

QUARTERMASTER CORPS  
TENTATIVE  
SPECIFICATION

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*Superseded By*  
*29-134*

J. Q. D. No. 673  
18 May 1945

SCALE, WEIGHING, PLATFORM, PORTABLE,  
DIAL TYPE, 400 POUND CAPACITY\*  
(STOCK NO. 18-S-1183-12)

A. APPLICABLE SPECIFICATIONS.

A-1. The following specifications and subsidiaries thereto, of the issue in effect on date of invitation for bids, shall form a part of this specification.

A-la. Federal Specifications:-

- FF-S-91 - Screws, Machine; (Including Screws, Set).
- QQ-I-652 - Iron, Gray; Castings.
- QQ-S-741 - Steel, Structural (Including Welding) and Rivet; (For) Bridges and Buildings.
- AAA-S-121 - Scales, Weighing; General Specification.

A-lb. United States Army Specifications: -

- 3-171 - Primer, Synthetic, For Ferrous Metals.
- 3-181 - Enamel, Olive Drab, Rust-Inhibiting.
- 57-180 - Tubing, Mechanical or Structural, Steel, Carbon and Alloy, Seamless, Welded and Brazed.
- 57-107 - Steel, Carbon and Alloy, Bars.
- 57-136 - Steel, Carbon and Alloy; Sheets and Strips.
- 57-0-2 - Finishes, Protective, For Iron and Steel Parts.

A-lc. O.Q.M.G. Packing Specification: -

- GS No. 128 - Scale, Weighing, Platform, Portable, Dial Type, 400 Pound Capacity.

A-ld. Ordnance Department Drawings:-

- 7040076 - Fitting, Lubricating, 14 lbs. to 15 lbs. Release Pressure.
- CLDX6 - Fitting, Lubricating, Ordnance.
- CLDX8 - Elbow (Lubricating Fitting).
- CLDX9 - Fittings, Lubricating.

B. TYPE AND SIZE.

B-1. This specification covers one type and size of Scale, Weighing, Platform, Portable, Dial Type, 400 Pound Capacity.

\*This is the approved nomenclature.

C. MATERIAL AND WORKMANSHIP.

C-1. Materials. - Shall conform in all respects to the specifications listed in Section A, and as hereinafter specified.

C-1a. Castings, Iron, Gray. - Used in the fabrication of various parts of the scale, shall conform to the requirements of Class 25, Specification QQ-I-652.

C-1b. Steel. -

C-1b(1). Sheet or Strip. - Shall conform to the requirements for W.D. No. 1015, Specification 57-136.

C-1b(2). Bar Stock. - Shall conform to the requirements for W.D. No. 1015, Specification 57-107.

C-1b(3). Anglos. - Shall be bar size and conform to the requirements of Specification QQ-S-741.

C-1b(4). Tubing. - Shall be seamless and conform to the requirements for Type I, Class B, W.D. No. 1015, Specification 57-180.

C-1b(5). Screws, Machine. - Shall conform to the requirements of Type I, Specification FF-S-91.

C-1c. Gaskets. - Shall be fabricated from synthetic rubber (Neoprene).

C-1d. Primer. - Shall conform to the requirements for Grade II, Specification 3-171.

C-1e. Enamel. - Shall conform to the requirements for Type II, Specification 3-181.

C-1f. Lubricating Fittings. - Shall be zerk type fittings conforming to the requirements shown on applicable drawings, listed in Section A.

C-2. Workmanship. - The finished articles shall be clean, well made, and free from any defects which may affect appearance or serviceability.

D. GENERAL REQUIREMENTS.

D-1. See Section E.

E. DETAIL REQUIREMENTS.

E-1. Design and Construction. - The scale shall be the automatic indicating, double vertical pendulum, suspension bearing, bench type mounted on an adjustable wheeled stand. All parts of the scale shall be designed so as to be replaceable without machining or factory fitting. Construction of the scale shall conform to the requirements of Specification AAA-S-121, wherever applicable, and as specified herein.

E-1a. Capacity and Graduations. - The scale shall have a total capacity of 400 pounds, distributed and graduated on the dial, capacity beam and tare beam as follows: -

E-1a(1). Dial. - Shall be divided into 4 ounce graduations to a total of 250 pounds.

E-1a(2). Capacity Beam. - Shall be divided into 25 pound graduations to a total of 100 pounds.

E-1a(3). Tare Beam. - Shall be divided into 4 ounce graduations to a total of 50 pounds.

