled ring. Use clips to secure cable to handrail.



Adapter Bracket 63925

## Leveling the Platform

To level or adjust the height of the scale platform, carefully tilt the scale and turn the leveling feet either into or out of the platform underside.

**NOTE:** Adjust platform height so it does not touch floor or carpet. An incorrect weight reading will result if the ramp touches the floor or carpet.

## BATTERY CHARGING

The rechargeable battery in this scale is similar to the no-maintenance lead-acid batteries used in automobiles. Since the battery is sealed, no checking of water level or adding of water to the battery is necessary. However, recharging at proper intervals and proper storage procedures are necessary, similar to an automobile battery. A fully charged battery will provide approximately 250 normal weighings before requiring recharging. When the display flashes "Lo-b," the battery needs to be recharged.

## Charging the Battery

- A. Plug the battery charger power cord into the 3-prong jack on control panel box. Secure to handrail with clips.
- B. Plug the battery charger into a 120 VAC outlet.
- C. The battery will fully charge in 8 hours. **THE SCALE MAY BE USED WHILE THE BATTERY IS CHARGING.**

**NOTE:** The battery cannot be overcharged by the specially designed charger built into this scale. Do not use any other charger or adapter, otherwise **SERIOUS DAMAGE TO THE SCALE OR BATTERY CAN RESULT.**

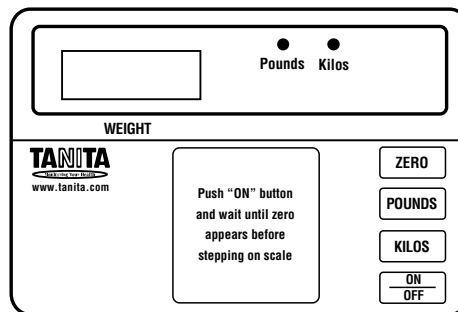
Optimum battery life will be obtained if the scale is operated and stored connected to 120 VAC. Always check plug to see if scale is charging before moving.

**STORAGE:** When storing the scale for an extended period of time (and the unit is not connected to a 120 VAC), the battery should be fully charged. The battery should then be charged every three months. A discharged battery should be recharged as soon as possible to prevent its useful life from decreasing significantly. A discharged battery left in the scale can leak and cause permanent damage to the battery and scale. Store the unit in a cool, dry place.

## PRODUCT DESCRIPTION

### Control Panel Box

The 4500 control panel keypad has four membrane switches. The POUNDS, KILOS, and ZERO switches have both primary and secondary functions listed below. Only the primary functions are listed on the switch.



Keypad 63911

Switch	Primary Function	Secondary Function
<b>On/Off</b>	Depress to turn scale on or off.	
<b>Kilos</b>	Depress to display weight in kilograms (light over switch will illuminate to indicate kilogram mode).	While in Kilos mode, depress for average reading when excessive movement prevents stationary measurement.  Depress after any reading to "lock" reading. Reading remains displayed for approximately 1 minute after patient is removed from scale, or until switch is depressed again. Kilos light will flash to indicate average or locked reading.
<b>Pounds</b>	Depress to display weight in pounds (light over switch will illuminate to indicate pounds mode).	Depress while in Pounds mode to average reading.  Depress after any reading in pounds mode to "lock" in reading. Light will flash to indicate average or locked reading.
<b>Zero</b>	Zeros readout (zeros out the weight of foreign object, e.g. blanket placed on platform).	Depress after initial weight is taken to reweigh individual.

