



INSTRUCTIONS for UNPACKING, SETTING-UP and USE

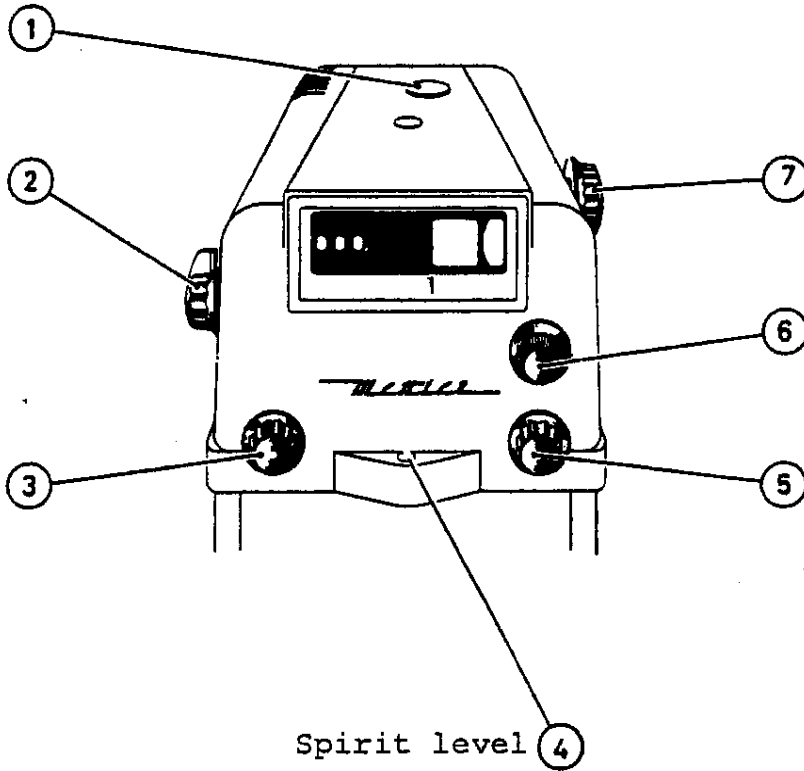
Mettler Analytical Balance

Model
Number
H 6

Housing
Cover

Arrestment
lever

Weight control
knob 10 g



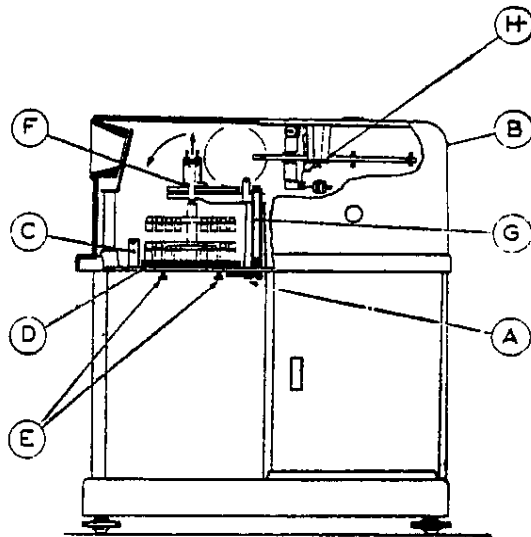
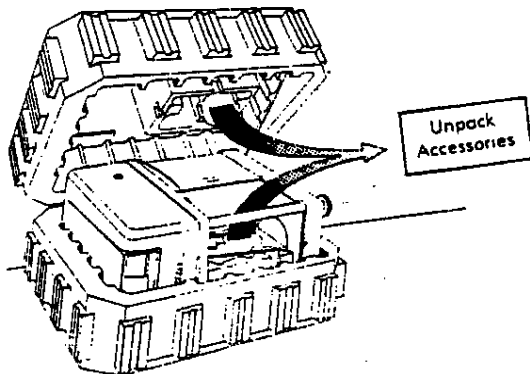
Optical zero
knob

