

ARTISAN®
TECHNOLOGY GROUP

Your **definitive** source for quality pre-owned equipment.

Artisan Technology Group
(217) 352-9330 | sales@artisantg.com | artisantg.com

Full-service, independent repair center
with experienced engineers and technicians on staff.

We buy your excess, underutilized, and idle equipment
along with credit for buybacks and trade-ins.

Custom engineering
so your equipment works exactly as you specify.

- Critical and expedited services
- In stock / Ready-to-ship
- Leasing / Rentals / Demos
- ITAR-certified secure asset solutions

Expert team | Trust guarantee | 100% satisfaction

All trademarks, brand names, and brands appearing herein are the property of their respective owners.

Visit our website - *Click HERE*

TROEMNER

Absolutely. Positively. Precise.

Troemner's Philosophy



Calibration & Traceability Philosophy

Troemner is the world's largest independent mass calibration company. Our philosophy is to provide the highest level of calibration quality by pursuing every measurement detail in order to achieve the most accurate and repeatable calibrations in the industry. We produce a precise measurement starting with a stable and tightly controlled environment, followed by using the finest equipment available, with highly trained personnel executing proven procedures. Our goal is to provide our customers with the lowest measurement uncertainties achievable.

Product Classes & End Markets

MARKETS	RECOMMENDED CLASSES
▶ Primary Calibration Laboratories ▶ National Measurement Institute	▶ ASTM E617 Class 000 ▶ UltraClass Platinum ▶ ASTM E617 Class 00 ▶ UltraClass Gold ▶ ASTM E617 Class 0
▶ Manufacturing QC ▶ Secondary Calibration Labs ▶ State Laboratories	▶ UltraClass Gold ▶ ASTM E617 Class 0 ▶ UltraClass ▶ ASTM E617 Class 1
▶ Pharmaceutical QC ▶ R&D ▶ Analytical Testing ▶ Chemical Manufacturing ▶ Utilities	▶ UltraClass ▶ ASTM E617 Class 1 ▶ ASTM E617 Class 2 ▶ ASTM E617 Class 3 ▶ ASTM E617 Class 4
▶ Pharmaceutical Bulk Weighing ▶ Pharmacists ▶ General Manufacturing	▶ ASTM E617 Class 2 ▶ ASTM E617 Class 3 ▶ ASTM E617 Class 4 ▶ ASTM E617 Class 5 ▶ NIST 105-1 Class F ▶ ASTM E617 Class 6
▶ Academia ▶ Legal Metrology & Bulk Weighing	▶ NIST 105-1 Class F ▶ ASTM E617 Class 6 ▶ ASTM E617 Class 7

NVLAP* vs. Traceable Calibration Certificates

The question Troemner answers most frequently for our precision weight customers is, "What type of certificate do I need to meet the requirements for my laboratory?" A fundamental requirement for all laboratories is that the precision weights must be traceable to the SI unit for mass, the kilogram, and both Troemner's ISO 17025, NVLAP* Accredited Calibration Certificate and Traceable Certificate include this information. The Traceable Certificate only provides traceability with a stated correction to the nominal value and the associated uncertainty. The ISO 17025, NVLAP* Accredited Calibration Certificate provides more data that may be vital to your laboratory's measurement and weighing processes.

To determine what is needed for a laboratory, a review of the standards they are required to adhere to will stipulate how much information is necessary for their measurement devices, including precision weights. Laboratories need to review their standards and answer these important questions.

Do your requirements call for an internationally accepted quality standard?

Compliance to internationally recognized standards is important because this provides insight into the calibration process. The ISO 17025, NVLAP* Accredited Calibration Certificate, unlike the Traceable Certificate, adheres to the strict requirements of numerous quality standards that are proven to meet the customer's needs. NVLAP* Accredited Calibration Certificates that meet the ISO/IEC 17025:2005 (General Requirements for the Competence of Testing and Calibration Laboratories) and ANSI/NCSL Z540-1-1994 (Calibration Laboratories and Measuring and Test Equipment - General Requirements) standards, demonstrate Troemner's quality processes are competent and support the scope of accreditation. This is accomplished through rigorous third-party independent audits of Troemner's quality systems and measurement assurance processes. The ISO 17025, NVLAP* Accredited Calibration Certificate meets the requirements of these international standards for quality, and increases the level of competence for customers complying with the GMP and GLP requirements for their laboratories.

