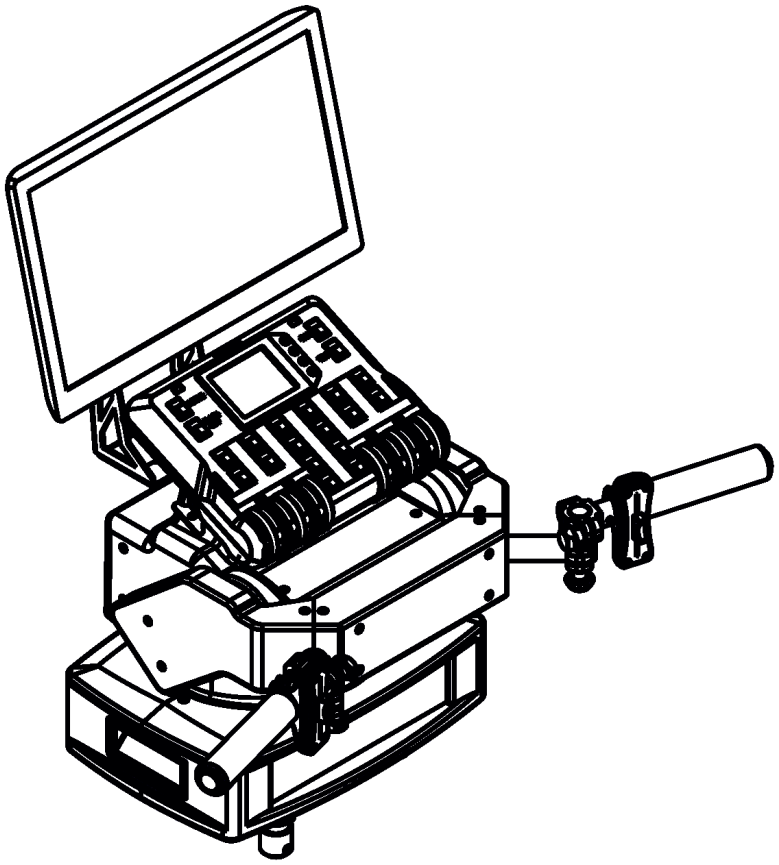
RoboSpot
Base Station Set



USER MANUAL

Version 2.7

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RoboSpot Base Station

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FOR YOUR OWN SAFETY, PLEASE READ THIS USER MANUAL CAREFULLY BEFORE YOU INSTALL THE PRODUCT .

1. Safety instructions

CAUTION!
The RoboSpot was designed for indoor use only.
The product is for professional use only, it is not for household use.

This product has left our premises in absolutely perfect condition. In order to maintain this condition and to ensure a safe operation, it is absolutely necessary for the user to follow the safety instructions and warnings written in this manual.

DANGEROUS VOLTAGE CONSTITUTING A RISK OF ELECTRIC SHOCK IS PRESENT WITHIN THIS UNIT!

Make sure that the available voltage is not higher than stated on the rear panel of the fixture.
This fixture should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supplied, consult your authorized distributor or local power company.

Always disconnect the fixture from AC power before cleaning, removing or installing a fuse, or any part.

The power plug has to be accessible after installing the fixture. Do not overload wall outlets and extension cords as this can result in fire or electric shock.

Do not allow anything to rest on the power cord. Do not locate this fixture where the cord may be damaged by persons walking on it.

Make sure that the power cord is never crimped or damaged by sharp edges. Check the fixture and the power cord from time to time.

Refer servicing to qualified service personnel.

This fixture falls under protection class I. Therefore this fixture has to be connected to a mains socket outlet with a protective earthing connection.

Do not connect this fixture to a dimmer pack.

If the fixture has been exposed to drastic temperature fluctuation (e.g. after transportation), do not switch it on immediately. The arising condensation water might damage your device. Leave the device switched off until it has reached room temperature.

Do not shake the fixture. Avoid brute force when installing or operating the fixture.

This fixture was designed for indoor use only, do not expose this unit to rain or use near water.

When choosing the installation spot, please make sure that the fixture is not exposed to extreme heat, moisture, dust or entertainment smoke (haze)

Air vents and slots in the fixture are provided for ventilation, to ensure reliable operation of the device and to protect it from overheating.

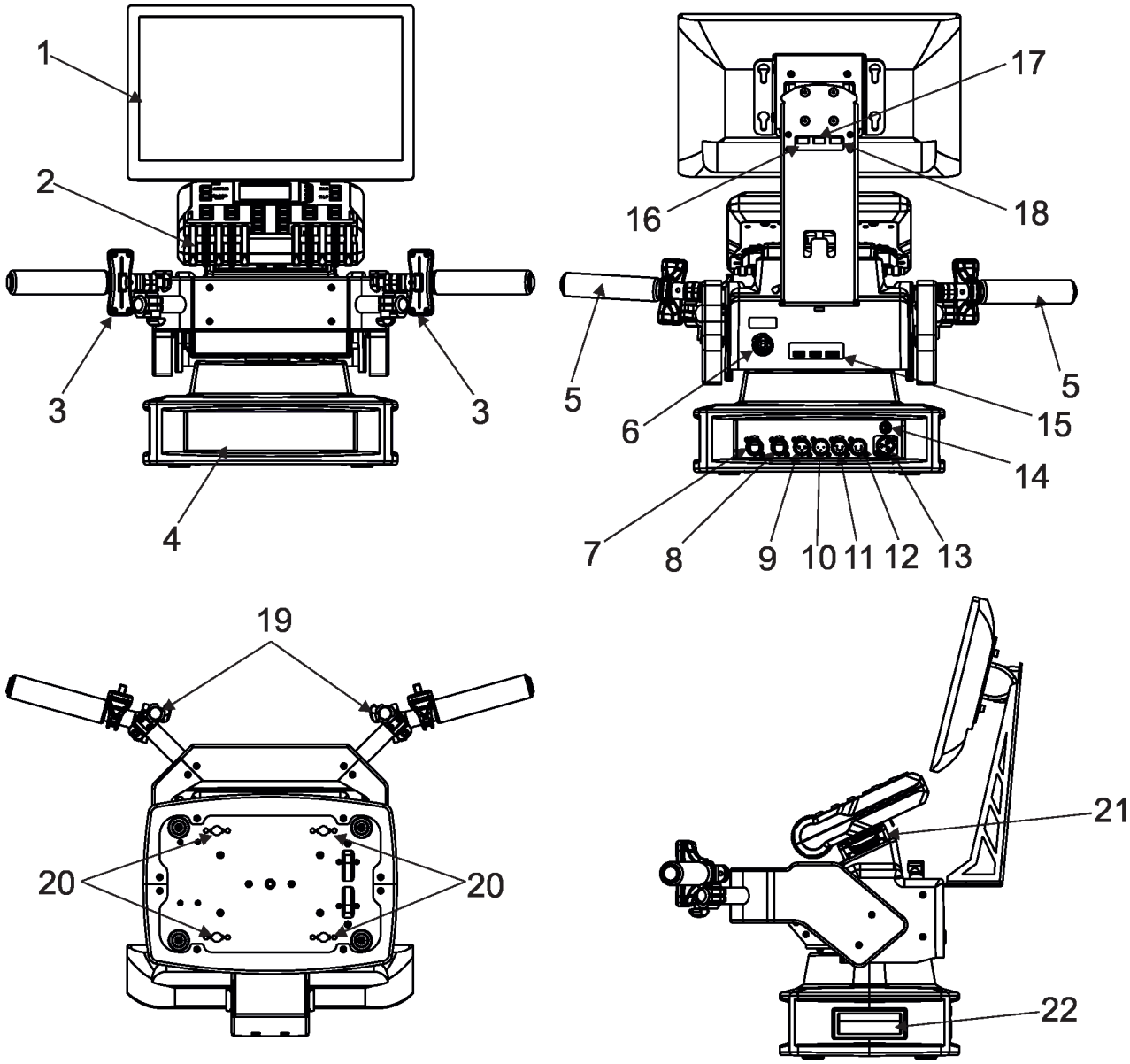
Operate the fixture only after having familiarized with its functions. Do not permit operation by persons not qualified for operating the fixture. Most damages are the result of unprofessional operation!

Please use the original packaging if the fixture is to be transported.

Please consider that unauthorized modifications on the fixture are forbidden due to safety reasons!

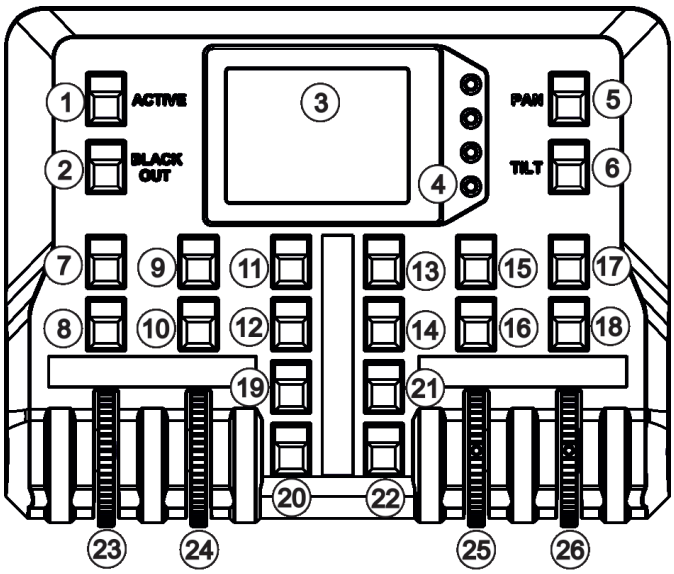
2. Description of the the RoboSpot

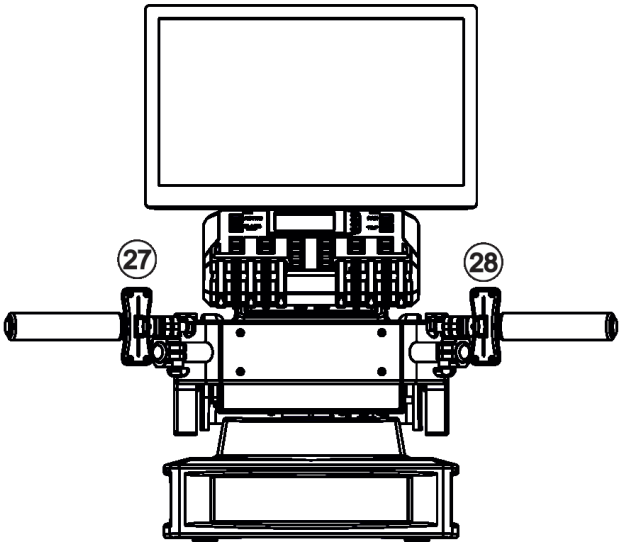
2.1 RoboSpot



1 - Monitor installed on the monitor holder
2 - FollowSpot Controller
3 - Faders
4 - Base
5 - Control handlebars
6 - Monitor supply
7 - Camera IN (RJ45)
8 - Ethernet (RJ45)
9- (DMX Out (3-pin XLR)
10 - (DMX In (3-pin XLR)
11- (DMX Out (5-pin XLR)
12 - (DMX In (5-pin XLR)
13 - Power (Neutrik PowerCon)
14 - Fuse holder
15 - HDMI output for monitor + 2 x USB
16 - Input for USB lamp (+5V/50mA)
17 - USB (50mA)
18 - Input for USB lamp (+5V/50mA)
19 - Adjusting locks for handles
20 - Apertures for 1/4 turn locks
21 - Base of the FollowSpot Controller
22 - Manipulation handles

