

INCH-POUND
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 SUPERSEDING  
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## PERFORMANCE SPECIFICATION

### SUSPENSION KIT, COLLAPSIBLE HOSELINE

This specification is approved for use by all Departments and Agencies of the Department of Defense.

#### 1. SCOPE

1.1 Abstract. This specification covers kits containing items necessary to suspend a 6- or 4-inch collapsible hoseline at road crossings, small streams, and areas where nestable culverts or road guards may not be used.

1.2 Classification. Hoseline suspension kits shall be classified as follows (see 6.2):

Type I	Suspension kit for 6-inch collapsible hoseline
Type II	Suspension kit for 4-inch collapsible hoseline

#### 2. APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section are specified in sections 3 and 4 of this specification. This section does not include documents cited in other sections of this specification or recommended for additional information or as examples. While every effort has been made to ensure the completeness of this list, document users are cautioned that they must meet all specified requirements documents cited in section 3 and 4 of this specification, whether or not they are listed.

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 the documents not listed in the DoDISS are the issues of the documents cited in the solicitation (see 6.2).

Beneficial comments, (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: U.S. Army Tank-automotive and Armaments Command, ATTN: AMSTA-TR-D/210, Warren, MI 48397-5000 by using the Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

AMSC N/A

FSC 4610

Distribution Statement A. Approved for public release; distribution is unlimited.

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## AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

## ASTM F 1145 – Standard Specification for Turnbuckles, Swaged, Welded, Forged

(Applications for copies should be addressed to the American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.)

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 Description. The hoseline suspension kit (hereinafter called kit) shall be used to raise collapsible hoseline at road crossings, small streams, and other areas where nestable culverts or road guards may not be used. The kit components shall provide enough material for one 200-foot crossing and shall be contained in a storage chest for ease in handling and transport.

3.2 First article. When specified (see 6.2), a kit shall be subjected to first article inspection in accordance with 4.2.

3.3 Physical characteristics.3.3.1 Kit components. The kit shall consist of the components specified in table I.TABLE I. Collapsible hoseline suspension kit components

Item	Component	Ref. para.	Qty. type I kit	Qty. type II kit
1	Wire rope	3.4.1	350 feet	350 feet
2	Fibrous rope	3.4.2	300 feet	300 feet
3	Wire rope clip	3.4.3	25	25
4	Shackle	3.4.4	60	60
5	Hose saddle	3.4.5	60	60
6	Anchor	3.4.6	14①	14①
7	Block	3.4.7	4	4
8	Turnbuckle	3.4.8	4	4
9	Wire rope thimble	3.4.9	4	4
10	Hoist	3.4.10	1	Not required
11	Chest	3.5.1	1	1

① Reducible (see 6.4)

3.4 Performance characteristics.

3.4.1 Wire rope. The wire rope for a type I or type II kit shall be uncoated, 6 by 19 regular lay with fiber core. The wire rope shall be one continuous length, spool mounted. A design factor of

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7 to 1, based on the wire rope nominal strength, shall be used to determine the wire rope size for each kit as follows:

3.4.1.1 Type I kit. The wire rope shall have a working load limit of approximately 3,000 pounds.

3.4.1.2 Type II kit. The wire rope shall have a working load limit of approximately 1,700 pounds.

3.4.2 Fiber rope. The fiber rope shall be regular lay with a safety ratio of 10 to 1 based on the fiber rope nominal strength. The rope shall be one continuous length, spool mounted and capable of floating in water. The spool, with rope, shall fit with other items in the storage chest specified herein. The working load limit for fiber rope for each type kit shall be as follows.

3.4.2.1 Type I kit. The fiber rope shall have a working load limit of approximately 420 pounds.

3.4.2.2 Type II kit. The fiber rope shall have a working load limit of approximately 270 pounds.

3.4.3 Wire rope clip. The wire rope clip shall be the saddle and U-bolt type, and shall be galvanized. Type I kit clips shall be suitable for securing the wire rope selected in accordance with 3.4.1.1. Type II kit clips shall be suitable for securing the wire rope selected in accordance with 3.4.1.2.

3.4.4 Shackle. The shackle shall be sized to fit over the wire rope selected by type kit in accordance with 3.4.1. The shackle shall have a secured pin and be galvanized. Each shackle shall have a working load limit of approximately 2,000 pounds for a type I kit and approximately 1,000 pounds for a type II kit.

3.4.5 Hose saddle. The hose saddle shall be made of a flexible material and shall provide support to the hoseline when attached to a shackle ( see 3.4.4) that is suspended from the wire rope (see figure 1). The saddle shall be of sufficient width to prevent the hoseline, when filled with liquid, from crimping or deforming at the suspension point. The shackle connection areas may be reinforced but shall fit into the shackle opening. The hose saddle shall be the same in each type kit.

