

HENRY TROEMNER, INC.

ESTABLISHED 1840



**PRECISION BALANCES
& WEIGHTS**

KYMOGRAPHS

STIRRERS

KJELDAHL APPARATUS

**LABORATORY &
INDUSTRIAL**

6825 GREENWAY AVENUE
PHILADELPHIA, PA. 19142



Henry TROEMNER, Inc.

MANUFACTURERS OF PRECISION BALANCES AND WEIGHTS and LABORATORY APPARATUS

6825 GREENWAY AVENUE, PHILADELPHIA, PA. 19142

PHONE 215 SA 4-0800

AIR MAIL

December 7, 1966

Forto N.V.
Energiestraat 35
Naarden, Holland

Attention: H. J. Buter, Director

Gentlemen:

Thank you for your recent request concerning our laboratory balances and weights and other laboratory apparatus.

We are forwarding to you under separate cover by surface mail our complete catalog. However, enclosed is a condensed version of our catalog until the complete catalog arrives.

If you would kindly let us know which items you are interested in by model number and/or catalog number, we would be glad to send you complete price information including export packing, freight, etc.

We are extremely interested in importing laboratory apparatus manufactured in Holland and we would like very much to receive literature describing products which we could import and sell in the United States. We would like to have an exclusive arrangement as sole distributor for this equipment in the United States. Please let us know if this is possible and what products would be available, including export prices.

Sincerely,

Henry TROEMNER, Inc.


Laird U. Park, Jr.
President

LUP:pag

Enclosure

Separate Cover (1) Complete Catalog

RETAIL PRICE LIST

(All prices f.o.b. Phila., Pa.)

Precision Laboratory Balances

400	\$185.00
410	170.00
410S	180.00
W-33	135.00
W-35	150.00
190	105.00
540	160.00

Heavy-duty Laboratory Balances

06B	60.00
07B	70.00
2-75	82.00
4-75	68.00

Heavy-duty Precision Balances

195-B	115.00
195-BS	129.00
195-BP	115.00
2-89-B	130.00
2-89-BS	145.00
2-89-BP	130.00

Specific Gravity Chain Balance

S-100 Liquids & Solids	195.00
S-101 Liquids only	185.00
S-102 Bow Pan	10.00
S-103 Cover	18.00
S-104 Plummet	22.50
S-105 Basket	11.00
S-106 Case	70.00

Westphal Specific Gravity Balance

5995	65.00
5996 Plummet	19.50
5997 Riders	15.00

Solder Testing Balance

936	160.00
937 Case	65.00
938 Mould	48.00
939 50% Weight	9.65

General Industrial Balance

10-S	115.00
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Portable Balances

700 (Scale only)	\$125.00
701 Carrying Case	65.00
S-742	140.00

Heavy-duty all-purpose balance

9559 10 lb. capacity	160.00
9559A 20 lb. capacity	265.00

Heavy-duty Solution Balances

80 20 kg. capacity	115.50
380 30 kg. capacity	130.00
<i>See Prices back of circular for other models and add 10% to all prices of other models listed.</i>	

High Sensitivity, Large Capacity Balances

1751	\$1850.00
175	1950.00
1755	2065.00
Cases For Above:	
With Sliding Front Door	435.00
With Sliding Front & Rear Door	475.00
1700 Table for 175 Series	178.00
Russell Balances	Prices on request

Universal Laboratory Positioner - 'LAB-ARM'

Single Arm Unit LA-1	27.50
Double Arm Unit LA-2	48.50
<i>See Lab Arm Price List for prices of parts, clamps & accessories.</i>	

Kymograph

MD-12 Monodrum	197.50
EX-12 Extension	73.00

*See Kymograph Price List for prices of other models, accessories & charting paper.***Instrument Drive**

300 With Motor	178.00
300 Without Motor	148.00
300R With Reversible Motor	245.00

Magnetic Stirrer

500 Assembled	22.50
501 Kit	18.25

Cylinder Bench Clamp

711	7.60
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Precision laboratory balances by TROEMNER

The product of a century's leadership in fine laboratory weighing, these Troemner precision balances are individually crafted for high accuracy and simplicity of operation. No springs, no bands to break or lose efficiency. No dials or "gimmicks" to interfere with the balance's one objective—fast, accurate weighing.

All the balances described on this sheet (except Model 190 on the back) have the following specifications:

Capacity—120 grams.

Sensitivity—2 mg.

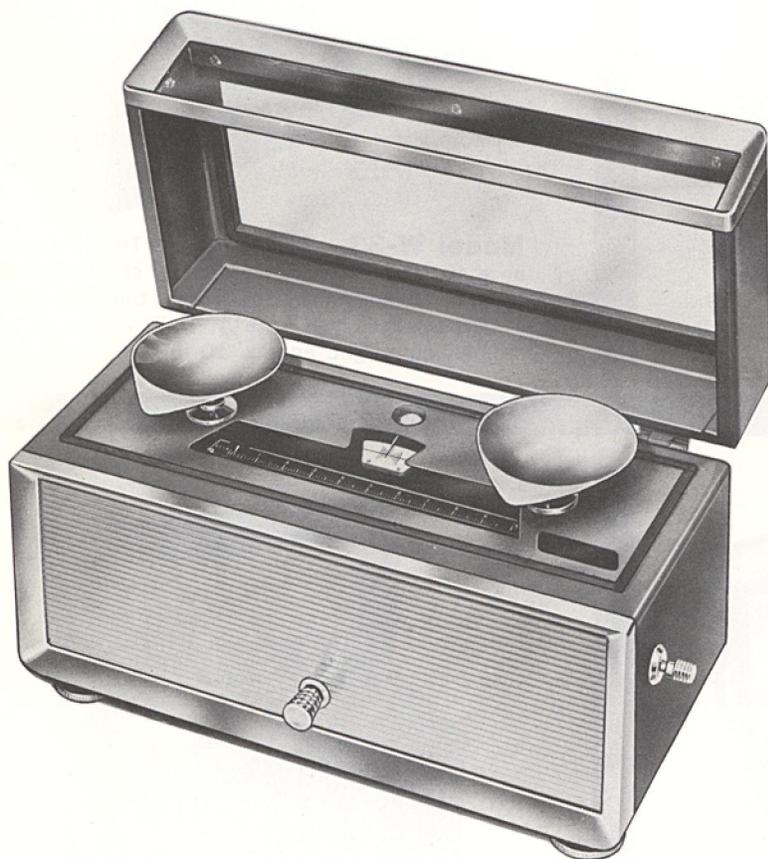
Sensitivity reciprocal—6.5 mg.

Beam graduated to 1 gram in 10-mg divisions or to 1 gram in 10-mg divisions and to 15 grains in $\frac{1}{8}$ -grain divisions.

All models have 3-in-diameter teardrop-shape stainless steel pans.

All models can be fitted with a scoop (see illustration of Model 410S below) for chemicals or seeds in place of one pan. In ordering this style, add "S" to model number.

These balances are also available without lid. Capacity without lid—500 grams; sensitivity—50 mg. Other balances available to customer specifications.



Model 410

Here is the world's leader in precision laboratory balances, an instrument which in a few short years has set a new standard in modern laboratory weight determination. Made like the best analytical balances, but suitable for all-around precision work. Stable, "nerve-free" mechanism. Weighs to full capacity with lid closed. New universal spirit level and single pointer visible through glass top. Heavy blue-gray metal case.

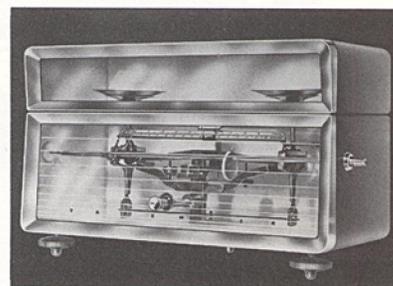
Dimensions: 12 $\frac{1}{2}$ " W, 6 $\frac{1}{8}$ " D, 7 $\frac{3}{4}$ " H.

Shipping weight: approx. 15 lb.

Any model shown may be modified to customer specifications.



Model 410S



Model 400—The ultimate instrument in accuracy, speed, and beauty. Same specifications as Model 410 but with handsome clear glass panel in front for complete visibility of balance interior.

Dimensions: 12 $\frac{1}{2}$ " W, 6 $\frac{1}{8}$ " D, 7 $\frac{3}{4}$ " H.
Shipping weight: approx. 16 lb.

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Other precision TROEMNER laboratory balances



Model 540 — A beautiful balance with case of light mahogany and glass—an asset to any laboratory. All metals parts corrosion-resistant.
 Dimensions: 13 $\frac{3}{4}$ " W, 6 $\frac{3}{4}$ " D, 7 $\frac{1}{2}$ " H.
 Shipping weight: approx. 11 lb.



Model W-33 — The lowest-price Troemner balance at the sensitivity and capacity shown on the front. Mahogany-finish case, glass in top of lid only.
 Dimensions: 13 $\frac{1}{2}$ " W, 6 $\frac{1}{2}$ " D, 7 $\frac{1}{2}$ " H.
 Shipping weight: approx. 10 lb.



Model W-35 — A medium-price balance of performance to match the best Troemner balances. Designed for appearance and dependability. All-glass lid for maximum visibility. Exterior metal parts chrome plated.
 Dimensions: 13 $\frac{1}{2}$ " W, 6 $\frac{1}{2}$ " D, 7 $\frac{1}{2}$ " H.
 Shipping weight: approx. 11 lb.



Model 190 — Capacity 50 grams (2 oz); sensitivity reciprocal 15 mg (.25 GN). Center agate bearings. Hinged lid with glass in top.
 Dimensions: 14" W, 6 $\frac{1}{2}$ " D, 7 $\frac{1}{2}$ " H, 11" H with lid open.
 Shipping weight: approx. 10 lb.
 Like all the other balances on this sheet, Model 190 is also available as Model 190S with scoop for chemicals or seeds in place of one 3" teardrop-shape stainless steel pan.

Any model shown may be modified to customer specifications.

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Heavy-duty laboratory balances by Troemner



Model O7B — Capacity 2 kg (4½ lb)—Sensitivity 65 mg (1 GN)—For its high sensitivity (65 mg) this all-around laboratory balance offers unusually high capacity—2 kg (4½ lb)—making it a very useful and versatile balance for any laboratory or industrial purpose. Has 6" removable stainless steel pans. Attractive and easy-cleaning blue-gray Chromatex finish. Plastic dust cover available as accessory.

BEAM: Graduated to 10 grams in 100-mg divisions and to 150 grains in 1-grain divisions. Available at additional cost in decimal-pound graduations, to 0.01 lb in .0002-lb divisions.

DIMENSIONS: 14½" W, 6" D, 7¼" H.

SHIPPING WEIGHT: approx. 6 lb.



Model O6B — Capacity 110 grams (4 oz)—Sensitivity 50 mg (0.8 GN)—Here is an ideal balance for smaller quantities—trim and compact for maximum portability. 4" stainless steel removable pan and 4" fixed plate. Balance finished in attractive blue-gray Chromatex. Nickel-plated brass weights included.

BEAM: Graduated to 10 grams in 100-mg divisions and to 150 grains in 1-grain divisions.

DIMENSIONS: 11" W, 4" D, 7½" H.

SHIPPING WEIGHT: approx. 4 lb.

Any model shown may be modified to customer specifications.

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Other heavy-duty Troemner laboratory balances

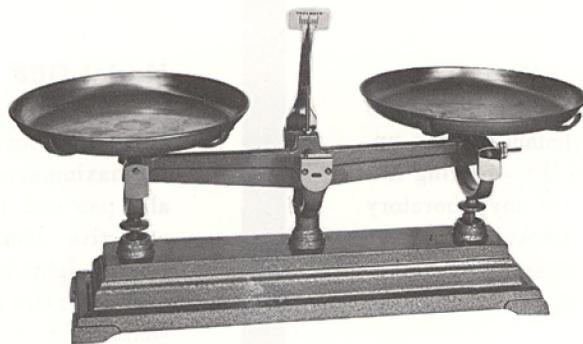


Model 4-75 — Capacity 1 kg (2 lb)—Sensitivity 500 mg (10 GN)—Blue-gray Chromatex base with 6" stainless steel pans, upright pointer. Used for bulk weighing of chemicals, metal parts, etc.

BEAMS AVAILABLE AT ADDITIONAL COST:
Graduated to 1 oz in 1/100-oz divisions, to 8 oz in 1/8-oz divisions, or to 100 grams in 1-gram divisions.

DIMENSIONS: 14" W, 6" D, 9½" H.

SHIPPING WEIGHT: approx. 5 lb.



Model 2-75 — Capacity 5 kg (10 lb)—Sensitivity 1 gram (20 GN)—A larger version of the 4-75 described at left. Has 9" stainless steel pans.

BEAMS AVAILABLE AT ADDITIONAL COST:
Graduated to 16 oz in 1/4-oz divisions, to 500 grams in 1-gram divisions, or to 100 grams in 1-gram divisions.

DIMENSIONS: 21" W, 9" D, 12" H.

SHIPPING WEIGHT: approx. 11 lb.

Any model shown may be modified to customer specifications.

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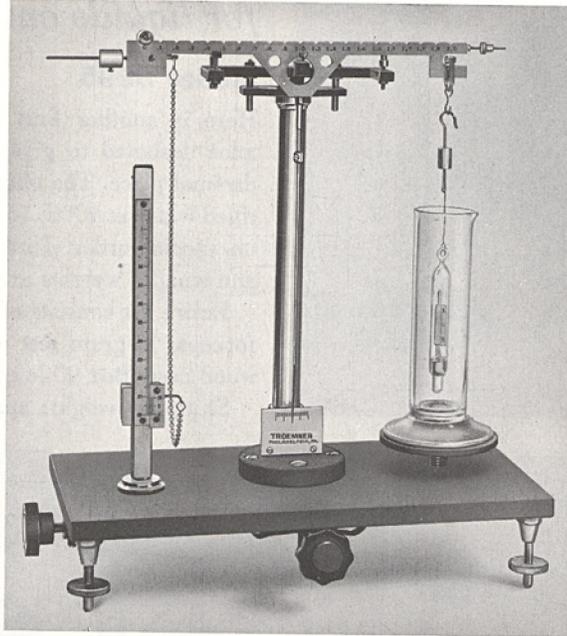
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Precision Specific-Gravity Chain Balance

by Troemner

for liquids and solids
and analytical balance (20g capacity)



Model S100 Liquids & solids

Model S101 Liquids only

Either model may be converted to a Chain Analytical Balance

For specific-gravity determinations as fine as 0.0001, this excellently-crafted balance is the ideal answer. Optically polished agate bearings and stellite knife edges, a hard rolled aluminum-alloy beam with three-point suspension, and a knob-operated chain—all these features contribute to precise control and extreme accuracy. Direct-reading vernier makes calculations unnecessary.

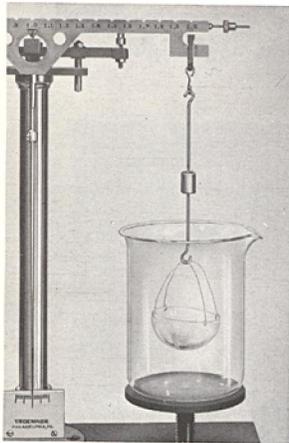
A thermometer-plummet (range 10 to 30°C) displaces exactly 10 grams of distilled water at 20°C (other temperatures available on special order). For determining specific gravity of solids, this plummet may be replaced with the slotted basket shown. The balance may also act as a conventional chain balance for weighings from 10 mg to 20 grams, with the use of the illustrated bow pan at slight additional cost.

Blue-gray Chromatex aluminum base 6" x 12" x 3/4", equipped with leveling screws, spirit level, and adjustable cylinder platform. Chrome-plated column with fallaway arms and three beam-arrest screws. Metal parts of the balance are completely rust-resistant.

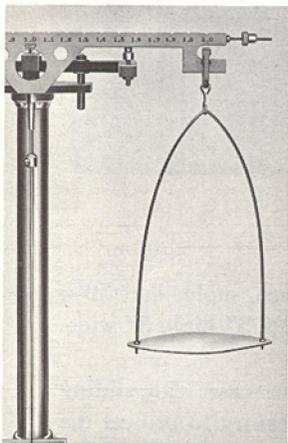
Shipping weight: approx. 15 lb.

Glass and mahogany balance case or plastic cover optional accessories.

Any model shown may be modified to customer specifications.



Slotted glass basket for specific gravity of solids.

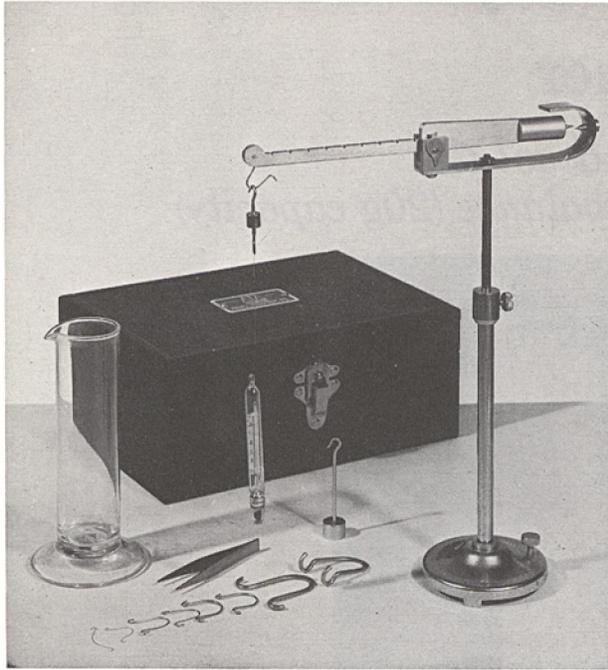


Bow pan for conversion to regular chain balance.

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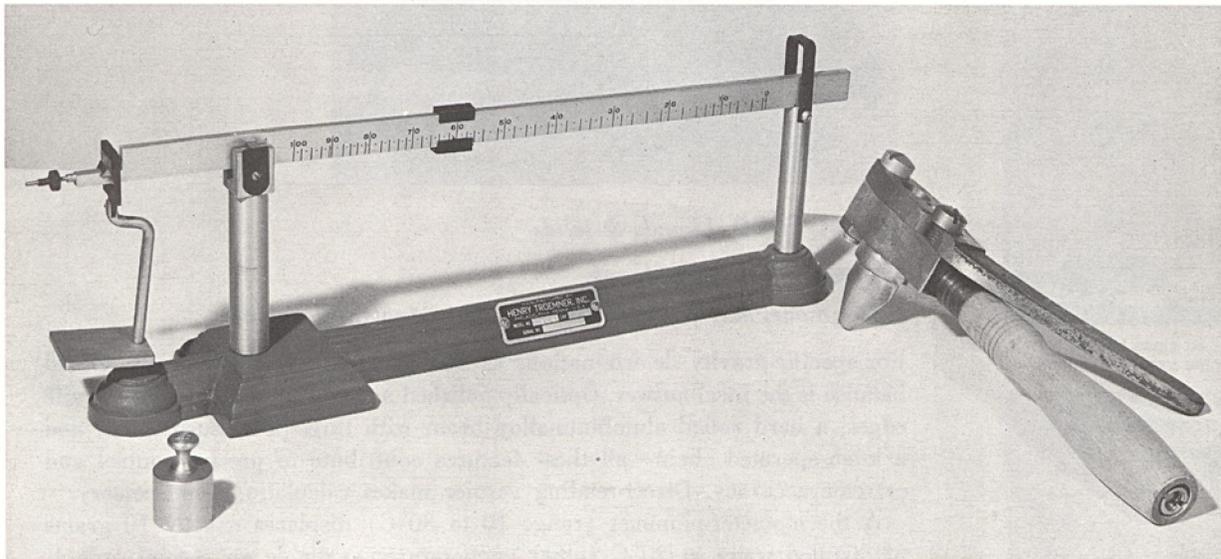
Westphal Specific-Gravity Balance for liquids only

Model 5995

Here is another fine Troemner specific-gravity balance designed to give liquid densities to the fourth decimal place. The plummet displaces 5 grams of distilled water at 20°C. 15°C plummets are also available on special order. Unit-weight is therefore 5 grams, and smaller weights are 500, 50, and 5 mg.

Entire kit consists of balance, jar, riders, plummet, forceps, 15-gram test weight, and leatherette-covered wood case. Box 9" long, 6½" wide, 3½" high.

Shipping weight: approx. 5 lb.



Solder-Testing Balance

Model 936—This very useful instrument shows the percentage of tin or antimony in lead. A cast of the specimen material, made in the mold, is placed on the pan of the scale. The sliding poise is moved out along the beam until the scale balances. At this point the indicator shows the percentage of tin from zero to 100% on the front of the beam, and the percentage of antimony from zero to 24% on the back of the beam. Balance is accurate to within 0.5%.

Complete set consists of balance, mold, and 50% brass weight. Dimensions 17" long, 5" high, 3" wide. Shipping weight: approx. 10 lb.

A glass and mahogany balance case with sliding front door is available as an accessory to protect the balance from air currents while weighing and to keep it free from dust and dirt at all times.

Dimensions 18" long, 16" high, 12" wide.

Shipping weight: approx. 18 lb.

Any model shown may be modified to customer specifications.

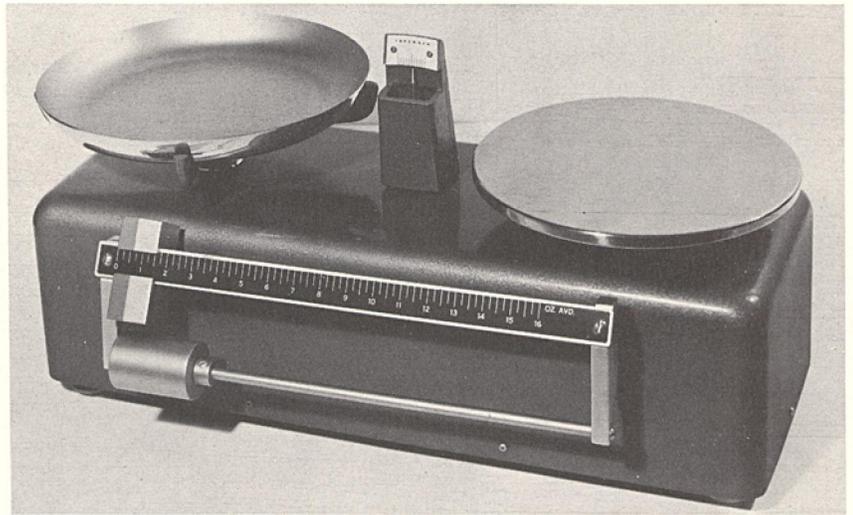
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Heavy-duty precision balances by Troemner

- Sensitivity 100 mg; capacities to 6 kg
- Attractive heavy aluminum case



Newly redesigned for all-around laboratory use, Troemner Balance Models 195-B and 2-89B now have a very sturdy aluminum case with chemical-resistant blue-gray Chromatex finish.

BEAMS available for either model:

- Graduated to 50 g in 500-mg divisions;
- to 100 g in 1-g divisions;
- to 500 g in 5-g divisions;
- to 8 oz in 1/8-oz divisions;
- to 16 oz in 1/4-oz divisions.

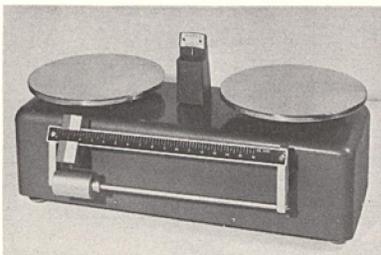
Please be sure to specify beam desired when ordering.

Pans, plates, or scoops are polished stainless steel. A streamlined index tower protects the easy-reading pointer. A locking tare weight simplifies net-weight measurements in containers.

Any model may be purchased without a beam at \$10 lower cost.



Model 195-BS or 2-89BS includes stainless steel scoop with counter weight for bulk weighing of dry chemicals, seeds, machined parts, etc.



Model 195-BP or 2-89BP has two identical stainless steel flat plates—either side of balance can carry weights or sample.

Model No.	Sensitivity	Capacity	Details	Dimensions	Approximate Shipping Weight
195-B	100 mg	3 kg	One 8" pan, one 6" plate	17½" x 8½" x 9½" high	22 lb
2-89B	200 mg	6 kg	One 9" pan, one 6" plate	20½" x 9" x 9½" high	24 lb
195-BS	100 mg	3 kg	One 15" x 8" scoop, one 6" plate	17½" x 8½" x 13¾" high	24 lb
2-89BS	200 mg	6 kg	One 19" x 9" scoop, one 6" plate	20½" x 9" x 15½" high	27 lb
195-BP	100 mg	3 kg	Two 6" flat plates	17½" x 8½" x 9½" high	23 lb
2-89BP	200 mg	6 kg	Two 6" flat plates	20½" x 9" x 9½" high	25 lb

Any model shown may be modified to customer specifications.

Henry Troemner, Inc.

6825 Greenway Ave., Phila., Pa. 19142



General Industrial Balance by Troemner



With 7" x 9" turned-up pan

With 19" x 9" stainless steel scoop

Model 10-S

Capacity 10 pounds

Sensitivity 1/100 oz (300 mg)

An extremely sensitive, rugged, and well-built balance for almost any purpose in the plant, laboratory, or shop. As shown in the smaller illustrations, alternate pans may be supplied for various materials to be weighed. Agate bearings assure high accuracy.

BEAM: graduated to 50 grams by 500-mg divisions or to 1 oz by 1/100-oz divisions.

WEIGHTS: supplied separately as required.

DIMENSIONS: 18" W, 9" D, 11" H.

SHIPPING WEIGHT: approx. 21 lb.

Portable Balance by Troemner

Model 700

Capacity 6 kg

Sensitivity 500 mg

A very useful balance which can be readily transported within the plant or used on construction sites for measuring and material testing. Especially adaptable for weighing soils, cement, aggregate, etc.

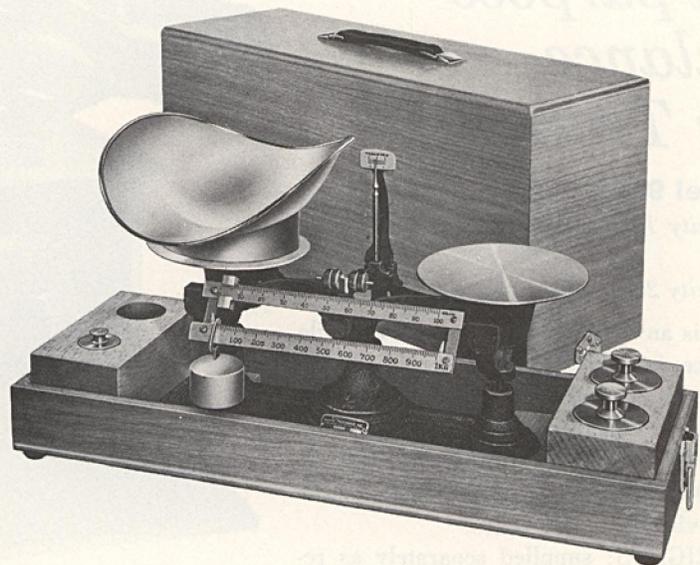
Stainless steel scoop (15" x 8" x 4") is standard equipment. Balance may be purchased either with or without oak case shown.

BEAMS: graduated to 100 grams in 1-gram divisions and to 1 kg in 100-gram divisions.

WEIGHTS supplied when case is purchased: One 1-kg, two 2-kg, 1 scoop tare weight.

DIMENSIONS: Case—25" long, 10" wide, 15" high; Balance—18" long, 10" wide, 11" high.

SHIPPING WEIGHT: Balance alone approx. 45 lb; balance with case approx. 65 lb.



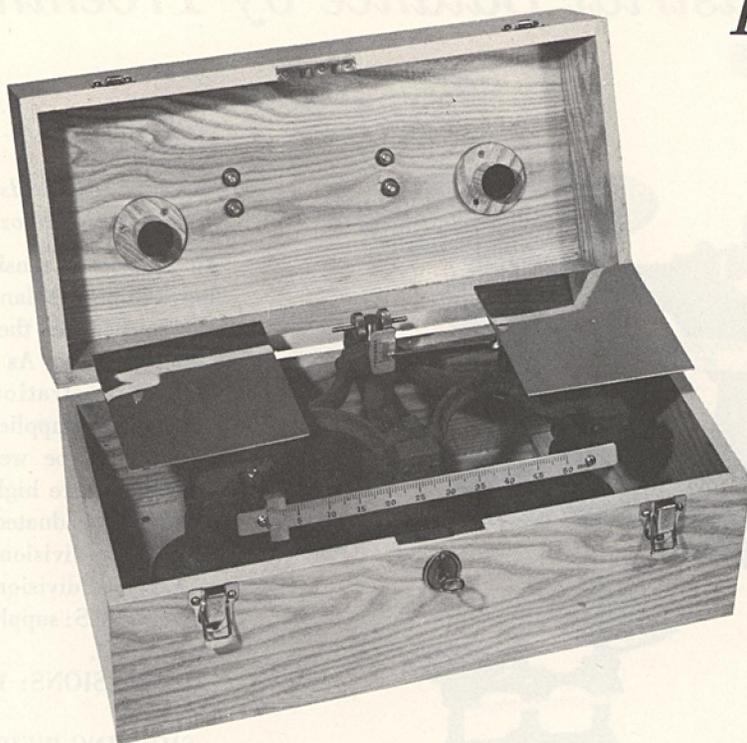
Any model shown may be modified to customer specifications.

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Portable Balance



Model S-742

Capacity 10 pounds

Sensitivity 1/100 oz

Designed for use by sealers of weights and measures in field work. Also useful as a highway balance and for soil analysis. Balance has two 5-inch square brass plates and an arrow indicator with ivory index.

BEAM: graduated to 1 oz in 1/100-oz divisions or to 50 grams in 500-mg divisions.

WEIGHTS: supplied separately as required.

DIMENSIONS OF CASE: 18" long, 8" wide, 8½" high.

SHIPPING WEIGHT: approx. 25 lb.

Heavy-duty all-purpose balance by Troemner

Model 9559

Capacity 10 lb with 1/100-oz sensitivity;
or

Capacity 20 lb with 1/40-oz sensitivity

Here is an extremely sturdy and versatile balance for use on a counter or in the plant. All critical parts are enclosed in a handsome oak case, protected from dust.

BEAM: graduated either to 1 oz in 1/100-oz divisions or to 50 grams in 500-mg divisions.

WEIGHTS: supplied separately as required.

DIMENSIONS of balance—19" long, 20" high, 19¼" wide; scoop 19" x 9".

SHIPPING WEIGHT: approx. 35 lb.



Balance shown with front open and closed.

Any model shown may be modified to customer specifications.

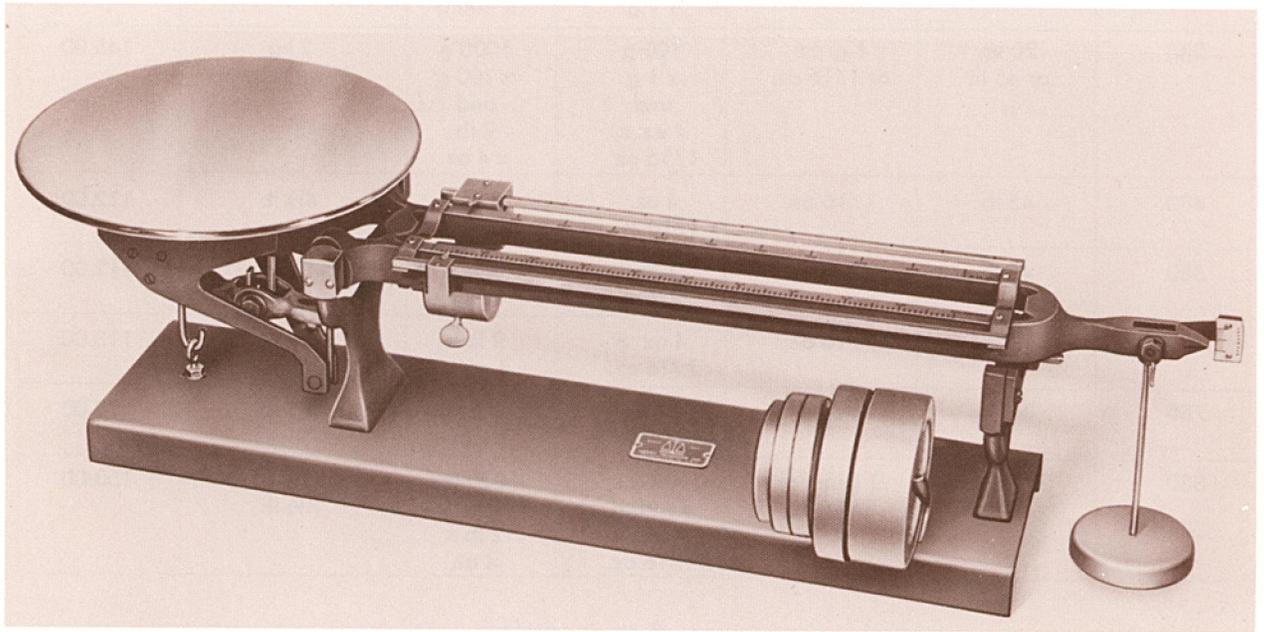
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The new Troemner heavy-duty solution balances Series 80

- 20-kg and 30-kg capacities
- sensitivity 1 gram at full load



Completely redesigned and corrosion-resistant throughout, these new Troemner Series 80 solution balances are recommended for use wherever liquids or solids in large quantities must be weighed with great accuracy.

11-inch stainless steel weighing plate, 2 stainless steel graduated beams (see beam calibrations in specifications on reverse side of this sheet). Smooth surfaces under the pan and along the base simplify cleaning.

Extremely versatile and durable—a laboratory stalwart.

Dimensions: 34" long, 11" wide, 10" high. Shipping weight (all models): Approx. 60 lb.

- Two capacities: 20 kg (45 lb) and 30 kg (70 lb)
- Metric and/or avoirdupois graduated beams
- Prices include weights on integral weight rack
- Optional scoops and other accessories for bulk weighing of seeds, chemicals, small metal parts, etc.
- Easy-to-read pointer and index
- Locking 2-kg tare weight
- Aluminum weigh beam
- Attractive blue-gray corrosion-resistant finish
- 2-year guarantee

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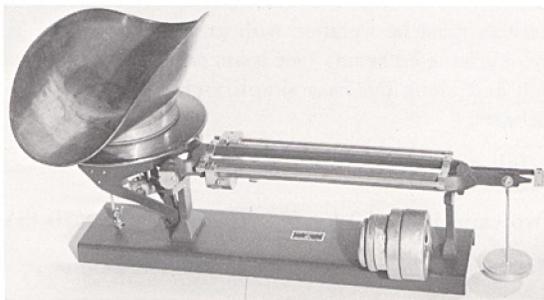


Troemner *Series 80* Solution Balances

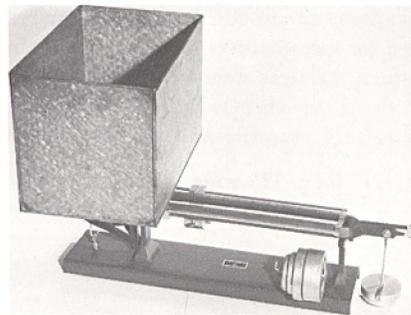
Specifications and prices

MODEL NO.	CAPACITY	SENSITIVITY	BEAM CALIBRATIONS		TARE CAPACITY	PRICE
			FRONT	BACK		
80	20 kg	1 gram	100 g x 1 g	1000 g x 100 g	2 kg	\$105.00
380	30 kg	1 gram	100 g x 1 g	1000 g x 100 g	2 kg	118.00
280	20 kg or 45 lb	1 gram or 1/16 oz.	100 g x 1 g and 4 oz. x 1/16 oz.	1000 g x 100 g and 2 lb x 4 oz.	2 kg or 4½ lb	145.00
480	45 lb	1/16 oz.	4 oz. 1/16 oz.	2 lb x 4 oz.	4½ lb	112.00
580	45 lb	.002 lb	.1 lb x .002 lb.	2 lb x .1 lb	4½ lb	112.00
680	70 lb	1/16 oz.	4 oz. x 1/16 oz.	2 lb x 4 oz.	4½ lb	118.00
780	70 lb	.002 lb	.1 lb x .002 lb	2 lb x .1 lb	4½ lb	128.00
880	30 kg or 70 lb	1 gram or 1/16 oz.	100 g x 1 g and 4 oz. x 1/16 oz.	1000 g x 100 g and 2 lb x 4 oz.	2 kg or 4½ lb	150.00

Accessories



Stainless steel scoop with foot to rest on weighing plate (Scoop, 6" deep, 22" long, 12" wide)
Model No. 1840 \$20.00



Subject box, 17½" x 12" x 12" deep,
with counterweight
Model No. 1850 \$24.00

Replacement weights:

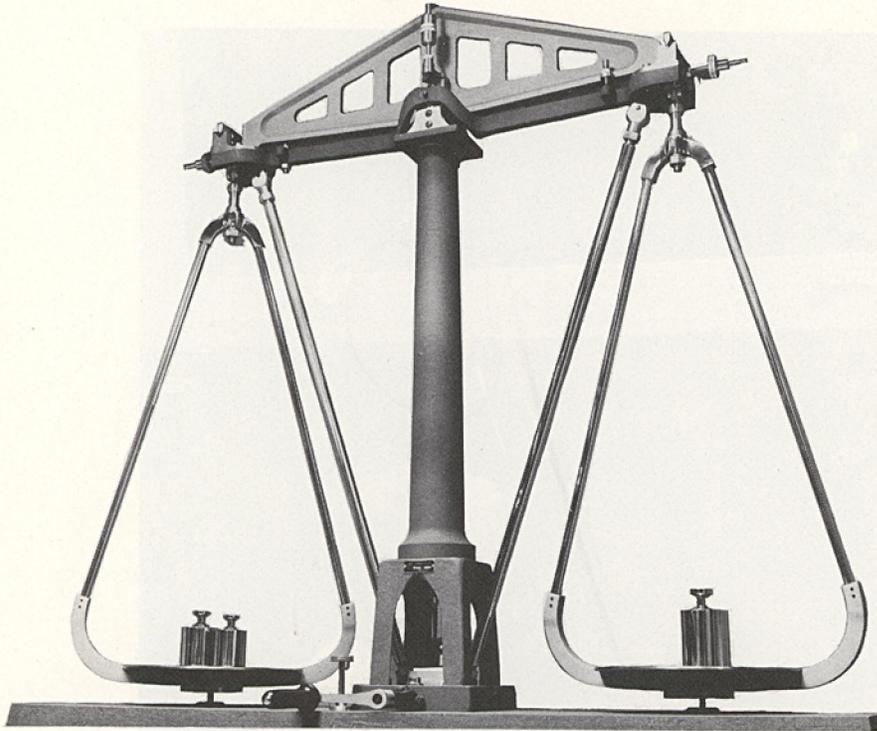
1 kg	\$ 1.30	2 lb	\$ 1.05
2 kg	1.75	4 lb	2.25
5 kg	2.50	10 lb	3.00
10 kg	3.50	20 lb	4.00
Complete set, metric ..	11.00	Complete set, avoirdupois	16.00

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High-sensitivity, large-capacity balances by Troemner

30kg, 60kg, 90kg capacities



Series 175

These popular very-heavy-duty analytical balances are particularly useful—in fact, essential—for extremely fine weight determinations in the following fields: Standards laboratories; nuclear testing; precious metals; quality control.

