

# SOFT LIMIT CONSOLE

CHAIN HOIST CONTROL SYSTEMS

## USER MANUAL



Console Touch Screen Operating System A-17-005-0013 TSOS Interface A-17-005-0103

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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Original Instructions SOFT LIMIT CONSOLE Rev ORG Released 09-2018

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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.

Motion Laboratories Inc. intends this document, whether printed or electronic, to be provided in its entirety.





#### • USER DOCUMENTATION



#### WARNING

Before installing and commissioning the Soft Limit Control System, 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 legible condition and replace missing or damaged labels.

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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 Potable Soft Limit Automation Control System models containing large format HMI Touch Screen Operating Systems: A-17-005-0013





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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 hoists without a clear view of the load or reliable communication with an observer. Do NOT operate hoists unless the hazard zone has been cleared

Do NOT operate system until a full risk assessment for your particular application has been completed. Do NOT operate system until all safety conditions have been assessed and only in emergency situations or initial setup.

Do NOT operate system until the E-stop system has been connected and tested.

Do NOT operate system unless all operators and observers have been informed of the location of all Emergency Stop (E-stop) switches.





#### • GENERAL SAFETY INFORMATION

This 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 manufacturer's 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 Soft Limit Control System 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 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 Soft Limit Control System has setup and configuration for safe and reliable operation. It is imperative that the user read and understand the instructions contained in the manual before attempting to operate.



#### DANGER

The "SAFETY OVERRIDE MANUAL CONTROL" function will by-pass all safety features. Care must be taken to assess the situation carefully before operating in this mode.

This controller uses industry standard color codes for illumination. Red is for safety warnings, Blue indicates a reset requirement and Green indicates a ready state to operate.





#### PRODUCT DEFINITION

The Portable Soft Limit Control System identified in this manual are 8 channel, rack mount, control systems that are linkable up to 80 hoists.

The Soft Limit Control System must be used with a hoist system which uses position and or weight feedback to operate the hoists in a safe manner. The system shall use encoder feedback for position control. If the system has loadcells to monitor weight, it shall use upper and lower weight limits to move the loads safely in both directions.

These systems are intended to operate fixed speed electric chain hoists modified to provide feedback. The components or Kits available for feedback are encoders/kits and loadcells. For reference part numbers for those parts are as follows:

- A-16-003-0001 A-16-003-0099 Encoders
- A-16-003-0100 A-16-003-0199 Encoder Kits
- A-17-003-XXXX Load Cells

The Soft Limit Control System has the following features:

- E-Stop system with global E-stop switches and reset switches
- HMI Touchscreen operator/display
- Manual Override input connector

#### • PRODUCT PERFORMANCE

The Soft Limit Control System's Console identified in this manual monitor the following criteria:

- E-Stop circuit; the console has both E-Stop and reset functions locally.
- Hoist Position; the console displays position feedback from the system.
- Hoist Weight; the console displays weight feedback from the system.

The Soft Limit Control System's Console identified in this manual have the following features:

- Manual Hoist Control.
- Soft Limit Hoist Control.







#### • TOUCH SCREEN OPERATING SYSTEM, CONSOLE, FRONT



- 1. HMI.
- 2. USB Port (for updating system).
- 3. Emergency Stop Button.
- 4. Reset Button.
- 5. OLED 5 Button Panel.
- 6. GO Button.





#### • TOUCH SCREEN OPERATING SYSTEM, CONSOLE, REAR



- 1. Handle.
- 2. USB Port. This port is for peripheral devices like a mouse and keyboard.
- **3.** Harting RJ45 PushPull Connector. This is for the connection of the Touch Screen Operating System (TSOS) Console to the TSOS Interface. It is for communication between the Touch Screen Operating System and the Programable Logic Controller (PLC).
- 4. DVI-D Video Port. This port is for a secondary monitor.
- **5.** Harting RJ45 PushPull Connector. This is for the connection of the TSOS Console to the TSOS Interface. It is for communication between the Touch Screen Operating System and the PLC.
- 6. NL8 Connector. This is for connection of the TSOS Console to the TSOS Interface. It is for the Power & Emergency Stop Circuit.





#### • TSOS INTERFACE, FRONT



- 1. Emergency Stop Button.
- 2. Reset Button.
- 3. TSOS Power Indicator.
- 4. NL8 Connector.
- 5. Harting RJ45 PushPull Connector
- 6. NL8 Shorting Plug.





