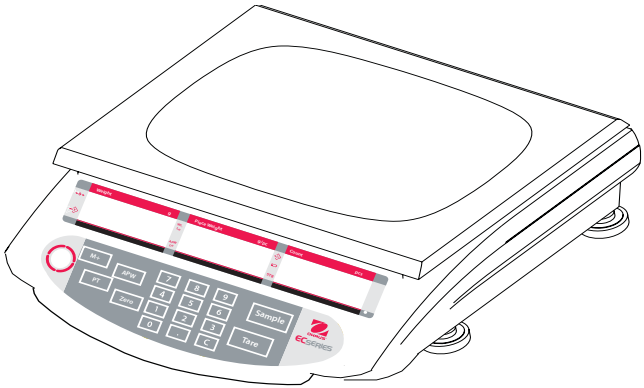
EC Series
Instruction Manual



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1 INTRODUCTION

This manual contains installation, operation and maintenance instructions for the EC Series counting scale. Please read the manual completely before installation and operation.

1.1 Product Description

The EC Series is an economical compact counting scale designed for fast, accurate operation ideally suited for annual inventories, parts rooms, rentals and other counting applications. Combining an internal accuracy of 1:600,000, Average Piece Weight (APW) of 0.01g/0.00002lb to 0.1g/0.0002lb (depending on model) and an internal rechargeable battery, the Ohaus EC Series scale offers accuracy, durability and portability in one easy-to-use design.

1.2 General Features

- ☑ Capacity models: 3000g/6lb, 6000g/15lb, 15000g/30lb, 30000g/60lb with maximum displayed resolution of 1:30,000.
- ☑ Stainless steel weighing pan
- ☑ Durable plastic housing with protective cover
- ☑ 3-window, backlit LCD with prominent 19mm high digits
- ☑ Fast display of Weight, Average Piece Weight (APW) and Parts Count.
- ☑ Gram or pound weighing units
- ☑ Low sample weight and APW indication
- ☑ Full counting keypad with numeric keys
- ☑ Dedicated TARE and SAMPLE keys for simple and fast operation
- ☑ Accumulator function for weight and parts count
- ☑ Adjustable filtering level for weighing under various conditions
- ☑ Auto-optimization recalculates APW constantly for enhanced counting accuracy
- ☑ 10-APW memory locations
- ☑ 80-hour Internal rechargeable battery with power-saving Auto-shut off feature

1.3 Safety Precautions

For safe and dependable operation of this scale, please comply with the following safety precautions:

- ☑ Verify that the input voltage printed on the AC Adapter and the plug type matches the local AC power supply.
- ☑ Make sure that the power cord does not pose a potential obstacle or tripping hazard.
- ☑ Disconnect the scale from the power supply when cleaning the scale.
- ☑ Do not operate the scale in hazardous or unstable environments.
- ☑ Do not immerse the scale in water or other liquids
- ☑ Do not drop loads on the platform.
- ☑ Use only approved accessories and peripherals, as available.
- ☑ Operate the scale only under ambient conditions specified in these instructions.
- ☑ Service should be performed by authorized personnel only.

2 INSTALLATION

2.1 Unpacking

Unpack and verify that the following components have been included:

- ☑ EC Scale
- ☑ Weighing Platform (plastic base with stainless steel pan)
- ☑ Instruction Manual
- ☑ AC Adapter

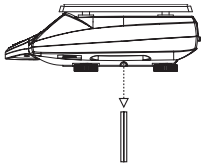
Save the packaging material. This packaging ensures the best possible protection for the storage or transport of the product.

2.2 Installing Components

Position the weighing platform pins into the through-holes on the top housing, then set the platform securely into place. Secure the in-use cover with double-sided tape as needed.

IMPORTANT:

- ☑ **BEFORE USING THE SCALE, REMOVE THE SHIPPING PROTECTION SCREW** located underneath the scale. This screw ensures protection of the load cell during transport, but will need to be removed for the scale to operate properly.



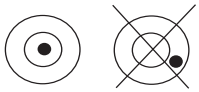
- ☑ It is recommended that the protective screw be re-installed if transporting the scale. Do not over-tighten the protective screw as it may damage the load cell. To re-install, turn the scale on and place a 500g weight on the pan, then slowly screw in the protection screw until the display shows a value between 250g to 400g.

