

INCH-POUND

KKK-T-683F  
15 December 2010  
SUPERSEDING  
KKK-T-683E  
w/AMENDMENT 1  
11 July 2005

## FEDERAL SPECIFICATION

## TRUCKS, HAND, TWO-WHEELED

The General Services Administration has authorized the use of this federal specification by all federal agencies.

## I. SCOPE AND CLASSIFICATION

1.1 Scope. This specification covers the requirements for five types of two-wheeled hand trucks.

1.2 Classification. The hand trucks covered by this specification shall be of the following types, as specified (see 6.2):

- Type I - Drum.
- Type II - Gas cylinder.
- Type III - General utility.
- Type V - Welder tank, 2 cylinder capacity.
- Type VI - Stair climbing.

## 2. APPLICABLE DOCUMENTS

2.1 Government publications. The issues of the following documents, in effect on the date of invitation for bids or request for proposal, form a part of this specification to the extent specified herein.

Federal Standards:

- FED-STD-H28 - Screw-Thread Standards for Federal Services
- FED-STD-595/13538 - Yellow, Gloss

Military Specifications:

- MIL-T-704 - Treatment and Painting of Material

Comments, suggestions, or questions on this document should be addressed to Defense Supply Center Philadelphia (DSCP), ATTN: DSCP-ITAA, 700 Robbins Avenue., Philadelphia, PA 19111-5096 or e-mail to [dscpg&inspeccomments@dla.mil](mailto:dscpg&inspeccomments@dla.mil). Since contact information can change, you may want to verify the currency of this address information using the ASSIST Online database at <https://assist.daps.dla.mil>.

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### Military Standards

MIL-STD-130 - Identification Marking of U.S. Military Property.  
MIL-STD-889 - Dissimilar Metals.

(Copies of these documents are available online at <https://assist.daps.dla.mil> or from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.)

2.2 Other publications. The following document(s) form a part of this specification to the extent specified herein. Unless a specific issue is identified, the issue in effect on the date of invitation for bids or request for proposal shall apply.

#### AMERICAN SOCIETY FOR QUALITY (ASQ)

ASQ Z1.4 - Sampling Procedures and Tables for Inspection by Attributes

(Application for copies should be addressed to the American Society of Quality, 600 North Plankinton Avenue, Milwaukee, WI 53203 or online at <http://www.asq.org>.)

#### AMERICAN WELDING SOCIETY (AWS)

AWS B2.1/B2.1M - Standard for Welding Procedure and Performance Qualification.

(Application for copies should be addressed to the American Welding Society, 550 N.W. LeJeune Road, Miami, FL 33126 or online at <http://www.aws.org> .)

#### INSTITUTE OF CASTER AND WHEEL MANUFACTURERS (ICWM)

A Guide to Understanding and Specifying Industrial Casters, Industrial Wheels.

(Application for copies should be addressed to the Material Handling Industry of America, 8720 Red Oak Blvd., Suite 201 Charlotte, NC 28217-3992 or online at <http://www.mhia.org> .)

#### MASTER PAINTERS INSTITUTE (MPI)

MPI #9 - Alkyd, Exterior, Gloss (MPI Gloss level 6)

(Application for copies should be addressed to online at <http://www.mpi.net> .)

#### NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 99 - Standard for Health Care Facilities.

(Application for copies should be addressed to the National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02269-7471 or online at <http://www.nfpa.org> .)

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## SAE INTERNATIONAL

## SAE J492 - Guide for Rivet Selection and Design Consideration

(Application for copies should be addressed to SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001 or online at <http://www.sae.org> .)

2.3 Order of precedence. In the event of a conflict between the text of this specification and the references cited herein, (except for associated detail specifications, specifications sheets or MS standards), the text of this specification shall take precedence. Nothing in this specification, however, shall supersede applicable laws and regulations unless a specific exemption has been obtained.

## 3. REQUIREMENTS

3.1 Description. The band trucks, hereinafter referred to as "trucks", are designed for one-person transportation of general and special loads on two-wheels.

3.2 First article. Unless otherwise specified (see 6.2), a sample shall be subjected to first article inspection (see 4.3 and 6.3).

3.3 Materials. Material shall be as specified herein. Material not definitely specified shall be of a composition and quality normally used by the manufacturer in the construction of trucks and shall be subject to all provisions of this specification.