Micrometer knob

Weight control
knob 1 g

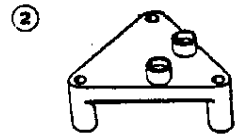
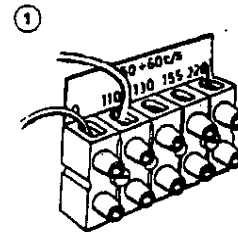
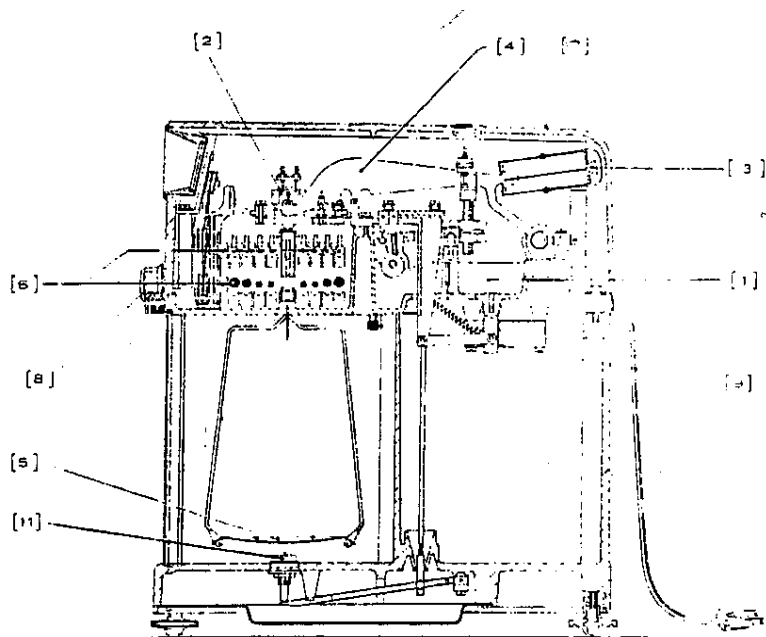
Spirit level

UNPACKING INSTRUCTIONS

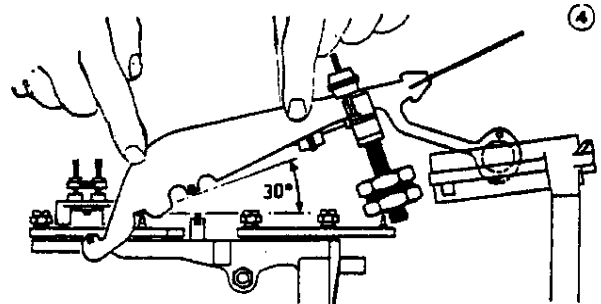
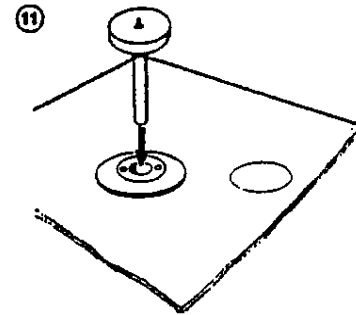


1. Remove adhesive tape from plastic container and lift off top.
2. Carefully remove balance from base of container, stand upright and unpack accessories. (See illustration)
3. Open cover latches (A) located in top rear of weighing chamber and carefully lift off the cover (B).
4. Remove yellow shipping bolt (C).
5. Unscrew yellow screws (E) so that the yellow wedge (D) can be removed. Remove it by pulling forward.
6. Remove plastic suspension support (F) by lifting stirrup and pulling forward.
7. Remove shipping bracket (G) by unscrewing yellow screws.
8. Remove beam by unscrewing yellow plate (H) which holds it to balance cover (B). Hold beam firmly by counter weight (Hexagon nuts) while removing plate. Important: Care must be taken not to touch the two knurled adjustment nuts on the beam.
9. All yellow packing parts must be out of the balance before you start to set it up.
10. The balance is now ready to set up according to the instructions.