### Special Features

Tanita Corporation's electronic scales come standard with these special features:

- 1. Autozero:** The scale will automatically display "0" when turned on. If a foreign object is placed on the platform before turning the scale on, it will automatically zero out that object's weight.
- 2. English-Metric Readout:** You may switch between metric (kilos) and English (pounds) readouts before or after a reading, and the scale will convert one reading to the other.
- 3. Recalculate Weight:** If the first reading of a patient's weight is suspect, a second reading can be taken without removing the patient from the scale. To reweigh the patient, simply depress the Zero switch.
- 4. Average Weight:** In most cases, the scales display an actual weight based on a series of consistent stable measurements. However, if the wheelchair/patient keeps moving, the scale may not get the readings required to give a "stable weight." In these instances an average weight can be determined by activating the Average Locking feature. Depress the Pounds (or Kilos) switch (dependent upon measurement mode). The indicator light should start flashing. A weight should appear in place of the moving dashes. Depress the Pounds or Kilos switch again to deactivate the feature.
- 5. Zero Ability:** The operator can zero out the weight of a chair, etc., upon which a patient is to be weighed.

### Specifications

#### Dimensions (Transport Position)

Height .....44"  
Width .....23"  
Length .....27"  
Weight (no package included) .....55 lb.

#### Power Requirements

Input Power .....120 VAC/60 Hz  
Rechargeable Battery .....8 Volt  
Minimum Charge Life .....250 Readings  
Recharge Time .....8 Hours

#### Operating Conditions

Temperature/Humidity .....Normal Room  
Temperature and Humidity

#### Scale Description

Type .....Strain Gauge  
Maximum Capacity .....800 lb./363 kg.  
Resolution .....0.1 lb./100 gm.  
Accuracy .....± 0.1 lb./100 gm.  
Maximum Zero Weight .....12.5 lb./5.6 kg.

## OPERATING INSTRUCTIONS

### As a Wheelchair Scale

When using the 4500 Wheelchair Scale, the weight of the wheelchair must be taken into account. Weigh the wheelchair by itself to determine its weight and then subtract this weight from the combined weight of patient and wheelchair.

**IMPORTANT:** *Adjust platform height so that ramp does not touch floor or carpet. An incorrect weight reading will result if the ramp touches the floor or carpet. (See Section "Leveling the Platform" on page 3.)*

### Weighing the Wheelchair

1. Turn scale on by depressing the On/Off switch. Wait for the display to show "0."
2. Roll the empty wheelchair onto the scale. Wait for the moving dashes to lock in and display the weight of the wheelchair.
3. Record the wheelchair weight.
4. Remove the wheelchair from the scale platform and turn scale off.

## Taking a Weight Measurement

1. Turn scale on. Wait for the display to show "0."
2. Wheel the patient onto the scale platform. Then lock the wheels to prevent rolling during weighing.
3. The moving dashes will lock in and display the weight measurement.
  - Measurement automatically defaults to pounds. If kilograms are required, push the Kilos switch.
  - If a reweigh is required, depress the Zero switch.
4. Deduct the wheelchair weight from the displayed weight to obtain the patient's weight.
5. Excessive movement may prevent a repeatable reading. In this case, a series of moving dashes continues to appear on the console rather than a weight reading. If moving dashes persist, activate the "Average Lock" by depressing the appropriate Pounds or Kilos switch to obtain an average reading of the patient's weight.

**NOTE:** *This reading is now an instantaneous average of weights that the computer calculates.*
6. After the weight measurement is obtained and recorded, remove the patient from the scale.
7. Depress the On/Off switch to turn the scale off.

## As a Chair Scale

When using the Wheelchair Scale as a Chair Scale, the weight of the chair used to seat the patient on the scale must be taken into account. This is accomplished by weighing the chair by itself to zero-out its weight.

Failure to correctly zero out the weight of the chair will result in incorrect patient weight readings.

## Weighing the Chair

### METHOD 1

1. Scale is off.
2. Place the empty chair on the scale platform.
3. Turn the scale on. The scale will now zero out the weight of the chair leaving a "0" reading on the display.

### METHOD 2

1. Turn the scale on. Wait for display to read "0."
2. Place the empty chair on the scale platform. The display will read the chair's weight.
3. Depress the Zero button to zero out the weight of the chair. The display should read zero again.

