



Ohaus Corporation
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 Florham Park NJ
 07932-0900

Triple Beam Balance

Balanza de Triple Brazo

Instuction Manual

Please read this manual before you use your Ohaus Triple Beam Balance.

Manual de Instrucciones

Por favor lea este manual antes de ensamblar y usar su Balanza de Triple Brazo de Ohaus.

Unpacking:

Carefully remove the balance and the separate poise (sliding weight) from the protective carton. You will find a slit rubber washer lodged underneath the platform, and one rubber washer located above the pointer. The washers are to be removed from the scale.

Desempaque:

Retire cuidadosamente la balanza y la pesa corrediza separada de la caja protectora de cartón. Hallará usted una arandela partida de caucho colocada debajo de la plataforma, y una arandela de caucho ubicadas sobre el indicador. Dichas arandelas deben retirarse de la balanza.

Set-up:

After placing the balance on a smooth, flat surface, slide the separate poise up into the slot on the back of the center beam. Tilt poise over into place on the beam. With all poises in zero position, the pointer should be near zero. On applicable models, the tare poise (13) shall be at the extreme left of its bar.

Armado:

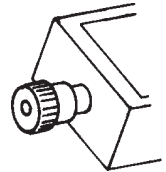
Después de colocar la balanza sobre una superficie lisa y plana, deslice la pesa separada hacia arriba al interior de la ranura de la parte trasera del brazo central. Incline la pesa colocándola en su lugar en el brazo. Con todas las pesas en posición de cero, el indicador debe hallarse próximo a cero. En los modelos en que corresponda, la pesa de tarado (13) debe hallarse completamente a la izquierda de su barra.

Zeroing:

For exact zero, adjust the knurled knob which is located at the left end of the beam. It is advisable to check the zero adjustment periodically.

Puesta a cero:

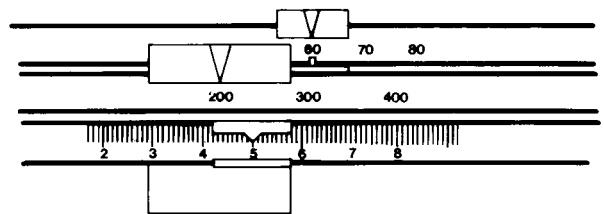
Para obtener una puesta exacta a cero, ajuste la perilla moleteada que se halla en el extremo izquierdo del brazo. Es aconsejable verificar periódicamente la puesta a cero.



Weighing:

Place the specimen on the center of the platform and proceed as follows:

1. Starting with the largest capacity beam (500 g), move the 500 g poise to the right to the first notch which causes the pointer to drop, then, move it back one notch, causing the pointer to rise.
2. Repeat procedure with the 100 g poise.
3. Slide the 10 g poise to the position which brings the pointer to rest at zero. The weight of the specimen is the sum of the values of all poise positions, read directly from the graduated beams.



Manera de pesar

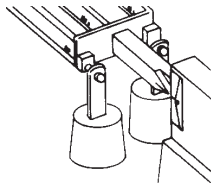
Coloque el espécimen en el centro de la plataforma y proceda como sigue:

1. Comenzando por el brazo de mayor capacidad (500 g), mueva la pesa de 500 g hacia la derecha hasta la primera muesca lo que hará caer el indicador, luego hágala retroceder una muesca, haciendo que el indicador suba.
2. Repita el procedimiento con la pesa de 100 g.
3. Deslice la pesa de 10 g hasta la posición que haga descansar el indicador en cero.

El peso del espécimen es la suma de los valores de todas las posiciones de pesa, leídas directamente en los brazos graduados.

Attachment weights:

Total capacity is either 2610 grams or 5 pounds, 2 ounces when attachment weights are suspended from the pivots (14). Without the weights, the capacity is either 610 grams or 1 pound, 2 ounces.

