

# 1600 Series Balance

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## Instruction Manual

Please read this manual before unpacking, setting up and using your balance.

## REPLACEMENT PARTS LIST

Part No.	Description	Reqd	Models Used On
3045-00	Scale Plate, Stainless Steel 6" dia.	1	1650
1039-02	Scale Pan 6" dia. x 3/4"	1	1610
1064-30	Cross		
1023-10	Balance Cup	1	All
1034-00	Friction Plate	3	All
1247-00	Friction Plate (with tab)	1	All
1008-05	Bearing	4	All
1035-03	Bearing Cover	4	All
3134-02	500g poise Assembly	1	All
9765-03	Dial Housing assembly	1	All
3359-00	Balance Compensator	1	All
9706-01	Tare Beam Assembly	1	All

## ACCESSORIES

183-00	Specific Gravity Rod and Clamp
703-00	Footed Polypropylene Scoop, 12" x 6" x 2 3/4" and Counterweight
703-S0	Footed Stainless Steel Scoop, 12" x 6" x 2 3/4" and Counterweight
706-00	Vinyl Dust Cover
707-00	Metric Attachment Weight Set: two P/N 702-02, 1000g and one P/N 701-02, 500g
80250400	Scoop, Stainless Steel, 12" x 6" x 2 3/4"
1101-20	Footed Polypropylene Scoop, 12" x 6" x 2 3/4"

## SPECIFICATIONS

CAPACITY	
With Attachment Weights	2610g
Without Attachment Weights	610g
READABILITY	
	0.1g
BEAM CALIBRATIONS	
Center Beam	500g x 100g
Rear beam	100g x 10g

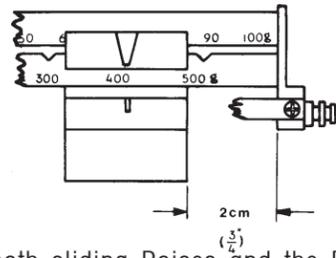
## UNPACKING

Your new precision balance was protected during shipment by a specially designed carton. Carefully remove the balance, the attachment weights (included with some models) and the separately packaged Poise (sliding weight) from the carton and place the balance on a reasonably flat and level surface.

Remove the slit rubber washer, which is lodged underneath the platform support, and the plain rubber washer that is located above the pointer.

## SET UP

Locate the bevel on the back of the center beam and slide the separate Poise up into it. Tilt the Poise over into place on the beam.



Place both sliding Poises and the Dial at their zero positions.

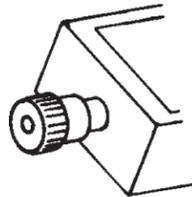


Move the Tare Poise to the extreme left.

The Pointer should come to rest near the zero balance position.

## ZEROING

To obtain exact zero balance, adjust the Balance Compensator (knurled knob) which is located at the left end of the beam.

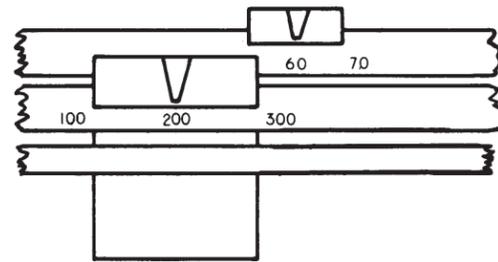


It is recommended that the zero balance be checked periodically to ensure accurate weight readings.

## WEIGHING

When exact zero balance has been obtained, proceed as follows:

1. Place the specimen in the center of the Platform.
2. Starting with the largest capacity beam (500 gram), move the 500 gram Poise toward the right to the first notch that causes the Pointer to drop, then move it back one notch, which causes the Pointer to rise.
3. Repeat the above procedure with the 100 gram Poise.

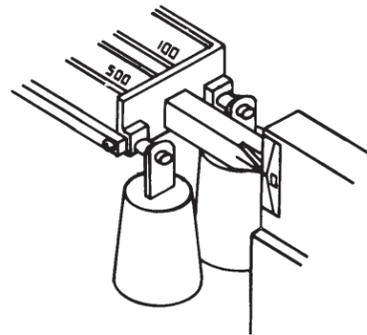


4. Turn the Dial until the Pointer comes to rest at zero.

The weight of the specimen is the sum of the values of the Poise positions, read directly from the Graduated Beams and the position of the Dial.

