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TEST REPORT

REVISION A: January 13, 2011

**TEST AND EVALUATION
 OF THE AQUA CREEK PRODUCTS
 MODEL F-700RL REVOLUTION
 AND AQUATRAM 360 MODEL K-700RL
 POOL LIFT**

A

for

Aqua Creek Products
 9889 Garry More Lane
 Missoula, MT 59808

STATE OF ALABAMA }
 COUNTY OF MADISON }

Robert D. Hardy, Department Manager, being duly sworn, deposes and says: The information contained in this report is the result of complete and carefully conducted testing and is to the best of his knowledge true and correct in all respects.

Robert D. Hardy

SUBSCRIBED and sworn to before me this 28 day of July 20 09

Sandra A. Daniel
 Notary Public in and for the State of Alabama at Large

My Commission expires June 5, 2011

Wyle shall have no liability for damages of any kind to person or property, including special or consequential damages, resulting from Wyle's providing the services covered by this report.

PREPARED BY: Jimmy Smith 07-28-09
 Jimmy Smith, Senior Engineering Specialist Date

APPROVED BY: Brian Coppock 7/28/09
 Brian Coppock, Senior Test Supervisor Date

WYLE Q. A.: Raul F. Terceno 7/28/09
 Raul F. Terceno, Q. A. Manager Date



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WH-1404, Rev. Feb '97

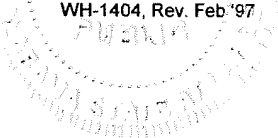


TABLE OF CONTENTS

	<u>Page No.</u>
1.0 INTRODUCTION.....	1
1.1 Scope.....	1
1.2 Product Description	1
1.3 References	1
1.4 Compliance Summary	2
2.0 SYSTEM TEST CONFIGURATION	2
2.1 Details of Tested System	2
2.2 Electrical	2
2.3 Construction Details	3
2.4 Quality Assurance	3
2.5 Test Equipment and Instrumentation	3

ATTACHMENTS

ATTACHMENT A – PHOTOGRAPHS	A-1
ATTACHMENT B – SAFETY CRITICAL COMPONENTS	B-1
ATTACHMENT C – TEST DATA	C-1
ATTACHMENT D – INSTRUMENTATION EQUIPMENT SHEET	D-1
ATTACHMENT E – UL 746C TEST REPORT	E-1
ATTACHMENT F – AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES 1009.2	F-1
ATTACHMENT G – REVOLUTION LIFT SPECIFICATIONS	G-1
ATTACHMENT H – INSTALLATION AND OPERATING INSTRUCTIONS	H-1

1.0 INTRODUCTION

1.1 Scope

This report documents conformance of the Aqua Creek Products Model F-700RL Revolution and Aquatram 360, Model K-700RL Pool Lift with the applicable requirements of the American with Disabilities Act: 1990 (Amendments Act Of 2008): Accessibility Guidelines 1009.2, ANSI/AAMI ES60601-1:2005, "Medical Electrical Equipment – Part 1: General Requirements for Basic Safety and Essential Performance," and Clause 27 of the "Standard for Polymeric Materials" UL 746C. Testing and evaluation of the Revolution and Aquatram 360 Pool Lift was conducted at Wyle Laboratories' facility in Huntsville, AL and Aqua Creek Products facility in Missoula, MT. The testing and evaluation was authorized by Mr. Brian Goettlich of Aqua Creek Products and conducted during July 7-10, 2009.

Contact: Mr. Brian Goettlich

Telephone: (888) 687-3552

E-mail: bgoettlich@aquacreek.com

1.2 Product Description

The Revolution and Aquatram 360 Pool Lifts are 24-VDC battery-powered, self-operable, permanently-mounted pool lifts designed to assist physically challenged individuals with access to swimming pools and/or spas. A detailed description of the Revolution and Aquatram 360 Pool Lifts, hereinafter referred to as the Equipment Under Test (EUT), and its support equipment is provided in Section 2.1.

