

GGG-T-2761

5 June 1991

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SUPERSEDING

MIL-T-82009B(YD)

18 May 1984

FEDERAL SPECIFICATION

TONGS, MATERIAL LIFTING, PIPE

This specification is approved by the Commissioner, Federal Supply Service, General Services Administration, for the use of all Federal agencies.

1. SCOPE

1.1 Scope. This document covers two classes of metal tongs for lifting materials such as pipe and conduit.

1.2 Classification. Unless otherwise specified (see 6.2), tongs are of the following classes and sizes. When specified (see 6.2), liners for tongs are to be provided for handling pipe of outside diameter (od) as specified (see 6.2).

Class I - Cast aluminum

Class II - Steel

Size 4 - For use with 4-1/2 inch od pipe

Size 6 - For use with 6-5/8 inch od pipe

Size 8 - For use with 8-5/8 inch od pipe

Size 10 - For use with 10-3/4 inch od pipe

Size 12 - For use with 12-3/4 inch od pipe

2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specifications and standards. The following specifications and standards form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those listed in the issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited in the solicitation (see 6.2).

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\*Beneficial comments (recommendations, additions, deletions) and any pertinent\*  
\*data which may be of use in improving this document should be addressed to: \*  
\*Commanding Officer (Code 156), Naval Construction Battalion Center, Port \*  
\*Hueneme, CA 93043, by using the self-addressed Standardization Document \*  
\*Improvement Proposal (DD Form 1426) appearing at the end of this document or \*  
\*by letter. \*  
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FSC 3940

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## SPECIFICATIONS

## MILITARY

- MIL-P-116 - Preservation, Methods of
- MIL-B-121 - Barrier Material, Greaseproofed, Waterproofed, Flexible

## STANDARDS

## FEDERAL

- FED-STD-123 - Marking for Shipment (Civil Agencies)

## MILITARY

- MIL-STD-105 - Sampling Procedures and Tables for Inspection by Attributes
- MIL-STD-129 - Marking for Shipment and Storage
- MIL-STD-2073-1 - DoD Materiel Procedures for Development and Application of Packaging Requirements

(Unless otherwise indicated, copies of federal and military specifications and standards are available from the Standardization Documents Order Desk, Bldg. 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.)

2.2 Non-Government publications. The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues of the documents which are DoD adopted are those listed in the issue of the DODISS cited in the solicitation. Unless otherwise specified, the issues of documents not listed in the DODISS are the issues of the documents which are current on the date of the solicitation (see 6.2).

## ASTM:

- ASTM A 36/A36M - Structural Steel
- ASTM A 148/A148M - Steel Castings, High-Strength, for Structural Purposes
- ASTM A 242/A242M - High-Strength Low-Alloy Structural Steel
- ASTM A 572/A572M - High-Strength Low-Alloy Columbium-Vanadium Steels of Structural Quality
- ASTM A 668 - Steel Forgings, Carbon and Alloy, for General Industrial Use
- ASTM B 21 - Naval Brass Rod, Bar, and Shapes
- ASTM B 179 - Aluminum Alloys in Ingot Form for Sand Castings, Permanent Mold Castings, and Die Castings
- ASTM B 247 - Aluminum and Aluminum-Alloy Die Forgings, Hand Forgings, and Rolled Ring Forgings
- ASTM D 3951 - Commercial Packaging

(Application for copies should be addressed to ASTM, 1916 Race Street, Philadelphia, PA 19103.)

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(Non-Government standards are normally available from the organizations that prepare or distribute the documents. These documents also may be available in or through libraries or other informational services.)

2.3 Order of precedence. In the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

### 3. REQUIREMENTS

3.1 Design and construction. Tongs shall be of the lever, double jaw, open caliper type with compound leverage grip. The jaws or liners shall grip the outside of the pipe at a point below the centerline of the pipe. The tongs shall be constructed to provide a nonmanual positive release from the pipe after the pipe is set down, and the hoisting line is slacked off. Tongs shall be of a configuration suitable for operation in a close side clearance for handling pipe in a narrow trench. The design and construction of the tongs shall provide adequate strength and grip of cast or fabricated parts to meet the performance requirements represented by the test in 4.5. Class I tongs shall be of heat-treated aluminum alloy as specified in 3.4.1; and shackles, links, and rings shall be aluminum-alloy forgings as specified in 3.4.2; or shackles shall be of cast-aluminum alloy as specified in 3.4.1. Class II tongs shall be fabricated of steel plate as specified in 3.4.3, or cast steel as specified in 3.4.4; shackles, links, and rings shall be steel forgings as specified in 3.4.5; or shackles shall be steel castings as specified in 3.4.4. Fulcrum pins shall be brass as specified in 3.4.6.