2.2 FollowSpot Controller





1 - Activation button (actives the FollowSpot Controller)
2 - BlackOut button
3 - Graphic touch screen
4 - Switch On screen button
5 - Pan button(enables/disables pan motor)
6 - Tilt button(enables/disables tilt motor)
7 - Preset button
8 - Activation button for jog-wheel
9 - Preset button
10 - Activation button for jog-wheel (24)
11 - Preset button
12 - Preset button
13 - Preset button
14 - Preset button
15 - Preset button
16 - Activation button for jog-wheel (25)
17 - Preset button
18 - Activation button for jog-wheel (26)
19 - Preset button
20 - Preset button
21 - Preset button
22 - Preset button
23 - Jog-wheel
24 - Jog-wheel
25 - Jog-wheel
26 - Jog-wheel
27 - left Fader
28 - Right Fader

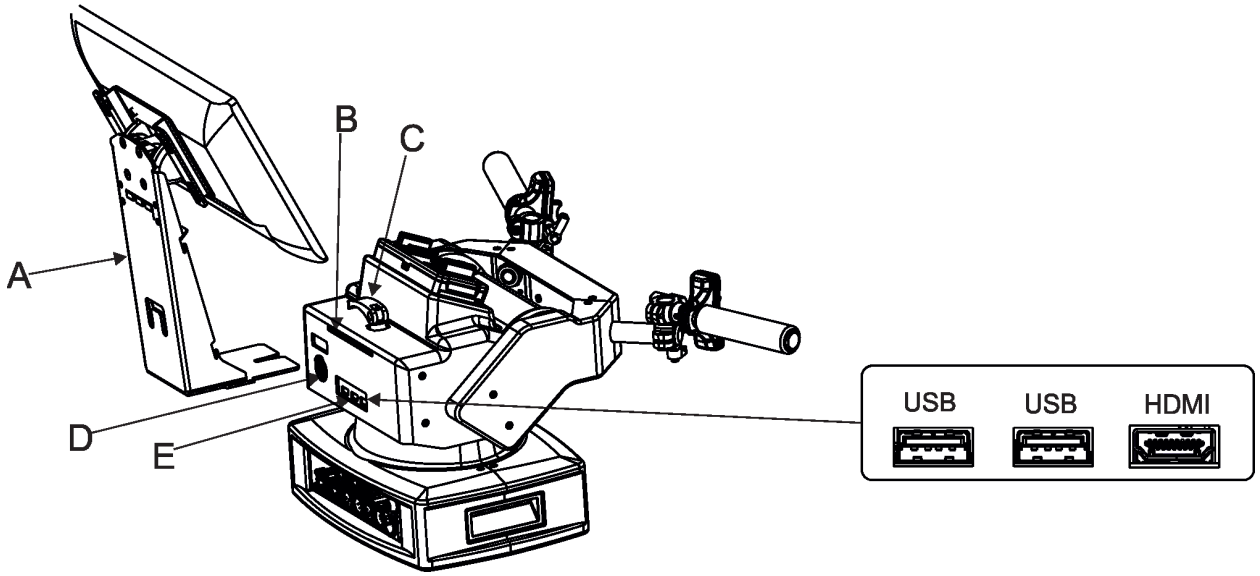
3. Installation

The RoboSpot must be installed by a qualified worker in accordance with all national and local electrical and construction codes and regulations.

Monitor installation

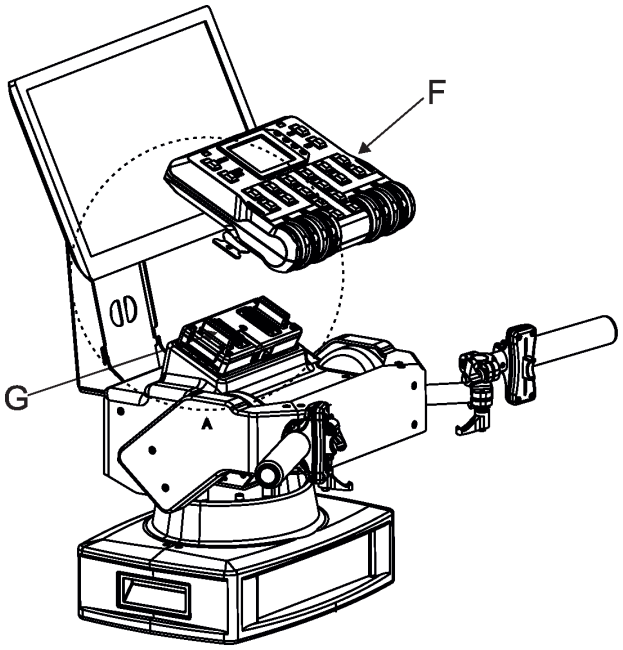
1. Insert the monitor holder (A) into the slot (B) of the RoboSpot and secure it by means of the lock (C). The lock must be fully screwed and reclined. Check the monitor is securely fastened.
2. Connect the power cable of LCD monitor to the socket (D), HDMI cable and two USB cables to sockets (E) in the RoboSpot.

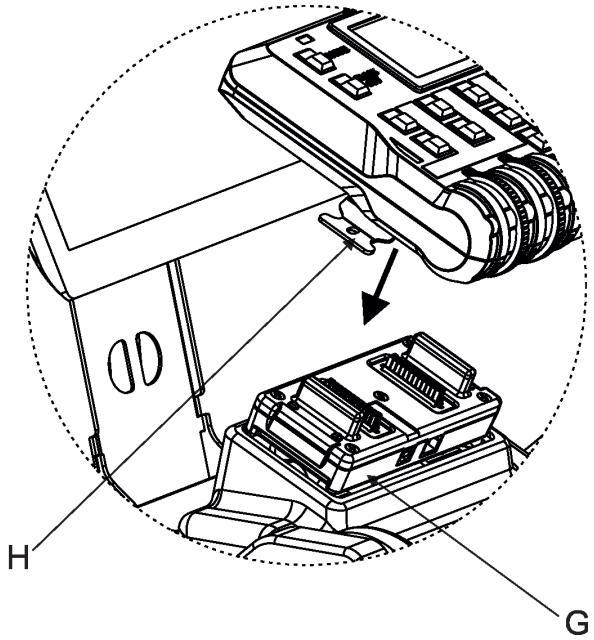
Note: The HDMI connection has to be carried out before connecting the RoboSpot to mains.



FollowSpot Controller installation

1. Place the FollowSpot Controller (F) on the FollowSpot Controller base (G). Connectors on both parts have to snap each other. Two locks (H) have to be pressed during placing (removing) the FollowSpot Controller (F).
2. If you need to place the RoboSpot on a tripod, you have to install an adaptor with spigot to the tripod.



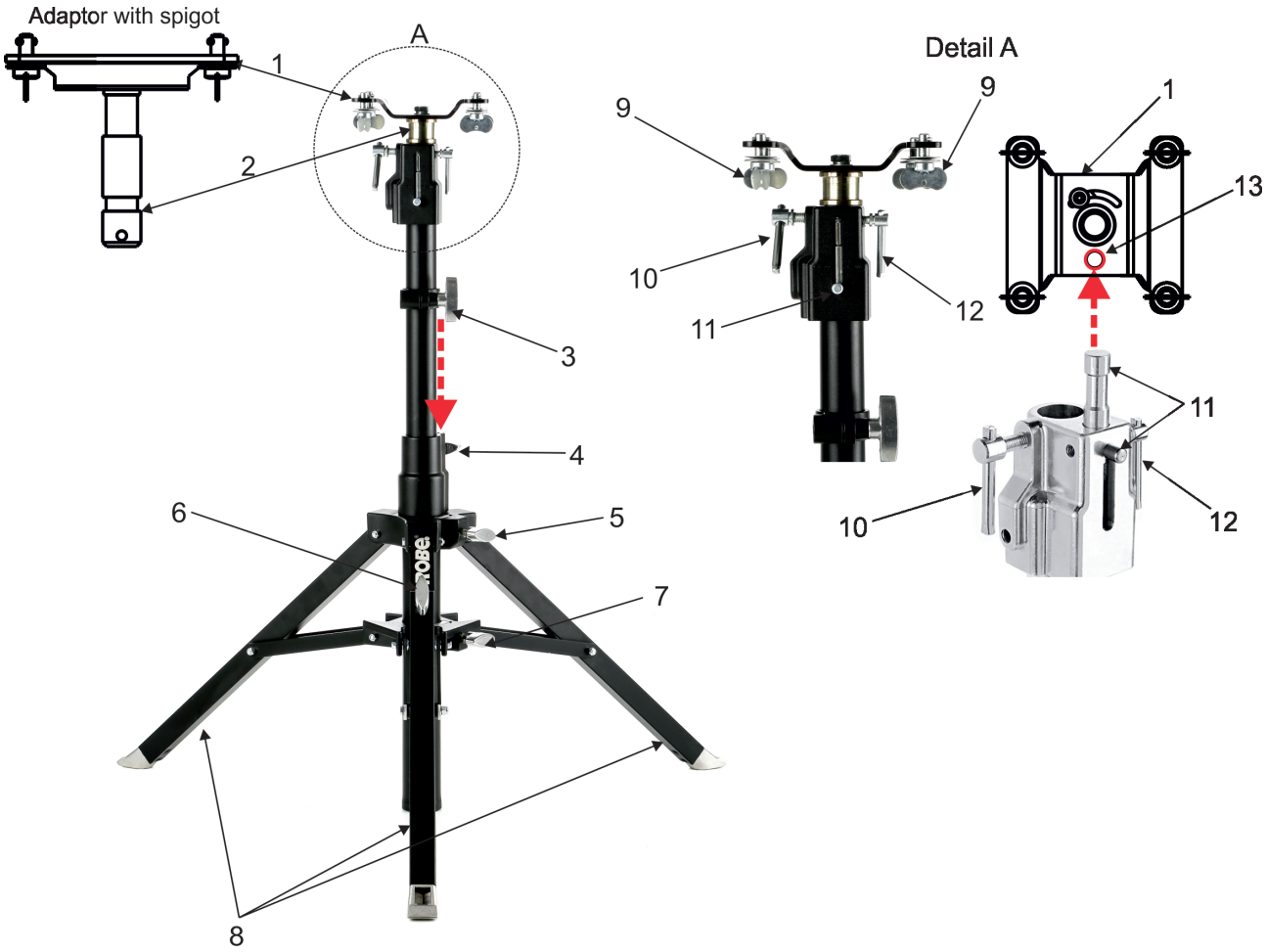


Tripod and adaptor installation

1. Unfold and adjust height of the tripod and distance of legs (8) by means of adjusting locks (4,5,6,7). The lock (3) has to be in a lower position (as shows arrow on picture below).
2. After inserting the adaptor (1) with spigot (2) to the tripod, the spigot (2) has to be secured by means of the lock (10) and the adaptor (1) by means of the pin (11) which is inserted to the hole (13) of the adaptor (1) as shows arrow on picture below. Position of the pin(11) has to be secured by means of the lock (12).
3. The four quarter -turn locks (9) of the adaptor serve for fastening the RoboSpot on the adaptor. Two workers should install the RoboSpot on the assebled tripod with the adaptor.

