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Rescue Seat Static Load Test

Test Report

Part Number: 420



Approved by: _____

Mario Vittone

Date: January 17, 2017

PROPRIETARY & CONFINDENTIAL

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1.0 PURPOSE:

The purpose of this report is to show the load strength of the #420 rescue seat. Successful completion will confirm that the rescue seat demonstrates the suitability and safety for the intended application of helicopter hoist operations, including the deployment and recovery of persons (Human External Cargo).

2.0 DESCRIPTION:

The Rescue Seat has been designed and engineered to withstand all conditions normally encountered in both the maritime and land rescue operations. LSC'S Rescue Seat is ideally suited for confined area rescues requiring a narrow profile, such as through tree canopies.

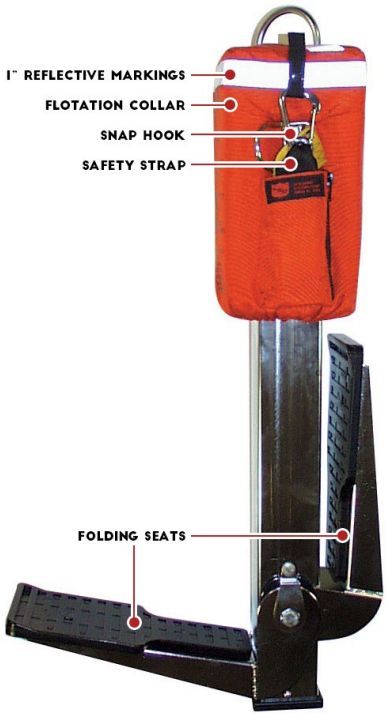
The Rescue Seat frame is constructed of TIG welded 304 stainless steel. All hardware is stainless steel for corrosion resistance. The Rescue Seat employs two fast acting, friction controlled seats that can be positioned for use in seconds. Both seats have a grip pattern molded into the seating area to prevent slippage.

The Rescue Seat is equipped with two adjustable safety straps stowed in zippered pockets for easy use and stowage. Flotation is constructed of closed cell foam. The cover is constructed of heavy duty urethane coated nylon sewn using nylon thread with lock stitch commercial grade sewing machines and has both written and pictorial instructions on two sides.

The Rescue Seat has been tested and approved by both the US Navy and the US Air Force.

The Department of the United States Army has approved the Lifesaving Systems Rescue Seat per the Airworthiness Release (AWR) for Rescue Hoist Equipment on UH/HH-60 Helicopters (AWR 980).

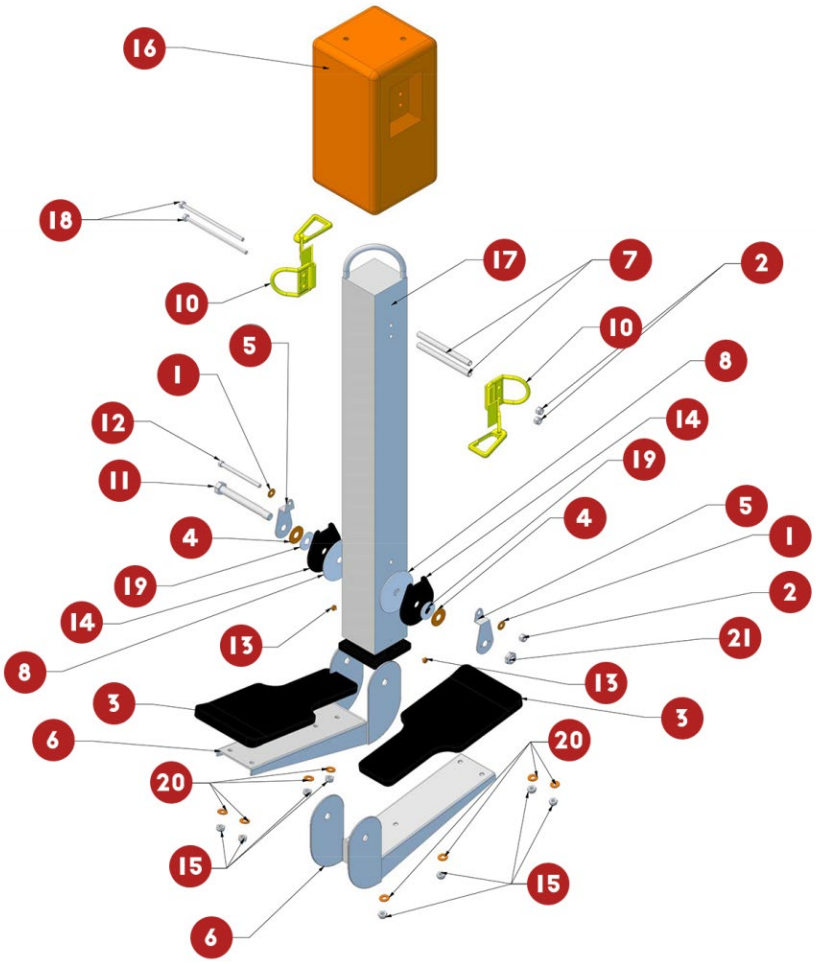
3.0 SPECIFICATIONS:



Product Specifications			
Materials:	Snap Hook: Wichard Stainless Steel Seat & Main Frame: Type 304 stainless steel Seat: ABS injection molded black plastic	**Breaking Limit**	Snap hook: 3750 LBS Safety Strap: 6000 LBS
Dimensions:	6" W x 9" D x 32" H	**Cleaning:**	Fresh water rinse
Weight:	18 LBS	**Inspection:**	Visual, Prior to each use
Service Life:	Frame – based on usage and condition Flotation & Safety Strap – Replace after 10 years or prior if necessary		

4.0 DESIGN AND CONSTRUCTION:

4.1 PART LIST



Item #	Quantity	Part #	Part Name
1	2	HO97	1/4-20 18-8 SS Flat Washer
2	3	HO40	1/4-20 18-8 SS Nyloc Nut
3	2	420-5	Seat

Item #	Quantity	Part #	Part Name
4	2	H103	1/2-13 18-8 SS Flat washer
5	2	420-07	Lock Lever
6	2	420-10	Seat, Frame
7	2		3/8 Upper Bolt Bushing
8	2	M034	Lrg. White Nylon Bushing
9	1	420-6	Plastic, End Plug
10	2	420-3	Safety Strap
11	1	H126	1/2-13 18-8 SS Hex Bolt
12	1	H094	1/4-20x3.5 18-8 SS Hex Bolt
13	2	H053	10x1/2 18-8 SS Phil Pan Screw
14	2	M035	Black Notched Nylon Bushing
15	8		5-16 24 SS Nyloc Nut
16	1	420-1	Flotation Cover
17	1	420-12	Frame, Main

Item #	Quantity	Part #	Part Name
18	2	H096	1/4-20x5.5 SS 18-8 Hex Bolt
19	2	H105	White Flat Nylon Washer
20	8		5-16 24 SS Flat Washer
21	1	H127	1/2-13 18-8 SS Nyloc Nut

5.0 TEST SETUP:

5.1 Equipment & Calibration:

The primary testing equipment consists of the following items:

1. Force Measurement: 10,000lb S-beam load cell (transducer) with one (I) each 0-10,000lbs digital gauge. Calibration conducted by Micro Precision Calibration, Inc. Sticker dated 05/02/16, valid thru 05/02/17.



2. Load Tester: Hydraulic Pull Strength



6.0 STATIC LOAD TEST:

6.1 Summary of Results:

Load	Pass/Fail	Notes
3,000lbs	Pass	No Deformation Detected
5,000lbs	Pass	No Deformation Detected
9,000lbs	Pass	Slight Elongation-Deformation
10,000lbs	Pass	Slight Elongation-Deformation

6.2 Test Results:

3,000lb Load:





5,000lb Load:





9,000lb Load:





10,000lb Load:





