

INCH-POUND

A-A-59576
July 20, 2004

COMMERCIAL ITEM DESCRIPTION

TOW BAR, FOR AIRCRAFT TOWING
(KC-10 Aircraft)

The General Services Administration has authorized the use of this commercial item description by all federal agencies.

1. **SCOPE.** This Commercial Item Description (CID) covers the KC-10 tow bar, which is used for towing and steering the aircraft by attaching it to the aircraft's nose landing gear and being pulled by a tow tractor. It will be used to move aircraft to various locations around the flightline without powering up the aircraft and to egress and regress aircraft from hanger facilities. The tow bar, once attached to the aircraft nose landing gear (NLG) strut, will then be attached to powered tugs to facilitate movement on the flightline.

2. **SALIENT CHARACTERISTICS.**

2.1 **Functional Requirements.** The tow bar shall be suitable for its intended use. Structural elements shall be rigid and possess the requisite strength. Individual components shall be durable, reliable and suited for their intended purpose. Service and parts shall be readily available for all components. The tow bar must be able to pull an aircraft weighing 590,000 pounds (265,500 kilograms) without any deformation.

2.2 **Interface.** The interface requirements shall be as specified in table I.

TABLE I. Interface requirements.

OVERALL LENGTH	129.100 INCHES NOMINAL
SPECIAL FEATURES	32.000 IN.HEIGHT; 34.000 IN.WIDTH; 480 LBS.
TOWED END CONNECTION TYPE	LUNETTE EYE
TOWING END CONNECTION TYPE	HOOK WITH LOCKING PIN
WHEEL QUANTITY	TWO (2)
LENGTH ADJUSTABILITY	NONADJUSTABLE

2.3 **Standard Commercial Unit.** The tow bar unit shall, as a minimum, be in accordance with the requirements of this specification and shall be the contractor's standard commercial product. Additional or better features which are not specifically prohibited by this specification, but which are a part of the contractor's standard commercial product, shall be included in the tow bar being furnished. The use of standard parts shall be maximized where they suit the purpose.

Comments, suggestions, or questions on this document should be addressed to WR-ALC/LGEC, 480 Richard Way Blvd. Suite 200, Robins AFB, GA 31098-1640 or emailed to bob.yohe@robins.af.mil. Since contact information can change, you may want to verify the currency of this address information using the ASSIST Online database at www.dodssp.daps.mil

AMSC N/A

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2.4 Materials. Selection of materials, processes, and parts utilized in the design and construction of the tow bar shall meet the best commercial practices and quality, unless otherwise noted, and shall be commensurate with the overall operational and performance requirements specified herein. The materials shall be of uniform quality and condition, free from any defects that may adversely affect appearance, strength, endurance, wear resistance, and/or serviceability. Parts that are subject to corrosion in a marine environment shall be aluminum flame sprayed, zinc galvanized, or constructed of stainless steel, brass, bronze, or other corrosion resistant material. Unless protected against electrolytic corrosion, dissimilar metals, as defined in MIL-STD-889, shall not be used in intimate contact with each other.

2.5 Design. The tow bar body consists of a cylindrical body. At one end of the tow bar is a lunette eye, to which the tow tractor connects. At the opposite end of the tow bar is a mechanical head assembly, to which the aircraft front landing gear connects. The tow bar shall be equipped with a wheeled undercarriage to serve as the means to make vertical height adjustments while attaching the end connection. The undercarriage shall be extendable by the use of either a mechanical device or a hydraulic pump and cylinder arrangement. If a hydraulic arrangement is selected, the undercarriage shall retract automatically by spring or other mechanism upon release of hydraulic pressure. The wheels as well as any protruding stands shall clear level ground by a minimum of 4.0 inches during towing operations. The unit shall permit easy accessibility for maintenance and service. The construction shall be such as to prevent conditions hazardous to personnel or detrimental to equipment.

2.6 Safety. The tow bar shall have an axial load limiter that fails at 83,700 lb drawbar pull. The load limiter shall be a shear pin type device. Equipped with a shear pin designed to break under excessive load. The shear pin will break before damage to the aircraft can occur. Shear pin failure is indicated by a sudden jerk of the tow vehicle and by an audible snap. The tow bar shall also have a load limiter device to limit torsional loads on the NLG strut to 350,000 inch pounds. The load limiter shall be a shear pin type device. Upon overload of the axial or torsional shear pin, the load shall be transferred to retaining bolts that prevent separation of the aircraft from the towing vehicle. Following a shear pin failure, the tow bar must be taken out of service for shear pin replacement. As a safety feature the tow bar shall have a minimum factor of safety of 3.0 against permanent deformation at the loads applied above.

2.7 Storage. Storage shall be provided on the tow bar for a spare set of shear pins for each shear pin device. The tow bar shall be delivered with a full set of spares in place.

2.8 Corrosion Resistance. Materials used in the construction/design must be corrosion resistant to support worldwide deployment scenarios. Corrosion/deterioration prevention and control for the tow bar shall be in accordance with best commercial practices.