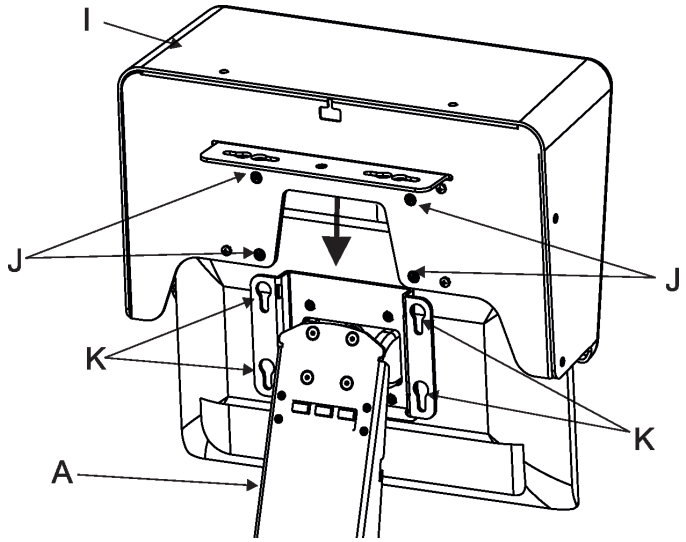
   Check that all quarter -turn locks (9) are fully tightened before operating the RoboSpot.

Check that all locks (3, 4, 5,6,7, 10,12) are fully tightened before placing the RoboSpot on the tripod with adaptor.

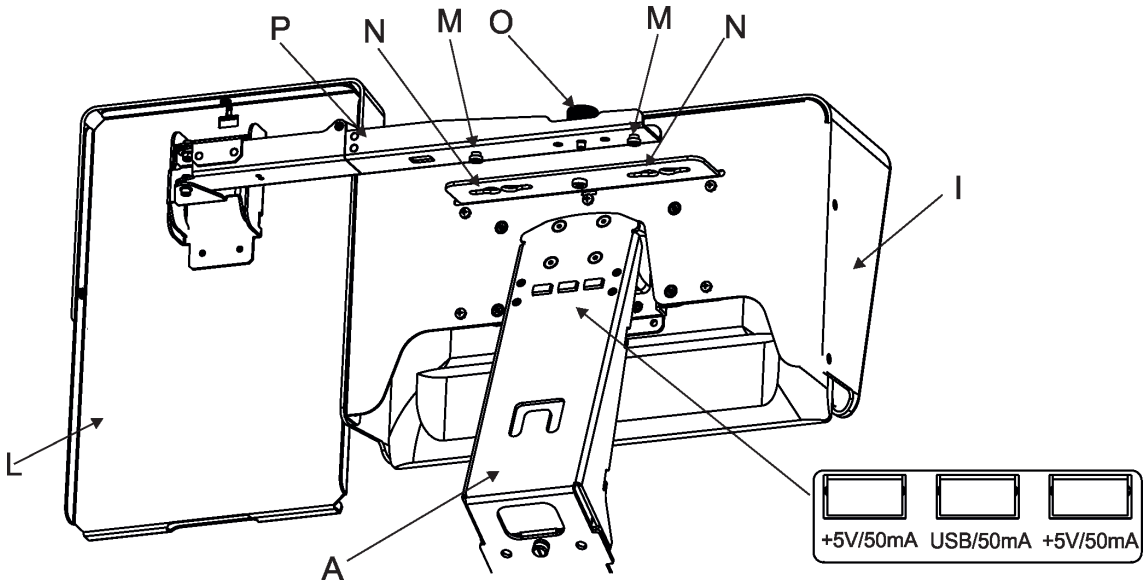


3.1 Monitor shield and note holder installation

1. Place the monitor shield (I) on the monitor holder (A) in this way that pins (J) of the monitor shield snap to apertures (K) in the monitor holder and move the monitor shield down until you rich a stop.



2. Place the note holder (L) on the monitor shield (I) in this way that pins (M) of the arm (P) snap to the apertures (N) of the monitor shield (I) and move the arm (P) to the left until you rich a stop.
3. Secure the note holder to the monitor shield by means of the knob (O).
4. Connect two cables of USB lamps to the sockets marked +5V/50mA on the monitor holder.



Note. The arm (P) of the note holder (L) can be turned by 180°, this turned position of the arm allows you to install the note holder on the opposite site of the monitor shield.

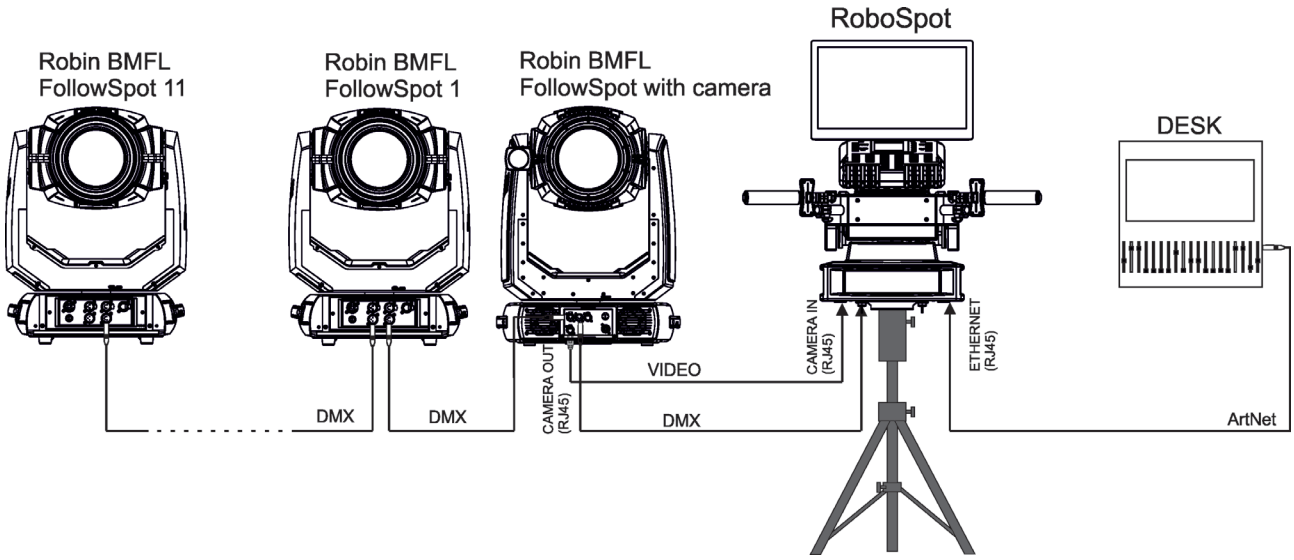
4. RoboSpot connection

After installing the RoboSpot, connect it with the ROBIN BMFL FollowSpot with camera (or the RoboSpot MotionCamera), with another supported ROBIN fixtures and a control desk.
The RoboSpot has to be connected with a desk by means of Ethernet cable and fixtures intended for the followspot operation have to be connected by means of DMX cable.

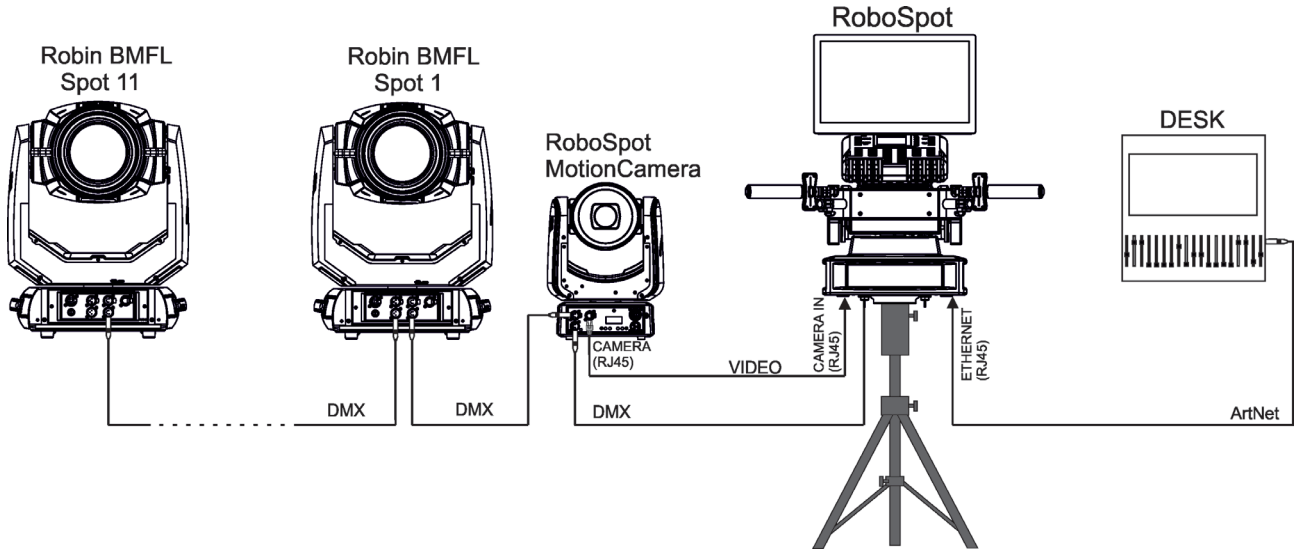
You do not need to patch the RoboSpot, but fixtures connected to the RoboSpot have to be patched.
Note: Fixtures connected to the RoboSpot and not supported by the RoboSpot will be ignored by the RoboSpot.

The desk is holding master intensity for the fixtures. You must open up a dimmer on the desk in order to control the light intensity from the RoboSpot. If you for example set a dimmer intensity at 50% on your desk, the RoboSpot operator will have full range of the fader to go from 0-50% of the light intensity.

Example 1. Connection with the ROBIN BMFL FollowSpot with camera
Up to 11 ROBIN BMFL FollowSpots can be connected to the ROBIN BMFL FollowSpot with camera.



Example 2. Connection with the RoboSpot MotionCamera
Up to 11 supported ROBIN fixtures can be connected to the RoboSpot MotionCamera. The fixtures should be of the same type.

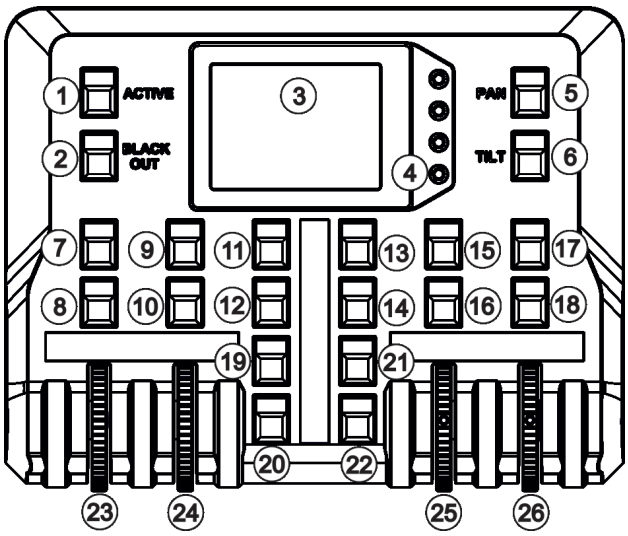


Note. In case of operating the RoboSpot system in interfered environment, Ethernet switches are recommended in video line (one at the RoboSpot and one at the Robin BMFL FollowSpot or RoboSpot MotionCamera).