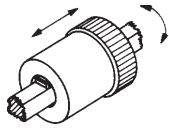


Pesas accesorias:

La capacidad total es 2610 gramos cuando se suspenden las pesas accesorias de los pivotes(14). Sin las pesas, la capacidad es 610 gramos.

Use of the tare:

Certain models are equipped with a patented tare poise (13). The poise will counterbalance empty containers no heavier than 225 grams or 8 ounces, by sliding it to the approximate balance, then rotating in either direction for precise positioning. Net weight of the contents of the container may then be read directly in the usual manner.



Empleo de la tara:

Ciertos modelos están equipados con una pesa patentada de tara (13). La pesa contrapesará recipientes vacíos de un peso no mayor de 225 gramos al deslizarla hasta el equilibrio apropiado, girándola luego en cualquier sentido para su exacta ubicación. Luego podrá leerse el peso neto del contenido del recipiente, del modo usual.

Care and maintenance:

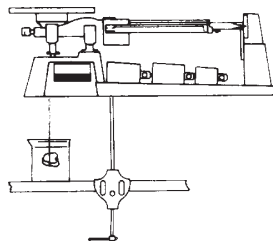
Keep balance clean at all times. In general, most foreign matter may be easily removed by an air syringe, but a piece of adhesive-backed tape pressed against the magnet faces will keep them free from dirt. Never apply lubricants to knives or bearings, nor allow foreign matter to accumulate.

Cuidado y mantenimiento:

Mantenga la balanza limpia en todo momento. En general, la mayor parte de las sustancias extrañas podrán quitarse fácilmente mediante una jeringa de aire, pero un trozo de cinta de respaldo adhesivo, apretado contra las caras de los imanes, las mantendrá libres de suciedad. Jamás aplique lubricantes a las cuchillas ni a los cojinetes, ni permita la acumulación de sustancias extrañas.

Specific gravity determination:

The Model 183 Clamp and Rod Support is an accessory for elevating the balance for suspending specimens in water. The rod is inserted into the 1/2 inch (12.7 mm) recess on the underside of the base. By means of a fine wire or thread, the specimen is attached to the check pin which connects the check rod assembly to the platform loop under the base.



Determinación del peso específico:

El soporte grapa-y-varilla, modelo 183, es un accesorio para elevar la balanza para suspender los especímenes en agua. La varilla se inserta en el receso de 12,7 mm de la cara inferior de la base. Mediante un alambre fino o un hilo, se sujeta el espécimen al perno de detén, que conecta el conjunto de varilla de detén, al lazo de la plataforma, debajo de la base.

Formulas:

Sólidos - (denser than water): To determine specific gravity of solids denser than water, the specimen should be first weighed in air and then weighed immersed in water.

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

Sólidos - (less dense than water): To determine the specific gravity of solids less dense than water, it is necessary to attach a sinker and then make the following weighings:

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

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

Formulas

Sólidos - (más densos que el agua): Para determinar el peso específico de los sólidos más densos que el agua, primeramente debe pesarse el espécimen en el aire y luego debe pesarse sumergido en agua.

$$\frac{\text{Peso en el aire}}{\text{Peso en el aire menos peso en el agua}}$$

Sólidos - (menos densos que el agua): Para determinar el peso específico de los sólidos menos densos que el agua, es necesario fijar una plomada, efectuando luego los pesajes siguientes:

- a. Peso del cuerpo en el aire.
- b. Peso combinado del cuerpo en el aire más la plomada en el agua.
- c. Peso tanto del cuerpo como de la plomada en el agua.