#### • TSOS INTERFACE, REAR



- 1. IEC Input & Main Power Rocker Switch.
- 2. Harting RJ45 PushPull Connector.
- 3. NL8 Connector.
- 4. Fuse Holder & Fuse.





#### • PART NUMBERS

PART NUMBER CONFIGURATION			motionlabo
			motioniaus -
GROUP	CATEGORY	SUBDIVISION	ID NUMBER
A = Top Level Assembly	- 17 = Rigging Electronics	- 005 = HMI Touch Screen	<ul> <li>xxx = Ideration</li> </ul>
		Operating System (TSOS)	

PART NUMBER TABLE		motion labs 😵 –	
Part Number	Туре	Description	
A-17-005-0013	TSOS	PLC Control System, Touch-Screen Operating System, HMI 12" with Enclosure, E-Stop, Reset, Go, OLED Buttons, NL8, Harting PushPull	
A-17-005-0103	Interface	PLC Control System, HMI Interface, RP3, IEC Input, E-Stop, NL8	

#### • SYSTEM CAPACITY

The Soft Limit Control System in this manual can run 1 to 80 Chain Hoists. The TSOS's Capacity is based on user scope and how many hoists can be defined on a specific HMI Screen size.

#### • ELECTRICAL SPECIFICATIONS, TOUCH SCREEN OPERATING SYSTEM, CONSOLE

Input Power	
Current Rating	3A max

#### • ELECTRICAL SPECIFICATIONS, TSOS INTERFACE

Input Power	100 - 120VAC 1 Phase
Frequency	
Current Rating	3A max

#### • PHYSICAL SPECIFICATIONS, TOUCH SCREEN OPERATING SYSTEM, CONSOLE

Chassis	
Front Panel	090" Aluminum, black powder coat finish
End Caps	Yellow ASA
Chassis Width	
Chassis Height	
Chassis Depth	
Weight	

#### • PHYSICAL SPECIFICATIONS, TSOS INTERFACE

Chassis	
Front Panel	125" Aluminum, black powder coat finish
Rear Panel	090" Aluminum, black powder coat finish
Chassis Height	
Chassis Width	



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#### **TECHNICAL SPECIFICATIONS**

Chassis Depth	5.5″
Weight	5 lbs.

#### • DATA SPECIFICATIONS

Data Communication Protocol, Console to Interface	Modbus TCF
Data Communications Protocol, Interface to Controller	. Modbus TCI

#### ENVIRONMENTAL SPECIFICATIONS

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

#### • CABLE SPECIFICATIONS

#### NL8 POWER/EMERGENCY STOP CIRCUIT CABLE

The Power/Emergency Stop Circuit Cable uses Neutrik NL8 8 pin connectors with 16/7 cable.

Console Power / E-Stop Connector		motion labs
PIN	FUNCTION	COLOR
1+	E-Stop A	N/A
1-	E-Stop B	N/A
2+	Reset A	N/A
2-	Reset B	N/A
3+	24 VDC	N/A
3-	0 VDC	N/A
4+	Ground	N/A
4-	-	N/A





#### DATA CABLE

The Data Cable uses Harting RJ45 PushPull connectors with Cat6 cable. Cable is a MLI product, part number 1002-09-45-600-0522

Console RJ45 PushPull Connector		motionlabs 🎸
PIN	FUNCTION	COLOR
1	Rx +	N/A
2	Rx -	N/A
3	Tx +	N/A
4	-	N/A
5	-	N/A
6	Tx -	N/A
7	-	N/A
8	-	N/A





#### SYSTEM CONNECTIONS

Note: System connections details all cable connections related to Portable Automation Console. Please refer to the System Schematic for other connections in the system.

TOUCH SCREEN OPERATING SYSTEM CONNECTIONS, CONSOLE



TOUCH SCREEN OPERATING SYSTEM CONNECTIONS, CONSOLE, PERIPHERALS







#### • POWER UP

Connecting the NL8 Cable to the TSOS Console will power the device. Connecting the Ca6 Cable to the TSOS Console will provide communications path.

The Emergency Stop Circuit must be satisfied. All E-Stop button quarter turned to release and reset button pressed.