2.9 Finish. Unless specified in the contract all painting and finishing shall be in accordance with the best commercial practice in the industry. All painted surfaces shall be color number 24052 (olive drab green) per FED-STD-595. All finishing processes utilized in the design and construction of the unit shall result in a durable, non-fading, long lasting finish. Finish warranty shall be equivalent to best commercial warranty offered or a minimum of 3 years, whichever is greater. Warranty is not to include damage caused by common maintenance activities.

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2.10 Maintenance. Use of standard hand tools enhances maintainability and decreases maintainer's cost. No more than 24 common hand tools, no more than 10 special tools (Special tools require approval of procuring activity and shall be funded in conjunction with the basic end item contract) one set per location. Metrics not considered special tools. The tow bar shall be field maintainable using a minimum number of common standard hand tools or other equipment. All major components shall be replaceable by field level maintenance technicians.

2.11 Instructions and Nameplate. Complete instructions on the use and maintenance of the tow bar shall be included. A corrosion resistant nameplate shall be securely attached to the unit. The nameplate shall include the following:

- Nomenclature
- Manufacturer's name/cage code
- Manufacturer's serial number
- Manufacturer's part number
- Date of manufacture
- Contract Number
- National Stock Number (NSN)
- Warranty information

2.12 Construction. The tow bar shall be constructed of parts that are free of harmful or extraneous materials. All edges shall be either rounded or beveled unless sharpness is required to perform a necessary function. All materials used in the construction of the unit shall be compatible in a manner that will in no way prevent compliance with the performance requirements set forth in this CID.

2.13 Workmanship. Workmanship of the tow bar equipment shall be of a high quality and shall be commensurate with the requirements specified herein. The manufacturer shall provide any/all accessories as standard that are necessary to make the unit complete and workable.

2.14 Operation. The tow bar shall be completely operable by one operator. The tow bar shall easily operate between the full range of heights.

2.15 Transportability. The unit shall be as small as practical and consistent with meeting the specified performance characteristics as stated herein. The unit shall be transportable by airlift, spring-ride truck or trailer, rail car, boat or ship. The unit shall meet all transport aircraft ramp negotiation requirements specified in MIL-HDBK-1784.

3. REGULATORY REQUIREMENTS.

3.1 Recycled/Recovered Materials. The offeror/contractor is encouraged to use recovered materials to the maximum extent practicable, in accordance with Federal Acquisition Regulation (FAR) paragraph (para) 23.403.

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4. PRODUCT CONFORMANCE PROVISIONS.

4.1 Product Conformance. The products provided shall meet the salient characteristics of this Commercial Item Description, conform to the producer's own drawings, specifications, standards and quality assurance practices, and be the same product offered for sale in the commercial marketplace. The Government reserves the right to require proof of such conformance. Minor changes to the design will be considered by the procuring activity provided that significant performance, reliability, durability and safety characteristics of the design are retained.

4.2 Bid Sample. When specified in the contract or purchase order, a bid sample shall be provided for government verification of compliance with the following inspection(s). The design strength calculations and/or tests of the load limiter devices, retaining bolts and body assembly shall be provided by the tow bar manufacturer.

4.3 Examination. The tow bar shall be visually examined to assure that it meets the requirements of this CID.

5. PERFORMANCE REQUIREMENTS.

5.1 Performance. The tow bar shall demonstrate that it meets the performance requirements of this CID.

6. PACKAGING REQUIREMENTS.

6.1 Packaging. Preservation, packaging, and marking shall be as specified in the contract or purchase order.

7. NOTES.

7.1 Addresses for obtaining copies of referenced documents.

FAR, para 23.403

(Application for copies should be addressed to the U.S. Government Printing Office, North Capitol and H streets NW, Washington, DC 20402.)

Copies of Department of Defense specifications, standards, and handbooks are available from the Standardization Documents Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.

7.2 Known acceptable products. Known acceptable products are as identified in table II.

TABLE II. Known acceptable products.

NSN	Part Number	CAGE (Manufacturer)
1730-01-465-0729	215030-1	08118 (STANLEY AVIATION CORPORATION)

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7.3 Ordering Data. The contract or order should specify the following:

CID document number and revision
Packaging requirements

7.4 Commercial Products. As part of the market analysis and research effort information was gathered from the following vendors of commercial/industrial products. At the time of CID preparation and coordination, these vendors were known to have commercial/industrial products that meet the requirements of this CID. (NOTE: This information should not be considered as a list of approved vendors or be used to restrict procurement to only the vendors shown here on.)

Stanley Aviation Corporation
2501 Dallas St.
Aurora, CO 80010-1009
Cage: 08118

7.5 Subject term (key word) listing.

Aircraft ground movement
Aircraft ground parking
Aircraft ground handling

Custodian:
Air Force – 99

Preparing activity
Air Force – 84

Agent
Air Force - 99

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(Project 1730-0391)

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 <http://www.dodssp.daps.mil/>.