2.3 Selecting the Location

Operate the scale on a firm, level surface. Avoid locations with rapid temperature changes, excessive dust, moisture, air currents, vibrations, electromagnetic fields, heat or direct sunlight.

2.4 Leveling the Scale

Adjust the leveling feet until the bubble is centeredin the circle of the level indicator (located on the front panel).



NOTE: Ensure that the scale is level each time its location is changed.

2.5 Connecting Power

2.5.1 AC Power

Verify that the intended AC power source matches the AC adapter rating. Connect the supplied AC adapter to the power input receptacle underneath the scale. Plug the AC adapter into a properly grounded power outlet.

2.5.2 Battery Power

The battery will begin charging with the AC adapter connected accordingly. An LED indicator below and to the right of the Count window shows the status of battery charging:

- Green – battery is fully charged
- Yellow – battery is partially charged and charging
- Red – battery is nearly discharged

When AC power is not available, the scale will operate on the internal rechargeable battery. The scale will automatically switch to battery operation if there is a power failure or the power cord is removed. Low battery charge is indicated by the annunciator (the scale will operate for approximately 10 hours more before automatically switching off).

Before using the scale for the first time, the internal rechargeable battery should be fully charged for up to 12 hours. A fully charged battery can operate the scale for approximately 80 hours independent of AC power. The scale can be operated during the charging process. The battery is protected against overcharging and the scale can remain connected to the AC power line.

NOTES:

☑ The battery must be recharged every 3 months if the scale is not used for a long time.

☑ Dispose of the lead acid battery according to local laws and regulations

CAUTION

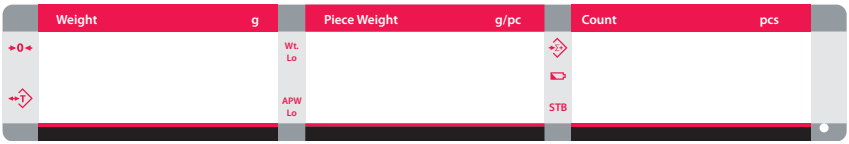
BATTERY IS TO BE REPLACED ONLY BY AN AUTHORIZED OHAUS SERVICE DEALER. RISK OF EXPLOSION CAN OCCUR IF REPLACED WITH THE WRONG TYPE OR CONNECTED IMPROPERLY

2.6 Initial Calibration

When the scale is operated for the first time, a Span Calibration is recommended to ensure accurate weighing results. Before performing the calibration, be sure to have the appropriate calibration weights.

Refer to *Section 6* for Span Calibration procedures.

3 OVERVIEW OF CONTROLS AND FUNCTIONS
3.1 Display Symbols



"WEIGHT"
- Weight Window - displays weight of object on weighing pan, or accumulated weight value

→0←
- Center of Zero Indication

→T←
- Tare or Pre-set Tare (PT) Indication

"PIECE WEIGHT"
- Piece Weight Window - displays the Average Piece Weight (APW) value, or number of weighments

"Wt. Lo"
- Low Sample Weight Indication - total sample weight is less than 10 display divisions, add more samples for more accurate reading

"APW Lo"
- Low Average Piece Weight Indication - calculated APW is less than 1/10 display divisions, unit weight is too small for ensuring accurate quantity calculations

"COUNT"
- Piece Count Window - displays the calculated number of pieces on the weighing pan, or accumulated piece count value

→Σ+
- Scale is in Accumulation mode

- Low battery charge, recharge battery

"STB"
- Stable Indication, scale is in stable condition

o LED
- Battery Charging Indication:
  - o Green – battery is fully charged
  - o Yellow – battery is partially charged and charging
  - o Red – battery is nearly discharged

3.2 Controls and Functions

Sample	• Inputs the indicated sample size and weight to calculate APW
Tare	• Inputs the weight of the object on the weighing pan as a Tare value • Long press – enters user setup mode
APW	• Inputs the indicated unit weight value entered via the numeric keypad
Zero	• Zeros the display • Long press – initiates calibration
PT	• Inputs the indicated value entered via the numeric keypad as a Pre-set Tare value
M+	• Adds the indicated weight or piece count value into Accumulation memory • Long press - recalls and displays the total Accumulation data: weight, count and number of weighments
C	• Clears the indicated input values
0-9-.	• 11 x Numeric keys, 0-9 and decimal point

4 OPERATIONS

4.1 Switching the Unit On and Off

The power switch is located underneath the right-hand side of the scale. Push the switch to the "I" position to turn the scale on, and to the "O" position to turn the scale off. Allow 15-30 minutes for the scale to warm up before use.
NOTE: Make sure the weighing pan is empty before turning the scale on.

4.2 Manual Tare

Tare is indicated by the ⇔T annunciator.

Place the container on the weighing pan (ex. 100g), then press **TARE**. "tARE" will be displayed momentarily before the weight is tared.

Weight g	Piece Weight g/pc	Count pcs
100.0	0.	0.
------	tArE	------
0.0	0.0	0.

4.3 Pre-set Tare

Pre-set Tare is a known tare value entered via the numeric keypad
Pre-set Tare is indicated by the ⇔T annunciator.

With an empty pan:
Press **PT**, "PrEtA" will flash on the display. Enter a numeric value (ex. 200g), then press **PT**. The Pre-set Tare will be displayed as a negative value (no weight on the pan).

Weight g	Piece Weight g/pc	Count pcs
0.0	PrEtA	------
200.0	PrEtA	------
-200.0	0.	------

With an existing weight on the pan (ex. 250g):
Press **PT**, "PrEtA" will flash on the display. Enter a numeric value (ex. 200g), then press **PT**.
The Net weight will be displayed.
When the weight is removed from the pan, the negative weight displayed is the Pre-set Tare value.

Weight g	Piece Weight g/pc	Count pcs
250.0	0.	0.
0.0	PrEtA	------
200.0	PrEtA	------
50.0	0.	0.
-200.0	0.	------

NOTE: To clear the Tare or Pre-set Tare value, press **TARE** with the pan empty.

4.4 Zero Operation

Center of Zero is indicated by the →0← annunciator.

Press **ZERO** to zero the weight display.
"CEntr" will be displayed momentarily before the display is zeroed.

Weight g	Piece Weight g/pc	Count pcs
------	CEntr	------
0.0	0.	0.

4.5 Sampling, Calculating Average Piece Weight (APW)

Place the desired sample onto the weighing pan (or into a tared container) (ex. 3000g).
Press **SAMPLE**. "SAmP" will be displayed momentarily before the calculated APW is confirmed (based on the last sample size entered or ex-factory default 10 if used for the first time).
Or, enter a new sample size (ex. 50) via the numeric keypad before pressing **SAMPLE**.

Weight g	Piece Weight g/pc	Count pcs
3000.0	0.	0.
3000.0	SAmP	------
3000.0	300.000	10.
3000.0	50.	**60.**
3000.0	SAmP	------
3000.0	60.0000	50.

NOTES:
- ☑ The larger the sample size, the more accurate the APW.
- ☑ The sample size entered is retained even after the unit is turned off.
- ☑ Unless stored into memory (refer to *Sec.4.7*), Piece Weight values are not retained when the unit is turned off.

4.6 Entering a Known Piece Weight

Enter the value of a known piece weight via the numeric keypad (ex. 40g/pc.), then press **APW** (with a weight on the pan, the piece count is automatically calculated and displayed).

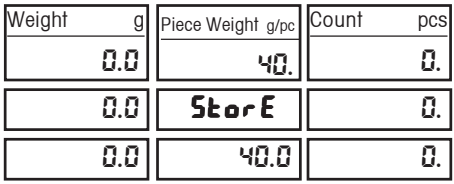
Weight g	Piece Weight g/pc	Count pcs
0.0	40.	**0.**
0.0	40.	0.

NOTES:
- ☑ To clear the Piece Weight value, press **C**.
- ☑ "**Wt. Lo**" annunciator will turn on if the total sample weight is less than 10 display divisions. Add more samples for a more accurate or stable reading.
- ☑ "**APW Lo**" annunciator will turn on if the APW value is less than 1/10th display divisions. Increase the piece weight value for more accurate results.
- ☑ Initate entry of decimal values with a "0". For example. 0.5g is entered as "0" "." "5".

4.7 Storing Piece Weight into Memory

There are 10 memory locations (0 to 9 numeric keys) available to store APW values.