3.3.1 Material deterioration prevention and control. The hand trucks shall be fabricated from compatible materials, inherently corrosion resistant or treated to provide protection against the various forms of corrosion and deterioration that may be encountered in any of the applicable operation and storage environment to which the hand trucks may be exposed.

3.3.1.1 Dissimilar metals. Dissimilar metals shall not be used in intimate contact with each other unless protected against galvanic corrosion. Dissimilar metals and methods of protection are defined and detailed in MIL-STD-889.

3.3.1.2 Identification of materials and finishes. The contractor shall identify the specific material, material finish or treatment for use with component and subcomponent, and shall make information available upon request to the contracting officer or designated representative.

3.3.2 Recycled, recovered, or environmentally preferable materials. Recycled, recovered, or environmentally preferable materials should be used to the maximum extent possible, provided that the material meets or exceeds the operational and maintenance requirements, and promotes economically advantageous life cycle costs.

3.4 Design and construction. The truck shall be designed and constructed to conform to the detailed type requirements specified herein.

3.4.1 Tire and wheel assemblies. All solid rubber tires and wheel assemblies shall conform to the industrial types as defined by the Institute of Caster and Wheel Manufacturers (ICWM).

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3.4.2 Wheel bearings. All wheels shall be equipped with anti-friction ball or roller bearings capable of sustaining the same load rating required for the wheels.

3.4.3 Threaded fasteners. The screw threads of all threaded fasteners shall conform to FED-STD-H28.

3.5 Performance. The type I truck loaded to not less than 1,200 pounds, the type III truck loaded to not less than 500 pounds, and the type VI truck loaded to not less than 700 pounds shall withstand a step drop of 2 inches without evidence of permanent distortion, breakage, or loosening of fixed components when tested as specified in 4.5.2.1. The type II truck loaded to not less than 300 pounds and the type V truck loaded to not less than 700 pounds shall withstand the tip and roll-off test specified in 4.5.2.2 without evidence of permanent deformation, breakage, or loosening of fixed components.

3.6 Detailed type requirements.

3.6.1 Type I. The type I drum truck shall have wheels outside of the frame and shall be constructed of steel tubing, pipe, and shapes. The truck shall be balanced to stand upright on the wheels and nose with the leading edge of the nose resting on the operation surface. The nose shall be tapered on the leading edge to facilitate insertion under the load. The axle shall be a through type and secured to prevent axle rotation.

3.6.1.1 Sliding hook. The truck shall be furnished with an adjustable sliding hook for retaining the drum.

3.6.1.2 Wheels. Wheels shall be metal wheels with solid rubber or polyurethane tires, shall be a minimum of 10 inches diameter by 2.50 inches rim width, and shall meet the load ratings of the ICWM standard for industrial wheels.

3.6.2 Type II. The type II gas cylinder truck shall have wheels outside the frame and shall be constructed of steel or aluminum. Means for supporting the cylinder shall be provided. The truck shall have two rear mounted swivel casters to provide a three-point suspension in the normal trucking position.

3.6.2.1 Rear caster assembly. The rear caster assembly shall consist of two swivel casters, a mounting plate, and a supporting structure. The assembly shall be retractable when the truck is standing in the upright position. The casters shall be industrial, light duty, swivel, and plate mount type with 3 to 5 inches wheel diameters. The caster tires shall be conductive rubber in accordance with NFPA 99.

3.6.2.2 Securing device. A spring-loaded chain, encased in rubber or plastic tubing, shall be provided to hold the cylinder in place.

3.6.2.3 Wheels. Wheels shall be a minimum of 8 inches diameter by 2 inches rim width and shall meet the operational load ratings of the ICWM standard, for industrial wheels. The wheels shall be equipped with molded on solid rubber conductive tires in accordance with NFPA 99.

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3.6.3 Type III. The type III general utility hand truck shall be constructed of commercial magnesium or aluminum material. The truck shall stand alone, without load, in a vertical position with the platform resting on the operating surface. The truck shall incorporate at least one chime hook for carrying a 55 gallon drum. The truck shall fit the curvature of the drum and shall be capable of securely holding the drum on the truck in the carry position. When the chime hook is not in use the truck can serve as a general utility hook.

