LIFESAVING SYSTEMS CORPORATION

LSC Test Report Number: F-730-384-S
Revision: A

Load Testing of #384-S



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PURPOSE:

The purpose of this report is to determine the load strength of the V-ring part number 384-S. Successful completion will confirm the 384-S demonstrates the suitability and safety for use on products designed to aid during helicopter hoist operations, including the deployment and recovery of both equipment and persons (Human External Cargo).

ACRONYMS AND ABBREVIATIONS:

LSC – Lifesaving Systems Corp.
N/A – Not Applicable
P/N – Part Number
S/N – Serial Number
Lbf – Pound-Force

TEST FACILITY:

Testing and inspection was performed at Lifesaving Systems Corporation's (LSC) manufacturing facility located in Apollo Beach, Florida by LSC personnel.

EQUIPMENT UNDER TEST:

Part No. 384-S

Webbing: Mil-Spec T-13 Nylon Webbing

Thread: TEX 210

Pattern: 6-Point Double W



SUMMARY OF TESTS PERFORMED & RESULTS:

Section	Test Description	Results
2.4	Load Test	The V-ring starts to experience material deformation at 4,000lbf. With the working load limit (WLL) set at 600lbs; the factor of safety equates to about 6.5 times the limit. Hence, this V-ring is adequate for use on LSC's helicopter hoisting harnesses, tethers, and lifesaving equipment.

SECTION 1- TEST CONDITIONS & EQUIPMENT:

1.1 ENVIRONMENTAL CONDITIONS

Load test shall be performed at a temperature of 75 ± 5°F, and a relative humidity of 50 ±15%. The temperature and humidity shall be recorded at time of test.

1.2 TOLERANCES

The load cell tolerances shall be maintained within all applicable specified tolerances.

- 2000lbf ± 2lbf
- 4000lbf ± 3lbf
- 6000lbf ± 4lbf

1.3 INSTRUMENTS AND EQUIPMENT

LSC Tool No.	Test Equipment	Description	Cal. Date	Cal. Due
88	Cell, Load	Force Measurement: 10,000lb	6/4/2019	6/4/2020
57	RH/Temp Monitor	Temp and Humidity Monitor	6/3/2019	6/4/2020
85	Calipers	Dimensional Measurement:	1/2/2019	1/2/2020

1.4 CALIBRATION

The instruments and equipment are calibrated according to manufacturer's specifications and calibration is traceable to the National Institute of Standards and Technology (NIST. Calibration records are maintained on file at Lifesaving Systems Corp. Photograph of the load cell calibration sticker can be found in Section 2.5 of this report.

SECTION 2- LOAD TEST:

2.1 SCOPE

The load test is performed to determine the strength of the V-ring.

2.2 APPRATUS

- Hydraulic pull tester
- Load Cell
- Type-13 Mil-Spec Nylon Webbing
- Type 302 stainless steel, 7 x 19 aircraft cable

2.3 PROCEDURE

Step 1. Mount the V-ring inside the hydraulic pull tester by looping a steel cable through the top grip and back through the V-ring.

Step 2. Mount the webbing loop attached to the V-ring to the bottom grip. The V-ring shall be in a vertical orientation before load testing.

Step 3. Increase the force at a rate of 100lbf every 3 seconds until the target load listed in Table1 is achieved or ultimate failure occurs.

Step 4. Release the force and measure the height of the V-ring for material deformation. Record results.

Step 5. Repeat each force for the target load listed in Table1. If ultimate failure or major deformation occurs the test shall end.

2.4 ANALYSIS OF RESULTS

Table1.

Target Load (lbf)	V-Ring Measurement (in)	Load Cell Reading (lbf)	Comment
0	0	0	-
2,000	2.312	2,095	No deformation
3,000	2.313	3,082	No deformation
4,000	2.345	4,019	Slight deformation noted
5,000	2.755	4,550	Major deformation noted in V-ring. Test was stopped at 4,550lbf.

Temperature and Relative Humidity Reading: 77.9°F, 53%

2.5 PHOTOGRAPHS



Test Setup



Load Cell: Calibration Sticker



Major Deformation:

Load at 4,550lbf