1.3 References

- Aqua Creek Products' Purchase Order No. 4253
- Wyle Laboratories' Quotation No. HSV 545/048441/NB
- American with Disabilities Act: 1990 (Amendments Act of 2008): Accessibility Guidelines 1009.2
- ANSI/AAMI ES60601-1:2005, "Medical Electrical Equipment – Part 1: General Requirements for Basic Safety and Essential Performance" (IEC 60601-1:2005)
- UL 746C "Standard for Polymeric Materials"
- Wyle Laboratories' Quality Assurance Program Manual, Revision 3
- ANSI/NCSL Z540-1, "Calibration Laboratories and Measuring and Test Equipment, General Requirements"
- ISO 10012-1, "Quality Assurance Requirements for Measuring Equipment"

1.4 Compliance Summary

The Aqua Creek Products Model F-700RL Revolution Pool Lift and Aquatram 360, Model K-700RL complied with the applicable requirements of ANSI/AAMI ES60601-1:2005 and ADA Guidelines 1009.2 as indicated in Table 1-1 with no modifications necessary. This evaluation report is valid only for the Revolution and Aquatram 360 Pool Lifts. Any safety changes, revisions, or corrections made to the model after this evaluation shall be reevaluated, and a revised report shall be issued.

Table 1-1 Compliance Summary

Test Description	Requirements ANSI/AAMI ES60601-1	Compliant/Non-Compliant
General Tests	Section 4	Compliant
Accessible Parts	Section 5.9	Compliant
Equipment Identification	Section 7	Compliant
Protection Against Mechanical Hazards	Section 8	Compliant
Maximum Temperature During Normal Use	Section 11	Compliant

Test Description	Requirements ADA Accessibility Guidelines 1009.2	Compliant/Non Compliant
ADA Requirements		Compliant

2.0 SYSTEM TEST CONFIGURATION

2.1 Details of Tested System

The EUT and associated components of the test system are identified in Table 2-1.

Table 2-1 Components List

Item	Part/Model No.	Serial No.	Quantity
Revolution Pool Lift	Model F-700RL	8066	1
AquaTram360 Pool Lift	Model R-700RL	N/A	1
Battery Charger	CHJ	050438-0022	1
Battery	BAJ	046169-0016	1
Control Box	CBJ	047652-0032	1
Actuator	LA34	6012807	1
Handset (Pendant Control)	HB00-U010	N/A	1

2.0 SYSTEM TEST CONFIGURATION (continued)

2.2 Electrical Ratings

- Battery Charger 100/240-VAC, 50/60 Hz
- Battery 24 VDC, 6.5A

2.3 Construction Details

The Revolution and Aquatram 360 Pool Lift frame is constructed of stainless steel coated with a UV resistant powder coat finish. For specific construction details see Attachments G and H. Approximate weight and measurements are as follows:

- Weight: 175 lbs.
- Dimensions (Retracted Mode): 93 7/8" (237 cm) height x 63 3/8" (161 cm) deep x 24" (61 cm) wide

2.4 Quality Assurance

All work performed on this program was in accordance with Wyle Laboratories' Quality Assurance Program and Wyle Laboratories' Quality Program Manual, which conforms to the applicable portions of International Standard Organization (ISO) Guide 17025. The Wyle Laboratories, Huntsville Facility, Quality Management System is registered in compliance with the ISO-9001 International Quality Standard. Registration has been completed by Quality Management Institute (QMI), a Division of Canadian Standards Association (CSA). Wyle Laboratories is accredited (Certificate No. 845.01) by the American Association for Laboratory Accreditation (A2LA), and the results documented in this test report have been determined in accordance with Wyle's scope of accreditation unless otherwise stated in the report.