* NVLAP Laboratory Code 105013-0

NVLAP* vs. Traceable Calibration Certificates

Do your SOP's require documentation for the standards used and environmental conditions at the time of calibration?

Identification of the standards used allows the customer to view the type of mass comparator utilized for the calibration. Knowing the mass standards used allows the customer to verify the right equipment has been operated to perform a competent calibration. The environmental data captured at the time of calibration is useful for the weight that was used to verify the balance. The air density at the time of calibration can be determined, and a correction for the customer's laboratory can be calculated. The greater the difference in the air densities results in a greater error on the balance.

Do lower uncertainties on the calibration matter?

Traceable Certificates have a higher uncertainty due to the nature of the calibration process. Weight calibrations performed by manual comparison will have an uncertainty component caused by the technician's interaction with the mass comparator. In contrast, ISO 17025, NVLAP* Accredited Calibration Certificates for precision weights, ranging from 1 milligram through 1 kilogram, are completed on a robotic mass comparator where the repeatability of the process becomes a smaller uncertainty factor than that of the manual calibration process. The robotic mass comparators provide the ISO 17025, NVLAP* Accredited Calibration Certificate with lower uncertainties and a greater confidence in the measurements.

* NVLAP Laboratory Code 105013-0

NVLAP* vs. Traceable Calibration Certificates

NVLAP* ACCREDITED WEIGHT CALIBRATION CERTIFICATE	TRACEABLE CERTIFICATE
TRACEABILITY AND UNCERTAINTY	
▶ Traceable assigned corrections and uncertainty	▶ Traceable assigned corrections and uncertainty
UNCERTAINTY VALUE	
▶ Robotic calibrations guarantee low process variation and lower uncertainties	▶ Higher assigned uncertainty
INTERNATIONALLY RECOGNIZED STANDARDS	
▶ ISO/IEC 17025 and ANSI/NCSL Z-540-1 compliant with annual accreditation audits ▶ Audited by pharmaceutical companies to meet GLP and GMP requirements ▶ Weights are manufactured and calibrated to meet ANSI/ASTM E617 or OIML R 111 standards	▶ No compliance statement to any standard ▶ Calibrated to meet tolerance only

* NVLAP Laboratory Code 105013-0

NVLAP* vs. Traceable Calibration Certificates

NVLAP* ACCREDITED WEIGHT CALIBRATION CERTIFICATE	TRACEABLE CERTIFICATE
ENVIRONMENTAL DATA	
▶ Environmental data is essential for precision weight measurements to determine error in the weight that is calibrated at standard air density of 0.0012 g/cm^3, but is then used at a different air density	▶ No environmental data is reported
STANDARDS USED DATA	
▶ Defines Troemner calibration interval for the standards used for the customer calibration	▶ No standards used data
CERTIFICATE REVISION LEVEL	
▶ The documented revision level is useful to demonstrate an unbroken chain of changes to the NVLAP* Accredited Calibration Certificate	▶ No revision date ▶ No detailed listing of changes to the certificate

* NVLAP Laboratory Code 105013-0

Analytical Precision Weights



General Information

Troemner Analytical Precision Metric Weights are available in Troemner UltraClass Platinum, UltraClass Gold, and UltraClass and ANSI/ASTM E617 Class 000, 00, 0, 1, 2, 3 and 4. Troemner Analytical Precision Avoirdupois Weights are available in ANSI/ASTM E617 Class 1, 2, 3, and 4. Individual sizes ranging from 0.05 mg through 1000 kg with sets from 0.05 mg-0.5 mg through 1 mg-50 kg.

Construction

Milligram Weights - Weights 500 mg and below are made of sheet metal and are one-piece construction with one side turned up to make them easy to handle with forceps. Milligram weights are marked with their nominal value with the exception of Class 000, 00 and 0.

Gram Weights - Troemner Analytical Precision Weights 1 g and larger consist of a body and a lifting knob. The lifting knob is specifically designed for use with forceps or some other lifting device. Weight bottoms are slightly recessed to expose the smallest possible area to wear. Each weight is marked with their nominal value with the exception of Class 000, 00 and 0.

Analytical Precision Weights

Troemner Analytical Precision Weights are available in either one-piece or two-piece construction. One-piece construction (Class 000, 00 and 0) indicates the weight is manufactured from a single uniform piece of Stainless Steel, the weight has no other material added to it, and it has no method of adjustment other than removing material by polishing.