5. Operation

After installing the RoboSpot and connecting it with the ROBIN BMFL FollowSpot (RoboSpot MotionCamera) and another fixtures used for the followspot operation, connect the RoboSpot to mains by means of the enclosed power cord.

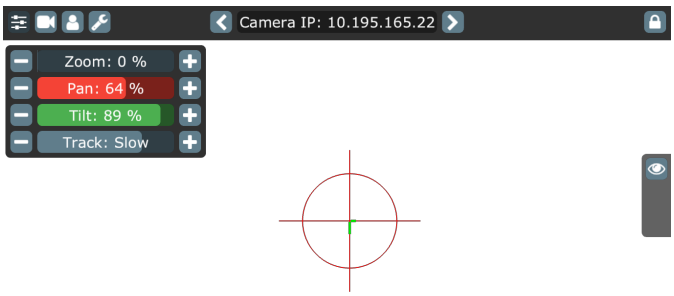
Press the button ACTIVE (1) in order to activate the FollowSpot Controller. By pressing the button PAN (5) and TILT (6) you can activate/deactivate of the pan/tilt movement of the ROBIN BMFL FollowSpot (and all connected BMFL fixtures to the RoboSpot).
The button BLACK OUT (2) closes light output of the ROBIN BMFL FollowSpot (and connected fixtures to the RoboSpot).



5.1 Functions mapping

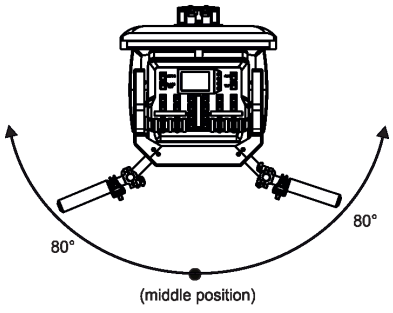
After switching the fixture on,touch the Sliders button on the RoboSpot touch screen and use the pan and tilt sliders to set desired position of the ROBIN BMFL FollowSpot´s head.

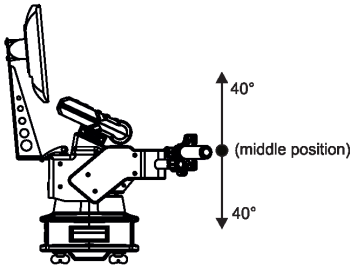
Sliders button

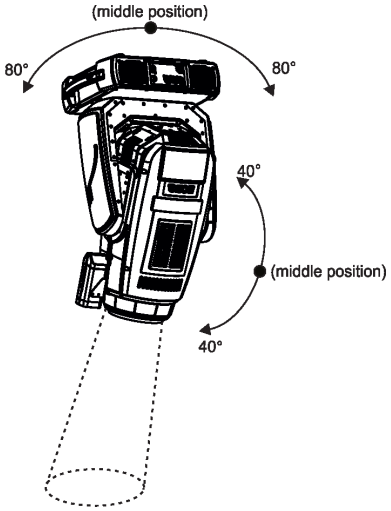


Sensitivity of pan/tilt movement:
High level (most accurate) - green slider
Medium level -yellow slider
Low level- red slider
In order to switch sensitivity of pan or tilt movement to desired level, press and hold the PAN (5) or TILT (6) button until the colour of fader is changed.

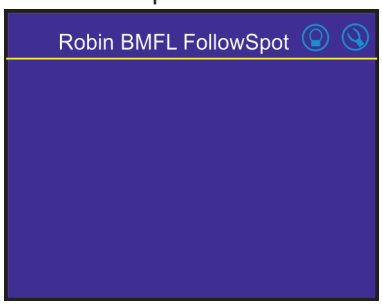
It is suitable to set the RoboSpot handlebars to the "middle" position and after that set the pan and tilt position of the moving head by the sliders on the RoboSpot touch screen.

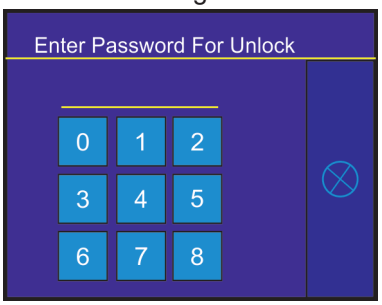






Touch the icon on the FollowSpot Controller to display the password entering screen:



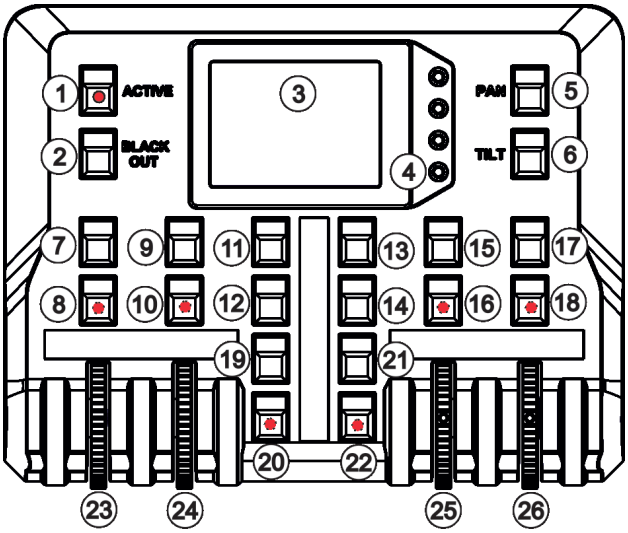


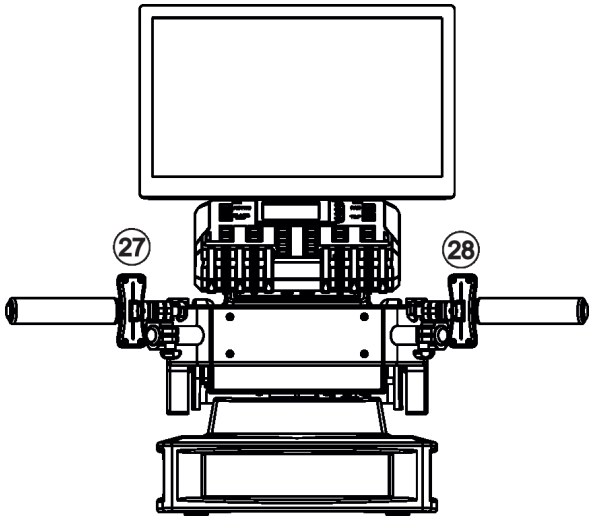
Enter the password (5242) to enter the main menu of the FollowSpot Controller. The password prevents unauthorized person from changing setting of the FollowSpot Controller.

Enter the menu "Functions Mapping". The list of available effects will appear:
If the message" Please Activate FollowSpot Controller!" will appear, press the ACTIVE button (1) on the Follow Spot Controller.

To assign effects to the jog-wheels and faders

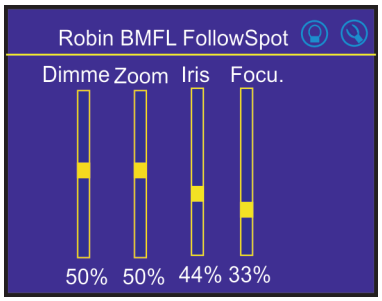
1.Touch desired effect. Buttons (8/10/16/18) which activate Jog-wheels (23/24/25/26) and buttons (20/22), which matches faders (27/28) will start to flash.





2.Press desired button and selected effect will be assigned to its jog-wheel (fader).
Assigned effect is displayed in a yellow colour, free effects stay in a white colour.
3.Repeat steps 1 and 2 for needed effects.

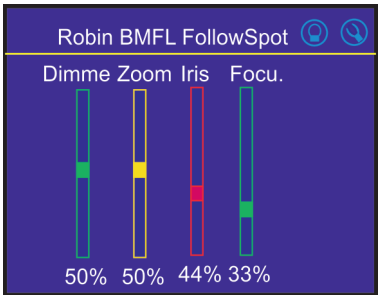
4.Touch the [cancel] icon and than [back arrow] icon. The screen with effect faders will appear.
E.g.



Only effects assigned to the jog-wheels will appear on this screen.
Effects assigned to the faders will not be shown.

Sensitivity of the jog-wheels assigned to the effects can be set at three levels: low, medium and high.
The levels of the sensitivity are marked in colour on the screen:

low level - red slider
medium level - yellow slider
high level (most accurate)- green slider



In order to switch an jog-wheel to desired level of sensitivity, press and hold its activating button (8/10/16/18) until the colour of fader is changed.

Effects assigned to the four jog-wheels and two faders on the handlebars have a priority over DMX values coming from a DMX controller**.**

Functionality of the RoboSpot can by restricted by means of commands on the channel Power/Special Functions (240-255 DMX) of connected fixture.

To control desired effect
1.Use its slider on the screen or press the activating button for its jog-wheel and use this jog-wheel or use a corresponding fader.
The FollowSpot Controller overwrites fixture channels which are mapped to its jog-wheels or faders, excepting a dimmer. The dimmer value is a combination of value coming from DMX console and a value on the Follow-Spot Controller (e.g. DMX console sends 180 DMX, jog-wheels shows 50%, real DMX value coming to fixture is 90 DMX).
In case that the DMX console does not send DMX data, the FollowSpot Controller allows full range (0-255 DMX) of dimmer control.

To release an effect from the jog-wheel (fader)
1.Touch desired effect from the list of effects in the menu "Functions Mapping".
2.Touch the option "Unlink".
3.The effect will be displayed in a white colour.
The item "All" allows you to release all assigned effects at one go.

5.2 Influence of the RoboSpot on the fixture channels

The general rule (with a few exceptions described in the table below) is the RoboSpot controls mapped channels (functions) on jog-wheels or faders in range which allows the FollowSpot Controller (see the chapter 6.1 Menu Functions Mapping).

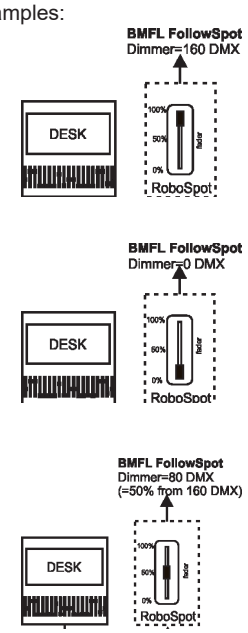
Non-mapped channels (functions) are subject to full control of a desk except:

Colour channels (CMY+CTO and RGB(W)+CTO) if Colour Buttons are active.
Zoom/focus in Multi Device Control if the function Auto Zoom/Foc. is on.
Pan/tilt.
Pan/tilt speed (use the Track slider in the Slider menu on the screen to set desired pan/tilt speed).

Behaviour of the shutter channel:

Closed shutter on the desk closes light output on a fixture connected to the RoboSpot.
Open shutter on the desk - light output of the connected fixture can be closed by the BlackOut button on the FollowSpot controller.

