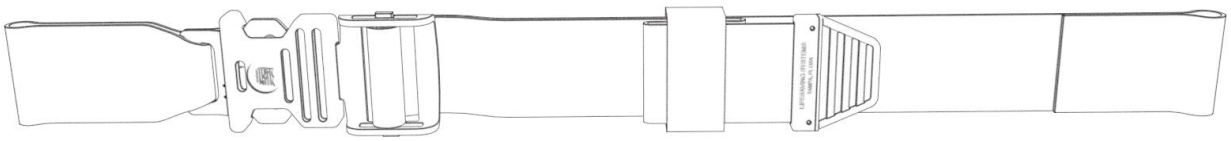
Lifesaving Systems Corp.
220 Elsberry Road
Apollo Beach, FL 33572
Phone: 813-645-2748
www.Lifesavingsystems.com

Patient Restraint Strap Test Report

In Conjunction with:

404 & 406 Rescue Litters

P/N: 140



Approval:

Tested by: T Homas Beach Date: OCT-20-2016

(LSC Engineering)

Approved by: Mark Vitt Date: OCT-20-2016

(LSC Management)

PROPRIETARY & CONFINDENTIAL

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1.0 General:

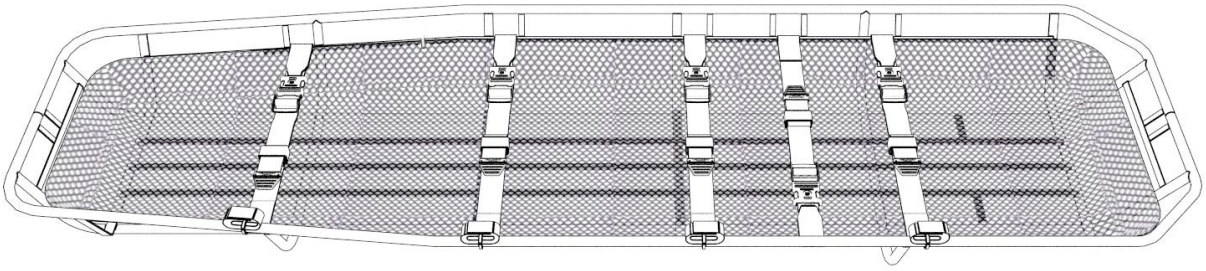
The patient restraint strap covered in this test report is of rescue and survival equipment nature. Inherent to all rescue and survival environments is an increased risk of injury and/or possible death to an individual or group of individuals. The patient restraint strap is intended to aid the professional rescuer(s) and/or survival victim(s). However, all risks for injury or death cannot be completely eliminated or foreseen. 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.

This test report provides information for the material and strength of the patient restraint strap. Any modifications, additions or alterations to the patient restraint straps shall render the test results invalid.

2.0 Description:

The patient restraint strap is designed to restrain patients with minimum discomfort and to prevent patients from injuring themselves and others. The restraint strap assembly (140) is constructed with solution dyed polyester and stainless steel hardware. 5 restraint straps are used in conjunction with LSC's rescue litters, see Figure A.