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

Features:

- A low cost, maintenance-free balance which provides all the convenience of a top loader, yet retains the ruggedness needed for a wide range of lab work.
- Tiered beam visibility and zero adjust combine to give high speed performance and reduce error.
- Magnetic damping speeds up weighing by causing the beam to come to rest quickly without affecting sensitivity or accuracy. It operates on the principle of a permanent magnetic field resisting the motion of a non-magnetic, aluminum damper vane attached to the beam. The pole faces of the damping magnets are positioned on both sides of the damper vane. Damping force is proportional to vane velocity and reduces to zero when the beam stops, thereby turning itself off. The system is permanent, self-regulating, maintenance-free, frictionless and effective at all loads.
- Tare beam and poise (13) (on specific models) make repetitive weighings and chemical formulations easy by eliminating container weight from calculations.
- Attachment weights store conveniently in the base when not in use.

Características:

- Balanza de costo reducido, de bajo mantenimiento, que brinda toda la comodidad de la carga superior, pero que retiene la robustez necesaria para una amplia gama de trabajos de laboratorio. La visibilidad de las muescas de brazos y el ajuste de cero se combinan para permitir el trabajo rápido y la reducción de los errores.
- La amortiguación magnética acelera el pesaje, haciendo que el brazo llegue al reposo en forma rápida sin afectar ni la sensibilidad ni la exactitud. Trabaja sobre el principio de la resistencia de un campo magnético permanente al movimiento de una aleta amortiguadora no magnética de aluminio, fijada al brazo. Las caras polares de los imanes amortiguadores, se hallan ubicadas de ambos lados de la aleta amortiguadora. La fuerza amortiguadora es proporcional a la velocidad de la aleta y se reduce a cero al detenerse el brazo, inactivándose a sí misma. El sistema es permanente, auto-regulante, libre de mantenimiento, libre de rozamiento y eficaz con todas las cargas.
- El brazo de tarado y la pesa, (13) (en modelos específicos), facilitan el pesaje y las formulaciones químicas a repetición eliminando de los cálculos el peso del recipiente.
- Las pesas accesorias, se almacenan cómodamente en la base cuando no se usan.

REPLACEMENT PARTS LISTS

IDENT. NO.	PART NO.	DESCRIPTION	REQD	MODELS
1	3045-00	Scale Plate SST - 6" dia.	1	750-S0
			1	750-SW
			1	760-00
			1	860-W0
2	1039-02	Scale Pan 6" dia. x 3/4"	1	710-00
	1064-30	Cross	1	710-T0
3	1077-03	Scoop, SST 12" x 6" 2-3/4" deep	1	720-S0
4	1101-20	Scoop, Polypropylene 12" x 6" x 2-3/4" deep	1	730-00
5	3043-20	Specimen Pan	1	730-00
	3052-00	Cover		
	2570-21	Cross		
6	1023-00	Balance Cup	1	All
	1034-00	Friction Plate	3	All
7	1247-00		1	
	1008-23	Bearing	4	All
9	1035-03	Bearing Cover	4	All
10	3134-02	500g Poise Assembly	1	All 700
	3135-11	100g Poise Assembly	1	All 700
12	3134-02	16 oz. Poise Assembly	1	860-W0
				820-SW
				820-W0
13	9704-00	25g Tare	1	760-00
				710-T0
		8 oz. Tare	1	All
				800