Table of behaviour of some mapped channels (functions) on the RoboSpot:

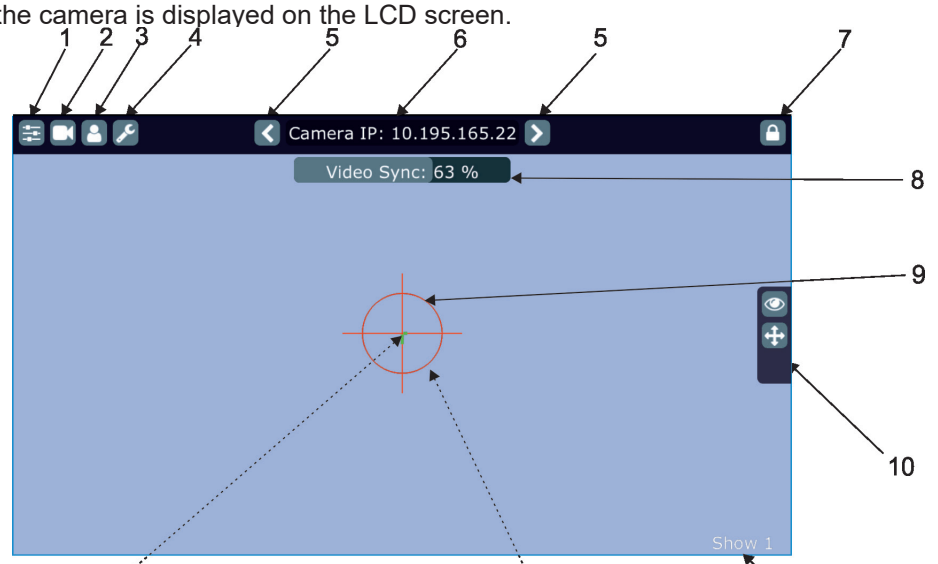
Mapped channel (function)	**Behaviour of channel**		**Comment**
	Single Device Control	**Multi Device Control (MDC)**	
Dimmer	Jog-wheel or fader* of the RoboSpot controls a light intensity from 0% to the value set at desk. Examples:  To get max. light intensity, set desk dimmer =100% and the RoboSpot fader=100%.	The same as at Single Device Control	Exception: the RoboSpot takes full control over dimmer during the process "Setup MDC" (menu "Multi. Dev. Control").
Zoom, Focus	Jog-wheels or faders* allow full control in range of 0-100%.	**1. Auto Zoom/Foc.= Off** The same as at Single Device Control. **2. Auto Zoom/Foc.= On** MDC takes control over zoom and focus regardless of it if they are mapped on jog-wheels or faders or not. If zoom and focus are mapped - offsets set on jog-wheels or faders are added to automatically calculated values. If zoom and focus are not mapped - automatically calculated values are used (offsets on jog-wheels or faders are set to 0).	Auto Zoom/Foc. is the function in the menu "Multi. Dev. Control".

* depends on functions mapping to the control elements of the RoboSpot.

5.3 LCD monitor screen

The RoboSpot is equipped with the 15.6" (10-point) touch screen with max. resolution 1366 x 768.

1. After switching the RoboSpot and the ROBIN BMFL FollowSpot with camera (or the RoboSpot MotionCamera) on, image scanned by the camera is displayed on the LCD screen.



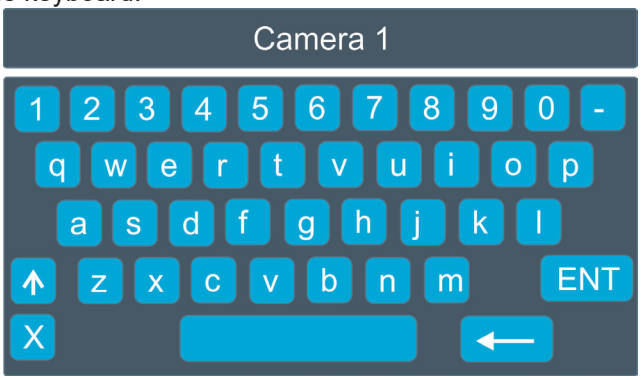
Touch the centre of the positioning cross and move the positioning cross to desired position on the screen.

Touch the edge of the positioning circle and move it in/out to decrease/increase the size of the circle

Current scene

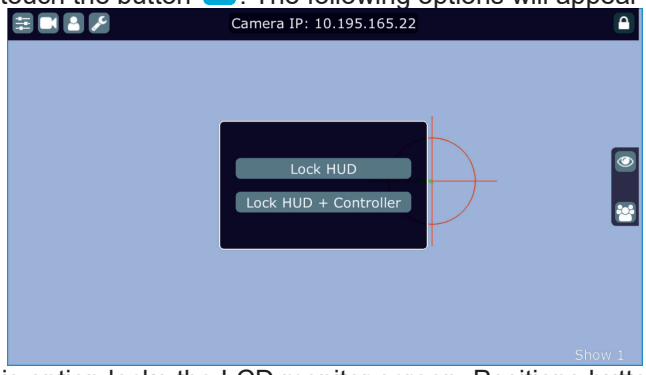
1- Slider button
2- Camera button
3- User button
4- Service button
5 - Camera selection buttons
6- IP address of selected camera*
7- Screen lock***
8- Video synchronization box**
9 - Position circle (red)
10 - Action toolbar

*You can change the name of selected camera. To rename selected camera, touch for two seconds the camera name (e.g. Camera IP: 10.195.164.171).
The software touch keyboard will appear. Use the keyboard to type a new name of camera (e.g. Camera 1).
Touch ENT to save the new name of the camera. The new name is saved into camera (in case that you will use other Robospot, the new camera name will be reloaded)
Touch the key X to close the keyboard.



**When you switching between cameras, a box with video synchronization status is displayed. This box shows a delay between the camera and the screen. The value 0% means max. delay, 100% is without delay (and this box will disappear from the screen after reaching 100%).

*** To lock the screen, touch the button . The following options will appear on the screen:



Lock HUD - this option locks the LCD monitor screen. Positions buttons and pan/tilt movement by means of the control handlebars are available.

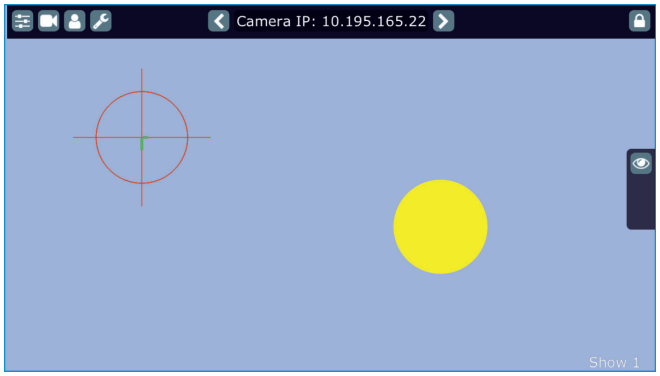
Lock HUD + Controller - this option locks the LCD monitor screen and the FollowSpot Controller display. The FollowSpot Controller presets and Jog-wheels are available (Jog-wheels have to be activated before locking the FollowSpot Controller display). Positions buttons and pan/tilt movement by means of the control handlebars are also available.

Lock ALL - this option locks all RoboSpot system

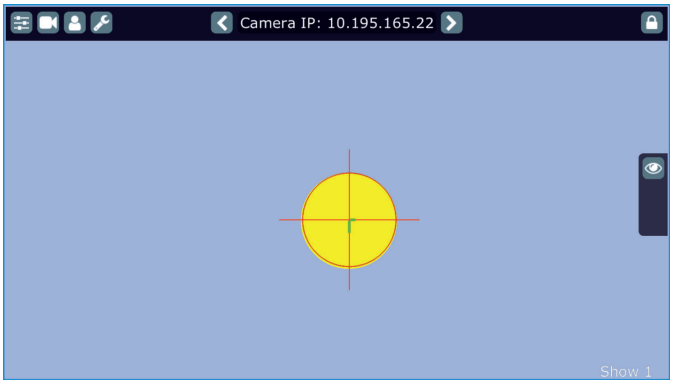
To unlock the screen, touch the button and the software touch keyboard will appear. Type a correct password (the password is the same as the password for the FollowSpot Controller, default password is 5242) and confirm it by touching the key ENT. Touch the key X to close the keyboard.

Note: the message "Not correct camera settings! Reset camera settings?" informs you that the RoboSpot software and the camera settings are not accordance.
Use the option "Yes" to set correct camera settings.
The option "Yes" has the same effect as the option "Factory reset " in the Camera button menu.
The message " Last used camera not present. Wait for camera?" informs you that the RoboSpot cannot find last used camera. If you select Yes, the RoboSpot will still search for last used camera, if you select No, the RoboSpot will use another founded camera.

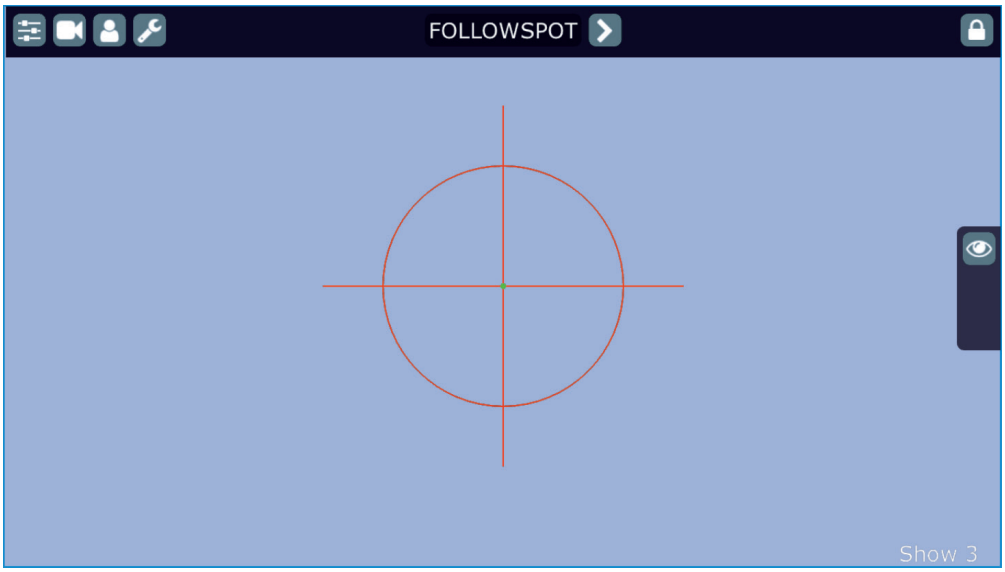
2. After switching the ROBIN BMFL FollowSpot lamp on and adjusting its beam (zoom, focus, dimmer....), aim the beam to desired position by means of the pan/tilt handles.



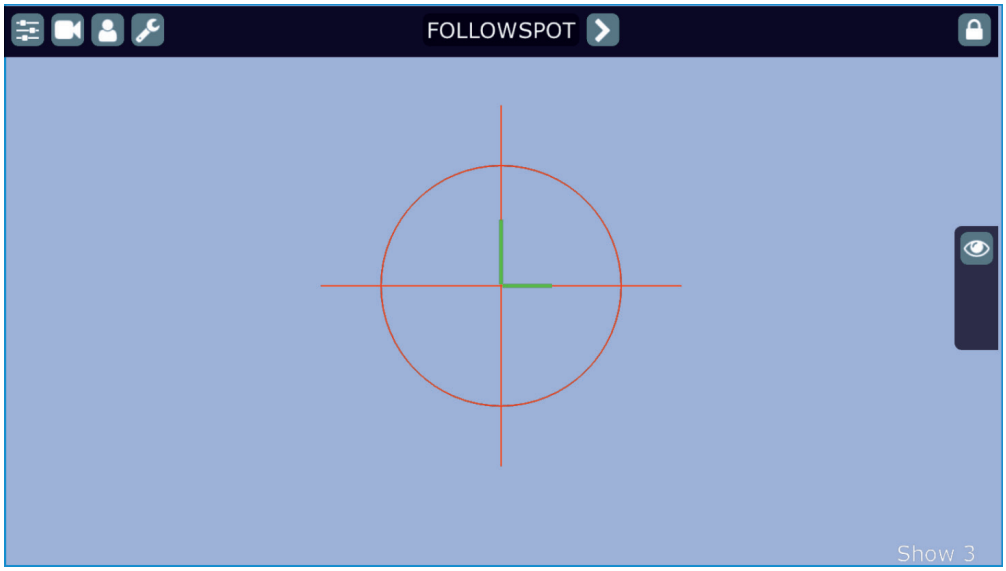
3. Touch and move the position circle on the beam image and set its size in order to match to beam image. Now, when you move with the control handles, both beam image and position circle on the screen will move synchronously. In case that the light output from the fixture is closed, you know the position of the light beam by means of the position circle.
Note: if you change a camera zoom, you have to move and adjust the position circle on the beam image again.