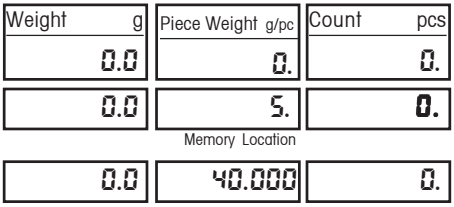
After determining the piece weight (refer to *Sec. 4.5 or 4.6*), long-press **APW** for approx. 2 seconds. "StorE" will flash on the display.
Press any one of the numeric keys to store the piece weight data in this selected location.



NOTE: Stored APW values are retained when the unit is turned off.

4.8 Recalling Piece Weight from Memory

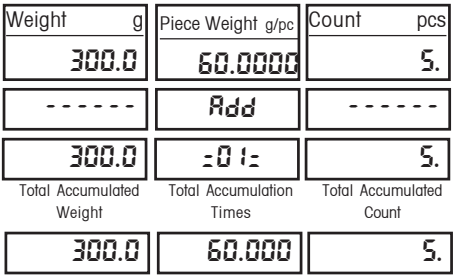
Press the numeric key (ex. location 5) with the stored piece weight data (ex. 40 g/pc), then press **APW** two times. The stored data will be uploaded and displayed.



4.9 Accumulation: Weight and Quantity

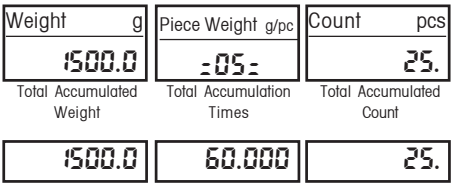
Accumulation is indicated by the →Σ+ annunciator.

Place the item to be weighed/counted on the pan (ex. 300g with APW of 60g). Press **M+**. "Add", then the accumulation event is displayed momentarily before reverting to normal weighing mode.
NOTE: Weight display must return to zero before the next accumulation can register.



To recall Total Accumulation data, press **M+** with no weight on the pan. The data is displayed momentarily before reverting to normal weighing mode.

To clear the Total Accumulation data, press **C** while the data is displayed.



NOTE: Accumulation data is not retained when the unit is turned off.

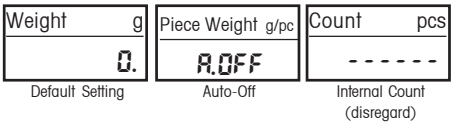
5 SCALE SETTINGS

- ☑ Long-press **TARE** to enter into the user-selectable scale settings (Setup mode).
- ☑ In Setup mode:
  - o Press **Sample** to step through available settings
  - o Press **Tare** to accept the displayed setting and proceed to the next Setup parameter
- ☑ Press **C** at any time to exit from the Setup mode.
- ☑ Re-start the scale after changing settings in the Setup mode

The following parameters are available:

5.1 Auto-Off

Sets the period of inactivity before the scale automatically turns off.
The following settings are available:
0 = Off, 2, 5, 8 (minutes)



Default Setting | Auto-Off | Internal Count (disregard)

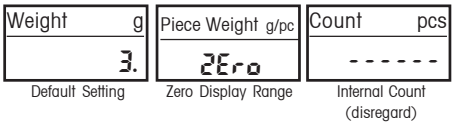
5.2 Zero Tracking Range

Sets the range in which the zero reading is maintained.
The following settings are available:
0 = Off, 1 = 0.5d, 2 = 1d, 3 = 2d, 4 = 3d
(d = scale division)

Default Setting | Zero Tracking Range | Internal Count (disregard)

5.3 Zero Display Range

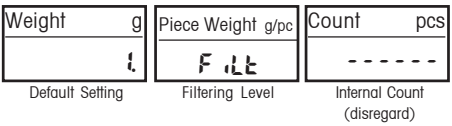
Sets the range in which the Zero indication turns on.
The following settings are available:
0 = Off, 1 = 0.5d, 2 = 1d, 3 = 2d, 4 = 3d
(d = scale division)



Default Setting | Zero Display Range | Internal Count (disregard)

