Jewelry Scale

INSTRUCTION MANUAL

HT-500GD

A&D
A&D Company, Limited

SAFETY PRECAUTIONS

All safety messages are identified by the following, "**WARNING**" or "**CAUTION**", of ANSI Z535.4 (American National Standard Institute: Product Safety Signs and Labels). The meanings are as follows:

⚠ WARNING	A potentially hazardous situation which, if not avoided, could result in death or serious injury.
⚠ CAUTION	A potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

- ❑ This manual is subject to change without notice at any time to improve the product.
- ❑ Product specifications are subject to change without any obligation on the part of the manufacture.
- ❑ When using the scale, the following safety precautions should always be followed.

⚠ WARNING

Repairs

Do not disassemble the scale. Contact your local A&D dealer if your balance needs service or repair.

Troubleshooting

If a problem has occurred and you cannot clear it, stop using the scale, place a notice on the scale and request service from the store where you purchased the balance or from your local A&D dealer.

⚠ CAUTION

Conditions for use and Ambient Temperature

- ❑ The scale is a precision instrument. Avoid installing the scale in direct sunlight, excessive dust, high humidity, high temperature, large temperature fluctuations or magnetic fields, which may cause problems or malfunctions.
- ❑ Drafts and vibration may cause excessive weighing errors.
- ❑ Use the scale range of the -10°C to 40°C, with less than 85% R.H.

Operation

- ❑ Avoid using the weighing pan to move the scale, as that could cause damage to the scale.
- ❑ Avoid overloading that could cause damage to the scale.
- ❑ The scale is not waterproof type. Water invading into the scale may cause damage.
- ❑ If the scale is not to be used for a long period of time, remove all batteries from the battery compartment to avoid battery leakage.
- ❑ Do not mix batteries made by different manufactures, or mix old and new batteries. Replace all of the batteries at one time.
- ❑ Use only the specified AC adapter for the scale (AC adapter is optional).
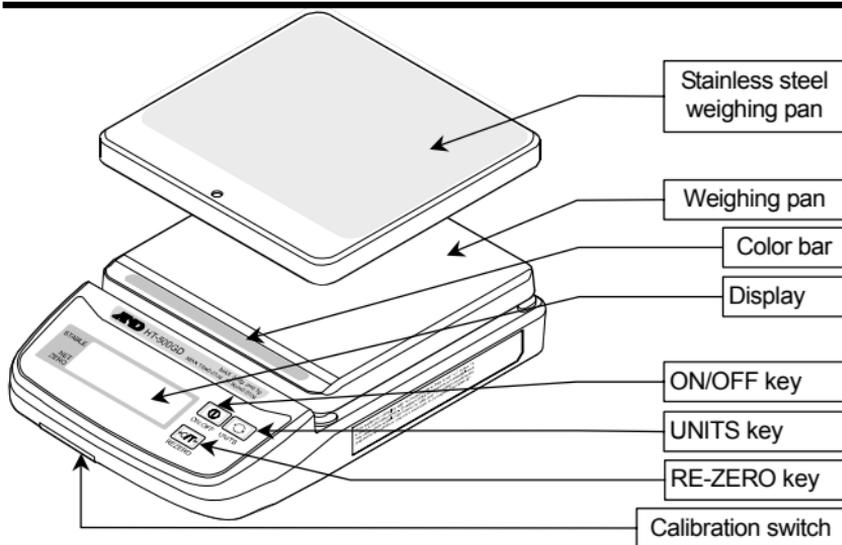
Compliance with FCC rules

Please note that this equipment generates, uses and can radiate radio frequency energy. This equipment has been tested and has been found to comply with the limits of a Class A computing device pursuant to Subpart J of Part 15 of FCC rules. These rules are designed to provide reasonable protection against interference when the equipment is operated in a commercial environment. If this unit is operated in a residential area it may cause some interference and under these circumstances the user would be required to take, at his own expense, whatever measures are necessary to eliminate the interference. (FCC = Federal Communications Commission in the U.S.A.)