The green lines in the position circle give pan and tilt position of the control handles.
The green point in the centre of the position circle signals the middle position of the control handles.



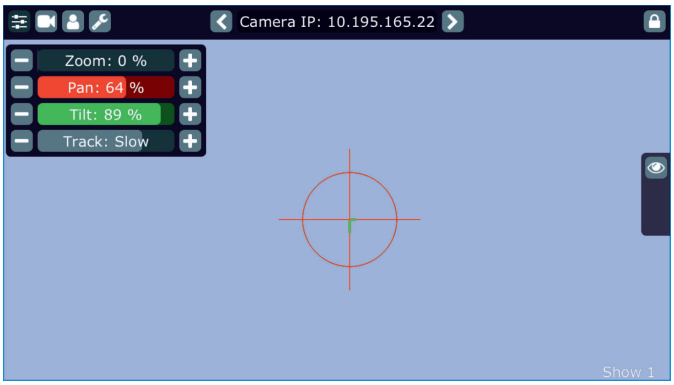
If you move with control handles, the distance between the green lines and the red circle will give available range of pan and tilt movement of the control handles. The red circle poses a " limit" of pan/tilt movement.



Note.
If the pan/tilt control handles requires recalibration, the following screen will appear.

In this case please do a calibration of pan/tilt handles as described in the article "5.5 RoboSpot handles calibration".

Sliders menu



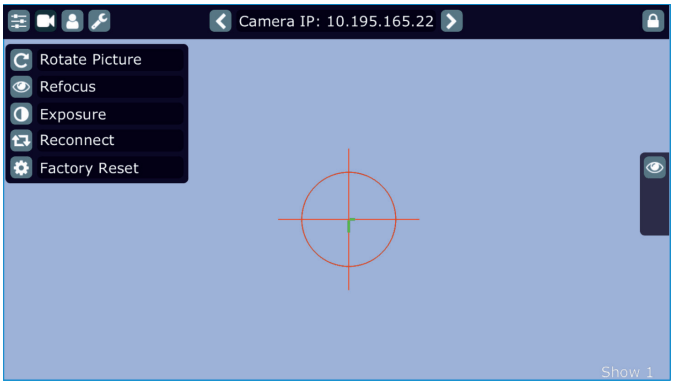
Zoom slider- use it to change a zoom of currently selected camera. A sensitivity of a camera zoom can be set in three levels: low (green slider), medium (yellow slider) and high (red slider).
To change the sensitivity level of the camera zoom, the camera zoom has to be assigned to some jog-wheel of the FollowSpot Controller, please see the chapter "Functions mapping" how to change sensitivity level of a slider. After changing of zoom size, picture is automatically focused.

Pan/Tilt sliders - use them to move a moving head to the desired position. A Sensitivity of pan/tilt movement can be set in three levels : low (green slider), medium (yellow slider) and high (red slider).
In order to switch the sensitivity of pan or tilt movement to desired level, press and hold the PAN (5) or TILT (6) button until the colour of fader is changed.

Track slider- use it to set desired level of speed of pan/tilt movement. Each level of the track slider responds to the DMX value of the Pan/Tilt speed channel in DMX chart of BMFL fixture:

Track level	DMX value on the Pan/Tilt speed channel
Smooth	0
Fast	1
Medium	10
Slow	20

Camera menu



Rotate Picture- use this item to rotate a picture on the touch screen 180 degrees from current orientation.

Refocus- use this item to focus an image on the screen (Focus of the camera is set to the "One shot focus " mode which means that picture is focused automatically after zoom change and the item Refocus allows to focus the image when the zoom is without change.

Exposure- you can choose from three levels (Low, Medium, High) of a light intensity in the position circle on the screen to see objects hidden from reason of high light intensity in the position circle on the screen. The item Auto switches off this function.

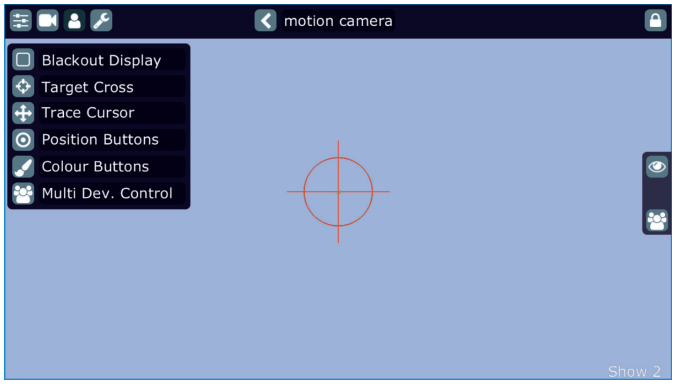
Reconnect- the item disconnects and again connects active camera to the RoboSpot. Use the item in case that behaviour of the camera is not correct (e.g. long response time).

Factory Reset- use this item to set a camera to the current setting.

All items stated above relate to the selected camera in the menu bar.

Every camera holds information about position of the position circle, its size and picture rotation.

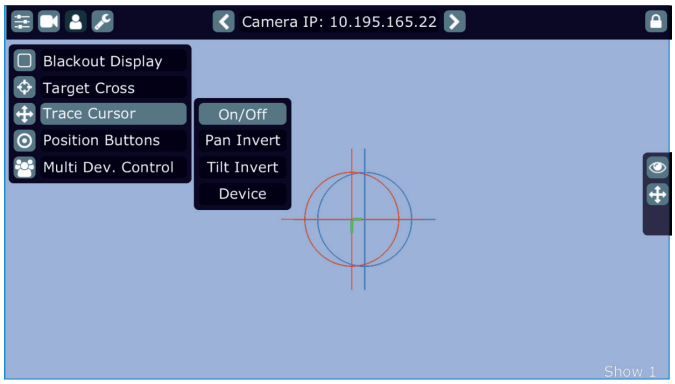
User menu



Blackout Display - use the item to darken the screen. To active the screen, touch it.

Target Cross - use the item to switch on/off the red position circle.

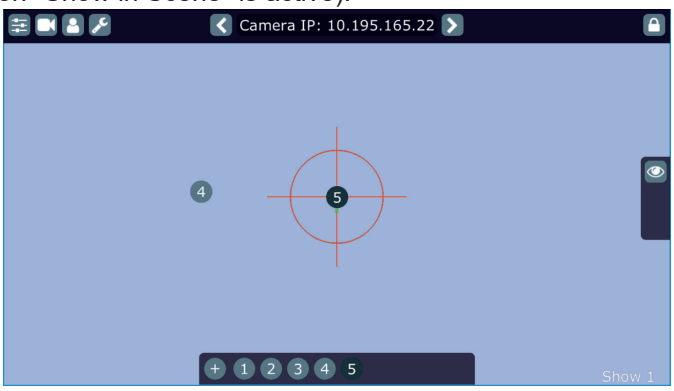
Trace Cursor - if the function is on, a blue circle will appear during (behind a red position circle) which gives a target position of the position circle (beam image) during its movement.



Pan Invert - the item inverts a pan movement
Tilt Invert - the item inverts a tilt movement
Device - the menu allows you to select a device with camera. Correct device has to be chosen if the "Trace Cursor" function is to work correctly.
MotionCamera - select the item if you use the RoboSpot Motion Camera.
BMFL Follow Spot - select the item if you use the Robin BMFL FollowSpot with camera.

Position Buttons - if the function is on, the "+" button will appear at the bottom of the screen. Move the position circle to desired position and press the "+" button. Button no.1 will appear at the bottom of the screen and the button no.1 is assigned to this position of the position circle (if item " Show in scene is active, button no.1 is displayed in the position circle on the screen). You can assign up to 9 buttons to different positions of the position circle on the screen.
If you touch a position button, the position circle will move to the position of this position button.

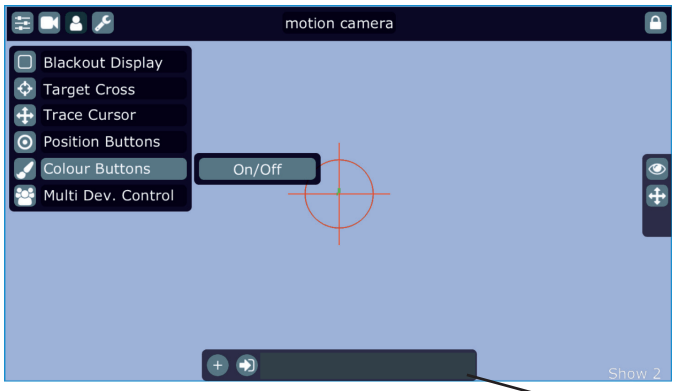
Last activated position button is highlighted.
Example (option "Show in Scene" is active):



In the position button are also saved values of the following items: zoom, focus, camera zoom, pan/tilt sensitivity and track value.
To remove position button from screen, touch it until the message "Delete position button number X?" appears on the screen and select option "Yes".

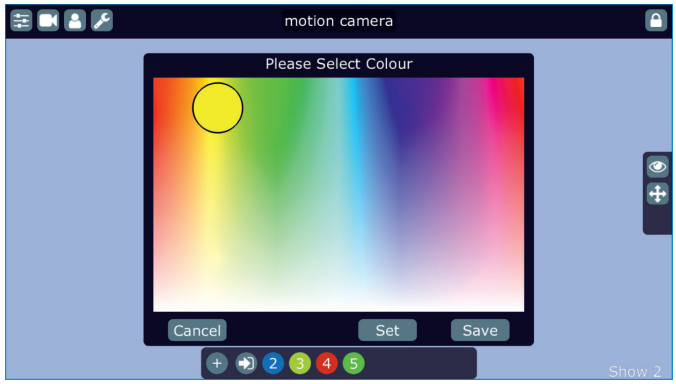
Show in Scene - the item allows you to show positions of the position buttons on the screen.

Colour Buttons - the function allows you to change colour on used fixtures together. The function controls colour channels (Red/Green/Blue/White/CTO channels at LEDs fixtures and Cyan/Magenta/Yellow channels at lamp fixtures). When choosing desired colour, corresponding channels are taken over from a desk to the Robospot.