Series 175 Balances by Troemner weigh up to 100 kg of material with an accuracy of 60 mg. Smaller quantities can be weighed accurately to 30 mg. They meet all the requirements for precise weighing at full load.

Heavy blue-gray painted aluminum base and column, lacquered brass beam. Fall-away beam support and pushbutton pan arrest. All exposed steel parts carefully blued.

Dimensions, all models: 49" W, 15" D, 48" H; beams 31" long; plate diameter 11"; pan arches 16" wide.

Model No.	Capacity	Sensitivity Reciprocal	Approximate Shipping Wght.
1751	30 kg (66 lb)	30 mg (0.5 grain)	285 lb
175	60 kg (132 lb)	60 mg (1.0 grain)	315 lb
1755	90 kg (198 lb)	60 mg (1.0 grain)	345 lb

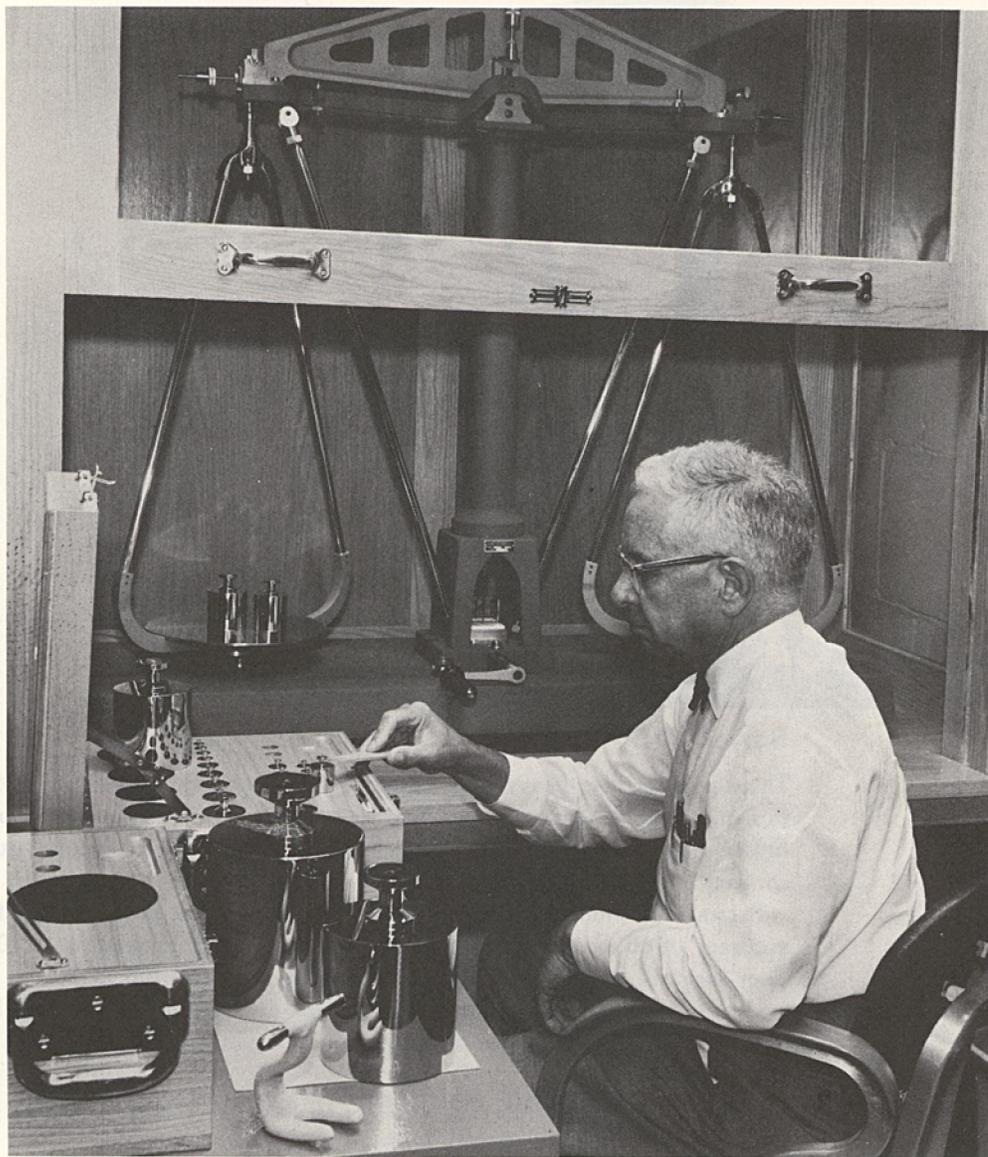
Any model shown may be modified to customer specifications.

Henry Troemner, Inc.

6825 Greenway Ave., Phila., Pa. 19142



*Enclosed high-sensitivity,
high-capacity balances
by Troemner*



Series 175-C

All models of the Series 175 Balances described on the front of this sheet are available also with the expertly crafted polished oak case illustrated here. The case has been designed to protect the balance from air currents when in operation and from dust at all times. An easily-

operated sliding glass door makes the case easily accessible.

Order an enclosed model by adding a "C" after the model number shown on the front.

Dimensions of case: 58" W, 28" D, 52" H.

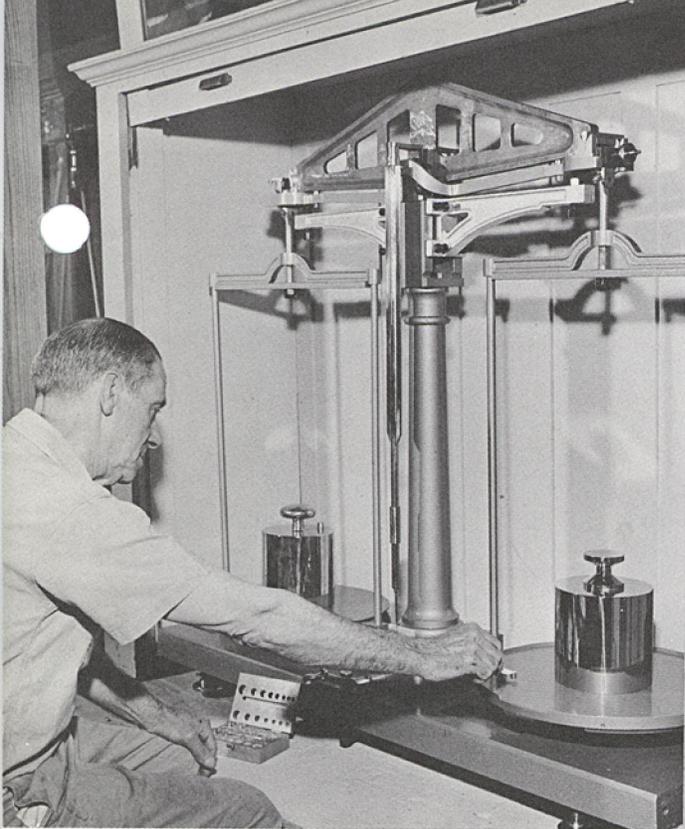
Shipping weight: approx. 610 lb plus weight of balance.

Any model shown may be modified to customer specifications.



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6825 Greenwood Ave., Philadelphia, Pa. 19142



TROEMNER



- **WEIGHT CALIBRATION AND CERTIFICATION**
50 micrograms to 5,000 kg (11,000 lb)
- **WEIGHT REFINISHING**
- **SPECIAL WEIGHTS TO SPECIFICATION**

All NBS tolerances from Class M to Class T

1. CALIBRATION

Take advantage of TROEMNER's complete facilities and unique skill in weight calibration and adjustment to meet your requirements and to comply with U. S. Government contract specifications.

New weights or weight sets and even those you are now using may be calibrated and certified by TROEMNER to show traceability to National Bureau of Standards master weights. This information is provided on a certificate known as a "Traceable Certificate."

Many Government and industrial specifications make a further requirement, namely that the actual value of each weight be certified. For those instances we supply a "Weight Calibration Certificate."

Both TROEMNER certificates are completely acceptable for industrial and Government requirements. The Traceable Certificate is most frequently used, and it is also more economical.

The information listed on each of the two TROEMNER calibration certificates is as follows:

TRACEABLE CERTIFICATE

1. Owner's name and address
2. Range of weights in set

3. Class of adjustment and details of construction
4. Statement that weights are within tolerance
5. NBS numbers for TROEMNER Master Weights

WEIGHT CALIBRATION CERTIFICATE

1. All the information in Traceable Certificate
2. Listing of each weight and its actual value
3. NBS tolerance for each weight

1a. CALIBRATION FEES

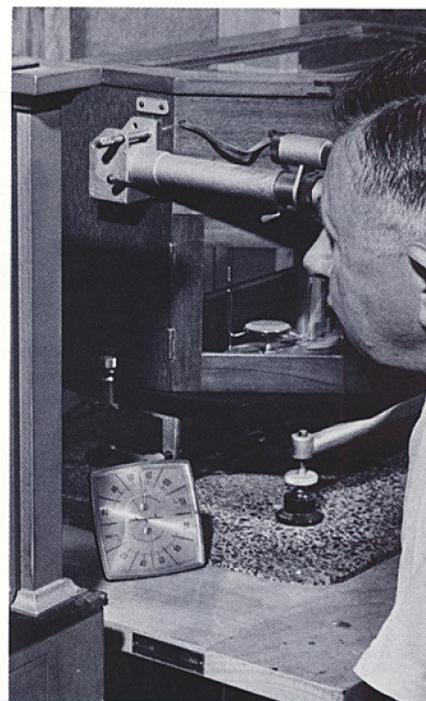
Fees depend on the class of adjustment, construction, and quantity of weights involved.

2. WEIGHT REFINISHING

Your used weights can be made like new by TROEMNER at the time of calibration. Refinishing includes cleaning, polishing, plating, and calibration to the specified tolerance. Any weights that cannot be refinished or calibrated will be replaced if you so desire. Your weight case can also be refinished or replaced on request.

3. QUOTATION

For a quotation on calibration and/or refinishing, pack the weights or weight set in a strong carton, making sure that all weights are protected from damage in shipment. Insure for full value and ship to TROEMNER. Your quotation will be sent promptly on receipt of weights.



TROEMNER manufactures a full line of balances, weights, and mass standards. Write for catalog.

Henry TROEMNER, Inc.

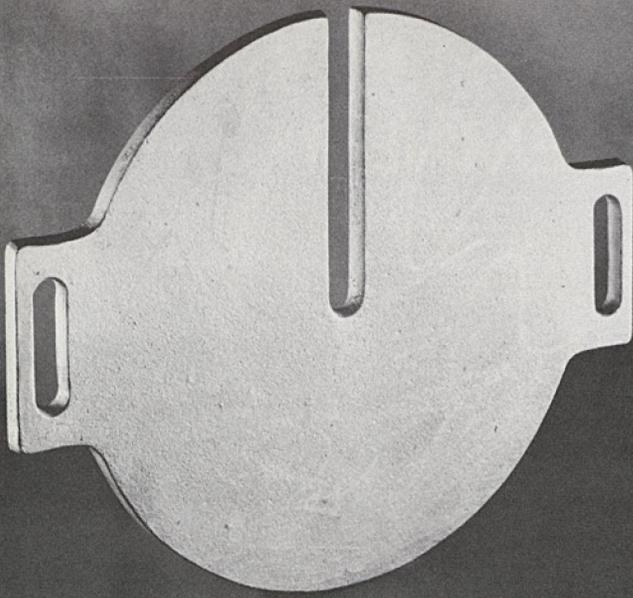
6825 Greenway Ave., Philadelphia, Pa. 19142 • Phone (215) 724-0800



SPECIAL WEIGHTS by TROEMNER

50 micrograms to 5,000 kg (11,000 lb)

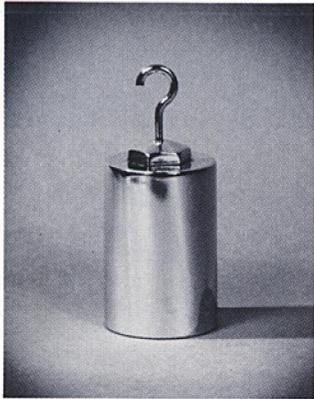
SLOTTED, HOOK, and OTHER SHAPES FOR ANY PURPOSE, especially for use with and calibration of PRESSURE GAUGES • TENSILE TESTERS DEAD-WEIGHT TESTERS • LOAD CELLS TORQUE TESTERS • PROVING RINGS OR ANY FORCE-MEASURING DEVICE



50 lb, Class T, cast iron, slotted



10 lb, Class S-1, chrome-plated brass, grip handle



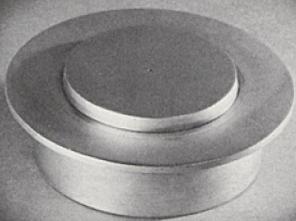
8 oz, Class P, lacquered brass, hook



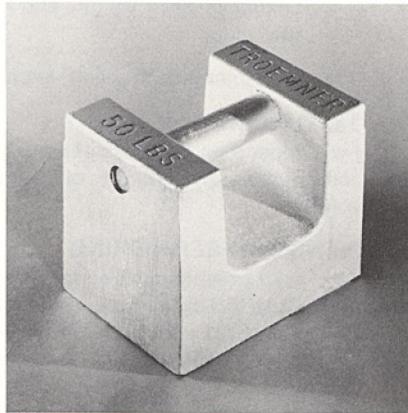
1 lb to 1/8 oz, Class C, stainless steel, pinned and sealed

The weights and weight sets illustrated here are just a sampling of the almost unlimited variety of special weights that TROEMNER can manufacture and calibrate to your specifications.

