

DL Series

Operation Manual

North and South America:

Denver Instrument Company
1855 Blake Street
Denver, Colorado 80202
1-800-321-1135
Tel: 303-431-7255
Fax: 303-423-4831

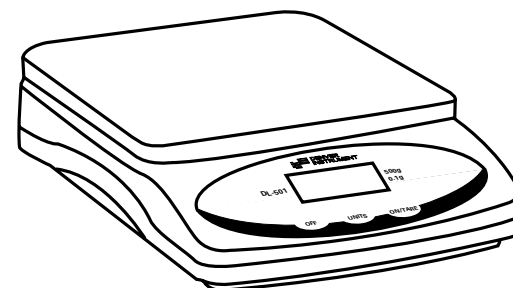
U.K. and Ireland:

Denver Instrument Company
Denver House, Sovereign Way
Trafalgar Business Park
Downham Market
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Tel: 44 136 63862 42
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Europe, Asia and Australia:

Denver Instrument GmbH
Robert-Bosch-Briete 10
37079 Gottingen Germany
Tel: 49 551 20977 31
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www.denverinstrument.com



You have purchased a quality precision weighing instrument that requires handling with care.

Read entire contents of this **Operation Manual** prior to operating your new Denver Instrument balance.

Disclaimer

Calibrate your balance using a reference weight of the appropriate tolerance (class). An instrument can be no more accurate than the standard to which it has been compared. For assistance in the selection of reference weights, please contact the factory.



Caution!

Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate this equipment.



Warning

Never lift balance by the weighing pan as this may cause damage to internal mechanisms.

Always lift and transport the balance by its base, including removal from packing materials!

Cleaning Instructions

The exterior surfaces of the product may be cleaned with a mild water-based detergent and a lint-free nonabrasive cloth. Alternatively, isopropyl alcohol may be used. Do not immerse the product in any liquid.



Warning

Never lift balance by the weighing pan as this may cause damage to internal mechanisms.

Always lift and transport the balance by its base.

Note

This unit contains no user serviceable parts.
All replacement parts should be obtained from the manufacturer. Please refer to this manual for the phone number of your sales and service representative.

Warranty Instructions

1. If you have any questions about a Denver Instrument product, please contact the nearest Denver Instrument office as listed below.
2. If it becomes necessary to return your Denver Instrument product for service, you must obtain a "Return Authorization Number". Please pack the product securely in its original approved packing carton or an other suitable container. Include your Return Authorization Number on the shipping label. Shipping charges must be fully prepaid.

Return to authorized distributor or :

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F. Battery-saving mode.

The balance can be set to turn off automatically after 1 to 9 minutes or to stay on until the Off key is pressed.

To select auto-off interval:

1. Turn the balance off.
2. Hold down the On/Tare key so all segments are displayed.
3. Continue to hold down the On/Tare key and press the Units key four times. Release the On/Tare key.
4. The display will show **Off** and the number of minutes set.
5. Press the Units key to cycle through the choices of minutes (1 to 9).
6. Press the Off key when the desired auto-off time appears.

 **Note:** Auto-off interval is not applicable if battery-saving mode is set to **Step0**.

To disable battery-saving mode:

1. Turn the balance off.
2. Hold down the On/Tare key so all segments are displayed
3. Continue to hold down the On/Tare key and press the Units key four times. Release the On/Tare key.
4. Press the On/Tare key so the display shows **Step**.
5. Press the Units key to select **0** for battery-saving mode off or **1** to enable auto-off interval.
6. Press the Off key when the desired auto-off time appears.

Troubleshooting

Display Shows	Cause	Remedy
EEEE	Weight exceeds balance capacity. Pan obstructed	Reduce weight Check pan placement
-----	Underload	Check pan placement
Lo	Battery low	Replace battery

