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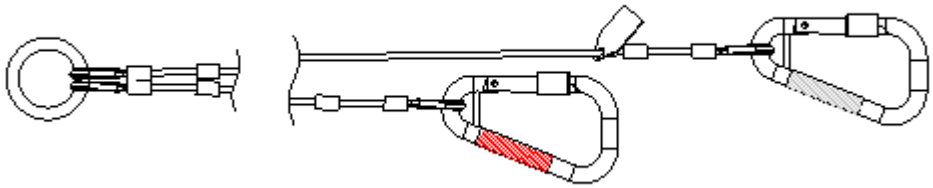
Litter Hoisting Sling Test Report

In Conjunction with:

LSC Rescue Litters

P/N: 190



Approval:

Tested by: _____ Date: DEC-01-2016

(LSC Engineering)

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PROPRIETARY & CONFINDENTIAL

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1.0 General:

The litter hoist sling covered in this test report is of rescue and survival equipment nature. Inherent to all rescue and survival environments is an increased risk of injury and/or possible death to an individual or group of individuals. Equipment training, including continued proficiency reviews and maintenance, is vital to the proper and safe use of all rescue and survival type equipment.

It is the responsibility of the purchasing and end-user organization or individual to define the operational procedures and safety guidelines associated with the proper utilization, maintenance (including service life) and storage of the rescue and survival equipment. All individuals must be thoroughly trained and familiarized with the intended purpose, correct use and function of the equipment. Failure to do so may result in serious injury or death.

2.0 Warning:

The attachment point on this device is subject to dynamic rollout from the Slide-Lok hook manufactured by Capewell Aerial Systems, LLC. Use of this product with Slide-Lok hooks is not recommended, approved, or otherwise advised by Lifesaving Systems Corporation. Organizations should fully test all hook attachment hardware for acceptable geometry and security in any rescue hook prior to use.

Replace sling assembly showing any evidence of damage. Failure of sling may result in serious injury or death.

3.0 Inspection:

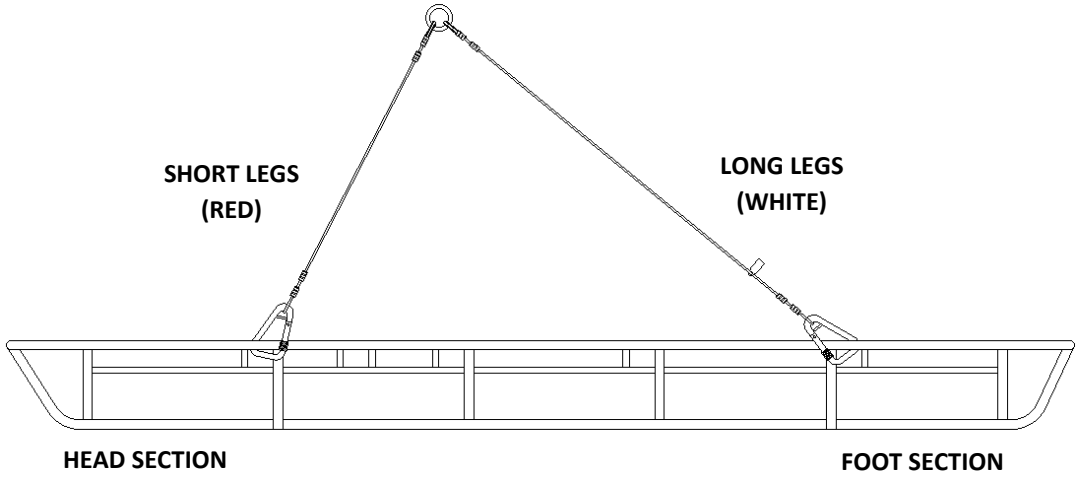
Prior to placing in service, after each use and every three months thereafter, visually inspect the sling assembly as follows:

1. Cables for broken wires or strands, corrosion or deformity.
2. Metal components for any damage, corrosion, deformity or cracks.
3. Snap hooks for proper operation. Lubricate with light lubricant such as WD-40.

4.0 Description:

Horizontal litter hoist sling designed for quick attachment to, and detachment from the Medevac and Stokes-type litters.

Short legs of each sling half (red labeled snap hooks) must be attached at litter head section attachment points; the long legs of each sling half (white labeled snap hooks) must be attached at foot section attachment points.



5.0 Instructions:

1. Lay sling halves in litter bed with red labeled snap hooks toward head section and white-labeled hooks toward foot section.

2. Locate head section sling attachment points on litter frame and install red reflective tape provided. Install snap hooks into sling attachment points on litter frame with latch gates facing outboard. Hand tighten locknuts on each snap hook. If installed, flotation logs can be loosened to aid installation.

WARNING: Tighten flotation logs if loosened during sling installation.