SETTING UP INSTRUCTIONS



1. Dust off balance and accessories with the air syringe. Thoroughly clean the knife-edges, planes, and sapphire arrest bearings with the chamois and syringe.
2. Set required voltage on terminal plate (1). All balances are set at 110 volts before shipment.
3. Place small suspension plate (2) on sapphire pins located on front of orange plate.
4. Before putting beam in balance make sure arrest lever is in the arrest position. (See Instructions for Use, 1.2.).
5. Remove damping pot cover (3), carefully place beam (4) on arrest bearings and replace damping pot cover. Position of cover clasp should be off center.
6. Make sure that all weights (6) are resting in their respective hanger notches.
7. Replace cover (7) and close cover latches (9). Fit on knobs (8).
8. Place pan brake (11) into guide.
9. Place pan (5) on to suspension hook.
10. Insert magnifier into front panel by sliding from left to right.
11. Plug cord into electrical outlet.
12. Allow 30 minutes for the balance to adjust to the room temperature.



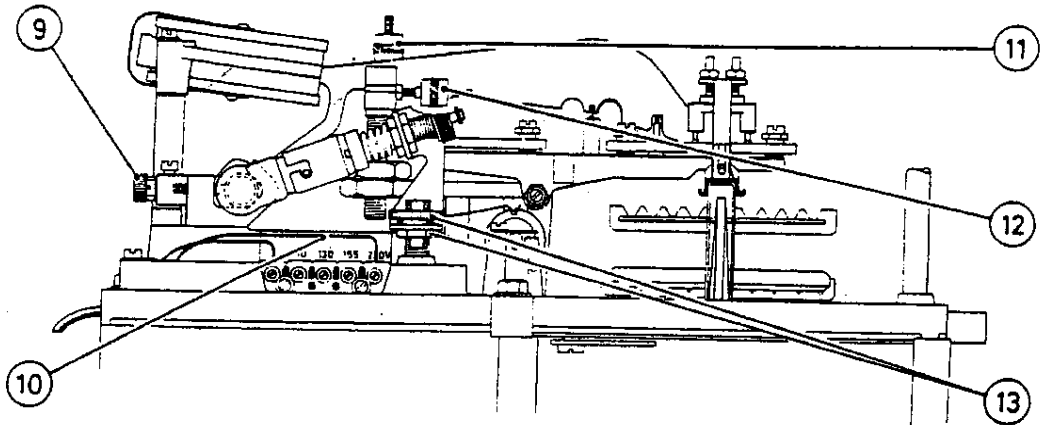


Fig. 1

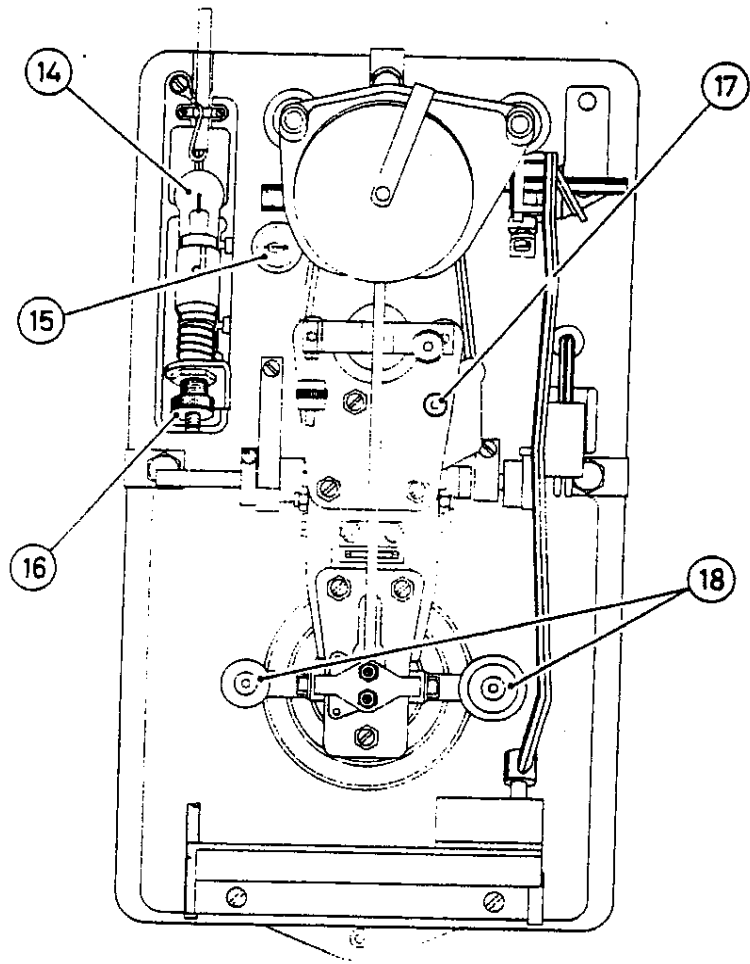


Fig. 2

INSTRUCTIONS FOR USE

The Mettler H6 balance is a precision instrument of practical and sturdy construction, simple to operate if the following rules are observed:

1. THREE FUNDAMENTAL RULES FOR MAINTAINING ACCURACY AND PRECISION

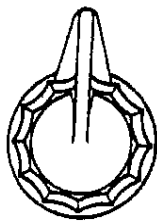
1.1. Set up balance where it will be free from vibration

Preferably choose a room with constant temperature and humidity in which to set up the balance. A weighing table of adequate weight and stability will be a suitable base.