3.4.6 Anchor. A means to anchor the wire rope at each end, as the suspension kit is installed and during its operational life, shall be provided. The anchors shall hold fast as the wire rope comes under tension during installation and hoseline use. The anchors shall provide a place of attachment for a shackle that fastens to a turnbuckle or the hoist. For type I kits, the hoist shall be installed to be used on one end as a temporary tensioning device, when a turnbuckle cannot be used to increase the tension, then replaced by a turnbuckle when the installation is complete. The anchors shall be capable of being installed by hand. The selected item may be ganged to provide the required holding force and to keep the item small and easy to handle. If a drive type anchor is selected, a driving tool and, if necessary, a driving cap shall be supplied to prevent end mushrooming. The required holding force shall be equal to the working load limit of the wire rope specified in 3.4.1.1 for a type I kit, and 3.4.1.2 for a type II kit.

3.4.7 Block. The block shall be single sheave, steel shell tackle block, and sized to accept the type kit wire rope identified in 3.4.1.1 and 3.4.1.2. A self locking swivel hook on the block with a minimum working load limit of 3,000 pounds shall be acceptable for a type I kit and a working load limit of 2,000 pounds for a type II kit.

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3.4.8 Turnbuckle. The turnbuckle shall be type 1, grade 1, class E in accordance with ASTM F 1145. The turnbuckle shall have a galvanized finish and be sized, in accordance with ASTM F 1145, by type kit as follows.

3.4.8.1 Type I kit. The turnbuckle for type I kits shall be as specified above and shall be 3/4-inch in size with a clear opening of 18.00 inches, minimum.

3.4.8.2 Type II kit. The turnbuckle for type II kits shall be as specified above and shall be 3/8-inch in size with a clear opening of 6.00 inches, minimum.

3.4.9 Wire rope thimble. The wire rope thimble shall be the standard type sized to fit the wire rope specified in accordance with 3.4.1.1 for a type I kit and 3.4.1.2 for a type II kit. Thimbles shall have a galvanized finish.

3.4.10 Hoist. A lever hoist is only required for the type I kit. The hoist shall have a capacity of not less than 3000 pounds and a minimum lift of 15 feet. The hoist shall have swivel hooks with latches and shall have a galvanized or other corrosion resistant finish.

### 3.5 Sustainment.

3.5.1 Chest. A rugged chest, capable of containing all the components, shall be provided for each kit. The chest shall have a cover, cover securing devices, and handles able to withstand lifting of the chest with all components inside. The quantity of handles shall be determined by calculating the number of individuals required to lift the chest, with contents, if each individual has a lift capability of 40 pounds. Component location shall be such as to allow a reasonably balanced weight distribution for lifting. The chest shall have bins, cradles, or blocking for each kit component to prevent movement damage during shipping or handling. The chest shall not exceed 22.00 inches in height to allow it to fit into transport. A plan indicating component placement within the chest shall be provided and secured to the inside of the cover. Chest external finish color shall be as specified (see 6.2). Kit identification marking shall be applied to the chest external surface as specified (see 6.2).

3.5.2 Materials. The contractor shall select the materials not otherwise identified, capable of meeting all of the operational and environmental requirements specified herein.

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

3.5.2.2 Dissimilar metals. Dissimilar metals shall not be used in intimate contact with each other unless protected against galvanic corrosion.

## 4. VERIFICATION

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

- a. First article inspection (see 4.2).
- b. Conformance inspection (see 4.3).

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4.2 First article inspection. The first article inspection shall be performed on a minimum of one hoseline suspension kit (see 3.2 and 6.2). This inspection shall include the examination of table II. Nonconformance to any specified requirement or the presence of one or more defects shall be cause for rejection.

4.3 Conformance inspection. Conformance inspection shall be performed on all hoseline suspension kit production units and shall include the examinations indicated in the conformance column of table II. Nonconformance to any specified requirement, the failure of any test, or the presence of one or more defects shall be cause for rejection.

4.4 Examination. The first article hoseline suspension kit shall be examined for defects as specified in table II.

4.4.1 Material design and construction. Conformance to 3.3 shall be determined by visual inspection and review of contractor records providing proof or certification that components conform to the material requirements. Applicable records shall include receiving inspection records, vendor catalogues and certifications, and commercial standards.

4.4.2 Examination. The type I or type II collapsible hoseline suspension kit shall be examined for the defects specified herein.

TABLE II. Examinations for type I or type II suspension kits.