Once the PLC and other electronic devices in the unit have cycled on and booted up, the TSOS Console will be ready to operate





#### • SETUP / CONFIGURATION

HOME PAGE

You are not logged in. Please click on the Login button at the bottom left of the page.	09/13/2018	3:45:11pm
$\frac{PLC \text{ Restart}}{PLC \text{ Restart}} \frac{1}{4} \frac{2}{4} \frac{3}{4} \frac{4}{4} \frac{5}{4} \frac{6}{4} \frac{6}{4}$		
Fault		
Manager Layout		
Log In We Manufacture Solutions	For Your Challenges	

The **HOME** page is the main page where all other pages can be accessed, including the Login Menu. The upper left corner displays the login name and security level of the current user.





#### LOGIN - HOME PAGE

i	You are not logged in. Please click on the Login button at the bottom left of the page.
L	og In

Press the Login button to open the sign in screen.



Press the "NAME" text field to enter your login name. After you initiate the "NAME" field a standard keyboard screen will pop up, type your name and hit enter. Next press the "PASSWORD field and repeat the process to enter your login password.

Press the unlock icon to unlock the user. You are now logged in.

Press the home icon

to go back to the home page.

NOTE: Users must be entered into each HMI as a part of a system setup procedure. On initial startup, there are two default users and passwords provided. This is detailed in the "USER MANAGEMENT" section.

Once completed with the Login process, the HOME page displays security level and login name.



PLC RESTART



The PLC Restart section has indicators for each PLC's encoder counters. They all must be green for the system to run. If they are not green press the "PLC Restart" button. This will re-initialize the counters.





#### RUNTIME



The "Runtime" button brings up the runtime sub menu.



The Submenu has two buttons

**EXIT** – this will exit the runtime. Exiting the runtime will close the Soft Limit program.

**CONFIG** – This will display the runtime configuration. This function is reserved for Administrator and above user levels.

#### FAULT MANAGER

😵 FaultManager			mm/dd/yyyy	12:00:00 am
Alarm Summary				Home
			_	TIONTO
				_
Yallallar I.	had from (d.d.	24.00.00		
	vv/mm/dd	24:00:00	XXXXXXXX	
XXXXXXX	yy/mm/dd	24:00:00	XXXXXXXX	
				¥
Event Summarv				
│ ■■T ■■↓ ■↓ ■↓				
yy/mm/dd 24:00:00 XxXxXxXx			ՍսՍսՍսՍս	<b>★</b>
yy/mm/dd 24:00:00 XxXxXxXx			UuUuUuUu	
yy/mm/dd  24:00:00  XxXxXxXx			UuUuUuUu	
				¥
System Summary				
yy/mm/dd 24:00:00 XxXxXxXx			ՍսՍսՍսՍս	<b>*</b>
yy/mm/dd 24:00:00 XxXxXxXx			UuUuUuUu	
yy/mm/dd  24:00:00  XxXxXxXx			UuUuUuUu	
				¥





The Fault Manager displays three Summary lists.

- Alarm Summary The Alarm Summary is used to display any active faults of the system.
- Event Summary The Event Summary is reserved for future use.
- System Summary The System Summary shows all event that have taken place such as log in, log out, system events, system failures.

The "Reset Faults" will attempt clear all faults. If a fault remains, the condition which caused the fault still exists.

#### LAYOUT

The LAYOUT page(s) are custom made pages based on the user scope. They provide data to the user on layout and system configurations.

USER MANAGEMENT. This allows the addition of users and security groups.

The system comes with two preloaded users and passwords. One with user level security and one with administrator level security.

User Name	Password	Security Level
USER	USER	User Level (1)
ADMIN	ADMIN	Administrator Level (3)

\*Note – it is advisable to change the default passwords on initial startup. Add any new user information here but keep password records in a secure location.





User level security (1) allows access to:

- The HOME page.
- The SOFT LIMIT CONTROL page
- FAULT MANAGER
- LAYOUT pages

Administrator level security (3) allows access to all program features and parameters.

Note that you must be logged in as an administrator to add, remove, or otherwise edit user level information. Admins cannot be created, only the password can be changed. Pressing the "USER MANAGEMENT BUTTON" brings up the following page:



ADD- adds new user to the security group EDIT- Edits the user (password) **DELETE-** Deletes the selected user EXIT- Returns to the previous page



#### ADD NEW USER

- 1. Select the security group from the drop-down list
- 2. Enter the new user's name in the user field.
- 3. Enter the new user's password into both the "Pwd" and "Confirm Pwd" field.
- 4. Touch the add button.