2.5 Test Equipment and Instrumentation

All instrumentation, measuring, and test equipment used in the performance of this test program was calibrated in accordance with Wyle Laboratories' Quality Assurance Program which complies with the requirements of ANSI/NCSL Z540-1, ISO 10012-1, and ISO/IEC 17025. Standards used in performing all calibrations are traceable to the National Institute of Standards and Technology (NIST) by report number and date. When no national standards exist, the standards are traceable to international standards or the basis for calibration is otherwise documented. Attachment D contains of the instrumentation, measuring, and test equipment that were used to perform the tests.

ATTACHMENT B
SAFETY CRITICAL COMPONENTS

DATA SHEET



Customer: Aqua Creek
 Specimen: Pool Lift

Part No. F-700RL Revolution Lift Amb. Temp. N/A Job. No. T56737
 Spec. IEC 60601-1 Photo N/A Report No. T56737-01
 Para. Various Test Med. N/A Start Date July 7, 2009
 S/N 8066 Specimen Temp. N/A

Test Title: Critical Safety Components

Device	MFG	Model	Technical Data, Rating	Marks of Conformity
Control Box	Linak	CBJ	Input: 24 VDC Output: 24VDC, 250 W maximum	UL Recognized File E175209, CE, CSA, N576
Handset (Pendant Control)	Linak	HB00- U010	Four (4) Position Touch Control	UL Recognized File E175209,
Battery	Linak	BAJ	Output: 24 VDC, 10A maximum	UL Recognized File E175209, CE, CSA, N576
Battery Charger	Linak	CHJ	Input: 100-240 VAC, 50.60 Hz, 400 mA maximum, Output: 29.5 VDC, maximum 12 VA, Fuse: T 1.25A, 250V	UL Recognized File E175209, CE, CSA, N576
Actuator	Linak	LA34	24 VDC, 4.5A maximum	UL Recognized File E175209 CE, CSA, N576

Tested By *Jimmy Smith* Date July 10, 2009
 Witness N/A Date NA
 Sheet No. 1 of 1
 Approved *Brian Appert* 7/14/09

Notice of Anomaly N/A
 Wyle Form WH514A, Rev. APR '84

ATTACHMENT C
TEST DATA

DATA SHEET



Customer: Aqua Creek
Specimen: Pool Lift

Part No.	<u>F-700RL Revolution Lift</u>	Amb. Temp.	<u>N/A</u>	Job. No.	<u>T56737</u>
Spec.	<u>ANSI-AAMI ES60601-1</u>	Photo	<u>N/A</u>	Report No.	<u>T56737-01</u>
Para.	<u>4</u>	Test Med.	<u>N/A</u>	Start Date	<u>July 7, 2009</u>
S/N	<u>8066</u>	Specimen Temp.	<u>N/A</u>		
GSI	<u>N/A</u>				

Test Title: General Tests

The following sections were evaluated by either actual visual inspection of the EUT and/or inspection of accompanying documentation:

1. Paragraph 4.7 Single Fault Condition

- Paragraph 4.7 is not applicable because the EUT is powered by an internal 24 VDC battery pack and is not susceptible to a single fault risk. The EUT battery charger connects to the AC mains and has been tested and listed by UL (File Number E175209) but is not directly connected to the EUT.

2. Paragraph 4.10 Power Supply

- The EUT is powered by an *Internal Electrical Power Source* and meets the requirements of this paragraph.

3. Paragraph 4.11 Power Input

- Paragraph 4.11 is not applicable because the EUT does not connect direct to the AC mains. The EUT is powered by an internal 24 VDC battery pack which has been tested and listed by UL (File Number E175209).