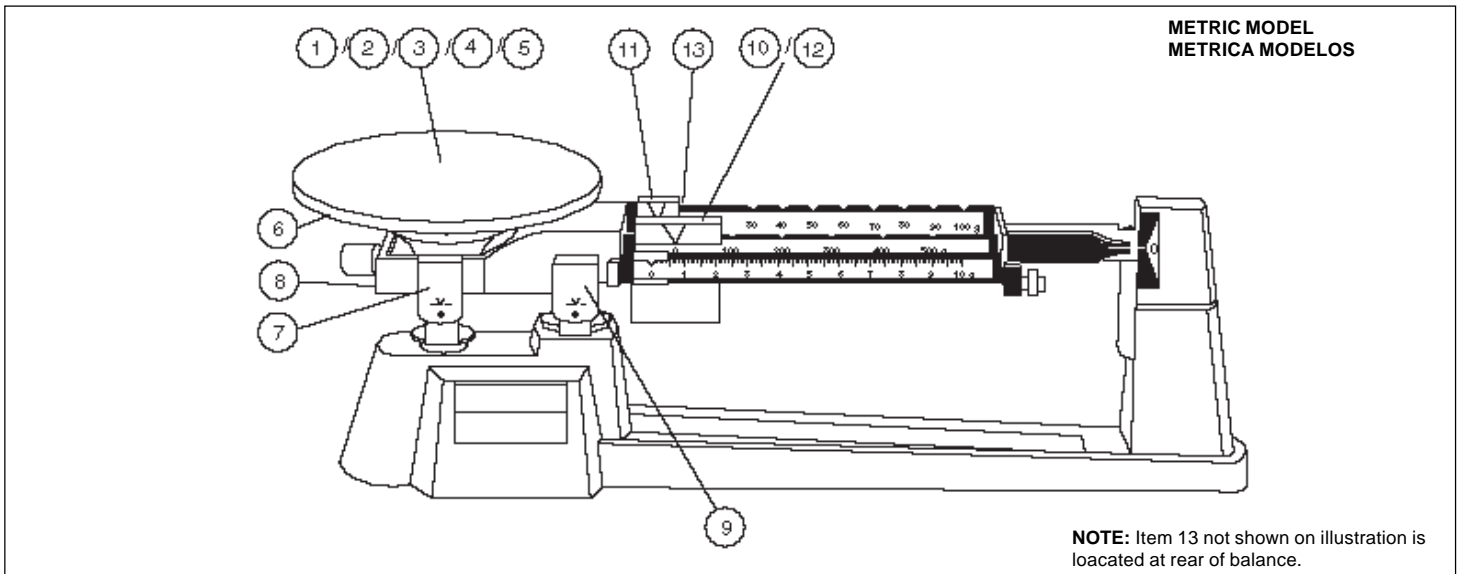
N° De Identificación	Partes N°	Descripcion	Necesaria	Modelos
1	3045-00	Platillo de balanza, de acero inoxidable, 15.2 cm de diametro	1	750-S0
				750-SW
				760-00
				860-W0
2	1039-02	Recipiente de balanza, de acero inoxidable, de 15.2 cm de diametro x 2 cm	1	710-00
	1064-30	Cruz		1
3	1077-03	Cuchara, de acero inoxidable, de 30.5 x 15.2 x 7 cm de profundidad	1	720-S0
	1101-20	Cuchara, de polipropileno, de 30.5 x 15.2 x 7 cm de profundidad		1
5	3043-20	Recipiente y tapa para especimenes	1	730-00
	3052-00		1	
	2570-21	Cruz	1	
6	1023-00	Taza de balanza	1	All
7	1034-00	Plato de friccion	3	All
	1247-00		1	
8	1008-23	Cojinete	4	All
9	1035-03	Tapa de cojinete	4	All
10	3134-02	Conjunto de pesa de 500g	1	All
				700
11	3135-11	Conjunto de pesa de 100g	1	All
				700
13	9704-00	Tara de 225g	1	760-00
				710-T0

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 1000g, one 500g
 807-03 Avoirdupoise Attachment Weight Set: two 2 lb, one 1 lb

Accesorios

183-00 Varilla y pinza para densidades.
 703-00 Platillo/paleta en polipropileno de 30.5 x 15.2 x 7 cm. y contrapeso
 703-S0 Platillo/paleta en acero inoxidable de 30.5 x 15.2 x 7 cm. y contrapeso.
 706-00 Cubierta de vinilo para el polvo.
 707-00 Juego de pesas metrico, adicional, dos pesas de 1000g y una de 500g.