3.6.3.1 Wheels. Wheels shall be made of commercial magnesium or aluminum. The wheels, equipped with molded on solid rubber or polyurethane tires, shall be a minimum of 8 inches diameter by 2 inches rim width and shall meet the operational load ratings of the ICWM standard for industrial wheels. Rubber tires furnished to the Government shall be not more than 12 months old on the date of shipment by the supplier.

3.6.4 Type V. The type V welding tank truck shall have a two cylinder capacity and shall have the wheels mounted outside the truck frame. The frame shall be fabricated of steel tubing, pipe and steel shapes. A horizontal brace, the full width of the frame, shall be provided to support the cylinders and to serve as a means of anchoring the securing chains. Prongs for coiling 25 feet of oxygen hose and 25 feet of acetylene hose simultaneously, shall be provided on the side of the frame.

3.6.4.1 Securing chains. Two cylinder securing chains shall be provided. The chains shall be fitted with quick-fastening devices and shall be adjustable for various sizes of cylinders. Each chain shall restrain one cylinder.

3.6.4.2 Toolbox. A heavy duty, lock-top toolbox shall be provided as an integral part of the truck. The box length shall be equal to the width of the truck frame  $\pm 0, -.75$  inch and shall be not less than 5 inches deep. The box shall be attached to the upper horizontal frame brace and shall hinge from the frame side.

3.6.4.3 Wheels. Wheels shall be equipped with molded on solid rubber or polyurethane tires having a minimum diameter of 14 inches by 2 to 2.50 inches rim width. The wheels shall meet the operational load ratings of the ICWM standard for industrial wheels.

3.6.5 Type VI. The type VI stair climber shall be fabricated from commercial grade magnesium. The side rails and the crossbars shall be covered with a protective Felt or rubber padding over the load area from the nose of the truck to the handles.

3.6.5.1 Retaining strap and strap tightener. Each hand truck shall be provided with a tie strap not less than 2 inches wide and 168 inches long. The strap shall have a strength rating of not less than 500 pounds. Each hand truck shall be provided with a hand strap tightener.

3.6.5.2 Crawler treads. Each hand truck shall be equipped with rubber belting crawler treads mounted on roller bearings.

3.6.5.3 Wheels. Wheels, equipped with molded on solid rubber or polyurethane tires, shall be a minimum of 6 inches diameter by 2 inches rim width and shall meet the operational load ratings of the ICWM standard for industrial wheels.

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3.7 Dimensions. The dimensions of the trucks shall be as shown in table I.

TABLE I. Trucking dimensions.

Truck type	Overall height (inches)	Overall width (inches)	Nose length minimum (inches)
Type I	61	24	6.313
Type II	45	17.5	6
Type III	52	18	6
Type V	50	33.75	13.5
Type VI	60	24	6

3.7.1 Tolerances. The dimensional tolerances for overall height and width shall be +.50 inch, -0 inch.

3.8 Color and finish. The portions of the truck normally painted shall be cleaned, treated, and painted in accordance with MIL-T-704, type A. Unless otherwise specified (see 6.2), finish coat shall conform to MPI #9, color gloss yellow, No.13538 of FED-STD-595.

3.9 Identification marking. The truck shall be identified in accordance with MIL-STD-130, and shall include the contractor's name or trademark, and part number.

3.10 Workmanship. All parts, components, and assemblies of the truck, including castings, forgings, molded parts, stampings, seals, and machined surfaces shall be clean and free from sand, dirt, fins, pits, sprues, and other harmful extraneous material. The truck shall withstand any operation specified herein without deformation, breakage of connections or malfunction caused by incorrect workmanship. Edges and surfaces exposed to operating and maintenance personnel shall be smooth and rounded to the extent that a hazardous surface does not exist.

3.10.1 Riveted connections. Riveted connections shall be in accordance with SAE J492. Rivet holes shall be accurately punched or drilled and shall have burrs removed. Rivets shall completely fill the holes. Rivet heads shall be full, neatly made, concentric with the rivet holes, and in full contact with the surface of the member, and shall not be cracked, fractured or broken.

3.10.2 Bolted connections. Bolt holes shall be accurately punched or drilled and shall have burrs removed. Washers or lockwashers shall be provided. Self-locking nuts are acceptable in lieu of standard nuts and lockwashers. All cap-screws, bolts, and nuts shall be tight and correctly torqued.