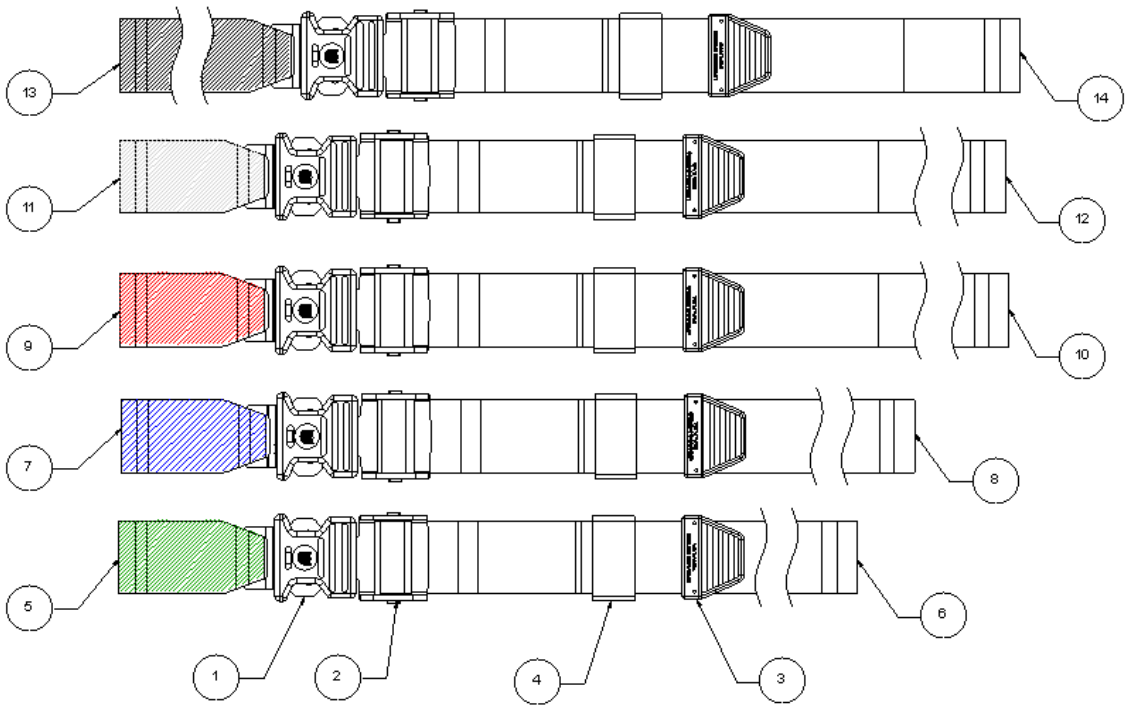


(Figure A)

3.0 Parts and Materials:

3.1 Webbing:

- Material: Solution Dyed Polyester
- Breaking Strength: Minimum 6000lbs (Manufacturer Data)
- Webbing with Hardware: Minimum Breaking Strength 1450lbs

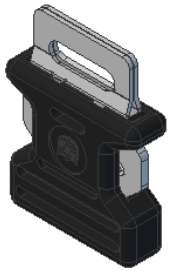


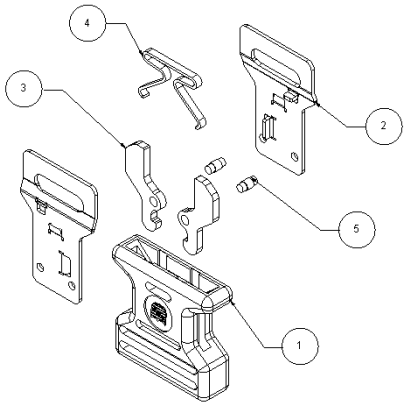
Item No:	Description:	QTY:	Part Number:	Stock Size:
1	Quick Release Safety Buckle	5	393	N/A
2	Adjuster w/QRSB Key, 1.75”	5	451-K	N/A
3	Pull Tab	5	H007	N/A
4	1” BLK Elastic	5	NF003	1.0”x4.0”
5	Solution Dyed Polyester Webbing (Green #355)	1	NFW059	1.75”x 16.5”
6	Solution Dyed Polyester Webbing (Green #355)	1	NFW059	1.75”x 38.0”
7	Solution Dyed Polyester Webbing (Blue #293)	1	NFW060	1.75”x 16.5”
8	Solution Dyed Polyester Webbing (Blue #293)	1	NFW060	1.75”x 48.0”
9	Solution Dyed Polyester Webbing (Red #185)	1	NFW056	1.75”x 16.5”
10	Solution Dyed Polyester Webbing (Red #185)	1	NFW056	1.75”x 54.0”
11	Solution Dyed Polyester Webbing (Gray #663)	1	NFW058	1.75”x 16.5”
12	Solution Dyed Polyester Webbing (Gray #663)	1	NFW058	1.75”x 54.0”
13	Solution Dyed Polyester Webbing (Black #419)	1	NFW057	1.75”x 23.0”
14	Solution Dyed Polyester Webbing (Black #419)	1	NFW057	1.75”x 66.0”

3.2 Hardware:

- Part Number: 393

  Description: Quick Release Safety Buckle

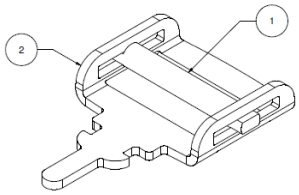




Item	P/N	Description	Material
1	392-1	Housing, BLK	Acetal
2	393-1	Frame	S.S 304
3	393-3	Latch	S.S 304
4	393-4	Spring	S.S 17-7PH
5	385-6	Collar Rivet	S.S 303

- Part Number: 451-K

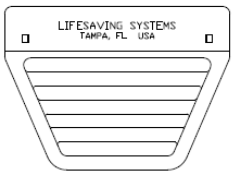
  Description: Adjuster W/QRSB Key, 1.75”



Item	P/N	Description	Material
1	451-02	Adjuster Bar	S.S 304
2	451-01k	Frame w/Key	S.S 304