PARTS DESCRIPTION

Stainless steel weighing pan

Weighing pan

Color bar

Display

ON/OFF key

UNITS key

RE-ZERO key

Calibration switch

STABLE indicator

Negative sign

NET indicator

ZERO indicator

Weighing units

Battery indicator

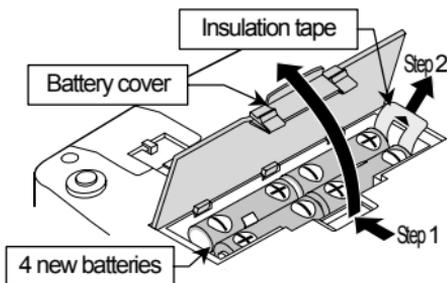| ⏻	The ON/OFF key turns the scale power on/off.
→0/T←	The RE-ZERO key sets the display to zero or subtracts the weight of a container in the weighing mode. The RE-ZERO key selects a parameter in the preset modes.
⟳	The UNITS key changes weighing units in the weighing mode. The UNITS key selects item in the preset modes.
STABLE ○	The STABLE indicator ○ indicates when the reading is stable in the weighing mode. The STABLE indicator ○ indicates active units in unit selection.
NET ◄	The NET ◄ indicates when the net weight is displayed.
ZERO ◄	The ZERO ◄ indicates when the scale zero is correct.
🔋 🔋 🔋	Battery remaining level, shown after power-on only.

Errors

E	Overload.
-----	The scale zero is out of range.
Lb	Low battery. Replace used batteries with four new ones immediately.
CALE	Calibration error. The weighing of zero or calibration mass is out of range.

PREPARATION

Installing batteries
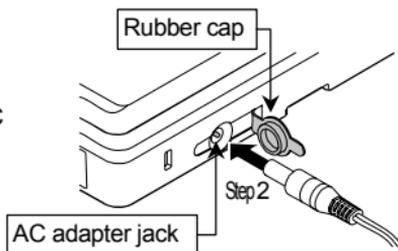
Step 1 Remove the battery cover.

Step 2 Before use, remove the insulation tape from the battery compartment.

Step 3 Insert 4 new batteries (AA size) into the battery compartment, taking extreme care of the polarities.

Step 4 Replace the battery cover.

Note The batteries provided with the scale are for testing the performance of the scale and may have a limited life.

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When using the AC adapter

Step 1 Verify that the AC adapter is correct.

Step 2 Open the rubber cap and plug the AC adapter into the AC adapter jack.

Rubber cap

Step 2

AC adapter jack

WEIGHING

Step 1 **Turning the scale on / off**
Press the ON/OFF key to turn the scale on.
The scale displays all segments for a few seconds and then displays zero.
Press the ON/OFF key again to turn the scale off.

Step 2 **Selecting the weighing unit**
Press the UNITS key to select the weighing unit.
The scale will power up with the weighing unit that was in use when last turned off.

Step 3 **Weighing**
❑ Verify that the reading is zero. If not, press the RE-ZERO key to zero the display.
❑ If you use a container for weighing, place an empty container on the weighing pan and press the RE-ZERO key to zero the display.
❑ Place the objects to be weighed on the weighing pan or in the container. When the reading becomes stable, the STABLE indicator ○ is displayed.

FUNCTIONS

Automatic Power Off Function

If the scale is left ON and the STABLE indicator is displayed, the automatic power-off function turns power off after approximately 5 minutes.

Step 1 **Entering the preset mode.**
Press the ON/OFF key while pressing the RE-ZERO key.

Step 2 **Selecting the status.**
Press the RE-ZERO key to disable or enable this function.
$\boxed{P_{u}FF0}$ Automatic power off function is disabled
$\boxed{P_{o}FF1}$ Automatic power off function is enabled.

Step 3 **Storing the status.**
Press the UNITS key. The scale displays $\boxed{End}$ and returns to the weighing mode.

Storing Weighing Units

❑ Among the units, those available for the user have been set at the factory before shipping. The unit can be selected in the preset mode. Refer to the table on the page 6 for the order of the units available, while skipping the units that are not available. Select and store the weighing units as described below.