**DELETE USER (This includes Password Information)** 

- 1. Select the security group from the drop-down list
- 2. Select the user from the user drop-down list.
- 3. Touch the delete button.

#### CHANGE PASSWORD

- 1. Select the security group from the drop-down list.
- 2. Select the user from the user drop-down list.
- 3. Enter the new password into both the "Pwd" and "Confirm Pwd" fields
- 4. Touch the edit button



#### HOIST MANAGER

Hoist N	mm/dd/yyyy 12				
Channel	Hoist Name	Channel	Hoist Name	Channel	Hoist Name
1	AaBbCcDdEeFf	17	AaBbCcDdEeFf	- 33	AaBbCcDdEeFf
2	AaBbCcDdEeFf	- 18	AaBbCcDdEeFf	34	AaBbCcDdEeFf
3	AaBbCcDdEeFf	19	AaBbCcDdEeFf	35	AaBbCcDdEeFf
4	AaBbCcDdEeFf	20	AaBbCcDdEeFf	36	AaBbCcDdEeFf
5	AaBbCcDdEeFf	21	AaBbCcDdEeFf	- 37	AaBbCcDdEeFf
6	AaBbCcDdEeFf	- 22	AaBbCcDdEeFf	- 38	AaBbCcDdEeFf
7	AaBbCcDdEeFf	23	AaBbCcDdEeFf	39	AaBbCcDdEeFf
8	AaBbCcDdEeFf	24	AaBbCcDdEeFf	40	AaBbCcDdEeFf
9	AaBbCcDdEeFf	25	AaBbCcDdEeFf	41	AaBbCcDdEeFf
10	AaBbCcDdEeFf	26	AaBbCcDdEeFf	42	AaBbCcDdEeFf
11	AaBbCcDdEeFf	27	AaBbCcDdEeFf	43	AaBbCcDdEeFf
12	AaBbCcDdEeFf	28	AaBbCcDdEeFf	44	AaBbCcDdEeFf
13	AaBbCcDdEeFf	29	AaBbCcDdEeFf	45	AaBbCcDdEeFf
14	AaBbCcDdEeFf	- 30	AaBbCcDdEeFf	46	AaBbCcDdEeFf
15	AaBbCcDdEeFf	- 31	AaBbCcDdEeFf	47	AaBbCcDdEeFf
16	AaBbCcDdEeFf	- 32	AaBbCcDdEeFf	48	AaBbCcDdEeFf
Home					Position Manager

The Hoist Manager allows you to change hoist names and access the Position Manager. Hoist Names display on every page where hoists are referenced and will help identify channel assignments.



#### **POSITION MANAGER**

V PositionManager											2:00:00 am		
Hoist #	Se	et Ft / In		Counts	Hoist #	Set	Ft / In	C	ounts	Hoist #	Set	t Ft / In	Counts
1	SET	123'	12"	1234	17	SET	123' 12	2" 1	234	33	SET	123' 12'	1234
2	SET	123' <sup>-</sup>	12"	1234	18	SET	123' 12	2" 1	234	34	SET	123' 12'	1234
3		123'	12"	1234	19	SET	123' 12	2" 1	234	35	SET	123' 12'	1234
4	SET	123' '	12"	1234	20	SET	123' 12	2" 1	234	36	SET	123' 12'	1234
5	SET	123' <sup>-</sup>	12"	1234	21	SET	123' 12	2" 1	234	37		123' 12'	1234
6		123' '	12"	1234	22	SET	123' 12	2" 1	234	38		123' 12'	1234
7	SET	123' '	12"	1234	23	SET	123' 12	2" 1	234	39		123' 12'	1234
8		123' <sup>-</sup>	12"	1234	24	SET	123' 12	2" 1	234	40		123' 12'	1234
9		123'	12"	1234	25	SET	123' 12	2" 1	234	41		123' 12'	1234
10		123' <sup>-</sup>	12"	1234	26	SET	123' 12	2" 1	234	42		123' 12'	1234
11		123' <sup>-</sup>	12"	1234	27	SET	123' 12	2"_1	234	43		123' 12'	1234
12		123'	12"	1234	28	SET	123' 12	2" 1	234	44		123' 12'	1234
13		123' <sup>-</sup>	12"	1234	29	SET	123' 12	2" 1	234	45		123' 12'	1234
14		123' '	12"	1234	30	SET	123' 12	2" 1	234	46		123' 12'	1234
15	SET	123'	12"	1234	31	SET	123' 12	2"1	234	47		123' 12'	1234
16	SET	123' <sup>-</sup>	12"	1234	32	SET	123' 12	2" 1	234	48	SET	123' 12'	1234
Home		Bac	k	Re	set Positi	on _	for 5 : currer	RESET   second: nt positi	Position bu s to reset a ions to ZER	itton all ?O.		Encod	er Rates