**NOTE:** *The Zero button has a dual function. If the weight of the chair is greater than 12.5 lbs., the scale will reweigh the chair instead of zeroing it out when the button is depressed. IN THIS CASE, YOU MUST USE METHOD 1 TO ZERO OUT THE WEIGHT OF THE CHAIR.*

## Taking a Weight Measurement

1. Once the chair weight has been zeroed out and the display reads "0," have the patient sit on the chair.
2. The moving dashes will lock in and display the patient's weight.
3. Weight measurement should automatically be displayed on the control panel box console.
  - Measurement automatically defaults to pounds. If kilograms are required, push the Kilos switch.
  - If a reweigh is required, depress the Zero switch.
4. Excessive movement may prevent a repeatable reading. In this case, a series of moving dashes continues to appear on the console rather than a weight reading. If moving dashes persist, activate the "Average Lock" by depressing the appropriate Pounds or Kilos switch to obtain an average reading of the patient's weight.

**Note:** *This reading is now an instantaneous average of weights that the computer calculates.*
5. After weight measurement is obtained and recorded, have the patient step off the scale.
6. Depress the On/Off switch to turn scale off.

## As a Stand-on Scale

1. Turn the scale on. Wait for display to read "0."
2. Have the patient step onto the scale platform.
3. The moving dashes will lock in and display the patient's weight.
  - Measurement automatically defaults to pounds. If kilograms are required, push the Kilos switch.
  - If a reweigh is required, push the Zero switch.

**Note:** *This reading is now an instantaneous average of weights that the computer calculates.*
4. Excessive movement may prevent a repeatable reading. In this case, a series of moving dashes continues to appear on the console rather than a weight reading. If the moving dashes persist, activate the "Average Lock" by depressing the appropriate Pounds or Kilos switch to obtain an average reading of the patient's weight.
5. After weight measurement is obtained and recorded, have the patient step off the scale.
6. Depress the On/Off switch to turn scale off.

## CARE AND MAINTENANCE

Proper care and cleaning of all Tanita Corporation scales and accessories is essential to ensure a long life of accurate and effective operation. In addition to routine cleaning, include a regular check of all structural apparatus to ensure stability.

### Cleaning

Disconnect battery charger from scale before cleaning.

1. All external surfaces can be wiped clean with a damp cloth. Mild soap and water solution may be used. Wipe unit dry with a clean, soft cloth.
2. **DO NOT** immerse control panel box into cleaning or other liquid solutions.
3. **DO NOT** use isopropyl alcohol or other solutions to clean surface of control panel box.
4. Check the overall appearance of the whole scale for any obvious damage, wear and tear. Inspect the AC cord and adapter for cord cracking or fraying or for broken or bent prongs.

### Calibration

**Note:** *Your scale has been accurately calibrated at the factory. However, there is always a possibility that the calibration changed due to jarring during shipping. The following procedure should be followed to check and/or correct any error in calibration.*

1. Depress On/Off switch on scale and wait for a display of "0."
2. Place an accurately known weight on the platform.
3. If display is other than known weight, then the scale is out of calibration.
4. Remove the 4 screws nearest the face switch panel (2 on each side — near the aluminum trim). Slightly loosen the remaining 4 screws (2 on each side), **but do not remove**. Lift off the top portion of the head. **Be careful, since it is attached to the bottom portion with a ribbon cable.** Looking at the bottom front of the head (underneath), you will see 2 small adjustment screws. The left metal screw (VR2) is for coarse adjustments; it adjusts for large errors. The right plastic screw (VR1) is for fine adjustments; it adjusts small errors.
5. Turn the metal coarse calibration screw (VR2) in small increments, **CLOCKWISE to increase weight or COUNTERCLOCKWISE to decrease weight**. In most cases, this is the only adjustment needed.
6. If necessary, make adjustments with the right plastic screw (fine adjustment). **CLOCKWISE to decrease weight; COUNTERCLOCKWISE to increase weight.**

7. Remove weight and depress Zero switch. Wait for a display reading of "0." Again add known weight to platform. If reading is correct, no further adjustments are necessary. If reading is incorrect, repeat steps 5 and 6 until correct reading is obtained.