3.2 First article. When specified in the contract or purchase order, a sample shall be subjected to first article inspection (see 4.2.1, 6.2, and 6.6).

3.3 Standard commercial product. The tongs shall, as a minimum, be in accordance with the requirements of this document and shall be the manufacturer's standard commercial product. Additional or better features which are not specifically prohibited by this specification but which are a part of the manufacturer's standard commercial product, shall be included in the tongs being furnished. A standard commercial product is a product which has been sold or is being currently offered for sale on the commercial market through advertisements or manufacturer's catalogs, or brochures, and represents the latest production model.

3.4 Materials. Materials shall be as specified herein and in applicable specifications and standards, and other referenced documents. Materials not specified shall be selected by the contractor and shall be subject to all provisions of this specification. Materials shall be free of defects which adversely affect performance or serviceability of the finished product.

3.4.1 Cast aluminum. Cast aluminum parts shall be aluminum-alloy castings, heat-treated, conforming to ASTM B 179. The alloy designation shall be that used by the manufacturer in regular commercial production of the parts.

3.4.2 Aluminum forgings. Aluminum forging parts shall be aluminum-alloy forgings conforming to ASTM B 247. The alloy designation shall be that used by the manufacturer in regular commercial production of the parts.

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3.4.3 Steel. Steel plates, shapes, and bars shall conform to ASTM A 36/A36M, ASTM A 242/A242M, or ASTM A 572/A572M, as applicable, and as standard with the manufacturer.

3.4.4 Steel castings. Steel castings shall conform to ASTM A 148/A148M.

3.4.5 Steel forgings. Steel forgings shall conform to ASTM A 668.

3.4.6 Brass. Brass bars and pins shall conform to ASTM B 21, C46400.

3.5 Interchangeability. All units of the same classification furnished with similar options under a specific contract shall be identical to the extent necessary to insure interchangeability of component parts, assemblies, accessories, and spare parts.

3.6 Cleaning, treatment, and painting. Surfaces normally painted in good commercial practice shall be cleaned, treated, and painted as specified herein. Unless otherwise specified (see 6.2), the color of the finish coat shall be the manufacturer's standard. Surfaces to be painted shall be cleaned and dried to insure that they are free from contaminants such as oil, grease, welding slag and spatter, loose mill scale, water, dirt, corrosion product, or any other contaminating substances. As soon as practicable after cleaning and before any corrosion product or other contamination can result, the surfaces shall be prepared or treated to insure the adhesion of the coating system. The painting shall consist of at least one coat of primer and one finish coat. The primer shall be applied to a clean, dry surface as soon as practicable after cleaning and treating. Painting shall be with manufacturer's current materials according to manufacturer's current processes and the total dry film thickness shall be not less than 2.5 mils over the entire surface. The paint shall be free from runs, sags, orange peel, or other defect.

3.7 Workmanship. The quality of workmanship shall meet the standards prevalent among manufacturers who normally produce equipment of the type specified herein.

3.7.1 Steel fabrication. The steel used in fabrication shall be free from kinks, sharp bends, and other conditions which would be deleterious to the finished product. Manufacturing processes shall not reduce the strength of the steel to a value less than intended by the design. Manufacturing processes shall be done neatly and accurately. All bends shall be made by controlled means to insure uniformity of size and shape.

3.7.2 Welding. Welding procedures shall be in accordance with a nationally recognized welding code. The surface of parts to be welded shall be free from rust, scale, paint, grease, or other foreign matter. Welds shall be of sufficient size and shape to develop the full strength of the parts connected by the welds. Welds shall transmit stress without permanent deformation or failure when the parts connected by the weld are subjected to proof and service loadings.

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3.7.3 Riveted connections. Rivet holes shall be accurately punched or drilled and shall have the burrs removed. Rivets shall be driven with pressure tools and shall completely fill the holes. Rivet heads, when not countersunk or flattened, shall be of approved shape and of uniform size for the same diameter of rivet. Rivet heads shall be full, neatly made, concentric with the rivet holes, and in full contact with the surface of the member.