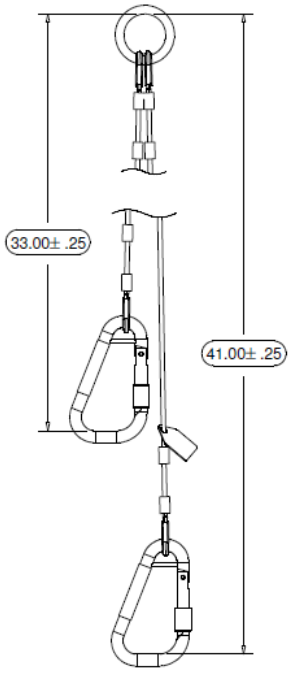
3. Locate foot section sling attachment points on litter frame and install white reflective tape provided. Install snap hooks into sling attachment points on litter frame with latch gates facing outboard. Hand tighten locknuts on each snap hook.

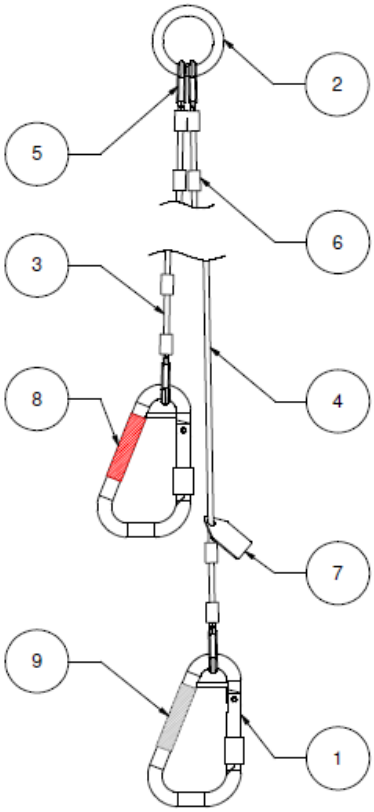
4. Recheck each of the four snap hooks for proper installation and ensure locking nut is tight.

6.0 Parts and Materials:

6.1 Litter Hoist Sling:

- Material: Stainless Steel
- Weight: ~3.0lbs (1.36kg)
- Working Load Limit (WLL): 600lbs (272.15kg)
- Dimensions:
  - Long Cables: 41” (104.14cm)
  - Short Cables: 33” (83.82cm)





Item No:	Description:	QTY:	Part Number:	Stock Size:
1	Snap Hook w/ Screw Lock	4	369	N/A
2	Weld O-Ring, 5/16” SS	2	360	1-1/2”ID x 5/16” THK
3	5/ 32 7X19 SS CABLE T304	2	RW002	5/ 32" DIA X 35-7/ 8" LG
4	5/ 32 7X19 SS CABLE T304	2	RW002	5/ 32" DIA X 43-7/ 8" LG
5	THIMBLE AN 100-C5 5/ 32 SS	8	RWH001	5/ 32”
6	OVAL SLEEVE 5/ 32 ZINC PLT	16	RWH003	5/ 32”
7	TAG, METAL LSC	2	RWH006	N/A
8	RED RETRO, HOOK	2	MR003	2" WIDE X 1-1/ 2" LG
9	WHITE RETRO, HOOK	2	MR002	2" WIDE X 1-1/ 2" LG
10	RED RETRO, PACKAGE*	2	MR003	2" WIDE X 2-1/ 2" LG
11	WHITE RETRO, PACKAGE*	2	MR002	2" WIDE X 2-1/ 2" LG

* Items 10 & 11 are not illustrated; however, they are included in the assembly with the packaging.

6.2 Hardware:

○ <u>O-Ring:</u> • Part Number: 360 • Material: Stainless Steel • Internal Diameter: 1-1/2” • Thickness: 5/16” • Breaking Strength: 5000lbs (2268kg)	
○ <u>Locking Snap Hook:</u> • Part Number: 369 • Material: Stainless Steel • Breaking Strength: 4500lbs (2041.16kg)	
○ <u>Cable:</u> • Part Number: RW002 • Material: Stainless Steel T304 • Diameter: 5/32” • Construction:7 x 19 • Breaking Strength: 2400lbs (1088.6kg)	
○ <u>Thimble:</u> • Part Number: RWH001 • Material: Stainless Steel 304 • Size: 5/32”	
○ <u>Sleeve:</u> • Part Number: RWH003 • Material: Zinc Plated • Size: 5/32” • Meets U.S. Military standard MS-51844	

7.0 Load Test Objective:

Determine if the (#190) litter hoist sling is capable of withstanding a maximum load of 3,000lb (1360.77kg). This would exceed the load requirements specified for rescue litters/stretchers.

- The *ASTM F 2821, Standard Test Methods for Basket Type Rescue Litters*, has a maximum load performance requirement of 2,473lbf (11kN).