Tested By	<u><i>Jim Smith</i></u>	Date	<u>July 10, 2009</u>
Witness	<u>N/A</u>	Date	<u>NA</u>
Sheet No.	<u>1</u>	of	<u>1</u>
Approved	<u><i>Brai Appala</i></u>	<u>7/14/09</u>	

Notice of Anomaly None
Wyle Form WH614A, Rev. APR '84

DATA SHEET



Customer: Aqua Creek
Specimen: Pool Lift

Part No.	<u>F-700RL Revolution Lift</u>	Amb. Temp.	<u>N/A</u>	Job. No.	<u>T56737</u>
Spec.	<u>ANSI-AAMI ES60601-1</u>	Photo	<u>N/A</u>	Report No.	<u>T56737-01</u>
Para.	<u>5.7</u>	Test Med.	<u>N/A</u>	Start Date	<u>July 7, 2009</u>
S/N	<u>8066</u>	Specimen Temp.	<u>N/A</u>		
GSI	<u>N/A</u>				

Test Title: Humidity Preconditioning

Humidity Preconditioning is not applicable because the test requirements of Paragraphs 8.7.4 and 8.8.3 are not applicable because the EUT does not connect directly to the AC mains.
The EUT battery charger connects to the AC mains and has been tested and listed by UL (File Number E175209) but is not directly connected to the EUT.

Tested By	<u><i>Jon Smith</i></u>	Date	<u>July 10, 2009</u>
Witness	<u>N/A</u>	Date	<u>NA</u>
Sheet No.	<u>1</u>	of	<u>1</u>
Approved	<u><i>Brian Cappade</i></u>		<u>7/14/09</u>

Notice of Anomaly None

DATA SHEET



Customer: Aqua Creek
Specimen: Pool Lift

Part No.	<u>F-700RL Revolution Lift</u>	Amb. Temp.	<u>N/A</u>	Job. No.	<u>T56737</u>
Spec.	<u>ANSI-AAMI ES60601-1</u>	Photo	<u>N/A</u>	Report No.	<u>T56737-01</u>
Para.	<u>5.9</u>	Test Med.	<u>N/A</u>	Start Date	<u>July 7, 2009</u>
S/N	<u>8066</u>	Specimen Temp.	<u>N/A</u>		
GSI	<u>N/A</u>				

Test Title: Determination of Applied Parts and Accessible Parts

1. Paragraph 5.9.2.1 Test Finger
 - There are no hazardous voltages accessible to the operator during normal operation of the EUT. All electrical components are sealed and have no points of entry for the operator's access.
2. Paragraph 5.9.2.2 Test Hook
 - A visual inspection of the EUT determined that there are no accessible panels, cutouts or openings which the operator may come into contact with during normal operation.
3. Paragraph 5.9.2.3 Actuating Mechanisms
 - This paragraph is not applicable because there are no hazardous voltages present in the EUT which the operator may encounter during normal operation.

Tested By	<u><i>Jerry Smith</i></u>	Date	<u>July 10, 2009</u>
Witness	<u>N/A</u>	Date	<u>NA</u>
Sheet No.	<u>1</u>	of	<u>1</u>
Approved	<u><i>Bruce Campbell</i></u>		<u>7/14/09</u>

Notice of Anomaly None

DATA SHEET



Customer: Aqua Creek
Specimen: Pool Lift

Part No.	<u>F-700RL Revolution Lift</u>	Amb. Temp.	<u>N/A</u>	Job. No.	<u>T56737</u>
Spec.	<u>ANSI-AAMI ES60601-1</u>	Photo	<u>N/A</u>	Report No.	<u>T56737-01</u>
Para.	<u>7</u>	Test Med.	<u>N/A</u>	Start Date	<u>July 7, 2009</u>
S/N	<u>8066</u>	Specimen Temp.	<u>N/A</u>		
GSI	<u>N/A</u>				

Test Title: Equipment Identification, Markings and Documents

1. Paragraph 7.1.2 Legibility of Markings
 - All warning statements, instructive statements and safety markings and drawings display on the exterior of the Equipment Under Test (EUT) are legible and readable from the intended position of the operator.
2. Paragraph 7.2.4 Accessories
 - All accessories are clearly marked with the manufacturers name and trademark and applicable electrical ratings.
3. Paragraph 7.9.2 Instructions
 - An Operators Instruction Manual is included with the EUT detailing set-up and operational functions as well as safety warnings.