Specifications

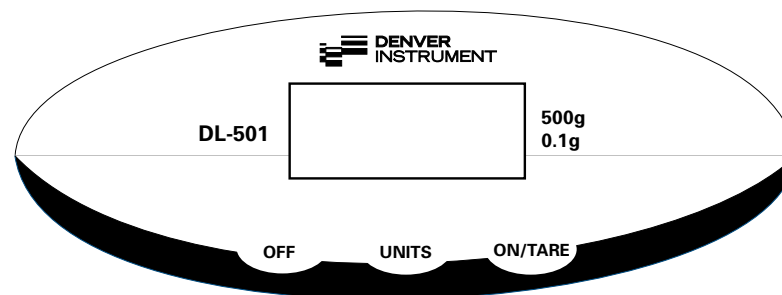
Model	DL-501	DL-2	DL-3
Capacity	500g	2000g	3000g
Readability	0.1g	0.5g	1g
Taring Range	0 to 500g	0 to 2000g	0 to 3000g
Repeatability	0.1g	0.5g	1g
Linearity	0.1g	0.5g	1g
Pan Size	5.4" x 5.4" (138 x 138mm)	5.4" x 5.4" (138 x 138mm)	5.4" x 5.4" (138 x 138mm)

Common Specifications:

Dimensions (LxWxH):	7.5 x 5.5 x 1.7" (190 x 140 x 45 mm)
Net Weight:	0.8 lbs (0.38kg)
Operating Temperature:	10°C - 30°C (50°F - 86°F)
Electrical Requirements:	9V battery or AC Adapter (sold separately)

Function Keys

On/Tare	Turns the balance on. Returns the unit to zero (tares).
Units	Toggle between defined units.
Off	Turns the balance off.



Operation

A. Taring (Zeroing)

All models have taring capabilities up to their total weight capacity (varies with each model)

1. Place sample container on pan.
2. Press the On/Tare key to zero the balance.
3. Add your sample, when the balance is stable the display shows the weight of the sample and a ° in the top left corner of the display.

B. Weigh Units

Pressing the Units key will toggle between the units selected as Unit 1. The choices are:

- grams (**g**) and pounds/ounces (**lb/oz**)
- grams only
- grams, troy ounces (**ozt**) and pennyweight (**dwt**)
- grams (**g**) and ounces (**oz**)
- grams, Taiwanese kilograms (**kg**) and piece count (**P**)

To select Unit 1

1. Turn the balance off.
2. Hold down the On/Tare key so all segments are displayed.
3. Continue to hold down the On/Tare key and press the Units key four times. Release the On/Tare key.
4. Press the On/Tare key twice so the display reads **Unit 1** (or **Unit P** if in piece mode).
5. Press the Units key to cycle through the choices of units.
6. Press the Off key when the desired unit combination appears.

Unit 2 can also be defined. The choices are grams (g), troy ounces, pennyweight, ounces (oz), Taiwanese kilograms or pounds/ounces (lb/oz). Unit 2 is used after being set until the Units button is pressed.

To select Unit 2

1. Turn the balance off.
2. Hold down the On/Tare key so all segments are displayed.
3. Continue to hold down the On/Tare key and press the Units key four times.
4. Release the On/Tare key.
5. Press the On/Tare key three times so the display reads **Unit 2**.
6. Press the Units key to cycle through the choices of units.
7. Press the Off key when the desired unit appears.

C. Calibration

To calibrate the balance, tare or zero the balance with no weight on the pan.

1. Turn the balance off.
2. Hold down the On/Tare key so all segments are displayed.
3. Continue to hold down the On/Tare key and press the Units key three times. Release the On/Tare key.
4. After a few seconds the display will show **C** and the value of the required calibration weight (for example, **C2000** for the DL-2).
5. Place the correct weight on the balance. After several seconds the maximum capacity will be displayed indicating the value has been accepted.

D. Count or Piece Mode

1. Select grams, Taiwanese kilograms (kg) and piece count (P) as Unit 1.
2. Place the container on the pan and press On/Tare.
3. Press the Unit key until the display reads PC followed by the reference quantity.
4. To change the reference quantity, press the On/Tare key until the desired reference quantity (10, 20 or 50) is displayed.
5. Place the designated number of pieces on the balance.
6. Press the On/Tare key. The display will show P and the number of pieces.
7. Add or subtract pieces.
8. For the next set of pieces to be weighted, press the Units key until grams are displayed and repeat steps 2 - 7.



If balance is turned off, the reference weight must be reset.



The individual piece must weigh more than the resolution of the balance.

E. Auto Zero

The balance will automatically keep the balance at zero even with slight changes.

1. Turn the balance off.
2. Hold down the On/Tare key so all segments are displayed.
3. Continue to hold down the On/Tare key and press the Units key four times.
4. Release the On/Tare key.
5. Press the On/Tare key four times so the display reads **tr-xd**.
6. Press the Units key to cycle through the choices of zero tracking (1d to 4d).
7. Press the Off key when the desired setting appears.