- Part Numbers: H007

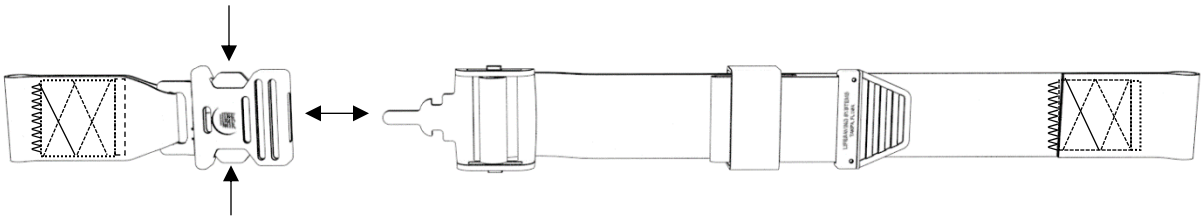
  Description: Pull Tab



Item	P/N	Description	Material
1	H007	Tab, 1.75” Webbing	Acetal

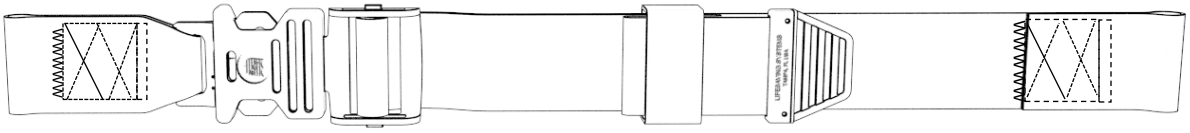
4.0 Design and Function:

- The patient restraint strap is intended to secure a victim inside a rescue litter during emergency situations.
- The load bearing hardware is made of stainless steel for strength and durability.
- The adjuster key allows the strap to be adjusted to various sizes while also preventing slip during loads.
- The restraint strap is fitted with a plastic pull tab that protects the webbing ends from unraveling.
- The buckle is designed with a dual push release mechanism that allows for quick and secure strap attachments.



4.1 Stitching:

- Material: Anefil® Nylon thread
- Color: Black
- Size: Tex 135
- Construction: 420d x 3
- Strength: 23.8lbs
- Pattern: Combination box, Double-W stitch, with zig-zag pattern over end. Both Sides.



5.0 Load Testing Setup:

5.1 Equipment:

Load Tester



Sample Litter Bar Attachment



5.2 Calibration:

Calibration of the Load Cell was performed by Micro Precision Calibration Inc.

Address: 5909-B Breckenridge Parkway, Tampa FL 33610

Phone: 813-621-6495

Cert No. 222200812331091

MPC Control #	LSC-62
Asset ID:	LSC-62
Gage Type:	Load Cell
Manufacturer	OMEGA
Model Number	LC111-10k
Size	10,000lbs
Temp/RH	72.0˚F/53.0%
Serial Number	291538
Department	N/A
Performed by	David Jandziszak
Received Condition	In Tolerance
Returned Condition	In Tolerance
Cal. Date	May 03, 2016
Cal. Interval	12 Months
Cal Due Date	May 03, 2017
Work Order #	FL-4006201



Standards Used to Calibrate Equipment:

I.D.	Description	Model	Serial	Manufacturer	Cal. Due Date	Traceability #
FA0094	Load Cell with Indicator	T103P/S Cell	0009691-68L/AA34229	BTEK/ISK	AUG 31, 2016	220081202122770

Procedure Name: 33K6-4-3196-1

Description: Load Cells, General

*Certificate of Calibration is held at LSC

6.0 Load Test Objective:

Determine the maximum strength of the patient restraint strap when a static force is applied. The webbing shall not break under 1000lbf (4.44kN). The key adjuster shall not pull from the buckle under 1000lbf (4.44kN). Continue to load the patient restraint strap to failure and record the results.

7.0 Load Test Procedure:

7.1 Pull Strength:

- Webbing shall be tested for breaking strength in a testing machine verified to have a load measurement error of not more than 1% in the range of the breaking strength of the webbing.
- Place the patient restraint strap in the load tester.
- Preload the patient restraint strap to 50lbf. Verify the strap is in a suitable position.
- The webbing shall be stretched continuously to 1000lbf moving at 100lbf increments but not to exceed over 1-minute duration.
- Hold the patient restraint strap at a 1000lbf load for 1-minute.
- Release tension and observe patient restraint strap.
- Increase load at 100lbf increments until failure but not to exceed over 1-minute duration.
- Record results.

8.0 Results:

- Patient restraint strap showed no signs of damage or fatigue at 1000lbf (4.44kN) along a 1-minute duration.
- Adjuster key pulled from buckle at 1380lbf (6.13kN).





9.0 Definitions:

- RESTRAINT SYSTEM:
  Consists of any strap, webbing or similar device including all buckles or other fasteners, and all integral hardware designed to secure a person in an aircraft with the intention of minimizing injury, including all buckles or other fasteners, and all integral hardware.

- HARDWARE:
  Any part of the restraint system, other than webbing.
- BUCKLE:
  A quick release connector which fastens together the individual straps of a restraint system.
- WEBBING:
  A narrow fabric woven with continuous filling yarns and finished selvages.

- PUSH BUTTON: BUCKLE
  A quick release connector in which the release is accomplished by depressing the release mechanism.

- ADJUSTMENT HARDWARE:
  Any hardware designed for adjusting the size of a restraint system to fit the user, including such hardware that may be integral with a buckle, attachment hardware, or retractor.

10.0 References:

- Society of Automotive Engineers (SAE) Aerospace Standard (AS) 8043, Revision B, "Restraint Systems for Civil Aircraft," Issued March 1986, revised September 2008, reaffirmed March 2014.