Two-piece construction means the weight is made of multiple pieces of stainless steel. Troemner UltraClass Series and ANSI/ASTM E617 Class 1, 2, 3 and 4 weights 1 g and larger are produced from two pieces of material. The body of the weight is the primary piece and the knob of the weight is the secondary piece. The knob has a thread that screws into the body and is tightened. There is a cavity below the knob thread in the body which contains adjusting material, typically the same material from which the weight is made.

Material Specifications

Material Specifications for Class 000, 00 and 0 Weights

Range	Base Material	Density
25 kg-50 kg	316 Stainless Steel	7.95 g/cm3 at 20°C
1 g-20 kg	Troemner Alloy 8	8.03 g/cm3 at 20°C
5 mg-500 mg	304 Stainless Steel	7.95 g/cm3 at 20°C
Below 5 mg	3003-H14 Aluminum	2.7 g/cm3 at 20°C

Material Specifications for UltraClass Series, and Class 1, 2, 3 and 4 Weights

Range	Base Material	Density
25 kg-50 kg	316 Stainless Steel	7.95 g/cm3 at 20°C
1 g-20 kg	Troemner Alloy 8	8.03 g/cm3 at 20°C
5 mg-500 mg	304 Stainless Steel	7.95 g/cm3 at 20°C
Below 5 mg	3003-H14 Aluminum	2.7 g/cm3 at 20°C

Suggested Markets

Suggested Markets for Analytical Precision Weights include, but are not limited to, pharmaceutical, biotech, nanotechnology, life science, forensic and nuclear industries.

Cal-Paks™



General Information

Troemner Cal-Paks™ contain (3) high quality, precision weights which can be used with all balance manufacturers' makes and models. The weights supplied are the balance manufacturers' recommended calibration weight, 10% of the calibration weight, and the minimum weight as determined by the balance's readability and expected standard deviation under normal conditions as recommended by USP 41 (United States Pharmacopeia).

Troemner Cal-Pak™ components and carrying case are linked through the use of a unique serial number. You can trace your individual weights to the appropriate NVLAP* Accredited Calibration Certificate and master carrying case. The precision weights in your Cal-Pak™ are traceable to internationally recognized standards through an exacting series of precision measurements that provide an accurate value for each weight with low uncertainty. Troemner's ISO 17025, NVLAP* Accredited Calibration Certificate provides evidence that the process for the measurement traceability chain meets the stringent requirements of ISO/IEC 17025 and has been approved by NVLAP*.

* NVLAP Laboratory Code 105013-0

Construction

Troemner Cal-Paks™ are available in either Analytical Precision Weight or OIML Precision Weight styles. Each style differs in construction and shape as described below.

Gram & Kilogram Weights - Analytical Precision Weights 1 g and larger are cylindrical in shape and consist of a body and a lifting knob. The lifting knob is specifically designed for use with forceps or some other lifting device. OIML Precision Weights are cylindrical in shape with a tapered neck for easy gripping. OIML R 111 Class E2 weights are one-piece weights. OIML R 111 Class F1 weights are two-piece construction. Analytical Precision and OIML Precision weight bottoms are slightly recessed to expose the smallest possible area to wear.

Milligram Weights - Both Analytical Precision Weights and OIML Precision Weights 500 mg and below are made of Stainless Steel or Aluminum and are one-piece construction with one side turned up to make them easier to handle with forceps. Analytical Precision milligram weights are rectangular in shape and all classes are marked with their nominal value. Each OIML Precision milligram weight's nominal value is determined by the shape of the weight according to the table below.

Shape	Denomination
Pentagon	500 mg, 50 mg, 5 mg
Square	200 mg, 20 mg, 2 mg
Triangle	100 mg, 10 mg, 1 mg

Electronic Balance Weights



General Information

Troemner's Electronic Balance Weights are used to perform routine calibrations and verifications for your electronic balance and/or scale. Weights are available in Troemner UltraClass and ANSI/ASTM E617 Class 1, 2, 3, and 4 in sizes ranging from 10 g through 30 kg

Construction

Straight Cylinder Weights - Weights from 10 g through 600 g are machined as straight cylinders with the adjusting cavity opening in the bottom of the weight.