The Position Manager allows you to change the current position value of any hoist to zero or a predetermined location. It also allows access to system encoder rates.

#### **Changing Positions**

To change a position, enter the desired position into the Set Ft / In fields. After the desired position has been entered hold the "SET" button for approximately 5 seconds. You will see the counts change to the new desired position counts per encoder rate. Verify the new setpoint position was accepted. If not repeat the process. Be sure to hold the "SET" button for the required time to allow the change to take place.

Hoist #	Set	Counts	
1	SET	123' 12"	1234





#### Resetting Positions to Zero

Holding the "Reset Position" button will change ALL channels/hoists positions to 0' 0". Please make sure this is your intention before doing so as this action cannot be undone.



#### ENCODER RATE

∛ Enco	<b>der</b> Ra	ate				mm/c	ld/yyyy 12:00:00 am
	Ch	Encoder Rate	Ch	Rate	Ch	Rate	
	1 - 8	1234	17 - 24	1234	33 - 40	1234	
	9 - 16	1234	25 - 32	1234	41 - 48	1234	
							Notes
Back		Encoder ra Encoder ra	ates for SN	И10 16 fpm : 11( И10 64 fpm : 11(	01 01	AaBbCcDdE mNnOoPpQ xYyZzAaBbC KkLIMmNnO v	eFfGgHhli]jKkLIM qRrSsTtUuVvWwX CcDdEeFfGgHhli]j oPpQqRrSsTtUuV WwXx

This page is for administration only. This page is used to change the encoder rates to match the hoists connected to the system. A Motion Labs technician will set encoder rates during commissioning and will leave notes on the page designating the encoder rates used. These rates SHOULD NOT be changed. Doing so will lead to erroneous position control.





#### SOFT LIMIT SETUP

😵 Soft LimitSetup							nm/dd/yyyy 12:00	):00 am
		<u>Soft Lim</u>	it Names					
		SL #	Soft Limit Name	SL #	Soft Limit	Name		
		1	AaBbCcDdEeFfGg	11	AaBbCcDd	EeFfGg		
		2	AaBbCcDdEeFfGg	12	AaBbCcDd	EeFfGg		
		3	AaBbCcDdEeFfGg	13	AaBbCcDd	EeFfGg		
		4	AaBbCcDdEeFfGg	14	AaBbCcDd	EeFfGg		
		5	AaBbCcDdEeFfGg	15	AaBbCcDd	EeFfGg		
		6	AaBbCcDdEeFfGg	16	AaBbCcDd	EeFfGg		
		7	AaBbCcDdEeFfGg	17	AaBbCcDd	EeFfGg		
		8	AaBbCcDdEeFfGg	18	AaBbCcDd	EeFfGg		
		9	AaBbCcDdEeFfGg	19	AaBbCcDd	EeFfGg		
		10	AaBbCcDdEeFfGg	20	AaBbCcDd	EeFfGg		
	Soft Limits 1 - 5		Soft Limits 6 - 10		Soft Limits 11 -15		Soft Limits 16 - 20	
H	lome							

Soft Limit Setup allows you to change Soft Limit names and access the pages for setting up Soft Limits. Soft Limit names display on every page where Soft Limits are referenced and will help identify movement assignments.