Number	Conformance	Examination description	Method of examination
101	X	Component quantities not as specified (see 3.3.1).	Visual
102		Wire rope not as specified (see 3.4.1).	Visual/SIE
103		Fiber rope not as specified (see 3.4.2).	Visual/SIE
104		Wire rope clip not as specified (see 3.4.3).	Visual/SIE
105		Shackle not as specified (see 3.4.4).	Visual
106		Hose saddle not as specified (see 3.4.5).	Visual/SIE
107		Anchor not as specified (see 3.4.6).	Visual/Doc.
108		Block not as specified (see 3.4.7).	Visual
109		Turnbuckle not as specified (see 3.4.8).	Visual/SIE
110		Wire rope thimble not as specified (see 3.4.9).	Visual/SIE
111		Hoist not as specified (see 3.4.10).	Visual/Doc.
112		Storage chest not as specified (see 3.5.1).	Visual
113		Materials not as specified (see 3.5.2).	Visual/Doc.

SIE = Standard Inspection Equipment

Doc. = Document

## 5. PACKAGING

5.1 Packaging. For acquisition purposes, the packaging requirements shall be as specified in the contract or order (see 6.2). When actual packaging of materiel is to be performed by DoD personnel, these personnel need to contact the responsible packaging activity to ascertain requisite packaging requirements. Packaging requirements are maintained by the Inventory Control Point's

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packaging activity within the Military Department or Defense Agency, or within the Military Department's System Command. 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

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

6.1 Intended use. The collapsible hoseline suspension kit is intended for use in providing a means for hoseline passage at road crossings, small streams, and other areas where nestable culvert or road guards may not be used.

6.2 Acquisition requirements. Acquisition documents must specify the following:

- a. Title, number, and date of this specification.
- b. Classification of kit required (see 1.2).
- c. Issue of DoDISS to be cited in the solicitation, and if required, the specific issue of individual documents referenced (see 2.2).
- d. When a first article is required for examination and approval, time frame for submission, and the number of units required (see 3.2).
- e. Alternative permissible quantity of anchors (see 3.3.1 and 6.4).
- f. Storage chest color and markings (see 3.5.1).
- g. Packaging requirements (see 5.1).

6.3 First article. When a first article inspection is required, the item(s) should be a first article production unit(s). The contracting officer should include specific instructions in acquisitions documents regarding arrangements for examinations and disposition of the first article.

6.4 Anchor quantity adjustment. If the provider can demonstrate that a proposed anchor system performs to the requirements stated herein with less than the quantity listed in table 1, the contracting officer may reduce the quantity required (see 6.2) . The system will be capable of being installed by hand; and validation of the system's holding power, demonstrable in at least four soil types, will be requisite. Included in the soil types will be one that has a high sand content, and one that represents conditions found close to streams. The quantity recommended for inclusion in the kit shall be that required under the worst soil conditions and sufficient for both ends of the wire rope.

## 6.5 Definitions.

6.5.1 Design factor. The ratio of the nominal strength of a wire rope to the total working load on that rope.

6.5.2 Fiber rope. Rope made from fibrous material, either natural such as manila or synthetic such as nylon or polypropylene.

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6.5.3 Hose saddle. A piece of flexible material used to support the hoseline string in its passage over obstacles. The saddle must have width to support the hoseline without restricting flow and strength to allow support of the load by being attached to a shackle suspended from the wire rope.