3.10.3 Steel fabrication. Steel used in the fabrication of the truck shall provide original quality surface finish and shall be free from kinks and sharp bends. Steel having a corroded surface is not acceptable. The forming of material shall be done by methods that will not cause damage to the metal. Shearing and chipping shall be done neatly and accurately. Corners shall be square and true. Burned surfaces of flame-cut material shall be free of slag. Precautions shall be taken to avoid overheating, and heated metals should be

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allowed to cool slowly except where heat treatment is required. All modular assembly fabrication shall provide for interchangeability of components.

3.10.4 Welding. The surfaces of parts to be welded shall be free from rust, scale, paint, grease, and other foreign matter. Welds shall transmit stress without permanent deformation or failure when the parts connected by the welds are subjected to proof and service loading.

3.10.4.1 Qualifications for welders and welding equipment operators. The contractor shall be responsible for qualifying all welders and welding equipment operators in accordance with AWS B2.1 using the contractor's or manufacturer's recorded welding procedure. The Government may require the recertification of any welder or welding operator.

#### 4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract, the contractor is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract, the contractor may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspection set forth in the specification where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

4.1.1 Component and material inspection. The contractor is responsible for insuring that components and materials used are manufactured, examined, and tested in accordance with referenced specifications and standards.

4.2 Classification of inspections. The inspection requirements specified herein are classified as follows:

- a. First article inspection (see 4.3).
- b. Quality conformance inspection (see 4.4).

#### 4.3 First article inspection.

4.3.1 Examination. The first article truck shall be examined for the defects specified in 4.5.1. Presence of one or more defects shall be cause for rejection.

4.3.2. Tests. The first article truck shall be tested as specified in 4.5.2.1 or 4.5.2.2, as applicable. Failure of any test shall be cause for rejection.

#### 4.4. Quality conformance inspection.

4.4.1 Sampling. Sampling for examination and tests shall be in accordance with ASQ Z1.4. The unit of product for this inspection shall be one fully assembled truck. A lot shall consist of all trucks of one type offered for delivery at one time.

4.4.2 Examination. Samples selected in accordance with 4.4.1 shall be for the defects specified in 4.5.1. Inspection shall be level II with AQL of 1.0 percent defective.

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4.4.3 Tests. Samples selected in accordance with 4.4.1 shall be tested as specified in 4.5.2.1 or 4.5.2.2, as applicable. Inspection level shall be S-L with an AQL of 1.0 percent defective.

4.5 Inspection procedure.

4.5.1 Examination. Trucks shall be examined as specified herein for the following defects:

Major

<u>Defect No.</u>	<u>Defect</u>	<u>Requirement paragraph</u>
101.	Materials not as specified.	3.3
102.	Materials not resistant to corrosion and deterioration, or treated to be resistant to corrosion and deterioration for the applicable storage and operating environments.	3.3.1
103.	Dissimilar metals as defined in MIL-STD-889 are not effectively insulated from each other.	3.3.1.1
104.	Contractor does not have documentation available for identification of material, material finishes, or treatment.	3.3.1.2
105.	Tires and wheel assemblies not as specified or incorrectly installed.	3.4.1, 3.6.1.2, 3.6.2.3, 3.6.3.1, 3.6.4.3, 3.6.5.3
106.	Wheel bearings not as specified.	3.4.2
107.	Threaded fasteners not as specified.	3.4.3
108.	The trucks are not constructed as specified.	3.6.2, 3.6.3, 3.6.4, 3.6.5
109.	Leading edge of nose not tapered.	3.6.1
110.	Axle not locked in bracket as specified.	3.6.1
111.	Rear caster assembly not as specified.	3.6.2.1
112.	Securing devices not as specified.	3.6.1.1, 3.6.2.2, 3.6.4.1, 3.6.5.1
113.	Truck will not stand alone.	3.6.1, 3.6.3
114.	Tool box not as specified.	3.6.4.2
115.	Crawler treads not as specified.	3.6.5.2
116.	Dimensions not as specified.	3.7
117.	Workmanship not as specified	3.10
118.	Riveted connections not as specified.	3.10.1
119.	Bolted connections not as specified.	3.10.2
120.	Steel fabrication not as specified.	3.10.3
121.	Welding not as specified.	3.10.4
122.	Regulatory requirements not as specified.	3.3.2
123.	Qualification of welders and welding equipment operators not as specified.	3.10.4.1

Minor

201.	Color and finish not as specified.	3.8
202.	Identification marking missing, incorrect, or illegible.	3.9



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4.5.2 Tests.