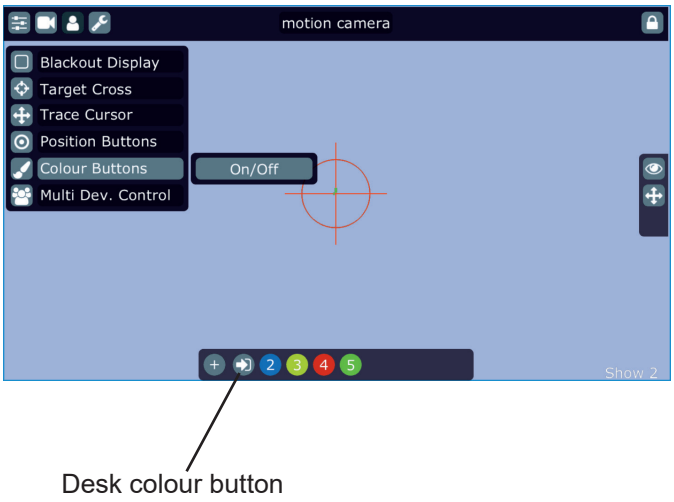
Touch the button + and the following screen will appear.

Colour bar



Use the circular picker to choose a desired colour. The chosen colour can be "send" to fixtures by pressing the button Set or saved to the colour bar at the bottom of the screen by pressing the button Save. Up to 8 colour buttons can be saved to the colour bar.

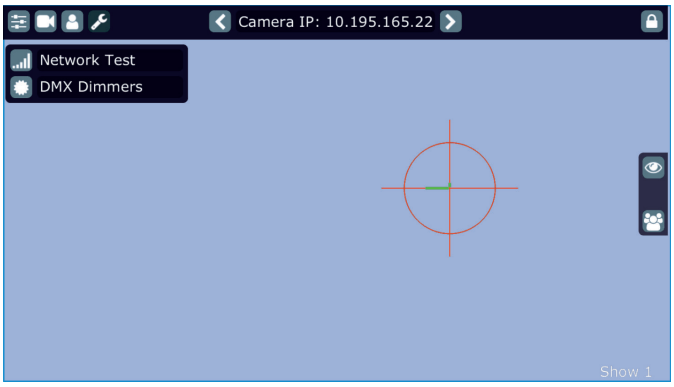
Desired colour can be activated by touching its button in the colour bar.



To delete a colour button, touch and hold a finger on the button for a while.
The Desk Colour button passes colour channels on to the control from a desk.

Multi Dev.Control - the menu serves for activating and setting control of fixtures in the multi device operation. For more information please see the chapter Multi device control.

Service menu



Network Test - the item runs a connection test between a camera and the RoboSpot. During the test, do not touch any buttons on the FollowSpot controller.

DMX Dimmers - the item shows value of dimmer for each fixture (in %). This dimmer value of the corresponding fixture is calculated from a DMX value of dimmer sent from a desk to the fixture and a position of fader or Jog-wheel (depends on fixture mapping).
E.g. DMX value for dimmer sent from the desk to a fixture is 120, by means of the fader this value can be changed from 0 DMX to 120 DMX.

5.4 Streaming a camera video

If you wish to stream a camera video over computer network, use a rtsp stream supported media player (e.g. VLC media player, SMPlayer,...) running on your computer and type the following to your media player:

rtsp://IP address of camera/profile2/media.smp

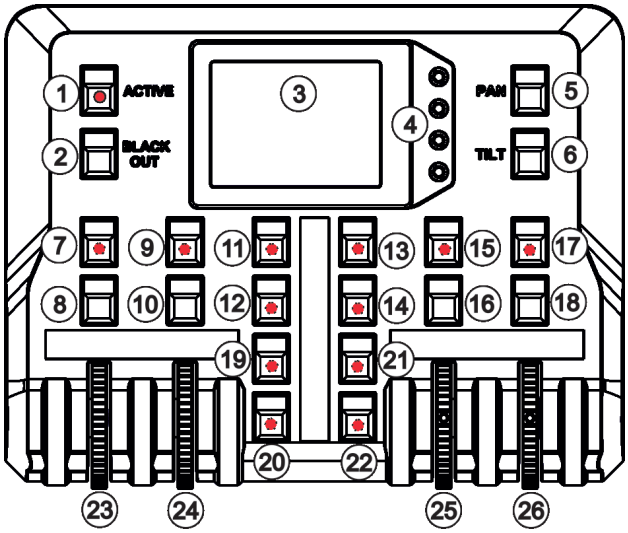
example: rtsp://10.195.165.223/profile2/media.smp

5.5 Saving and recalling the FollowSpot controller presets

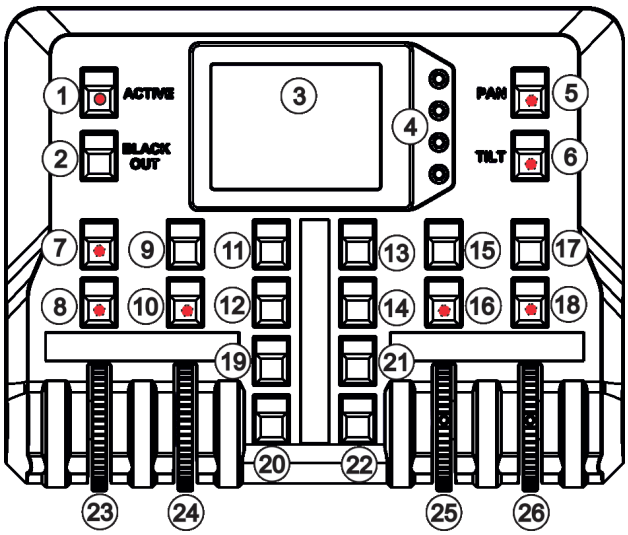
The FollowSpot Controller offers to save up to 12 presets.

To save the FollowSpot controller preset

1. Press and hold one of the preset buttons (7/9/11/12/13/14/15/17/19/20/21/22) e.g. button (7) until the jog-wheel activating buttons (8/10/16/18) and the pan/tilt buttons (5/6) start to flash.



2. Press flashing button of effect which value you wish to add to the current preset (the button will start light continually).



Note: values on faders cannot be included to presets.

3. Press and hold selected preset button until the jog-wheels activating buttons stop to flash.
The preset button will light.
Note: Every user preset can have different FollowSpot Controller presets which are saved into the user preset file. This file can be saved on a USB flash drive.

To recall the FollowSpot controller preset

Press a button with stored FollowSpot Controller preset.

To delete the FollowSpot controller preset

1. Press and hold desired preset button until the jog-wheel activating buttons (8/10/16/18) and the pan/tilt buttons (5/6) start to flash.
2. Press and hold selected preset button until the jog-wheels activating buttons stop to flash. Do not press any jog-wheels activating button. The preset button will stop to light.

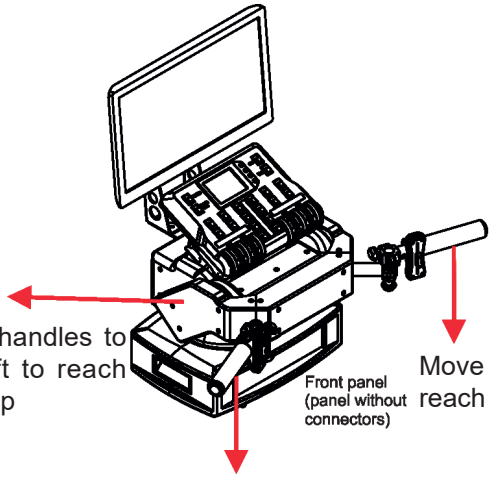
Note: you can write notes on the white fields of the FollowSpot Controller, use a marker on an alcohol base and a suitable cleaning liquid (on alcohol base) for removing the notes. Never use solvents!

5.6 RoboSpot handles calibration

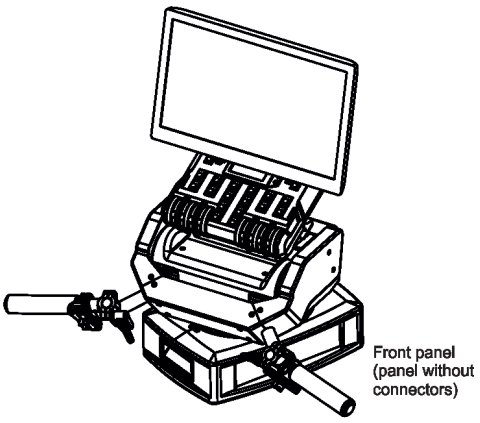
To calibrate the RoboSpot handles.

1. Install the FollowSpot Controller on the FollowSpot Controller base
1. Deactive the FollowSpot Controller (button ACTIVE (1) must not light)
2. Move the control handles of the RoboSpot to the calibration position, in this way:
   pan direction - move handles fully to the left until you reach a stop
   tilt direction - move handles fully down until you reach a stop
3. Keep handles in the calibration position and press and hold the PAN button (5) for circa 6 seconds until this button makes one flash - it is a finish of the calibration and you can use the FollowSpot Controller.