5.4 Filtering

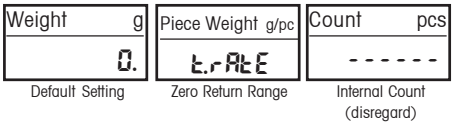
Sets the level in which the Stable indication turns on; the higher the setting, the faster stabilization time.
The following settings are available:
0, 1, 2, 3, 4, 5 (level)



Default Setting | Filtering Level | Internal Count (disregard)

5.5 Zero Return Range

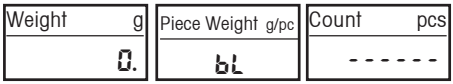
Sets the level in which the zero point is stable; the higher the setting, the more stable.
The following settings are available: 0, 1, 2, 3, 4, 5 (level)



Default Setting | Zero Return Range | Internal Count (disregard)

5.6 Backlight

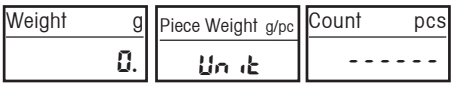
Sets the activation mode of the backlight.
The following settings are available:
0 = Auto-on with items greater than 9d placed on the pan or any key is pressed; turns off after 5 seconds of inactivity.
1 = Manual; press the decimal point key [.] to switch the backlight on or off.



Default Setting | Backlight | Internal Count (disregard)

5.7 Unit Selection

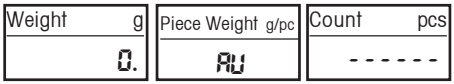
Sets the active weighing unit.
The following settings are available:
0 = Grams (g), 1 = Pounds (lb)



Default Setting | Weighing Unit | Internal Count (disregard)

5.8 APW Re-computing

Sets the APW re-computing mode. Optimizes piece weight accuracy by automatically re-computing the existing APW as further pieces (less than the original quantity on the pan) are added (a beep will sound in this event).
The following settings are available:
0 = Off, 1 = On



Default Setting | APW Re-averaging | Internal Count (disregard)

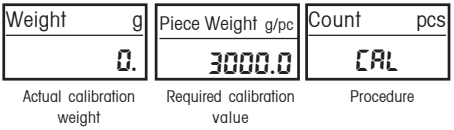
6. CALIBRATION

For best results, calibrate the scale at regular intervals. Temperature changes, geographic gravity variations, altitude changes and abuse are few reasons why a scale may need recalibration.

When the scale is ideally positioned for operation, enter calibration and proceed as follows:

Long-press **Zero** to initiate calibration (do not release key-press until "CAL" is displayed).

The required calibration weight is displayed (ex. 3000g for a 3kg model). At this time, a different calibration weight value can be entered via the numeric keypad.



Place the corresponding calibration weight on the pan. The display flashes until the actual weight is registered and the calibration process ends (the scale momentarily beeps before exiting to normal weighing mode).

NOTE: Press **Zero** at any time to abort during the calibration process.

7. TROUBLESHOOTING

The following table lists common problems, possible causes and remedies. If the problem persists, contact Ohaus or your authorized Ohaus dealer.

Symptom	Possible Causes	Remedy
Scale will not turn on.	AC power not connected. Battery discharged.	Connect scale to power. Connect scale to power and charge battery.
Battery fails to charge fully.	Battery is defective or past its useful life.	Have the battery replaced by an authorized Ohaus service dealer.
Weight reading does not stabilize.	Unstable environment. Interference under pan.	Ensure a stable environment. Ensure that the weighing pan is unobstructed and free to move.
Scale does not display accurately.	Improper calibration.	Calibrate the scale using proper calibration weights.
E1, E2, E3 displayed	The pan is placed incorrectly. Zero limit exceeded during power up.	Reposition the pan correctly. Ensure the pan is empty before switching the scale on.
--OL-- displayed	Load exceeds scale capacity.	Reduce the load on the pan.