## TROUBLESHOOTING

The following guide will help you to solve common problems:

PROBLEM	SOLUTION
Incorrect patient weight readings	A. Platform too low and hitting platform feet or carpet. Increase platform height. See "Leveling the Platform" on page 3. B. Person, other than person being weighed, touching or leaning on scale handlebar. C. Weight of wheelchair or chair not taken into account. See "Operating Instructions" on page 4. D. Platform not level. See "Leveling the Platform" on page 3.
Display flashes "Lo-b"	Recharge battery. See "Charging the Battery" on page 3.
Patient weight readings consistently too high or too low	Check scale calibration and calibrate if necessary. See "Calibration" on page 6.

# PARTS LIST

## COMPUTER BOARD

Qty	Part Description	Location	Qty	Part Description	Location
1	RES. MOX .47 1W 5%	R4	1	CAP MONO CER .47UF 50V	C22
1	RES. CF 2.7 1/4W 5%	R2	3	CAP TANT 1UF 35V	C3
1	RES. CF 10 1/4W 5%	R12			C14
1	RES. CF 22 1/4W 5%	R7			C16
1	RES. CF 150 1/4W 5%	R29	1	CAP ELE 4.7UF 50V	C2
1	RES. CF 120 1/4W 5%	R6	2	CAP ELE 47UF 25V	C6
2	RES. CF 560 1/4W 5%	R13			C10
		R14	1	CAP ELE 100UF 25V	C11
4	RES. CF 1K 1/4W 5%	R3	3	CAP ELE 470UF 25V	C1
		R5			C7
		R15			C12
		R50	1	CERAMIC RES. 4.00MHz	X1
1	RES. MF 2.00K 1/4W 1%	R48	4	TRANS. PNP PWR 2N6728	Q1
2	RES. CF 2.2K 1/4W 5%	R18			Q2
		R37			Q3
4	RES. CF 3.9K 1/4W 5%	R1			Q4
		R16	2	TRANS. PNP PWR TIP32	Q5
		R22			Q7
		R32	1	TRANS. PNP GEN MPS3702	Q8
2	RES. MF 4.02K 1/4W 1%	R44	13	TRANS. NPN GEN MPS3704	Q6
		R45			Q9
1	RES. CF 4.7K 1/4W 5%	R21			Q10
1	RES. MF 9.31K 1/4W 1%	R49			Q11
2	RES. CF 10K 1.4W 5%	R38			Q12
		R40			Q13
2	RES. CF 15K 1/4W 5%	R27			Q14
		R47			Q15
7	RES. CF 27K 1/4W 5%	R8			Q16
		R9			Q17
		R10			Q18
		R11			Q19
		R17			Q2
		R43	4	DIODE SIGNAL 1N4148	CR1
		R46			CR7
6	RES. CF 33K 1/4W 5%	R19			CR14
		R24			CR15
		R25	1	DIODE ZENER 9.1V 1N4739A	CR2
		R28	10	DIODE REC 600V 1N4005	CR3
		R30			CR4
		R31			CR5
1	RES. CF 150K 1/4W 5%	R26			CR6
		R23			CR8
1	RES. MF 301K 1/4W 1%	R34			CR9
4	RES. MF 402K 1/4W 1%	R35			CR10
		R36			CR11
		R41			CR12
		R42			CR13
1	RES. CF 470K 1/4W 5%	R20	2	IC REG 5V 7805	U1
1	RES. CF 3.3M 1/4W 5%	R39			U2
1	RES. CF 1/4W 5%	R33	1	IC MICROPROCESSOR	U3
1	RES. NETWORK 220	RN1	2	IC DUAL OP-AMP LM358N	U4
1	POT 1K 1 TURN	VR1			U7
1	POT 25K 20 TURN	VR2	1	IC HEX INV BF CD4049UBE	U5
1	CAP CER NPO 22PF 50V	C4	1	IC QUAD B SW CD4016BE	U6
1	CAP CER 100PF 50V	C5	1	IC OP-AMP ICL7652CPD	U8
1	CAP CER .001UF 50V	C18	1	IC DUAL COMP LM393N	U9
1	CAP MY .001UF 100V	C9	2	HEADER 2PIN .156C	J2
1	CAP PS AX .0047UF 50V	C17			J3
1	CAP TANT 4.7UF 25V	C15	1	HEADER 5PIN .156C	J5
3	CAP MONO CER .1UF 50V	C19	1	IC SOCKET 16PIN	J1
		C20	1	IC SOCKET 28PIN	U3
		C8	1	HEATSINK TO-220	Q7
1	CAP PC AX .1UF 100V	C21	4	SCREW, 4-40 X 3/8	
1	CAP MONO CER .22UF 50V	C13	4	NUT, 4-40 KEPS	