❑ It is also possible to specify the display unit that will be shown first when the scale is turned on.

❑ Either Tael (HK general, Singapore) or Tael (Taiwan) can be selected.

Step 1 **Entering the preset mode.**
Press the ON/OFF key while pressing the UNITS key.
Press the RE-ZERO key.

Step 2 **Selecting units.**
UNITS key   Select the unit.
RE-ZERO key   The STABLE indicator **o** indicates when to enable the unit.
              Select to disable or to enable the unit.
              ex. $\boxed{{}^{o}Un\,it\ \textbf{g}}$ or $\boxed{Un\,it\ \textbf{g}}$.

Step 3 **Storing units.**
Press the UNITS key to display $\boxed{End}$.
Press the RE-ZERO key to return to the weighing mode.

Unit	Unit name	Conversion to gram	At preset mode
g	Gram	1 g	$Unit\ g$
t	Tola (India)	11.6638038 g	$Unit\ t$
OZ	Ounce (Avoir)	28.349523125 g	$Unit\ OZ$
OZt	Troy Ounce	31.1034768 g	$Unit\ OZt$
lb	Pound (UK)	453.59237 g	$Unit\ lb$
tl	Tael (Taiwan)	37.5 g	$Unit\ tl$
	Tael (HK general, Singapore)	37.7994 g	$Unit\_tl$
dwt	Pennyweight	1.55517384 g	$Unit\ dwt$
ct	Metric Carat	0.2 g	$Unit\ ct$

☐ Newton **N** is a value calculated as follows:
Newton = (weight in gram) x (9.80665 m/s^2) / 1000.

Selecting The Decimal Point

Step 1 Entering the preset mode.
Press the ON/OFF key while pressing the UNITS key.
Press the UNITS key to display the current decimal point.
$Pnt\ .$ or $Pnt\ ,$.

Step 2 Selecting a decimal point.
Press the RE-ZERO key to select decimal point ▫ or ▫.

Step 3 Storing the decimal point.
Press the UNITS key to display End .
Press the RE-ZERO key to return to the weighing mode.

Setting The Stability

Step 1 Entering the preset mode.
Press the ON/OFF key while pressing the UNITS key.
Press the UNITS key to display the current setting. $Fir\ 0$ or $Fir\ 1$.

Step 2 Selecting a filter.
Press the RE-ZERO key to select $Fir\ 0$ or $Fir\ 1$ for the filter response.

Step 3 Storing the selected filter response.
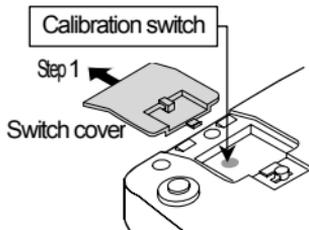Press the UNITS key to display End .
Press the RE-ZERO key to return to the weighing mode.

CALIBRATION

When is Calibration Required?

Calibration may be required when the scale was initially installed or has been moved to another location.

Calibration switch

Step 1

Switch cover

Calibration Using a Calibration Weight

Step 1 **Entering the calibration mode**

Remove the switch cover located on the bottom of the scale.

Press the ⌈ON/OFF⌋ key to turn the scale on.

Press the ⌈Calibration⌋ switch while the scale is in the weighing mode.

⌈ *CAL* ⌋ will be displayed.

Step 2 **Zero calibration**

Press the ⌈RE-ZERO⌋ key. ⌈° *CAL0* ⌋ will be displayed.

Wait for the STABLE indicator ○ to be displayed with nothing on the weighing pan.

Press the ⌈RE-ZERO⌋ key to perform zero calibration.

⌈° *CALF* ⌋ will be displayed after a few seconds.

Select next step as follows:

■ Proceed to the span calibration of Step 3.

■ Press the ⌈UNITS⌋ key to return to the weighing mode without performing span calibration.

Step 3 **Span calibration**

When ⌈° *CALF* ⌋ is displayed, place the calibration weight on the center of the weighing pan.

Wait for the STABLE indicator ○ to be displayed.

Press the ⌈RE-ZERO⌋ key to perform span calibration.