E-1b. Dial Mechanism. - Shall be designed so that the scale indications will not be influenced by temperature changes. The pointer of the indicating mechanism shall be actuated by the load to be weighed through a rack and pinion, two full floating fulcrum sectors and two compensating pendulum poises and steel ribbons or draft bonds. The two pendulums shall act as a counter-force for the load. The design and method of operation of the pendulum assembly shall be such that tilting of the scale in the direction of either pendulum due to ordinary out-of-level operating conditions will not affect the accuracy of the weight indications. All materials used in the fabrication of the dial mechanism shall be high quality throughout and of the kind commonly used by first class manufacturers of this class of equipment. Pendulums shall be made of non-corrodible metal.

E-1c. Dial Housing. - Shall be cast from gray iron conforming to the requirements specified in paragraph C-1a. The housing shall be equipped with a cast iron front scroll containing clear, double strength glass and a one-piece back plate made of steel conforming to requirements specified in paragraph C-1b(1). Housing shall be made dust and moisture proof by use of molded, air-tight rubber gaskets between front scroll and housing and the back plate and housing. Gaskets shall be made of rubber conforming to the requirements specified in paragraph C-1c.

E-1d. Oil Seal. - Shall be mounted on the steelyard rod connecting dial mechanism with tare beam lever and shall serve to protect the counter-balancing and indicating mechanism from dirt and foreign matter, act as a preventive against corrosion and rust and to preserve the sensitivity and accuracy of the scale.

E-1e. Heating Unit. - Each scale shall be equipped with a heating unit, consisting of a standard lamp socket and a standard one piece, waterproof lamp cord about 6-foot long. The socket shall be rigidly secured in the dial housing by a bracket or other suitable means. A 3/8" rubber bushing shall protect the cord at the point where it passes through the dial housing and a standard 50 watt light globe shall be furnished in each socket.

E-1f. Chart. - Shall be fabricated either from sheet aluminum with a satin finish or from sheet steel, approximately 0".035 thick, with an electro-galvanized finish. The diameter of the chart shall be not less than 19-1/2 inches at the reading line and shall be printed with black figures and graduation on a white back ground. The graduations may be staggered on the chart and shall enable quick and accurate reading of the indicator. The chart shall face toward the platform of the scale.

E-lg. Indicator. - Shall be fabricated from sheet aluminum or sheet steel, approximately 0.025 thick, and shall be of knife blade form designed to reduce parallax to a minimum. The indicator shall be equipped with adjustable counter weights so as to make possible accurate adjustment of the scale.

E-lh. Rack and Pinion. - Shall be so designed and adjusted that the indicator attached to the pinion shaft will be controlled with absolute accuracy. The teeth on the rack and pinion shall be precisely spaced and each tooth shall be correct in shape and adjusted so that the teeth will mesh perfectly at every point on each and every tooth. The rack shall be self-aligning and may be made of either brass or stainless steel. The pinion may be fabricated of brass, bronze or nickel silver, with a shaft made of high quality drill rod.

E-li. Column. - Shall be fabricated of cast iron conforming to the requirements specified in paragraph C-1a and shall be designed to afford a rigid support for the dial housing and beams. The length of the column or clearance between the level of the platform and bottom of the dial shall be approximately 17 inches.

E-lj. Locking Device. - Shall be actuated by one motion of a handle or lever conveniently located on the front of the dial housing. The device shall consist of the handle or lever, a cam and a steel shaft so arranged as to lock both pendulums and the tare beam lever simultaneously and prevent movements, impacts or shocks on the platform or tare beam lever from being transmitted to the balancing mechanism.

E-lk. Hydraulic Shock Absorbing Mechanism. - Shall be of efficient design, embodying an automatic dashpot which shall be self-adjusting to all temperature changes. The mechanism shall be attached to the tare beam lever system, shall control the oscillation of the weight indicator, causing it to come to rest and register weight quickly, and shall absorb the shock of load impacts and disturbances on the platform thus preventing such shocks from reaching and injuring the dial mechanism.

E-ll. Beams. - The scale shall be furnished with both tare and capacity beams mounted on the same side as the dial. Beams shall be fabricated of stainless steel. Graduations shall be clearly cut and shall be filled with a red or white composition for easy reading. The capacity beam shall be notched at each graduation.

E-lm. Poises. - Shall be fabricated of cast iron conforming to the requirements specified in paragraph C-1a, or they may be made of brass or die cast of zinc with steel inserts. Cast iron poises shall be electro-zinc plated with thickness of plating not less than 0".0005. The poise on the tare beam shall be constructed with a non-removable set screw through the side. The capacity poise shall be equipped with a poise stop to secure exact location of the poise at every notched graduation on the capacity beam.