## DISPLAY BOARD

Qty	Part Description
1	RES.CF 120 1/4W 5%
1	RES. CF 10K 1/4W 5%
1	TRANS. NPN GEN MPS3704
2	LED DISCRETE T-1 3/4 RED
4	7-SEG DISPLAY
4	IC SOCKET, 14 PIN
1	HEADER, 6 PIN .100C RT
3	JUMPER, .6 IN 22ga
1	RIBBON CABLE, 16 COND

## PARTS AND ACCESSORIES

Description	Part No.
Battery Transformer/AC Adapter	63812
Rechargeable Battery	63648
Display Board w/cable	63663
7 Segment Display	63999
R4	63878
Ramp Kit	63866
Wheel	63970
Handlebar	63949
Control Box Clamp	63935
Transformer Cable with Connector	63826
3-Prong Jack	63894
5-Prong Jack	63932
Adapter Bracket	63925
Rubber Mat	63881
Shipping Carton	63984

\* Value may change depending on gain requirements of scale model



## **WARRANTY**

Tanita Corporation ("Tanita") warrants that for a period of three years from the date of purchase, this product will be free from defects in material and workmanship. This warranty covers all components of this scale, with the exception of the AC adapter. The AC adapter is warranted for one year. Tanita, at its option, will repair or replace this product or any component of the product found to be defective during the warranty period. Replacement will be made with a new or remanufactured product or component. If the product is no longer available, replacement may be made with a similar product of equal or greater value. This is your exclusive warranty.

This warranty is valid for the original purchaser from the date of initial purchase and is not transferable. Tanita dealers, service centers, or retail store outlets selling Tanita products do not have the right to alter, modify or in any way change the terms and conditions of this warranty.

The warranty does not cover normal wear of parts or damage resulting from negligent misuse of the product. Further, the warranty does not cover Acts of God, such as fire, flood, hurricanes, and tornadoes.

Tanita shall not be liable for any incidental or consequential damages caused by the breach of an express or implied warranty or condition. Except to the extent prohibited by applicable law, any implied warranty of merchantability or fitness for a particular purpose is limited in duration to the duration of the above warranty. Tanita disclaims all other warranties or conditions, express or implied statutory or otherwise. Some provinces or jurisdictions do not allow the exclusion or limitation of incidental or consequential damages or limitation on how long an implied warranty lasts, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights, and you may also have other rights that vary from state to state or province to province.

### ***How to Obtain Warranty Service***

Call (877) 682-6482 to obtain a Return Authorization for warranty service. Then, send the product with proof of purchase included. Ship with freight and insurance prepaid to:

Tanita Corporation of America Inc.  
Attn: R/A # \_\_\_\_\_  
102 Progress Drive  
Saukville, WI 53080

Make certain that your scale is properly packed to avoid damage in transit to the factory. If your scale is not covered by warranty, or has been damaged, an estimate of repair costs or replacement costs will be provided to you for approval prior to servicing or replacing.



**Tanita Corporation of America, Inc.**  
2625 South Clearbrook Drive  
Arlington Heights, IL 60005  
Toll Free: (877) 682-6482  
Direct: (847) 640-9241  
Fax: (847) 640-7978