TROEMNER special weights can be made of any material, in any shape and size, and to any NBS tolerance from Class M to Class T. Send a drawing and specification for a quotation.



5 lb, Class Q, stainless steel, one piece
Set 20 kg to 1 gram, Class S, stainless steel, screw knob



50 lb, Class C, cast iron, grip handle

Set 20 lb to 5 lb, Class T, cast iron, slotted



Henry TROEMNER, Inc.

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FOR CHECKING PRE-PACKAGED COMMODITIES as described in **NBS HANDBOOK 67**
Check accuracy of low-capacity scales and balances with Troemner

Stainless Steel TEST WEIGHT KIT SW-20



Kit No. SW-20, complete in carrying case, consists of the three separate units shown.

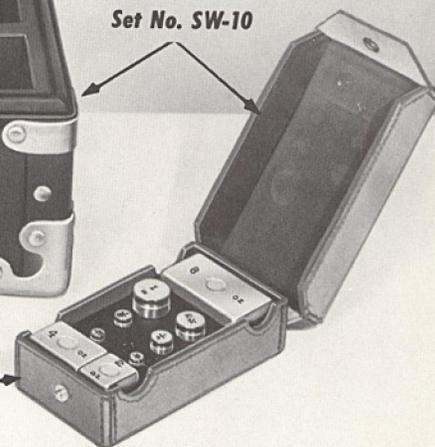


EXCLUSIVE FINGER NOTCHES

Set No. SW-10



Set No. SW-3



Set No. SW-20

- For checking scales and balances in stores and manufacturing plants
- Total available weight 8.721 lb
- All weights one-piece 18-8 stainless steel or aluminum

Kit SW-20 is an easily portable high-quality set of avoidupois test weights especially designed for checking the accuracy of scales and balances in supermarkets, grocery and delicatessen stores, drug counters, packaging operations, manufacturing, etc.

The entire set is contained in a sturdy metal-reinforced trunk-type carrying case with handle. The weights total 8.721 pounds. Every weight is made in strict conformity with Class "C" tolerances and specifications. Weights from 2 lb down to 0.01 lb are precision-machined from Type 18-8 stainless steel for extreme accuracy, long life, and resistance to corrosion and abrasion. The five smallest weights (0.005 lb to 0.001 lb) are finely machined concave aluminum.

An exclusive TROEMNER feature: The three 2-lb weights are provided with finger notches (see illustration) for easy handling.

Individual compartments in the carrying case are provided for each 2-lb and 1-lb weight, for the set from 8 oz down to 1/16 oz, and for the decimal-pound set from 0.3 lb down to 0.001 lb. The decimal-pound set is also available separately as Set SW-3.

A compartment in the lid of the carrying case measures 8¼" x 6¼" x 1½" deep, providing space for seals, tools, and other equipment.

TROEMNER Set No. SW-20..... \$150

- | | | |
|------------------|---------------------|----------------------|
| • 3 2-lb weights | • 1 ¼-oz weight | • 1 0.03-lb weight |
| • 1 1-lb weight | • 1 ⅛-oz weight | • 1 0.02-lb weight |
| • 1 8-oz weight | • 2 1/16-oz weights | • 1 0.01-lb weight |
| • 1 4-oz weight | • 1 0.3-lb weight | • 1 0.005-lb weight |
| • 1 2-oz weight | • 1 0.2-lb weight | • 1 0.003-lb weight |
| • 1 1-oz weight | • 1 0.1-lb weight | • 1 0.002-lb weight |
| • 1 ½-oz weight | • 1 0.05-lb weight | • 2 0.001-lb weights |

TROEMNER Set No. SW-10..... \$110

Same as SW-20 but without decimal-pound test weights from 0.3 lb to 0.001 lb

TROEMNER Set No. SW-3..... \$44

Decimal-pound test weights from 0.3 lb to 0.001 lb

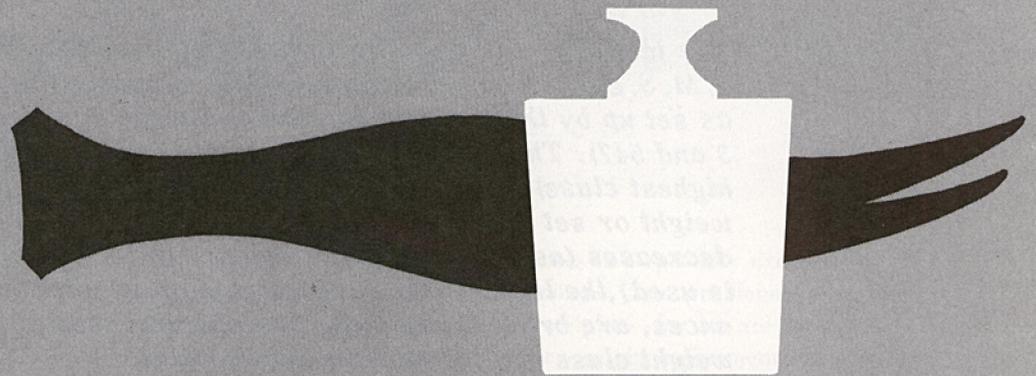
TROEMNER manufactures a full line of balances, weights, and mass standards. Write for the complete TROEMNER catalog.

Henry TROEMNER, Inc.

6825 Greenway Ave., Philadelphia, Pa. 19142 • Phone (215) 724-0800



TROEMNER



precision laboratory weights



HENRY TROEMNER, INC.
PHILADELPHIA, PA.

TROEMNER

precision laboratory weights

From 0.65 mg. (1/100 grain) to 250 kg. (550 lb.)

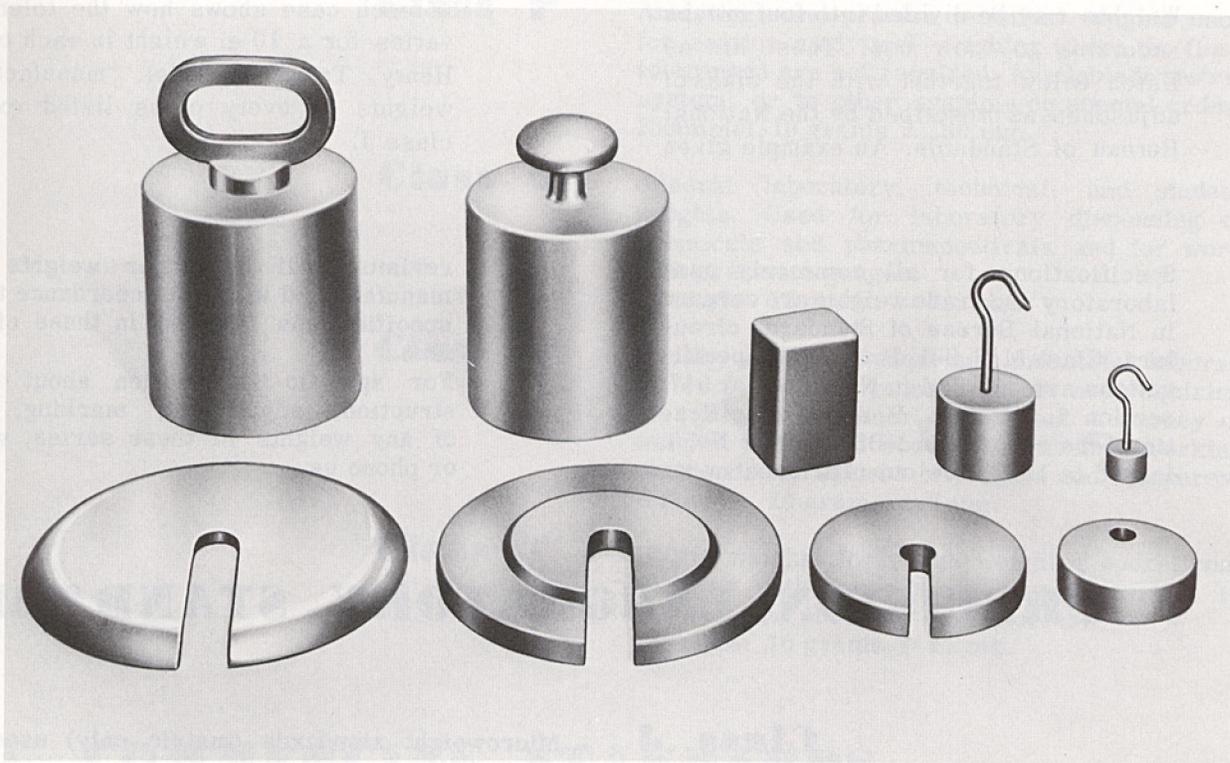
There has long been some degree of confusion in the realm of classification of laboratory standards and working weights. We hope this catalog will help to dispel some of the fog and present in one handy place the basic information every balance user should have on weights and standards.

The familiar classification of laboratory weights (in Classes J, M, S, etc.) is based entirely on the tolerances in accuracy as set up by the National Bureau of Standards (Circulars 3 and 547). The higher in the scale of classes (J being the highest class), the lower the tolerance for any individual weight or set of weights. As the need for extreme accuracy decreases (as, for example, a balance of less sensitivity is used), the lower classes of weights, of greater tolerances, are brought into play. The specific uses of each weight class are indicated in this booklet.

Troemner manufactures laboratory weights of all N.B.S. classes except J, and all Troemner weights are made in strict accordance with National Bureau of Standards specifications.

WEIGHTS OF SPECIAL SIZE OR SHAPE: We specialize in making weights in any class to suit individual requirements. Write for quotation. Inquiries about Troemner balances and weights, or about laboratory weighing procedure, are welcome; write or phone Henry Troemner, Inc., Philadelphia, Pa.

Special precision weights by Troemner



Precision laboratory weights for special purposes is a specialty excelled in by very few manufacturers. Troemner, however, welcomes your problems involving even the most unusual configurations and sizes of weights—for we are set up to handle the unusual along with the standard laboratory-weight assignment.

- You can specify Troemner weights in any size from 0.65 mg (1/100 grain) up to 250 Kg. (550 lb.)
- Available in any shape specified (screw knob, grip handle, hook hanger, solid cube, solid cylinder, slotted disc, etc.).
- All Troemner weights are adjusted to National Bureau of Standards tolerances for Classes S, S-1, P, Q, C, and T. Other adjustments on request.
- We meet your specifications as to shape, size, etc.
- No limitation on material as long as it is machinable or

castable. For example, we regularly supply weights in brass, aluminum, steel, cast iron, stainless steel, and tantalum. Consult Troemner for weights in any material for special applications.

- Specify any finish—plating in nickel, chromium, or cadmium; brass lacquer; anodized aluminum, etc.
- We supply weights in all systems. You need merely specify whether you want weights in metric, avoirdupois, or troy (apothecary) system.

Troemner master weights are certified by the U. S. Bureau of Standards for accuracy. At your request, we certify the calibration of all weights shipped to you. Certificate indicates nominal value, tolerance, and true value. We can also submit weights directly to the Bureau of Standards for certification when required.

A final word: Your precision weighing can only be as good as the weights and the balances you use. Troemner is a name world-renowned in laboratory balances and weights—the best combination is one of Troemner's complete line of laboratory balances and a set of Troemner precision weights. Send for complete catalog.

WEIGHT CLASSIFICATION

Weights may be divided into four groups according to their use. These are as listed below together with the class of adjustment as prescribed by the National Bureau of Standards. An example given

in each case shows how the tolerance varies for a 10 g. weight in each class. Henry Troemner, Inc., manufactures weights in every class listed except class J.

Specifications for all commonly used laboratory and trade weights are covered in National Bureau of Standards circulars. Class M, S, S-1, P, Q, and T Specifications are detailed in NBS circular 547, section 1. Class A, B, and C specifications are covered in NBS circular No. 3, issued in 1918, now out of print but under

revision. All Troemner weights are manufactured in strict accordance to the specifications outlined in these circulars.

For specific information about construction, adjustment, marking, etc. of any weights in these series, write or phone us.

1. PRECISION LABORATORY STANDARDS

- Class J** Microweight standards (metric only) used in micro balance work.
Example: 10 grams \pm .003 mg.
- Class M** High-precision scientific standards (metric only) used as reference, and in high-precision and high-constancy work.
Example: 10 grams \pm .050 mg.
- Class S** Scientific Standards used for reference, calibration and precision analytical work in physical and chemical laboratories and in assay work. Available in metric system only.
Example: 10 grams \pm .074 mg.
- Class S-1** Laboratory standards used for routine analytical and precision, nonmetric work with balances using quick-weighing devices, such as a chain. This class bridges the gap between the best laboratory weights (Class P) and the precision laboratory standards. Available in metric system, or in other systems on special order.
Example: 10 grams \pm .25 mg.

2. LABORATORY WEIGHTS

- Class P** Analytical and precise technical weights used for routine analytical weighing where the finer tolerances are not required. Available in metric system, or in other systems on special order. Example: 10 grams \pm .50 mg.
- Class Q** General laboratory, technical, and student weights. Used for laboratory dispensing of chemicals and pharmaceuticals and for work with precision gauges. Example: 10 grams \pm 2.0 mg.
- Class C** Widely used in student and industrial laboratories for weight measurements not requiring the greater or finer adjustment accuracy of weights described above. Also used as working standards for sealers of weights and measures. Example: 10 grams \pm 7 mg.
- Class T** Utility weights for rough weighing operations, such as with force measuring apparatus, in physical and chemical laboratories. Example: 10 grams \pm 21 mg.

3. COMMERCIAL STANDARDS

- Class A** State Primary Standards used as reference standards and for checking class B and C weights.
- Class B** State Working Standards for sealers of weights and measures and for high-grade working standards such as would be needed to test Class C weights.
- Class C** Test Weights designed for working standards for sealers of weights and measures, for use in testing trade weights and weighing instruments. This adjustment also used for laboratory and industrial work.

4. TRADE WEIGHTS

Used in the sale of commodities and services and made and adjusted to specification listed in National Bureau of Standards Handbook 44, 2nd Edition. Not generally used for laboratory work.

ANALYTICAL & LABORATORY WEIGHT TOLERANCES

National Bureau of Standards' Tolerances for Individual Weights and Group Tolerances for weights in a set.

All Tolerances in Milligrams except in Grams where noted. Missing Class C Tolerances - Use Tolerance for next lowest denomination.

Denomination	CLASS M Tolerance (mg.)		CLASS S Tolerance (mg.)		CLASS SI Tolerance (mg.)		Class P	Class Q	Class C	Class T	Denomination
	Individual	Group	Individual	Group	Individual	Group					
100 G.	0.50)		.25)		1.0		2.0	9.0	30	100	100 G
50 G.	.25)		.12)	None	0.60		1.2	5.6	20	62	50 G
30 G.	.15)	None	.074)		.45		.90	4.0	-	44	30 G
20 G.	.10)		.074)	0.154	.35	Two-thirds of weights	.70	3.0	10	33	20 G
10 G.	.050)		.074)		.25	in a set must	.50	2.0	7	21	10 G
5 G.	.034)		.054)		.18	be within one	.36	1.3	5	13	5 G
3 G.	.034)	0.065	.054)	0.105	.15	half of the	.30	0.95	-	9.4	3 G
2 G.	.034)		.054)		.13	individual	.26	.75	3	7.0	2 G
1 G.	.034)		.054)		.10	tolerances.	.20	.50	2	4.5	1 G
500 Mg.	.0054)		.025)		.080		.16	.38	1.5	3.0	500 Mg.
300 Mg.	.0054)	0.0105	.025)	0.055	.070		.14	.30	-	2.2	300 Mg.
200 Mg.	.0054)		.025)		.060		.12	.26	0.7	1.8	200 Mg.
100 Mg.	.0054)		.025)		.050		.10	.20	0.5	1.2	100 Mg.
50 Mg.	.0054)		.014)		.042		.085	.16	.35	0.5	50 Mg.
30 Mg.	.0054)	0.0105	.014)	0.034	.038		.075	.14	-	.68	30 Mg.
20 Mg.	.0054)		.014)		.035		.070	.12	.20	.56	20 Mg.
10 Mg.	.0054)		.014)		.030		.060	.10	.15	.40	10 Mg.
5 Mg.	.0054)		.014)		.028		.055	.080	.10	-	5 Mg.
3 Mg.	.0054)		.014)		.026		.052	.070	-	-	3 Mg.
2 Mg.	.0054)	0.0105	.014)	0.034	.025		.050	.060	.05	-	2 Mg.
1 Mg.	.0054)		.014)		.025		.050	.050	.04	-	1 Mg.
½ Mg.	.0054)		.014)		.025		.050	.050	.04	-	½ Mg.

Conversion Factors for Units of Mass

Values in boldface are exact values

Units of mass less than pounds and kilograms						
Unit	Grains	Apothecaries' scruples	Pennyweights	Avoirdupois drams	Apothecaries' drams	Avoirdupois ounces
1 grain	1	0.05	0.041 666 67	0.036 571 43	0.016 666 7	0.002 285 71
1 apothecary scruple	20	1	0.833 333 3	0.731 428 6	0.333 333	0.045 714 3
1 pennyweight	24	1.2	1	0.877 714 3	0.4	0.054 857 1
1 avoirdupois dram	27.343 75	1.367 187 5	1.139 323	1	0.455 729 2	0.062 5
1 apothecary dram	60	3	2.5	2.194 286	1	0.137 142 9
1 avoirdupois ounce	437.5	21.875	18.229 17	16	7.291 67	1
1 apothecary or troy ounce	480	24	20	17.554 28	8	1.097 142 9
1 apothecary or troy pound	5 760	288	240	210.651 4	96	13.165 714
1 avoirdupois pound	7 000	350	291.666 7	256	116.666 7	16
1 milligram	0.015 432 356	0.000 771 618	0.000 643 014 8	0.000 564 383 3	0.000 257 205 9	0.000 035 273 96
1 gram	15.432 356	0.771 618	0.643 014 85	0.564 383 3	0.257 205 9	0.035 273 96
1 kilogram	15 432.356	771.617 8	643.014 85	564.383 32	257.205 94	35.273 96

Units of mass greater than avoirdupois ounces						
Unit	Apothecaries' or troy ounces	Apothecaries' or troy pounds	Avoirdupois pounds	Milligrams	Grams	Kilograms
1 grain	0.002 083 33	0.000 173 611 1	0.000 142 857 1	64.798 918	0.064 798 918	0.000 064 798 9
1 apothecary scruple	0.041 666 7	0.003 472 222	0.002 857 143	1 295.978 4	1.295 978 4	0.001 295 978
1 pennyweight	0.05	0.004 166 667	0.003 428 571	1 555.174 0	1.555 174 0	0.001 555 174
1 avoirdupois dram	0.056 966 146	0.004 747 178 8	0.003 906 25	1 771.845 4	1.771 845 4	0.001 771 845
1 apothecary dram	0.125	0.010 416 667	0.008 571 429	3 887.935 1	3.887 935 1	0.003 887 935
1 avoirdupois ounce	0.911 458 3	0.075 954 861	0.062 5	28 349.527	28.349 527	0.028 349 53
1 apothecary or troy ounce	1	0.083 333 33	0.068 571 43	31 103.481	31.103 481	0.031 103 48
1 apothecary or troy pound	12	1	0.822 857 1	373 241.77	373.241 77	0.373 241 77
1 avoirdupois pound	14.583 333	1.215 277 8	1	453 592.427 7	453.592 427 7	0.453 592 427 7
1 milligram	0.000 032 150 74	0.000 002 679 23	0.000 002 204 62	1	1	0.000 001
1 gram	0.032 150 74	0.002 679 23	0.002 204 62	1 000 000	1 000	0.001
1 kilogram	32.150 742	2.679 228 5	2.204 622 341	1 000 000	1 000	1

Units of mass greater than avoirdupois ounces						
Units	Avoirdupois ounces	Avoirdupois pounds	Short hundred-weights	Short tons	Long tons	Metric tons
1 avoirdupois ounce	1	0.062 5	0.000 625	0.000 031 25	0.000 027 901 79	0.000 028 349 53
1 avoirdupois pound	16	1	0.01	0.000 5	0.000 446 428 6	0.000 453 592 427 7
1 short hundredweight	1 600	100	1	0.05	0.044 642 86	0.045 359 243
1 short ton	32 000	2 000	20	1	0.892 857 1	0.907 184 86
1 long ton	35 840	2 240	22.4	1.12	1	1.016 047 04
1 kilogram	35.273 957	2.204 622 34	0.022 046 223	0.001 102 311 2	0.000 984 206 4	0.001
1 metric ton	35 273.957	2 204.622 34	22.046 223	1.102 311 2	0.984 206 40	1

TROEMNER WEIGHT CALIBRATION SERVICE

1. It is often necessary that purchased weights or weight sets be accompanied by a certificate stating that the weights were adjusted with TROEMNER master weights which are traceable to National Bureau of Standards master weights by an NBS test number.

This is called a "Traceable Certificate" and shows:

- Customer's name and address
- Range of weights in set
- Class of Adjustment
- Construction details
- Statement that weights are within prescribed tolerance
- NBS Test numbers for TROEMNER masterweights used

2. In some cases the actual values of adjustment are also required.

This is called a "Weight Calibration Certificate" and shows:

- All of above information
- Each weight and its actual value
- Tolerance allowed by NBS for each weight

3. Fees for the above certificates are based on the class of adjustment and quantity of weights. We will be pleased to submit a quotation for new weights or weight sets in your possession that require re-calibration.

NBS CALIBRATION SERVICE

The National Bureau of Standards maintain a calibration service for certain reference standards. We will gladly submit a quotation whenever this type of calibration is required.

The TROEMNER TRACEABLE CERTIFICATE or WEIGHT CALIBRATION CERTIFICATE are completely acceptable for most purposes, including performance on Government Contracts.

TROEMNER WEIGHTS - CLASS S, S-1, AND P

Supplied in polished hinged-lid mahogany box. Gram weight pockets Class S and S-1 are velvet lined. Complete with stainless steel bone-tipped forceps. Gram weight block and fractional tray are removable for use inside balance case. Class S and S-1 sets containing fractions are supplied with one 5 mg. and one 10 mg. rider, when requested, at no extra charge.

All weights have concave bottoms, and are highly polished. Their heads are shaped so as to give the best possible grip when picked up with forceps.

STAINLESS STEEL WEIGHTS are highly resistant to wear and corrosion and have low magnetic properties. They are made from an alloy whose nickel content is at least 50% of the chromium content, according to National Bureau of Standards requirements.

All milligram weights are flat, with smooth corners and edges, without rough edges or cracks. The denomination is marked on each weight and one side of the weight is bent up to form a convenient handle. In Classes S and S-1, weights are tantalum from 500 mg. to 50 mg., aluminum 30 mg. and below. All Class P mg. weights are aluminum.

CLASS S

STAINLESS STEEL LABORATORY WEIGHT SETS



RANGE	SET NO.	PRICE	RANGE	SET NO.	PRICE
20 g. to 1 g.	1221	\$43.50	100 g. to 1 g.	1621	54.25
100 mg.	1222	55.60	100 mg.	1622	66.50
10 mg.	1223	59.10	10 mg.	1623	69.00
5 mg.	1224	61.15	5 mg.	1624	70.15
1 mg.	1225	64.35	1 mg.	1625	75.00
50 g. to 1 g.	1521	48.50	200 g. to 1 g.	1721	78.80
100 mg.	1522	59.70	500 g. to 1 g.	1821	131.50
10 mg.	1523	63.00	1000 g. to 1 g.	1921	173.00
5 mg.	1524	65.25			
1 mg.	1525	68.80			

STAINLESS STEEL LABORATORY WEIGHT SETS



CLASS S-1

RANGE	SET NO.	PRICE	RANGE	SET NO.	PRICE
20 g. to 1 g.	2221	\$35.00	100 g. to 1 g.	2621	43.00
100 mg.	2222	43.25	100 mg.	2622	50.25
10 mg.	2223	47.10	10 mg.	2623	53.50
5 mg.	2224	48.25	5 mg.	2624	55.20
1 mg.	2225	50.00	1 mg.	2625	57.25
50 g. to 1 g.	2521	38.25	200 g. to 1 g.	2721	67.50
100 mg.	2522	46.00	500 g. to 1 g.	2821	116.00
10 mg.	2523	48.50	1000 g. to 1 g.	2921	155.00
5 mg.	2524	49.25			
1 mg.	2525	52.00			

CLASS P

RANGE	SET NO.	PRICE	RANGE	SET NO.	PRICE
20 g to 1 g	3221	\$28.00	100 g to 1 g	3621	\$34.30
100 mg	3222	34.60	100 mg	3622	40.00
10 mg	3223	37.68	10 mg	3623	42.00
5 mg	3224	38.60	5 mg	3624	44.00
1 mg	3225	40.00	1 mg	3625	45.60
50 g to 1 g	3521	30.60	200 g to 1 mg	3725	56.00
100 mg	3522	36.80	500 g to 1 mg	3825	89.50
10 mg	3523	39.30	1000 g to 1 mg	3925	121.75
5 mg	3524	40.85			
1 mg	3525	41.60			

RIDERS - Add \$1.00 for each rider desired.