🕸 So	<b>ft</b> Limits	1 - 5	1 - 16	17 - 32	33 - 48	mm/dd/yyyy	/ 12:00:00 am
Select Holst	Holst Name	Current Position	Аавросораненты g	AabbCcDdEertG g	Aabbucudeerig g	AaBbCcDdEeFfG g	AaBbCcDdEeFfG g
CH-01	AaBbCcDdEeFf	123' 12"	123' 12''	123' 12''	123' 12''	123' 12''	123' 12''
CH-02	AaBbCcDdEeFf	123' 12"	123' 12"	123' 12''	123' 12'	123' 12''	123' 12"
CH-03	AaBbCcDdEeFf	123' 12''	123' 12''	123' 12''	123' 12''	123' 12''	123' 12''
CH-04	AaBbCcDdEeFf	123' 12''	123' 12''	123' 12"	123' 12"	123' 12''	123' 12"
CH-05	AaBbCcDdEeFf	123' 12''	123' 12"	123' 12''	123' 12''	123' 12''	123' 12"
CH-06	AaBbCcDdEeFf	123' 12''	123' 12"	123' 12''	123' 12''	123' 12''	123' 12''
CH-07	AaBbCcDdEeFf	123' 12''	123' 12''	123' 12"	123' 12"	123' 12''	123' 12''
CH-08	AaBbCcDdEeFf	123' 12''	123' 12''	123' 12''	123' 12'	123' 12'	123' 12''
CH-09	AaBbCcDdEeFf	123' 12''	123' 12''	123' 12''	123' 12"	123' 12'	123' 12''
CH-10	AaBbCcDdEeFf	123' 12''	123' 12''	123' 12''	123' 12"	123' 12'	123' 12"
CH-11	AaBbCcDdEeFf	123' 12''	123' 12''	123' 12''	123' 12"	123' 12'	123' 12"
CH-12	AaBbCcDdEeFf	123' 12''	123' 12''	123' 12''	123' 12''	123' 12'	123' 12''
CH-13	AaBbCcDdEeFf	123' 12''	123' 12''	123' 12"	123' 12''	123' 12''	123' 12''
CH-14	AaBbCcDdEeFf	123' 12''	123' 12''	123' 12'	123' 12''	123' 12''	123' 12''
CH-15	AaBbCcDdEeFf	123' 12''	123' 12''	123' 12'	123' 12''	123' 12''	123' 12''
CH-16	AaBbCcDdEeFf	123' 12'	123' 12''	123 12"	123" 12"	123' 12''	123' 12''
CH-1	Hoist Selected		SL-1	SL-2	SL-3	SL-4	SL-5
CH-2	Hoist NOT Sele	cted	1	Hold to Set SoftL	imit Position for s.	elected hoist(s)	
Back				Soft Limits	<b>1 - 5</b> 6 -	10 11 - 15	16 - 20
		Sati	Desition Soft	: Limit		Î	
	logond	Set			Soft Lin	nit Selection	
	regend	Se	ection Butt	ons	Bu	uttons	

**Hoist Channel Selection Buttons** 

**Hoist Channel Selection Buttons** - All 80 hoist's information cannot fit on one page. Use these buttons to choose the set of 16 hoists you wish to modify.

**Legend** – Displays selection status for a hoist. The selected hoist(s) is the one(s) which will be modified. Press on the channel number to highlight the channels to be modified.

**Set Position Soft Limit Selection Buttons** - When your desired hoists are selected and ready for the current position to be entered in to a soft limit, press this button for 5 seconds or until you see the change take place. Note that this will only affect the channels displayed on the soft limit configuration page. If you would like to modify other channels, then you must use the Hoist Channel Selection Buttons to modify the other channels.

**Soft Limit Selection Buttons** – All 20 soft limit's information cannot be displayed at the same time due to screen area restrictions. Use these buttons to choose the set of soft limits you will be modifying.





#### • OPERATION

Prior to operation, all system set up procedures must be completed. These are the methods of operation available:

- MANUAL CONTROL
- SOFT LIMIT CONTROL





MANUAL CONTROL. (Manual up and down control).

This operating method is for jogging hoists up or down. There is no setpoint required to run in this mode. The hoists will move in the direction selected when the "GO" button is pressed and all safety conditions are met. Any hoist(s) can be moved in this control method.









#### RUNNING IN MANUAL CONTROL

Before running in any mode make sure that the system is fully powered on and that all setup and configuration steps have been completed.

Choose the desired direction for the hoists intended to run. After hoist(s) are selected press the GO button to run. This is a momentary button and must be held to continue operation.



#### SOFT LIMIT CONTROL





Soft Limit Run Buttons





**Soft Limit Group Selection** – Five soft limits can be displayed at the same time due to screen area restrictions. Use these buttons to choose the set of five soft limit you will be moving hoists to.

**Hoist Enable Popup Button** – When the button pressed, it brings up Hoist Enable Popup. This popup allows you to enable channels to run.

Hoist Enables		Х
CH-01 AaBbCcDdEeFf	CH-17 AaBbCcDdEeFf	CH-33 AaBbCcDdEeFf
CH-02 AaBbCcDdEeFf	CH-18 AaBbCcDdEeFf	CH-34 AaBbCcDdEeFf
CH-03 AaBbCcDdEeFf	CH-19 AaBbCcDdEeFf	CH-35 AaBbCcDdEeFf
CH-04 AaBbCcDdEeFf	CH-20 AaBbCcDdEeFf	CH-36 AaBbCcDdEeFf
CH-05 AaBbCcDdEeFf	CH-21 AaBbCcDdEeFf	CH-37 AaBbCcDdEeFf
CH-06 AaBbCcDdEeFf	CH-22 AaBbCcDdEeFf	CH-38 AaBbCcDdEeFf
CH-07 AaBbCcDdEeFf	CH-23 AaBbCoDdEeFf	CH-39 AaBbCcDdEeFf
CH-08 AaBbCcDdEeFf	CH-24 AaBbCcDdEeFf	CH-40 AaBbGcDdEeFf
CH-09 AaBbCcDdEeFf	CH-25 AaBbCoDdEeFf	CH-41 AaBbCcDdEeFf
CH-10 AaBbCcDdEeFf	CH-26 AaBbCcDdEeFf	CH-42 AaBbCcDdEeFf
CH-11 AaBbCcDdEeFf	CH-27 AaBbCoDdEeFf	CH-43 AaBbCcDdEeFf
CH-12 AaBbCcDdEeFf	CH-28 AaBbCcDdEeFf	CH-44 AaBbCcDdEeFf
CH-13 AaBbCcDdEeFf	CH-29 AaBbCcDdEeFf	CH-45 AaBbCoDdEeFf
CH-14 AaBbCcDdEeFf	CH-30 AaBbCeDdEeFf	CH-46 AaBbGoDdEoFf
CH-15 AaBbCcDdEeFf	CH-31 AaBbCcDdEeFf	CH-47 AaBbCcDdEeFf
CH-16 AaBbCcDdEeFf	CH-32 AaBbCcDdEeFf	CH-48 AaBbCcDdEeFf
	Select All	

**Soft Limit Run Buttons** – These five buttons are the Run buttons for movement to soft limits.

**View Soft Limit Popup Buttons** – This Popup allows you to preview the setpoint positions assigned to the soft limit.

Soft Limit	1					Х
1 AaBbCcDdEeFf	23'12"	<b>17</b> AaBbCcDdEeFf	123'12"	33 AaBbCcDdEeFf	123 1	2"
2 AaBbCcDdEeFf: 12	23'12"	<b>18</b> AaBbCcDdEeFf	123'12"	34 AaBbCcDdEeFf	123'1	2"
AaBbCcDdEeFf 12	23'12"	<b>19</b> AaBbCcDdEeFf	123'12"	35 AaBbCcDdEeFf	123'1	2"
4 AaBbQcDdEeFf 12	23'12"	20 AaBbCcDdBeFf	123'12"	36 AaBbCcDdEeFf	123'1	2"
5 <sub>AaBbQcDdEeFr</sub> 12	23'12"	<b>21</b> AaBbCcDdEeFf	123'12"	37 AaBbCcDdEeFf	123'1	2"
6 AaBbQcDdEeFr 12	23'12"	<b>22</b> AaBbOcDdBeFf	123'12"	38 AaBbCcDdEeFf	123'1	2"
7 AaBbQcDdEeFr 12	23'12"	<b>23</b> AaBbOcDdBeFf	123'12"	<b>39</b> AaBbCcDdEeFf	123'1	2"
8 AaBbQcDdEePf 12	23'12"	<b>24</b> AaBbOcDdEeFf	123'12"	40 AaBbCcDdBeFf	123 1	2"
9 AaBbQcDdEeFr 12	23'12"	25 AaBbCcDdEeFf	123'12"	<b>41</b> AaBbCcDdEeFf	123 1	2"
10 AaBbQcDdEeFf 12	23'12"	<b>26</b> AaBbOcDdBeFf	123'12"	<b>42</b> AaBbCcDdEeFf	123'1	2"
11 AaBbQcDdEePt 12	23'12"	<b>27</b> AaBbOcDdBeFf	123'12"	<b>43</b> AaBbCcDdEeFf	123'1	2"
12 AaBbQcDdEeFf 12	23'12"	<b>28</b> AaBbCcDdBeFf	123'12"	<b>44</b> AaBbCcDdEeFf	123'1	2"
13 AaBbQcDdEePt 12	23'12"	<b>29</b> AaBbOcDdEeFf	123'12"	45 AaBbCcDdEeFf	123'1	2"
14 AaBbQcDdEeFf 12	23'12"	30 AaBbCcDdEeFf	123'12"	46 AaBbCcDdEeFf	123'1	2"
15 AaBbQcDdEeFr 12	23'12"	<b>31</b> AaBbOcDdEeFf	123'12"	<b>47</b> AaBbOcDdEeFf	123'1	2"
16 AaBbCcDdEeFf 12	23'12"	32 AaBbCcDdEeFf	123'12"	48 AaBbCcDdEeFf	123 1	2"