⌈ *End* ⌋ will be displayed and the scale will automatically return to the weighing mode.

Remove the calibration weight from the weighing pan.

Note For details about the calibration weight, Refer to "**SPECIFICATIONS**".

Calibration by Gravity Compensation

If the acceleration of gravity at your location is not correct and you do not have calibration weights, the scale can be calibrated by compensating for the acceleration of gravity. Refer to "**The Value of Gravity at Various Locations**".

Step 1 **Setting a new acceleration value**

Press the ⌷ON/OFF⌷ key to turn the scale on.

Press the ⌷Calibration⌷ switch while the scale is in the weighing mode.

Press the ⌷UNITS⌷ key when ⌷ `CAL` ⌷ is displayed. The current acceleration value will be displayed. ex. ⌷ `9788` ⌷ .

Change the value with following keys.

⌷RE-ZERO⌷ key   Increments the blinking digit.

⌷UNITS⌷ key   Moves the blinking digit.

Step 2 **Storing the value into the memory**

While pressing the ⌷UNITS⌷ key, press and hold the ⌷RE-ZERO⌷ key and release the ⌷UNITS⌷ key.

After ⌷ `End` ⌷ , ⌷ `CAL` ⌷ will be displayed.

Turn the scale off to finish the procedure.

SPECIFICATIONS

MODEL	HT-500GD
Weighing capacity	510 g
Resolution	0.1 g
Non-linearity	±0.2 g
Repeatability (Std. deviation)	0.1 g
Span drift	±150 ppm/°C (5°C to 35°C / 41°F to 95°F)
Operating temp.	−10°C to 40°C / 14°F to 104°F, Less than 85%RH
Display	13.5 mm / 0.53 inches, 7segment liquid crystal display
Display update	Approximately 10 times per second
Power supply	4 x R6P / LR6 / "AA" size batteries or AC adapter
Battery life	Approximately 450 hours with alkaline cells at 20°C / 68°F
Pan size	132 (W) x 130 (D) mm 5.2 (W) x 5.1 (D) in.
Dimensions	195 (W) x 136 (D) x 44 (H) mm 7.7 (W) x 5.4 (D) x 1.7 (H) in.
Approximately weight	610 g
Max. Tare weight	510 g
Calibration weight	500 g ±0.01 g
Accessories	3 color bars, stainless steel weighing pan, this manual, 4 "AA" size monitor batteries
Options	AC adapter

Gravity Acceleration At Various Locations

Amsterdam	9.813 m/s^2	Madrid	9.800 m/s^2
Athens	9.807 m/s^2	Manila	9.784 m/s^2
Auckland NZ	9.799 m/s^2	Mexico City	9.779 m/s^2
Bangkok	9.783 m/s^2	New York	9.802 m/s^2
Brussels	9.811 m/s^2	Milan	9.806 m/s^2
Buenos Aires	9.797 m/s^2	Oslo	9.819 m/s^2
Calcutta	9.788 m/s^2	Ottawa	9.806 m/s^2
Cape Town	9.796 m/s^2	Paris	9.809 m/s^2
Chicago	9.803 m/s^2	Rio de Janeiro	9.788 m/s^2
Copenhagen	9.815 m/s^2	Rome	9.803 m/s^2
Nicosia	9.797 m/s^2	San Francisco	9.800 m/s^2
Jakarta	9.781 m/s^2	Singapore	9.781 m/s^2
Frankfurt	9.810 m/s^2	Stockholm	9.818 m/s^2
Istanbul	9.808 m/s^2	Sydney	9.797 m/s^2
Havana	9.788 m/s^2	Taipei	9.790 m/s^2
Helsinki	9.819 m/s^2	Tokyo	9.798 m/s^2
Kuwait	9.793 m/s^2	Vancouver, BC	9.809 m/s^2
Lisbon	9.801 m/s^2	Washington DC	9.801 m/s^2
London (Greenwich)	9.812 m/s^2	Wellington NZ	9.803 m/s^2
Los Angeles	9.796 m/s^2	Zurich	9.807 m/s^2