

MODIFIED CHAIN HOIST

ELECTRIC CHAIN HOISTS

USER MANUAL

HSC-01 Chain Hoist
1750-03-00-01
StageMaker Model: SR05



This chain hoist control system is intended for professional use only.
Read this entire document before installing, operating, or using
this chain hoist control system.

■ ORIGINAL INSTRUCTIONS

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Part Number: 1750-03-00-01UM
Release: 06-2018

Original Instructions
Modified Chain Hoist
Rev ORG
Released [06-2018]

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Other functions not described in this document may be available. However, this fact shall not constitute an obligation to supply such functions with a new product or when servicing.

We have checked that the contents of this document correspond to the device described.
There may be discrepancies nevertheless, and no guarantee can be given that they are completely identical.
The information contained in this document is reviewed regularly and any necessary changes will be included in the next edition.

We welcome suggestions for improvement.

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FOREWORD

• **USER DOCUMENTATION**



WARNING

Before installing and commissioning the Modified Chain Hoist, you must read all safety instructions and warnings carefully including all the warning labels attached to the equipment. Make sure that the warning labels are kept in a legible condition and replace missing or damaged labels.

REGIONAL CONTACTS

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• **USE FOR INTENDED PURPOSE ONLY**

The equipment may be used only for the application stated in the manual and only in conjunction with devices and components recommended and authorized by Motion Laboratories Inc.

• **IDENTIFICATION**

This user manual pertains to the following Modified Chain Hoist models:

Any version of 1750-03-00-01



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WARNINGS

• **SYMBOLS**



DANGER

Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.



WARNING

Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



CAUTION

Used with the safety alert symbol indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.
Used without a safety alert symbol indicates a potentially hazardous situation which, if not avoided may result in property damage.

• **DON'Ts**

- Do NOT allow lifting operations unless carried out by a competent person.
- Do NOT operate the hoists without a clear view of the load or reliable communication with an observer.
- Do NOT operate the hoists unless the hazard zone has been cleared
- Do NOT operate the system until a full risk assessment for your particular application has been completed.

SAFETY INSTRUCTION

- **GENERAL SAFETY INFORMATION**

The manual must be kept by a person in charge in a suitable place and ready for consultation, in optimal conditions. Should it be lost or damaged, the manual can easily be retrieved on the manufacturers website: www.motionlabs.com.

The manufacturer retains all material and intellectual rights on the manual, and restricts its duplication, even partial, for any commercial use.



CAUTION

All marking data should not be removed by grinding, abrasion or peeling, whether accidental or not. Any unit that does not carry the proper identification references should be removed from service until those references can be replaced.



WARNING

This equipment contains dangerous voltages and controls potentially dangerous rotating mechanical parts. Non-compliance with or failure to follow the instructions contained in this manual can result loss of life, severe personal injury or serious damage to property.

- **ELECTRICAL SAFETY INFORMATION**

The Modified Safety Hoists operates at high voltages. There are no user serviceable parts inside the enclosure.



DANGER

Risk of electric shock. Disconnect the power supply across all poles before opening the equipment for access. Repairs on equipment must only be carried out by trained NA service technicians familiar with the technical specifications contained in this unit.

To ensure proper operation and dependability, any defective electrical component must be replaced using parts contained in the relevant spare parts list.

- **OPERATIONAL SAFETY INFORMATION**

The modified safety chain hoist is provided with a full operator manual supplied by the manufacturer of the chain hoist. This document should be read in its entirety.

OVERVIEW

• PRODUCT DEFINITION

The modified chain hoist described in this manual are based on modifications performed to standard fixed speed electric chain hoists as supplied by various manufacturers. All lifting capacities and electrical characteristics are as supplied by the manufacturer.

Modifications for 1750-03-00-01 are limited to the addition of the following:

- An absolute encoder driven by the limit output shaft and attached via a single beam alignment coupling.
- A hub interface board used to collect data from the absolute encoder and / or a load cell (optional)
- A six-pin XLR connection loom to allow the hoist to be connected to the Hoist Safety Controller (HSC) Data Collection Hub (DCH).

• PRODUCT PERFORMANCE

The modified chain hoist 1750-03-00-01 identified in this manual is monitored by the HSC for the following criteria:

- Verification that the hoist is connected to the controller
- The hoist is monitored to provide feedback that it is moving when intended.
- The hoist is monitored to provide feedback that it is moving in the correct direction when intended.
- If the option is chosen, the hoist is monitored for imposed weight.

OVERVIEW

- 1750-03-00-01, Hoist

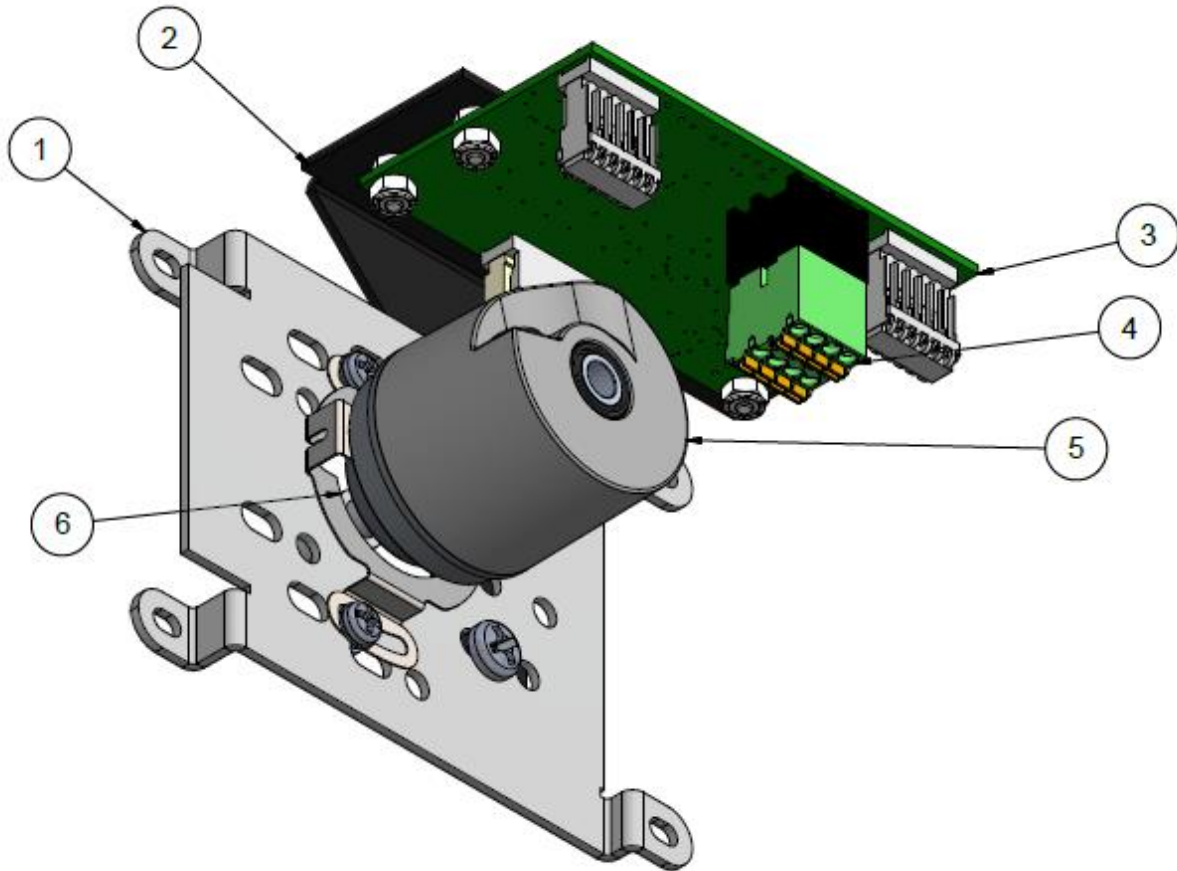


	MLI Part Number	MAN Part Number	Description
1	N/A	N/A	Stage Maker SR 05 Series Hoist
2	N/A	N/A	Brake End, Internal Assembly
3	1402-06-37-05-003	N/A	Cable Tail, Data, 22/6, 6Pin XLR Male, Bare End, 3FT
4	A-76-001-0008	N/A	Cable, Motor Tail, P14-01, 45IN, Unterminated



OVERVIEW

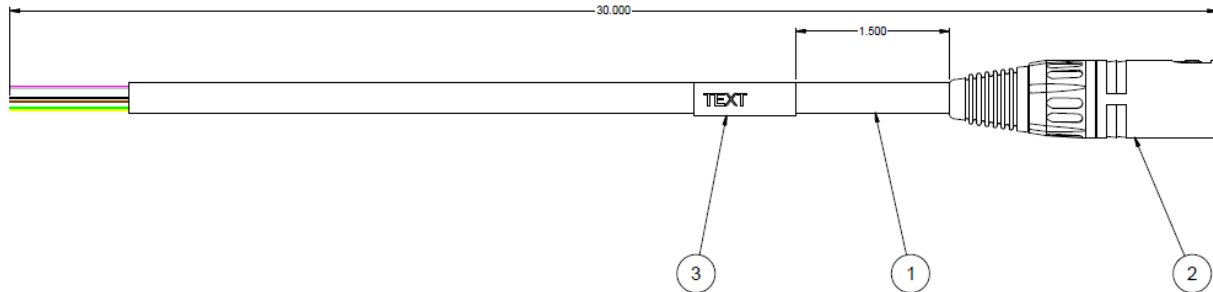
- 1750-03-00-01, Brake End, Internal Assembly



	MLI Part Number	MAN Part Number	Description
1	N/A	N/A	Fixing plate
2	2602-05-00-22-003	N/A	Bracket, PCB, Hoist Interface Board, SR5, Steel, Black
3	C-02-001-0097	N/A	PCB Assembly, Hoist Data Interface, HSC
4	1000-15-01-03-002	N/A	Plug, Straight, Two Piece Terminal Block, 4 Pole, Dual Row, Green, 24AWG-16AWG, 8A 150V
5	2022-01-01-01-001	RM-50HA0E-5C13S12M-CT1M/N68	Encoder, Absolute, 36mm/Hollow Shaft 6.35, 25bit/SSI
6	2602-20-00-01-001	N/A	Shaft, Adapter, Encoder to Stage Maker SR05

OVERVIEW

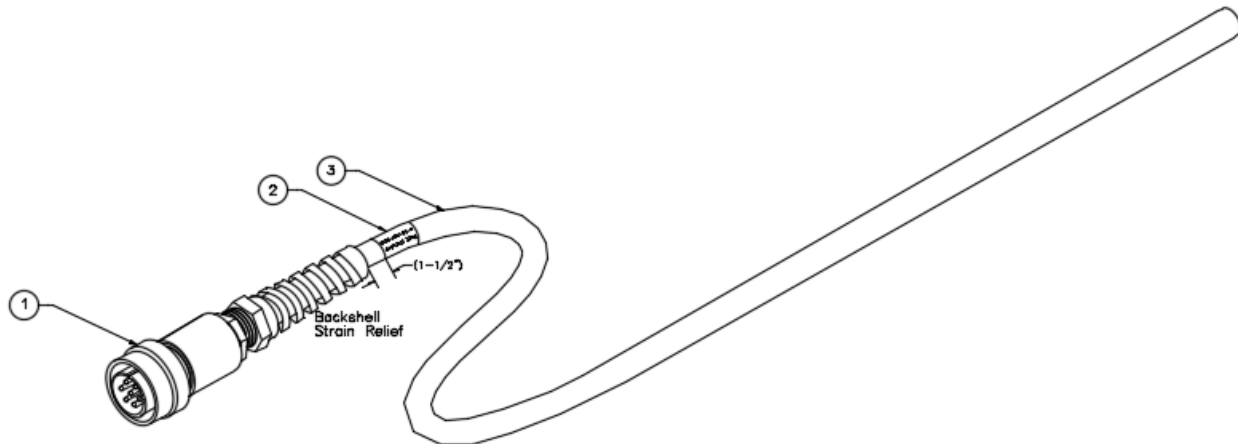
- 1402-06-37-05-001, Encoder Tail



	MLI Part Number	MAN Part Number	Description
1	1500-50-00-01-001	N/A	Std Label, Printable, Vinyl, White, Self Laminating, 1" X .75" - 2.5" Cable Marker, 100pc Roll, PTL-21-427
2	1000-60-04-00-006	N/A	XLR, 6Pin, P, Nickel, Solder Cup
3	3500-04-05-03-001	N/A	Cable, Custom, 22/6, 3Twisted Pair w/Foil Wrap, Braid and Drain Wire, PVC Jacket, Pairs are Yellow/Green, Brown/White and Pink/Grey, Encoder, 1500FT/REEL

OVERVIEW

• **Power / Control Tail**



	MLI Part Number	MAN Part Number	Description
1	1500-50-00-01-001	N/A	Std Label, Printable, Vinyl, White, Self Laminating, 1" X .75" - 2.5" Cable Marker, 100pc Roll, PTL-21-427
2	1000-60-04-00-006	N/A	XLR, 6Pin, P, Nickel, Solder Cup
3	3500-04-05-03-001	N/A	Cable, Custom, 22/6, 3Twisted Pair w/Foil Wrap, Braid and Drain Wire, PVC Jacket, Pairs are Yellow/Green, Brown/White and Pink/Grey, Encoder, 1500FT/REEL

TECHNICAL SPECIFICATIONS

• PART NUMBERS

PART NUMBER CONFIGURATION			
CATEGORY	MFG / Type	VFD Mod	Fixed Speed Mod
1250 = MLI	03= StageMaker SR05	00= No VFD Mod	01= RM-50HA0E-5C13S12M-CT1M/ absolute encoder, mounted to end of Limit shaft with single beam spring coupling, HIB mounting bracket, SIL1 HIB board, Data Output XLR tail, 14 Pin power / control tail
Chain Hoist Modifications			

• SYSTEM CAPACITY

The capacity of the 1750-03-00-01 in this manual is specified by the base hoist model and detailed in the hoist manufacturers user manual.

• ELECTRICAL SPECIFICATIONS

The electrical specifications of the 1750-03-00-01 in this manual is specified by the base hoist model and detailed in the hoist manufacturers user manual.

• PHYSICAL SPECIFICATIONS

The physical specifications of the 1750-03-00-01 in this manual is specified by the base hoist model and detailed in the hoist manufacturers user manual.

• DATA SPECIFICATIONS

Data Communication Protocol, Absolute Encoder to HIB..... SSI
 Data Communication Protocol, Hoist to Hub..... RS485 Full Duplex

• ENVIRONMENTAL SPECIFICATIONS

Indoor Use Only
 IP Rating..... IP40
 NEMA..... NEMA1
 Operating Temperature Range..... 0°C to 70°C



TECHNICAL SPECIFICATIONS

• CABLE SPECIFICATIONS


DATA CABLE

The Data Cable uses Neutrik 6 Pin XLR connectors with 6 Conductor (3 Twisted Pair) 22AWG shielded cable. Cable is an MLI product, part number 1500-50-00-01-001.

DATA CABLE, HOIST TO HUB		
PIN	FUNCTION	COLOR
1	24VDC +	Pink
2	0VDC	Grey
3	TX+ From Hub	White
4	TX- From Hub	Brown
5	RX- From Hoist	Green
6	RX+ From Hoist	Yellow

HOIST POWER CONTROL CABLE

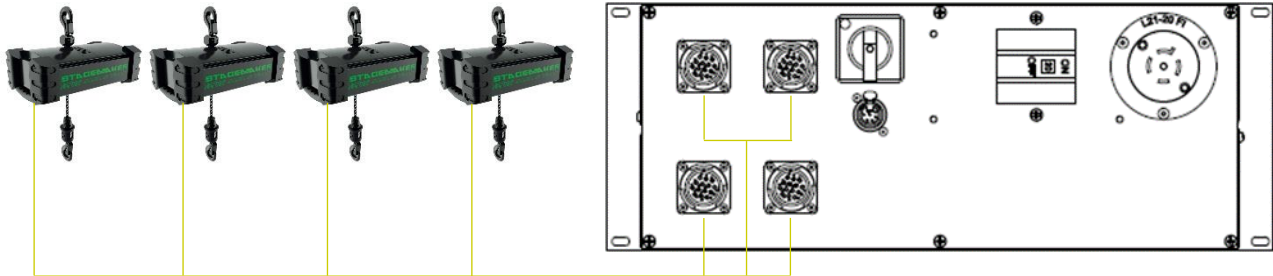
The Hoist Power and Control Cable uses 7 Conductor 16AWG cable with Soriau 14 pin (P14) connector. Cable is an MLI product, part number 1500-10-00-15-001.

HOIST POWER/CONTROL P14		
PIN	FUNCTION	COLOR
A	L1	BLACK
B	L2	RED
C	L3	BLUE
D	UP	BROWN
E	COMMON	VIOLET
F	DOWN	YELLOW
N	GROUND	GREEN/YELLOW

INSTALLATION

• **SYSTEM CONNECTIONS**

Prior to powering up the system, all cabling should be properly installed and connected in the following manner:



Each Hoist has been equipped with a Power Control Cable tail. Connect Chain Hoists to controller with 16/7 Hoist Power and Control Cables.

DATA CONNECTIONS



Each Hoist has been equipped with a Data Cable tail. Connect Chain Hoists to Data Collection Hub (DCH) with Motion Labs 6pin XLR Data Cables.

INSTALLATION

- **POWER UP**

The power up sequence for the system will be detailed in the respective Front-End manuals.

- **HOIST SETUP & CONFIGURATION**

The setup & configuration of the 1750-03-00-01 in this manual is specified by the base hoist model and detailed in the manufacturers user manual.

- **OPERATION**

The operation of the 1750-03-00-01 in this manual is specified by the base hoist model and detailed in the manufacturers user manual and in the respective Front-End manuals.

- **FAULTS**

The hoist itself does not indicate any faults.



MAINTENANCE

- **INSPECTIONS**

All maintenance and inspections are to be done in accordance with the manufacturers manuals.



SPARE PARTS AND DISPOSAL

- SPARE PARTS

Only original spare parts may be used. Motion Laboratories Inc. cannot be held responsible for failures and breakdowns caused by the use of non-OEM or incorrect spare parts.

In case of necessity, please contact:

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In case of necessity for parts and assemblies in the hoist, please contact:

Stagemaker Factory USA

TEL: +1 (937) 525-5100

www.rmhoist.com