CLASS S, S-1 & P

INDIVIDUAL STAINLESS STEEL LABORATORY WEIGHTS

SIZE	S	S-1	P	SIZE	S	S-1	P
1 g	\$3.30	\$3.00	\$2.40	100 g	\$ 7.70	\$ 7.00	\$ 5.60
2 g	3.30	3.00	2.40	200 g	12.10	11.00	8.80
3 g	3.30	3.00	2.40	300 g	14.85	13.50	10.80
5 g	3.30	3.00	2.40	500 g	17.60	16.00	12.80
10 g	3.85	3.50	2.80	1 kilo	26.40	24.00	19.20
20 g	5.12	4.65	3.72	2 kilo	39.60	36.00	28.80
30 g	5.67	5.15	4.12	3 kilo	61.60	56.00	44.80
50 g	6.33	5.75	4.60	5 kilo	79.20	72.00	57.60

MILLIGRAM WEIGHTS

	S	S-1	P
500 mg to 50 mg		\$2.75 ea.	\$2.50 ea.
30 mg to 1 mg		2.20 ea.	2.00 ea.
			\$2.00 ea.
			1.60 ea.

BEAM RIDERS

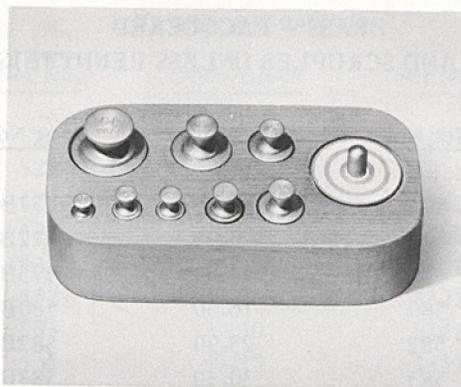
Standard riders are listed below. All riders are made of aluminum with the eye directly above and in the same plane as the legs. When ordering, give approximate thickness of beam so that rider will fit properly.

Riders will be made to order for any size not listed.

<u>Denomination</u>	<u>S</u>	<u>S-1</u>	<u>P</u>
1.0 Mg.	1.75	1.50	1.00
5.0 Mg.	1.75	1.50	1.00
6. Mg.	1.75	1.50	1.00
10. Mg.	1.75	1.50	1.00
12. Mg.	1.75	1.50	1.00

CLASS C

CLASS Q - ADD 10% TO CLASS C PRICES



**Metric
Brass Weights - Lacquered
In Polished Open Block Or
Hinged-Lid Case With Stainless Steel Forceps**

<u>Weight Range</u>	<u>Set No.</u>	<u>Open Block</u>	<u>Set No.</u>	<u>Hinged Lid Block</u>
10 Gram - 10 mg.	500	\$3.00	500B	\$4.50
20 Gram - 10 mg.	501	3.75	501B	6.40
50 Gram - 10 mg.	502	5.20	502B	6.75
100 Gram - 10 mg.	503	7.10	503B	9.50
Fractionals to 1 mg. - add \$1.25				
200 Gram - 1 gram	504	7.90	504B	9.10
500 Gram - 1 gram	505	10.85	505B	12.90
1000 Gram - 1 gram	506	15.70	506B	18.50
2000 Gram - 1 gram	507	29.35	507B	38.20
5000 Gram - 1 gram	508	51.25	508B	62.50
Fractional to 10 mg. - add \$2.80				

FRACTIONAL WEIGHT SET: 500 mg. - 10 mg. \$2.80

INDIVIDUAL CLASS C METRIC WEIGHTS - see page 17

NICKEL PLATED OR CHROME PLATED WEIGHTS - prices on request.

CLASS C

TROY OR APOTHECARY

BRASS – LACQUERED
SETS CONTAIN DRAMS AND SCRUPLES UNLESS PENNYWEIGHTS ARE SPECIFIED

<u>Weight Range</u>	<u>Set No.</u>	<u>Open Block</u>	<u>Set No.</u>	<u>Hinged Lid Block</u>
1 oz. – ½ grain	571	\$8.40	571B	\$9.60
2 oz. – ½ grain	572	9.95	572B	11.10
5 oz. – ½ grain	575	14.05	575B	15.40
10 oz. – ½ grain	580	16.50	580B	19.50
20 oz. – ½ grain	582	25.90	582B	28.75
30 oz. – ½ grain	583	30.10	583B	34.25
50 oz. – ½ grain	585	38.40	585B	41.30
100 oz. – ½ grain	590	63.25	590B	74.50
200 oz. – ½ grain	592	110.00	592B	125.35
300 oz. – ½ grain	593	189.50	593B	204.50
500 oz. – ½ grain	595	301.75	595B	325.00

No. 2323 Special Coin Weight Set 300 grains – .1 grain in Hinged lid Block \$15.50.

INDIVIDUAL WEIGHTS

<u>OUNCES</u>	<u>DRAMS</u>	<u>Knob</u>	<u>Coin</u>	<u>GRAINS</u>	<u>Al. Wire</u>	<u>Al. Concave</u>
¼ oz. \$1.00	½ dr. \$.95	\$1.60	½ gn	\$.40	\$.35	
½ oz. 1.25	1 dr. .95	1.60	1 gn	.40	.35	
1 oz. 1.45	2 dr. .95	1.60	2 gn	.40	.35	
2 oz. 1.70	4 dr. 1.20		5 gn	.40	.35	
5 oz. 2.50	8 dr. 1.20		10 gn	.50	.45	
10 oz. 3.75						
20 oz. 9.00						
30 oz. 11.00						
50 oz. 12.60						
100 oz. 24.30						
200 oz. 48.25						
300 oz. 87.30						
500 oz. 105.65						

<u>SCRUPLES</u>	<u>Coin</u>	<u>Knob</u>	<u>PENNYWEIGHTS</u>	<u>Knob</u>
½ scruple	\$1.50	\$.50	½ dwt.	\$.70
1 scruple	1.50	.70	1 dwt.	.75
2 scruple	1.50	.80	2 dwt.	.75
			5 dwt.	.90
			10 dwt.	1.20

CLASS C AVOIRDUPOIS

Brass - Lacquered

<u>Weight Range</u>	<u>Set No.</u>	<u>Open Block</u>	<u>Set No.</u>	<u>Hinged Lid Block</u>
1 oz. 1/16 oz.	520	\$3.25	520B	\$4.50
2 oz. 1/16 oz.	522	4.25	522B	5.50
4 oz. 1/16 oz.	524	5.90	524B	6.85
8 oz. 1/16 oz.	528	8.20	528B	9.70
1 lb. 1/16 oz.	531	13.50	531B	15.75
2 lb. 1/16 oz.	532	19.00	532B	22.20
4 lb. 1/16 oz.	534	27.10	534B	30.50
5 lb. 1/16 oz.	535	30.15	535B	36.50
10 lb. 1/16 oz.	540	52.50	540B	55.90
0.5 lb. .001 lb.	550	14.75	550B	16.20

INDIVIDUAL WEIGHTS

<u>OUNCES</u>		<u>POUNDS</u>		<u>POUNDS (Decimal)</u>	
1/128, 1/64, 1/32 & 1/16 oz.	\$.50	1 lb.	\$2.65	.5 lb.	\$3.25
1/8 oz.	.55	2 lb.	4.95	.2 lb.	2.50
1/4 oz.	.55	4 lb.	10.25	.1 lb.	2.45
1/2 oz.	.55	5 lb.	12.10	.05 lb.	2.25
1 oz.	.75	10 lb.	24.20	.02 lb.	2.20
2 oz.	1.00	20 lb.	45.00	.01 lb.	2.20
4 oz.	1.50	25 lb.	76.50	.005 lb.	2.20
8 oz.	2.05	50 lb.	115.30	.002 lb.	2.20
				.001 lb.	2.20

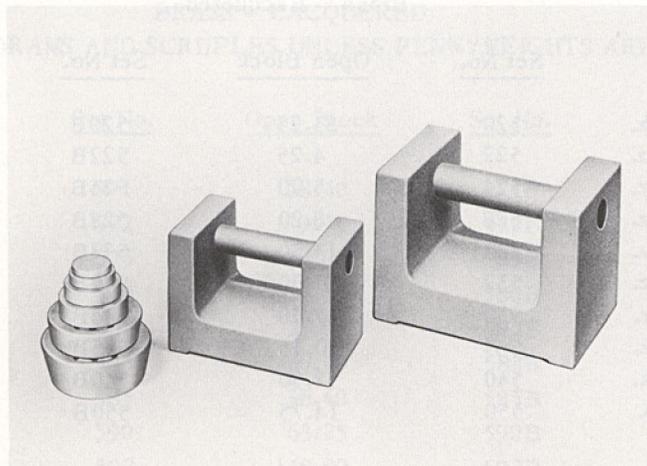
Individual Weights - Metric, Brass, Lacquered

	<u>SIZE</u>	<u>CLASS C</u>	<u>SIZE</u>	<u>CLASS C</u>
Aluminum				
Milligram	1, 2, 5, 10, 20, 50,		200 g.	\$1.60
Weights:	100, 200, 500	\$.35	500 g.	3.00
GRAM:	1 g.	.35	1,000 g.	5.90
	2 g.	.35	2,000 g.	11.00
	5 g.	.35	5,000 g.	29.25
	10 g.	.40	10,000 g.	52.50
	20 g.	.50	20,000 g.	105.00
	50 g.	.80	50,000 g.	260.00
	100 g.	1.10		

Chrome Plated Weights - See page 19.

CLASS T

ALUMINUM PAINTED CAST IRON



IRON AVOIRDUPOIS WEIGHT SETS

IRON METRIC WEIGHT SETS

Weights 5 lb. and over are rectangular with grip handle.

	Set No.	
1/2 lb. - 1/2 oz.	600	\$ 4.50
1 lb. - 1/2 oz.	601	9.30
2 lb. - 1/2 oz.	602	12.70
4 lb. - 1/2 oz.	604	15.00
5 lb. - 1/2 oz.	605	15.60
10 lb. - 1/2 oz.	610	24.60
20 lb. - 1/2 oz.	620	41.40
25 lb. - 1/2 oz.	625	53.50
50 lb. - 1/2 oz.	650	90.00

	Set No.	
1 kg. - 10 g.	661	\$10.50
2 kg. - 10 g.	662	13.90
2-1-1 kg. - 10 g.	663	16.00
5 kg. - 10 g.	665	25.75
10 kg. - 10 g.	670	43.00
20 kg. - 10 g.	680	66.00

INDIVIDUAL IRON METRIC WEIGHTS

INDIVIDUAL IRON AVOIRDUPOIS WEIGHTS

1/2 oz.	\$.95	1 lb.	\$2.90	10 lb.	\$8.75
1 oz.	1.00	2 lb.	3.35	20 lb.	12.00
2 oz.	1.15	3 lb.	3.80	25 lb.	13.50
4 oz.	1.35	4 lb.	4.30	50 lb.	15.00
8 oz.	1.75	5 lb.	4.65		

10 g.	- \$0.65
20 g.	- 0.80
50 g.	- 0.90
100 g.	- 1.15
200 g.	- 1.25
500 g.	- 1.75
1 kg.	- 2.05
2 kg.	- 3.35
5 kg.	- 8.05
10 kg.	- 18.00
20 kg.	- 24.00

Decimal-pound Class "C" Sealers' Weights by Troemner

One-piece stainless steel and aluminum



Here is a handy, attractive, and extremely durable set of test weights specially designed, in cooperation with the National Bureau of Standards, for Sealers of Weights and Measures. It is especially useful in package checking and in the testing of decimal-pound scales.

Whether carried in the pocket or in a larger weight case, the polished hardwood case with its rounded corners is easy to handle and takes up little space. Each one-piece weight is held snugly in its own felt-padded pocket. The velvet-lined lid holds both the larger and the smaller weights firmly for ease in carrying.