Tested By	<u>Jim Smith</u>	Date	<u>July 10, 2009</u>
Witness	<u>N/A</u>	Date	<u>NA</u>
Shcct No.	<u>1</u>	of	<u>1</u>
Approved	<u>Bruce Cappell 7/14/09</u>		

Notice of Anomaly None

DATA SHEET



Customer: Aqua Creek
Specimen: Pool Lift

Part No.	<u>F-700RL Revolution Lift</u>	Amb. Temp.	<u>N/A</u>	Job. No.	<u>T56737</u>
Spec.	<u>ANSI-AAMI ES60601-1</u>	Photo	<u>N/A</u>	Report No.	<u>T56737-01</u>
Para.	<u>8.8.3</u>	Test Med.	<u>N/A</u>	Start Date	<u>July 7, 2009</u>
S/N	<u>8066</u>	Specimen Temp.	<u>N/A</u>		
GSI	<u>N/A</u>				

Test Title: Dielectric Strength

This test was waived because the battery charger is the only accessory that is connected to the AC mains and has been tested and listed by UL (File Number E175209). The charger is not directly connected to the EUT.

Tested By *Jay Smith* Date July 10, 2009
Witness N/A Date NA
Sheet No. 1 of 1
Approved *Bruce Appels* 7/14/09

Notice of Anomaly None

DATA SHEET



Customer: Aqua Creek
 Specimen: Pool Lift

Part No. F-700RL Revolution Lift Amb. Temp. N/A Job. No. T56737
 Spec. ANSI-AAMI ES60601-1 Photo N/A Report No. T56737-01
 Para. 9 Test Med. N/A Start Date July 7, 2009
 S/N 8066 Specimen Temp. N/A
 GSI N/A

Test Title: Protection Against Mechanical Hazards

The following sections were inspected to determine compliance with any mechanical hazards:

Mechanical Hazard	Section 9, Sub-clause	Compliant/Non-compliant
Hazards Associated with Moving Parts	9.2	Compliant
Hazards Associated with Surfaces, Corners, and Edges	9.3	Compliant
Instability Hazards	9.4	Compliant
Expelled Parts Hazard	9.5	Compliant

Notice of Anomaly None

Tested By *Jay Smith* Date July 10, 2009
 Witness N/A Date NA
 Sheet No. 1 of 1
 Approved *Bruce Appuk* 7/14/09

Wyle Form WH614A, Rev. APR '84

DATA SHEET



Customer: Aqua Creek
 Specimen: Pool Lift

Part No. F-700RL Revolution Lift Amb. Temp. N/A Job. No. T56737
 Spec. ANSI-AAMI ES60601-1 Photo N/A Report No. T56737-01
 Para. 11.1.1 (Table 24) Test Med. N/A Start Date July 7, 2009
 S/N 8066 Specimen Temp. See Table
 GSI N/A

Test Title: Maximum Temperature During Normal Use

The actuator of the EUT was operated continuously for ten (10) minutes) and maximum temperatures were recorded as indicated in the following table:

Test Location	Ambient Temperature (C°)	Maximum Temperature (C°)	Maximum Allowable Temperature (C°)
Actuator Housing	23	30.2	48
Battery	23	24.2	48
Main Control Box	23	24.0	48
Actuator Drive Shaft Housing	23	25.3	48
Seat	23	23	43
Arm Rest	23	23	43

Tested By Jon Smith Date July 10, 2009
 Witness N/A Date NA
 Sheet No. 1 of 1

Notice of Anomaly None

Approved Ronni Appala 7/14/09

Wyle Form WH614A, Rev. APR '84

DATA SHEET



Customer: Aqua Creek
 Specimen: Pool Lift
 Part Number F-700RL Revolution Lift Amb. Temp. N/A Job. No. T56737
 Specification ADA 1990 (2008) Guidelines Photo N/A Report No. T56737-01
 Section 1009.2 Test Med. N/A Start Date July 7, 2009
 Para. Various (see table below) Specimen Temp. N/A
 S/N 8066
 Test Title: Compliance with American with Disabilities Act (Guidelines for Pool Lifts Section 1009.2)