Cylindrical Weights - Cylindrical weights from 1 kg to 5 kg are machined as cylinders and have a groove around the diameter approximately 25% from the top of the weight to allow for easier handling. The adjusting cavity opening is in the bottom of the weight.

Electronic Balance Weights

Grip Handle Weights - Grip handle weights from 4 kg through 30 kg have a recess in the top center of the weight with a lifting handle spanning the recess slightly below the top surface of the weight. The recess allows the user to pick up the weight using the handle and provides clearance for the user's hand. Grip handle weights 4 kg to 10 kg are 5 inches in diameter. Grip handle weights above 10 kg through 30 kg are 6 inches in diameter. The adjusting cavity for grip handle weights is within the lifting handle.

Material Specifications

Material Specifications for UltraClass and Class 1, 2, 3, and 4 Weights

Range	Base Material	Density
2 kg-30 kg	303 Stainless Steel	7.85 g/cm3 at 20°C
10 g-1500 g	316 Stainless Steel	7.95 g/cm3 at 20°C

Suggested Markets

Electronic Balance Weights are ideal for non-chemical environments to verify balances or scales.

Heavy Capacity Weights



General Information

Manufactured from Stainless Steel, these weights are highly stable and resistant to corrosion - ideal for wash down environments and as a replacement for your Cast Iron Weights. Weight sizes range from 20 kg through 2000 kg and 75 lb through 5000 lb. Troemner's Stainless Steel Heavy Capacity Weights can be supplied with Troemner's NIST Traceable Certificate up to 2000 kg (5000 lb) or with a NVLAP* Accredited Calibration Certificate for weights up to 1000 kg (3000 lb). Available in ANSI/ASTM E617 Class 2, 3, 4, 5, and 6 and NIST Handbook 105-1 Class F.

* NVLAP Laboratory Code 105013-0

Heavy Capacity Weights

Construction

Weights ranging from 20 kg/75 lb and up are cylindrical in shape and have a secure eyebolt on the top center of the weight allowing them to be moved easily with various types of industrial equipment. All of Troemner's Stainless Steel Heavy Capacity Weights have two-piece construction that allows the weights to be adjusted. Within each weight there is a cavity below the eyebolt that is filled with adjusting material, typically the same material from which the weight is made. This cavity is sealed during the production process to ensure the stability of the weight. The eyebolt has an opening of 1 ½ inches.

Suggested Markets

Suggested Markets for Stainless Steel Heavy Capacity Weights include, but are not limited to, food, beverage, pharmaceutical, nuclear, and fine chemical industries. Stainless Steel Heavy Capacity Weights are also used to test commercial weighing devices by state and local weights and measures officials, device installers, and service technicians.

Stainless Steel Test Weights



General Information

Stainless Steel Cylindrical Weights are legal for trade, which means their design meets the specifications as outlined in NIST Handbook 105-1 and are approved to be used on legal for trade devices within the United States. Adjusting cavities are on the top of the weight and are tamper resistant. Weights are offered in a variety of styles including: flat, cylindrical, cube and stackable grip handle weights. Individual sizes range from 1 mg through 30 kg and 0.001 lb through 50 lb. Weight sets range from 1 g-50 g through 1 mg-5000 g and 0.05 oz-4 oz through 1/32 oz-10 lb. Troy, Pennyweight and Grain weights are also available. Offered in NIST Handbook 105-1 Class F.

Construction

Weights 200 g, 8 oz, 0.5 lb, or 5 ozt and larger have two-piece construction which indicates that the weight is constructed of multiple pieces of raw material. In the case of Stainless Steel Test Weights, this means that the weight body is constructed from one piece of material with an adjusting cavity. This cavity contains

the adjusting material, which is typically the same material from which the weight is made. Once the weight is adjusted into tolerance, it is sealed using an Aluminum cap and Stainless Steel back-up spacer.

Cylindrical weights smaller than 200 g, 8 oz, or 0.5 lb are one-piece construction, which means the weight is manufactured from a single uniform piece of raw material. One-piece Stainless Steel Test Weights of this size are adjusted by polishing material off the bottom of the weight.

Weights 200 mg-500 mg are flat Stainless Steel with one side of the weight turned up for easy handling.

1 mg-100 mg weights are flat aluminum with one side of the weight turned up for easy handling.