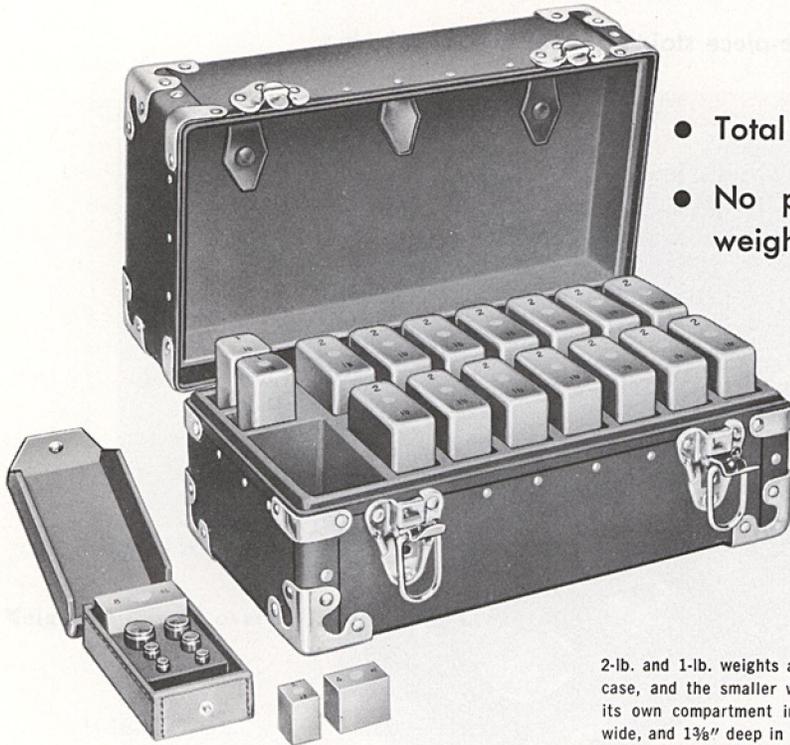
All weights are made to National Bureau of Standards specifications for Class "C" weights.

The weight range in Troemner Set No. SW-3 is .3 lb to .001 lb. Cylindrical one-piece stainless steel weights from .3 lb to .01 lb. Concave aluminum weights from .005 lb to .001 lb. For convenience, there are two .001-lb weights in each set.

Outside dimensions of case: $7\frac{1}{8}$ " long, $2\frac{5}{8}$ " wide, $1\frac{3}{8}$ " high.

Troemner Set No. SW-3 \$48.50, f.o.b. Philadelphia, Pa.

Stainless Steel Class "C" Sealers' Weights by Troemner



- Total available weight 31 pounds
- No plating to peel off—precise weight and long life assured

2-lb. and 1-lb. weights are packed in individual compartments in the larger case, and the smaller weights are packed in a small case which fits into its own compartment in the larger case. A compartment 11" long, 5½" wide, and 1¾" deep in the lid of the larger case can be used to hold tools, seals, certificates, and other equipment. Outside dimensions 12" long, 7" wide, 6¾" high. Felt-lined outer case made of sturdy trunk fibre with nickel-plated hardware and plastic handle. Inner case leather or leatherette-covered plywood. Total weight approximately 37 pounds.

Here is *the* set of avoirdupois test weights long desired by Sealers of Weights and Measures. Each weight in the set, from two pounds down to 1/16 ounce, is machined from solid non-magnetic stainless steel, making nickel or chrome plating unnecessary and thereby assuring the accuracy and long life inherent in solid non-plated construction.

Cube weights from 2 lb. to 2 oz. have adjustment cavity sealed with aluminum cap. Cylindrical weights from 1 oz. to 1/16 oz. have groove at top for ease in handling.

All weights in the set have an attractive satin finish, and are made in strict conformity with National Bureau of Standards tolerances and specifications for Class "C".

Contents of Kit:

- | | |
|------------------|--------------------|
| 14 2-lb. weights | 1 1-oz. weight |
| 2 1-lb. weights | 1 ½-oz. weight |
| 1 8-oz. weight | 1 ¼-oz. weight |
| 1 4-oz. weight | 1 ⅛-oz. weight |
| 1 2-oz. weight | 2 1/16-oz. weights |

Troemner Set No. SW-140 List price \$245.00

Troemner manufactures a full line of laboratory and sealers' balances, stainless-steel and chrome-plated brass sealers' weights in all systems, from .00001 lb. up to 50 lb. Write for complete information including prices.

PRECISION WEIGHTS - STAINLESS STEEL & CHROME PLATED
 CLASSES N & S-1
 P. C. H. & C. PINNED & SEALED
 PRECISION WEIGHT SETS



**Troemner Sealers' Weights,
 Set No. SW-30**

The same stainless-steel weights as in Set No. SW-140, described on the front, except that in this set there are three 2-lb. weights and one 1-lb. weight down to two 1/16-oz. weights. Designed for extra convenience in carrying where a total of 8 lb. of available weight will suffice. Outside case dimensions 4 1/8" long, 4 1/2" wide, 5 1/2" high.

Troemner Set No. SW-30 List price \$153.50

These two sets are designed specifically for the package-control program as described in NBS Handbook 67. They may also be used in testing scales in all types of retail stores.



**Troemner Decimal-Pound
 Sealers' Weights**

One-piece stainless steel and aluminum test weights in a polished hardwood case with velvet-lined lid. Range is 0.3 lb. to 0.001 lb. Outside case dimensions 7 1/8" long, 2 3/8" wide, 1 3/8" high.

Troemner Set No. SW-3 List price \$48.50

PRECISION WEIGHTS - STAINLESS STEEL & CHROME PLATED

CLASSES M, S, S-1

P, C, B, & C PINNED & SEALED

AVOIRDUPOIS

METRIC

	STAINLESS STEEL			CHROME PLATED BRASS	STAINLESS STEEL			CHROME PLATED BRASS
	S-1 Screw Knob	C Pinned & Sealed	C Screw Knob	C Screw Knob	S-1 Screw Knob	C Pinned & Sealed	C Screw Knob	C Screw Knob
100 lb.	\$485.00	\$475.00	\$270.00		50 kg	\$495.00	\$485.00	\$275.00
50 lb.	260.00	250.00	119.00		30 kg	350.00	375.00	185.00
25 lb.	161.00	156.00	105.00		25 kg	305.00	320.00	155.00
20 lb.	143.00	138.00	84.25		20 kg	220.00	290.00	122.00
10 lb.	94.00	89.00	45.00		10 kg	115.00	140.00	85.25
5 lb.	56.00	51.00	30.25		5 kg	72.00	95.00	54.50
2 lb.	42.00	37.00	24.50		3 kg	56.00	65.00	53.25
1 lb.	26.50	22.50	17.50		2 kg	36.00	52.00	34.50
8 oz.	19.00	18.00	13.00		1 kg	24.00	35.00	23.50
4 oz.	17.50	16.50	10.25		500 g	16.00	20.00	14.75
2 oz.	13.00	12.50	8.25		300 g	13.50	20.00	13.00
1 oz.	12.00	12.00	6.25		200 g	11.00	17.50	10.50
1/2 oz.	10.75	10.50	5.75		100 g	7.00	16.00	4.75
1/4 oz.	9.50	9.00	5.00		50 g	5.75	14.00	4.25
1/8 oz.	9.35	8.50	4.50		30 g	5.15	13.00	3.50
1/16 oz.	9.00	8.00	4.00		20 g	4.65	12.00	3.25
1/32 oz.	9.00	8.00	4.00		10 g	3.50	10.00	2.75
.5 lb.	18.00	18.00	13.00		5 g	3.00	8.00	2.50
.2 lb.	18.00	18.00	12.50		3 g	3.00	8.00	2.50
.1 lb.	13.00	13.00	9.50		2 g	3.00	8.00	2.50
.05 lb.	13.00	13.00	6.50		1 g	3.00	8.00	2.50
					500 mg to 50 mg	2.50 ea.	1.80 ea.	1.80 ea.
					30 mg to 1 mg	2.00 ea.	1.50 ea.	1.50 ea.
.02 lb.	12.00	10.00	6.50					
.01 lb.	11.00	9.00	4.50					
.005 lb.	10.00	8.00	4.50	10,000	40.00	35.00	21.00	
.002 lb.	10.00	8.00	4.50	5,000	30.00	25.00	16.00	
.001 lb.	10.00	8.00	4.50	2,000	25.00	23.50	14.00	
				1,000	17.50	15.00	11.00	
				500	15.00	13.50	10.00	
				200	14.00	12.00	7.50	

GRAIN

Individual Grain Weights

100 GN to .01 GN	10.00 ea.	9.00 ea.	6.50 ea.
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PRICES FOR CLASSES M, S, P, B

- Class M STAINLESS STEEL Write for quotation
- Class S STAINLESS STEEL Add 10% to class S-1 prices
- Class P STAINLESS STEEL Deduct 20% from class S-1 prices
- Class B CHROME PLATED BRASS Add 30% to class C screw knob prices

NOTE: Class B is adjustment only, not construction. Write for quotation on class B construction and adjustment.

GRIP HANDLES - Are available for class B & class C adjusted screw knobs weights, chrome plated brass, 5 lb. and over. Add 30% to price.

PRECISION WEIGHT SETS

IN POLISHED OAK LINED CASES

SCREW KNOB WITH TANTALUM AND ALUMINUM FRACTIONALS

AVOIRDUPOIS	S-1	C	C
	Screw Knob Stainless Steel	Pinned & Sealed Stainless Steel	Screw Knob Chrome Plated Brass
50 lb. x 1/32 oz.	\$1,055.00	\$987.65	\$629.00
20 lb. x 1/32 oz.	611.40	585.00	391.00
10 lb. x 1/32 oz.	435.55	407.75	267.00
5 lb. x 1/32 oz.	338.00	312.35	210.00
2 lb. x 1/32 oz. (Includes 2 ea. 2 lb. weights)	278.60	257.50	182.40

The above sets available with decimal pound weights to .01 lb. (instead of fractional ounces) — add \$23.50

METRIC

20 kg x 1 gram	770.00	965.00	548.00
10 kg x 1 gram	515.00	625.00	396.00
5 kg x 1 gram	300.00	435.00	261.00
1 kg x 1 gram	155.00	236.00	137.50

GRAIN

1000 GN x .1 GN	185.00	135.00	105.00
1000 GN x .01 GN	225.00	175.00	135.00

PRICES FOR CLASSES M, S, P, B

Class M	STAINLESS STEEL	Write for quotation
Class S	STAINLESS STEEL	Add 10% to class S-1 prices
Class P	STAINLESS STEEL	Deduct 20% from class S-1 prices
Class B	CHROME PLATED BRASS	Add 30% to class C screw knob prices

NOTE: Class B is adjustment only, not construction. Write for quotation on class B construction and adjustment.

GRIP HANDLES — Are available for class B & class C adjusted screw knobs weights, chrome plated brass, 5 lb. and over. Add 30% to price.

SLOTTED WEIGHTS

	CAST IRON – CLASS T	BRASS – CLASS C	BRASS – CLASS C
	INTERLOCKING	FLAT	INTERLOCKING
POUND			
50	\$18.75	\$87.10	\$97.20
25	–	64.30	73.00
20	13.80	44.25	52.00
10	9.65	28.50	37.00
5	6.50	15.75	28.00
2	5.25	12.50	19.50
1	4.80	3.00	15.70
.5	4.75	3.00	6.40
.2	4.50 (Alum)	3.00	6.40 (Alum)
.1	4.50 (Alum)	3.00	6.40 (Alum)
OUNCE			
8	5.05	2.25	6.40
4	4.70	1.75	6.40
2	4.10	1.50	6.40
1	3.75	1.25	6.40
KILOGRAM			
5	5.00	32.20	40.00
2	3.00	21.70	27.40
1	2.50	14.80	19.10
1/2	1.60	–	–
500 grams	–	2.10	15.00
200 grams	–	1.30	6.20
100 grams	–	1.00	6.20
50 grams	–	.85	6.20
20 grams	–	.70	6.20
10 grams	–	.70	6.20
5 grams	–	.70 (Alum)	6.20 (Alum)
2 grams	–	.70 (Alum)	6.20 (Alum)
1 gram	–	.70 (Alum)	6.20 (Alum)
WEIGHT RACK 500 g x 1 g		2.35	
WEIGHT HANGERS			
50 grams – holds 1 kg of brass slotted weights		\$1.00	
1000 grams – holds 8 kg of iron slotted weights		4.00	
4 oz. – holds 2 lb. of brass slotted weights		2.50	

Write or call for information and prices on the following:

Weight hangers for any combination of weights

Special sizes or tolerances of weight & weight hangers

Special calibration weights for dead weight testers, load cells or any other purpose.

HOOK WEIGHTS

METRIC

BRASS - CLASS C HOOK TOP & BOTTOM

20 kg	\$72.00	100 g	\$1.20
10 kg	47.30	50 g	.90
5 kg	21.45	20 g	.70
2 kg	12.70	10 g	.60
1 kg	4.60	5 g	.60
500 g	2.30	2 g	.60
200 g	1.55	1 g	.60

AVOIRDUPOIS

BRASS - CLASS C HOOK TOP & BOTTOM

50 lb.	\$98.00	1/2 oz.	\$5.00
20 lb.	48.00	1/4 oz.	4.50
10 lb.	25.60	1/8 oz.	4.00
5 lb.	18.35	1/32 oz.	4.00
2	7.70	.2 lb.	4.00
1	6.90	.1 lb.	4.00
8 oz.	6.25	.05 lb.	4.00
4 oz.	6.00	.02 lb.	4.00
2 oz.	5.75	.01 lb.	4.00
1 oz.	5.50		

Call or write for quotation on any of the following:

Weights with bottom hook recessed.

Other classes of adjustment such as S, S-1, P, Q, & T.

Other materials such as steel or stainless steel.