### 6.6 Subject term (key word) listing.

Crossing

Hose saddle

Turnbuckle

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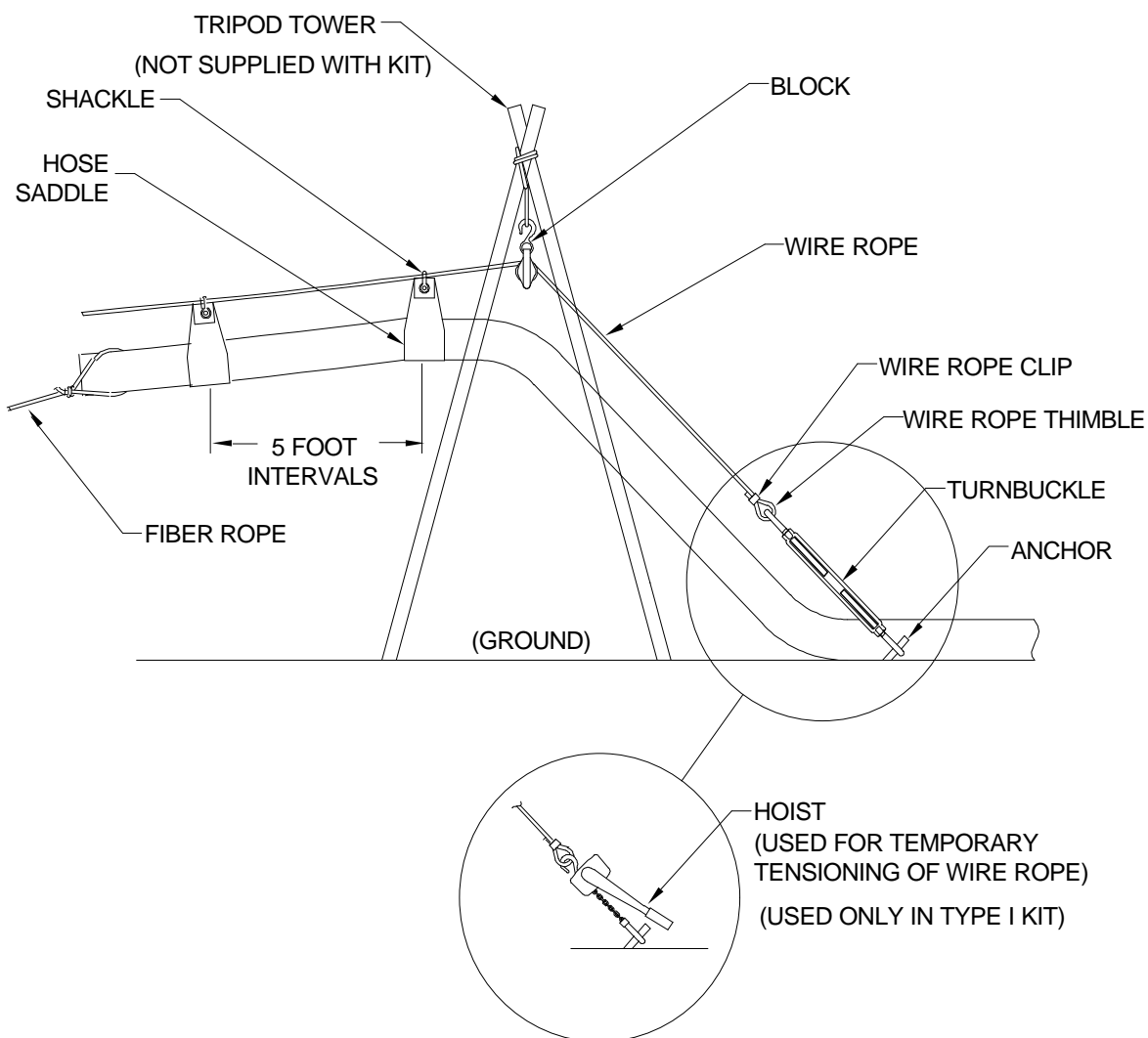


FIGURE 1. Kit components installation (typical).



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Custodian:  
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Preparing activity:  
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**STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL****INSTRUCTIONS**

1. The preparing activity must complete blocks 1, 2, 3, and 8. In block 1, both the document number and revision letter must be given.
2. The submitter of this form must complete blocks 4, 5, 6, and 7.
3. The preparing activity must provide a reply within 30 days from receipt of the form.

NOTE: This form may not be used to request copies of documents, nor to request waivers, or clarification of requirements on current contracts. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or to amend contractual requirements.

I RECOMMEND A CHANGE:	1. DOCUMENT NUMBER MIL-PRF-53012A	2. DOCUMENT DATE (YYMMDD)
3. DOCUMENT TITLE SUSPENSION KIT, COLLAPSIBLE HOSELINE		
4. NATURE OF CHANGE <i>(Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed)</i>		
5. REASON FOR RECOMMENDATION		
6. SUBMITTER		
a. NAME (Last, First, Middle Initial)	b. ORGANIZATION	
c. ADDRESS (Include Zip Code)	d. TELEPHONE (Include Area Code) (1) Commercial (2) DSN (If applicable)	7. DATE SUBMITTED (YYMMDD)
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a. NAME USA TARDEC, AMSTA-TR D/210 (IPDS)	b. TELEPHONE (Including Area Code) (1) Commercial (810)574-4126 (2) DSN 786-4126	
c. ADDRESS (Include Zip Code) US Army Tank-automotive and Armaments Command Attn: AMSTA-TR-D/210 Warren, MI 48397-5000	IF YOU DO NOT RECEIVE A REPLY WITHIN 45 DAYS, CONTACT:  Defense Quality and Standardization Office 5203 Leesburg Pike, Suite 1403, Falls Church, VA 22041-3466 Telephone (703) 681-9340 DSN 761-9340	