4.5.2.1 operational test, types I, III, and VI. Place load as specified in 3.5 on the applicable truck and allow truck to drop a distance of 2 inches over the edge of a horizontal plane onto a concrete surface while in toward motion at 2 to 3 feet per second, with load in balanced position. Repeat test five times and then examine truck for compliance with applicable requirement paragraph specified. Nonconformance shall constitute failure of test.

4.5.2.2 operational test, types II and V. Place load as specified in 3.5 on the applicable truck and allow truck to drop a distance of 2 inches over the edge of a horizontal plane onto a concrete surface while in forward motion at 2 to 3 feet per second, with load in balanced position. Repeat test five times. The loaded truck shall be tipped on it's side, using the rim of one wheel as a fulcrum through an angle of 90 degrees, so that the axle is in a vertical position and then return to an upright position. In addition, the type V truck shall be loaded with 1,000 pounds equally distributed on the frame members for a period of 5 minutes. After completion of all tests the truck shall be examined for compliance with 3.5. Nonconformance shall constitute failure of this test.

## 5 PACKAGING

5.1 Packaging. For acquisition purposes, the packaging requirements shall be as specified in the contract or order (see 6.2). When packaging of materiel is to be performed by DoD or in-house contractor personnel, these personnel need to contact the responsible packaging activity to ascertain packaging requirements. Packaging requirements are maintained by the Inventory Control Point's packaging activities within the Military Service or Defense Agency, or within the military service's system commands. Packaging data retrieval is available from the managing Military Department's or Defense Agency's automated packaging files, CD-ROM products, or by contacting the responsible packaging activity.

## 6 NOTES

INFORMATION FOR GUIDANCE ONLY. This section contains information of a general or explanatory nature that is helpful, but is not mandatory.

6.1 Intended use.

6.1.1 Type 1. The type I hand trucks are intended to be used to carry standard 55-gallon drums over short distances in warehouses and on paved surfaces.

6.1.2 Type II. The type II hand trucks are intended to be used for transporting pressurized gas cylinders for medical or industrial use.

6.1.3 Type III. The type III hand trucks are intended to be used for handling and positioning material within transporting aircraft, on transporter truck, at support base railhead, on support base receiving dock, and on warehouse wood or concrete floors.

6.1.4 Type V. The type V hand trucks are intended to be used for transporting oxygen and acetylene cylinders, and welding accessories.

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6.1.5 Type VI. The type VI hand trucks are intended to be used for carrying various loads over short distances in warehouses, on paved surfaces, and up and down stairs of buildings.

6.2 ordering data. Acquisition documents should specify the following:

- a. Title, number and date of this specification.
- b. Type hand truck required (see 1.2).
- c. When first article is not required for inspection and approval, (see 4.3 and 6.3).
- d. Color, if other than specified (see 3.8)
- e. Packaging requirements (see 5.1).

6.3 First article. When a first article inspection is required, the items should be a preproduction model. The first article should consist of one unit of each type truck procured. The contracting officer should include specific instructions in procurement documents regarding arrangements for examinations, test and approval of the first article test results and disposition of the sample(s).

6.4 Provisioning. The contracting officer should include provisioning requirements for repair parts and maintenance tools as necessary (including any special tools), and instructions on shipment of trucks. A suggested paragraph is as follows:

"Shipment of truck should include repair parts, maintenance tools, operational instructions, and accessories, unless exceptions are provided elsewhere in the contract."

6.5 Subject term (key word) listing.

Drum  
Gas cylinder  
Stair climber  
Utility  
Welder tank

6.6 Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extent of the changes.

Custodians:

Army - AT  
Navy - SA  
Air Force - 99

Preparing activity:

DLA - IS

(Project 3920-2010-001)

Review activities:

Army - MD, SM  
Navy - MC

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change. You should verify the currency of the information above using the ASSIST online database at <https://assist.daps.dla.mil>.