Specifications

	700 Metric Series	800 Avoirdupois Series
Capacity		
w/attachment weights	2610g	5 lb. 2 oz.
w/o attachment weights	610g	1 lb, 2 oz.
Readability		
	0.1g	0.01 oz.
Calibrations		
Front Beam	10g x 0.1g	1oz. x 1/64 oz.
Center Beam	500g x 100g	16 oz. x 1 oz.
Rear Beam	100g x 10g	1oz. x 0.01 oz.

Especificaciones

	700 Serie métrica	800 Serie Avoirdupois
Capacidad		
Con juego de pesas	2610g	5 lb, 2 oz
Sin juego de pesas	610g	1 lb, 2 oz.
Lectura		
	0.1g	0.01 oz.
Escalas		
Brazo delantero	10g x 0.1g	1 oz. x 1/64 oz.
Brazo central	500g x 100g	16 oz. x 1 oz.
Brazo trasero	100g x 10g	1oz x 0.01 oz.

**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.

GARANTIA LIMITADA

Los productos Ohaus estan garantizados contra defectos de material y fabricacion desde el dia de entrega hasta el final de la duracion de esta garantia. Durante el periodo de garantia, Ohaus reparara, o a su opcion, sustituirá sin ningun costo a usted, repuestos que esten defectuosos, provisto que usted entregue el producto a Ohaus por cuenta propia.

Esta garantia no aplica si el producto ha sido dañado por accidente o mal uso, expuesto a radioactividad o a materiales corrosivos, o si materiales estraños han penetrado adentro del producto, o como resultado de modificaciones efectuadas por personal no relacionadas con Ohaus. A partir del recibo de su tarjeta de garantia en Ohaus, esta garantia comenzara, desde el dia en que fue embarcado a usted por nuestro distribuidor autorizado. Ninguna otra garantia sera dada por Ohaus Corporation. Ohaus no sera responsable por ningun otro daño consecuente. Como legislaciones de garantias cambian de estado a estado y de pais a pais, por favor pongase en contacto con Ohaus o su distribuidor local para mas detalles.

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With offices worldwide



Ohaus Corporation
29 Hanover Road
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1600 Series Balance

Instuction Manual

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

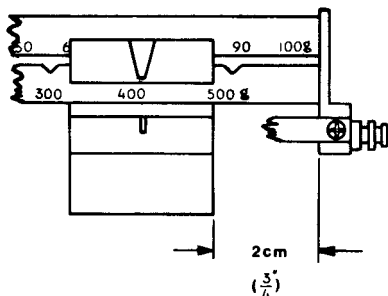
UNPACKING

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.

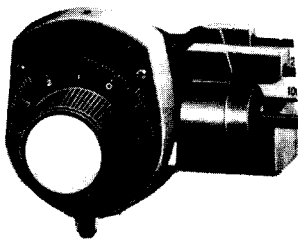
Remove the slit rubber washer, which is lodged underneath the platform support, and the plain rubber washer that is located above the pointer.

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.

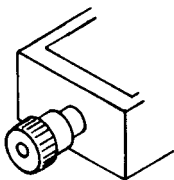


Move the Tare Poise to the extreme left.

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.

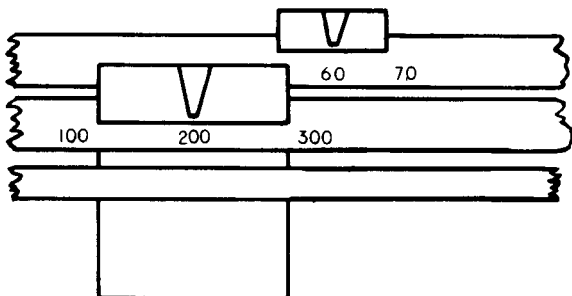


It is recommended that the zero balance be checked periodically to insure accurate weight readings.

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.

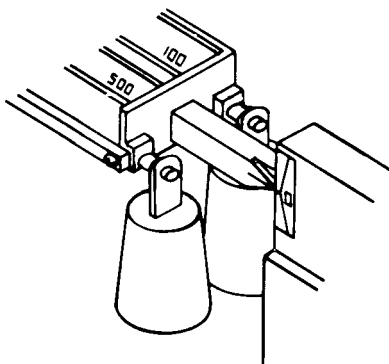


4. Turn the Dial until the Pointer comes to rest at zero.

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.