## OPTIONAL ATTACHMENT WEIGHTS

The total capacity of the balance when Attachment Weights are suspended from the pivots is 2610 grams.

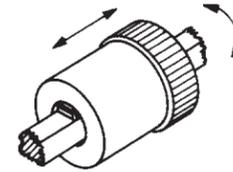


Without attachment weights, the capacity is 610 grams.

## USE OF THE TARE

All models are equipped with a patented Tare Poise which will counterbalance empty containers up to and including 225 grams.

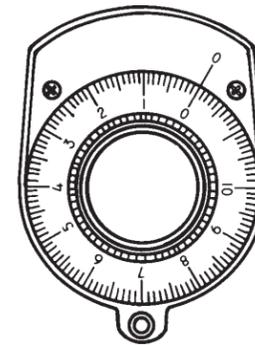
To use the Tare Poise, slide it to a position of approximate balance, and then rotate the Poise to obtain exact zero balance.



The net weight of the contents of the container may then be determined in the usual manner.

## FEATURES

- **CONVENIENT DIAL READING**  
Enables weighing to 0.1 gram without the need for an added poise.



- **TIERED BEAM VISIBILITY AND ZERO ADJUST**  
Combination provides high speed efficiency and reduces errors.

- **MAGNETIC DAMPING**  
Based on the principle of a permanent magnetic field resisting the motion of the non-magnetic aluminum damper vane. The damping force is proportional to the velocity of the damper vane and reduces to zero when the vane comes to rest.

Speeds up weighing by causing the beam to come to rest quickly without affecting sensitivity or accuracy. The system is permanent, self-regulating, frictionless and effective at all loads.

- **TARE BEAM AND POISE**  
Simplifies repetitive weighings and chemical formulations by eliminating the container weight from calculations.

- **OPTIONAL ATTACHMENT WEIGHTS**  
store conveniently in the base when not in use.

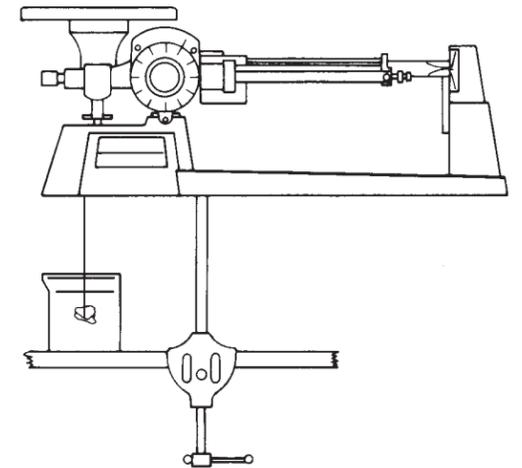
## CARE AND MAINTENANCE

Keep the balance clean at all times. In general, most foreign matter may be easily removed by using an air syringe. A piece of adhesive-backed tape pressed against the Magnet faces will keep them free from dirt.

## SPECIFIC GRAVITY DETERMINATION

Ohaus Model 183 clamp and Rod Support is an accessory which elevates the balance for suspending specimens in water.

The rod is inserted into half inch (12.7 mm) diameter recess on the underside of the base. The specimen is attached to the check pin by means of a fine wire or thread. The check pin connects the check rod assembly to the platform loop under the base.



## FORMULAS

- Solids denser than water.  
First weigh the specimen in air and then weigh it immersed in water.

$$SG = \frac{\text{Weight in air}}{\text{Weight in air minus weight in water}}$$

- Solids less dense than water.

It is necessary to attach a sinker and then make the following weighings:

- a. Weight of specimen in air
- b. Combined weight of specimen in air plus sinker in water.
- c. weight of both specimen and sinker in water.

$$SG = \frac{a}{b - c}$$