- The US Mil-Spec MIL-L-37957A load requirement for a rescue stretcher is 2,500lb (1134kg).

8.0 Load Testing Setup:

8.1 Equipment:

The primary testing equipment consists of the following items:

1. Force Application: Physical weights consisting of lead shot in fabric bags and/or lead bars.
2. Force Measurement: 10,000lb S-Beam load cell (transducer) with one (I) each 0-10,000lbs. digital gauge. A commercial grade shipping scale will be used to independently verify the weight of the specimens added to the basket for force application.
3. Fixtures: Shackles, pins, and custom fixtures as required to suspend the litter with physical weights.
4. Miscellaneous Measurement Instruments: Rulers, tape measures, calipers, pressure gauges & 10x magnifying glass as required for supplemental measurement information.

8.2 Calibration:

Calibration conducted by Micro Precision Calibration, Inc. – Sticker dated 05/02/16, valid thru 05/02/17.

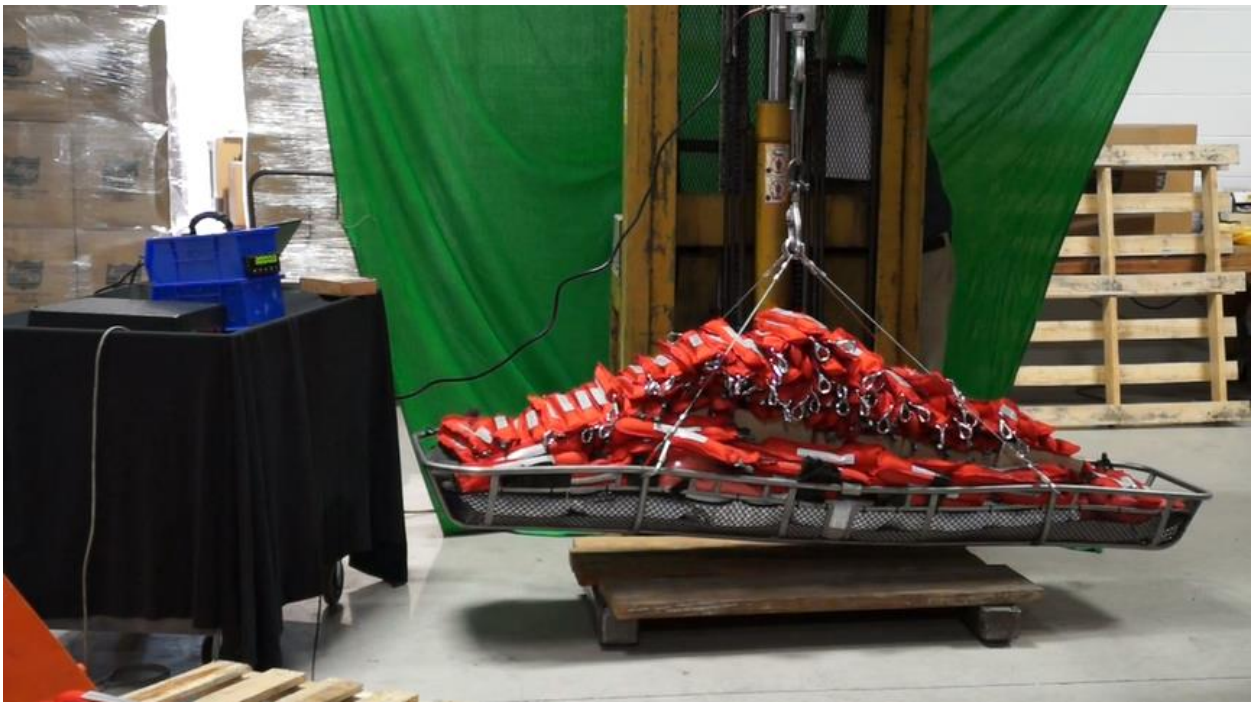


9.0 Load Test Procedure:

1. Attach the (#190) litter hoist sling to the (#406) Medevac II litter as described in the instruction manual.
2. Place the O-Ring from the (#190) hoist sling into the lifting attachment device that is connected to the load cell.
3. Begin evenly distributing pre-weighed fabric lead shot bags across the litter until 3,000lbs (1360.77kg) has been reached.
4. Lift the litter off the ground until it is totally suspended and stable.
5. Verify the load cell reading is 3,000lbs (1360.77kg). Add more weight as needed.
6. Lower the litter to the ground and visually inspect (#190) litter hoist sling for any part fatigue.
7. Record Results.

10.0 Load Test Results:

(#406) litter with 3,000lb (1360.77kg) load- suspended:





11.0 References:

- *ASTM F 2821, Standard Test Methods for Basket Type Rescue Litters.*
- US Mil-Spec MIL-L-37957A