8. TECHNICAL DATA

Model	EC3	EC6	EC15	EC30
Capacity x Readability	3000 g x 0.1 g 6 lb x 0.0002 lb	6000 g x 0.2 g 15 lb x 0.0005 lb	15000 g x 0.5 g 30 lb x 0.001 lb	30000 g x 1 g 60 lb x 0.002 lb
Maximum Displayed Resolution	1:30000	1:30000	1:30000	1:30000
Min Recommended Sample Weight	1 g / 0.002 lb	2 g / 0.005 lb	5 g / 0.01	10 g / 0.02 lb
Min Recommended APW	0.01 g / 0.00002 lb	0.02 g / 0.00005 lb	0.05 g / 0.0001 lb	0.1 g / 0.0002 lb
Construction	Stainless steel pan, plastic housing			
Weighing Units	g, lb			
Application Modes	Weighing, Counting, Accumulation			
Display	3-Window, 19 mm / 0.75" High, 6-digit, 7-segment backlit LCD display			
Display Indicators	Stability, Center of Zero, Tare, Low Sample Weight, Low APW, Accumulation, Battery status			
Memories	10 locations for APW			
Keyboard	7 function, 11 numeric x Membrane switch: Tare, Sample, APW, Zero, Pre-set Tare, M+, Cancel			
Zero Range	4% of Full Scale Capacity			
Tare Range	Full Capacity by Subtraction (except EC15, up to 10kg only)			
Stabilization Time	≤ 2 seconds			
Operating Temperature	0° to 40°C			
Humidity Range	≤90% relative humidity, non-condensing			
Power	AC Adapter 12V DC / 800mA Internal rechargeable lead acid battery			
Battery Life	80 hours continuous use with 12 hour recharge time			
Calibration	Automatic external with kg mass			
Shipping Protection	Shipping screw to avoid damage to sensitive components			
Safe Overload Capacity	120% of capacity			
Pan Size	294 x 226 mm / 11.6 x 8.9 in.			
Scale Dimensions W x H x D	325 x 114 x 330.5 mm / 12.8 x 4.5 x 13 in.			
Shipping Dimensions W x H x D	440 x 160 x 360 mm / 17.3 x 6.3 x 14.2 in.			
Net Weight	4.2 kg / 9.2 lb			
Shipping Weight	5.3 kg / 11.7 lb			
Other Features	Auto-Zero Tracking, Filtering Level, Auto-Optimization of APW			

Compliance

Compliance to the following standards is indicated by the corresponding mark on the product.

Marking	Standard
CE	This product conforms to the EMC Directive 2004/108/EC and the Low Voltage Directive 2006/95/EC. The complete Declaration of Conformity is available online at www.ohaus.com.

EC Emissions Note

This device complies with EN55011/CISPR 11 Class B Group 1.

ISO 9001 Registration

In 1994, Ohaus Corporation, USA, was awarded a certificate of registration to ISO 9001 by Bureau Veritus Quality International (BVQI), confirming that the Ohaus quality management system is compliant with the ISO 9001 standard's requirements. On May 21, 2009, Ohaus Corporation, USA, was re-registered to the ISO 9001:2008 standard.

FCC Note

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Disposal

In conformance with the European Directive 2002/96/EC on Waste Electrical and Electronic Equipment (WEEE) this device may not be disposed of in domestic waste. This also applies to countries outside the EU, per their specific requirements.

The Batteries Directive 2006/66/EC introduces new requirements from September 2008 on removability of batteries from waste equipment in EU Member States. To comply with this Directive, this device has been designed for safe removal of the batteries at end-of-life by a waste treatment facility.

Please dispose of this product in accordance with local regulations at the collecting point specified for electrical and electronic equipment.

If you have any questions, please contact the responsible authority or the distributor from which you purchased this device.

Should this device be passed on to other parties (for private or professional use), the content of this regulation must also be related.

For disposal instructions in Europe, refer to www.ohaus.com, choose your country then search for WEEE.

Thank you for your contribution to environmental protection.

LIMITED WARRANTY

Ohaus products are warranted against defects in materials and workmanship from the date of delivery through the duration of the warranty period. During the warranty period, Ohaus will repair, or, at its option, replace any component(s) that proves to be defective at no charge, provided that the product is returned, freight prepaid, to Ohaus.

This warranty does not apply if the product has been damaged by accident or misuse, exposed to radioactive or corrosive materials, has foreign material penetrating to the inside of the product, or as a result of service or modification by other than Ohaus. In lieu of a properly returned warranty registration card, the warranty period shall begin on the date of shipment to the authorized dealer. No other express or implied warranty is given by Ohaus Corporation. Ohaus Corporation shall not be liable for any consequential damages.

As warranty legislation differs from state to state and country to country, please contact Ohaus or your local Ohaus dealer for further details.

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