ADA Guidelines for Pool Lifts Section & Description	Requirement	Compliance		Comments
		Yes	No	
1009.2.2 Seat Location	In the raised position, the centerline of the seat shall be located over the deck and 16 inches (405 mm) minimum from the edge of the pool. The deck surface between the centerline of the seat and the pool edge shall have a slope not steeper than 1:48.	X		Instructions for installation of the lift in accordance with ADA Guidelines are included in the Aqua Creek Products® "Installation, Assembly and Operating Instructions" Revised May, 2009
1009.2.3 Clear Deck Space	On the side of the seat opposite the water, a clear deck space shall be provided parallel with the seat. The space shall be 36 inches (915 mm) wide minimum and shall extend forward 48 inches (1220 mm) minimum from a line located 12 inches (305 mm) behind the rear edge of the seat. The clear deck space shall have a slope not steeper than 1:48.	X		Instructions for installation of lift in compliance with ADA Guidelines are included in the Aqua Creek Products® "Installation, Assembly and Operating Instructions" Revised May, 2009
1009.2.4 Seat Height	The height of the lift seat shall be designed to allow a stop at 16 inches (405 mm) minimum to 19 inches (485 mm) maximum measured from the deck to the top of the seat surface when in the raised (load) position.	X		The Seat Height was verified to be compliant with the requirements of the ADA Guidelines.
1009.2.4 Seat Height	The seat shall be 16 inches (405 mm) wide minimum.	X		The Seat Width was verified to be compliant with the requirements of the ADA Guidelines

Tested By [Signature] Date July 10, 2009
 Witness N/A Date N/A
 Sheet No. 1 of 2
 Approved [Signature] 7/14/09

Notice of Anomaly None

DATA SHEET



Customer: Aqua Creek
 Specimen: Pool Lift
 Part Number F-700RL Revolution Lift Amb. Temp. N/A Job. No. T56737
 Specification ADA 1990 (2008) Guidelines
 Section 1009.2 Photo N/A Report No. T56737-01
 Para. Various (see table below) Test Med. N/A Start Date July 7, 2009
 S/N 8066 Specimen Temp. N/A

Test Title: Compliance with American with Disabilities Act (Guidelines for Pool Lifts Section 1009.2)
 (continued)

ADA Guidelines for Pool Lifts Section & Description	Requirement	Compliance		Comments
		Yes	No	
1009.2.6 Footrests and Armrests	Footrests shall be provided and shall move with the seat. If provided, the armrest positioned opposite the water shall be removable or shall fold clear of the seat when the seat is in the raised (load) position.	X		Removable footrests are provided on the lift. Armrests are provided and can be folded clear for access and egress on either side of the seat.
1009.2.7 Operation	The lift shall be capable of unassisted operation from both the deck and water levels. Controls and operating mechanisms shall be unobstructed when the lift is in use.	X		The Handset Control allows the user to adjust the lift on a vertical plane (up/down) and horizontal plane (right/left) without any obstructions. The user can rotate the lift 360°.
1009.2.8 Submerged Depth	The lift shall be designed so that the seat will submerge to a water depth of 18 inches (455 mm) minimum below the stationary water level.	X		The seat will submerge as required and is adjustable for approximately 14 inches travel up/down beyond the ADA Guidelines
1009.2.9 Lifting Capacity	Single person pool lifts shall have a weight capacity of 300 pounds. (136 kg) minimum and be capable of sustaining a static load of at least one and a half times the rated load.	X		The Load Capacity of the lift was verified up to 500 pounds and Static Load Capacity was verified up to 750 pounds which exceeds the minimum ADA Guidelines.

Tested By Jay Smith Date July 10, 2009
 Witness N/A Date N/A
 Sheet No. 2 of 2
 Approved Brian Appud 7/14/09

Notice of Anomaly None
 Wyle Form WH614A, Rev. APR '84