1.2. Load and unload balance only when it is arrested

When arrested, the beam and the suspension each rest on three arrestment pins. Thus the knife edges are not under load and not liable to damage by sudden load changes such as are caused by laying on or removing the object to be weighed. The arrestment lever (2) should be moved slowly until the scale illumination has been switched on.

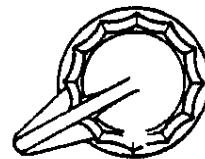
Positions of arrestment lever (2)



(I)



(II)



(III)

Balance arrested	Balance partially released	Balance fully released
Loading and unloading of pan	Operation of weight setting knobs (Weight pre-selection)	Setting of zero point and Unidigit knob

1.3. Only turn weight setting knobs with balance partially released

Partial release protects the knife edges from damage during weight setting. Abrupt load changes resulting from applying and removing the weights are, to a large extent, absorbed by the arrestment pins as the beam movement is limited, when partially released.

2. ADJUSTMENTS

Every balance is fully adjusted before leaving the factory so that only minor adjustments may be needed as the result of shipping.

Important: The arrestment lever (2) must be vertical before any adjustment is made.

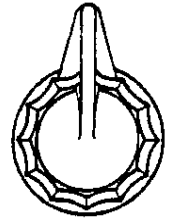


Fig. 3

To remove housing cover (1) for adjustments, slide side windows back and swing out tabs (19). Then withdraw knobs (2, 3, 5, 6 and 7) from their shafts (see Fig. 5) and lift cover off vertically.

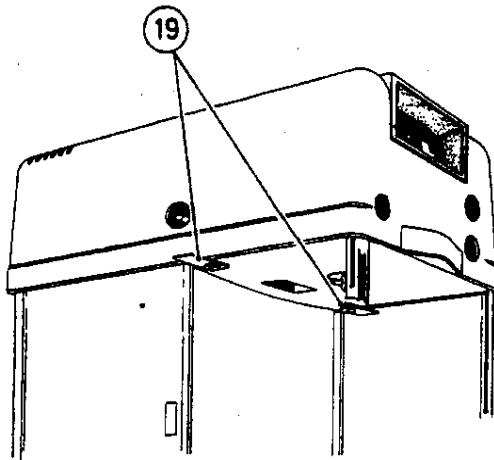


Fig. 4

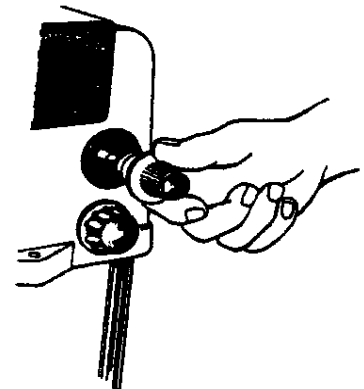


Fig. 5

2.1. Leveling balance

Before doing any work on the balance, make sure it is properly leveled. If necessary, level the balance as follows:

- a) Observe spirit level (4) from above and adjust it in the longitudinal axis by means of the two front foot screws.
- b) Using the rear foot screw, bring bubble of level (4) exactly into circle.

2.2. Scale image sharpness

Remove housing cover (1) and load pan with approximately 2 g. Partially release balance (arrestment lever (2) in position II). A blurred scale image can then be properly focused by turning the knurled stud (9).

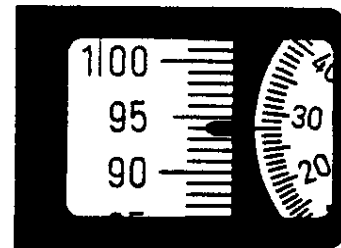
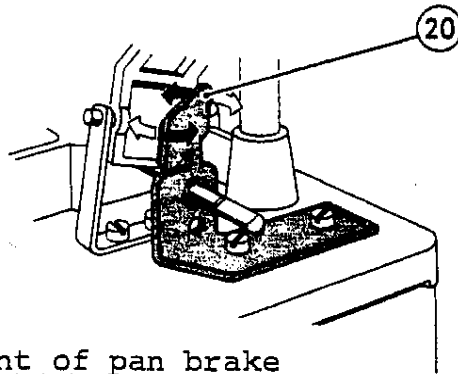
2.3. Image brightness

Remove housing cover. If the scale image is dark or shows colored margins, adjust the bulb (14) with knurled nut (16) on light bulb holder. The height of the bulb can be adjusted with the knurled and hexagonal nut (13).

2.4. Lateral adjustment of scale image

Remove housing cover. Slight pressure exerted on the angle mirror (20) will center the row of characters in the scale window (see Fig. 6).

Fig. 6

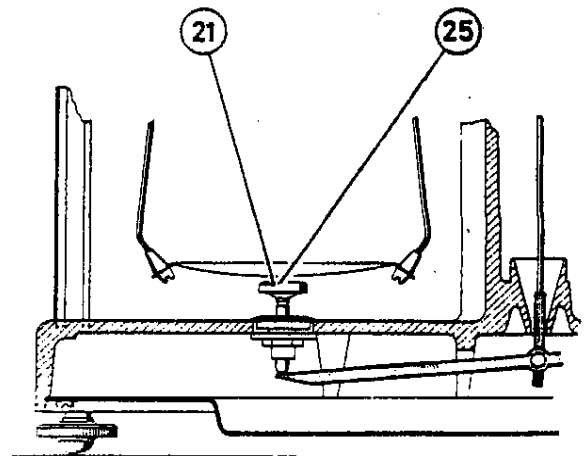


2.5. Adjustment of pan brake

With the balance arrested (arrestment lever (2) in position I), the pan should barely touch the brake pin (25), but not depress it substantially. If adjustment is necessary, proceed as follows:

- a) Remove the pan
- b) Remove the pan brake (21) from the guide. Rotation of the shaft will adjust pan brake pin height.

If the brake pin is too high, rotate the shaft clockwise. If the brake pin is too low, rotate shaft counter-clockwise.



Use the shaft to adjust the height of the brake pin.

2.5. Adjustment of pan brake (cont.)

- c) Replace pan brake and pan.

Note: Pan brake mechanism should never be lubricated.