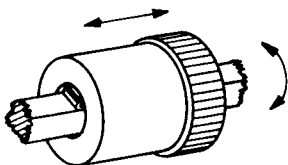


Without attachment weights, the capacity is 610 grams.

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.

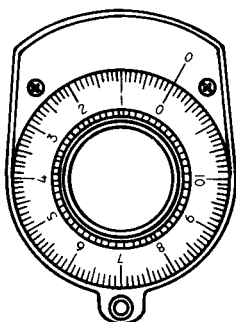


The net weight of the contents of the container may then be determined in the usual manner.

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

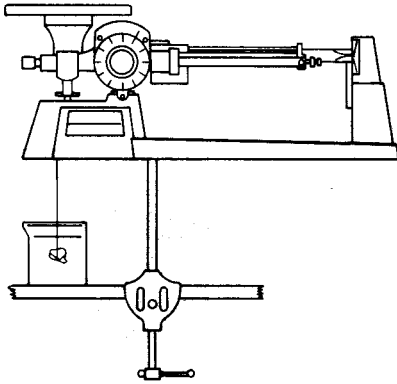
Keep the balance clean at all times. In general, most foreign matter may be easily removed by using an air syringe. A piece of adhesive-backed tape pressed against the Magnet faces will keep them free from dirt.

Never apply lubricants to the knives or bearings, nor allow foreign matter to accumulate.

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 the 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.

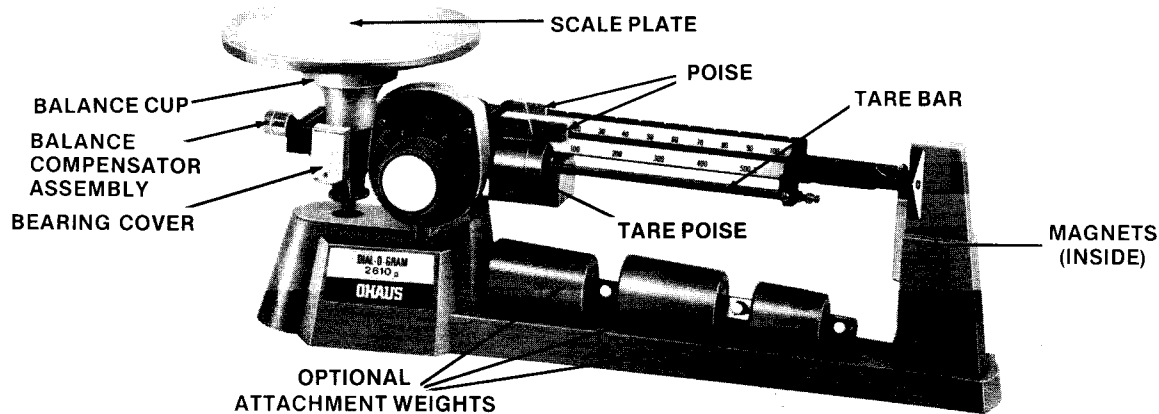
$$SG = \frac{\text{Weight in air}}{\text{Weight in air minus weight in water}}$$

- 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

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



Model 1650 shown

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	1	
1077-03	Scoop, Stainless Steel 12" X 6" X 2 3/4" deep	1	1620-S
1101-20	Scoop, Polypropylene 12" X 6" X 2 3/4" deep	1	1620
3043-20	Specimen Pan	1	1630
3052-00	Cover	1	
2570-21	Cross	1	
1023-00	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
3550-04	Dial Housing Assembly	1	All
9701-01	Balance Compensator Assembly	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
- 1078-03 Footed Stainless Steel Scoop,
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