3.7.4 Machine work. Tolerances and gages for metal fits shall conform to the limitations specified herein and otherwise to the standards of good commercial practice.

3.7.5 Castings. All castings shall be sound and free from patching, misplaced coring, warping, or any other defect which reduces the casting's ability to perform its intended function.

3.7.6 Forgings. All forgings shall be of uniform quality, free of detrimental flash, scale, cracks, hard spots, cold shuts, and excessive cooling stresses. Strength and other essential physical properties of the forgings shall be adequate throughout the purpose intended.

#### 4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the contractor is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract or purchase order, 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 inspections set forth in the specification where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

4.1.1 Responsibility for compliance. All items shall meet all requirements of section 3 and 5. The inspection set forth in this specification shall become a part of the contractor's overall inspection system or quality program. The absence of any inspection requirements in the specification shall not relieve the contractor of the responsibility of assuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling in quality conformance does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to acceptance of defective material.

4.1.2 Component and material inspection. Components and materials shall be inspected in accordance with all the requirements specified herein and in applicable referenced documents.

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

- a. First article inspection (see 4.2.1).
- b. Quality conformance inspection (see 4.2.2).
- c. Packaging inspection (see 4.6).

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4.2.1 First article inspection. First article inspection shall be performed on one unit when a first article is required (see 3.2 and 6.6). This inspection shall include the examination of 4.4 and the test of 4.5. Failure of the first article to pass the examination or any of the tests shall be cause for rejection. The first article may be either a first production item or a standard production item from the supplier's current inventory provided the item meets the requirements of the specification and is representative of the design, construction, and manufacturing technique applicable to the remaining items to be furnished under the contract.

4.2.2 Quality conformance inspection. Each unit furnished under a contract shall be examined in accordance with 4.4, tested in accordance with 4.5, and inspected in accordance with 4.6.

4.3 Sampling. Sampling and inspection procedures shall be in accordance with MIL-STD-105. The unit of product shall be one tong unit. All tongs offered for delivery at one time shall be considered a lot for purpose of inspection (see 6.4).

4.4 Examination. Each sample selected shall be examined for compliance with the requirements specified in section 3 of this specification. Any redesign or modification of the contractor's standard product to comply with specified requirements, or any necessary redesign or modification following failure to meet specified requirements shall receive particular attention for adequacy and suitability. This element of inspection shall encompass all visual examinations and dimensional measurements. Noncompliance with any specified requirements or presence of one or more defects preventing or lessening maximum efficiency shall constitute cause for rejection.

4.5 Operational weight test. The sample tongs shall be set manually at the center of a weighted pipe which shall be loaded by any convenient means to obtain a gross load on the tongs for the size specified in 1.2. Gross loads shall be not less than the following:

Size 4	- 1,250 pounds (lb)
Size 6	- 1,800 lb
Size 8	- 3,000 lb
Size 10	- 4,000 lb
Size 12	- 4,500 lb

The weighted pipe represents the heaviest load to be handled allowing a design factor of not less than two. The tongs and weighted pipe shall be lifted, then swung in an arc and set down. The tongs shall be released from the pipe by slacking off of the line without any manual manipulation of the tongs. Failure of the tongs to pass any test shall be cause for rejection.

4.6 Preparation for delivery inspection. The preservation, packaging, packing, and marking of the tongs shall be inspected to verify conformance to the requirements of section 5.

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## 5. PREPARATION FOR DELIVERY

5.1 Preservation and packaging. Preservation and packaging shall be level A or commercial as specified (see 6.2).

### 5.1.1 Level A.

5.1.1.1 Methods of preservation. Cleaning processes, drying procedures, preservatives, and methods of preservation specified in the following paragraphs are listed in MIL-P-116 and shall conform to the requirements of MIL-P-116 and any applicable specifications.

5.1.1.2 Cleaning and drying. Prior to the application of preservative compounds or paint, surfaces shall be cleaned by process C-1 and dried by any applicable procedure of MIL-P-116.

5.1.1.3 Unprotected surfaces. Unprotected exterior metal surfaces requiring the application of a contact preservative in accordance with MIL-P-116 and not specifically provided for herein shall be preserved as follows:

5.1.1.3.1 Unfinished (not machined) surfaces. Unfinished exterior metal surfaces shall be coated with type P-1 preservative.