Material Specifications

Material Specifications for Class F Weights

Range	Base Material	Density
1 g & larger	303 Stainless Steel	7.85 g/cm3 at 20°C
200 mg-500 mg	304 Stainless Steel	7.95 g/cm3 at 20°C
1 mg-100 mg	3003-H14 Aluminum	2.7 g/cm3 at 20°C

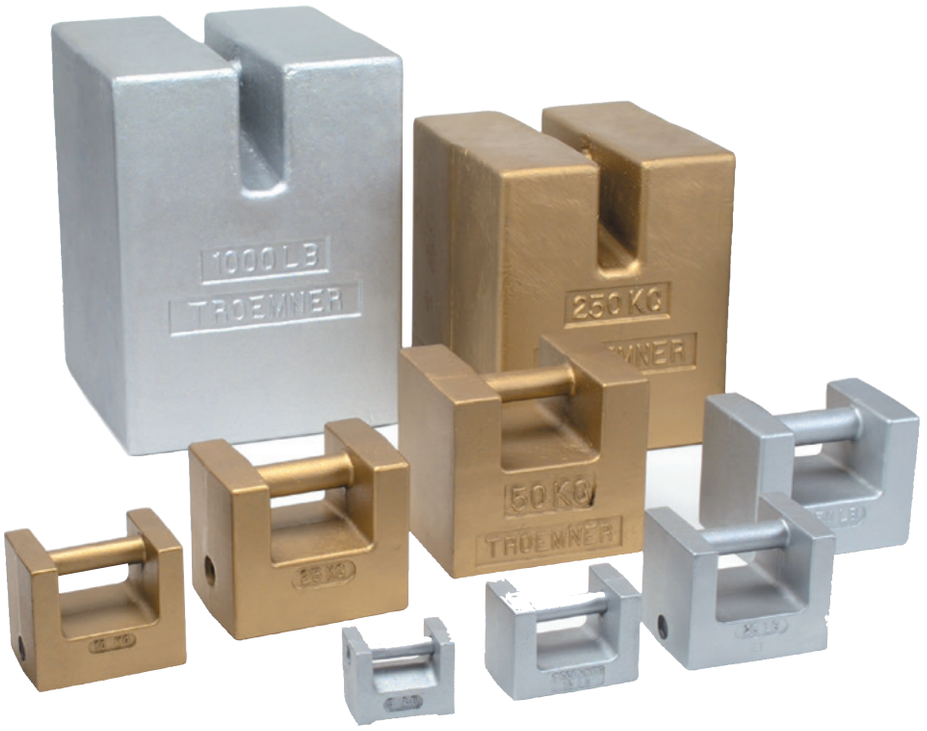
Suggested Markets

Stainless Steel Class F Test Weights may be used to test most accuracy Class III scales, all scales of Class IIIL or IIII, and scales not marked with a class designation. Class F is also acceptable for use in verifying scales that have 0.1% accuracy or lower.

Class F Test Weights are primarily used to test commercial weighing devices by state and local weights and measures officials, device installers, and service technicians.

Suggested markets for Stainless Steel Test Weights include, but are not limited to, Hospitals and Food Services.

Cast Iron Heavy Capacity & Grip Handle



General Information

Weight sizes range from 2 kg through 2000 kg and 5 lb through 5000 lb. Weights larger than 5 kg/10 lb are legal for trade and are supplied with NIST Handbook 105-1 Class F tolerances. This means their design is acceptable for use in checking weighing devices where the price of the item being purchased is based on its weight. Weights 5 kg/10 lb and smaller are not legal for trade and are classified as ANSI/ASTM E617 Class 6.

Cast Iron Heavy Capacity & Grip Handle

Construction

Troemner's Cast Iron Weights are manufactured to meet NIST Handbook 105-1 specifications. The weights are manufactured from high quality iron that meets specifications for hardness. Castings are free of cracks, pits and sharp edges and meet surface roughness requirements. Each weight has an adjusting cavity located on its side. Adjusting cavities are sealed with a lead plug and steel back-up spacer to provide a tamper resistant seal of the adjusting cavity. Weights 50 kg/100 lb and below are designed to be picked up by hand. Weights above 50 kg/100 lb are designed to be picked up by means of a hook.

All surfaces are smooth and free of scratches, dents and pores as outlined in NIST Handbook 105-1. Weights are coated with a durable coat of paint to protect the casting from rusting. Paint is hard and resistant to chipping. Color coding - gold for metric and silver for avoirdupois - is used to differentiate the weights.

Suggested Markets

Cast Iron Grip Handle Weights are primarily used to test commercial weighing devices by state and local weights and measures officials, device installers, and service technicians. Cast Iron Grip Handle Weights may be used to test most accuracy Class III scales, all scales of Class IIIL or IIII, and scales not marked with a class designation. Class F is also acceptable for use in verifying scales that have a 0.1% accuracy and lower.

Cast Iron Slotted Weights



General Information

Cast Iron Slotted Weights are used in a variety of applications such as pressure, torque and tensile strength testing. Cast Iron Slotted Weights are typically used with a hanger that also has its weight calibrated so the hanger can be used as part of the overall weight under test. Several Cast Iron Slotted Weights may be used together to build up from a minimum weight to a maximum test load. The hanger weight selected should be able to accommodate the total load needed. Weight sizes range from 200 g through 100 kg and 0.5 lb through 200 lb. Weights are supplied with NIST Handbook 105-1 Class F tolerances.

Cast Iron Slotted Weights

Construction

Cast Iron Slotted Weights above 2 kg/5 lb have adjusting cavities. Weights below 2 kg/5 lb are adjusted by removing material from the underside of the weight. Each weight has its nominal value cast into the top side of the weight. Weights are coated with a durable coat of paint to protect the casting from rusting. Color coding - gold for metric and silver for avoirdupois - is used to differentiate the weights. Weights 50 kg/100 lb and above are provided with two handles on opposite ends to aid in lifting.

Hangers - Cast Iron Slotted Weights are typically used with a hanger that also has its weight calibrated so the hanger can be used as part of the overall weight under test. Weight hangers are available in a variety of lengths and weight capacities. Hangers are calibrated to a mass value, and also have a capacity of how much weight can be loaded onto them. To determine which hanger will accommodate your weights, use the stem height of the hanger as the maximum height, then use the thickness dimension of each weight along with the quantity you intend to place on the hanger to determine the total height of your stack of weights. The height of your stack of weights should be less than the length of the hanger. The dimension of the hook opening is ½ inch.

Suggested Markets

Cast Iron Slotted Weights are primarily used to calibrate large capacity scales.

Stainless Steel Hook & Slotted Weights



General Information

Stainless Steel Hook and Slotted Weights are used in a variety of applications such as pressure, torque, and tensile strength testing. Hook Weights are available as hook top, hook top and bottom, or hook top and bottom with a recessed bottom. Stainless Steel Slotted Weights are typically used with a hanger that also has its weight calibrated so it can be used as part of the overall weight under test. Several Stainless Steel Slotted Weights may be used together to build up from a minimum weight to a maximum test load. The hanger weight selected should be able to accommodate the total load needed.

Weight sizes range from 1 g through 25 kg and 1/32 oz through 50 lb. Weights are supplied in NIST Handbook 105-1 Class F tolerances.

Construction

Troemner's Stainless Steel Hook and Slotted Weights are manufactured from 300 series stainless steel. Each weight has the nominal value stamped into the top side of the weight.

Hook Top Only - Hook Top Weights are flat on top with a stationary hook in the center of the weight.

Stainless Steel Hook & Slotted Weights

Hook Top and Bottom - Hook Top and Bottom Weights have a flat top and bottom with a stationary hook on either end of the weight.

Loose Hook Top and Bottom - Loose Hook Top and Bottom Weights have a flat top with recessed bottom which allows the hook to move freely through the weight. The recessed bottom also allows the weight to sit flat on an even surface.

Slotted Weights – Slotted weights are available in either flat or interlocking design. The interlocking design helps secure a stack of slotted weights onto a hanger. Hangers are available in a variety of lengths and weight capacities. Hooks on hangers have a ½ inch opening.

Material Specifications

Material Specifications for Stainless Steel Slotted Weights

Range	Base Material	Density
10 g and larger	303 Stainless Steel	7.85 g/cm3 at 20°C
5 g and smaller	5052-H32 Aluminum	2.7 g/cm3 at 20°C

Material Specifications for Stainless Steel Hook Weights

Range	Base Material	Density
All sizes	303 Stainless Steel	7.85 g/cm3 at 20°C

Suggested Markets

Recommended applications for Stainless Steel Hook Weights include, but are not limited to, blood collection. Recommended applications for Stainless Steel Slotted Weights include, but are not limited to, torque calibrations and tensile strength testing.