2.6. Zero point adjustment

Before adjusting the zero point, be sure:

- a) The balance is level (see point 2.1.)
b) Micrometer knob (6) and weight controls (knobs 3 and 5) are set to zero.

Release balance (arrestment lever (2) in position III). Turn knob (7) clockwise as far as it will go. Pointer should now indicate 2 divisions above zero.

If the pointer indicates less than 2 divisions: Arrest balance, remove housing cover (see point 2.) and turn tare weight (12) counter-clockwise.

If the pointer indicates more than 2 divisions: Arrest balance, remove housing cover (see point 2.) and turn tare weight (12) clockwise.

Using knob (7) bring zero line to the pointer so that it is centered in the pointer to the right.

Arrest balance.

2.7. Scale deflection (sensitivity) check and adjustment

Load pan with 1 g (± 10 mg) and set weight control (knob 5) to 1 g. Close side windows.

Release balance and set zero point (knob 7).

With balance released, turn knob (5) slowly counter-clockwise to zero.

The scale should come to rest exactly at 100.

2.7. Scale deflection check and adjustment (cont.)

If the reading is more than 100, arrest balance, remove housing cover (1) and turn tare weight (11) clockwise.

If the reading is less than 100, arrest balance, remove housing cover (1) and turn tare weight (11) counter-clockwise.

After correcting scale deflection, the zero point must be checked (see point 2.6.). Repeat procedure if necessary.

2.8. Voltage adjustment (for Swiss-made units only)

Disconnect wall plug
Remove housing cover (1)
If the lead (10) is not at the desired voltage, loosen set screw, remove and replace in desired terminal.
Connect wall plug
Partially release balance to check lighting
Replace housing cover (1).

Note: U.S. made units are set for 110 volts.

3. WEIGHING

Before weighing, be sure that:

- a) The balance is level and arrested.
- b) The pan is clean and unloaded.
- c) The side windows are closed.
- d) The weight control knobs (3 and 5) are set to zero.
- e) The micrometer knob (6) is set to zero.

Release balance and set zero point with optical zero knob (7).

Arrest balance.

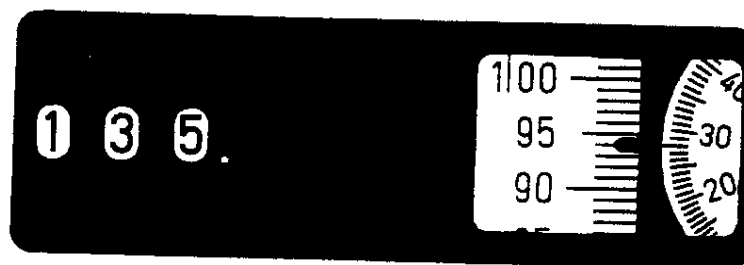
3.1. Weighing unknowns

Load pan only while balance is arrested (arrestment lever (2) in position I). If possible, use tongs so that no humidity or heat is brought into the weighing chamber by the hands. Close side windows after loading.

To make a weighing, proceed as follows:

- a) Partially release balance (arrestment lever (2) in position II).
- b) Turn weight control knob (3) clockwise. When scale moves up, turn knob (3) back one step.
- c) Repeat operation with knob (5).
- d) Arrest balance (arrestment lever (2) in position I).
- e) After short pause, release balance (arrestment lever (2) in position III) and allow scale to come to rest.
- f) Turn micrometer knob (6) counter-clockwise until the next lowest scale division is at the center of the forked pointer (see fig. 8).
- g) Read result and arrest balance (arrestment lever (2) in position I).
- h) With balance arrested, unload pan and bring all knobs back to zero.

Fig. 8



Weight = 135.9428 g

3.2. Weighing-in

The weighing-in operation is performed as follows:

- a) With balance arrested, weigh container to be used (see 3.1.) and record the weight.

3.2. Weighing-in (cont.)

- b) Add the weight of the sample amount desired to the weight of the container to get the total weight to be weighed-in. (see Fig. 9).