Hoist View – This area is where is can view if a channel has been enabled and the current position.



Legend – The Legend displays the representation of channel/hoist enabled. (Please see above.)





#### RUNNING IN SOFT LIMIT CONTROL

Before running in any mode make sure that the system is fully powered on and that all setup and configuration steps have been completed.

Before running, enable hoists intended to move via the hoist enable Popup. Make sure hoists you have enabled are properly displayed in Hoist View.

Press the Soft Limit Run button to move to the intended Soft Limit. This is a momentary button and must be held to continue operation. When it reaches its soft limit position the button will illuminate green (shown below).





#### FAULTS

On the bottom of the Control Screens there is an alarm banner that, when an active fault is present, scrolls across the bottom of the page. To clear faults press the reset faults button.

The following is the Fault table.

FAULT	CAUSE
<"Hoist Name"> Encoder Up Fault	An enabled channel has been asked to move up and its respective encoder has not counted any counts or counted in the opposite direction. There are three main events that would normally cause this fault. a.) the system has not fully satisfied the Emergency Stop Circuit. Make sure the system is ready to run; All e-stop buttons are released and a reset command has occurred. b.) the respective channels supplemental breaker is tripped/off or the fuse is blown/removed. c.) the encoder is damaged.
<"Hoist Name"> Encoder Down Fault	An enabled channel has been asked to move down and its respective encoder has not counted any counts or counted in the opposite direction. There are three main events that would normally cause this fault. a.) the system has not fully satisfied the Emergency Stop Circuit. Make sure the system is ready to run; All e-stop buttons are released and a reset command has occurred. b.) the respective channels supplemental breaker is tripped/off or the fuse is blown/removed. c.) the encoder is damaged.
note: Each hoist will show it's name d	uring a fault. Multiple faults will show at the same time.



#### RELATED PRODUCT LINE COMPONENTS



The Soft Limit Console is designed as part of a Soft Limit System. The system consists of:

- Motor Controller. This can be presently installed in a venue or portable.
- The Soft Limit Automation Controller.
- Hoists modified with MLI encoders
- Load Cells, a variety of options are available to interface with the hoist to allow weight monitoring.



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#### MAINTENANCE

#### • INSPECTIONS

Maintenance and inspections should be carried out by competent personnel.

Check all components of system prior to operation.

• SOFTWARE UPDATE

If software updates are available, they will be delivered with instructions on how to implement them.





#### • 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:

#### **Motion Laboratories Inc.**

520 Furnace Dock Road, Cortlandt Manor, NY 10567, USA TEL: 800.277.6784 I TEL: +1 (914) 788-8877 I FAX: +1 (914) 788-8866 www.motionlabs.com

• DISPOSAL

The Soft Limit Console should be scrapped by cutting, so that it can no longer be used, whether at the end of its expected lifetime.

Upon demolition, plastic parts must be separated from electric components and must be sent to selective collections according to regulations in force.

With regard to metal elements and components, all materials shall be separated by type such as ferrous materials or aluminum and shipped for recycling.