Economical Stainless Steel Weights



General Information

Troemner Economical Stainless Steel Weights and Weight Sets are economical, quality weights. Individual weights are available from 1 mg through 2000 g. Weight Sets are designed to achieve any total mass by combining smaller masses. The makeup of Economical Stainless Steel Weight Sets varies. Weights are adjusted to tolerances specified by ANSI/ASTM E617 Class 7.

Construction

Cylindrical Weights – Weights 1 g and above are carefully manufactured from stainless steel and are cylindrical in shape for easy gripping. Weights 1 g to 100 g are of one-piece construction and are adjusted by removing material from the bottom of the weight. Weights 200 g through 2 kg have an adjusting cavity on the top that is sealed with a plug. Economical Stainless Steel Weights 1 g and above are perfectly flat on top to stack easily on center. Weights 500 mg and 200 mg are made of stainless steel, weights 100 mg and below are made of aluminum. Milligram weights are flat, one-piece construction with one side turned up to make them easy to handle with forceps.

Economical Stainless Steel Weights

Construction (cont'd)

Slotted Weights – Weights 10 g through 500 g (0.1 N through 5 N) are made of stainless steel, and weights 1 g through 5 g are made of aluminum. All slotted weights have an approximate diameter of 1 ⅝ inches and have a slot opening width of ¼ inch. A hanger is also available to stack and hang your slotted weights. The overall length of the hanger is approximately 7 ⅞ inches with a usable length of 7 inches. The hanger is designed to accept the slotted weights.

Hook Weights – Weights range from 10 g through 1 kg (0.1 N through 10 N) and are made of stainless steel. On all hook weights, except the 10 g (0.1 N) which has a hook on the top of the weight only, there is a hook on the top and the bottom of the weight so the weights can be hooked together. The design of the hook weight allows the bottom hook to be recessed in the bottom, so the hooked weights can be set on a flat surface without tipping over. The opening of the hook for each weight is ½ inch. All Economical Stainless Steel weights, regardless of design, are marked with their nominal mass value.

Material Specifications

Material Specifications for Class 7 Weights

Range	Base Material	Density
Larger than 5 g	303 Stainless Steel	7.85 g/cm3 at 20°C
5 g and smaller	3003-H14 Aluminum	2.7 g/cm3 at 20°C

Suggested Markets

Suggested Markets for Economical Stainless Steel Weights include, but are not limited to, educational markets.

Custom Weights



General Information

Meeting your special weight needs is a Troemner specialty. We can custom make precisely the weight you need for your unique application. If you cannot find a weight or weight set to fit your individual specifications, Troemner is able to create a customized weight to fit your needs.

Any Size
From 50 micrograms through 2000 kg (0.0001 oz through 5000 lb)

Any Denomination
Metric, avoirdupois, troy ounce, grain, pennyweight, carat, other standards, or even custom units.

General Information (cont'd)

Any Tolerance
Including all ANSI/ASTM, NIST, OIML classes or special tolerances such as Troemner UltraClass Series or a customer-designated tolerance.

Any Material
Including stainless steel, aluminum, cast iron, nichrome, steel, gold, silver, titanium, and more.

Any Shape
Slotted, hook, bar, cylindrical, flat, dish, cube, etc. We can create drawings and prints based on customer input or can work from customer supplied prints.

Engineering Services
Troemner can provide assistance and guidance in helping you design a weight for your specific application or we can design a weight and provide drawings based on your design input.

Troemner, LLC
201 Wolf Drive • Thorofare, NJ 08086
800.249.5554 • troemner@troemner.com
troemner.com

715170-00 (Rev 1 - 3/16)

Artisan Technology Group is an independent supplier of quality pre-owned equipment

Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

Learn more!

Visit us at **artisantg.com** for more info on price quotes, drivers, technical specifications, manuals, and documentation.

Artisan Scientific Corporation dba Artisan Technology Group is not an affiliate, representative, or authorized distributor for any manufacturer listed herein.

We're here to make your life easier. How can we help you today?

(217) 352-9330 | sales@artisantg.com | artisantg.com

ARTISAN® TECHNOLOGY GROUP