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TALOS Main

Programmable Electronic System

USER MANUAL

TALOS Main

A-17-012 Series

The TALOS Main Controller is intended for professional use only. Read this entire document before installing, operating, or using TALOS Main.

■ ORIGINAL INSTRUCTIONS

Document Number: A-17-012-0001-UM
Release: 02-2023

Original Instructions
TALOS Main
Rev A
Released 02-2023

Proudly Made in the USA
1.800.227.6784 FOR MORE INFORMATION http://www.motionlabs.com/
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- **USER DOCUMENTATION**

WARNING
Before installing and commissioning the TALOS Main 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.

- **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 TALOS Main Controller models:
A-17-012-0001

TABLE OF CONTENTS

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 the system until a full risk assessment for your application has been completed.
Do NOT operate system until all safety circuits have been checked and proven to be working correctly.
Do NOT operate system until the Emergency Stop(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 E-stop switches.

SAFETY INSTRUCTIONS

General Safety Information

This manual should be kept by a person in charge in a suitable place so that it can be easily accessed when required. Should it be lost or damaged, the manual can 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 in loss of life, severe personal injury or serious damage to property.

Electrical Safety Information

The TALOS 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 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 TALOS 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 Manual Hand Held Control of all subsystems including the "SAFETY OVERRIDE MANUAL CONTROL" function will bypass 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.

OVERVIEW

Product Definition

The TALOS System identified in this manual serves as the front-end interface to Motion Lab's Automation Systems, such as Soft Limit and VS-02. This system consists of TALOS Main, a PC based main control station, a hold to run enabling device, peripherals, and two monitors. TALOS allows users to easily configure, monitor and operate all subsystems seamlessly as though they are one automation control system. The user can easily configure and execute moves of all stage machinery controlled by any of its configured subsystems. This includes both Fixed Speed and Variable Speed Motion Labs chain hoist controllers.

The TALOS System may operate many subsystems. The system capacity will be based on communications load. TALOS will inform the user as to what percentage of load is used. Systems may be expanded to have larger communications loads.

TALOS is intended to operate Motion Labs subsystems.
For reference, part numbers for those sub systems are as follows (where "X" is a variable):

- 1225-D-XX-XXXX Soft Limit Install Controllers
- A-17-007-XXXX Soft Limit Portable Controllers
- 1261-4-X-X-XXXX-XX Hoist Safety Controller (HSC)
- A-17-013-XXXX Variable Speed Portable Controllers
- 1290-1-XX-XX-XX Variable Speed Portable Drive Boxes
- 1225-D-XX-XXXX Variable Install Systems

Product Performance

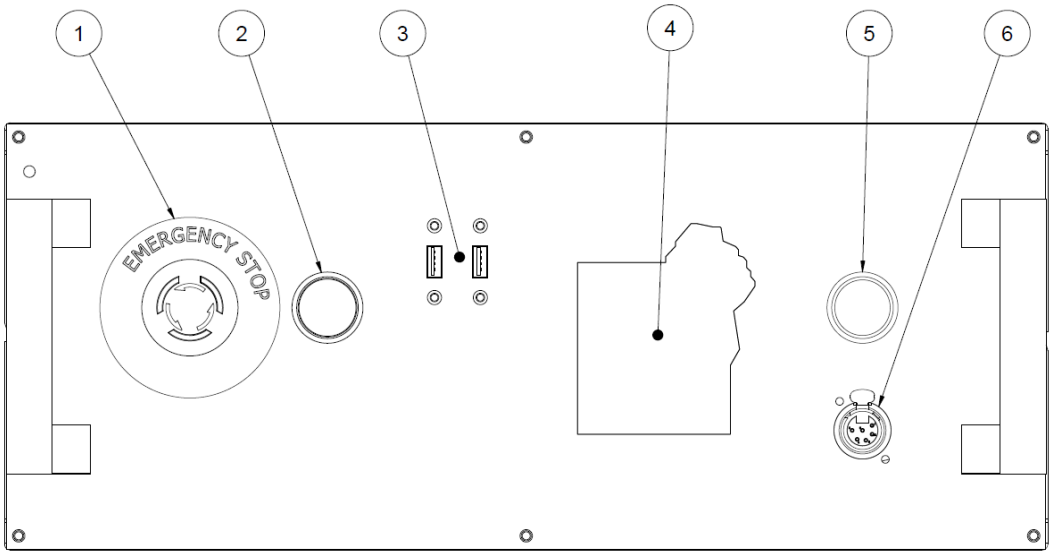
The TALOS Main System has the following features:

- Global Emergency Stop and Reset for all subsystems.
- Safety rated hold to run enabling devices.
- Solid State hardware.
- 4 modes of operation; Manual, Position, Cue and Sequence Mode.
- System Scan: TALOS can detect controllers on the network and automatically add them to the Showfile.

The TALOS Main System identified in this manual monitors the following criteria:

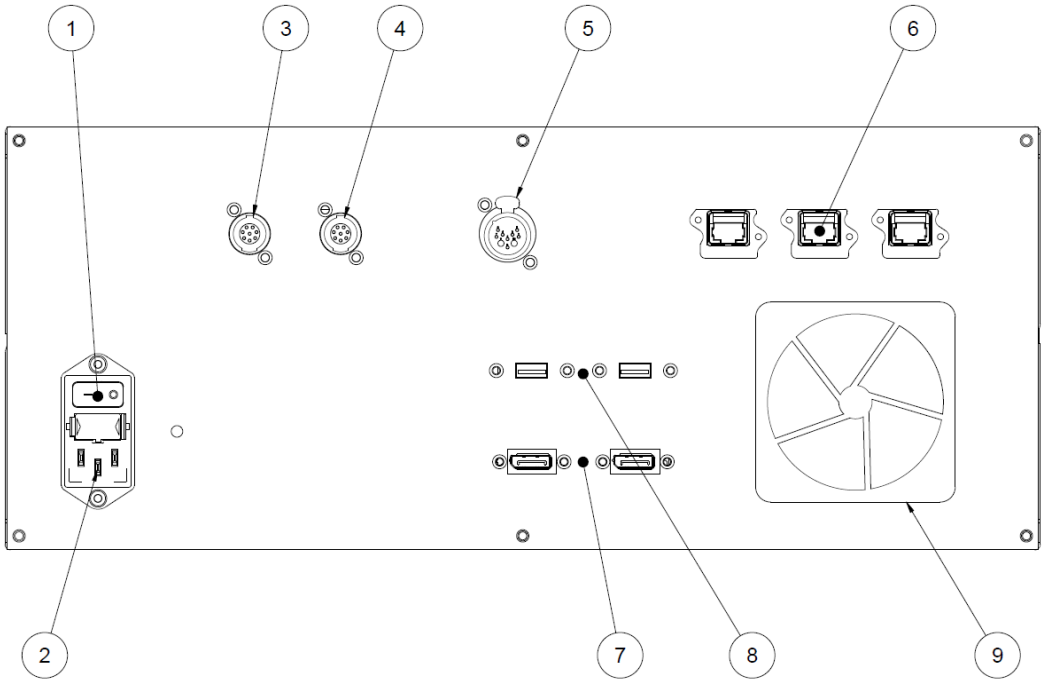
- Emergency Stop circuit; Combines all subsystem E-stop circuits.
- Player Position: From systems where position feedback is available.
- Player Weight: From systems where weight feedback is available.
- Player Information: From systems where this information is available.
- Power Monitoring: From systems where this information is available.
- System Health: From systems where the information is available.

Front View



1. **Emergency Stop.** Red mushroom button that, when pressed, activates an E-stop.
2. **Reset Button.** Blue Illuminated momentary button that lights whenever an E-Stop condition has been triggered and remains lit until the condition has been satisfied and the system is reset by pressing the button.
3. **USB Ports.** Used for import and export of files to and from TALOS.
4. **Power Light.** Blue light behind TALOS logo indicating TALOS Main is powered on.
5. **Status Light.** A multicolored pilot light that indicates the status of the system. Green indicates the system is ready, yellow indicates a warning, red indicates a fault.
6. **Safety Input**. Input connector for enabling device. The enabling device may be a Hold to Run (HTR) safety device. Devices include foot pedals, palm switches, Shorting plugs, etc.

Rear View



1. **Power switch.** Switch that turns unit on. This switch is illuminated and will lit if the unit is turned on.
2. **IEC Power Input.** Input Power for the unit. (6’ Power Input Cable included with unit.)
3. **HSC E-stop Link.** Emergency Stop Link input that connects to HSC controllers’ E-stop circuit to the TALOS Emergency Stop circuit.
4. **VS-01 E-stop Link.** Emergency Stop Link input that connects to VS-01 controllers’ E-stop circuit to the TALOS E-stop circuit.
5. **Soft Limit System Link.** Soft Limit System Link connects the Soft Limit controllers’ E-stop circuit to the TALOS E-stop circuit. The Soft Limit system link can also connect the communications for the system as well.
6. **Network Ports.** 3 independent networks (details found in the specifications area of the manual.)
7. **Display ports.** 2 display ports to connect two monitors needed to operate TALOS.
8. **USB Ports.** Used for peripherals such as keyboards and mouse needed to operate TALOS
9. **Filter Cover.** Passive air flow for unit.

TECHNICAL SPECIFICATIONS

Part Numbers

PART NUMBER CONFIGURATION

Group		Category		Subdivision		ID Number
A = Top Level Assembly	-	17 = Rigging Electronics	-	012 = Programmable Electronic Systems	-	xxxx = Iteration

PART NUMBER TABLE

Part Number	Type	Description
A-17-012-0001	CONTROLLER	Programable Electronic Systems, TALOS Main
A-17-012-1000	ENABLING DEVICE	Programable Electronic Systems, Enabling Device, Hold to Run, Footswitch, Blue, 10ft 6pin XLR
A-17-012-2000	ACCESSORIES	Programable Electronic Systems, Accessories, Rack Ears

System Capacity

The system capacity is the number of controllers and stage machinery you can connect, operate and monitor before you have exceeded the prescribe limitations of your TALOS control system. There are variables that restrict the amount of subsystem connections allowed on a standard TALOS Main unit. The variables that define system capacity are subsystem's capacity, communications load, and PROFINET driver load.

Subsystems have their own variables that would restrict their system capacity. Items like the amount of data that can pass over a communications medium before there is a measured performance decrease, system interconnections, and interoperability issues may be reasons for such capacities. Please find this information in the User Manual for that subsystem.

The communications load is shown as a percentage. It is the amount of IO available vs the amount of IO used. TALOS will inform the user as to what percentage of load is used. A standard TALOS Main's communication load is based on 3000 IO connections. TALOS Main may be upgraded to add IO connections to your unit for larger communications loads.[1]

Subsystem	Size	Controller	Hoist	Full System
Soft Limit	8 Hoists	194 (6%)	14(<1%)	306 (10%)
Hoist Safety Controller	4 Hoists	240 (8%)	204 (6%)	1,056 (35%)
VS-01	12 Hoists	208 (6%)	16 (<1%)	400 (13%)
VS-02	24 Hoists	90 (3%)	42 (1%)	1098 (37%)

The PROFINET driver can only have eight total connections on the standard TALOS Main. One of those connections is used internally to the device. The seven remaining connections are for communications to other PROFINET devices. For example, you may only connect seven VS-02 24-channel controllers to

[1] IO can be upgraded in the following Total IO packages: 5000, 10000, 15000, 25000, 50000. Contact for larger systems.

TALOS Main. TALOS Main may be upgraded to add PROFINET connections to your unit for more connected PROFINET devices.[2]

Electrical Specifications, TALOS Main

Input Power..... 100 – 240 VAC 50/60 Hz
Current Rating..... 5 A max.

Physical Specifications, TALOS Main

Chassis..... 18 gauge steel, black powder coat finish
Front Panel..... .090" aluminum, black powder coat finish
Rear Panel..... .090" aluminum, black powder coat finish
Chassis Width..... 17"
Chassis Height..... 4RU, 7"
Chassis Depth..... 15"
Weight..... 20 lbs.

Data Specifications, TALOS Main

Data Communications Protocol, Network A..... PROFINET
IPv4 Address, Network A..... 192.168.2.100
Data Communications Protocol, Network B..... Modbus TCP
IPv4 Address, Network B..... 192.168.0.100
Data Communications Protocol, Network C..... N/A
IPv4 Address, Network C..... 192.168.1.1

Environmental Specifications, TALOS Main

Indoor Use Only
IP Rating..... IP40
NEMA Rating..... NEMA1
Operating Temperature Range, min..... 0°C / 32°F
Operating Temperature Range, max..... 55°C / 122°F

[2] Can be expanded to 64 or 512 connections

Cable Specifications

- HSC E-stop Circuit Cable

The HSC emergency circuit cable uses Neutricon 8 pin connectors with 1500-26-00-11-001 cable.

HSC Emergency Stop Link Connector		motionlabs
Pin	**Function**	**Color**
1	Reset A	N/A
2	Not Used	N/A
3	I5 to 14 E-Stop Link	N/A
4	I6 to 24 E-Stop Link	N/A
5	14 to 13 E-Stop Link	N/A
6	24 to 23 E-Stop Link	N/A
7	Not Used	N/A
8	Not Used	N/A

- VS-01 Emergency Stop Circuit Cable

The VS-01 emergency stop circuit cable uses Neutricon 8 pin connectors with 1500-26-00-11-001 cable.

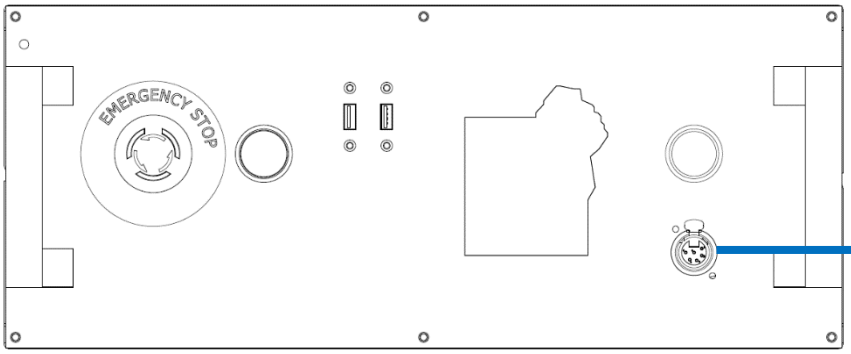
VS-01 Emergency Stop Link Connector		motionlabs
Pin	**Function**	**Color**
1	Reset A	N/A
2	Not Used	N/A
3	I5 to 14 E-Stop Link	N/A
4	I6 to 24 E-Stop Link	N/A
5	14 to 13 E-Stop Link	N/A
6	24 to 23 E-Stop Link	N/A
7	Not Used	N/A
8	Not Used	N/A

INSTALLATION

System Connections

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

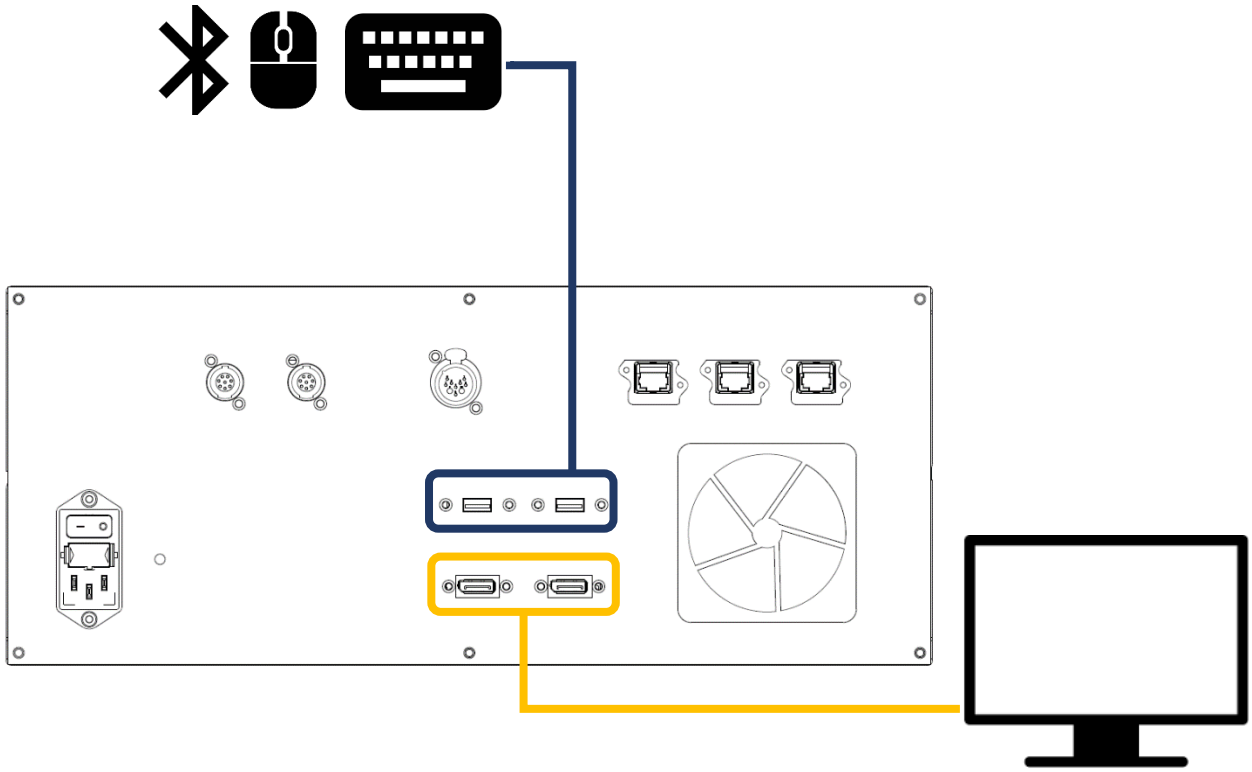
- Front Panel Connections



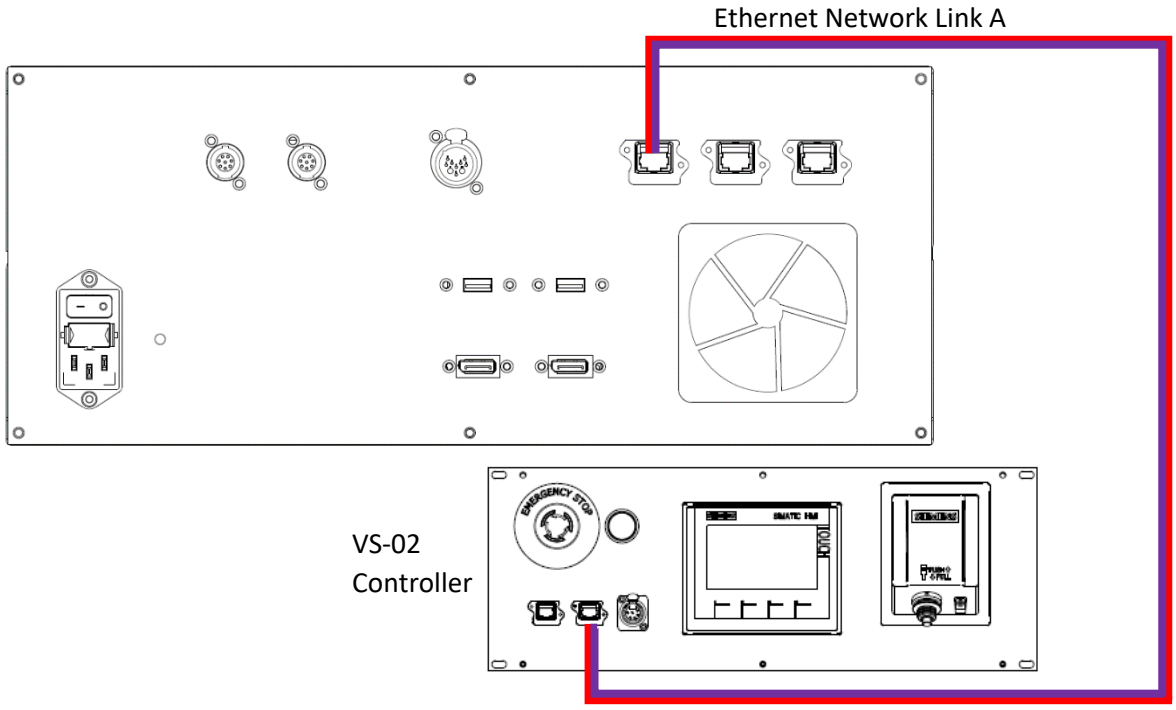
Enabling Device Link

- Rear Panel Connections

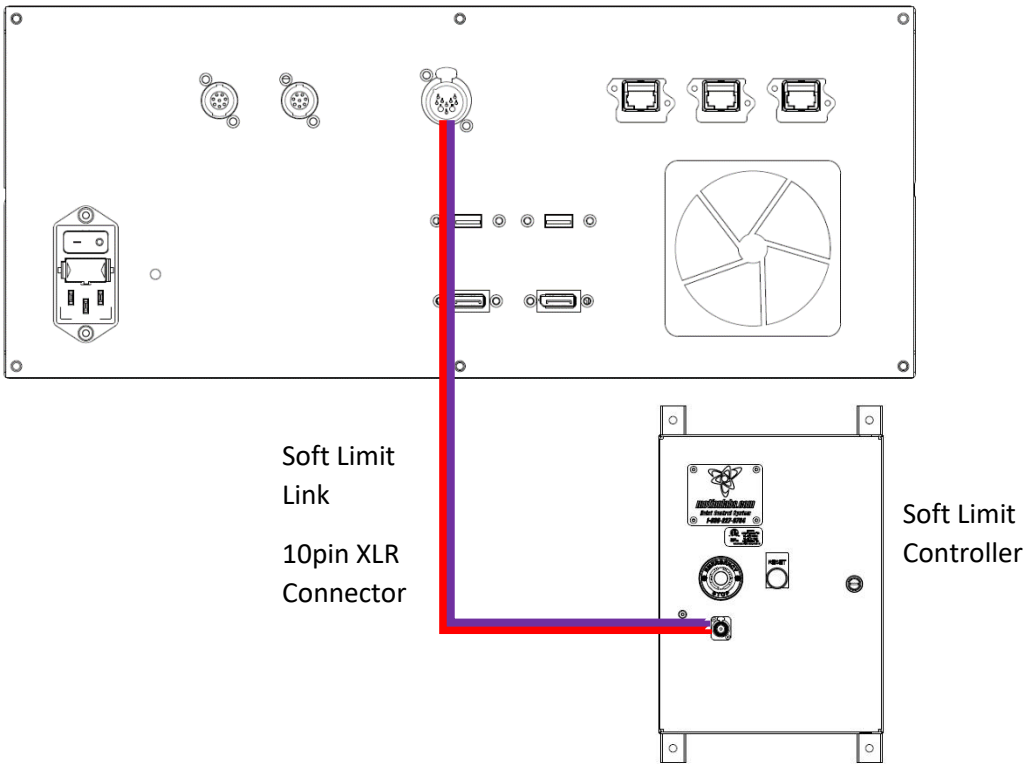
Peripheral Connections



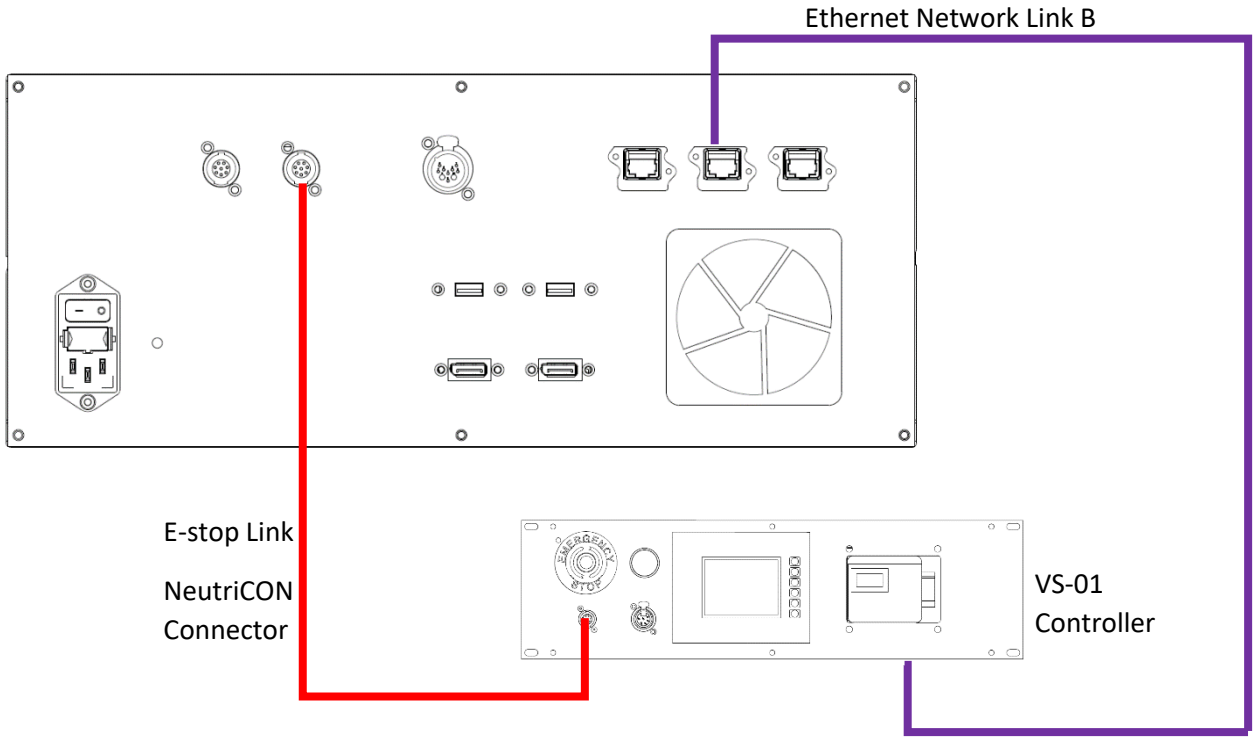
Connecting to a VS-02 Controller



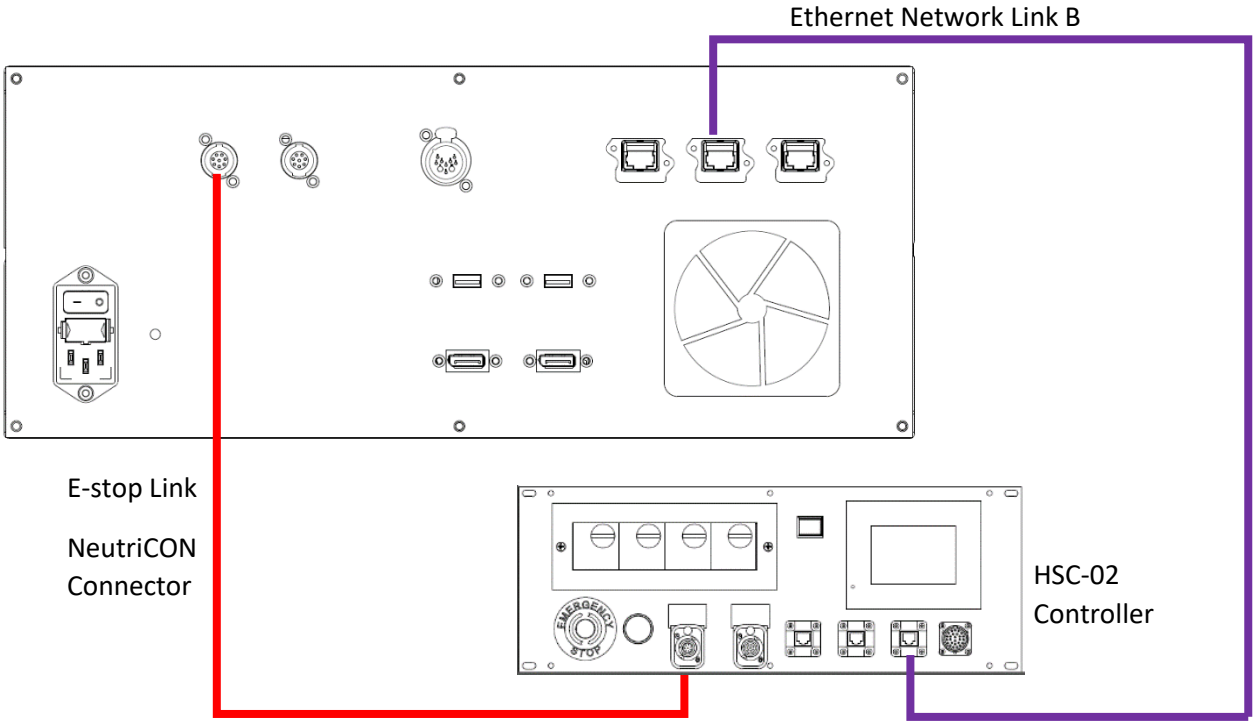
Connecting to a Soft Limit Controller



Connecting to a VS-01 Controller



Connecting to a HSC-02 Controller



Power Up

Verify that the TALOS Main power switch is in the off position and all necessary system devices are connected.

Once the above is verified, turn on TALOS Main.

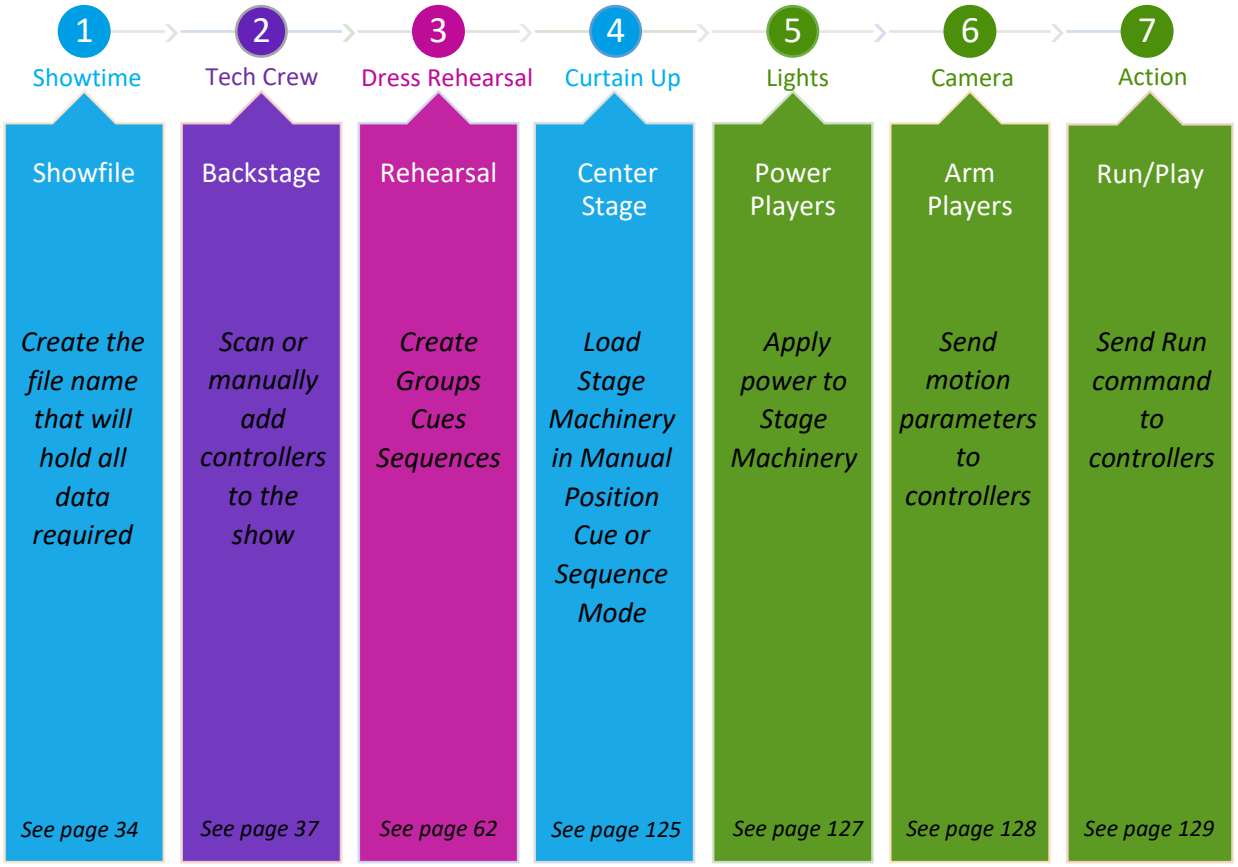
The E-stop Circuit is a manually resetting safety circuit. It must be satisfied and reset for safe operation. To facilitate this, all E-Stop buttons must be quarter-turned to release. The reset button's indicator turns blue, indicating the button is enabled. Press the reset button. The blue indicator on the reset button will turn off when the Emergency stop circuit has been satisfied.

Note that not all connected subsystems take the same amount of time to boot up and some pieces of equipment may need more or less time than TALOS to power up. please refer to sub system manuals to determine the power up requirements for sub systems.

OPERATION

Getting Started

TALOS allows users to easily configure, monitor and operate all subsystems seamlessly through one Automation System Platform. The figure below shows the basic steps to follow when using TALOS with the navigation, panels and button names appearing in white. Their naming convention serves users as a reminder in which each step must be completed. The steps are described in greater detail later in this manual.



Talos Login

- How to log in to TALOS

Figure 1-Login popup

The login screen appears when TALOS is launched or when Login is selected from user right-click options.

1. Enter username and password credentials into the provided fields.
2. Press Login. The username and the user level are displayed on Stage Left in the Upper Ribbon.

Center Stage defaults to Cue on login.

- Stage Left Upper Ribbon Controls

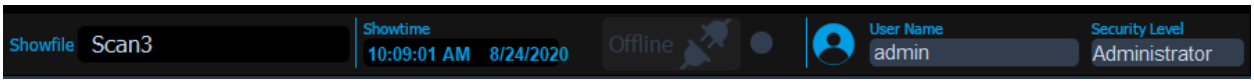


Figure 2 Stage Left Upper Ribbon

The Upper Ribbon houses the Offline/Online buttons and displays the current time, the Showfile name, the username and the user level of the user currently logged in.

Login Controls Table

Control	Graphic	Function/ Instruction
Offline		All User Levels have access. Brings TALOS Online with controllers. If the Player Power button is active and the user goes Offline, player power is removed, and all buttons within the Control Center are disabled. When TALOS goes online the button will illuminate blue. Users cannot go online unless a Showfile has been loaded or a new Showfile has been created.
Online		TALOS goes Offline with controllers. Disabled if system is armed. When TALOS goes offline the button will dim back to gray.
Pilot Light		Indicates current Connection Mode of TALOS. BLUE- TALOS is Online. GRAY- TALOS is Offline.

- TALOS User Levels

Access to TALOS Screens are based upon User Levels. The table below outlines User permissions.

User Level	Description
Administrator	Allowed access to all TALOS program and features including Login Administration which includes Adding Users and assigning User Levels and Resetting Passwords. In addition, the Administrator role can also export data from the Event log.
Operator Tech	Has access to all Stage Screens which include: Showfile, Backstage, Rehearsal, Showtime, Events and Settings. The Operator Tech can run players in all modes on Center Stage. This includes Manual, Position, Cue and Sequence modes. Unlike the Administrator role the Operator Tech does not have access to Login Administration.
Operator	An Operator has the lowest level of permissions having only access to the Showfile, Showtime and Events screens on Stage Left. An Operator can only run cues and sequences from Center Stage.

- User Right-click Options

Right-clicking on the Username field displays the control options available for login.

- User Control options

User Control options table

Option	Description
Login as…	Displays Login popup.

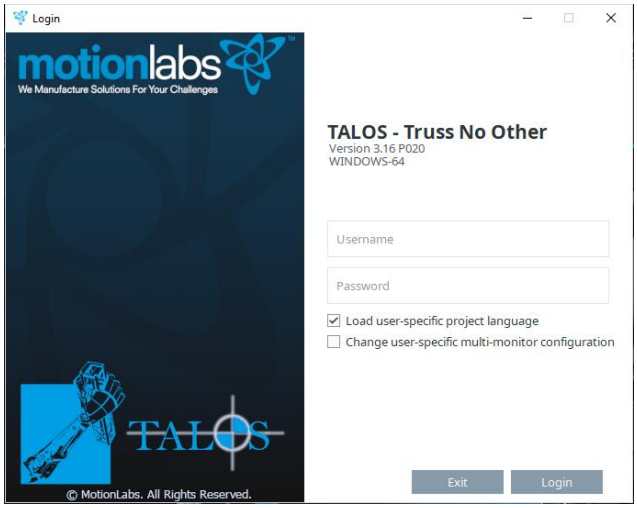
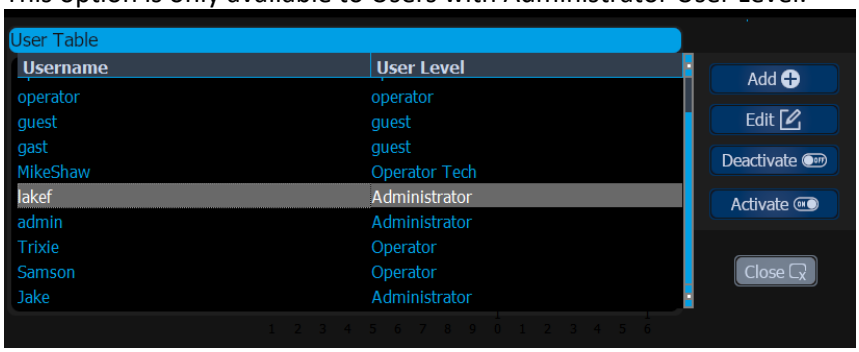
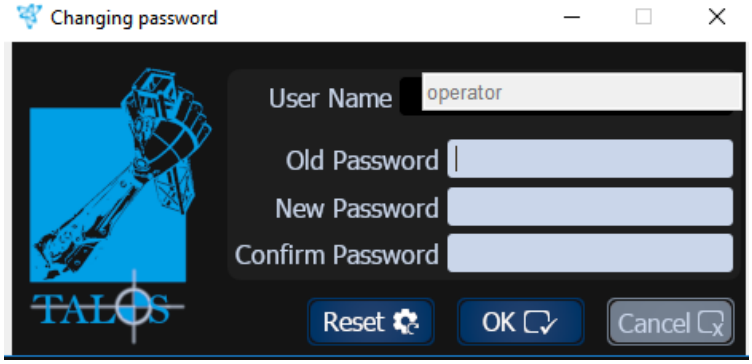


Figure 3 Login popup

1. Enter a valid Username and Password
2. Press the Login button to log in.

Option	Description
Logout	Logs the current User out of TALOS. The only screen accessible with no user logged in is Showfile on Stage Left
Close TALOS	The TALOS Close option is only available to administrator user levels.
User Administration	Displays the User Administration popup This option is only available to Users with Administrator User Level.  *Figure 4 User Administration popup* Displays a table of all active Users and their User Level. An Administrator level can Add New Users, Change Users, Activate and Deactivate Users.
Change Password	Displays the Changing Password popup  *Figure 5 Change Password popup*

User Administration

- Adding a New User
  1. Press the Add button. The New User popup is displayed.

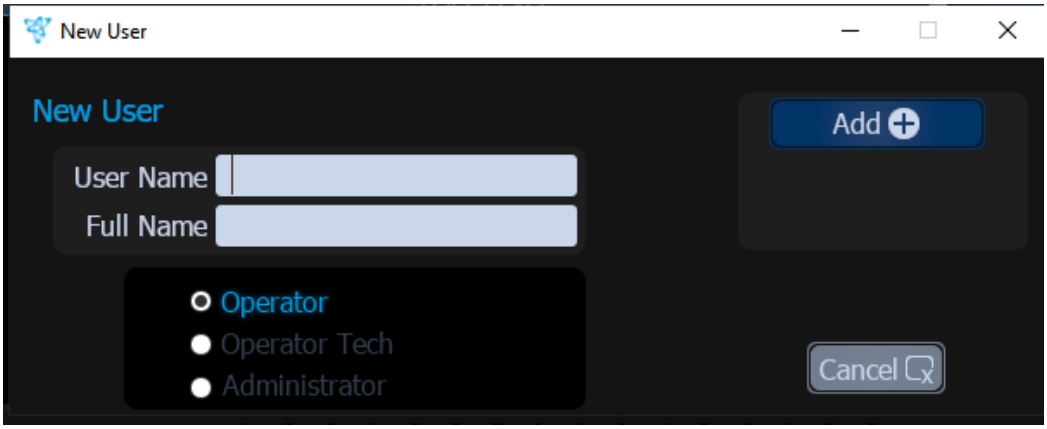


Figure 6 New User popup

  2. Enter a new Username and the user's full name.
  3. Select the User Level.
  4. Press the Add button. The user is added to TALOS and will now display in the User Table on the User Administration popup.

- Changing a user's full name or password.
  1. Select a Username from the User Table. The selected user is highlighted.
  2. Press the Change button. The Change User popup is displayed.

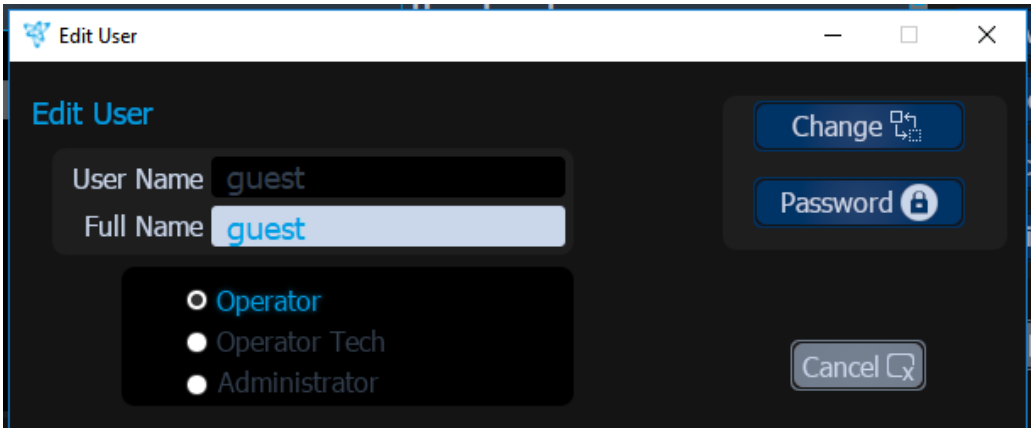


Figure 7 Edit User popup

  3. Enter in the new user's full name.
  4. Select the User Level.

     The Password button will display the Password popup where the new password can be entered.

- Deactivating Users
  1. Select a Username from the User Table. The selected user is highlighted.
  2. Press the Deactivate button. The selected user usage rights are removed and the user no longer appears in the User Table on the User Administration popup.

A warning window appears to confirm the deactivation of the user.

- Activating Users

An Activated User is one who can access TALOS Screens.

1. Press the Activate button. The Deactivated User table is displayed listing all the deactivated Users in TALOS.

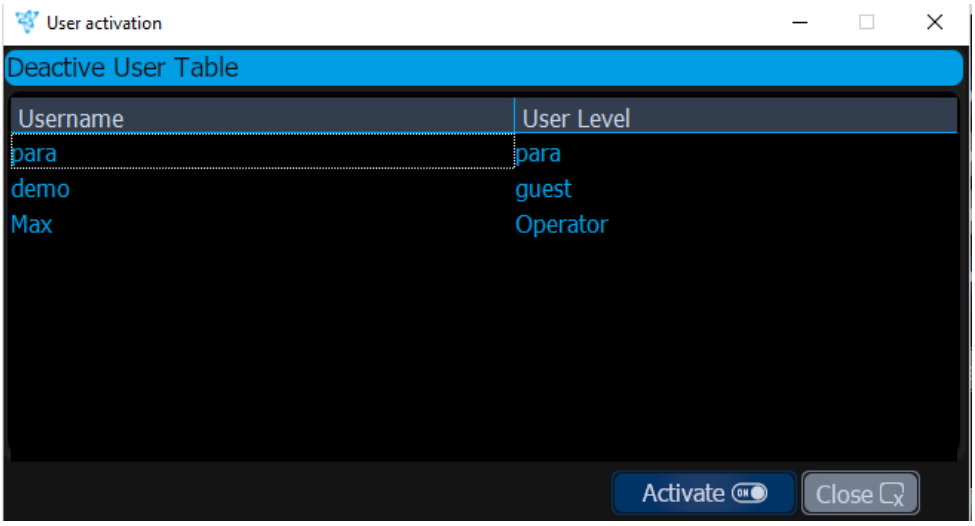


Figure 8 Deactivated User popup

2. Select the Username to activate.
3. Press the Activate button. The user is Activated and added to the User Table on the User Administration popup.

- Closing the User Administration popup
  1. Press the Close button to exit the User Administration popup.

Administrator functions controls table

Control	Graphic	Function
Add		Adds new users Users must be created in order to have access to TALOS.
Deactivate		Deactivates users. A Deactivated User cannot login and therefore cannot operate TALOS.
Activate		Reactivates deactivated users. Users must be Activated to be able to login and operate TALOS.

- Changing a User's Password
  1. Enter in the Old Password and the New Password.
  2. Reenter the New Password to Confirm.
  3. Press the Okay button to confirm the New Password.

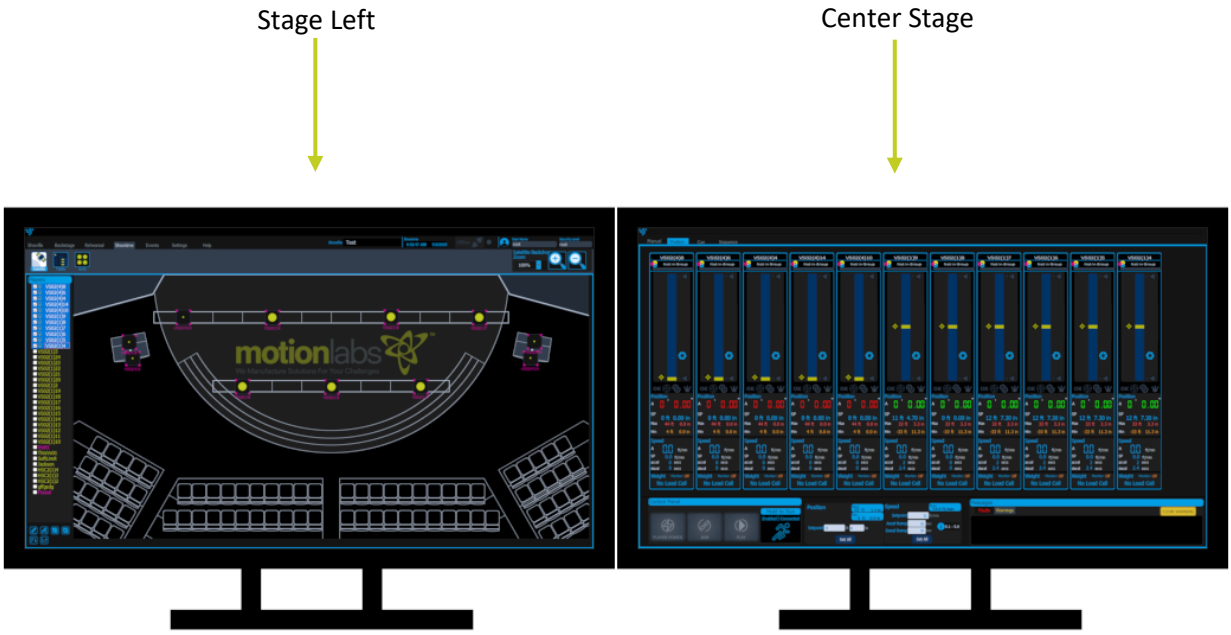
Resetting a User's Password means a password is not required. This should be used only if the password is not known. After resetting a password, the Administrator must assign another password tor the User to keep the system secure.

User Right-click options access table

User Level	Login as…	Logout	User Administration	Change Password
Administrator	X	X	X	X
Operator Tech	X	X		X
Operator	X	X		X

Navigation Guide

TALOS consists of a dual monitor display. Named Stage Left and Center Stage.



- Stage Left

Stage Left is the monitor that appears on the operator's left. It houses all the panels used in preparation for movement. This includes the Showfile, Backstage, Rehearsal, Showtime, Events, Settings and Help screens. The username and security level also appear on Stage Left.

Stage Left houses the following screens:

Showfile- Create and edit Showfiles.

Backstage- Configure controllers, players and monitor system status.

Rehearsal houses the groups, cue, sequences, Layout and SafeZone screens.

Groups- Create and add members to groups.

Cues- Create and edit cues.

Sequences- Create and edit sequences.

Layout- Create a layout of player positions.

SafeZone- Create and edit safety interlocks.

Showtime- Houses the Satellite, Table View and Grid View screens.

Satellite View- Displays players on a top view drawing (Satellite Backdrop.)

Table View- Displays player data for all selected players in a table.

Grid View- Displays player status Smart Icons for all players in a grid.

Events- Store and view all recorded faults.

Settings- Houses all settings options for TALOS.

Help- Houses the Stage Scripts, Talos Tools, TALOS Manual and About help options.

- Center Stage

In TALOS, Center Stage is the monitor that appears on the operator's right. It houses all the motion panels which are the panels where TALOS loads players intended for movement. This includes Manual, Position, Cue and sequence mode panels. The Control Station and Message Display also appear on Center Stage.

CenterStage houses the Following screens:

CenterStage-Manual- Jog players into position.

CenterStage-Position- Move players into position.

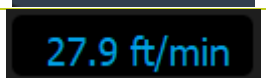
CenterStage-Sequence- Operate created sequences

CenterStage-Cue - Operate created cues.

- TALOS Display Indicators

TALOS standardizes the colors of objects and text to help the user with workflow. The tables below explain what the colors represent.

Entry Fields

Field Color	Graphic	Indication
White		Field information is editable
black		Field information is Monitor only.

Tool Tips

Tool tips appear in blue to indicate item names or to provide additional information. Tool tips are accessed by hovering the mouse over an onscreen object.

Button Display

Buttons that appear in gray are disabled.

Player names in Player Tree

Color	Graphic	Indication
MLI Green		Identifies players
Midnight Blue		Identifies cues

Showfile

The purpose of the Showfile screen is to create and edit Showfiles. A Showfile is the file that contains all data used by TALOS to move stage machinery in entertainment production. This includes but is not limited to Backstage Setup, groups, cues, sequences, Layout and SafeZone Interlocks.

Navigation

Stage Left>Showfile

- Screen Layout

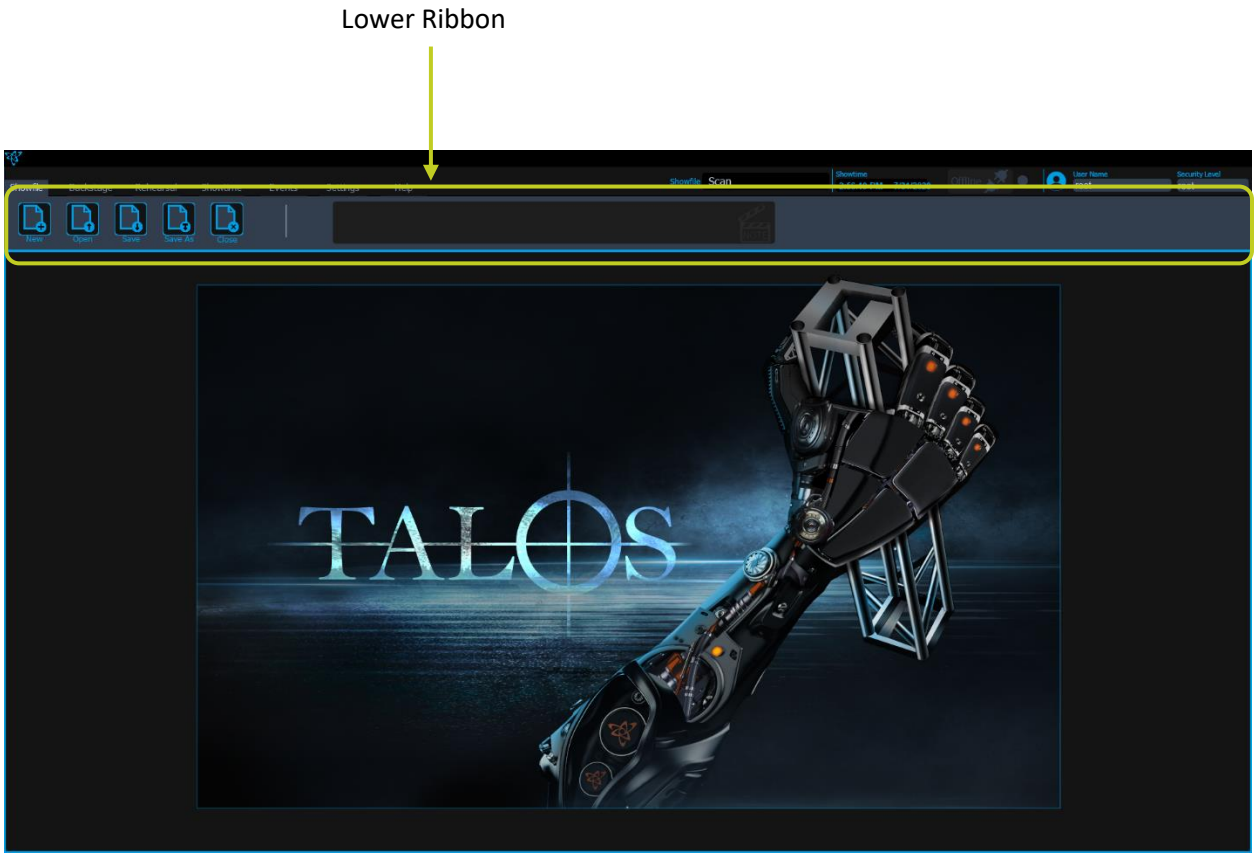
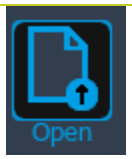


Figure 9 Showfile-Lower Ribbon buttons

Showfile Controls Table

Control	Graphic	Function/Instruction
New		Displays New Showfile popup.
Open		Displays Open Showfile popup.
Save		Displays Save Showfile popup.
Save as		Displays Save As Showfile popup.
Close		Closes current Showfile.

- Creating a New Showfile

A new Showfile Name must be created before the user is given access backstage.

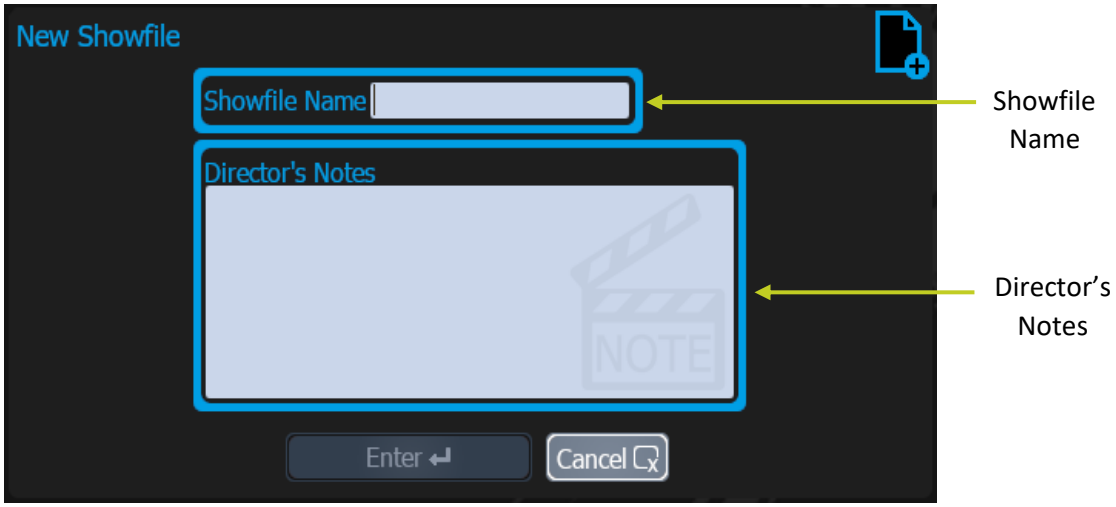


Figure 10 New Showfile popup

1. Press the New button of the Lower Ribbon. The New Showfile popup will appear.
2. Type a Showfile name.
3. Type notes in the Director's Notes Panel to provide any information related to the Showfile being created.
4. Press the Enter button to create the Showfile.

- Opening a Showfile

Used to open previously saved Showfiles.

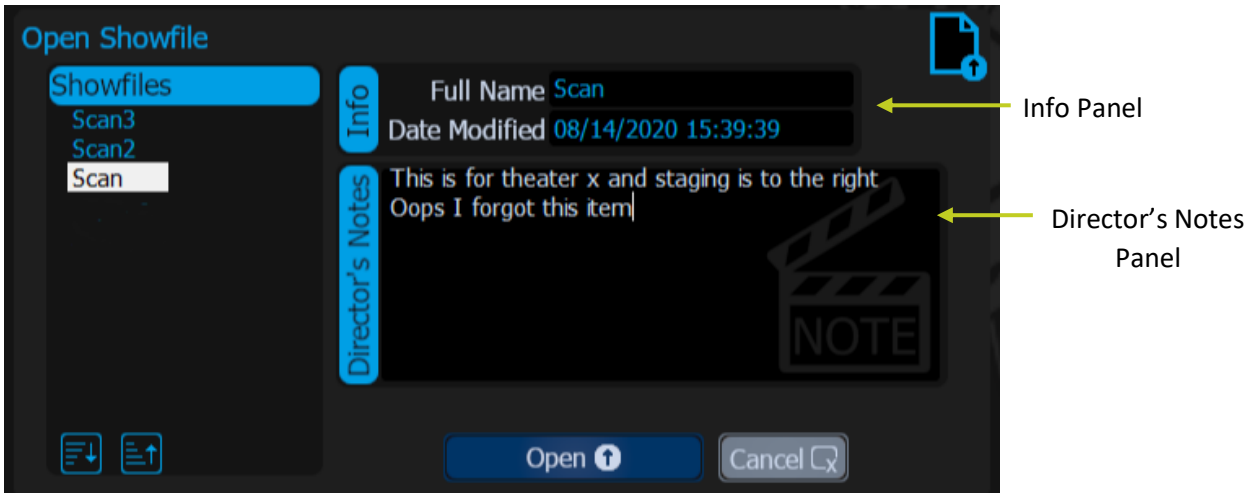


Figure 11 Opening a Showfile

1. Press the Open button on the Lower Ribbon to display the Open Showfile popup.
2. Select a Showfile Name. The file name and the date the file was last modified are displayed in the Info Panel. Director's Notes are displayed in the Director's Notes Panel.
3. Press the Open button to open the selected Showfile.

- Saving a Showfile

Saves all Showfile data under current Showfile name.

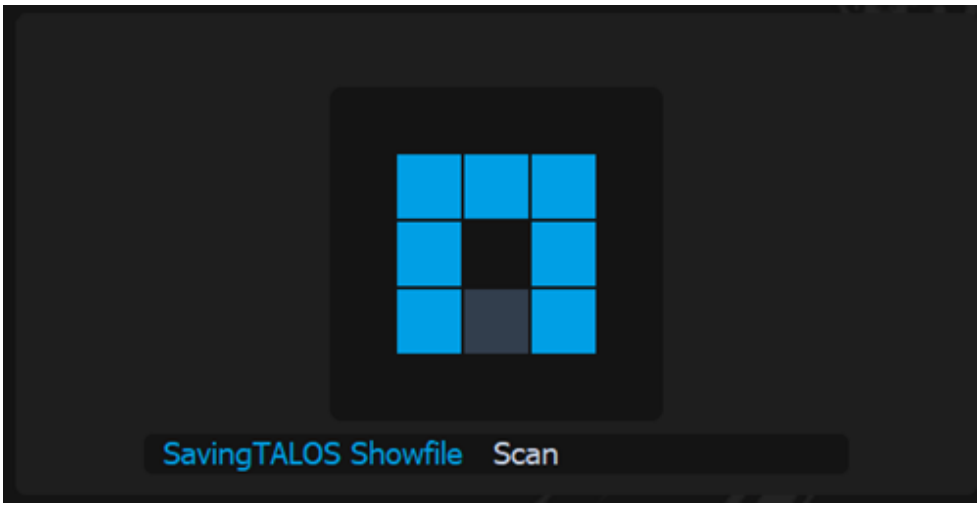


Figure 12 Saving a Showfile

1. Press the Save button in the Lower Ribbon to save the current Showfile. The Save popup displays the name of the Showfile being saved.

- Saving a Showfile As

Saves Showfile under a different filename. This can be used to copy a Showfile to a new name.

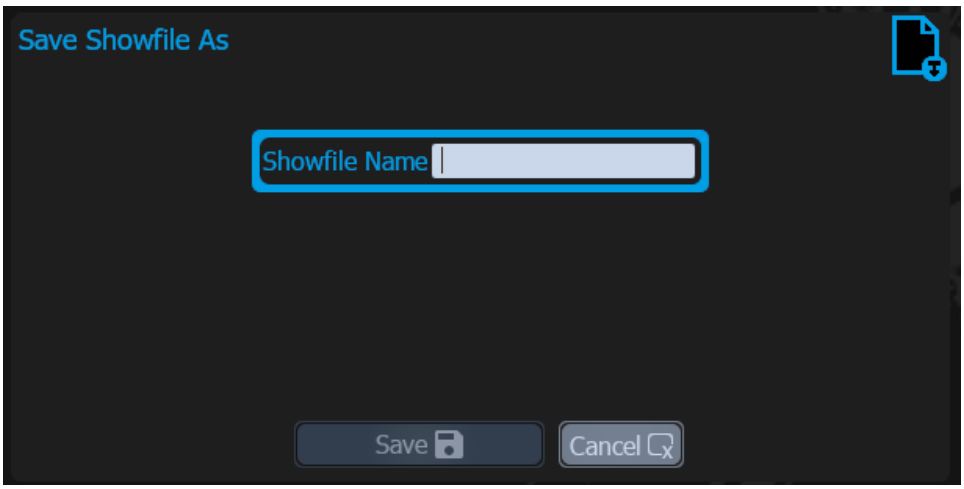


Figure 13 Saving a Showfile As

1. Press the Save As button in the Lower Ribbon. The Save Showfile As popup is displayed.
2. Enter a new name for the current Showfile to be saved.
3. Press the Save button. The current Showfile is saved under the new name.

- Closing Current Showfile

Allows user to Close Showfile.

Figure 14 Close Showfile

A warning window will appear when the user closes a file to warn that any unsaved changes will be lost giving the user the option to cancel the request.

1. Press the Close button in the Lower Ribbon to close out of the current Showfile.

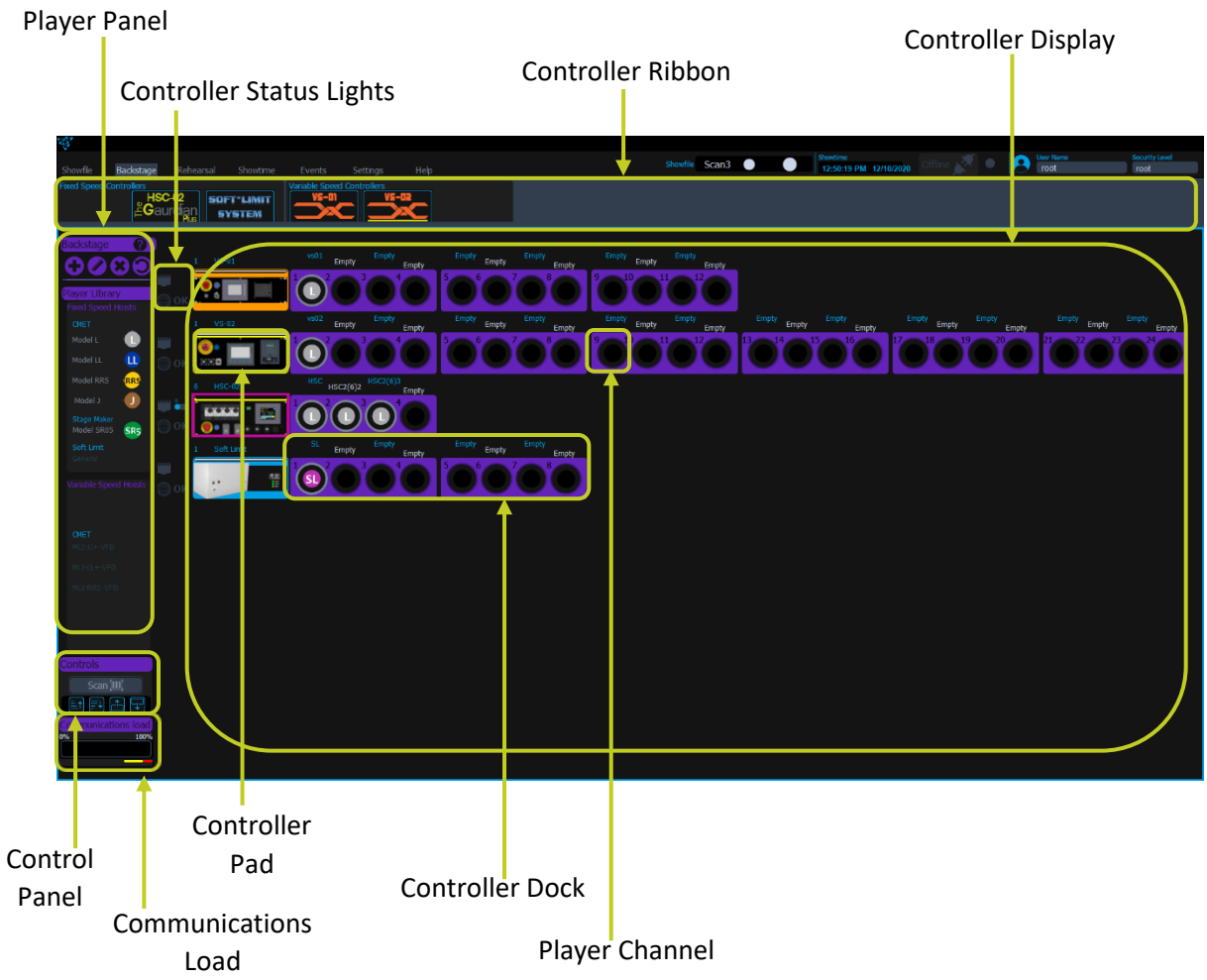
Backstage

The purpose of Backstage is to configure controllers and players. The System status is also monitored Backstage.

Navigation

Stage Left> Backstage

- Screen Layout



- Player Panel

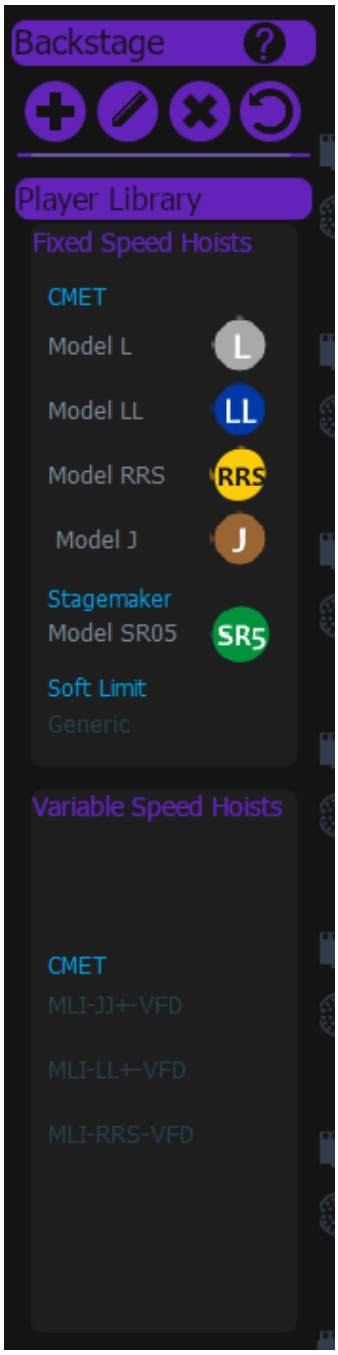


Figure 15 Player Panel

The Player Panel houses the Add a Controller, Edit a Controller, Delete a Controller and Exit Edit Mode buttons. It displays the available players based on the selected controller type.

Player Panel Controls Table

Control	Graphic	Function/ Instruction
Add a Controller		Adds an empty Controller Pad.  *Figure 16 Empty Controller Pad*
Edit a Controller		Enters Edit Mode. 1. Select a controller to highlight 2. Press the Edit a Controller button to enter Edit Mode.
Delete a Controller		Deletes the selected controller. 1. Select a controller to delete. 2. Press the Delete a Controller button.  A warning window appears if players assigned to the controller have memberships in groups, sequences, cues and or interlocks. Players with memberships must be manually removed from the membership before a Player can be deleted.
Exit Edit Mode		Unhighlights the selected controller and exits out of Edit Mode

- Adding a Controller

A controller is a device that controls stage machinery. It can connect to TALOS through a communications path, through which Talos monitors and controls the connected stage machinery.

TALOS Controllers Table

Controller	Description
HSC-02 Controller	BGV-C1 fixed speed automation control system.
Soft Limit Controller	A fixed speed system that gives position feedback via an encoder to a programmable logic controller (PLC) and allows for movement of chain hoists to a desired position (position manager.
VS-01 Controller	A control system that utilizes frequency drive technology to allow smooth, dynamic operation of chain hoists.
VS-02 Controller	A control system that utilizes frequency drive technology to allow smooth, dynamic operation of chain hoists with integrated safety.

There are two different types of controllers:

A Fixed Speed Controller operates at a set speed for the entirety of its operating process.

A Variable Speed Controller operates by varying the frequency and voltage of its power supply to adjust motor speeds.

An Empty Controller Pad must be added when assigning a controller type manually.

1. Press the Add Controller button. An empty controller pad is added to the Controller Display.

Figure 17 Controller Dock in Edit Mode

2. Drag and drop a Controller Smart Icon from the controller ribbon to the empty controller pad. The selected controller is added to the controller pad and the corresponding channel dock is displayed.

Assign a Controller ID

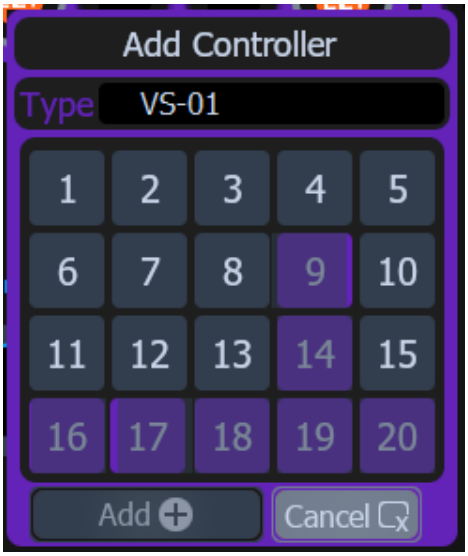


Figure 18 Add Controller popup

1. The Add Controller popup will display when a controller is assigned. The controller ID is a unique ID used by TALOS to communicate to the controller. Gray buttons are available for use. Purple buttons indicate that the ID is already in use or unavailable for that controller type.

Controller Types Table

	Name	Graphic	Function/ Instruction
Fixed Speed Controllers	**HSC-02 The Guardian Plus**		Adds HSC-02 Controller. 1. Drag and drop HSC-02 Controller Smart Icon from the Controller Ribbon to the empty Controller Pad. 2. The Controller Icon is displayed  *Figure 19 HS-02 Controller Display*
	Soft Limit System		Adds Soft Limit Controller. 1. Drag and drop Soft Limit Controller Smart Icon to Empty Controller Pad. 2. The Controller Icon is displayed.  *Figure 20 Soft Limit Controller Display*
Variable Speed Controllers	**VS-01**		Adds VS-01 Controller. 1. Drag and drop VS-01 Controller Smart Icon to Empty Controller Pad. 2. The Controller Icon is displayed.  *Figure 21 VS-01 Controller Display*

	Name	Graphic	Function/ Instruction
Variable Speed Controllers	**VS-02**		Adds VS-02 Controller. 1. Drag and drop VS-02 Controller Smart Icon to Empty Controller Pad. 2. The Controller Icon is displayed.  *Figure 22 VS-02 Controller Display*

- Adding Players to the Controller Dock

1. Player Smart Icons compatible with the controller are displayed in the Player Panel. Drag and drop a Player Smart Icon from the Player Panel to the controller dock. The Add Player popup is displayed with the player's Nameplate.

Figure 23 Add Player popup

2. Enter a player name in the Player Name Field and press the Enter button. The Max/Min Panel displays
3. Enter Max and Min parameters for the player. These limits will be used by TALOS for limiting setpoints. The player parameters will be monitored by TALOS in real time and a fault will be generated if any of the limit values are exceeded.

> Max and Min values are shown. If limits are exceeded a red indicator will appear around the field and an out-of-range message will be displayed on screen. The user will not be able to enter any parameters until the condition is resolved.

4. Press the Enter button again. The player is assigned to the controller.

   (Repeat process to assign additional players or use the Duplicate Function – See Duplicating players.)

- Controller Status Lights

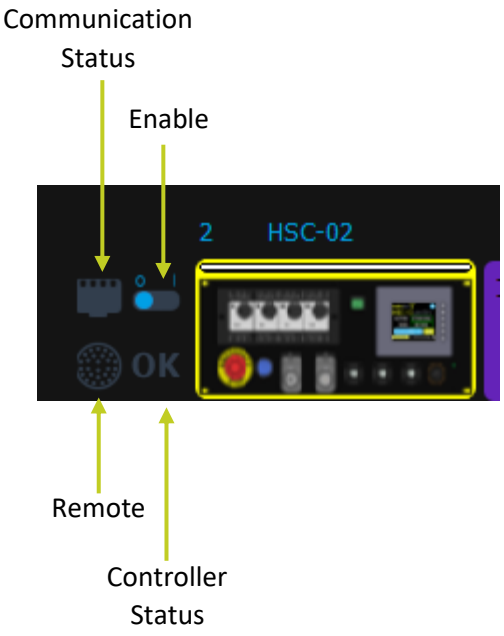


Figure 24 Controller Status Lights

Controller Status lights indicate the current status for each controller.

Controller Status Lights Table

Icon	Status	Indication/Function
		Communication Status
	**Green**	Online, Controller connected and in TALOS Mode
	**Gray**	Offline /Not connected/Not in TALOS Mode
	**Enable**	Allows the user to toggle contactor on and off. Only available on HSC controllers. Disabled if any of the controller's players are on Center Stage.  Green bar on the Controller Icon indicates the contactor is enabled on HSC type controllers.

Icon	Status	Indication/Function
		Controller Status
	**Gray OK**	Offline /Not connected/Not in TALOS Mode
	**Green OK**	Controller Ready
	**Red Triangle**	Controller fault
	**Orange**	Max and Min Configs do not match (Online vs Offline)
	**Blue**	Remote is connected. Cannot operate controller from TALOS
	**Gray**	Remote is not connected.

- Controller Pad Right-click

Edit Mode

Edit Mode is entered by pressing the Edit a Controller button on the Player Panel. Press the Exit Edit Mode button to end Edit Mode and enter Display Mode.

Figure 25 Controller Dock in Edit Mode

Controller Pad Edit Mode Table

Function	Description
Duplicate Controller	Creates a duplicate of the selected controller.
Change Controller ID	Allows users to alter the controller ID that was initially selected.
View Player Types	The Player Types popup is displayed for each available player in the controller. This is option is only available for HSC-02 controllers

View Player Types

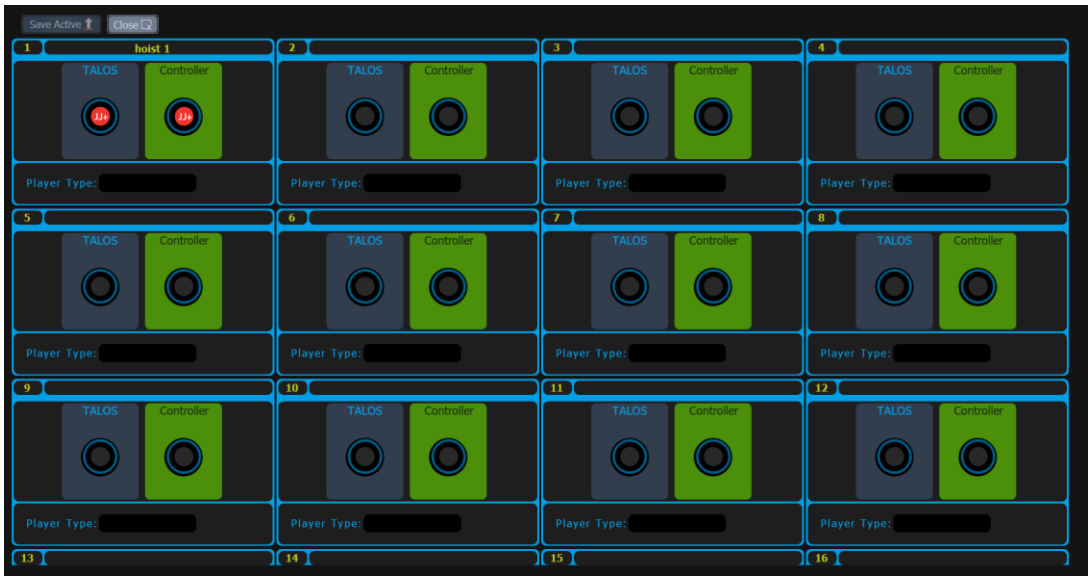


Figure 26 View Player Types

Player Types Table

Player Type	Graphic
HSC-02	
Model L	
Model LL	
Model RRS	
Model J	
Model SR05	
VS-01 and VS-02	
MLI-JJ+-VFD	
MLI-LL+-VFD	
MLI-RRS-VFD	
Soft Limit	
Generic Player Type	

Player types inform TALOS of motor characteristics so offline and online types must match in order to move a player.

1. Press the View Player Types option from the menu. The Player Types popup is displayed. (only available with HSC-02 controllers)

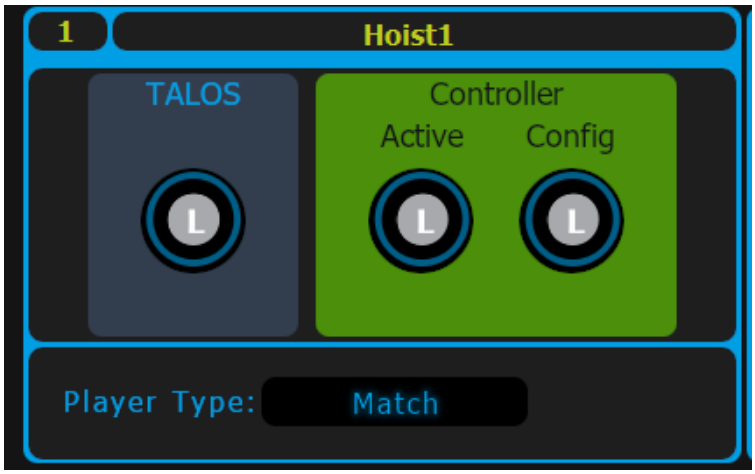


Figure 27 View Player Types-HSC-02 Controller

The three player types displayed under Talos, Active and Config must match in order for the controller's status to be OK.

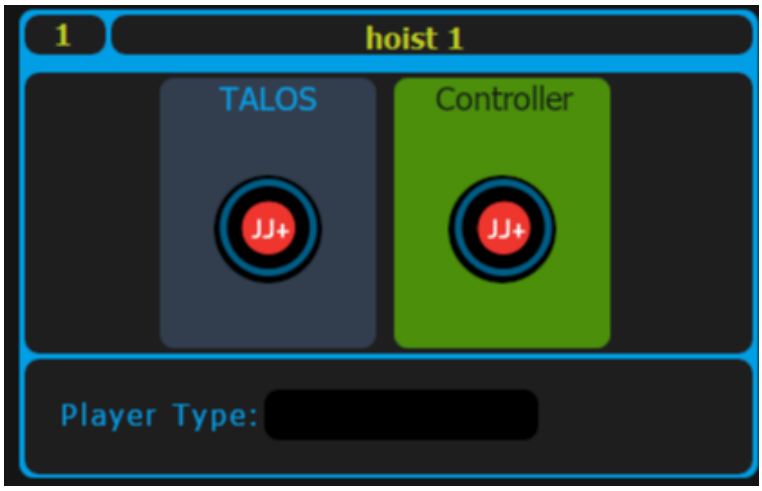


Figure 28 View Player Types-VS-02 Controller

The player types displayed for Talos and controller must match in order for the controller to be online.

If the Player Type field is empty a player is not connected.

If the Player Type under TALOS does not match with the Player types under Active and Config the Player type under TALOS is considered wrong and must be manually changed Backstage to match the Controller.

Display Mode

Press the Exit Edit Mode to enter Display Mode.

Figure 29 Controller Dock Not in Edit Mode

Controller Pad Display Mode Table

Function	Description
Configure all Parameters	The Parameters popup is displayed for each available player in the controller.
Reset Encoder (Online)	Displays Reset Encoder popup which allows user to zero a player's current position.
Enable Load Limits	Displays Enable Load Limit popup which allows user to enable or disable weight monitoring via a Load Cell
View Player Types	Displays Player Types popup. (HSC-02 only) On HSC2 controllers allows users to save Active type to config type.

Configure all Parameters

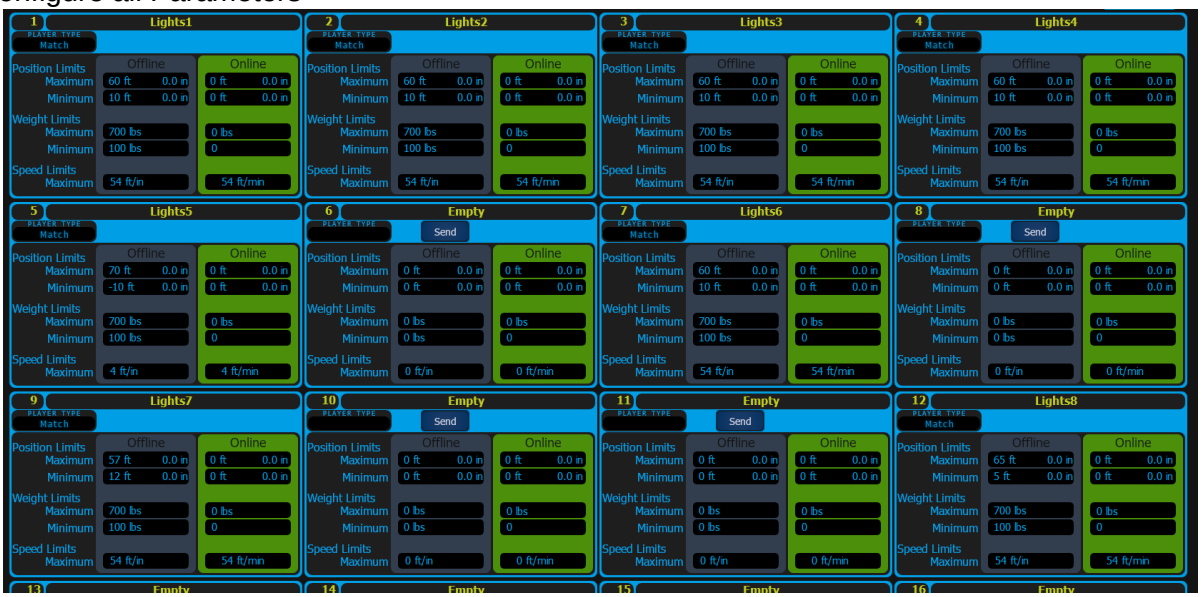


Figure 30 Configure all Parameters

1. Press the Configure all parameters option in the menu. The Player Parameters popup appears.
2. Player Parameters are displayed for online and offline parameters.
3. Press the Send button to send the offline parameters to the controller.

If parameters do not match “Do Not Match” is displayed in red in Player Type field. The user must change the player type. See Adding Players to the Controller Dock.

Figure 30 Parameters Do Not Match

Reset Encoder

The Reset Encoders popup allows users to set the current player's position to zero (only available when the controller is online).

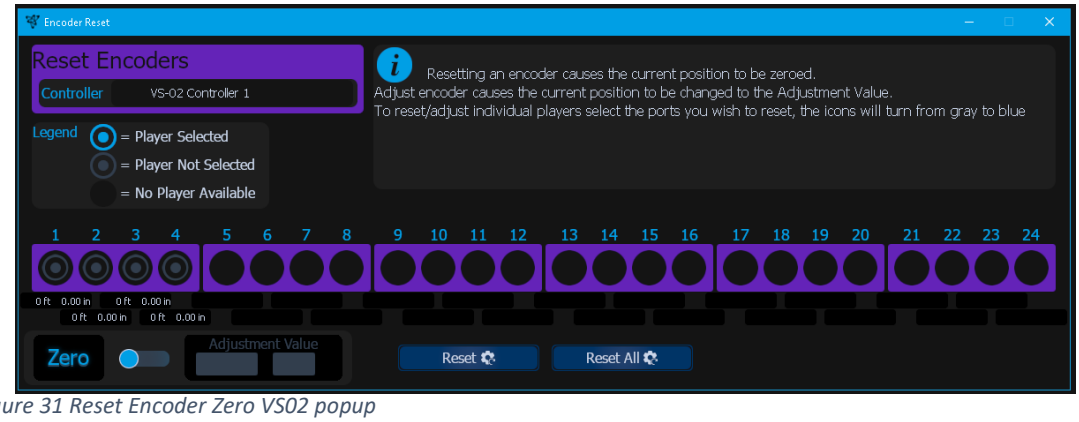


Figure 31 Reset Encoder Zero VS02 popup

Selected channels are displayed in blue, unselected channels are displayed in gray and an empty channel means no player is connected.

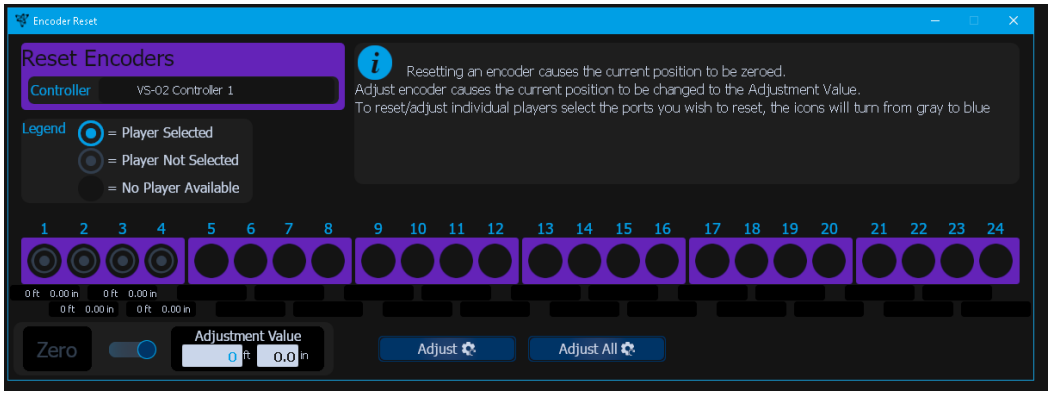


Figure 33 Adjust Encoder VS02 popup – Channel selected

1. Right Click on the controller and press the Reset Encoders option.
2. Select the channel to reset or adjust. They will turn from gray to blue.
3. Select Reset or Adjust via the toggle button.
   RESET OPTION
4. Select Reset button to reset encoder counts for the selected channels to zero. Pressing the Reset All button resets all the channels that have a player connected.
   ADJUST OPTION
5. Enter the Adjustment Value and select the Adjust button to change the current position of selected channels to the Adjustment Value. Pressing the Adjust All button changes all the channels that have a player connected.

Reset Encoders Table

Control	Graphic	Function
Adjust		Adjusts the selected players actual position to the value entered in Adjustment Value. (VS-02 Systems only)
Adjust All		Adjusts all the players actual positions to the value entered in Adjustment Value. (VS-02 Systems only)
Selection Toggle		Toggles between Zero Reset or Adjust Value (VS-02 Systems only)
Reset		Resets the current player's position to zero for all the selected players.
Reset All		Selects and resets all current player's positions to zero.
Close		Closes the popup display.

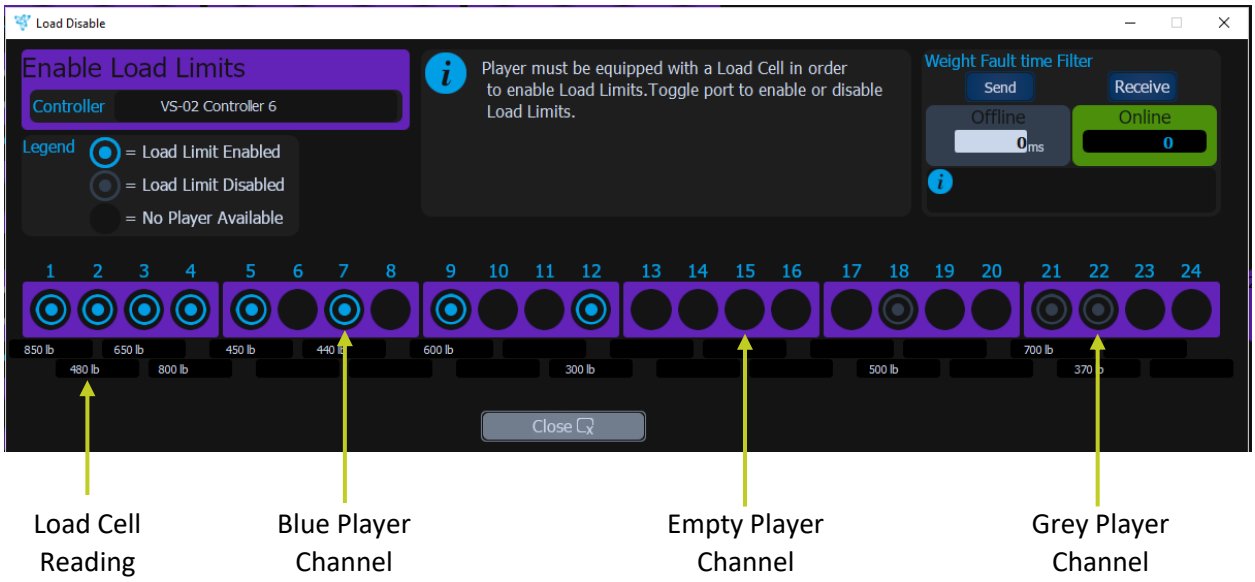
The system several minutes to write values from RAM to ROM. Do not power down the drives during this adjustment. However, it is recommended to cycle power to the drive(s) to verify that the adjustment has been successfully written to ROM.

- Enable Load Limits

The Enable Load Limits allows users to enable or disable load monitoring.

> Load Limits are only available for VS-02 and Soft Limit Controllers.

Enable Load Limits - VS-02



Load Cell Reading

Blue Player Channel

Empty Player Channel

Grey Player Channel

Figure 32 Load Disable popup

Gray means load monitoring is disabled.

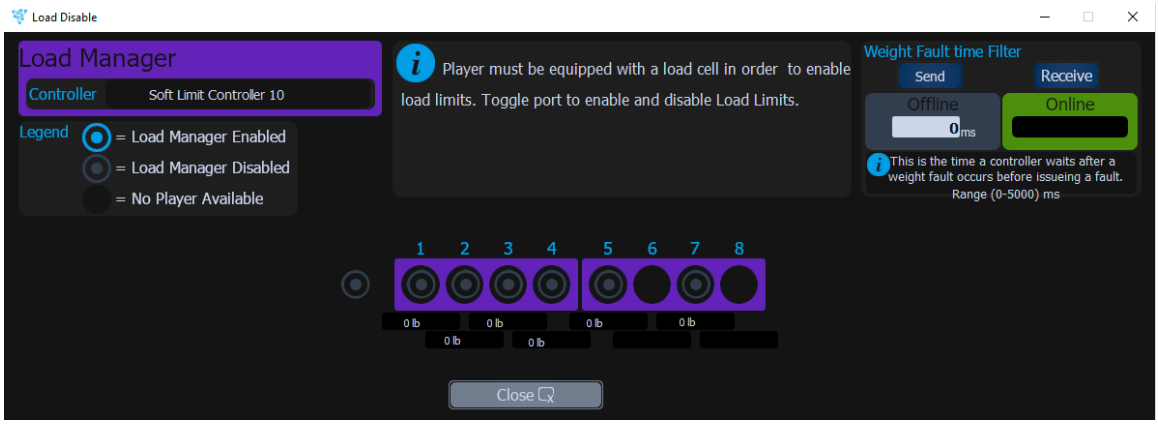
Blue means load monitoring is enabled.

No symbol means no player is connected.

1. Press Enable Load Limit option. The Load Disable popup is displayed.
2. Select a gray port to enable the load limit. Channels will turn from gray to blue to indicate that the load limit has been enabled.
3. Press the Close button to exit the popup.

Figure 35 Load Manager- Soft Limit Controller

Enable Load Limits – Soft Limit



Soft limit controllers have an enable all option.

1. Press the gray player channel icon to the left of the controller dock to enable the Load Limit for all connected players.

- Player Channel Right-click

Right-click Edit Mode

Figure 33 Players Channel-Edit Mode

Edit mode is entered by pressing the Edit a Controller button on the Player Panel. Press the Exit Edit Mode button to enter Display Mode. Dashed lines around the player channel indicate the controller is in edit mode.

Player Channel Edit Mode Table

Function	Description
Delete Player	Deletes the selected player from the controller. Players with Memberships in Groups, sequences, Cues, or Interlocks can NOT be deleted. To delete, memberships must first be removed manually.
Duplicate Player	Displays Player Duplicate popup which allows user to duplicate the selected player to one or more player channels.
Copy parameters	Copies all the max and min parameters of the player.
Paste parameters	Paste copies the previous copied player's parameters to the selected player.

Duplicate Players

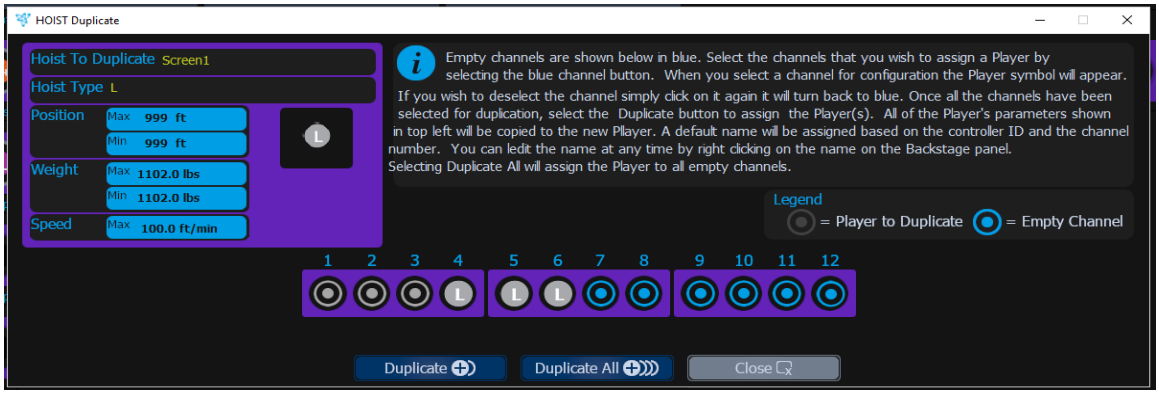


Figure 34 Duplicate Players popup

1. Press the Duplicate Player option. The Duplicate Player popup displays.
2. Select the empty channels that the selected player will be copied to. Press the Duplicate button to duplicate selected channels. The Controller Dock is updated, and the duplicated players are displayed.

Duplicate Players Table

Control	Graphic	Function
Duplicate		Duplicates the current player into the selected player channel(s).
Duplicate All		Duplicates current player to all empty channels.
Close		Closes the popup display.

Right-click Display Mode

Figure 35 Players Channel- Display Mode

Player Channel Display Mode Table

Function	Description
Player Name Plate	Displays the Player Nameplate popup with the following player information; Manufactur, Model Number, Type,Upper weight limit LBS/Kgs and FPM.
Edit Parameters	Displays the Player Parameter popup. Allows for the player position Min/ Max values and player speed Max/Min values to be edited.
	Edit Parameters is disabled for any player that is loaded on Center Stage.
Memberships	Displays The Memberships popup indicating any group, cues, sequences, and interlocks a player belongs to.

Player Name Plate

The Player Nameplate displays information obtained from the Player Smart Icon.

Figure 36 Player Nameplate popup

1. Select the Player Nameplate from the options menu. The Player Nameplate popup is displayed.
2. Press the Close button to close the Nameplate popup.

Edit Parameters

Position Max/Min parameters are used to set the parameter range for setpoints.

Weight Max/Min parameters are sent to the controller and are monitored. If they are exceeded a fault is generated.

> Offline parameters must match online parameters to run the player on Center Stage. This is achieved via the Send and Receive buttons

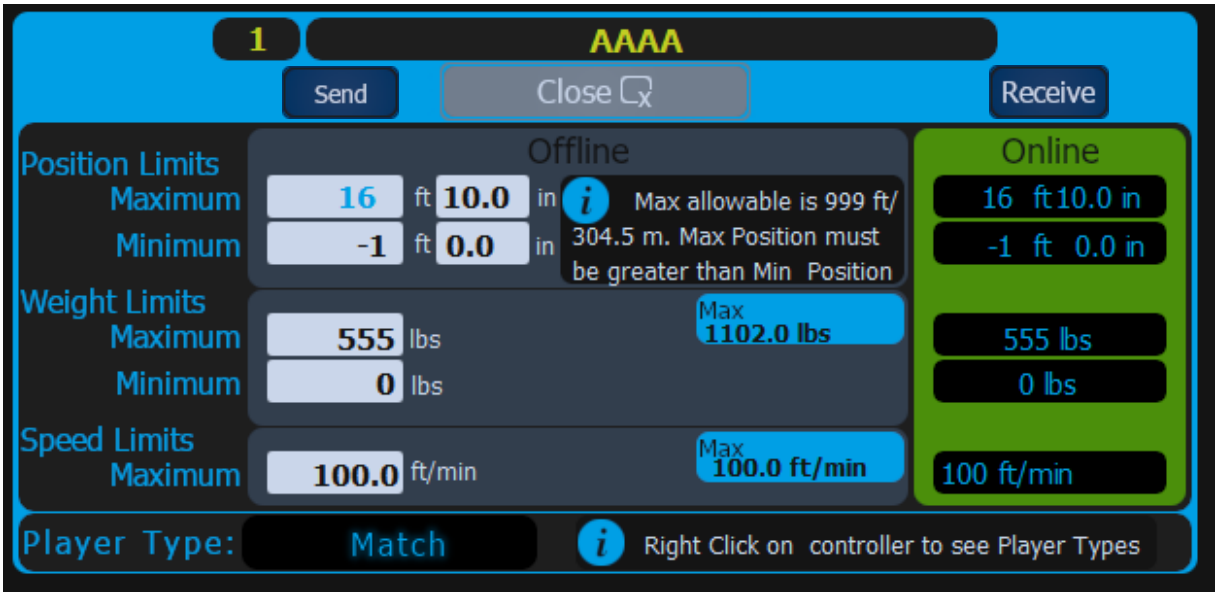


Figure 37 Player Parameters popup

1. Select Edit Parameters from the options menu. The Player Parameter popup is displayed.
2. Enter values for the position Max/Min and the Weight Max/Min for the selected player . The only fields that can be edited are those in the offline column.
3. Parameters can be sent or received to and from the controller via the Send and Receive button. Player's parameters must match in order to run the player on Center Stage. Select Send to send offline paramters to the controller or Receive to receive parameters from the controller.
4. Press the Close button. Edited values are updated for the player.

Memberships

Memberships refer to any association a player may have to groups, sequences, cues or Interlocks.

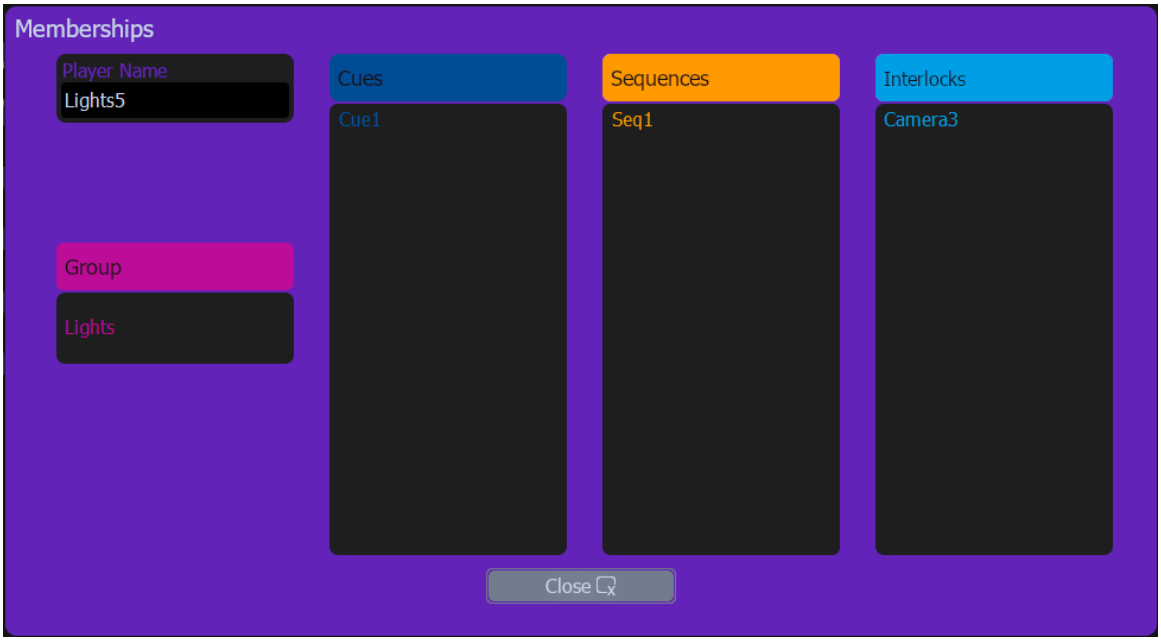


Figure 38 Memberships popup

1. Select Player Nameplate from the options menu. The Player Nameplate popup is displayed
2. Press the Close button to close the Memberships popup.

- Control Panel Control

The control Panel houses the Scan, Sort Controllers Descending, Sort Controllers Ascending, Move Controller Up and Move Controller Down buttons.

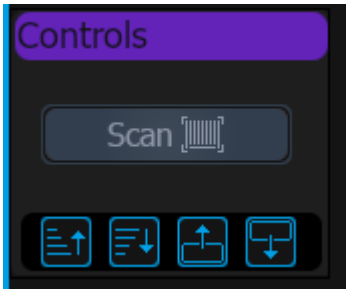


Figure 39 Control Panel

Control Panel Table

Control	Graphics	Function/ Instructions
Scan		Scans network searching for connected controllers. If a controller is discovered TALOS configures communications and addresses tags for the controller and all connected players and displays this information in the controller display. 1. Press the Scan button on the Control Panel. The scanned controllers are added to the Control Display along with their corresponding Controller Dock which displays the number of ports available for the controller. Soft Limit Controller Players must be added manually and require encoder rates and max speed to be inserted.
Sort Controllers Descending		The controllers are displayed in the order in which they were scanned or manually entered. This button places the controllers from the last entered (at the top of the display) to the first entered (at the bottom of the display).
Sort Controllers Ascending		The controllers are displayed in the order in which they were scanned or manually entered. This button places the controllers from the first entered (at the top of the display) to the last entered (at the bottom of the display).
Move Controller Up		Moves selected controller up in the controller display
Move Controller Down		Moves selected controller down in the controller display

- Communications Load Panel

The Communications Load Panel displays the percent of IO currently utilized. The value shown is based on the maximum number of IO permitted by the license purchased.

Figure 40 Communication Load Panel

The Progress Bar indication provides feedback based on the percentage of IO used within a single Showfile. This will indicate to the user when they are approaching their licensed limit. The Panel includes two colored borders which appear when the percentage value of the progress bar reaches a predetermined value.

A yellow border is displayed when the progress value is equal to or greater than 70 percent.

Figure 41 Communication Load Panel-Yellow Indicator active

A red border is displayed when the progress value is equal to or greater than 99 percent.

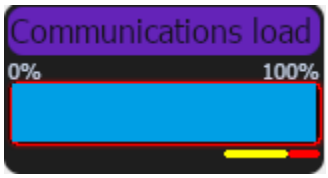


Figure 42 Communication Load Panel-Red Indicator active

The Settings Screen will display the number of IO that is currently used along with the number purchased with the license. TALOS will initiate a System Error and not allow you to run the system if the limit is exceeded. In order to operate TALOS, the user must remove player(s) and or controller(s)/ The showfile must then be saved and reopened. This allows TALOS to reconfigure addresses that may have not be configured when the system was over the purchased limit.

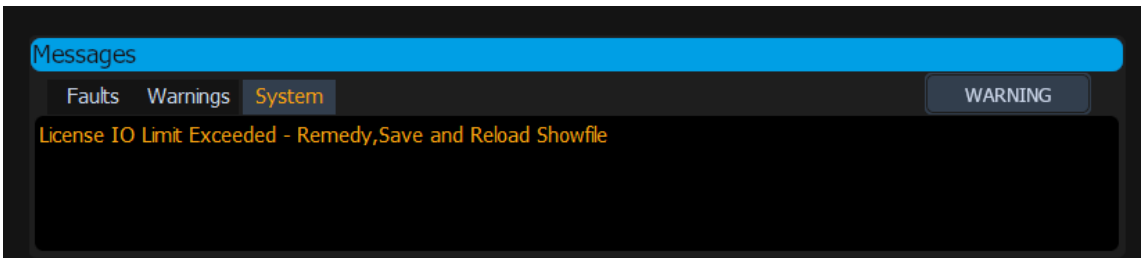


Figure 43 System Error Message when over limit

Rehearsal-Groups

The purpose of the Rehearsal-Group screen is to create and edit groups. A group is a set of players that when commanded to move will move in the same direction, at the same speed, acceleration, deceleration, and the same distance. Only players of the same type can be added to a group.

Navigation

Stage Left>Rehearsal>Rehearsal-Group

- Screen Layout

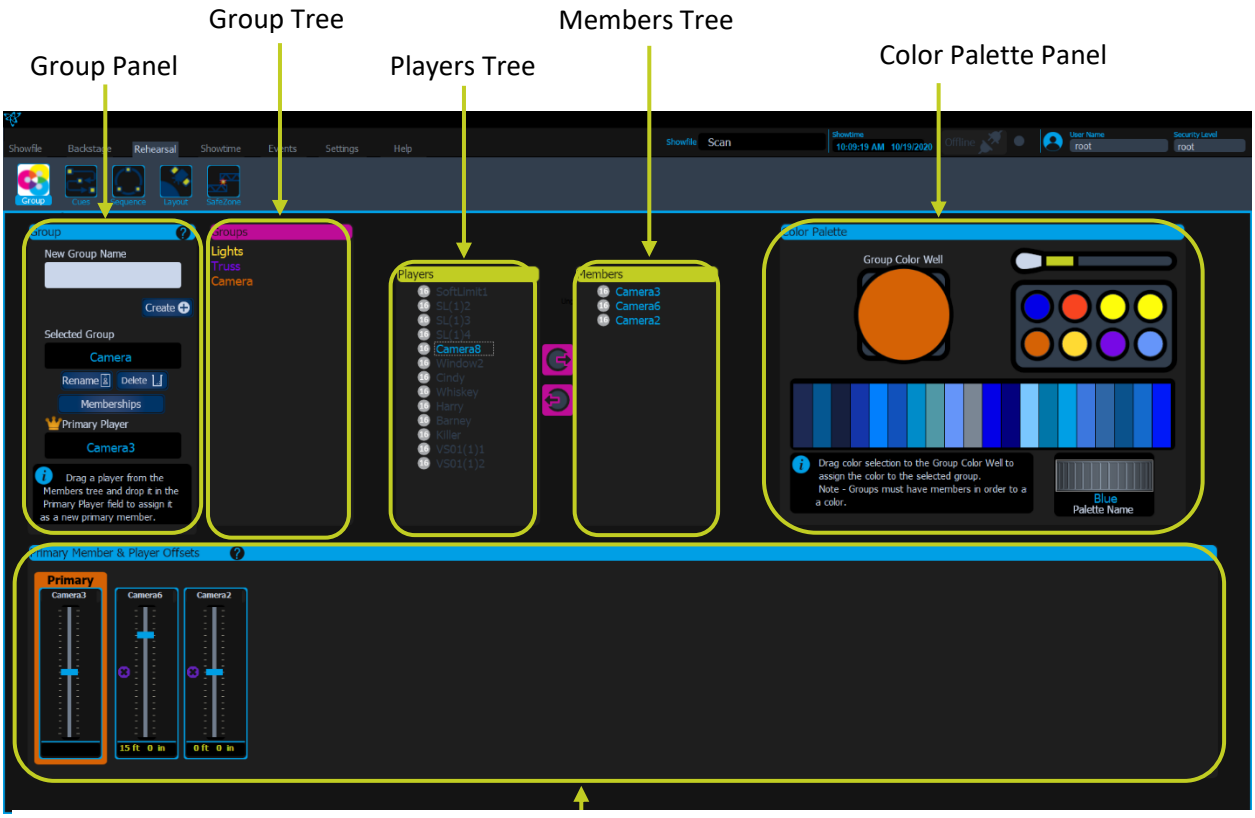


Figure 44 Group Screen

Primary Member and Player Offsets Panel

- Group Panel Controls

The Group Panel houses the Create, Rename, Delete and Membership buttons. The selected group is indicated on the Group Panel along with the group's primary player.

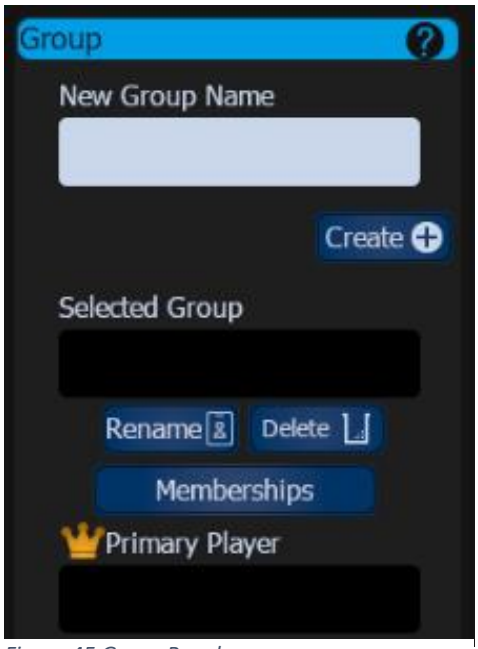
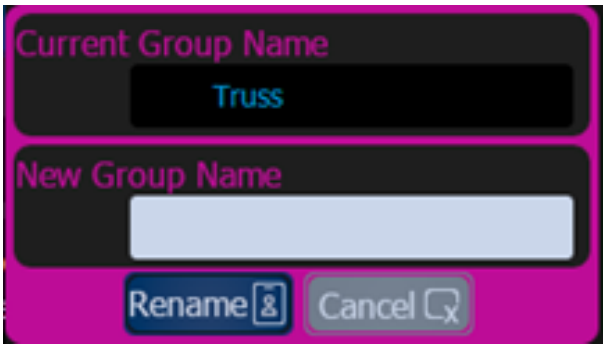


Figure 45 Group Panel

Group Panel Table

Control	Graphic	Function / Instructions
Create		Creates a new group.
Rename		Displays the Rename popup.  *Figure 46 Rename popup* 1. Press the Rename button. 2. Enter a new group name in the text field. 3. Press Rename button on the popup to enter the new group name.

Control	Graphic	Function / Instructions
Delete		Deletes the current group from the Showfile. A warning window will appear for user to confirm deletion or to warn user that the Group cannot be deleted.
Memberships		Displays the Memberships popup which lists the cues and sequences the current group belongs to.  *Figure 47 Memberships popup* If a player is already a member of a cue or a sequence, it cannot be added to a group. To add the player, users must manually remove it from the cue or sequence it is a member of.

- Creating a New Group

The first step in creating a group is to assign a name from the Group Panel.

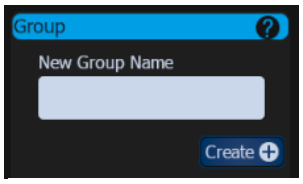


Figure 49 Creating a New Group (Group Panel)

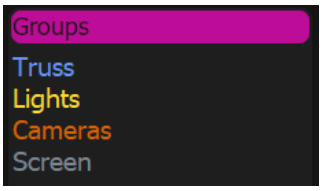


Figure 48 Group Tree

1. Type the name of the new group and press the Create button. The new group will appear under the Groups Tree. The group name appears in gray indicating that the group currently has no members assigned.

- Assigning a Group Color

A color is assigned to a group to help identify members of the group when they appear on Stage Left and Center Stage.

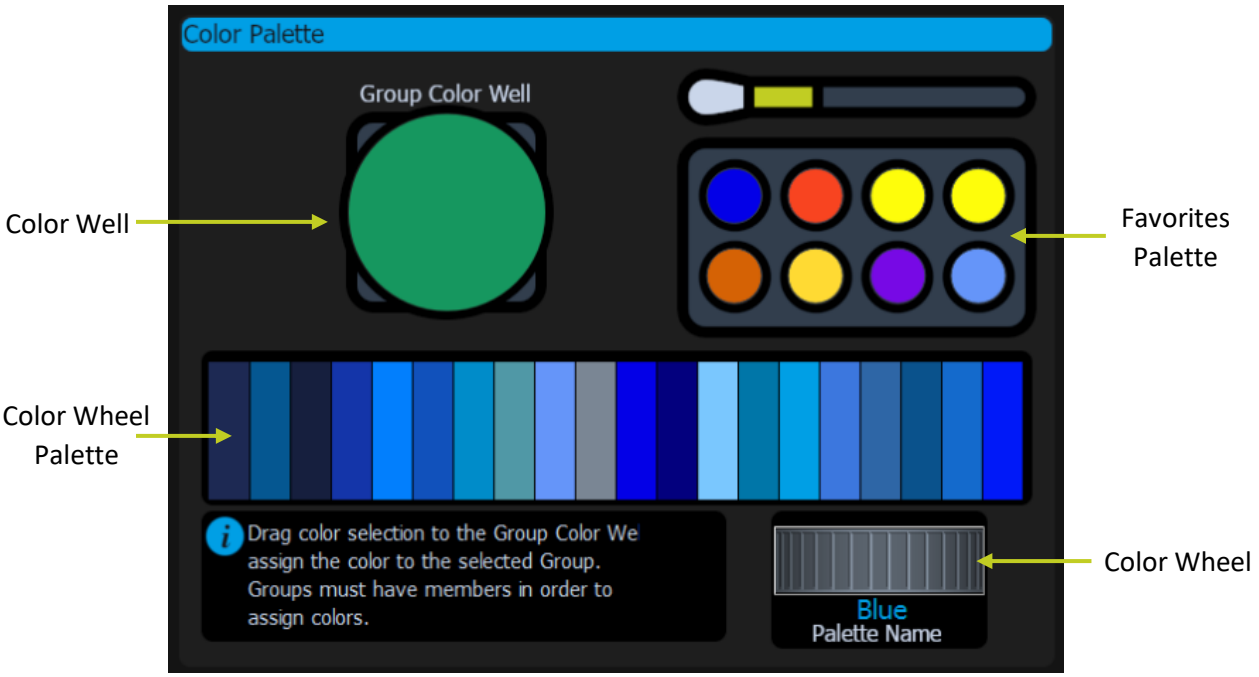


Figure 50 Color Palette

1. Select and drag a color from either the Favorites Palette or the color Wheel Palettes and drop it on to the Color Well to assign a color. Or you can click on a color on the wheel to assign the color.

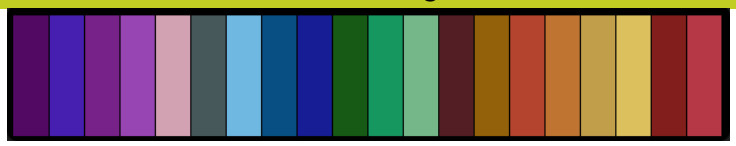
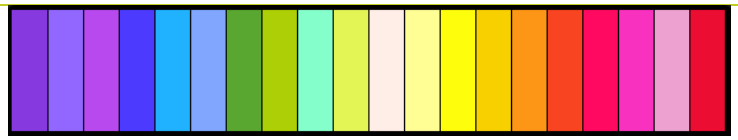
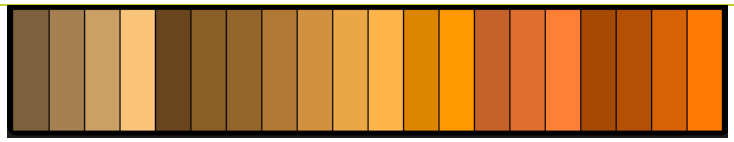
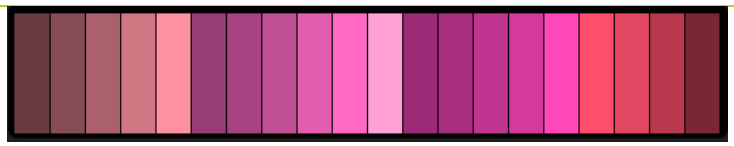
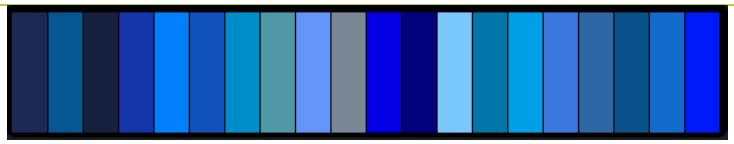
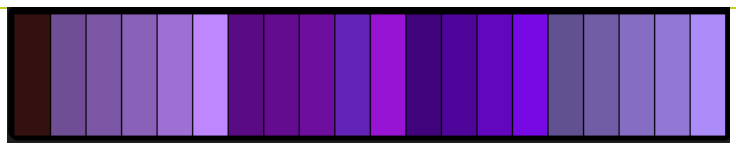
Both the Color Well and group name will change color. This color will be used to identify the group and its members.

- Using the Color Wheel Palette

There are eight Color Wheel Palettes available in TALOS.

1. Scroll through the palettes with the Color Wheel to select the desired palette, Select and drag a color from the Color Wheel Palette. Drop it on to the Favorites Palette or the Color Well. You can assign the color directly by clicking on the color on the wheel. The Color Well will not change when using this method.

Color Palettes Table

Color Wheel Palette	Palette Image
Museum	
Neon	
Orange	
Red	
Blue	
Purple	

- Using the Favorite Palette

The Favorites Palette is where favorite colors can be stored for easy access. The palette allows for eight different colors to be stored. These colors will be saved with the Showfile.

Figure 51 Favorites Palette

1. Add colors to the Favorites Palette by selecting the color from the Color Wheel Palette. Drag and drop the color into a Favorite Palette well.

- Assigning Group Members

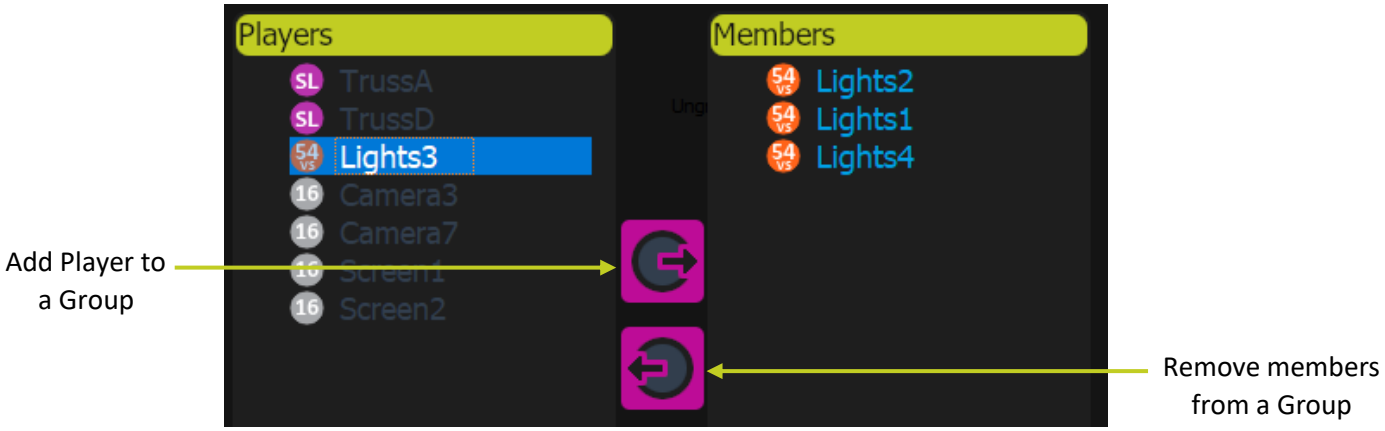


Figure 52 Player Tree &Member Tree

1. Select the group from the Group Tree. The name of the group displays on the Group Panel as the current group and its current members are listed on the Member Tree.

2. Select a player in the Player Tree and press the Add Player button.
   The player will move from the Players Tree to the Members Tree.

Player types are indicated by the icons to the left of each Player name on the Player Tree. Grayed out player names indicate the player is disabled because they are not of the same type as the added members. Different player types cannot be combined in a group because they do not share the same speed characteristics.

Players loaded on Center Stage are disabled within the Players Tree.

- Removing Group Members
  1. Select the group from the Group Tree.
  2. Select the player member from the Members Tree and press the Remove Member button.

Once a player has been removed it will be moved from the Members Tree back to the Players Tree.

- Changing the Primary Player

The primary player of a group serves as the lead player in the group. It cannot be assigned an offset. It therefore will move to the assigned setpoint whereas group members will move to the assigned setpoint plus the assigned offset. The Primary Member default is the first player that is added to the group. To change the primary player default, do the following:

1. Select the player member from the Member Tree and drag it to the Primary Player field in the Group Panel.

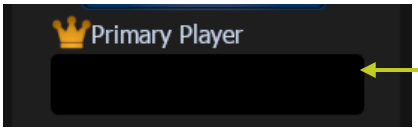


Figure 53 Primary Player Display

- Assigning Player Offsets

The player offset is the magnitude of position difference from a member in a group to the primary player. The offset can be positive or negative. Each member can be assigned an offset using the sliders in the Primary Member and Player Offsets Panel.

The Primary Member is highlighted in the group color.

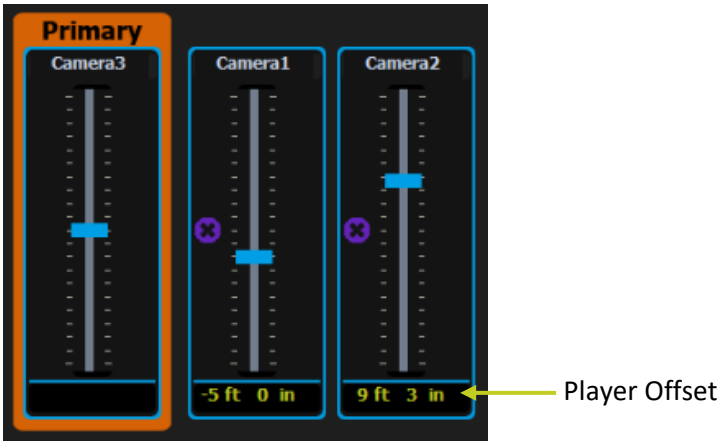


Figure 54 Primary Member & Player Offsets Panel

1. Select and move the slider in either the positive or negative direction to adjust the offset.

The default offset is zero.

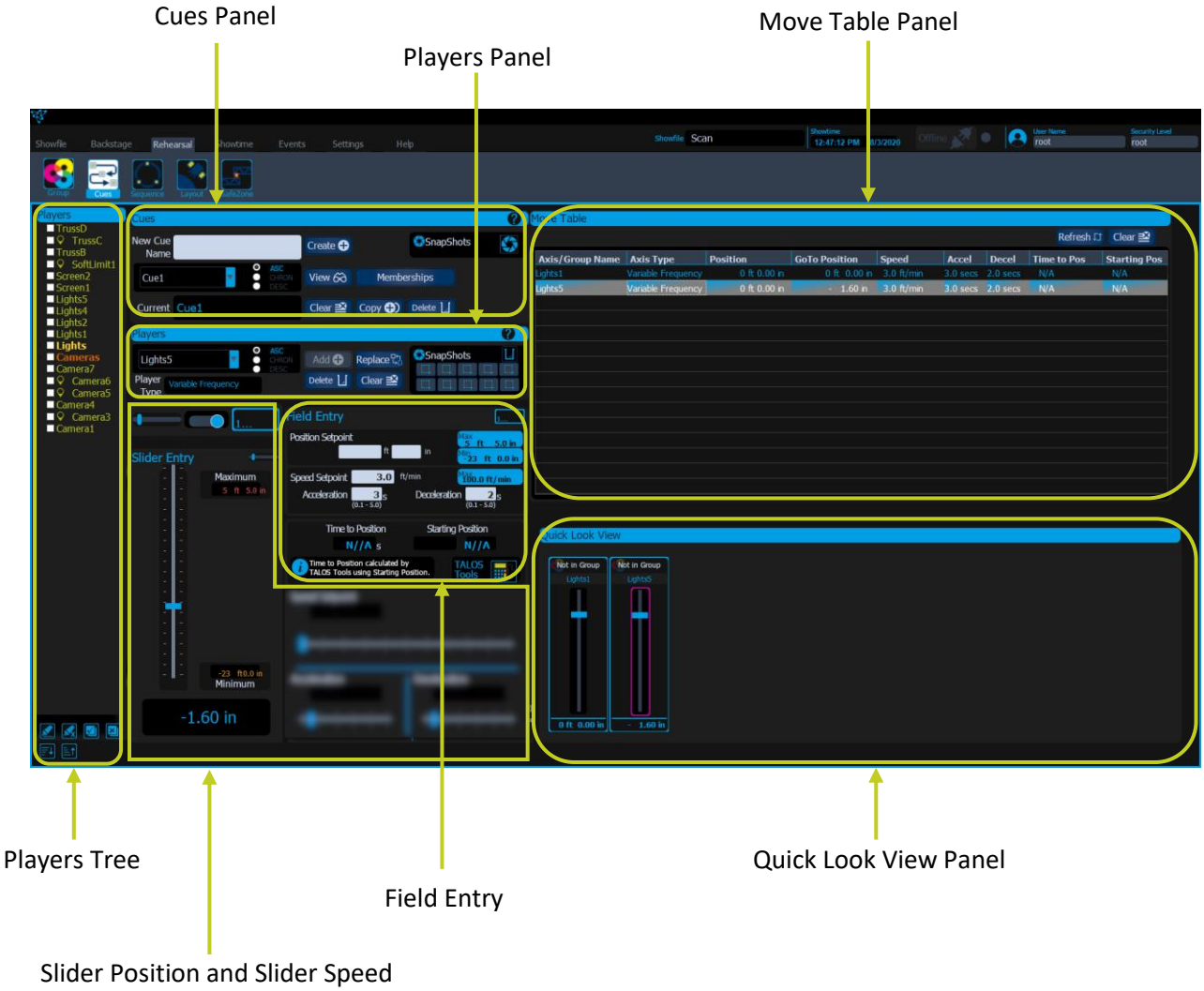
Rehearsal-Cue

The purpose of the Rehearsal-Cue screen is to create and edit cues. A cue is a group of concurrent moves in which one or multiple players are assigned to move to a pre-determined position. Each move in a cue must have a player or group of players assigned as well as a position setpoint. If the player(s) is controlled by a variable frequency drive (VFD), speed parameters must also be assigned. position, speed, acceleration, and deceleration can be different for each move in a cue.

Navigation

Stage Left>Rehearsal> Cue

- Screen Layout



IMPORTANT
When entering a negative number for position fields in TALOS the negative number is only permittable in the foot or meter field, not in the inches field.

- Cue Panel Control

The Cue Panel houses the Create, View, Clear, Copy, Delete, Membership and SnapShots buttons. The selected cue is indicated on the Cue Panel.

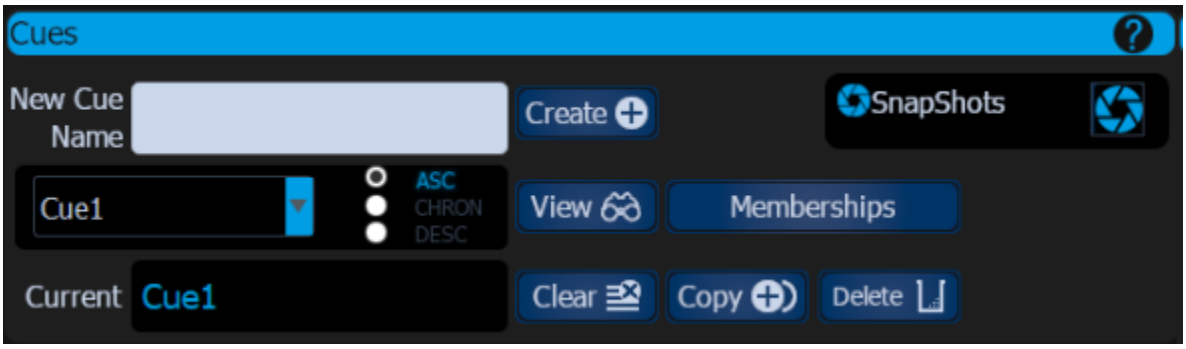


Figure 55 Cue Panel

Cue Panel Table

Control	Graphic	Function/ instructions
Create		Creates a new cue.
View		Displays all the moves programmed in the selected cue in the Move Table.
Memberships		Displays the Memberships popup which lists the sequences the current cue belongs to.

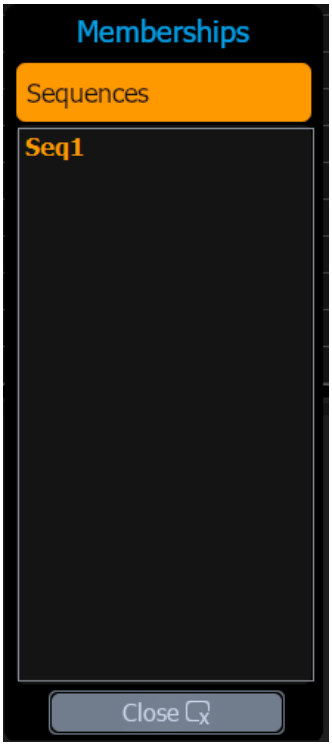
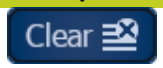
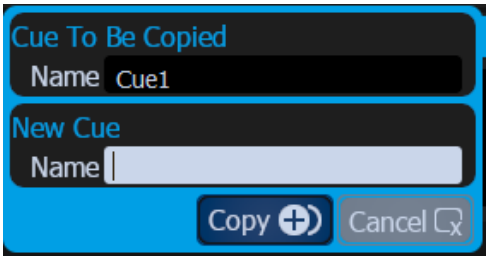


Figure 56 Membership popup

Control	Graphic	Function/ instructions
Clear		Clears the current cue.
Copy		Displays the Copy popup.  *Figure 57 Cue Copy popup* 1. Press the Copy button. 2. Enter a new cue name in the text field. 3. Press the Copy button on the popup to copy the cue under a new name.
Delete		Deletes the current cue. A warning window will appear for user to confirm deletion.
Cue SnapShots		Captures all the players loaded on Center Stage. Each player is assigned as a move in the current cue with the actual position of the player as the position setpoint. If the player is controlled by a VFD, the commanded speed, acceleration and deceleration parameters will be captured as well. When captured the moves will appear in Move Table.

- Players Panel

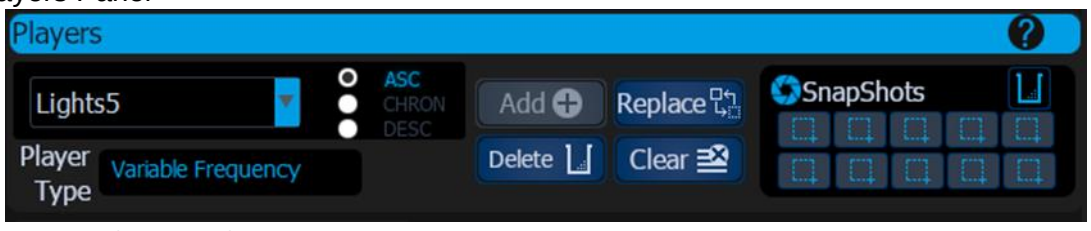


Figure 59 Players Panel

The Players Panel houses the Player dropdown menu along with the Add, Replace Delete, Clear and SnapShots buttons.

Player type is also displayed in the Players Panel.

Player Snapshots

SnapShots are stored player positions captured from players loaded on Center Stage.

The Snapshots buttons on the Players Panel stores up to 10 player-positions.

Stored positions can be applied as a player's position setpoint.

SnapShots that are out of range appear red and will not be assigned.

Players Panel Table

Controls	Graphics	Function/Instructions
Add		Adds the configured move to a cue.  A warning window will appear indicating that the Add button is disabled when Field is out of range.
Replace		Replaces a move in a cue with any edits that were made.  A warning window will appear indicating that the Player is to be Replaced.
Delete		Deletes move from current cue.
Clear		Clears all move parameter fields.
Player SnapShots		Press to apply stored position as setpoint. Roll over SnapShots to view tool tip of stored position setpoint values.
SnapShots delete		Drag and drop on individual SnapShots to delete stored position data. Press to Delete stored positions from all SnapShots.

- Creating a New Cue

Figure 58 Creating a New Cue (Cue Panel)

1. Type the name of the new cue and press the Create button.

> All panels other than the Cue Panel appear invisible until a Cue has been created.

- Assigning Moves to a Cue

A move is the repositioning of a player or group from their origin.

Moves are created by assigning a player position and speed parameters setpoints (if applicable) through either the Slider or Field Entry methods.

Position setpoint is the distance from the player's 0 reference that the player will move.

Speed is the rate the player moves from its starting position to its designated setpoint.

Acceleration is the time in seconds that a player will reach its targeted speed.

Deceleration is the time in seconds that it takes a player to come to rest when it receives a stop command from the controller.

1. Select a player from the Player dropdown menu. The menu can be sorted in ascending, descending or chronological order.

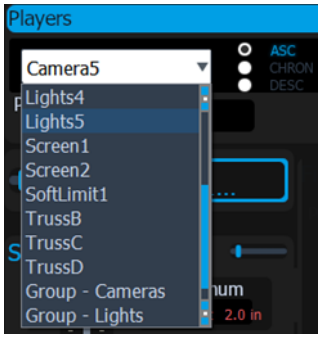


Figure 59 Player Dropdown Menu

2. Set a position setpoint by using the Position Slider or Field Entry. The User Input button switches between the two entry modes.

Using Slider Entry:

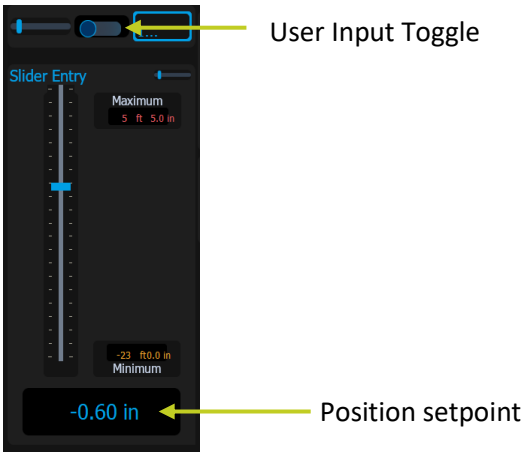


Figure 60 Slider Entry-Player Position

Slider resolution can be adjusted from the Settings screen.

Adjust the slider or use the mouse scroll to adjust the position setpoint. Maximum and minimum values are indicated and cannot be exceeded.

Using Field Entry

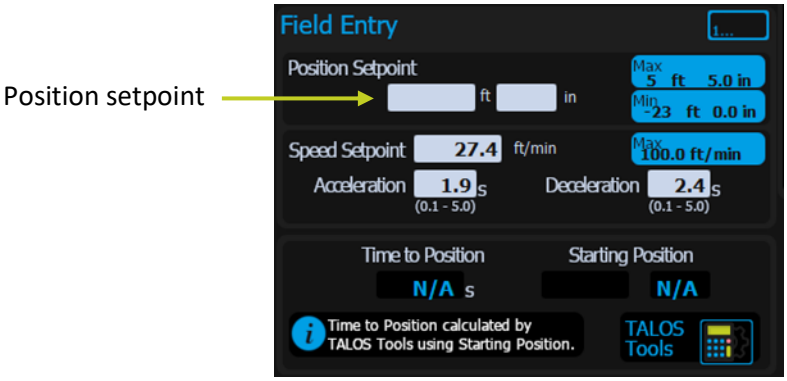


Figure 61 Field Entry- Position setpoint

Enter a setpoint for position in the Position Setpoint field. Blue boxes to the right indicate Max and Min values.

3. Set the speed setpoint by using the Speed Slider or Field Entry. The User Input button switches between the two entry modes. (For VFD controllers only)

Using Slider Entry

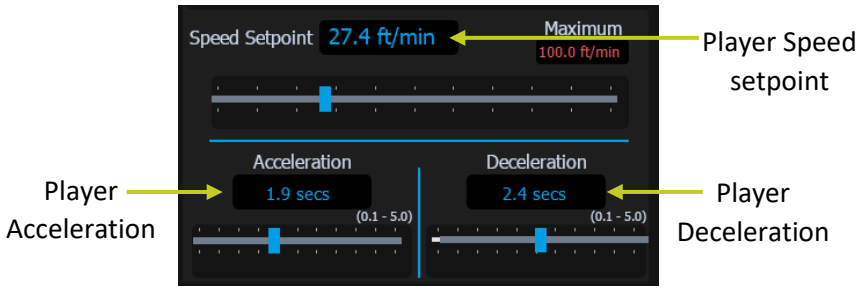


Figure 62 Slider Entry- Player Speed

Adjust the slider or use the mouse scroll to adjust the setpoints for speed, acceleration and deceleration.

Using Field Entry

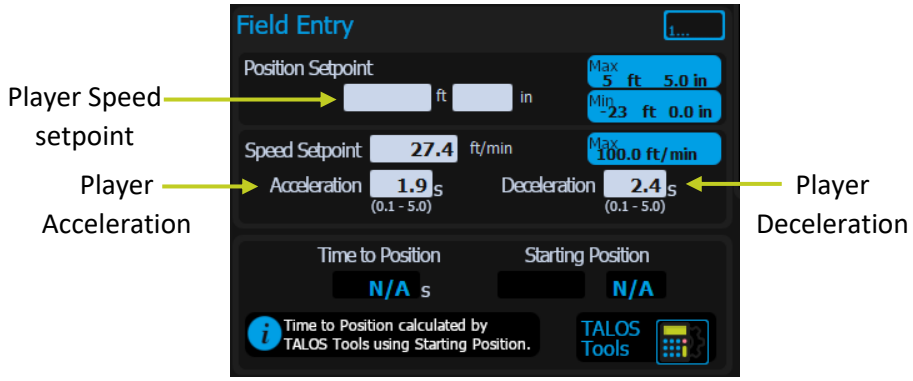


Figure 63 Field Entry- Speed

Enter in speed setpoint, acceleration and deceleration in the provided fields. Blue boxes to the right of each entry indicate min and max values. If values are exceeded an out-of-range display will appear.

The Speed parameters section is only displayed for players controlled by VFDs.

Use the Time to Position Calculator provided in TALOS Tools to calculate speed for a given time in seconds. This is accessed by pressing the TALOS Tools button in the Field Entry Panel (See TALOS Tools)

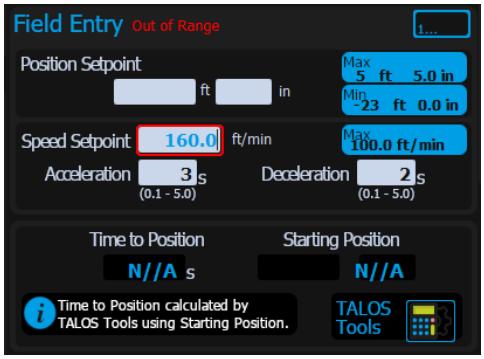


Figure 64 Field Entry Out of Range

4. Press Add button in the Players Panel to add the move to the cue.

- Using the Move Table

The Move Table displays a list of all the moves assigned to the selected cue.

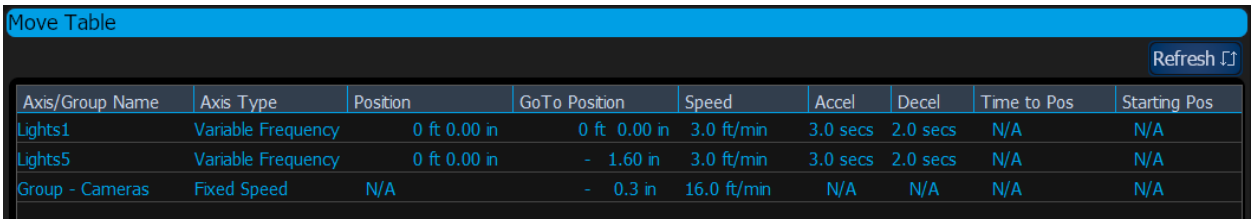


Figure 65 Move Table

1. Select a move from the Move Table. The player or group and its move parameters will load in the Slider Position and Slider Speed/Field Entry window. The selected player is highlighted in the Quick Look View Panel.

Time to Position and Starting Position will be displayed if they were used to calculate speed with the Time to Position Calculator. The Time to Position parameter is only valid if the player starts at the Starting Position indicated.

Figure 64 Move Table

Move Table Controls Table

Control	Graphic	Function/Instructions
Refresh	Refresh	Refreshes all the moves in Move Table

- Using the Quick Look View

Provides a graphical view of all moves in the selected cue.

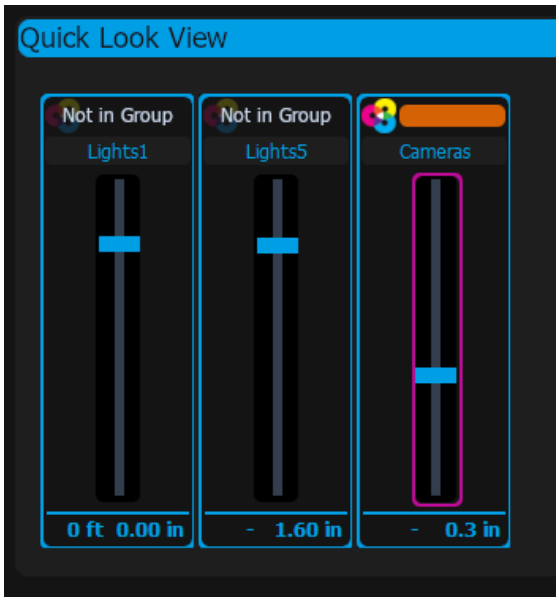


Figure 66 Quick Look View

1. Select a player from the Move Table. A Quick Look View of all players in the current cue is displayed.
2. Select a player from the Quick Look View to load Motion parameters for editing.

The Quick Look View is a quick and easy way to double check Position setpoints.

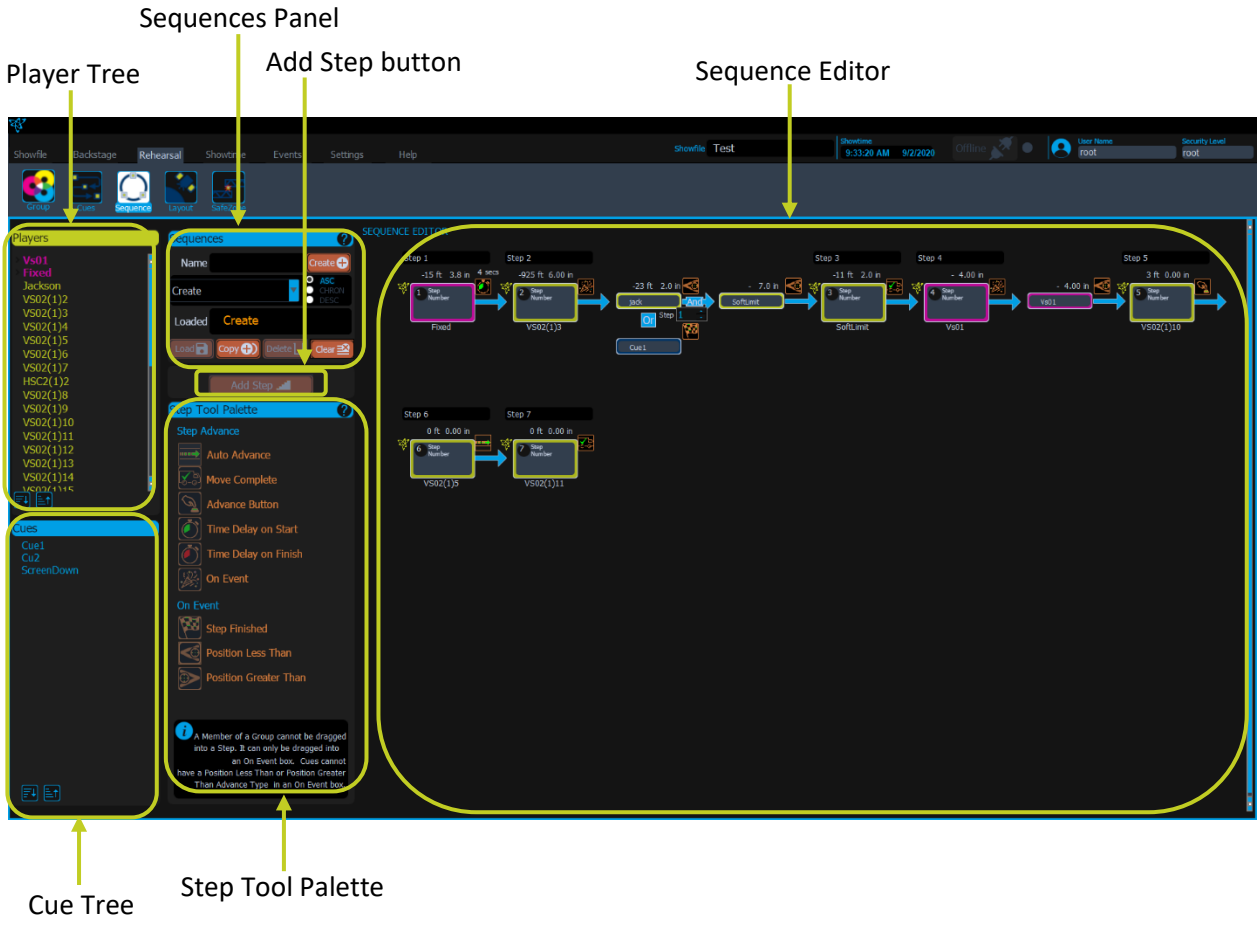
Rehearsal-Sequence

The purpose of Rehearsal-Sequence is to create or edit sequences. A sequence is an enumerated collection of steps that instruct a player, group or cue to move. The step will advance to the next step when the Advance Step Condition has been met. Motion parameters position, speed, acceleration, and deceleration must be assigned for players and groups. (Speed parameters only apply to VFDs).

Navigation

Stage Left> Rehearsal> Sequence

- Screen Layout



- Sequence Panel Controls

The Sequences Panel houses the Create, Load, Copy, Delete and Clear buttons and the sequence Dropdown Menu. The current sequence is indicated on the Sequences Panel.

Figure 67 Sequences Panel

Sequences Panel Table

Control	Graphic	Function/ Instructions
Create		Creates a new sequence with the name typed in the Name field.
Load		Loads the sequence in the Sequence Editor Panel for viewing or editing.
Copy		Displays the Sequence Copy popup.

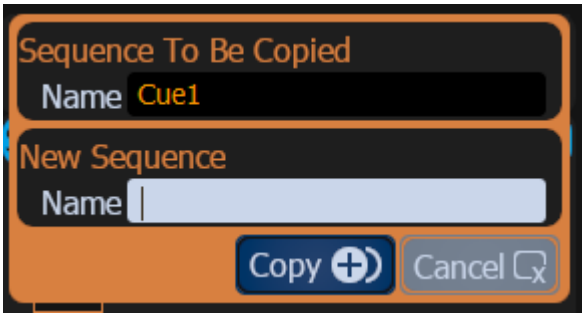


Figure 68 Sequence Copy popup

1. Press the Copy button.
2. Enter a new sequence name in the text field.
3. Press the Copy button on the popup to copy the sequence under a new name.

Control	Graphic	Function/ Instructions
Delete		Deletes the current sequence.
		A warning window will appear for the user to confirm deletion.
Clear		Clears current sequence from Sequence Editor.

- Creating a New Sequence
  1. Type in a sequence name in the available text field.
  2. Press the Create button. The sequence is added and set as the current sequence.

- Adding steps to a Sequence

Each step in a sequence must have a player, group, or cue assigned to it and an Advance Condition. If a player or a group is assigned, motion parameters must also be assigned.

1. Press the Add Step button. An empty Step Pad is added to the current sequence.

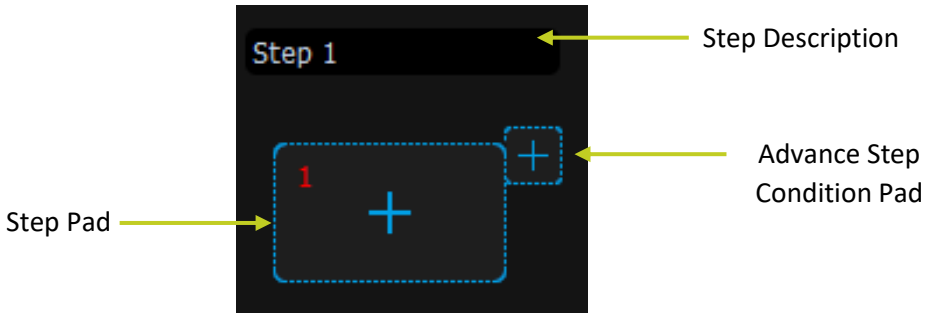


Figure 69 Empty Step Pad

Default Step Descriptions are assigned as the Step Number. They can be edited by typing in the Step Description field.

The step number will turn red if the step does not validate when the User Validates the Sequence from Center Stage

2. Drag and drop a player, group or cue from either the Player Tree or the Cue Tree to the Empty Step Pad. This will assign the player,group or cue to the step.

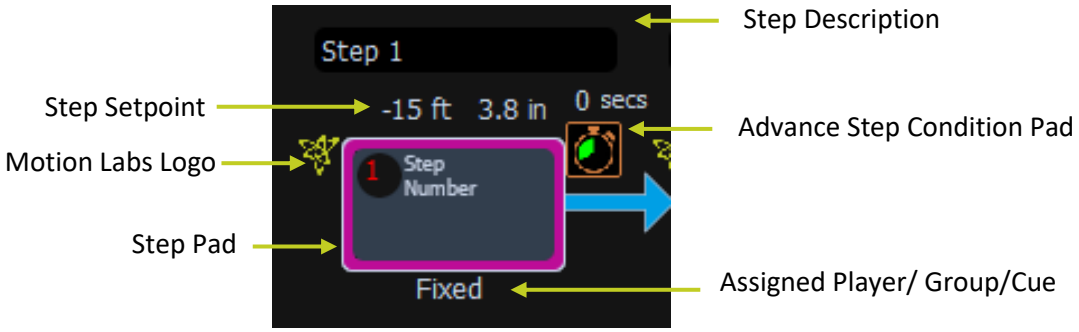


Figure 70 Step Pad

Step numbers displayed in red indicate that sequence will not be validated when loaded onto Center Stage.

The Step Pad displays the step number, the name of the assigned player/ group/ cue and setpoint (if applicable).

The Setpoint Field will not be displayed when a Cue is assigned to a step.

3. Drag and drop step instructions from the Step Tool Palette. If a player or group is dropped into the Step Pad the Step setpoint field will appear. Add setpoint parameters (player and group only).

4. Assign an Advance Step Condition by dragging a Advance Condition Smart Icon from the Step Tool Pallet to the Advance Step Condition Pad

Selecting Motion Lab's Logo will display the step Detail Popup.

5. Select the displayed setpoint (players and groups only) This will display the player or group Parameter popup:

Figure 71 Parameters popup

Enter/Edit player position and speed parameters (Speed parameters only apply to VFDs)

- Using the Step Tool Palette

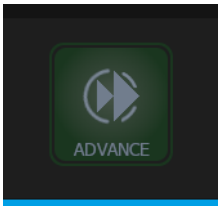
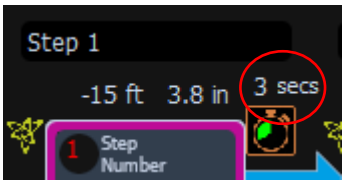
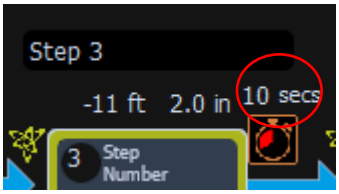
The Step Tool Palette houses the Step Advance Condition Smart Icons and On Event Condition Smart Icons.

A Step Advance Condition is the condition that must be met for a step in as sequence to index to the next step.

Figure 72 Step Tool Palette

1. Drag and drop an Advance Condition Smart Icon from the Step Tool Palette to the Advance Step Condition Pad. The Advance Condition is added to the step.

Advance Condition Smart Icons Table

Name	ICON	Function
Auto Advance		Current step will automatically index to next step.
Move Complete		Current step will index to the next step when the player or group reaches its setpoint or when a cue is done executing.
Advance Button		Current step will index to the next step when the Advance button is pressed on the Control Panel.  *Figure 73 Control Panel- Center Stage- Sequence*
Time Delay on Start		Current step will index to next step after the time delay has been reached. The timer starts timing at the beginning of the step. When the user assigns this condition Timer Entry Field will appear to allow the user to enter the time delay in seconds.  *Figure 74 Time Delay field- On Start*
Time Delay on Finish		Current step will index to next step after the time delay has been reached. The timer starts timing at the end of the step when the moves have been completed. When the user assigns this condition a Timer Entry Field will appear to allow the user to enter the time delay in seconds.  *Figure 75 Time Delay Field-On Finish*

Name	ICON	Function
On Event		An On Event Advance Condition allows the user to assign multiple conditions that must be met to advance the step. (See Using On Event Advance Conditions for details)

- Step Viewer

The user can display more information on the step by selecting the Motion Labs' logo at the corner of the step. The following popups can be displayed depending on the type of axis or move in the Step Pad.

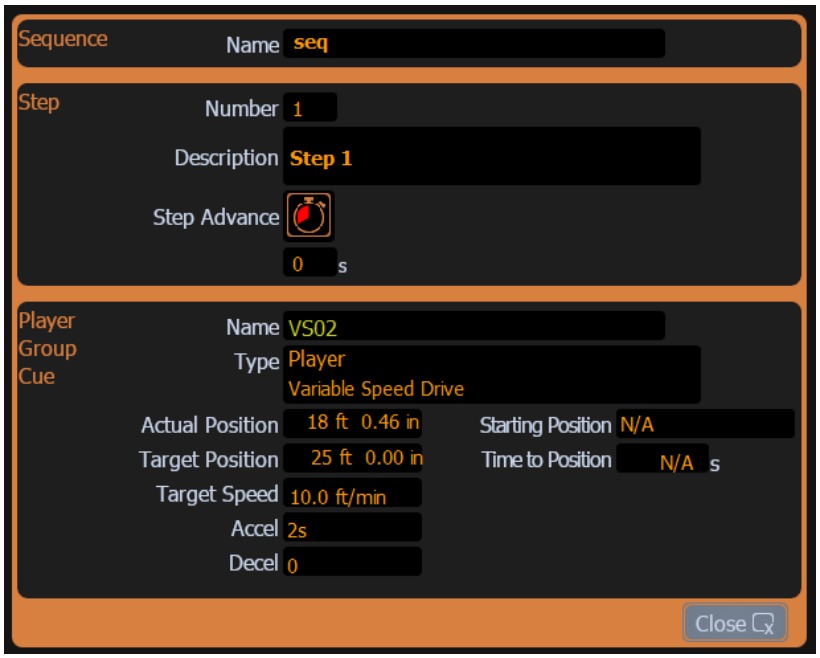


Figure 76 Players Step Detail Panel

Figure 77 Cue Step Detail Panel

Figure 78 Cue Step Detail Pane- View

Figure 79 Group Step Detail Panel

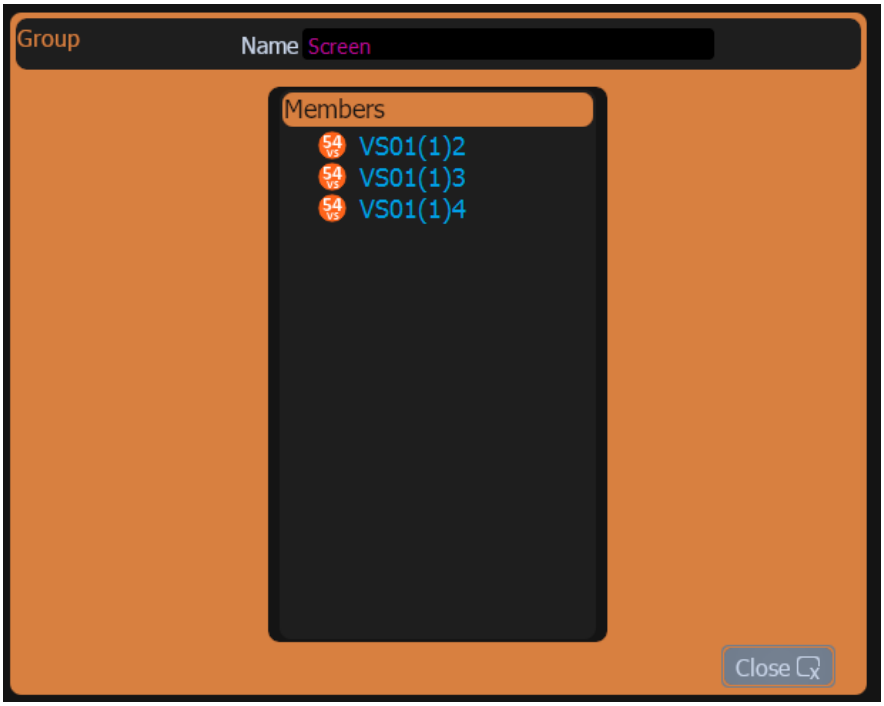


Figure 80 Group Step Detail Panel-View

- Using On Event Advance Conditions

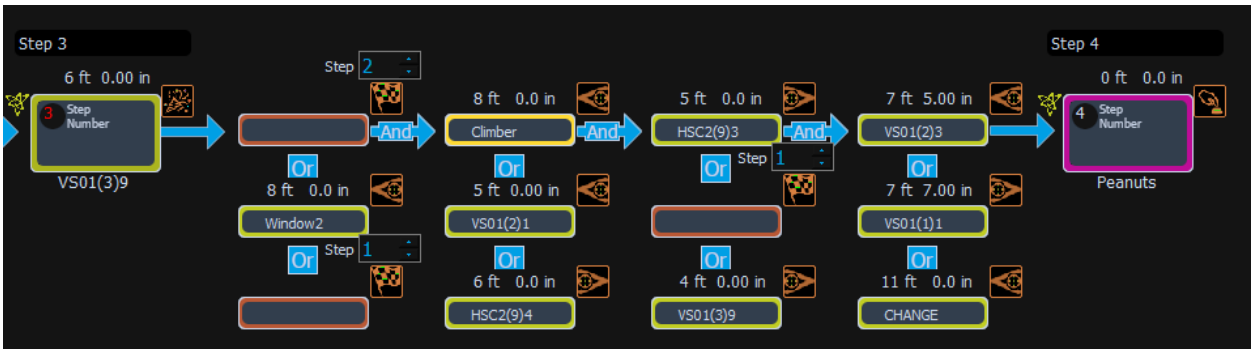


Figure 81 On Event Conditions Max of four AND conditions and three OR'ed conditions per AND operator.

An On Event Advance Condition allows the user to assign multiple conditions that must be met in order to advance the step. This is done by using "AND" and "OR" operator logic commonly used in programming.

The AND operator is an operator that performs a logical conjunction on two conditions. It only yields a value of "true" when both conditions are true. If one of the two conditions is false, then the logic AND operator yields a "false" value. The OR operator is a logic function which yields a value of "true" if either one of the conditions is true. If both statements are false, then the logic OR operator yields a "false" value.

A maximum of four AND operators is permitted in TALOS and a maximum of three OR operators per AND condition.

Cues cannot be assigned to an On Event

1. When an On Event Advance condition is assigned an On Event Pad will appear. This is the first On Event condition. Drag and Drop the On Event Advance Condition Smart Icon from the Step Tool Palette.

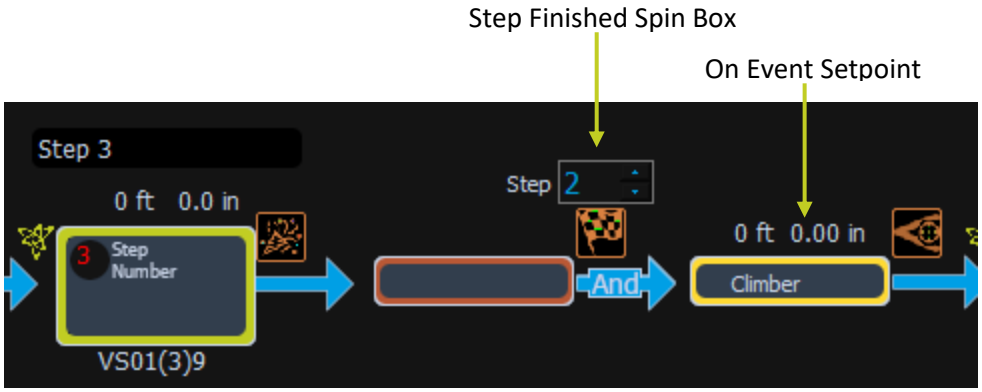
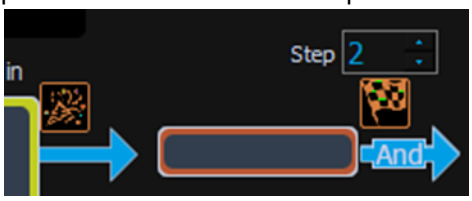


Figure 82 On Event Entry Fields

2. Right-click on the On Event box to add additional AND/OR conditions.

An On Event Condition is TRUE when the On Event Advance Condition has been met. See table below.

On Event Smart Icons Table

Name	Icon	Function
Step Finished		When a Step Finished condition is assigned the user will be prompted to input a step number. The condition is true when the assigned step has finished running. (This condition cannot be used in step 1). Enter Step Finished Number in the Step Finished Spin box.  *Figure 83 On Event Spin Box* Max value of the Step Finished Spin Box is the step before the current Step. Nothing can be assigned to the On Event pad when the Step Finished Condition is assigned.
Position Less Than		When a Position Less Than condition is assigned, the user must assign a player or a group to the empty On Event Pad (A cue is not permitted) and a position setpoint. The condition is true when the assigned player or group's Primary has reached a position that is less than or equal to the configured position setpoint.
Position Greater Than		When a Position Greater Than condition is assigned, the user must assign a player or a group to the empty On Event Pad (A cue is not permitted) and a position setpoint. The condition is true when the assigned player or group's primary player has reached a position that is greater than or equal to the configured position setpoint.

- AND/OR Operations in TALOS

(For more details on ANDing and ORing operations see Center Stage /Sequences)

- Editing Step Order

The user can reorder steps in a sequence by right-clicking on the step pad and selecting the direction to move the step. Step numbers will be reordered.

The Move Step Forward option moves the selected step one place ahead in the sequence. Steps numbers will be reordered.

The Move Step Backward option moves the selected step one place back in the sequence. Step numbers will be reordered.

- Inserting a Step in a Sequence

The user can insert a step in a sequence by right-clicking on the step pad and selecting Insert Before or Insert After. An empty Step Pad will appear. Step numbers will be reordered.

- Deleting a Step from a Sequence

The user can delete a step in a sequence by right-clicking on the step pad and selecting Delete Step. The Step will be deleted, and step numbers will be reordered.

- Deleting an On Event condition from a Step

The user can delete a step in a sequence by right-clicking on the On Event condition and selecting Delete Operator. TALOS will delete the operator and rearrange the AND and OR logic accordingly.

Rehearsal-Layout

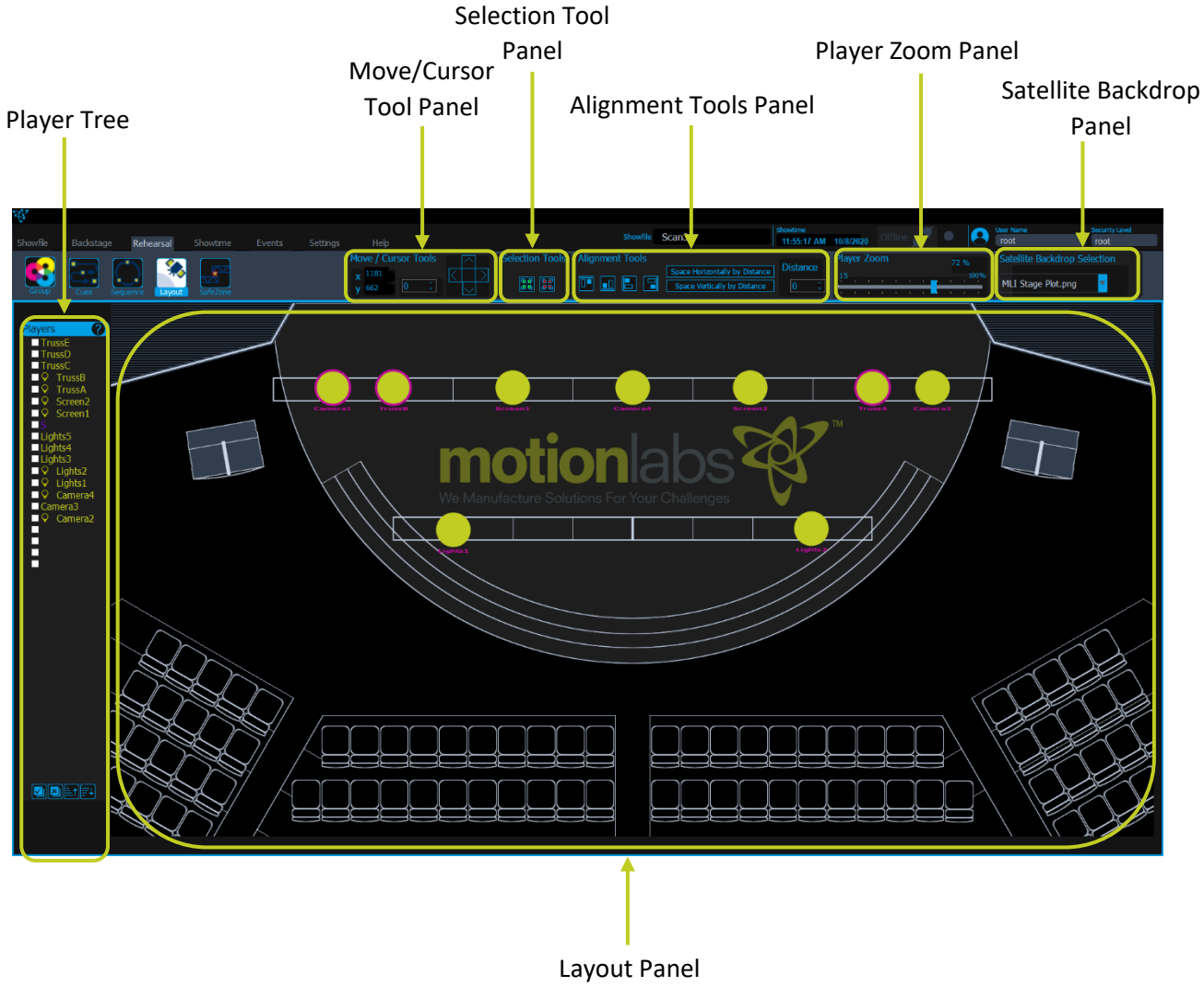
The purpose of the Rehearsal-Layout screen is to allow users to arrange players on a top view of a venue drawing (Satellite Backdrop). This allows the user to monitor players during an event based on their location via Showtime Satellite.

A Satellite Backdrop is a stage machinery plot used in TALOS to show the equipment layout in 2-dimensional space. The acceptable file types are: .tif, .tiff, .jpg and.png. The acceptable resolution of the image is: 1740 x 890.

Navigation

Stage Left> Rehearsal> Layout

- Screen Layout



- Player Tree Controls

The Player Tree houses the Check All, Sweep Offstage, Sort Ascending and Sort Descending buttons. The Player Tree lists all players created Backstage.

A GPS symbol to the left of players indicates that the player has been placed on the drawing and has position coordinates.

Player Tree Table

Controls	Graphics	Function/ Instructions
Check All		Places all players with position coordinates on the layout drawing.
Sweep Offstage		Removes all players from the Layout Panel and unchecks all the players.
Sort Players Descending		Reorders players in descending order on the Player Tree.
Sort Players Ascending		Reorders players in ascending order on the Player Tree.

- Creating a New Layout

A Satellite Backdrop can be loaded for players to be placed (New drawings are added to TALOS under the Settings screen).

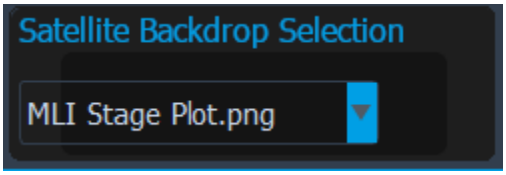


Figure 84 Satellite Backdrop Panel

1. Select the dropdown menu on the Satellite Backdrop to choose from available drawings.
2. Select a drawing. The selected drawing is loaded onto the Layout Panel.

- Assigning Player Positions

1. Drag and drop players from the Player Tree onto the layout drawing. A rigging point icon is displayed as players are dragged into position.

Figure 85 Rigging Point

The tip of the cursor indicates where the center point of the player will be placed.

A warning window will appear if the selected Player is already Positioned on the Layout Panel.

- Editing Layout Panel Display

Player's locations can be removed or edited using the panels located in the Upper Ribbon.

- Removing Player Position Coordinates

Right-click on a player on the Layout Panel and select Remove Position Coordinates to remove the coordinates. The player will be removed from the Layout Drawing.

Move/Cursor Tools

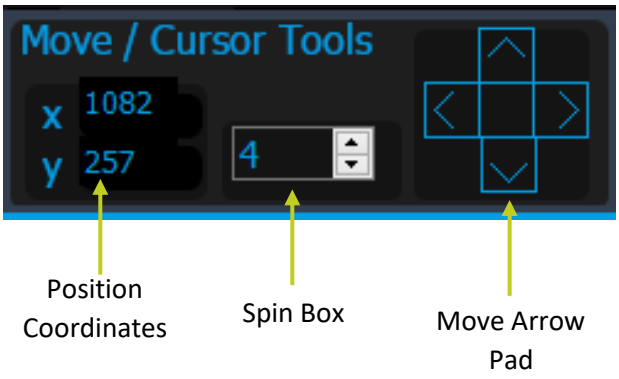


Figure 86 Move/Cursor Tools Panel

The Move/Cursor Control Panel displays the location coordinates for the cursor so that the user has a pixel to distance reference location.

Moving a Player on the Layout Panel

1. Select a player. The selected player is highlighted with a fuchsia border.
2. Enter a value in the Pixel Spin Box or using the up/down arrows to increment or decrement the entered value. The value entered represents the number of pixels the player will move.
3. Using the Move Arrow Pad select the direction the player is to move. The player moves in the selected direction based on the number of pixels entered in the Pixel Spin Box.

Multiple Players can be highlighted to move by selecting the Players with a left mouse click or by pressing the Select All button in the Selection Tools Panel.

Selection Tools Panel

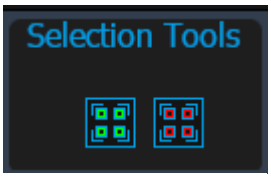


Figure 87 Selection Tools Panel

Selection Tools Table

Control	Graphic	Function/Instruction
Select All		Selects all loaded players on the layout drawing
Deselect All		Deselects all selected players

Alignment Tools Panel

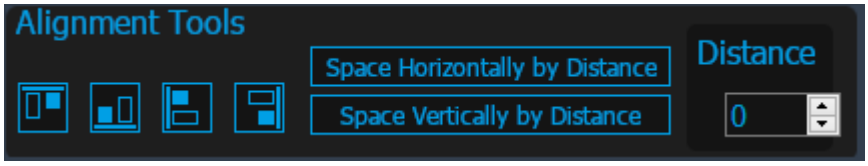
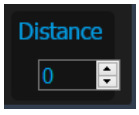


Figure 88 Alignment Tools Panel

The Alignment Tools Panel houses the Align Top, Alight Bottom, Align Left, Align Right, Space Horizontally by Distance and Space Vertically by Distance buttons.

Alignment Tools Table

Control	Graphic	Function/ Instruction
Align Top		Aligns the selected players with the top of the first player selected.
Align Bottom		Aligns the selected players with the bottom of the first player selected.
Align Left		Aligns the selected players with the left side of the first player selected.
Align Right		Aligns the selected players with the right side of the first player selected.
Distance Spin Box		This is the number of pixels a players will be spaced apart by the Space Horizontally/Vertically by Distance buttons.

Control	Graphic	Function/ Instruction
Space Horizontally by Distance	Space Horizontally by Distance	Equally spaces the selected players, horizontally starting with the first player. The spacing distance is based on the number of pixels entered in the Distance Spin box.
Space Vertically by Distance	Space Vertically by Distance	Equally spaces the selected players, vertically starting with the first player. The spacing distance is based on the number of pixels entered in the Distance Spin box.

Aligning Players on the Layout View

1. Select the players to be aligned. Selected players are highlighted with a fuchsia border.
2. Press an Alignment Type button. Players are aligned according to the selected alignment button.

Spacing Players

1. Select the players to be spaced. Selected players are highlighted with a fuchsia border.
2. Enter the number of pixels to space the players in the Distance Spin box. If they are typed in (instead of using up and down arrows) the enter key must be pressed for typed values to be registered.
3. Press Space Horizontally or Vertically by Distance button. Selected players are equally spaced on the Layout Panel.

Player Zoom

Figure 89 Player Zoom Panel

The Player Zoom Panel allows the user to resize players to the scale of the Satellite Backdrop. The zoom level is indicated above the slider.

1. Click and drag the slider to increase or decrease the size of the player. The zoom is applied to all players.

The Zoom Level defined here will be used to scale the Player Status Icons in Showtime Satellite View.

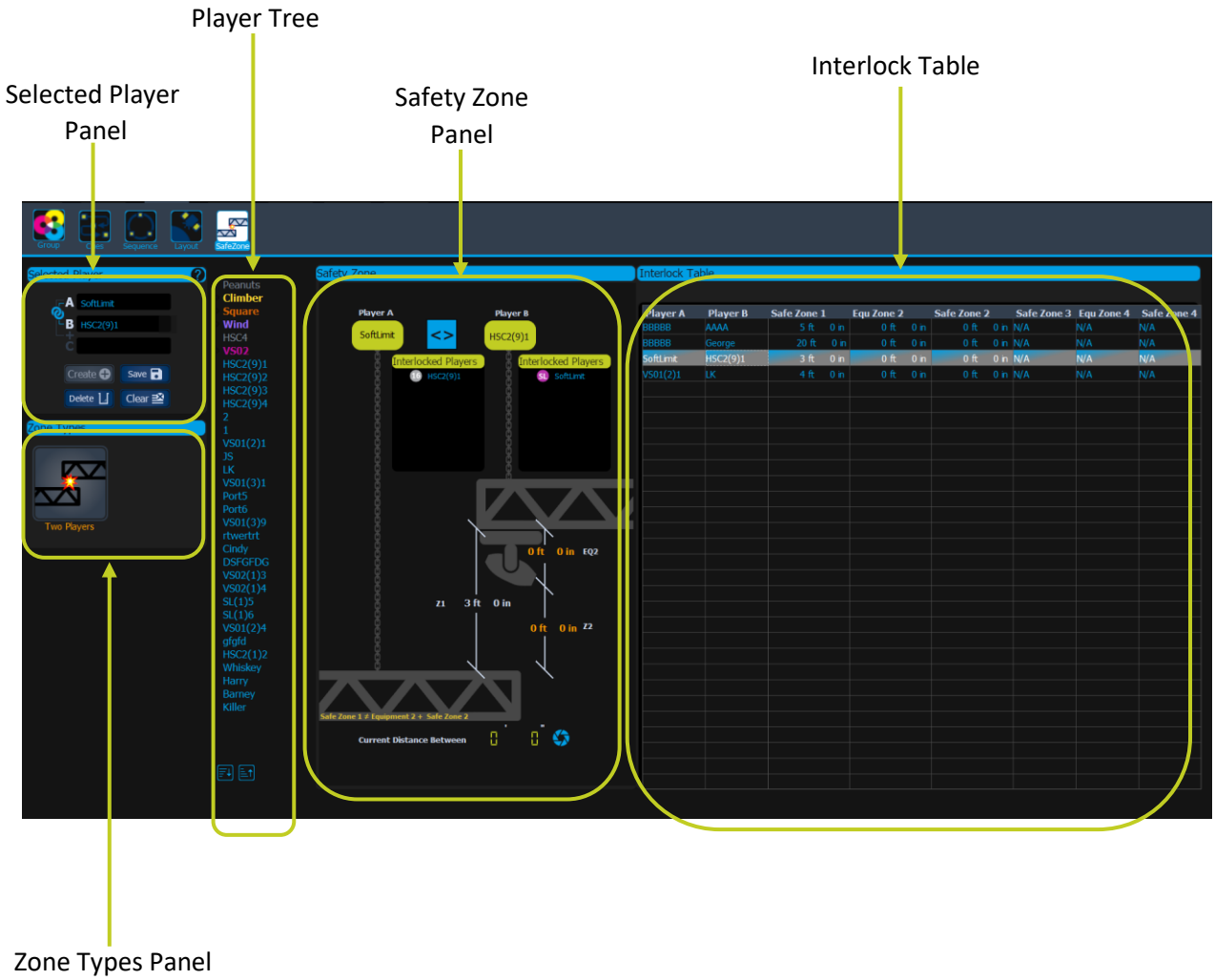
Rehearsal- SafeZone

The purpose of SafeZone is to create interlocks to prevent players from colliding. A SafeZone is the minimum distance allowed between two trusses. If this distance is exceeded TALOS will stop all motion to prevent a collision by executing a Safe Zone fault.

Navigation

Stage Left>Rehearsal> SafeZone

- Screen Layout



The resolution of the SafeZone is +/- 2 inches and therefore should be specified accordingly.

- Selected Player Panel Controls

The Selected Players Panel houses the Create, Save, Delete and Clear buttons. Players for the current SafeZone are displayed.

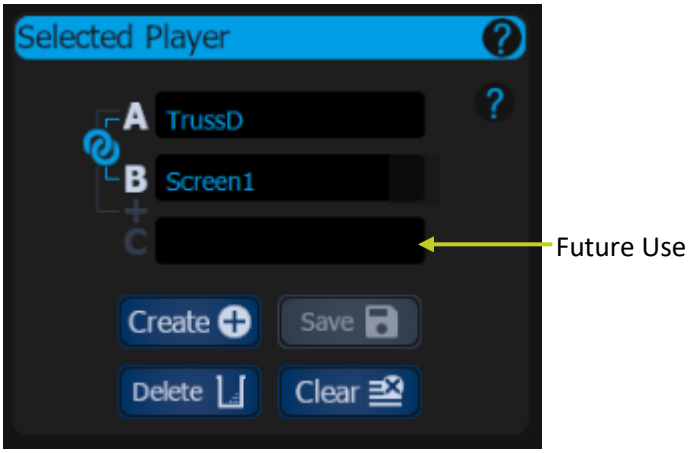


Figure 90 Selected Player Panel

Selected Player Panel Table

Control	Graphic	Function/ Instructions
Create	Create	Creates a new SafeZone.
Save	Save	Saves the SafeZone. SafeZone displays in the Interlock Table. Disabled when players are Armed.
Delete	Delete	Deletes the current SafeZone. Disabled when players are Armed or when selected Interlock is in a faulted state.
Clear	Clear	Clears all the Parameters on the Safety Zone Pane and unselects Interlock in the Interlock Table

- Creating a SafeZone Summary

1. Select a Zone Type from the Zone Types Panel. The Create button is enabled.
2. Press the Create button. This assigns a place holder in TALOS for the Safe Zone and creates a new row in the Interlock Table. Drag and Drop for Player A is enabled.

3. Drag and drop Player A. Drag and drop for Player B is enabled.
4. Set SafeZone Distances. The Save button is enabled.
5. Press the Save button. The interlock is saved and added to the Interlock Table.

- Selecting Zone Types

Currently there is only one Zone Type where two players are interlocked.

1. Select a Zone Type to load the Safety Zone Display.

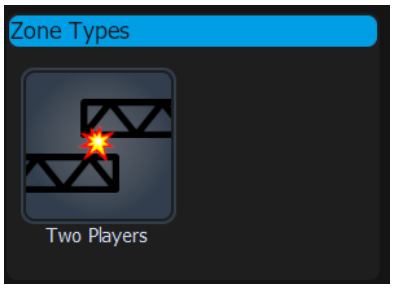


Figure 91 Zone Types

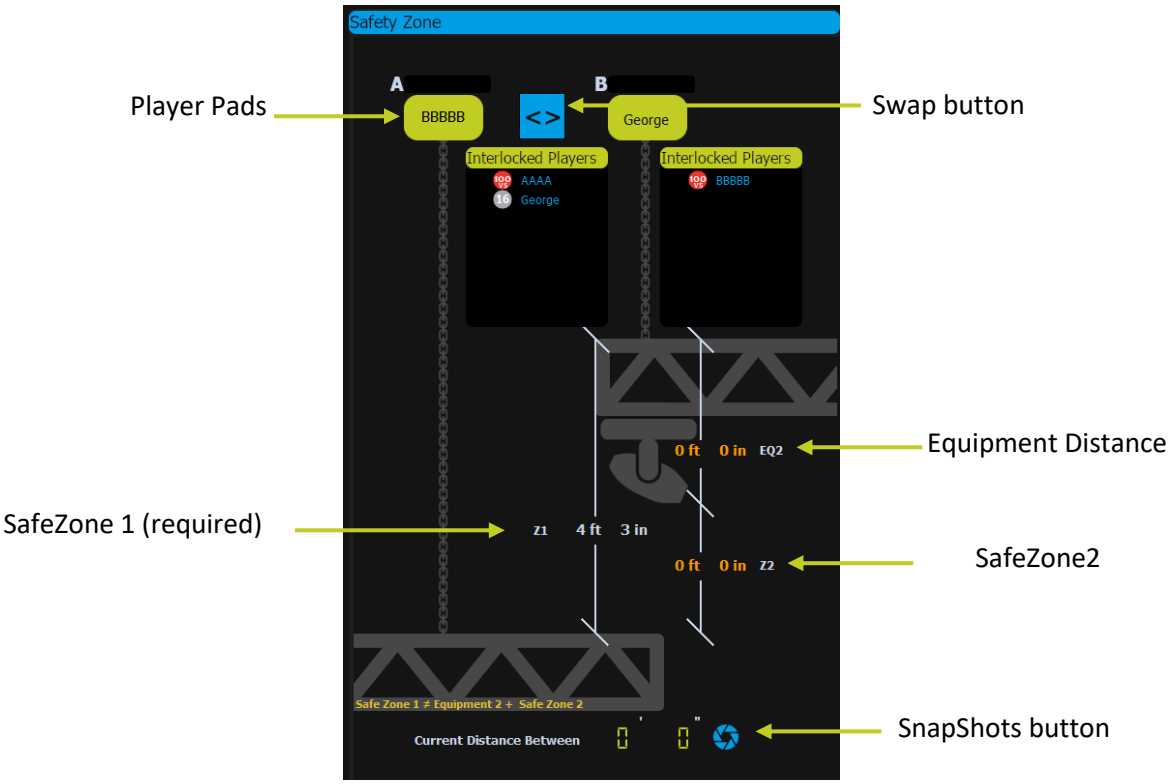


Figure 92 Safety Zone Panel

- Creating a SafeZone
  1. Select the Zone Type to be created. The Zone Type displays in the Safety Zone Panel. The Create button is enabled.
  2. Press the Create button.
  3. Player Pad A is enabled. Drag and drop a player from the Player Tree and drop on Player Pad A to set the first player to be interlocked. Player Pad B is enabled

> A player pad appears dimmed when it is disabled.

  4. Drag and drop a Player from the player Tree and drop on Player Pad B to set the second player to be interlocked.

> Negative Safe Zones are not permitted. if the distance between the two players displays as negative. A positive value can be achieved by either swapping the players via the Swap button or by choosing a different Zone Type.

  5. Enter the SafeZone distance. SafeZone data can be entered in two ways either by typing in the desired values in the Safety Zone Panel or by selecting the snapshot. It will set the current distance between the two players. The Save button is enabled.

> Another way to create SafeZones is by jogging Players on Center Stage-Position to max distance between them and pressing the SnapShot button.

The Operator can specify an Equipment Zone Distance when there is additional equipment attached between trusses. If the user prefers to enter an Equipment Zone which is a measurement from the top of a truss to the bottom of any piece of equipment attached to the truss and a SafeZone Distance below. TALOS will calculate SafeZone 1.

Figure 93 SafeZone Calculation

  6. Press the Save button to save the SafeZone. SafeZone information is loaded onto the Interlock table.

> Interlock Player Panels displayed below both Player A and Player B indicate all interlocked Players for the Player assigned. This is to prevent the duplication of SafeZones.

- Interlocking Groups

Groups cannot be dragged to a Player Pad. If one member of a group is interlocked to another player, all players of the group MUST be interlocked. This is to avoid members of a VFD group having different speed, acceleration, and deceleration parameters when trying to recover from a SafeZone fault. This result when TALOS restricts the speed of all faulted interlocked VFD players to a safe speed. If all the members of the group are interlocked this speed reduction will be executed by TALOS . If they are not interlocked, they will have different speed, acceleration and deceleration parameters unless changed by the user. Neglect to do so could result in the group moving ununiformly.

TALOS will reduce the speed and change the deceleration and acceleration rates of all members regardless if they are interlocked or if an interlocked member enters the Slow Down Zone and their setpoint is greater than 8 ft/min. See Slow Down Zone.

- Using the Interlock Table

Hoist A	Hoist B	Safe Zone 1	Equ Zone 2	Safe Zone 2	Safe Zone 3	Equ Zone 4	Safe Zone 4	Eq Zone 5
TrussD	Screen1	7 ft 0in	2 ft 0in	5 ft 0in	N/A	N/A	N/A	N/A
TrussA	Camera7	6 ft 7in	2 ft 3in	4 ft 4in	N/A	N/A	N/A	N/A

Figure 94 Interlock Table

The interlock table provides SafeZone information for all interlocks in the system. The state of the interlock is represented by the following colors:

Blue -Default State

Motion Labs Green - Actively being monitored on Center Stage

Yellow – Slow Done Zone

Red - Faulted

Gray/Blue Gradient - Selected for Editing

Selecting column titles will re-sort the table in order according to the information stored within the selected column.

1. Select a SafeZone from the interlock table. Selected SafeZone information is loaded onto the Safety Zone Panel.
2. Edit SafeZone parameters for the selected SafeZone.
3. Press the Save button to replace the new SafeZone data.

An onscreen popup will appear to verify that saved SafeZone is to be overwritten.

Players Pads are disabled when an Interlock is in a faulted state or if Players are Armed.

Slow Down Zone

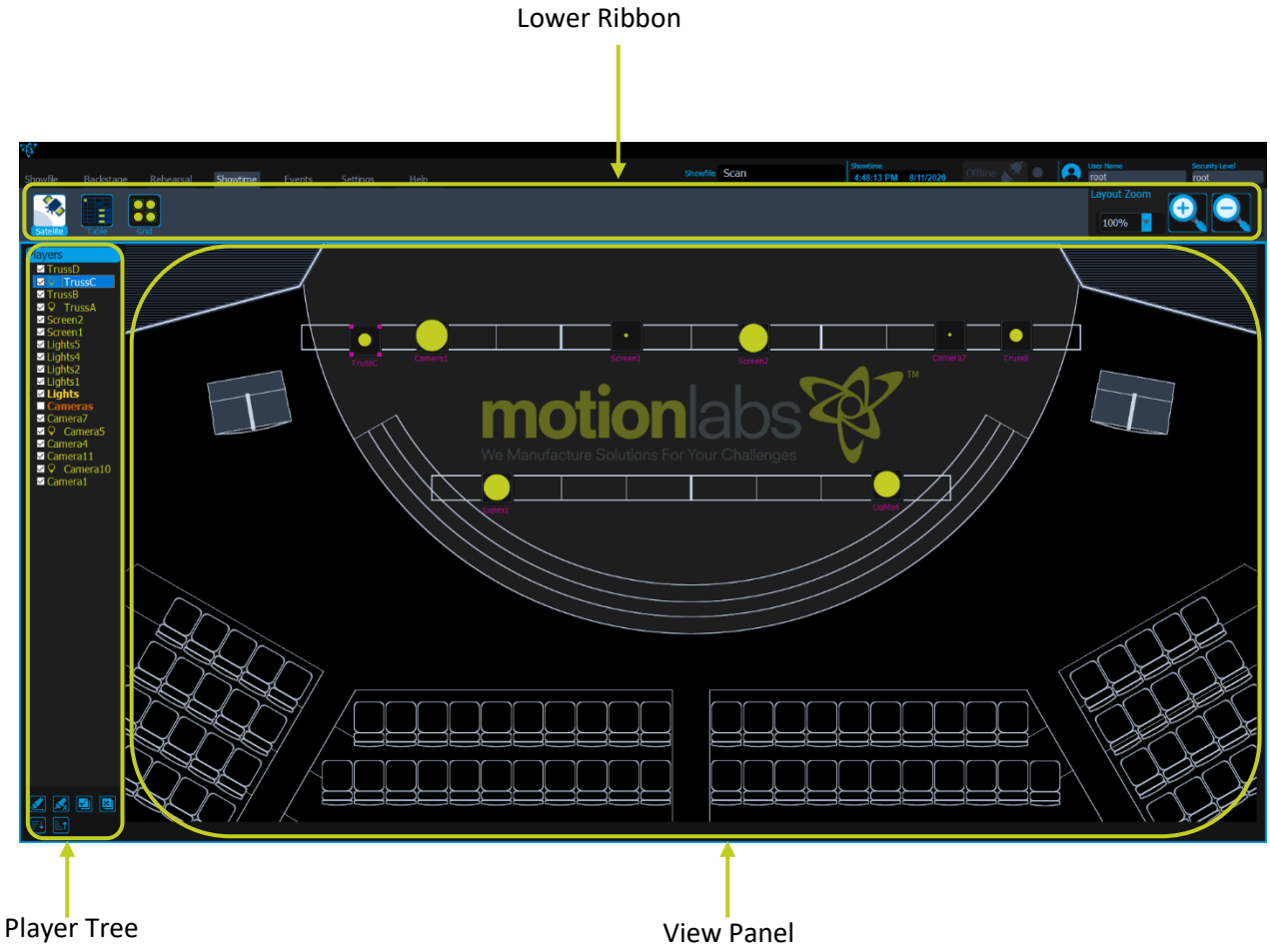
An interlocked VFD player that is approaching the SafeZone Distance at a high rate of speed may need to be slowed down to stop in time. TALOS uses a Slow Down Zone to achieve this. Its position is based on the SafeZone Distance specified by the user and the rate the distance is changing between two interlocked players. TALOS will change the players speed to 8 ft/min and its acceleration and deceleration times to .1 secs if this is required. The Interlock Icon displayed on the player's channel slider or progress bar (Sequence Mode) will change from blue to yellow indicating that the speed change has been issued by TALOS.

Showtime

Showtime Layout

Navigation

Stage Left>Showtime



- Showtime Lower Ribbon

Figure 95 Upper Ribbon

Figure 96 Satellite Screen button

Satellite View is an overhead view of all the checked players from the Player Tree. Players can only be displayed who have been assigned positions on the Rehearsal Layout panel. Satellite Backdrop is displayed in this view.

Figure 97 Table View Screen button

Table View presents player information in a table format.

Figure 98 Grid View Screen button

Grid View is an overhead view in all the checked players from the Player Tree. Players are displayed in rows across the View Panel.

- Player Tree Controls

The Player Tree houses all the players and groups assigned in Backstage. Players and groups can be highlighted or checked. A highlighted player appears on Center Stage when in Manual or Position Control. A checked player appears on Stage Left.

Figure 99 GPS icon

A GPS icon to the left of players in the Player Tree indicates that the player has been located on a Layout drawing in Rehearsal-Layout.

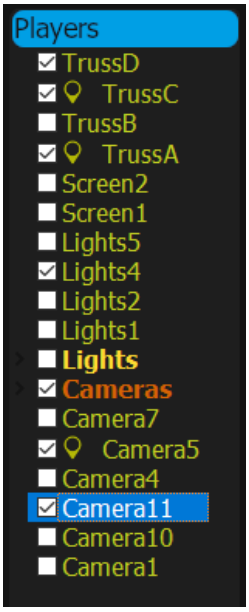


Figure 100 Players Tree

Player Tree Table

Control	Graphic	Function/ Instructions
Highlight All		Highlights all the players in the Player Tree and displays them onto Center Stage when in Manual Mode or Position Mode.
Unhighlight All		Unhighlights all players in the Player Tree and removes them from Center Stage when in Manual or Position Mode.
Check All		Checks all players in the Player Tree and displays them on Stage Left View Panel
Uncheck All		Unchecks all players in the Player Tree and removes all players from Stage Left View Panel
Sort Ascending		Sorts the Player Tree alphabetically in ascending order.
Sort Descending		Sorts the Player Tree alphabetically in descending order.

- Player Status Smart Icons

The Player Status Smart Icons provides a graphical view of the player's position and status.

Player Status Smart Icons appear on Showtime-Satellite View and Showtime- Grid View. The Smart Icon has the following characteristics:

- A circle represents the player's position as seen from the Top View of the player. The closer the player is to its maximum position the bigger the circle will appear in the rectangle that encompasses it. Player Status Smart Icons that touch the borders represent players at their maximum height. A circle that is touching the rectangular border is at its maximum position.
- The circle's color represents whether a player is a member of a group or not. Motion Labs Green is a player that does not belong to a group. Any other color is a group member assigned color.

On VS02 controllers, right click on the player name to see Motor Data Parameter Popup – see figure below.

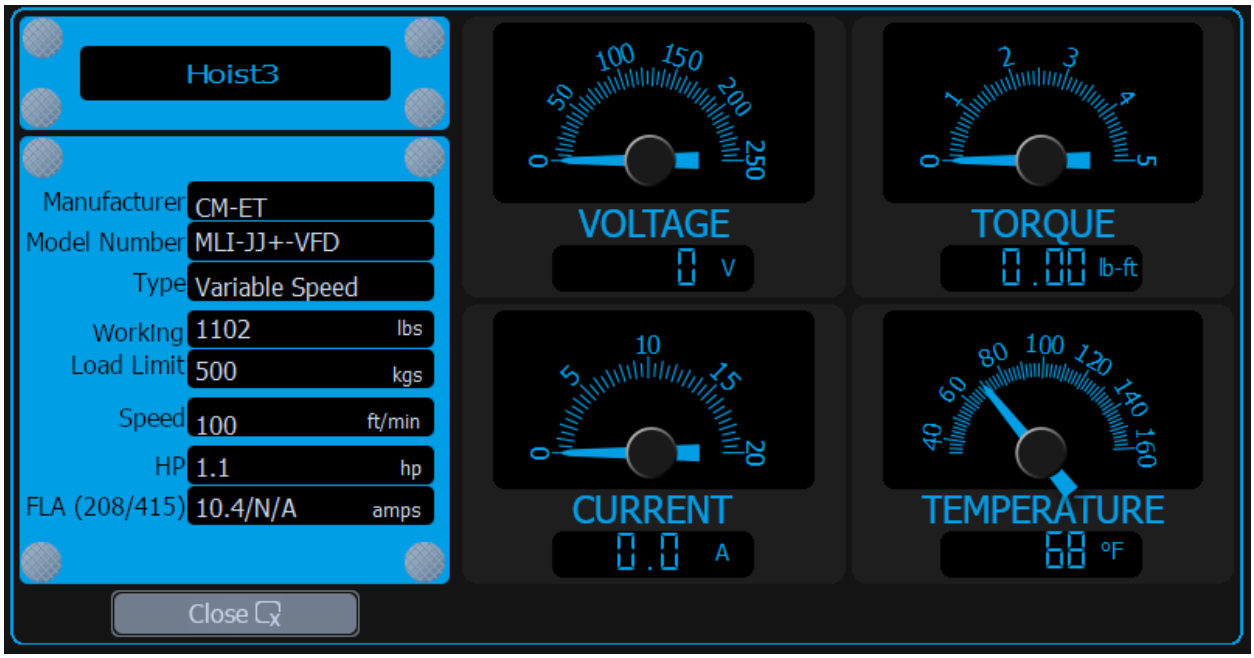
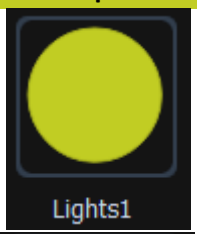
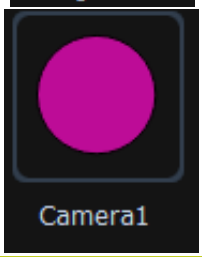
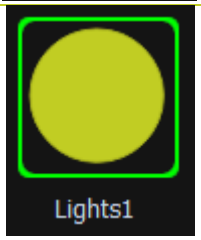
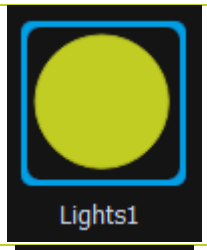


Figure 101 VS02 Motor Data Parameter Popup

Status Smart Icons

Graphic	Status Indication
 	Border Gray - Offline/ Not connected Player Circle -Motion Labs Green indicates this is a player that is not a member of a group. Player belonging to group members are displayed with the player circle shown in the group's color.
	Border Green - No fault
	Border Blue - Player in motion
	Border Red - Player faulted
	Animated alarm banner indicates overweight or underweight fault. When a Weight fault is detected a pulsing red alarm, beacon appears on the Player Status Icon of the faulted player, indicating which player is experiencing the fault. All movement is stopped.

Showtime-Satellite

Showtime- Satellite View displays players whose positions have been assigned in Rehearsal >Layout.

The Satellite Backdrop will appear if one was assigned in Rehearsal>Layout. Players can only be displayed if assigned positions from Rehearsal Layout (See Rehearsal Layout for more details)

Navigation

Stage Left> Showtime> Satellite View

- Screen Layout

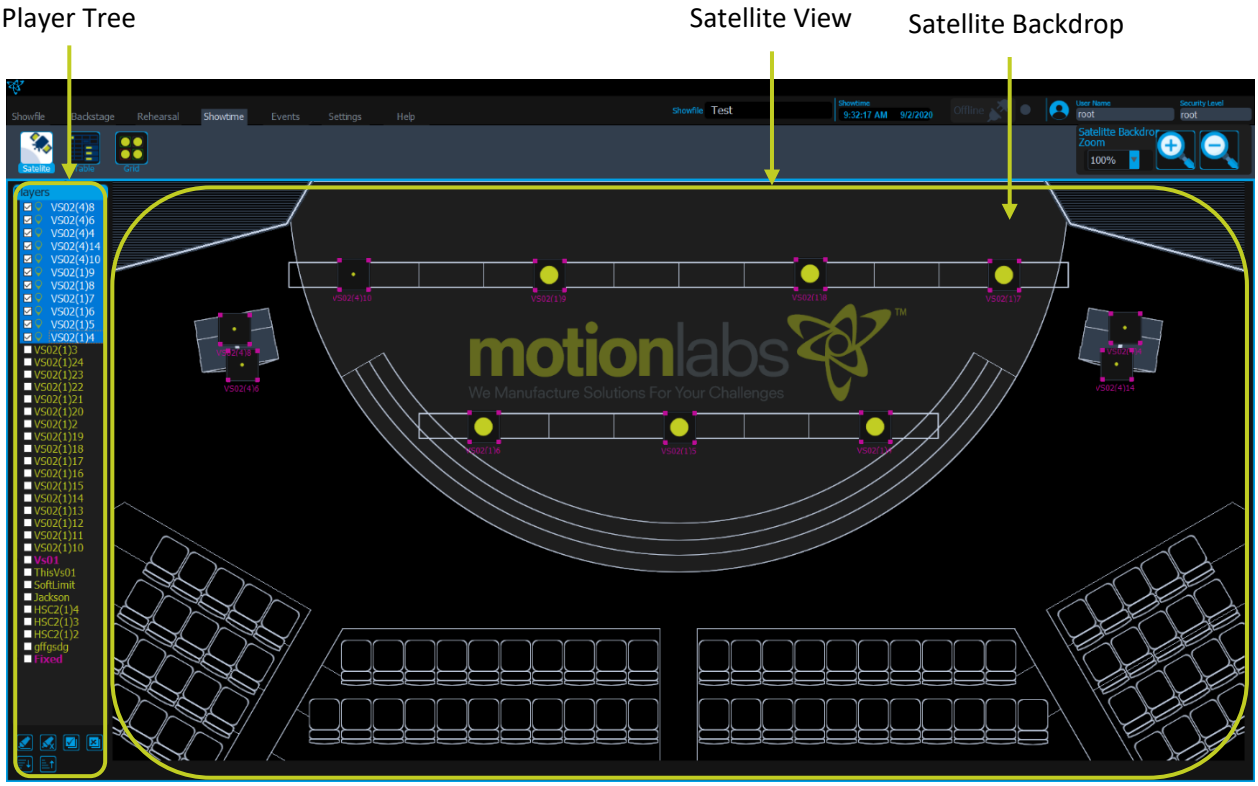


Figure 102 Satellite View

- Loading Players In Satellite View
  1. Press the check box to the left of the Player Names on the Player Tree.
     Only players that have been placed onto a layout drawing in Rehearsal-Layout can be viewed in Showtime-satellite view.

A GPS symbol indicates that a player has been placed on a Layout Drawing and can be viewed in Satellite View.

Players Status Smart Icons are displayed on the View Panel located in their assigned positions

Player Status Icons are scaled according to Player Zoom Level assigned in Rehearsal Layout.

- Satellite Backdrop Zoom

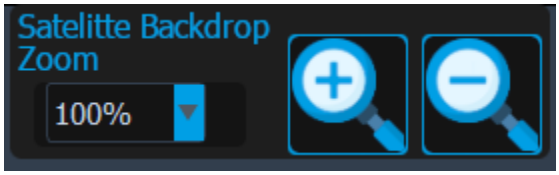


Figure 103 Showtime-Layout Zoom

Satellite Backdrop Zoom allows users to zoom in or out of the selected onscreen Layout Drawing.

The Satellite Backdrop Zoom Panel is only available in Satellite View.

There are two methods of adjusting zoom.

1. Select the Zoom Level Dropdown to switch between four different zoom levels: 100%, 200%, 300% or 400%.

2. Press the Zoom In button to zoom in or press the Zoom Out button to zoom out.

Panning in Satellite View

Panning is available when Zoom Level is greater than 100%.

1. Left mouse-click in the View Panel to enter panning mode. The cursor will change from an arrow to crosshairs to indicate panning mode. This indicates that Panning Mode has been enabled.
2. Right-click to escape Panning Mode and return to a zoom level to 100%

Showtime-Table

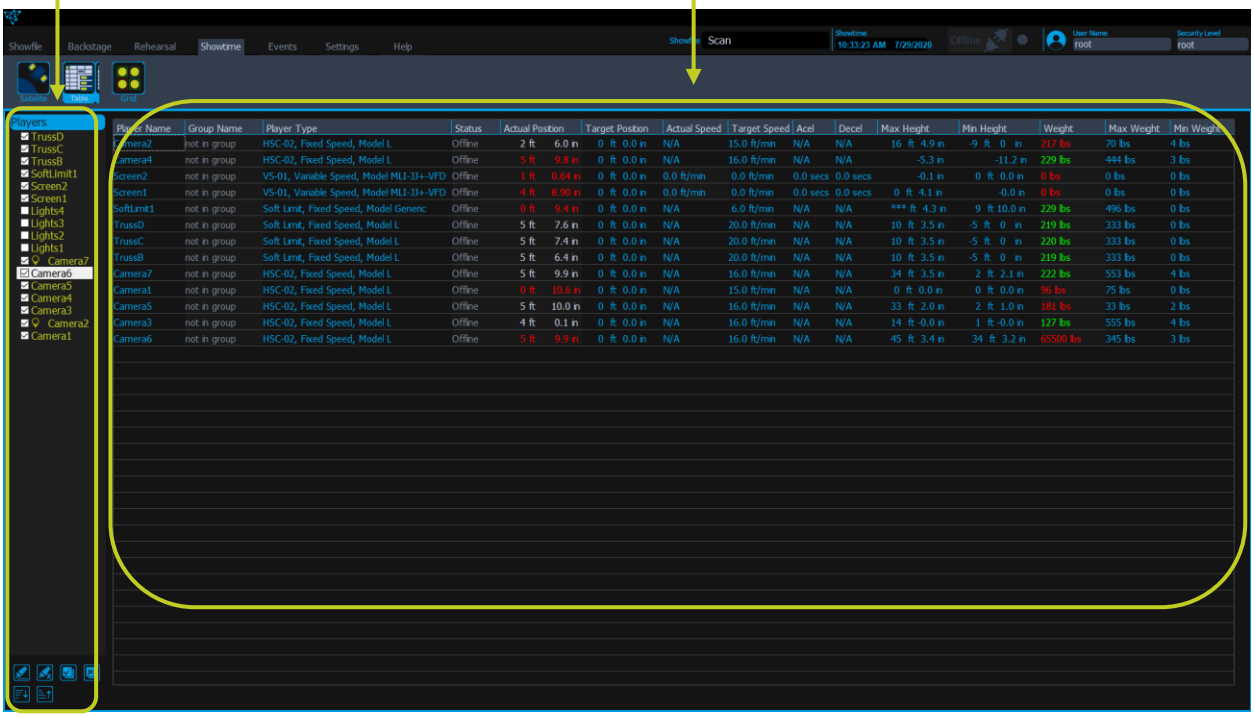
The Player Table displays the following information: Player Name or Group Name, Player or Group Type, Health Status, Actual Position, Target Position, Actual Speed, Target Speed, Acceleration and Deceleration rates, Maximum Height, Minimum Height, Weight, Maximum Weight and Minimum Weight. **Navigation**

Stage Left>Showtime> Table

- Screen Layout

Player Tree

Table View



- Viewing Players in the Table
  1. Select the check box to the left of the player's name in the Player Tree. The selected players information is added to the Table.
  2. Press the Check All button to load all players.

- Using the Table View

Player Name	Group Name	Player Type	Status	Actual Position	Target Position	Actual Speed	Target Speed	Acel	Decel	Max Height	Min Height	Weight	Max Weight	Min Weight
Camera2	not in group	HSC-02, Fixed Speed, Model L	Offline	2 ft 6.0 in	0 ft 0.0 in	N/A	15.0 ft/min	N/A	N/A	16 ft 4.9 in	-9 ft 0 in	217 lbs	70 lbs	4 lbs
Camera4	not in group	HSC-02, Fixed Speed, Model L	Offline	5 ft 9.8 in	0 ft 0.0 in	N/A	16.0 ft/min	N/A	N/A	-5.3 in	-11.2 in	229 lbs	444 lbs	3 lbs
Screen2	not in group	VS-01, Variable Speed, Model MLI-JJ+-VFD	Offline	1 ft 0.64 in	0 ft 0.0 in	0.0 ft/min	0.0 ft/min	0.0 secs	0.0 secs	-0.1 in	0 ft 0.0 in	0 lbs	0 lbs	0 lbs
Screen1	not in group	VS-01, Variable Speed, Model MLI-JJ+-VFD	Offline	4 ft 8.90 in	0 ft 0.0 in	0.0 ft/min	0.0 ft/min	0.0 secs	0.0 secs	0 ft 4.1 in	-0.0 in	0 lbs	0 lbs	0 lbs
SoftLimit1	not in group	Soft Limit, Fixed Speed, Model Generic	Offline	0 ft 9.4 in	0 ft 0.0 in	N/A	6.0 ft/min	N/A	N/A	*** ft 4.3 in	9 ft 10.0 in	229 lbs	496 lbs	0 lbs
TrussD	not in group	Soft Limit, Fixed Speed, Model L	Offline	5 ft 7.6 in	0 ft 0.0 in	N/A	20.0 ft/min	N/A	N/A	10 ft 3.5 in	-5 ft 0 in	219 lbs	333 lbs	0 lbs
TrussC	not in group	Soft Limit, Fixed Speed, Model L	Offline	5 ft 7.4 in	0 ft 0.0 in	N/A	20.0 ft/min	N/A	N/A	10 ft 3.5 in	-5 ft 0 in	220 lbs	333 lbs	0 lbs

Figure 104 Table View

Table View Table

Column Name	Description
Player Name	Name of the player.
Group Name	Name of group that the player is member of. Text appears in assigned group color.
Player Type	Controller type for player.
Status	Status for player (Offline, Configs Match, OK, faulted, player in motion)
Actual position	Current player position. Appears in red if max or min values are exceeded.
Target Position	Player target position.
Actual Speed	Actual speed of player.
Target Speed	Target speed of player (only available for VFD's).
Acceleration	Acceleration rate for VFD.
Deceleration	Deceleration rate for VFD.
Max Height	Maximum height for position setpoint
Min Height	Minimum height for position setpoint
Weight	Current weight of each player.
Max Weight	Maximum weight allowed for player.
Min Weight	Minimum Weight allowed for player.

Select a column to sort player data according to column header. All columns will be sorted so that the player's data stays with the correct

Acceleration rates are not accessible to TALOS for VS01 controllers and must be changed at the controller

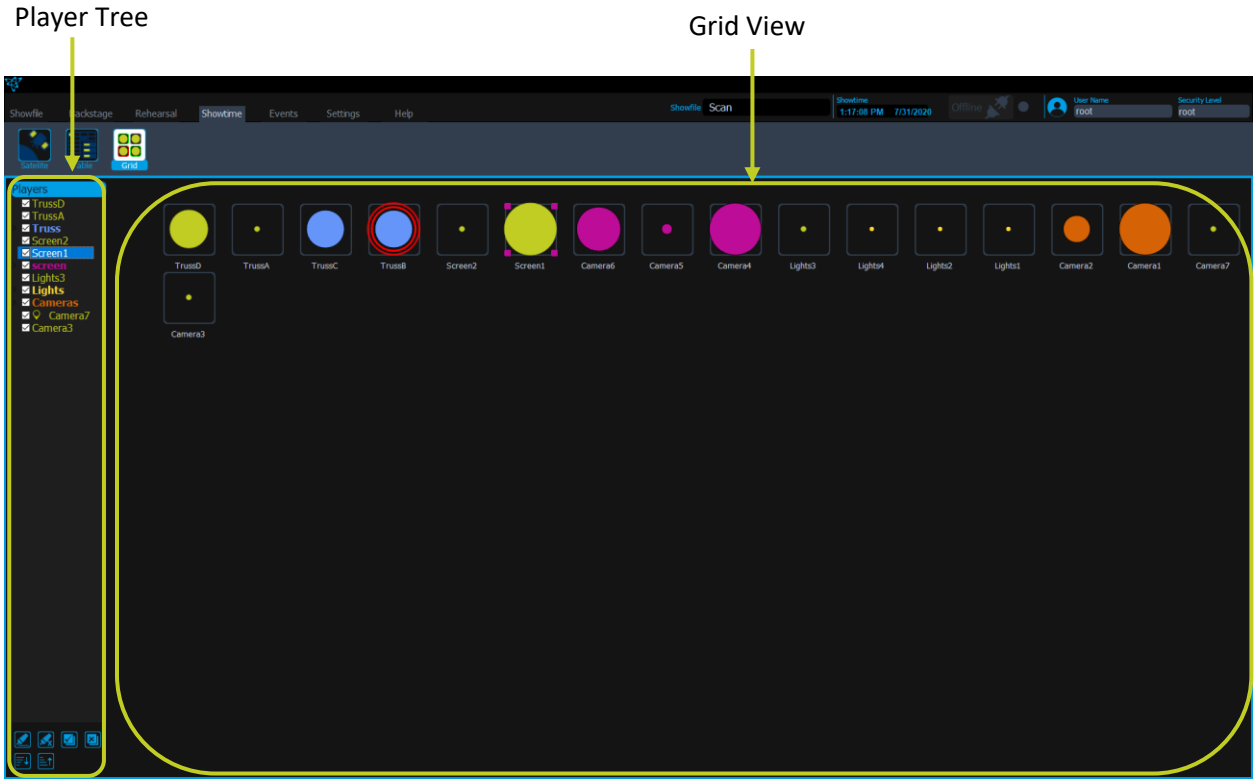
Showtime-Grid

Grid View displays Player Status Smart Icons in rows in the display.

Navigation

Stage Left>Showtime> Grid View

- Screen Layout



- Placing Players onto Grid View

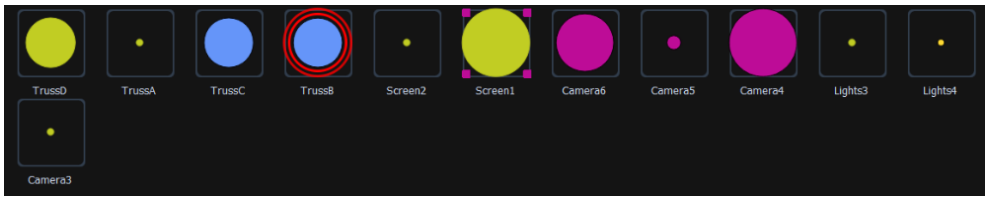


Figure 105 Grid View Display

1. Select the check box to the left of the player name in the tree.

   Press the Check All button to place all players onto the Grid View.

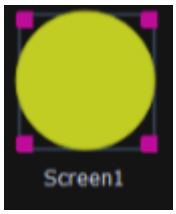


Figure 106 Player Status Smart Icon-Selected

Status Icons that have fuchsia corners represent Players currently loaded on Center Stage.

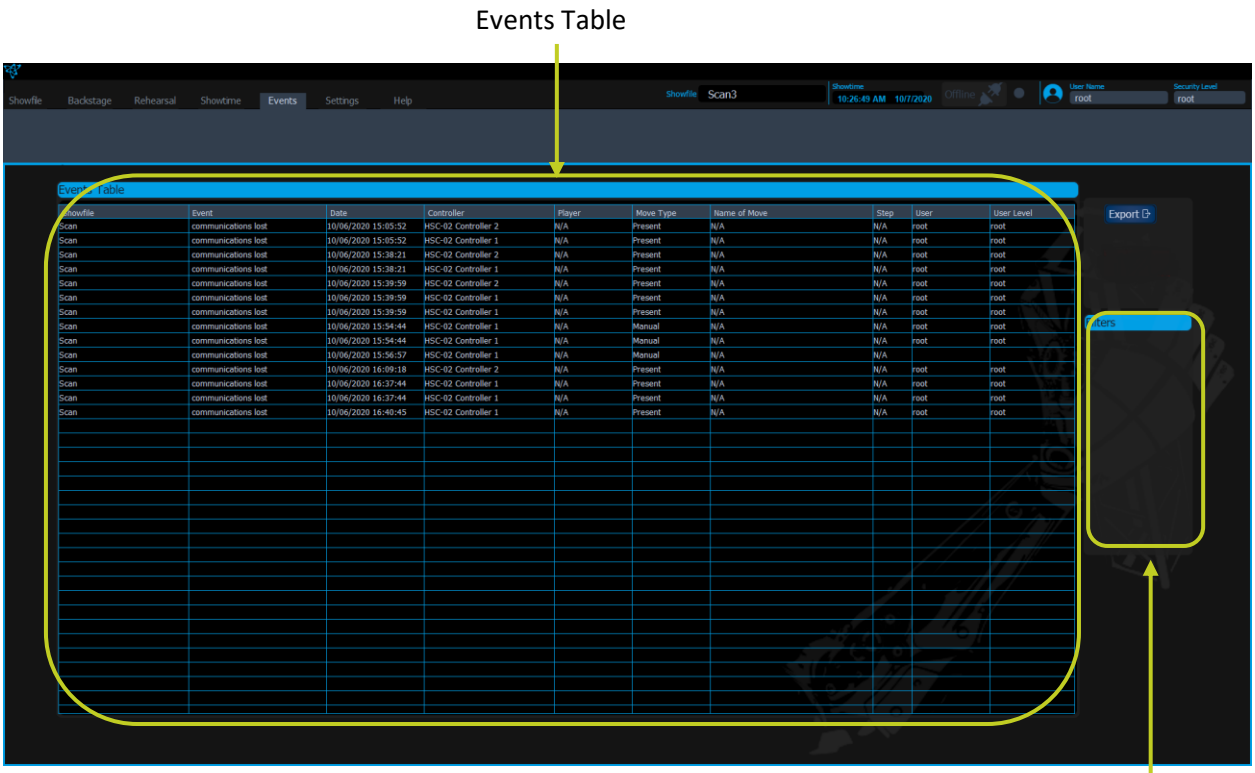
Events

The purpose of the Events screen is to record, and display faults detected by TALOS.

Navigation

Stage Left>Events

- Screen Layout



- Using The Events Table

Showfile	Event	Date	Controller	Player	Move Type	Name of Move	Step	User	User Level
Scan	communications lost	10/06/2020 15:05:52	HSC-02 Controller 2	N/A	Present	N/A	N/A	root	root
Scan	communications lost	10/06/2020 15:05:52	HSC-02 Controller 1	N/A	Present	N/A	N/A	root	root
Scan	communications lost	10/06/2020 15:38:21	HSC-02 Controller 2	N/A	Present	N/A	N/A	root	root
Scan	communications lost	10/06/2020 15:38:21	HSC-02 Controller 1	N/A	Present	N/A	N/A	root	root
Scan	communications lost	10/06/2020 15:39:59	HSC-02 Controller 2	N/A	Present	N/A	N/A	root	root

Figure 107 Events Table

Events Table

Colum Name	Description
Showfile	The Showfile that was loaded when the event occurred.
Event	Name of the fault.
Date	Date of fault occurrence.
Controller	Controller type.
Player	Name of player.
Move Type	Type of move at time of fault.
Name of Move	Name of move at time of fault.
Step	Step number at time of fault (only applies to faults that occurred during a sequence playing).
User	User logged in during fault.
User Level	Security Level of user logged in.

- Exporting Events
  1. Press the Export button. The table is exported to CVS format for download. Exported files can be retrieved from TALOS from Stage Left Settings.

Settings

Navigation

Stage Left>Settings

- System Units

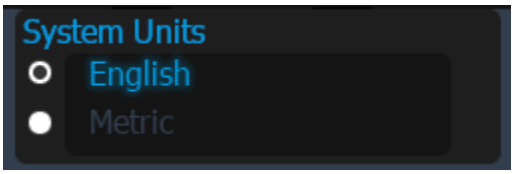


Figure 108 System Units

Allows users to change the units utilized throughout TALOS.

- Communication Status

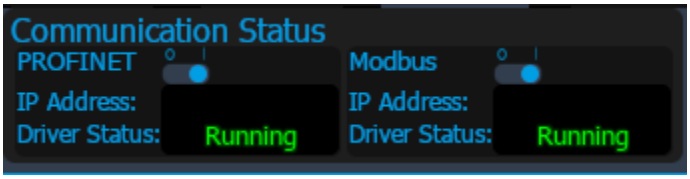


Figure 109 Communication Status

Indicates the status of the PROFINET and Modbus drivers. If a driver fails to start during the initial startup of TALOS, administrator users can start the driver by pressing the toggle button linked to the drive.

Communication Status Table

Control	Graphic	Function
Toggle Button		Press to start the corresponding driver.
Starting	Starting	Indicates the drive is currently Starting.
Running	Running	Indicates the drive is currently Running.
Stopped	Not Running	Indicates the drive is currently Not Running.

If either the Modbus or PROFINET Drivers are not running a warning is displayed in the Messages Panel on Center Stage. Users will be unable to arm moves until the driver has been restarted and the Communication Status shows both drivers as running.

- PROFINET Driver Connections

The number of supported PROFINET Driver Connections varies based on the license type purchased. The total number of PROFINET Connections per the applied license is displayed under the section labeled Total. The current number of PROFINET Drivers connected is displayed under the section labeled Active. The driver count consists of the total number of VS02 controllers loaded on the Backstage screen, plus one to account for the TALOS Main Driver.

Figure 110 PROFINET Driver Connections

The display includes color indicators which inform users if they have reached or gone over the allowed PROFINET Driver Connections.

Figure 111 PROFINET Driver Connections-At max

The count displayed under Active is yellow to indicate that the current number of PROFINET Driver Connections is equal to the maximum number of connections allowed by the applied license.

Figure 112 PROFINET Driver Connections-Max exceeded

The count displayed under Active is red to indicate that the current number of PROFINET Driver Connections has exceeded the maximum number of connections allowed by the applied license.

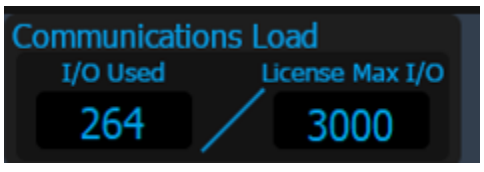


Figure 113 Communication Load

The count displayed under IO Used is red when the current number of I/O tags used exceeds the maximum number of IO allowed by the applied license. See Backstage Communications Load Panel

- Peripheral Settings

Figure 114 Peripheral Settings

Mouse

Allows users to adjust the incrementing resolution of the Position Sliders on Rehearsal Cue.

Users can select from the following increments, .1”, 0.25”,1”,1’

Hold to Run

Allows users to disable the Hold to Run device. When disabled, TALOS does not require a signal from the Hold To Run input to initiate and maintain motion of a player.

- Threshold Settings

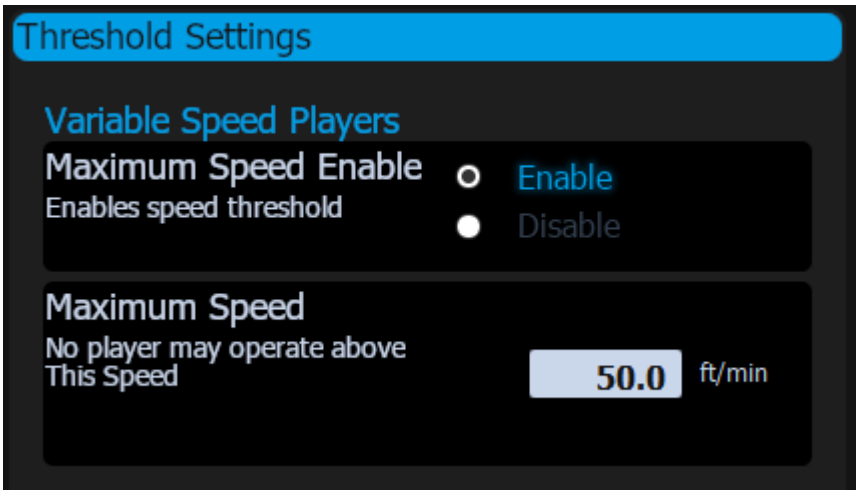


Figure 115 Threshold Settings Panel

Allows users to limit the maximum allotted speed for players (only applies to variable frequency controllers).

The Enable option must be selected to enable this feature.

If disabled TALOS will ignore this value and the Maximum Speed field will be disabled.

- Mode Settings- Recovery Mode

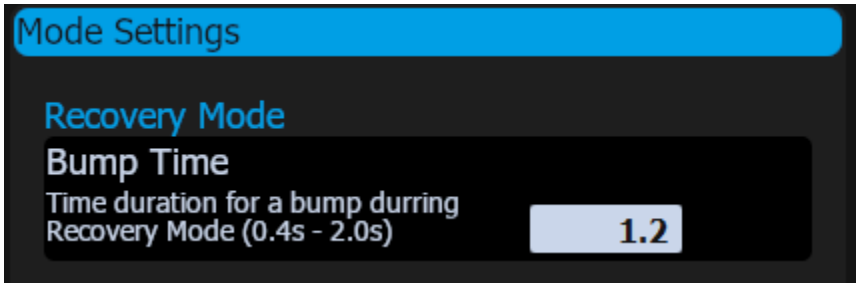


Figure 116 Mode Settings Panel

Bump Time is the amount of time TALOS will “bump” the motor of a player to safely move it out of a faulted Safe Zone.

The Bump button is displayed on the Center Stage-Position screen in place of the Run button when a Safe Zone fault occurs. It allows users to safely reposition players out of SafeZones.

TALOS recognizes the SafeZone fault and will only allow players to move in the opposite direction of one another to prevent collisions.

The Bump Time is the amount of time a player is pulsed to run when the Bump button is pressed.

Bump Time can be adjusted through Settings to any value ranging between 0.4 seconds and 2.0 seconds.

Once the Bump button is pressed TALOS will send a run command to the players for the duration of the specified Bump Time.

Press the Bump button until the SafeZone fault is resolved.

- File Management
  Showfile

Figure 117 Showfile

Satellite Background

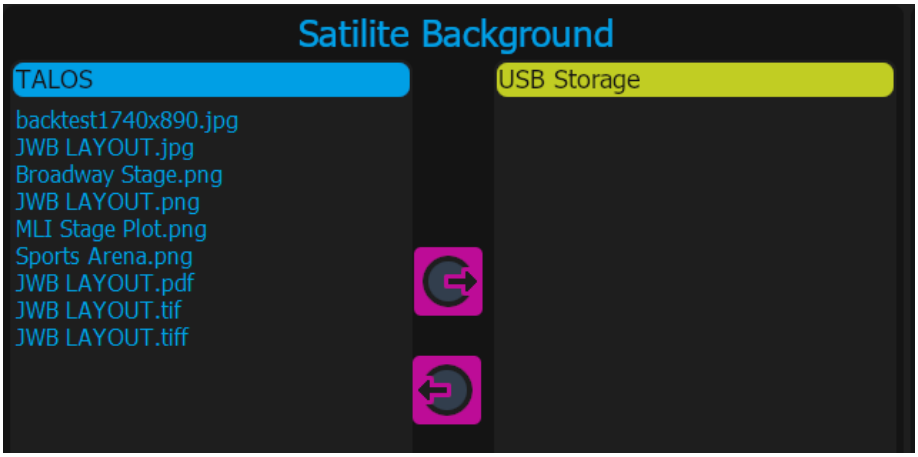


Figure 118 Background

Users can move drawing files displayed on the Rehearsal-Layout Screen and the Showtime-Satellite screen between TALOS and an external USB drive.

Events

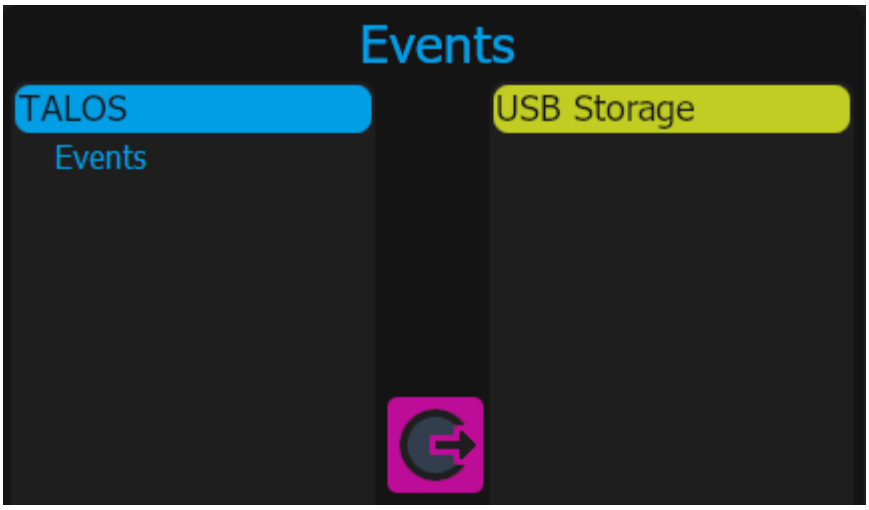


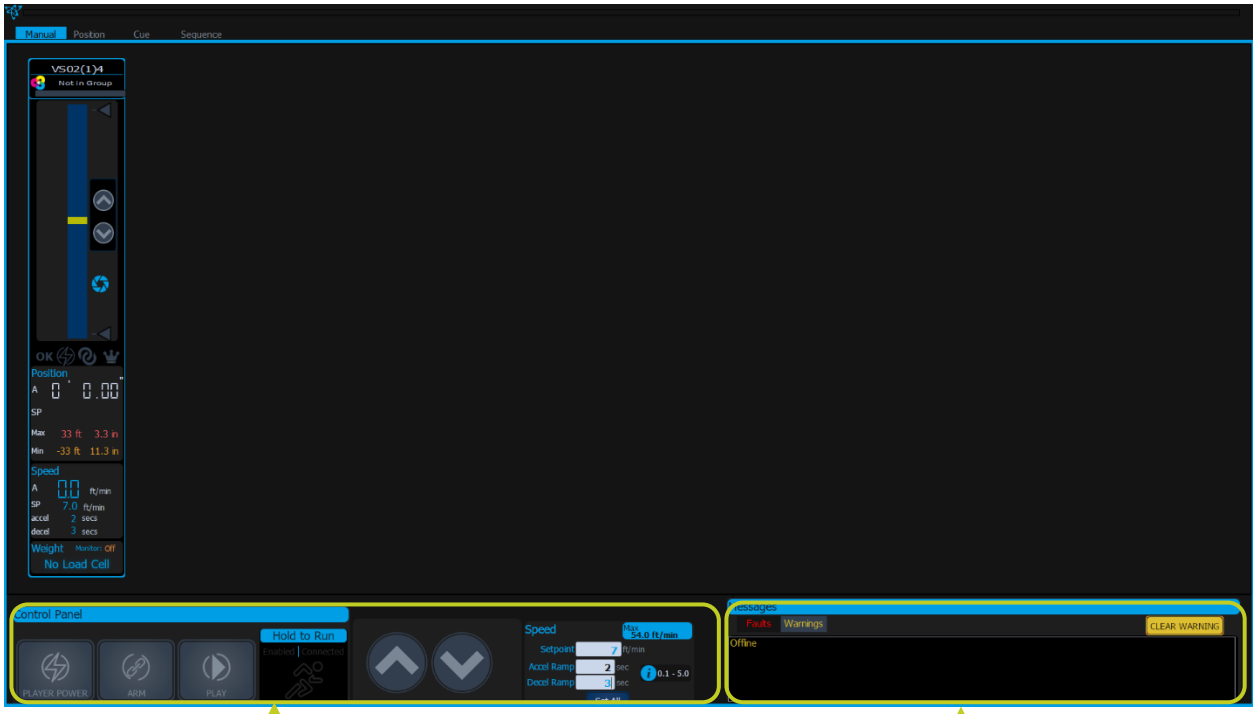
Figure 119 Events

Allows users to transfer exported Events file to a USB device.

Center Stage

- Center Stage Layout

Center Stage Top Ribbon



Control Center

Message Display

Center Stage consists of four main screens:

Manual Mode

Position Mode

Cue Mode

Sequence Mode

- Control Center

The Control Center houses the panels required to initiate player motion. The Control Center houses the panels required to initiate player motion, including the Control Panel and Message Display Panel. Panels that are Control Mode dependent, as indicated in the Control Center Mode Table, are also in the Control Center. Control Mode dependent panels include the Manual Control Panel, the Position Control Panel, the Speed Control Panel, the SafeZone Recovery Panel, and the Sequence Control Panel.

Control Center Modes Table

Center Stage Modes	Control Center Panels Available
Manual Mode	Control Panel Manual Control Panel Speed Parameters Panel Message Display Panel
Position Mode	Control Panel Position Control Panel Speed Parameters Panel Message Display Panel
Cue Mode	Control Panel Message Display Panel
Sequence Mode	Control Panel Sequence Control Panel Message Display Panel

Figure 120 Control Center-Manual

Figure 121 Control Center-Position

- Control Panel

The Control Panel houses the Player Power, Arm, Play, Run and Hold to Run buttons.

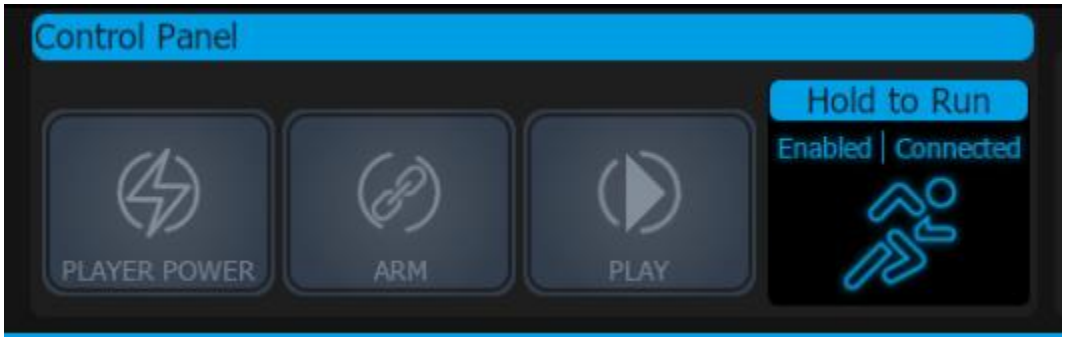


Figure 122 Control Panel

Control Panel Table

Control	Graphic	Function
Player Power	 Disabled  Enabled  Active	Supplies power to all the loaded players. It is enabled when TALOS is online and players are loaded on Center Stage. Gray - Player Power button Disabled. Dark Green - Power button Enabled. Green - Player Power On. Power applied to all loaded players and confirmation is received back from the controller that power has been enabled.

Control	Graphic	Function
Arm	 Disabled  Enabled  Active	Arm is enabled when Player Power is On and No Warning Messages appear for any players loaded on Center Stage. Gray - Arm button Disabled. Dark Green - Arm button Enabled. Green - Ready players have received move parameters and have confirmed receipt.
Play	 Disabled  Enabled  Active	With the HTR device engaged the sequence will begin to play when the button is pressed and let go. HTR device must be engaged for motion to continue. Turns into Stop button once pressed. Only available in Sequence Mode. It does NOT need to be held down with the HTR device. The sequence is “played” when the user selects play with the HTR device enabled. It is enabled when Arm button is ON. Gray –Play button Disabled. Dark Green – Play button Enabled. Green – Sequence is playing

Control	Graphic	Function
Stop	 Enabled  Active	Stops the execution of a sequence.
Run	 Disabled  Enabled  Active	Starts movement. HTR device must be activated first to initiate motion with Run button. Only available on the Manual, Position and Cue screens. In Sequence Mode this button will display “Play” to play the sequence. It is enabled when Arm button is ON. Gray – Run button Disabled. Dark Green – Run button Enabled. Green – Players are running

Run	Graphic	Function
Hold To Run	 Enabled Connected 	Gray- No Device Connected. Blue-Driver is connected in TALOS Main (see TALOS Main). Enabled Blue – Hold to Run Circuit Enabled Currently always true. Connected Blue – Hold to Run Device connected to TALOS Main. Person Running Blue – Hold to Run Device activated. Hold to Run device must be activated for the Run/Player button to be enabled. Both the HTR device and Run button must be engaged for motion to continue in Manual, Position and Cue modes.

- Manual Control Panel

Displays when in Manual Mode

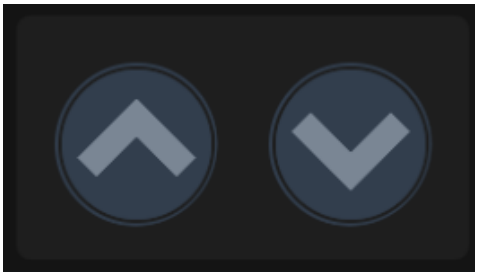


Figure 123 Manual Control Panel

Manual Control Panel Table

Control	Graphic	function
All Up	 Disabled  Selected	Set the direction as up for all players loaded on Center Stage. Gray- direction not confirmed. Green-indicates players have confirmed direction.

Control	Graphic	Function
All Down	 Disabled  Selected	Set the direction as down for all players loaded on Center Stage. Gray- direction not confirmed. Yellow- indicates players have confirm direction.

- Position Control Panel

In position mode users are prompted to insert position setpoints.

Figure 124 Position Control Panel

1. Input position setpoint and Press the Set All button. The specified position setpoint is applied to all players loaded on Center Stage.

- Speed Control Panel

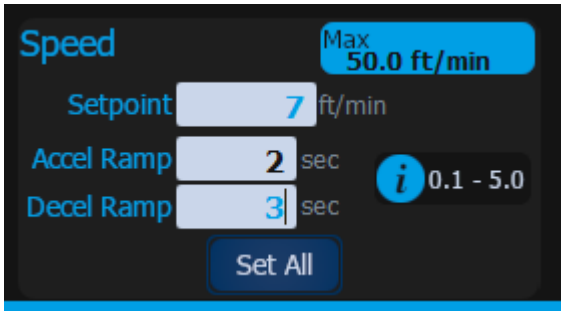


Figure 125 Speed Parameters Panel

1. Insert speed, acceleration ramp (Accel Ramp) and deceleration (Decel Ramp) ramp setpoints into the Speed Parameters Panel on the Control Panel.

   (Accel and decel ramp parameters are only required for VS02 controllers.)

2. Press the Set All button to enter setpoint for all VFD type players loaded on Center Stage.

- Entering Speed Parameters for Individual Players

Right-click on the speed setpoint of the Player Channel and select Set Motion Parameters. The Motion Parameter popup will appear.

If both Fixed Speed and Variable Frequency Players are loaded on center Stage, the Set All button will only be applied to the Players controlled by VFD's

- SafeZone Recovery

If any of the loaded players experience a SafeZone fault the Recovery warning will appear and TALOS must be placed in Manual Mode to recover. The Manual navigation button will blink as indication to the user that recovery must be executed in Manual mode.

Figure 126 SafeZone Recovery popup

Select Reset in the Message Display to clear this fault.

Players must be “bumped “back into a safe position. The direction the players must move is controlled by TALOS and the normal Run button is a Bump button that sends a run command to the controllers that stays on for the Bump Time specified in Settings

1. Press the Reset faults button on the Message display Panel once the SafeZone has been recovered. The fault is cleared in TALOS and on the associated controller. The Recovery Warning disappears.

2. Press the Player Power button to apply power to the drive or motor. TALOS requires feedback from all the controllers to maintain Player Power enable and to enable the Arm button.
3. Press the Arm button to confirm motion setpoints to the controller. TALOS requires feedback from all controllers that moves are confirmed to maintain the Arm button and to enable the Bump button.
4. Press the Bump button to move players. Players are moved based on the Bump Time set.

SafeZone Recovery Table

Control	Graphic	Function
Bump	 Disabled	Moves players back into a safe position based on the Bump Time specified on the Settings screen. Only available in Manual mode.
	 Enabled	It is enabled when Arm button is ON Gray Disabled Dark Green Enabled
	 Active	Green – bumping motor of player.

- Sequence Control Panel

The Sequence Control Panel allows for created sequences to be loaded and played on Center Stage.

Sequence Control Panel Table

Control	Graphic	Function
Advance	 Disabled  Enabled  Active	Indexes to the next step of the current sequence playing. Only available in Sequence Mode. This button only appears with a step that has the Advance button as the advance step condition. Gray Disabled Dark Green Enabled Green Indexing to next step

- Message Display

The purpose of the Message Display Panel is to provide fault and warning reporting from network Controllers to TALOS with the ability to reset controller faults from TALOS.

The message display houses system warnings and faults.

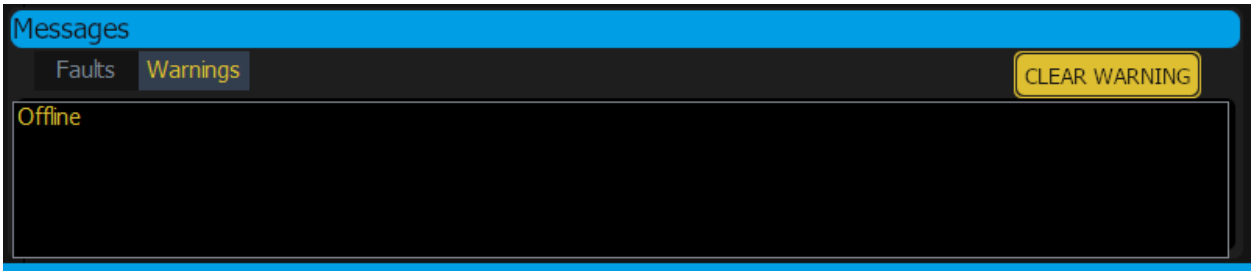


Figure 127 Message Display-warnings

A warning is anything that prevents TALOS from being Armed.

Examples of warnings include:

Player positioned at upper limit.

Controller is not in TALOS Mode.

Offline.

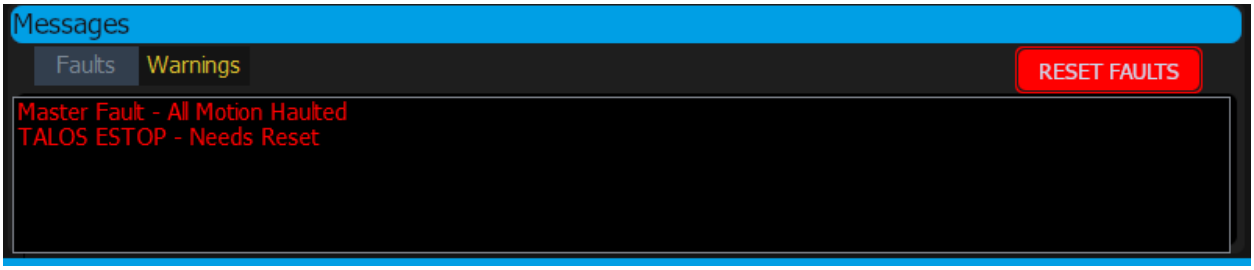


Figure 128 Message Display- faults

A fault is a condition that occurs in a controller or player that stops motion from continuing.

Examples of faults include:

TALOS ESTOP- Needs Reset

Upper Weight Limit Reached

Message Display Panel controls table

Control	Graphic	Function
Reset faults	RESET FAULTS RESET	Resets all faults displayed in the message display. Red indicates fault Gray indicates no fault detected.
Clear Warnings	CLEAR WARNING WARNING	Clears all warnings displayed in the message display. Yellow indicates warning is detected. Gray indicates no warning detected.

- Player Channel Strip

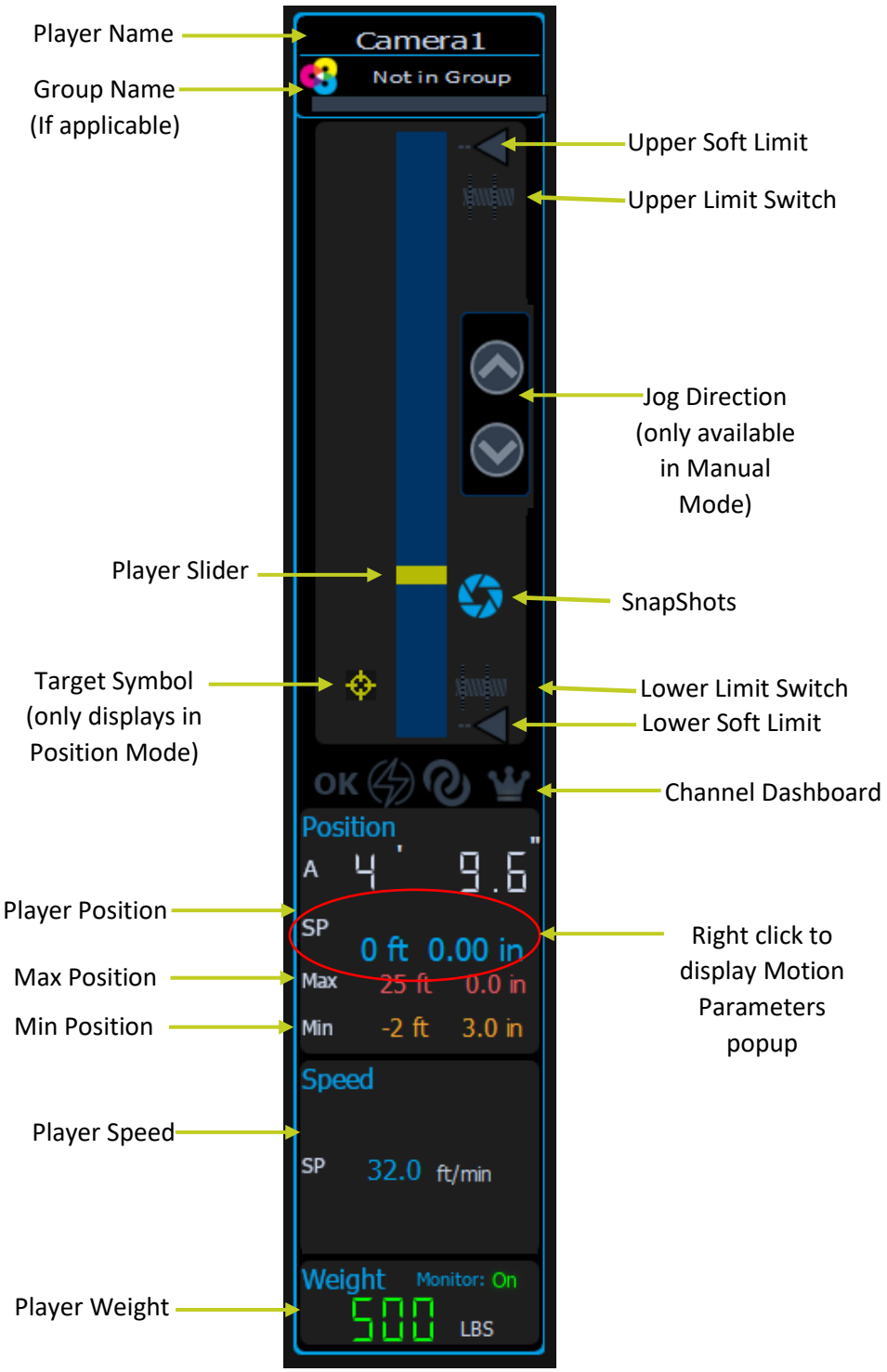


Figure 129 Player Channel

The Player Channel displays when the player is selected to run on Center Stage when in Manual or Position mode.

The Player Slider displays a player position by moving the Slider Handle in between the Max and Min positions. It appears on Center Stage-Manual and Center Stage-Position when players are selected from the Player Tree on Stage Left through the Showtime- Satellite or Showtime-Grid Screens.

The Player Channel appears on Center Stage-Cue when a cue is loaded On Deck (see Cue Mode on Center Stage)

Players Channel Table

Control	Graphic	Function
Upper Soft Limit		Red indicates Upper Soft Limit has been reached. Gray Player Actual Position OK
Upper Limit Switch		Red indicates Upper Limit Switch has been reached Gray Upper Limit Switch OK
Lower Soft Limit		Yellow indicates Lower Soft Limit has been reached. Gray Player Actual Position OK
Lower Limit Switch		Yellow indicates Lower Limit Switch has been reached Gray Lower Limit Switch OK
Target Symbol		Only displays in Position Mode. Indicates Position setpoint in reference to Max and Min positions.
SnapShots		Captures the current position of the players on Center Stage. How to create snapshots: 1. Place the system in Manual or Position mode (Center Stage). 2. Select player from the Players Tree. The Player Channel Strip is loaded on Center Stage. 3. Manually jog the player to the position desired for Snapshot. 4. Right-click the SnapShots icon on the Player Channel. A menu containing the 10 stored SnapShots appears. SnapShots previously created display stored position data. 5. Select an empty Snapshot to store the player's actual position. This position can later be used to assign a setpoint to a player in a sequence or a cue . (See Stage Left cues/sequences) If you left click on the SnapShots symbol the current position will be stored in the next available SnapShot.

Control	Graphic	Function
Slider		Green handles represent the player's actual position in reference to its Max and Min Values. It dynamically moves up and down as the player's position increases or decreases
		Channel Dashboard
OK Gray		Player not connected/Offline.
OK Green		Player status OK.
Orange		Conflict between Min and Max parameters (Offline versus Online).
Gray		Player Power is disabled.
Green		Player power is enabled.
Crown		Indicates that the player is the primary player in a group.
Offset		Displays offset value if player is a member of a group.
Gray		Indicates player is not associated with any SafeZone Interlocks.
Blue		Indicates player is associated with SafeZone Interlocks.
Yellow		Indicates player has entered Slow Down Zone
Red		Indicates a SafeZone fault.

Player Channel sections table

Player Channel parameters	Description
Motion Parameters (Individual Players)	Entering Motion Parameters from the Players Channel 1. Right-click on the position setpoint (SP) on the Player Channel Strip. The Motion Parameters popup is displayed (see time to Position Calculator for details). 2. Enter Parameters for position, speed, acceleration, and deceleration. 3. Press the Enter button. Parameters are applied to the player and the Player Channel Strip is updated. Setpoints that are applied to a group member are applied to all members of the group. Specified offsets are applied to the position setpoints for each member.
Motion Parameters (Groups)	The Player Channel displays the actual position, max height and min height for each loaded player/group member. Actual positions that are out of range are indicated in red. Max and Min positions are displayed in red/yellow. Group Max positions are calculated by TALOS . The value of the member with lowest max position is used. Group Min positions are calculated by TALOS. The value of the member with highest min position is used. When players that have the lowest group max and the highest group min will have their values displayed in the group's color, otherwise their values will appear in light blue.
Weight Parameters	The weight of the player's load is displayed on the Player Channel Strip when a load cell is present. If the applied weight is out of range, the weight value is displayed in red and the player will not be permitted to move. Players with no load cell will display "No Load Cell" and indicate that load monitoring is off. Load Monitoring can be turned off on Players that have load Cells. See Backstage Load Monitoring

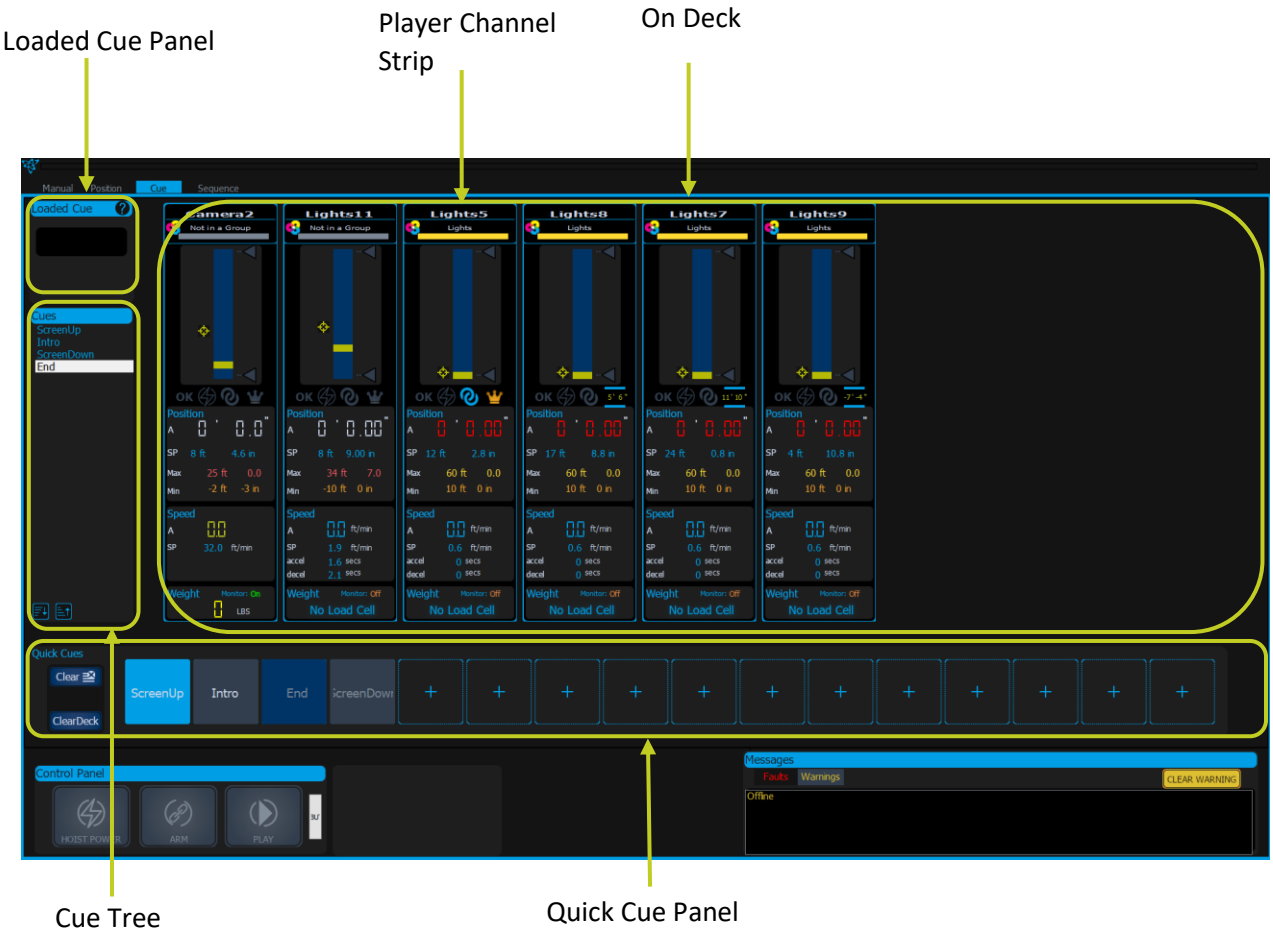
Center Stage-Cue Mode

The purpose of Center Stage-Cue screen is to allow users to run created cues.

Navigation

Center Stage> Cue

- Screen Layout



- Cue Tree

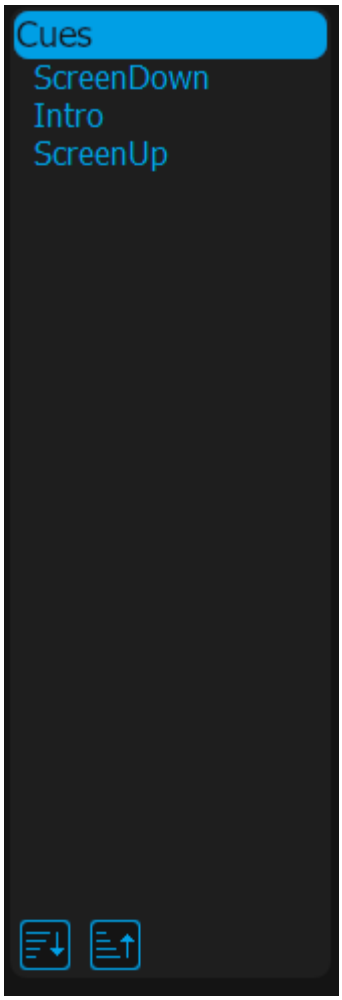


Figure 130 Cue Tree

Drag and drop cues from the Cue Tree to the Quick Cue Panel.

Cue Tree Table

Control	Graphic	Function
Sort ascending		Sorts cues in ascending order.
Sort descending		Sorts cues in descending order.

- Adding Quick Cues

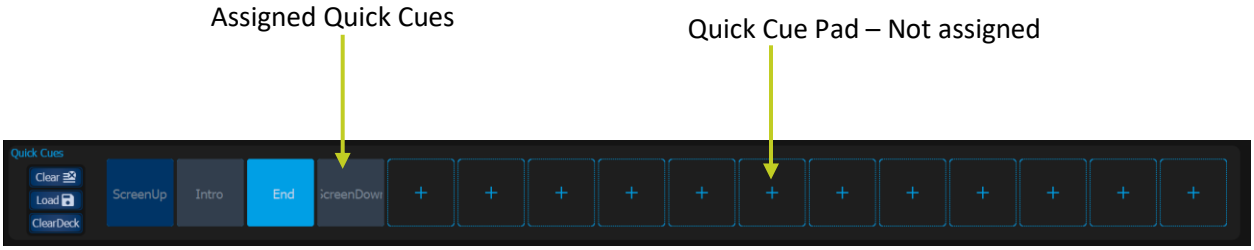
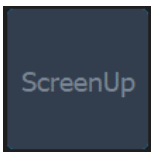


Figure 131 Quick Cues Panel

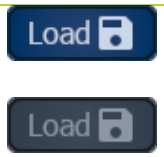
Button Color of Quick Cues Table

Quick Cue color	Graphic	Definition
Blue		Quick Cue has been assigned. Blue appears in odd numbered Quick Cues. Pressing a blue button loads the named cue on deck.
Gray		Quick Cue has been assigned. Gray appears in Even numbered Quick Cues. Pressing a gray button loads the named cue on deck.
Light blue		Quick Cue is on deck but not loaded. Pressing a light blue button validates the named cue by checking that the setpoints are in range. If validated the Load button is enabled.
Orange		Quick Cue is loaded on deck and is ready to run.

The Quick Cue panel allows users to store up to 16 of their most used cues. The Assigned Quick Cues are interchangeable.

1. Drag and drop cues from the Cue Tree to an unassigned Quick cue Pad on the Quick Cue Panel. The cue name is displayed in the cue box.

Quick Cues Table:

Control	Graphic	Function/ Instructions
Clear		Removes loaded Cue(s) from Quick Cue Panel. Press to Clear all assigned Quick Cues. Drag and drop on a Quick Cue Pad to clear a single Quick Cue.
Load		Sends Cue Moves to the controllers. Blue Enabled Gray Disabled
ClearDeck		Clears Cue Moves from On Deck.

- Loading Cues
  1. Select a Cue from the Quick Cue Panel. The selected Cue is displayed in light blue.
     Player Channels representing each move will appear On Deck. (See Player Channel Strip for more information).
     The Load button will be enabled.

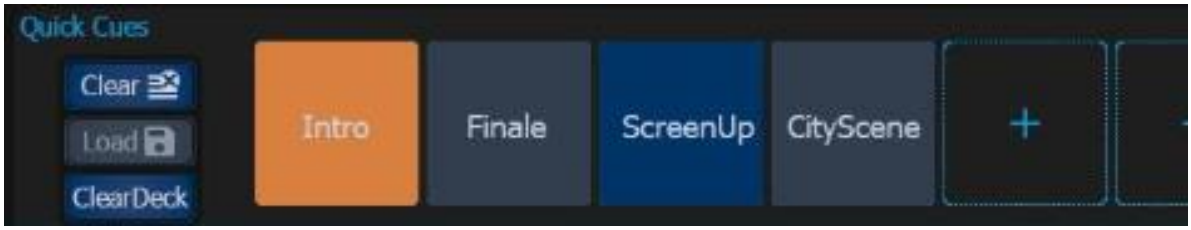


Figure 132 Assigned Quick Cues

  2. Press the Load button. The selected cue is loaded.
  3. An orange cue indicates that the cue is loaded and ready to run.

Figure 133 Loaded Cue Panel

Cues cannot be loaded when a player's setpoints are out of range. Out of range setpoints will appear in red and the Load button will be disabled.

Loaded Cue Table

Control	Graphic	function
Clear		Unloads the cue and clears it from the Cue Deck.

- Running a Cue

Only loaded cues can be executed to run

1. Press the Player Power button. Power is supplied to the loaded players and the Arm button is enabled.
2. Press the Arm button. Movement parameters are confirmed with the controller and the Run button is enabled.
3. Engage Hold to Run device.
4. Press and hold the Run button.

Center Stage- Manual/Position Modes

The purpose of the Center Stage-Manual screen is to allow users to jog selected players up or down.

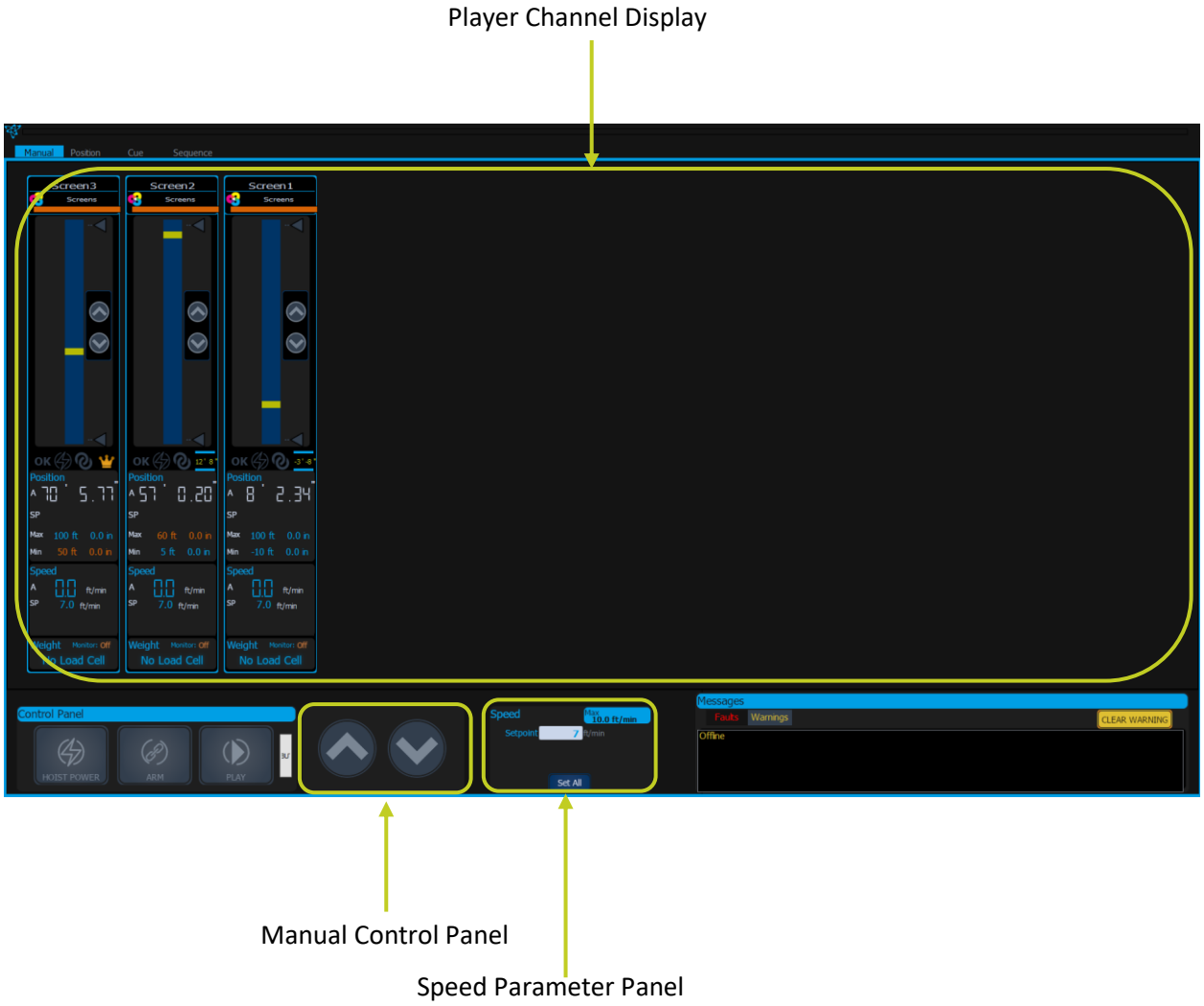
Manual Mode is used when the operator wants to move the player either up or down without with no preset setpoint. The player will move in the direction the operator selects when the Run button is pressed. This is referred to as open-loop position control.

Position setpoints are not required or displayed when operating players in Manual Mode.

Navigation

Center Stage> Manual

- Screen Layout-Manual Mode



Switching between Manual and Position modes clears all Players loaded onto Center Stage.

Players loaded on Center Stage can only be edited in Manual Mode.

The purpose of the Center Stage-Position screen is to allow users to move selected players to a targeted position.

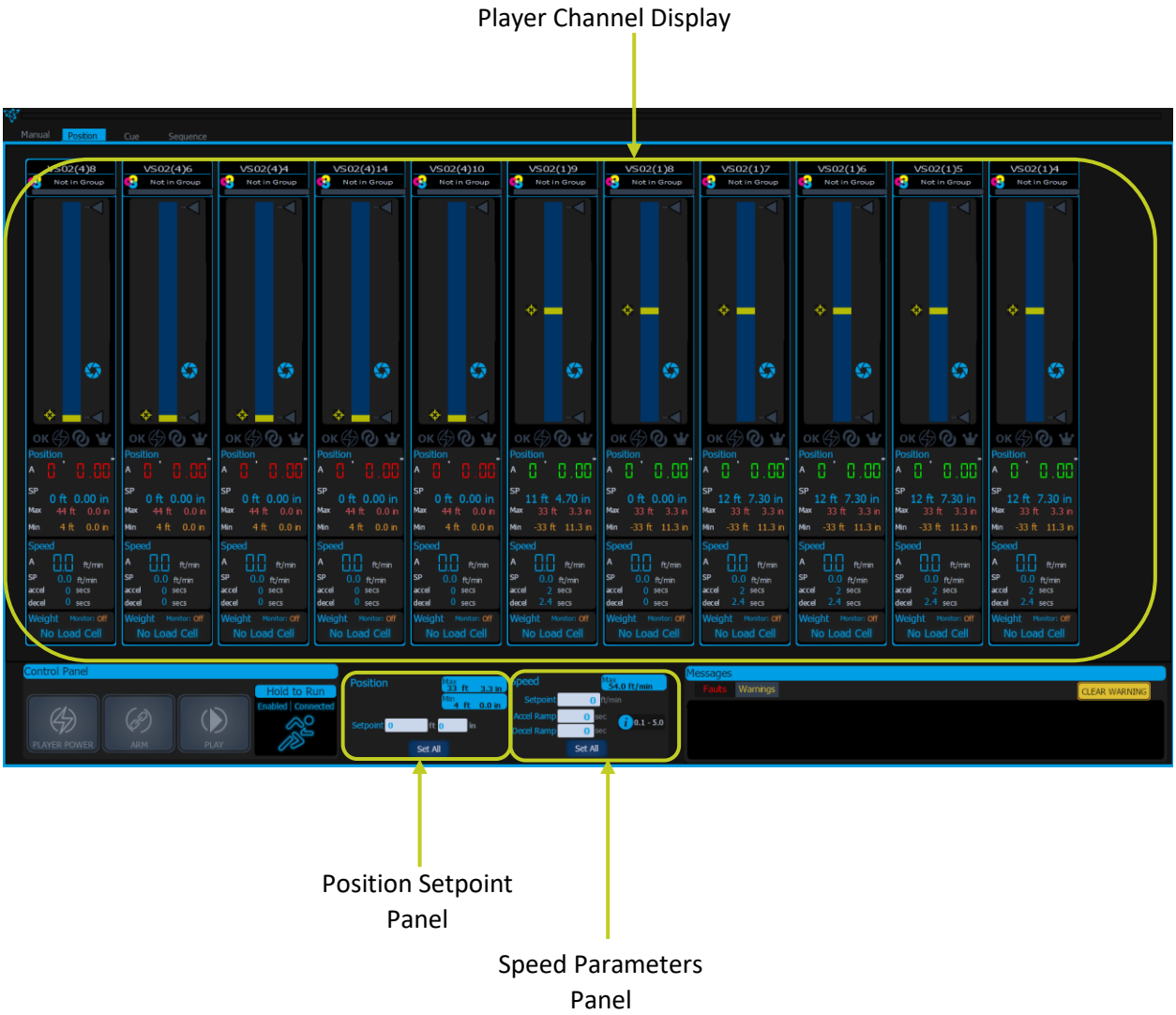
Position Mode operates under a closed loop position control.

Players on Center Stage are moved to the specified position setpoint. speed parameters must be provided for players controlled by VFD's.

Navigation

Center Stage> Position

- Screen Layout -Position Mode



- Loading Players on Center Stage In Manual or Position Mode

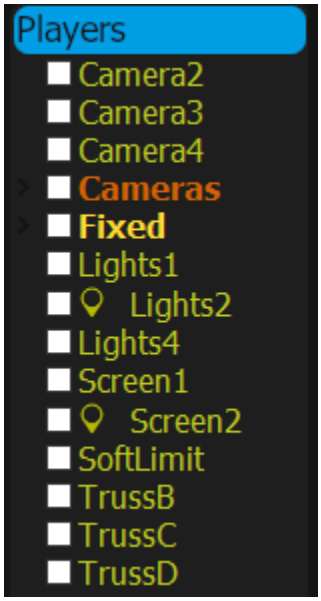


Figure 134 Players Tree

Select a group or player from the Player Tree by highlighting the name. Player or group members highlighted will appear on Center Stage via Player Channel Strips (see Player Channel Strip for more details).

Highlighted players are loaded on Center Stage in Manual or Position Mode and can be operated by users.

Checked Players are displayed on Stage Left under showtime.

- Selecting a Group

Figure 135 Selecting Groups In Manual Mode

Manual Mode allows for group members to be individually selected and loaded on Center Stage. This is not permitted in any other mode.

- Operating Manual Mode
  1. Select players or groups from Stage Left Showtime to be loaded on Center Stage.
  2. Enter speed Parameter data for speed, accel and decel ramp setpoints.
     Speed, accel ramp and decel ramp are only for Variable Frequency Controllers.
  3. Select a direction on the Player Channel for the player or group to be jogged or select a direction from the Control Panel to assign the same direction to all the channels (See Control Panel for more details.

     TALOS requires feedback from the controller for direction selected. If no feedback is obtained the direction selection is turned off.

  4. Press the Player Power to apply power to the drive or motor. TALOS requires feedback from all the controllers to maintain the Player Power on signal and to enable the Arm button.
  5. Press the Arm button. TALOS will confirm all motion setpoints with each controller. When all controllers confirm the setpoints were received the button will remain enabled and the Run button will be enabled.
  6. Press the Run button and the Hold to Run Device to initiate motion. One of the two must remained enabled for motion to continue (See Control Center for more details).

- Operating In Position Mode
  1. Select players or groups from stage left to be loaded on Center Stage.
  2. Enter a position setpoint.
  3. Enter speed, accel and decel setpoints. (Variable Frequency Controllers only.)
  4. Press the Arm button. TALOS will confirm all motion setpoints with each controller. When all controllers confirm the setpoints were received the button will remain enabled and the Run button will be enabled.
  5. Press the Run button and the Hold to Run Device to initiate motion. One of the two must remained enabled for motion to continue (See Control Center for more details).

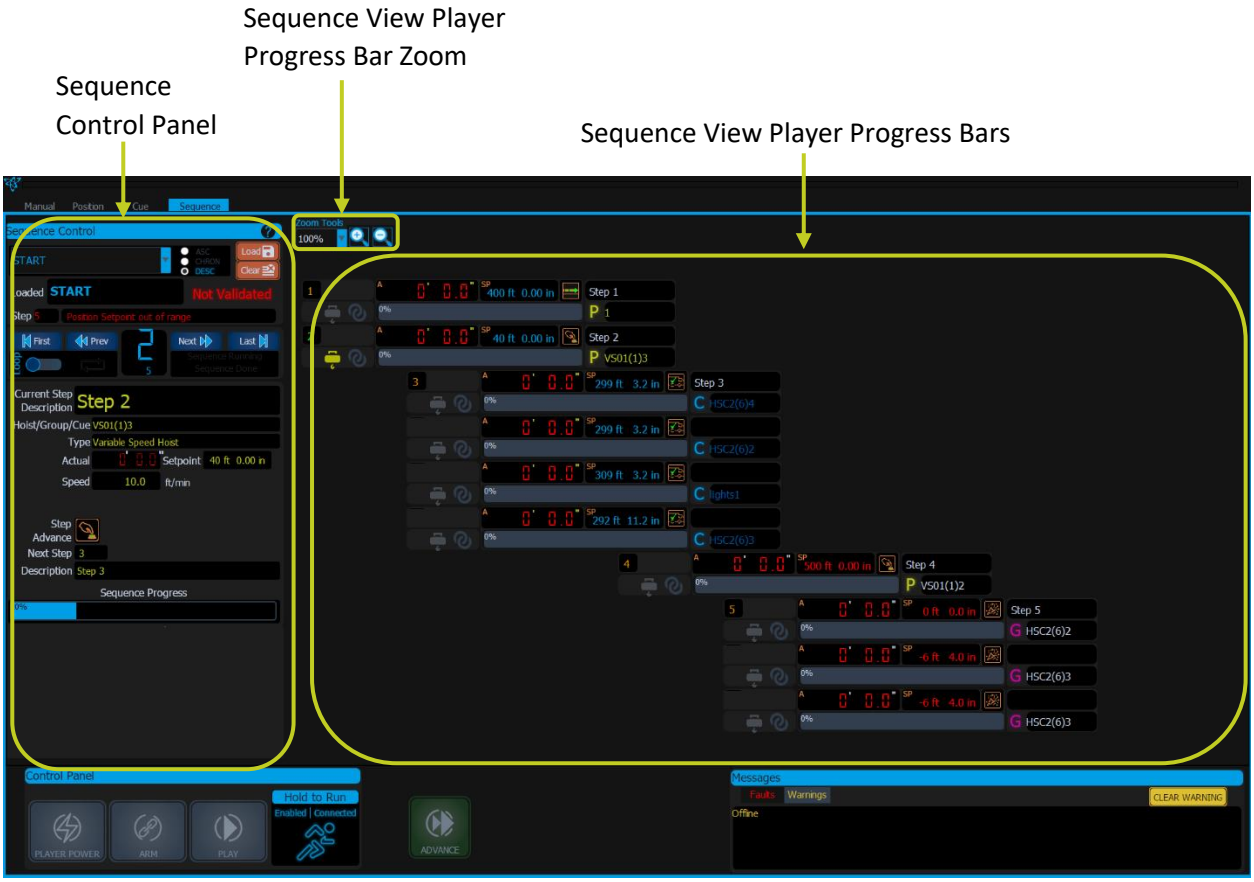
For movement to occur, the Hold to Run Device must be enabled, and the Run button pressed. The user must keep one of these signals enabled for motion to continue.

Center Stage- Sequence Mode

The purpose of the Center Stage-Sequence screen is to allow users to play created sequences.

Navigation Center Stage> Sequence

- Screen Layout



- Sequence Control Panel

Figure 136 Sequence Control Panel

- Loading a Sequence

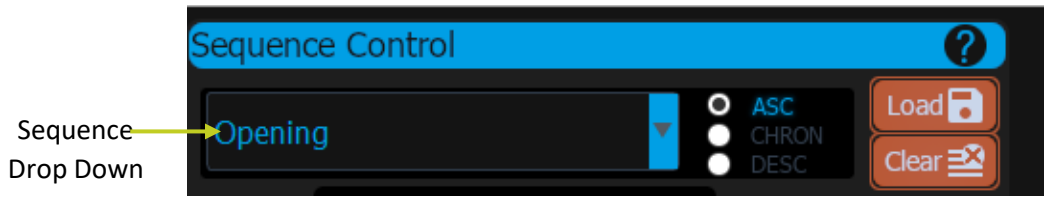


Figure 137 Sequence Drop Down

1. Select a Sequence from the Sequence Drop Down.
   Created Sequences displayed in the drop down can be reordered in ascending, descending or chronological order.
2. Press the Load button. The selected sequence is loaded on Center Stage and displayed in the Sequence View player section. As the sequence is loaded, TALOS checks if the sequence has all the required parameters to run. A sequence cannot be executed to run unless it is validated.

Figure 138 Sequence Validated

Sequences that are loaded on Center Stage and validated can NOT be edited on Stage Left Rehearsal.

If a sequence is Not Validated TALOS will display the first Step containing an issue and provide a description of the issue. Once the issue is fixed the Operator must select Load again to validate.

Figure 139 Sequence Not Validated

A sequence can only run once it is validated. If a sequence is loaded and validated, it cannot be edited on Stage Left. If multiple issues exist in the Sequence, the Sequence must be loaded multiple times as TALOS only reports issues one at a time. The operator can view all problematic Steps of the sequence by viewing it on Stage Left Rehearsal Sequence. Step numbers will appear in red on steps that require more data or correction.

Load Sequence Controls Table

Control	Graphic	Function
Load		Loads the selected sequence onto the Sequence View player in Center Stage.
Clear		Clears the loaded sequence from the Sequence View player on Center Stage.

- Step Controller

The Step Controller allows the user to step through a sequence and to run a sequence from a selected step. The Step Controller buttons are disabled if the sequence is Armed. (See Control Center)

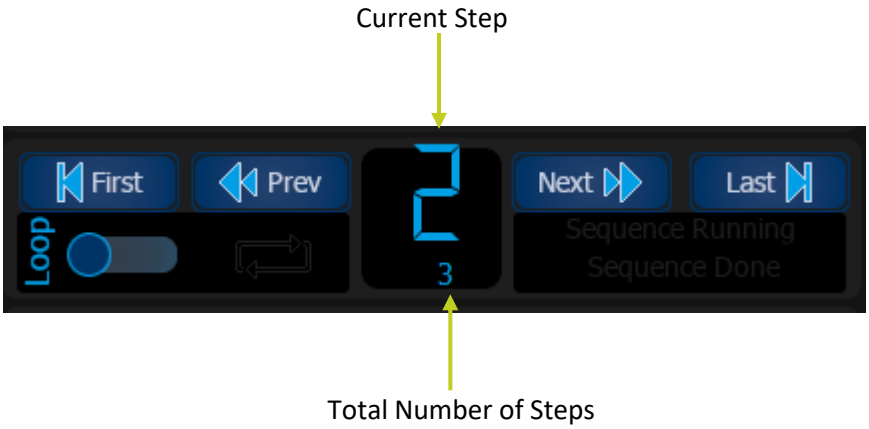


Figure 140 Step Controller

Step Controller Table

Control	Graphic	Function
First		Moves to the first step within the loaded sequence.
Prev		Indexes to the previous step within the loaded sequence.
Next		Indexes to the next step in the loaded sequence.
Last		Moves to the last step within the loaded sequence.
Loop Toggle		Turns looping on which causes the sequence to automatically play again after it is done executing the last step. The sequence will continue to loop until this button is toggled off.

Starting a sequence from any step number greater than one sets all previous steps as complete even though the steps were not executed. This allows TALOS to indicate Sequence Done when the last step is executed.

- Step Viewer

The Step Viewer section of the Sequence Control Panel displays step information of the current step of the loaded sequence.

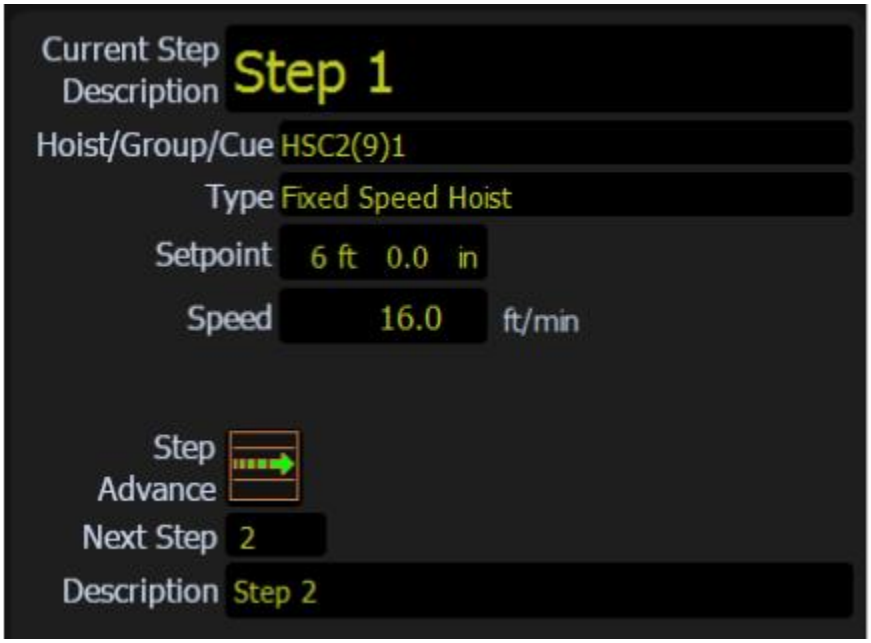


Figure 141 Step Details

The details displayed differ based on the assigned Step Advance Type.

- Sequence Progress Bar

The Sequence Progress Bar displays the percentage of completion of the sequence.

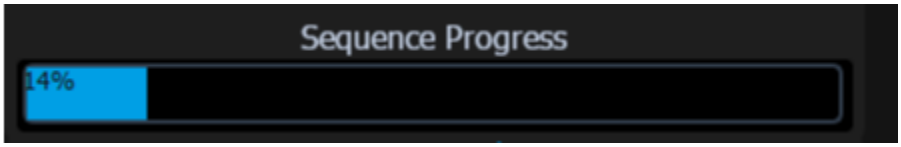


Figure 142 Sequence Progress

- On Event

Figure 143 On Event Conditions

The On Event Conditions section is displayed for steps with an On Event Advance Condition.

The On Event Conditions section displays the conditions of the step and indicates which conditions have been satisfied.

Satisfied conditions are displayed highlighted in blue with the associated player/ group name.

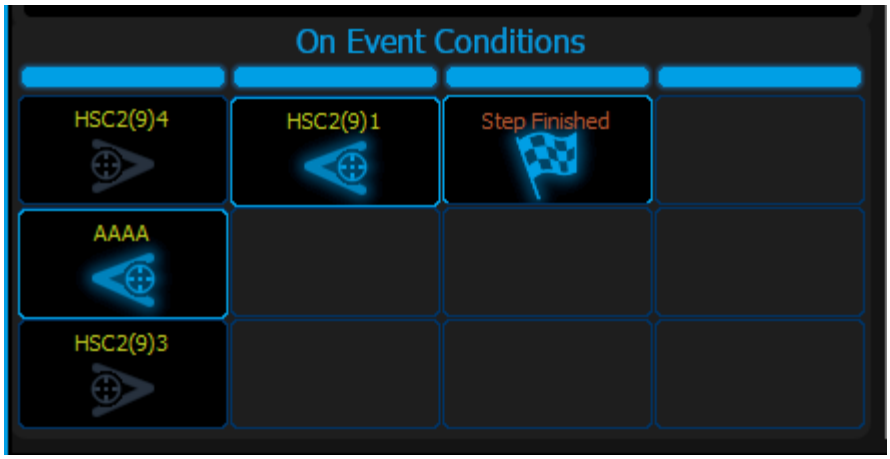


Figure 144 Satisfied On Event Condition Display

On Event Display Table

Control	Graphic	Function
Indicator light		Gray – indicates that any condition in a column has not been met. Blue- indicates at least one of the conditions in the column has been met. All four pilot lights must appear) for an On Event condition to be met and for the step to be indexed.

Press the player/group name to display the On Event Parameters popup.

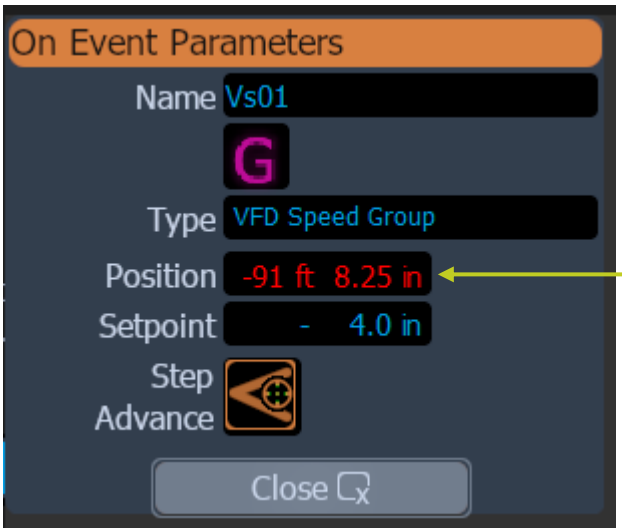


Figure 145 On Event Parameters Popup-Group

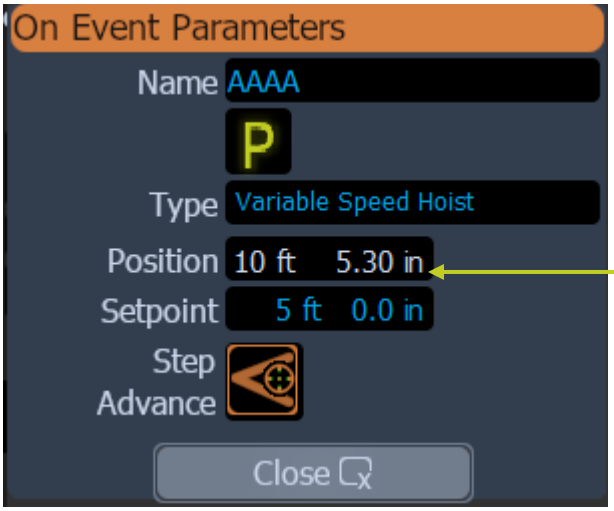


Figure 146 On Event Parameters Popup-Player

- AND/OR Operations

On Event Advance conditions allow the user to assign multiple conditions that must be met or allows for a different combination of conditions to be met to advance the step. This is done by using “AND” and “OR” operators commonly used in programming logic.

The AND operator is an operator that performs a logical conjunction on two conditions. It only yields a value of "true" when both conditions are true. If one of the two conditions is false, then the logical AND operator yields a "false" value. The OR operator is a logical function which yields a value of “true” if either condition is true. If both statements are false, then the logic OR operator yields a “false” value.

For an On Event condition to be true the On Event circuit must be completed. This is conveyed by the blue indicator lights above each column. A circuit is complete when there is a continuous path of true conditions from left to right. A true condition is indicated by a blue status bar at the top of the column. For the step to advance all four status bars must be blue.

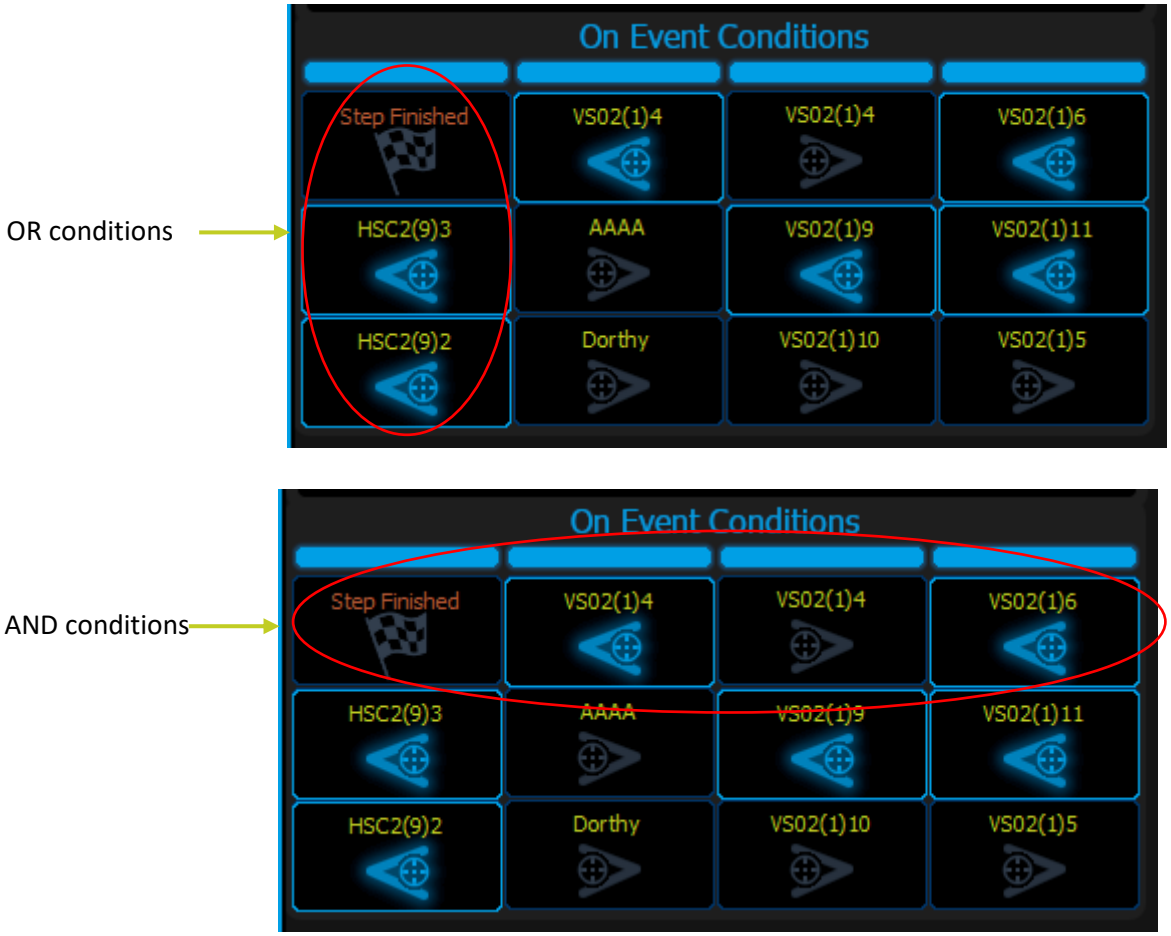


Figure 147ON Event Advance Condition met for a OR and a AND condition

- Sequence View Progress Bar

Progress Bars are displayed in the Sequence View Player Panel.

A Progress Bar is displayed in the Sequence View Player Panel for all players, group members, and cue moves in the sequence that is loaded.

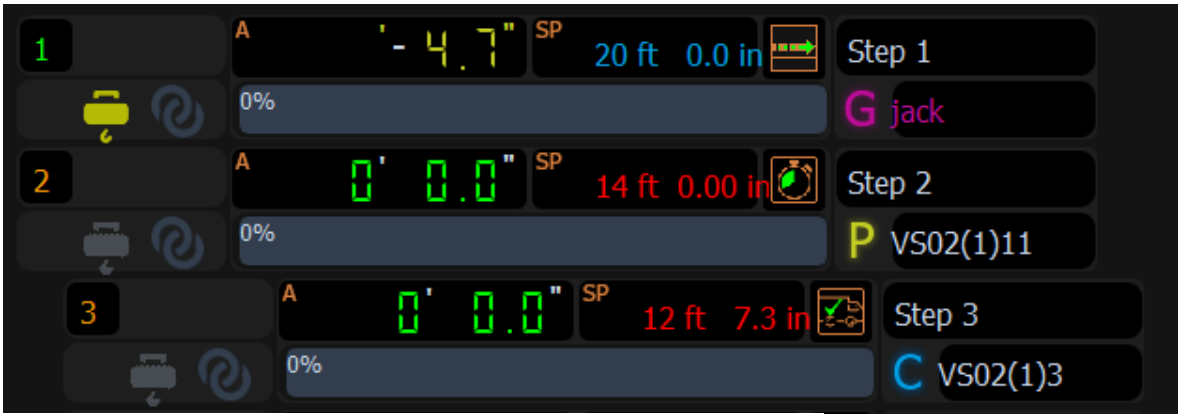


Figure 145 Progress Bar Display

The current step is indicated by a green step number.

Progress Bar Icons Table

Icon	Graphics	Function
Player Icon		Gray- Player not connected. Green- Current step. Red- Weight fault detected. Press the Player Icon to display the step description popup (see Rehearsal-Sequence for details).
Interlock Indicator		Gray - Does not contain an interlock.
		Blue- Interlocked with at least one other player
		Yellow - Player is in Slow Down mode
		Red- Interlock fault detected
Group Indicator		Indicates a group is assigned to the step.
Cue Indicator		Indicates a cue is assigned to the step.
Player Indicator		Indicates a player is assigned to the step.
Current Step Indicator		Indicates current step.
Active Step Indicator		Indicates step is not current step but still running.
Step Done Indicator		Indicates step is complete.

The alignment of the Progress Bars in the Sequence View Player section is based on the Advance Condition of the previous step.

The purpose of this is to create a quick visual of representing when the next step will execute with respect to the previous step. The Progress Bars appear either directly below the previous step or offset to the right of it. The distance it is shifted to the right is dependent on the Advance Type Condition.

Progress Bar Positioning Table

Step Advance Condition	Display
Auto Advance	Progress Bar Aligns with Previous Step
Time Delay	Progress Bar shifted slightly to the right of the Previous Step
Move Complete	Progress Bar shifted to the right of previous Step (Shift is greater than Time Delay Advance Conditions.)
Push Button Advance	Progress Bar Aligns with Previous Step
On Event	Progress Bar shifted to the right of previous Step (Shift is greater than Time Delay Advance Conditions.)

- Editing Sequence View Progress Bar Zoom

The Sequence View Progress Bar display can be either enlarged or minimized according to user preference.

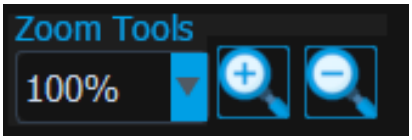


Figure 148 Zoom Tools Panel

There are two methods of adjusting zoom.

1. Select the Zoom Level Dropdown to switch between four different zoom levels. 100%, 200%, 300% or 400%

2. Press the Zoom In button to zoom in or press the Zoom Out button to zoom out.

Panning Sequence View Progress Bar display

Panning is available when Zoom Level is greater than 100%.

3. Left mouse-click in the View Panel to enter Panning Mode. The cursor will change from an arrow to four arrow symbol indicating that Panning Mode has been enabled.

Right-clicking escapes Panning Mode and returns the Zoom Level to 100%

Help

Figure 147 Help Ribbon

- TALOS Tools

Time to Position Calculator

Time to Position Calculator button
(TALOS Tools)

The purpose of the Time to Position Calculator is to calculate the speed a player must travel to reach its target setpoint in a specified time. The user must also specify a starting position, a target position, acceleration & deceleration times and a time in seconds to get to the setpoint.

The calculator can be accessed from four different locations within TALOS. Rehearsal-Cue, Rehearsal-Sequence, Center Stage Position and from the Help Ribbon.

The Time to Position Calculator is only applicable for Variable Frequency Controllers.

User Input Field (editable)

Acceptable Data Fields (Not Editable)

Figure 149 Time to Position Calculator

Using the Time to Position Calculator

From Rehearsal-Cue

1. Toggle User Input button to Field Entry.
2. Press the Calculator button located in the Field Entry Panel (the Calculator button is only displayed for VFD type players). TALOS Tools Time to Position popup is displayed.
3. Motion fields automatically populate with any parameters previously specified.

Figure 150 Calculation out of range

VS-01 systems do not allow TALOS to change ramp rates. To utilize this calculator for VS-01 the acceleration ramp must be set to 5 seconds.

4. Set a starting position
5. Set the time in seconds for the player to reach its target position and press Enter on the keyboards number pad. TALOS will calculate the speed the player needs to travel. If the speed is out of range, TALOS will set the permitted speed to the maximum speed of the controller.
6. Press the Apply button to apply calculated speed and any edited parameters to the Move. Table.

Time to Position and Starting Position data in the Move Table is for reference only. Time to Position holds true only if the player is originating from the Starting Position indicated.

From Rehearsal-Sequence

1. Select an existing sequence from the dropdown menu and press the Load button or create a new sequence and press the Create button. (Steps must be present to access Time to Position calculator)

Figure 151 Step Pad

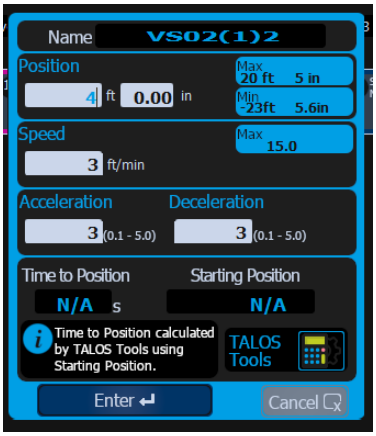


Figure 152 Player Data popup

2. Press the Target Position setpoint displayed above the Step Pad to select a player. The Player Data popup will appear displaying the data parameters that apply to the player's controller type.
3. If the controller type is a VFD the TALOS Tools button will appear. Select the TALOS Tools button to bring up the Time to Position Calculator.

4. Motion fields automatically populate with any parameters previously specified.

Figure 153 Time to Position Calculator popup

5. Set a starting position
6. Set the time in seconds for the player is to reach its target position and press the Enter button on the keyboard number pad. TALOS will calculate the speed the player needs to travel If the speed is out of range, TALOS will set the permitted speed to the maximum speed of the controller, and it will display the Time to Position calculated at maximum speed.
7. Press the Apply button to apply calculated speed and any edited parameters on the Step Pad.

From Center Stage-Position

Figure 154 Player Channel

1. Select a player from the Players Tree on the Rehearsal-Cue Screen. The Player Channel Strip is loaded on Center Stage. (Only displayed for VFD type players)

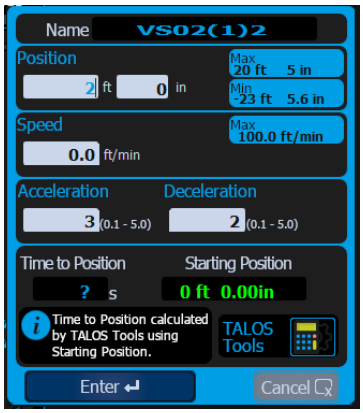


Figure 155 Motion Parameters popup

2. Select the player name at the top of the Player Channel Strip. Player position, speed, acceleration, and deceleration is displayed within a popup.
3. Select the TALOS Tools button in the lower right of the popup to bring up the calculator. Time to Position Calculator is set as default TALOS Tool.
4. Motion fields automatically populate with any parameters previously specified.
5. Set a starting position.
6. Set the time in seconds for the player is to reach its target position and press the Enter button on the keyboard number pad. TALOS will calculate the speed the player needs to travel If the

speed is out of range, TALOS will set the permitted speed to the maximum speed of the controller, and it will display the Time to Position calculated at maximum speed.

7. Press the Apply button to apply calculated speed and any edited parameters on the Player Channel.

From Help

1. Select the help screen on Stage Left. The help ribbon appears visible.

Figure 156 TALOS Tools button

2. Select the TALOS Tools button. The Tools home screen appears with no tool selected.
3. Press the Time to Position Calculator. The calculator is loaded with all fields blank and the permittable data field is hidden.
4. Set a starting position.
5. Set the time in seconds for the player is to reach its target position and press the Enter button on the keyboard number pad. TALOS will calculate the speed the player needs to travel If the speed is out of range, TALOS will set the permitted speed to the maximum speed of the controller, and it will display the Time to Position calculated at maximum speed.
6. Select the x in the upper right to close the calculator and exit out of TALOS Tools.

Length Converter

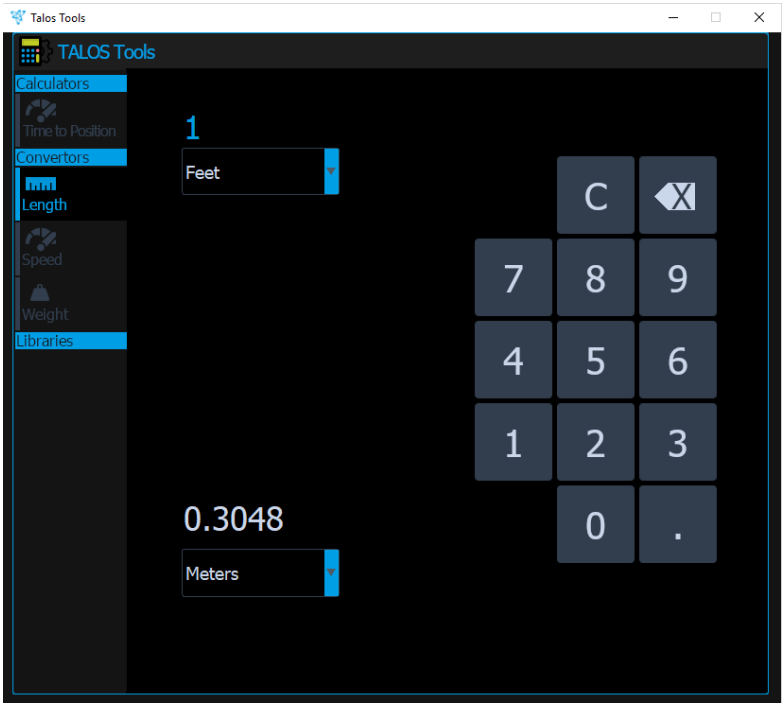


Figure 157 TALOS Tools Length Converter

The purpose of the Length converter is to allow users to convert units of Length within TALOS for personal reference.

The converter calculates for conversions between any pair of the following units:

Nanometers	Kilometers
Microns	Inches
Millimeters	Yards
Centimeters	Feet
Meters	Miles

1. Select a field to enter values in.
   Numbers for the selected field are displayed in blue.
2. Press the on-screen buttons or type to enter a value. The converter will calculate as soon as a number is entered.
3. Select the drop-down menu on either field to change units.

Speed Converter

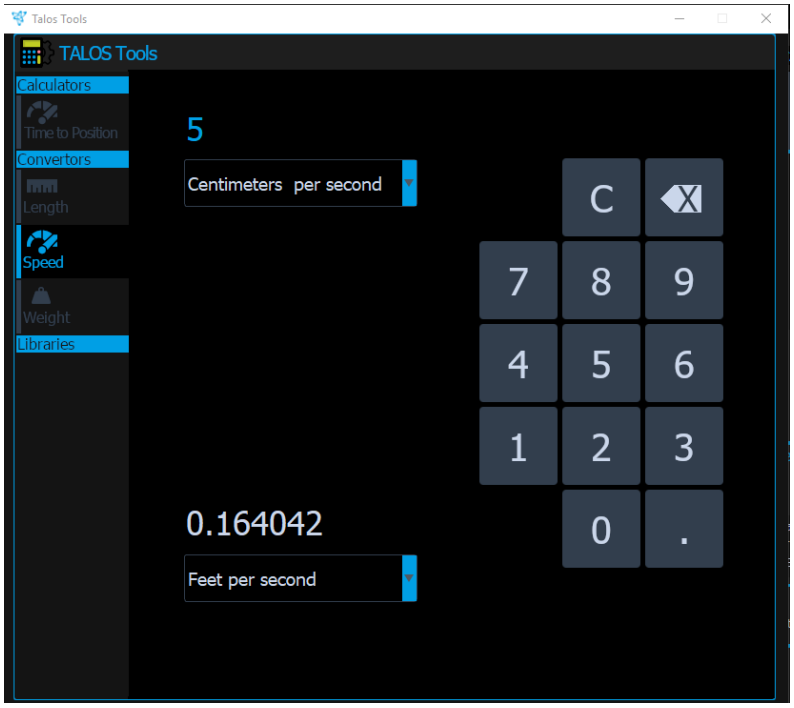


Figure 158 TALOS Tools Speed Converter

The purpose of the Speed Converter is to allow users to convert units of speed within TALOS for personal reference.

The converter calculates for conversions between any pair of the following units:

Centimeters per second	Kilometers per hour
Centimeters per minute	Feet per second
Meters per second	Feet per minute
Meters per minute	Miles per hour

1. Select a field to enter values in.
   Numbers for the selected field are displayed in blue.
2. Press the on-screen buttons or type to enter a value. The converter will calculate as soon as a number is entered.
3. Select the drop-down menu on either field to change units.

Weight Converter

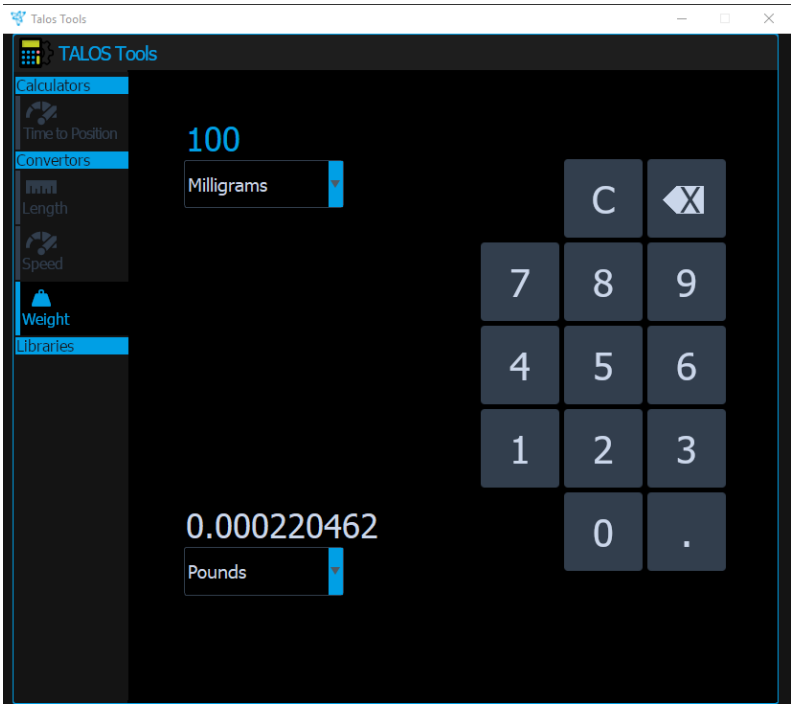


Figure 159 TALOS Tools Weight Converter

The purpose of the Weight Converter is to allow users to convert units of weight within TALOS for personal reference.

The converter calculates for conversions between any pair of the following units:

Milligrams	Metric tons
Centigrams	Ounces
Grams	Pounds
Kilograms	Tons

1. Select a field to enter values in.
   Numbers for the selected field are displayed in blue.
2. Press the on-screen buttons or type to enter a value. The converter will calculate as soon as a number is entered.
3. Select the drop-down menu on either field to change units.

- Stage Scripts

Provides a quick reference for using each screen when in TALOS.

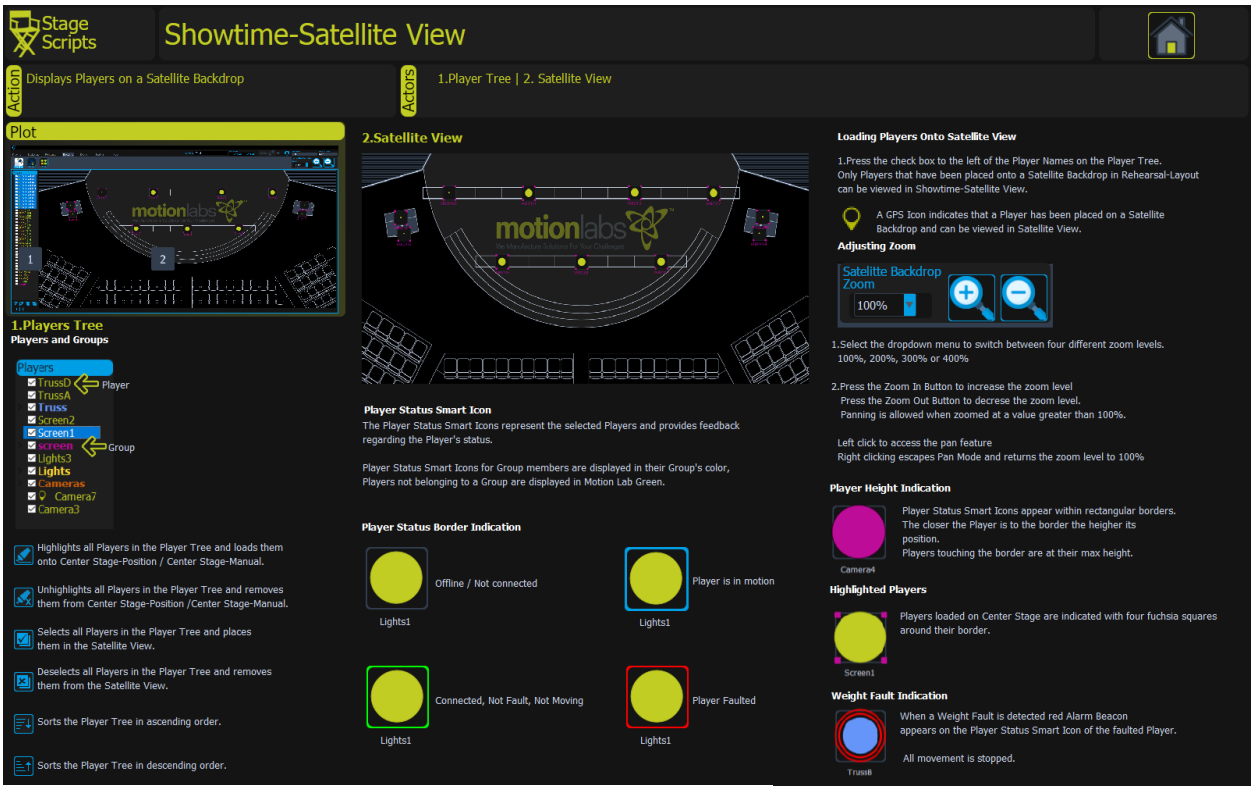
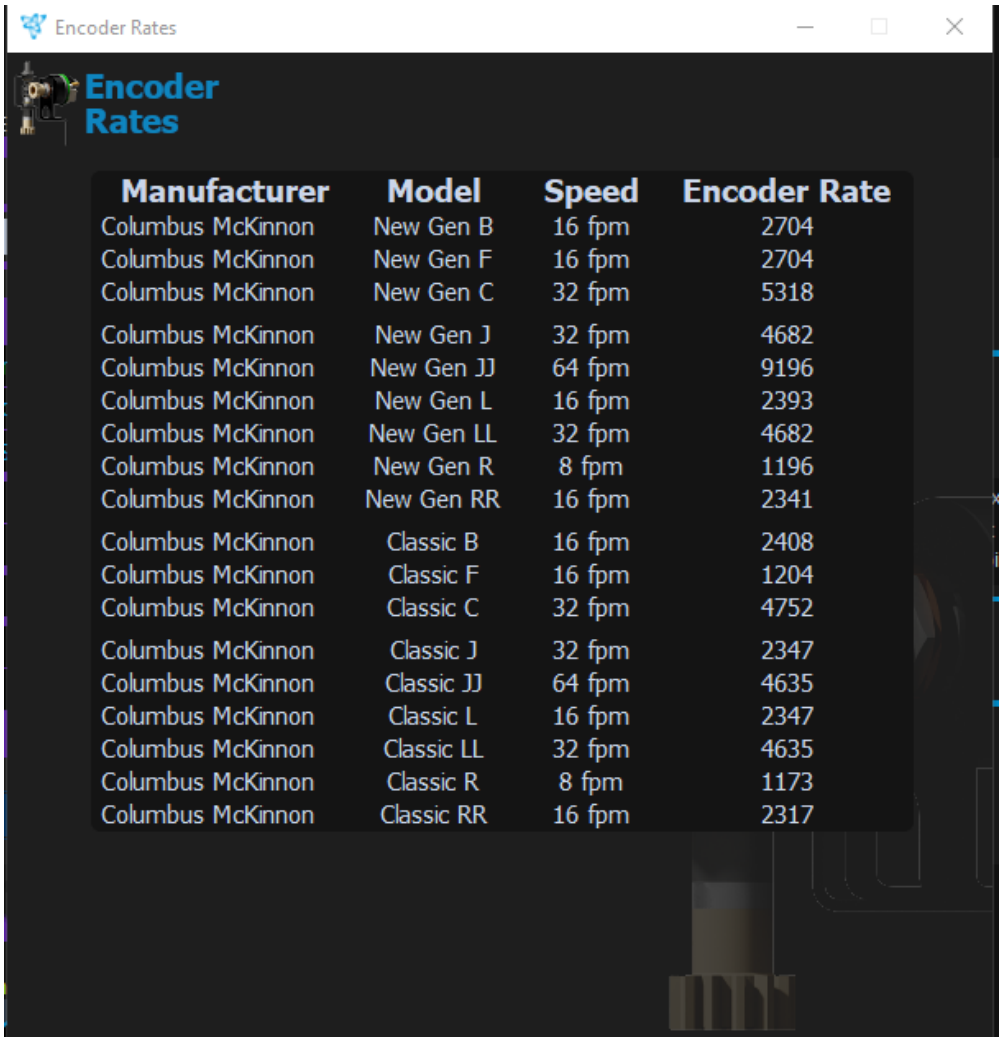


Figure 160 Stage Script example

Stage Script locations are indicated on the screen using a question mark icon.

- Encoder Rates



Manufacturer	Model	Speed	Encoder Rate
Columbus McKinnon	New Gen B	16 fpm	2704
Columbus McKinnon	New Gen F	16 fpm	2704
Columbus McKinnon	New Gen C	32 fpm	5318
Columbus McKinnon	New Gen J	32 fpm	4682
Columbus McKinnon	New Gen JJ	64 fpm	9196
Columbus McKinnon	New Gen L	16 fpm	2393
Columbus McKinnon	New Gen LL	32 fpm	4682
Columbus McKinnon	New Gen R	8 fpm	1196
Columbus McKinnon	New Gen RR	16 fpm	2341
Columbus McKinnon	Classic B	16 fpm	2408
Columbus McKinnon	Classic F	16 fpm	1204
Columbus McKinnon	Classic C	32 fpm	4752
Columbus McKinnon	Classic J	32 fpm	2347
Columbus McKinnon	Classic JJ	64 fpm	4635
Columbus McKinnon	Classic L	16 fpm	2347
Columbus McKinnon	Classic LL	32 fpm	4635
Columbus McKinnon	Classic R	8 fpm	1173
Columbus McKinnon	Classic RR	16 fpm	2317

Figure 161 Encoder Rates popup

An encoder rate is the distance a chain hoist will travel per pulse of its encoder. Variables such as speed and gearing may change the encoder rate value from hoist to hoist.

Encoder Rates are only used when adding a Soft Limit controller.

The Encoder Rates table can be accessed through the Help screen or when a player is being assigned to a Soft Limit Controller.

The table displays a list of common Soft Limit Controller models and information regarding speed and encoder rate.

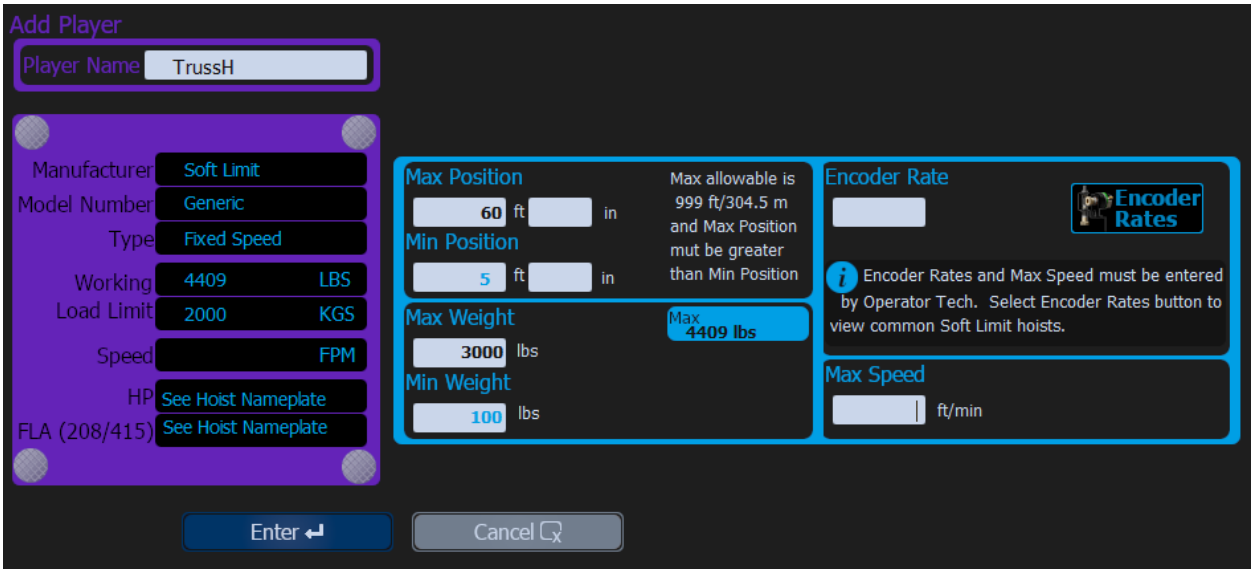


Figure 162 Add Player- Soft Limit Controller

Encoder Rates must be entered for all Soft Limit Controllers based on model numbers.

Soft Limit Controllers also require the Max speed to be specified based on the controller nameplate when assigning players.

RELATED PRODUCT LINE COMPONENTS

TALOS Main is the main control and data acquisition component of a larger distributed control system. The system consists of:

- Soft Limit Systems. This can be presently installed in a venue or portable.
- Hoist Safety Controllers (HSC).
- Variable Speed Control Systems.

MAINTENANCE AND INSPECTIONS

Maintenance and inspections should be carried out by competent personnel.

Information on general preventative maintenance may be found at: www.motionlabs.com. Check all components of system prior to operation.

Software Updates

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

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:

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

TALOS Main 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.

Separate and recycle all materials according to local guidelines. Whatever cannot be recycled should be disposed of as landfill waste.

DEFINITIONS

Activated User Any user who can access TALOS Screens.

Advance Step Condition The condition that must be met in order for a step in a sequence to index to the next step.

AND Operator An operator that performs a logical conjunction on two statements. It only yields a value of "true" when both statements are true. If one of the two statements is false, then the logical AND operator yields a "false" value.

Arm Confirms move parameters and enables the Run/Play button. The Arm button is disabled when a warning is displayed in the Messages Display.

Automated motion The movement of a load system to a specific position or sequence of positions by one or more pre-programmed moves.

Automation Operations performed electromechanically from pre-programmed criteria defined by the operator or manufacturer.

Backstage Screen to create, configure, edit, and monitor controllers and players.

Bump (inch) The momentary operation of a player; used for checking operation, direction, leveling a load, or SafeZone recovery.

Bumping The momentary operation of a player.

Center Stage The screen that appears on the operator's right. It houses all the motion panels where TALOS loads players intended for movement, including Manual, Position, Cue and Sequence control panels. The Control Station and Message Display also appear on Center Stage.

Center Stage - Control Station Houses the buttons used when moving players on Center Stage. The button options displayed depend on the screen selected on Center Stage. Buttons include Player Power, Arm, Run/Play. Position, Direction and Speed panels also reside on the control station

Center Stage - Cue Control Places TALOS in cue mode and displays the cue control screen.

Center Stage - Manual Control Places TALOS in manual mode and displays the manual control screen.

Center Stage - Position Control Places TALOS in position mode and displays the position control screen.

Center Stage - Sequence Control Places TALOS in sequence mode and displays the sequence control screen.

Closed loop A system that monitors the outcome of a process and uses that information to affect the process.

Command stop A command within the controller that stops movement of the player(s).

Competent person A person who is capable of identifying existing and predictable hazards in the workplace and who is authorized to take prompt corrective measures to eliminate them.

Control device The part of the system that is responsible for activation of a movement. It can be referred to as a human machine interface or man machine interface. It may control a single hoist or multiple hoists.

Control mode An operation method that dictates what type of move can be executed. TALOS has four control modes. They are Manual Mode, Position Mode, Cue Mode and Sequence Mode.

Controller A unit designed to allow for the operation of one or more players at a time, that (1) activates the power circuit, the control circuit, or both the power and control circuits of the player, and (2) allows for the removal of power from the player. It may be operated by a control device built in or attached via an external connector.

Cue A group of concurrent moves in which one or multiple players are assigned to move to a pre-determined position. Each move in a cue must have a player or group of players assigned as well as a position setpoint. If the player(s) is controlled by a variable frequency drive, speed parameters must also be assigned. Position, speed, acceleration and deceleration can be different for each move in a cue.

Cue Mode This is the mode that TALOS must be in to run cues.

Determinate structure A structure in which load distribution to supports are influenced by load and support location alone. In terms of entertainment rigging in this document, a determinate structure is a load system supported by multiple hoists in such a fashion that small moves of one hoist do not cause large load shifting to occur between hoists in the lifting system.

Director's Notes Comments attached to a Showfile that allow for further description and explanation of the file.

Enabling device A manually operated control device used in conjunction with a control station, which when continuously actuated, will allow a machine to function.

Encoder Rates Rate at which pulses from an encoder relate to distance of travel.

Equipment Zone Distance A measurement from the top of a truss to the bottom of any piece of equipment attached to the truss.

Emergency Stop A system designed to stop player movement by removing power from the player.

Events A list of faults that occurred in TALOS. Recorded Events are displayed in a table indicating the event name, the date & time the fault occurred, the name of the player & type (soft limit, HSC-02, VS-01 or VS-02), and the control mode at the time of the fault. If the control mode is a cue or a sequence, the loaded name will appear. If a sequence was running, the number of the step will be indicated.

Fault A condition that occurs in a controller or player that stops motion from continuing.

Group A set of players that are combined together with the intention of moving them in a synchronized fashion. Players in a group shall only move the same distance, in the same direction, at the same speed, acceleration, and deceleration.

HMI (Human Machine Interface) A user interface or dashboard that connects a person to a machine, system, or device. While the term can technically be applied to any screen that allows a user to interact with a device, HMI is most commonly used in the context of automation processes.

Hoist (electric chain hoist) - A device that uses an electric motor, link chain, and lift wheel to raise or lower a suspended load.

Hold to Run A safety enabled device that must be pressed and held closed by an operator the entire duration of movement. For example, a pushbutton that must be held down to jog a motor. If the pushbutton is released the movement will stop.

HSC-02 A fixed-speed automation control system that complies with German safety regulation BGV-C1.

Indeterminate structure A structure in which load distribution to supports are influenced by structure stiffness as well as load and support locations. In terms of entertainment rigging in this document, an indeterminate structure is a load system supported by multiple hoists in such a fashion that it is not practical to calculate with accuracy the dynamic load on any one of the hoists due to load shifting.

Interlock A mechanism, implemented in hardware or software, to coordinate the activity of two or more processes within a computing system, and to ensure that one process has reached a suitable state such that the other may proceed.

Interlock Device A switch, sensor, or interconnected logic system that permits or prevents motion.

Limit A limit switch, sensor or condition that prevents further movement in a direction of travel.

Limit switch A device that senses hoist chain travel beyond the normal position limit, i.e. over-travel.

Load carrying device The component(s) of the hoist system that connect a suspended load to the lifting media (e.g., batten, truss, hook).

Lower Ribbon Toolbar below main navigation or upper ribbon. Its contents are dependent on the upper ribbon.

Lower soft limit Indicates Position Min has been reached.

Manual Mode Requires only a direction and speed parameters (VFD only) in order to run. Players on Center Stage will move in the direction the operator selects when run conditions are met. This is referred to as open-loop position control.

Member A term used to describe players who belong to a particular group.

Membership Belonging to a group, cue, sequence or SafeZone interlock.

Move Table A table on Stage Left - Cue that lists all the moves included in the current cue.

Move The repositioning of a player or group from its origin.

On Event An advance condition allowing the user to assign multiple conditions that must be met to advance to the next step.

OR Operator An operator that performs a logical conjunction on two statements. It yields a value of "true" if either one or both statements are true.

Panning mode Mode on Stage Left - Showtime that allows the user to move around a Satellite Backdrop by clicking and dragging the cursor.

Pinout The assignment of a function to a particular terminal of a connector.

Player Stage Machinery that can be controlled by TALOS.

Player Offsets The magnitude of position difference from a member in a group to the Primary Member. The offset can be positive or negative.

Player Power When pressed, power is supplied to all loaded players. Movement will not occur untill the run/play button is pressed.

Player Tree An interactive list of all players in a Showfile.

Position Max/Min A player's minimum and maximum positions set by the user, creating the range of possible player positions when the user is setting the setpoints.

Position Mode Requires a setpoint and speed parameters (VFD only) to run. Players on Center Stage will move to the setpoint when the run conditions are met. This is referred to as closed-loop position control.

Primary Member Serves as the lead player in the group. The Primary Member will no have an offset.

Qualified person A person who has successfully demonstrated the ability to solve or resolve problems relating to the subject matter at work, either by possession of a recognized degree or certificate of professional standing or by extensive knowledge, training, or experience.

Quick Cues An area on Center Stage – Cue that holds 16 cues for loading.

Reasonably foreseeable misuse Use in any way that is predictable but not intended (e.g., deliberate misuse of the machine to save time or materials, inadequate operator training).

Recovery Mode Allows for a safe method of repositioning of a player when a SafeZone fault has occurred.

Rehearsal Navigation on Stage Left that gives operator access to Group, Cues, Sequences, SafeZone and Layout configuration.

Rehearsal - Cue Screen to create cues for players and groups.

Rehearsal - Group Screen to create new groups, select group colors, and assign group members.

Rehearsal - Layout Screen to position players on a Satellite Backdrop.

Rehearsal - SafeZone Screen to assign interlocks between players

Rehearsal - Sequence Screen to create sequences of players, groups and cues.

Risk assessment (RA) The process of identifying, evaluating, and qualifying potential hazardous conditions.

Risk Combination of the probability of occurrence of harm and the severity of that harm.

Risk reduction (RR) Mitigation of risk created by potential hazardous conditions.

Run/play initiates player movement in all modes

SafeZone the minimum distance allowed between two trusses**.**

SafeZone Distance References the minimum distance allowed between two trusses. TALOS will stop all motion to prevent a collision by executing a SafeZone fault. The operator can specify an Equipment Zone Distance when there is additional equipment attached between trusses.

SafeZone Fault A fault caused by a player coming within its SafeZone distance. Once detected, TALOS halts all movement and the user will only be allowed to manually bump the player until it moves outside its SafeZone Distance.

Slow Down Zone A zone calculated by TALOS that precedes the SafeZone Distance . Interlocked players are slowed down if the rate of change between them is too fast to stop safely for the SafeZone Distance. Only applies to variable speed playes.

Safety function A function implemented by a safety-related system or external risk reduction facilities intended to achieve or maintain a safe state for the equipment with respect to a specific hazardous event.

Satellite Backdrop A stage machinery plot used in TALOS to show the equipment layout in two-dimensional space. File types are: tif, tiff, jpg and png. Acceptable image resolution of the image is: 1740 x 890.

SCADA Stands for "supervisory control and data acquisition", a control system architecture that uses computers, networked data communications and graphical user interfaces for high-level process supervisory management.

Sequence An enumerated collection of steps that instruct a player, group or cue to move in a successive order. The step will advance to the next step when its assigned Advance Step Condition has been met. If the step is assigned a player or a group, motion parameters such as position, speed, acceleration, and deceleration must also be assigned to the step.

Sequence Mode This is the mode that TALOS must be in to run sequences.

Showfile The file that contains all the data used by TALOS to move stage machinery in an entertainment production. This includes but is not limited to Backstage setup, groups, cues, sequences, layout and SafeZone interlocks.

Showtime Navigation on Stage Left that displays all checked players from the Player Tree. The user can display players in Grid View, Satellite View or Table View.

Showtime-Grid View An overhead view in Showtime of all checked players from the Player Tree. Player status icons are displayed in rows across the Showtime Panel.

Showtime-Satellite View An overhead view in Showtime of all checked players from the Player Tree. Players can only be displayed who have been assigned positions on the Rehearsal Layout panel as indicated by the GPS icon beside the name on the Player Tree. Player status icons are displayed on the satellite backdrop.

Showtime-Table View Displays all checked players from the Player Tree in a table. The Table includes Player Name, Group Name (if applicable), Player Type, Status, Actual Position, Target Position, Actual Speed, Target Speed, Acceleration and deceleration rates, Maximum height, Minimum height, Weight, Maximum weight and Minimum weight.

Smart Icon Draggable icons that when dropped onto an object transfers useful data to the object.

Snapshots Allow the user to save and store preset positions of player for use in cues. Positions can be captured from Manual or Position Panels.

Soft*Limit System A system that gives position feedback via an encoder to a PLC and allows for movement of chain hoists to a desired position (position manager).

Stage Left Stage Left is the monitor that appears on the operator's left. It houses all the panels used in preparation for movement. This includes the Showfile, Backstage, Rehearsal, Showtime, Events, Settings and Help screens. The username and security level also appear on Stage Left.

Stage Left-Ribbon is located at the top of stage left and houses Stage Left Navigation, Showfile Name, username, security level, and the Online/Offline button.

Stage Machinery Are mechanical devices used to create effects or move equipment or scenery. Can be divided into two general categories: permanent machinery, which is equipment that is part of the venues structure and temporary machinery, which is equipment that is taken into the venue to be used with a specific production or event. These can include hoists, winches and other flying systems, lifts, or horizontal drives such as trolleys

Static load The maximum force applied to a component of a hoist system resulting from normal intended operating conditions while the system is at rest. This includes the apportioned fractions of the working load limit (WLL) and self-weight, including that due to load carrying devices and lifting media.

Step Pad Is an object that appears when adding a step to a sequence. Players, groups or cues can be dropped onto the step pad to assign it as the player, group or cue to move or play during a step.

Stop Categories

Category 0 stop An uncontrolled stop caused by the immediate removal of power to the machine actuators.

Category 1 stop A controlled stop with power to the machine actuators available to achieve the stop, then remove power when the stop is achieved.

Category 2 stop A controlled stop with power left available to the machine actuators.

TALOS a SCADA system that serves as the front-end interface to Motion Lab's Automation Systems, such as Soft Limit and VS-02. This system consists of TALOS Main, a PC based main control station, a hold to run enabling device, peripherals, and two monitors. TALOS allows users to easily configure, monitor and operate all subsystems seamlessly as though they are one automation control system. The user can easily configure and execute moves of all stage machinery controlled by any of its configured subsystems.

Upper Ribbon Main navigation on Stage Left and Center Stage.

Upper soft limit Indicates Position Max has been reached.

VFD (Variable Frequency Drive) A type of motor controller that drives an electric motor by varying the frequency and voltage of its power supply for the adjustment of motor speeds.

VS-01 A complete machine system that utilizes frequency drive technology to allow smooth, dynamic operation of chain hoists.

VS-02 A complete machine system that utilizes frequency drive technology to allow smooth, dynamic operation of chain hoists with integrated safety.

Warnings Conditions which occur in a controller or player that disables arming of players.

Weight Max/Min A players minimum and maximum weight load limits. These limits can be monitored and if exceeded generate a fault.

Working load limit (WLL) The maximum static load the user may apply.