Fig. 9	.456 g - container
	.420 g - sample
	<hr style="width: 100%; border: 0.5px solid black;"/>
	.876 g - target weight

- c) Pour material to be weighed-in evenly into the container until target weight is reached. (The Mettler Vibro Spatula is ideal for powdery materials).
- d) In cases where quantity to be weighed-in and weight of container exceeds 1 g (the range of the optical scale), mechanical weights sufficient to compensate for full grams must be dialed. For example: to weigh-in 3.5640 g, add 3 grams to the weight reading of the mechanical weight counters. Next, set micrometer to read 40. Then pour sample into container until optical scale reads 56.

3.3. Fixed tare compensation

Taring disks (18) fitted to the suspension provide the means to compensate permanently for the weight of a container, some attachment to the pan (such as pan hooks) or some other item to be used for all weighings. 15 grams are available.

The large disks weigh approximately 1 g, the small ones 0.1 g. Compensation is made by removing a sufficient number of the disks (an equal number from each side). Disks removed are stored on screw (17) to be replaced back on the suspension system when the tare is to be cancelled. The fine correction is made with the tare weight on the beam (12).

4. MAINTENANCE

4.1. Cleaning the plastic housing

Important: We recommend only lukewarm soapy water. Do not use acetone, ether or benzene type solvents.

4.2. Replacement of light bulb

Dim or burned out bulbs can be replaced as follows:

- a) Remove housing cover
- b) Depress bulb (14) and turn clockwise to remove
- c) Insert spare bulb (15) (filament must be vertical)
- d) Adjust image brightness (see point 2.3.)
- e) Replace housing cover

Important: Order spare bulb immediately.

4.3. Failures

If, after releasing the balance, the optical scale does not move freely:

- Arrest balance and check pan brake operation. If necessary, clean pan brake shaft and guide (see point 2.5.).

PERFORMANCE AND DESIGN DATAPerformance Data

Capacity	Weighing range	0 - 160 g
<hr/>		
Precision (standard deviation)		±0.05 mg
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Readability		0.1 mg
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Optical Scale Range		-50 mg to +1250 mg
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	Accuracy of weighings in optical range	±0.1 mg
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	1 scale division	=10 mg
<hr/>		
	Type and graduation of scale reading aid:	
	1 micrometer division	= 0.1 mg
<hr/>		
Built-in Weights	Set of weights	159 g
<hr/>		
	Accuracy: each weight combination better than	±0.18 mg (better than US Class S)
<hr/>		
	1 dialing step	=1 g
<hr/>		
Taring System	Built-in weight set can be used for taring with a corresponding reduction in weighing range	
<hr/>		
	Tare compensation by use of tare disks mounted on suspension plate- let in 1 g or 0.1 g increments 15 g	
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Design Data

Weighing System	Beam balance, substitution, single pan	
Damping	Symmetrical air damping	
Knives and Bearing Planes	Synthetic sapphire	
Built-in Set of Weights	Concentric, solid, one-piece ring weights	chrome-nickel steel. non-magnetic
	Density	7.77 g/cm ³ *
Pan	Chrome-nickel steel	
	Diameter:	3-1/2 inches
	Pan bow height:	6-1/4 inches
Weighing Chamber	Two sliding side doors	
	Base dimensions:	7-1/4 x 6-1/4"
	Height:	7-1/2 inches
Balance Housing	Plastic	
	Mounting plate of weighing system	aluminum alloy die casting
	Base dimensions:	9 x 13-3/4"
	Height:	15-3/4 inches
Hanger for weighing below Balance	Optional	
Power Supply	110 volts. 50 - 60 c/s	
Standard Accessories	PVC dust cover. spare light bulb	
Weight	Shipping weight:	24 lbs.
	Net weight:	18 lbs.

* at air-density 1200 mg/l calibrated to apparent mass of density 8.4 g/cm³.