5.1.1.3.2 Machined surfaces. Exposed machined surfaces shall be coated with type P-1 or P-11 preservative and wrapped or covered, as applicable, with barrier material conforming to MIL-B-121, type I, grade A, class 2. The material shall be secured in place with waterproof tape.

5.1.1.4 Unit protection. The complete tong shall be preserved method I or III as applicable.

5.1.2 Commercial. Material shall be preserved in accordance with ASTM D 3951.

5.2 Packing. Packing shall be level A, B, or commercial as specified (see 6.2).

5.2.1 Levels A and B. Packing shall be in accordance with MIL-STD-2073-1. Containers shall be selected from table VII of MIL-STD-2073-1 for the appropriate level.

5.2.2 Commercial. Material shall be packed in accordance with ASTM D 3951.

### 5.3 Marking.

5.3.1 Military agencies. Shipments to military agencies shall be marked in accordance with MIL-STD-129.

5.3.2 Civil agencies. Shipments to civil agencies shall be marked in accordance with FED-STD-123.

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## 6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

6.1 Intended use. Material lifting tongs are lifting devices intended to be used for lifting and moving pipe and conduit.

6.2 Ordering data. Purchasers should select the preferred options permitted herein and include the following information in acquisition documents:

- a. Title, number, and date of this specification.
- b. Class and size of tongs required (see 1.2).
- c. When the outside diameter of the pipe to be handled is to be different, and when liners for these tongs are required (see 1.2 and 6.3).
- d. Issue of DODISS to be cited in the solicitation, and if required, the specific issue of individual documents referenced (see 2.1.1 and 2.2).
- e. When first article is required for inspection and approval (see 3.2, 4.2.1, and 6.6).
- f. Color of finish coat, if different (see 3.6).
- g. Level of preservation and packaging and level of packing required (see 5.1 and 5.2).

6.3 General information. When ordering tongs for handling material with outside diameter other than mentioned in 1.2, the od must be specified in order that the proper liners or spacer pads be furnished (see 6.2).

6.4 Sampling procedures. Recommended inspection level is level II and Acceptable Quality Level is 4.0 (see 4.3).

6.5 Data requirements. When this specification is used in an acquisition and data are required to be delivered, the data requirements shall be developed as specified by an approved Data Item Description (DD Form 1664) and delivered in accordance with the approved Contract Data Requirements List (CDRL), incorporated into the contract. When the provisions of DOD FAR Supplement, Part 27, Sub-Part 27475.1 (DD Form 1423) are invoked and the DD Form 1423 is not used, the data shall be delivered by the contractor in accordance with the contract or purchase order requirements.

6.6 First article. When a first article inspection is required (see 3.2 and 6.2), the item will be tested and should be a sample selected from the first run production items or it may be a standard production item from the contractor's current inventory as specified in 4.2.1. The first article should consist of one unit. The contracting officer should include specific instructions in acquisition document regarding arrangements for examination, test, and approval of the first article.

6.7 Supersession data. This specification supersedes MIL-T-82009B(YD) dated 18 May 1984.



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6.8 Part or identifying number (PIN). The PIN to be used for tongs applied to this specification are created as follows:

	GGGT2761-	XXX
	*	*
Specification number	-----*	*
		*
Class and size	-----*	*

6.8.1 Class and size. The class and size of the tongs are identified by a three-digit number as shown in table I.

TABLE I. Class and size.

*-----*						
* Size *		Class I		Class II		*
*-----*						*-----*
* 4 *		04A		04B		*
*-----*						*-----*
* 6 *		06A		06B		*
*-----*						*-----*
* 8 *		08A		08B		*
*-----*						*-----*
* 10 *		10A		10B		*
*-----*						*-----*
* 12 *		12A		12B		*
*-----*						*-----*

6.8.2 Part numbers. The part identification numbering procedure is for Government purposes and does not constitute a requirement for the contractor.

6.9 Subject term (key word) listing.

Conduit  
Lifting device

## MILITARY INTERESTS:

Military Coordinating Activity

Navy - YD

Custodians

Army - ME

Navy - YD

Review Activities

Navy - SH

DLA - GS

## CIVIL AGENCY COORDINATING ACTIVITIES:

GSA - FSS

NASA - MSF

## PREPARING ACTIVITY:

Navy - YD

(Project 3940-0188)