E-ln. Platform. - Shall rest on a base constructed of cast iron conforming to the requirements specified in paragraph C-1a and shall have a removable steel top plate or center plate. The platform shall be of the suspension bearing type, not less than 21" x 29" with the 21 inch dimension parallel to the dial. Two steel axles, passing through the base near the ends, shall be provided to support the scale on the adjustable stand. An aproned edge shall extend over the base to protect the main levers from dust and dirt.

E-2b. Rust Protection. - All bright or interior parts not fabricated of rustless material shall be treated with a protective coat which will insure maximum protection against rust.

E-2c. Pretreatment of Metal Parts. - All surfaces of cast iron and steel members of the scale, which are not resistant to rust or otherwise finished as specified herein, shall be given a phosphate treatment conforming to the requirements for Type II, Specification 57-0-2.

E-2d. Primer. - The pre-treated metal parts shall be given one coat of metal primer conforming to the requirements specified in paragraph C-1d.

E-2e. Enamel. - The surfaces of all metal parts receiving the primer coat as specified in paragraph E-2d, shall then be given a heavy coat of olive drab enamel conforming to the requirements specified in paragraph C-1e.

E-2f. Alternate Finish. - Upon approval of the Contracting Officer the scale may be given a durable, lustrous, rust-resisting, black lacquer finish.

E-3. Marking For Identification. - A non-corrosive metal plate with the following information embossed or stamped thereon shall be securely affixed in a conspicuous place on each scale.

Name and Address of Manufacturer  
Year of Manufacture  
Date of Delivery  
Number of Contract or Order

E-4. Deviations. - Minor deviations from the provisions of this specification will be considered in order that manufacturers may follow their standard practice in producing similar scales. It is to be understood that the scale furnished will conform in general with the details and dimensions specified herein to a degree consistent with the functions for which it is intended. Manufacturers desiring to make minor changes in construction or manufacturing procedures shall first submit, before or within their bid, detailed drawings, descriptive literature or representative samples of their proposed designs for approval.

E-5. Samples for Approval. - Before production is commenced, a sample of the finished commodity shall be submitted for approval if such submission is required by the Contracting Officer in the invitation for bids.

E-6. Contractor's Inspection. - The contractor shall take such steps for inspection of the finished articles to assure compliance with this specification prior to submitting them to the United States Government for final inspection.

#### F. METHODS OF SAMPLING, INSPECTION AND TESTS.

F-1. Sampling. - Samples of any materials, components, etc., not furnished by the United States Government, entering into the manufacture of the article covered herein shall be selected from time to time by the Government Inspector, carefully examined and tests made to determine if they are in accordance with the specifications listed in Section A, and with this specification.

F-2. Inspection. - May be made throughout the entire process of manufacture. The passing as satisfactory of any detail of construction or materials shall not relieve the contractor of responsibility for faulty workmanship or materials which may be discovered at any time prior to final acceptance. Final inspection of the finished article shall be made either at point of production or at point of delivery designated in the contract or purchase order of procuring agency. In case of factory inspection, every facility shall be afforded inspectors, by the manufacturer, for the prosecution of their work.

F-3. Tests. -

F-3a. Samples for Test. - Shall be as required by the Inspection Officer.

F-3b. Necessary physical, chemical and finish tests shall be conducted to see that the subject commodity is in accordance with this and applicable specifications. Methods of testing described in Specification AAA-S-121, wherever applicable shall be followed.

F-3c. It is to be understood that the methods of testing described in this specification will in general be used; however the Government reserves the right to use such additional information or methods deemed necessary to determine compliance with the letter and spirit of this specification.

G. PACKAGING, PACKING AND MARKING.

G-1. Packaging, Packing, and Marking shall conform to the requirements of Specification GS No. 128.

H. NOTES.

H-1. The item covered in this specification will be used principally for weighing meat delivery pans in Central Meat Cutting Shops. Due to the rigorous and special service to which the scales will be subjected, the detailed requirements specified in this specification must be complied with in addition to the general requirements of Specification AAA-S-121.

H-2. Information to be Furnished. - The Contracting Officer should note the contents of paragraphs E-2f and E-5.

NOTICE: - When Government drawings, specifications, or other data are used for any purpose other than in connection with a definitely related Government procurement operation, the United States Government thereby incurs no responsibility nor any obligation whatsoever; and the fact that the Government may have formulated, furnished or in any way supplied the said drawings, specifications, or other data, is not to be regarded by implication or otherwise as in any manner licensing the holder or any other person or corporation or conveying any rights or permission to manufacture, use, or sell any patented invention that may in any way be related thereto.

NOTE: - Unless otherwise specified in invitation for bids, copies of this specification may be obtained at the following point:-

Jeffersonville Quartermaster Depot, Jeffersonville, Indiana.