Middle position

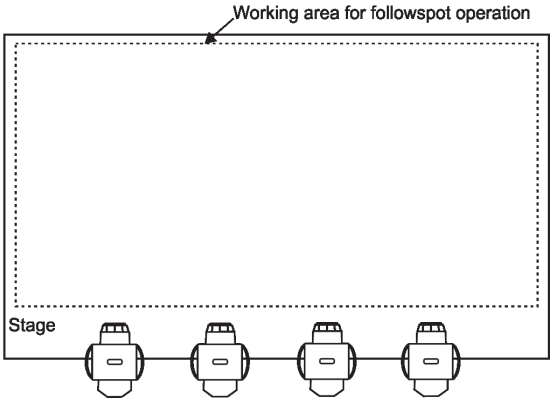


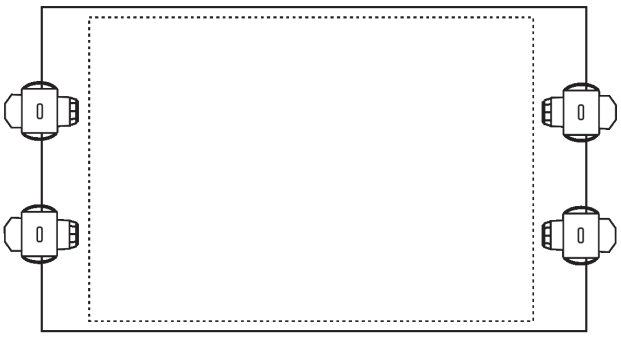
Calibration position

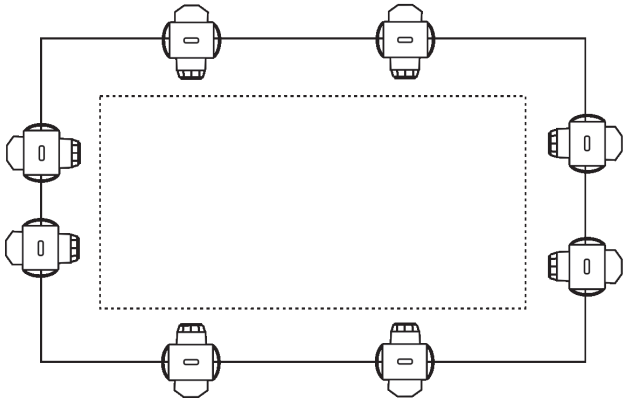


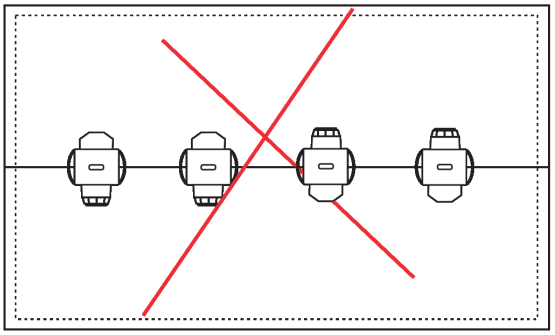
5.7 Multi device control

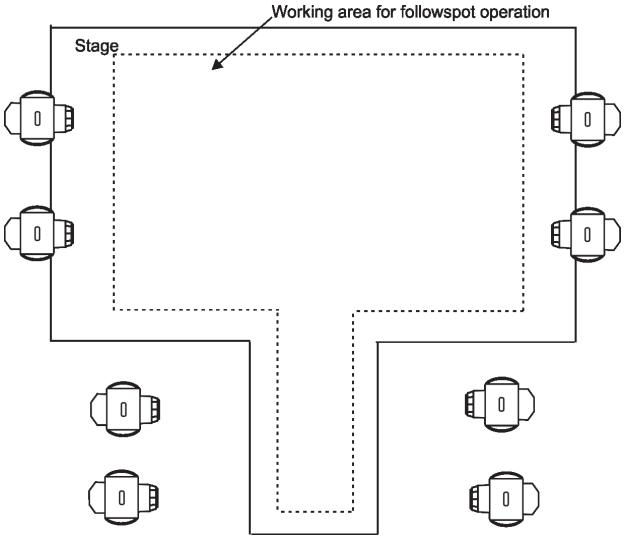
The RoboSpot can support more fixtures in the follow spot operation.
The fixtures used in the follow spot operation should be placed on a truss around the area intended for the follow spot operation. The fixtures can be placed above stage on one (two or three) side(s) of the stage or around the stage, placing inside the working area for the follow spot operation is not suitable .
Some examples of possible arrangements of fixtures above the stage:

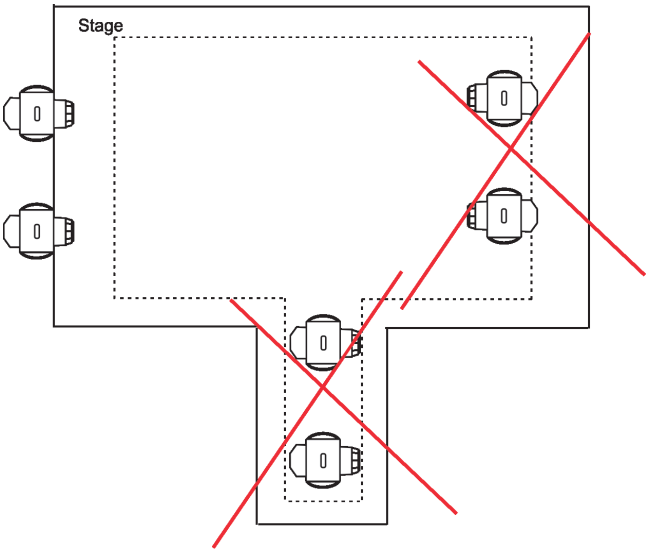




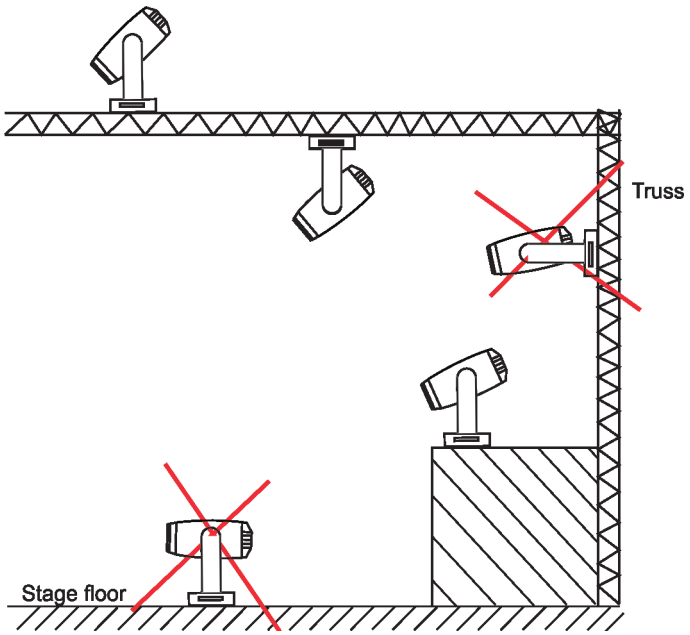




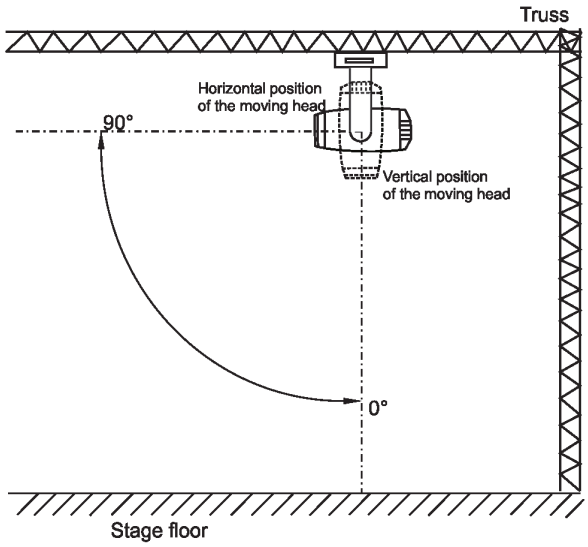


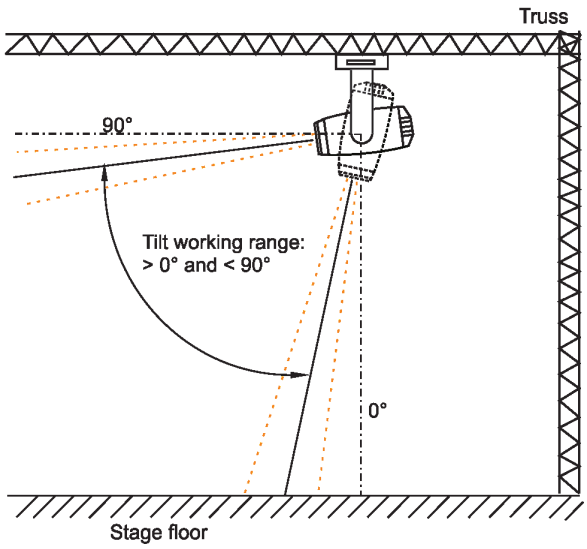


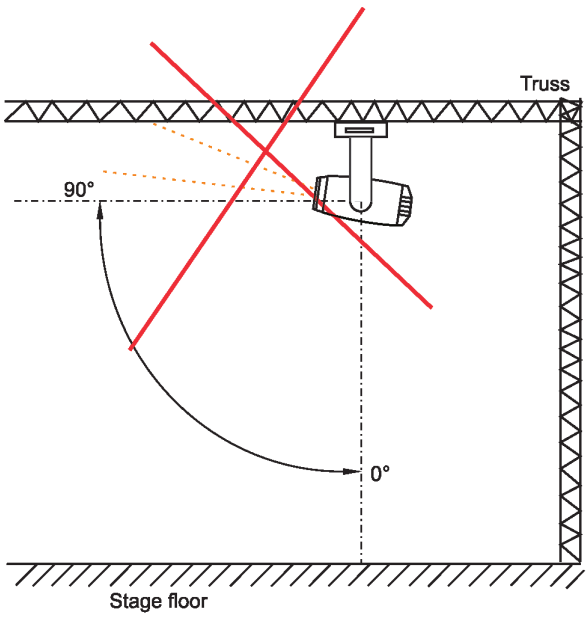
Fixtures cannot stay directly on the stage floor. They have to be placed above the stage floor in two positions only: head downwards or head upwards.

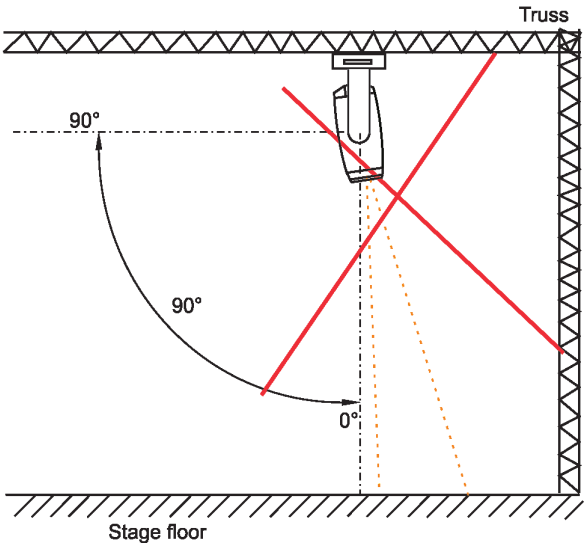


Fixture has to be installed on a truss in this way, that its tilt will move in range: >0° and < °90° as shown on the picture below to cover the whole working area for the followspot operation.



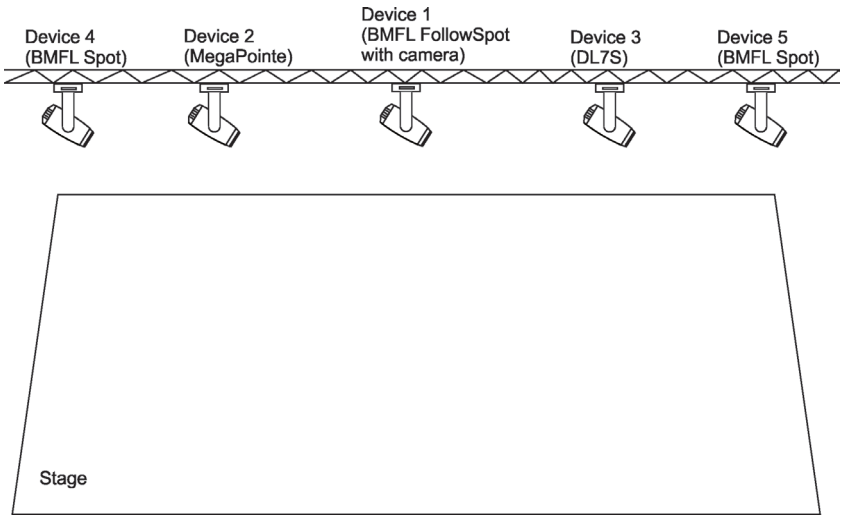




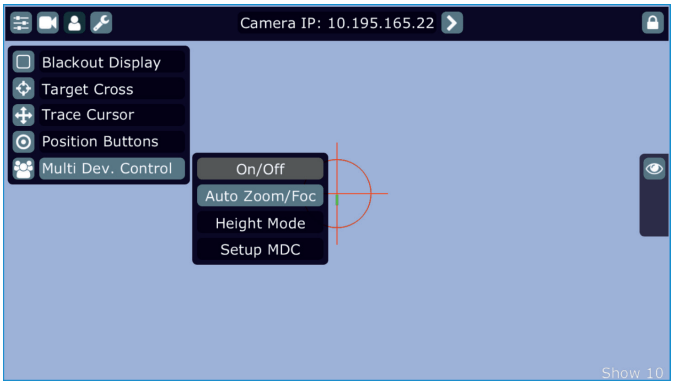


There is an example how to create the follow spot operation for three fixtures.

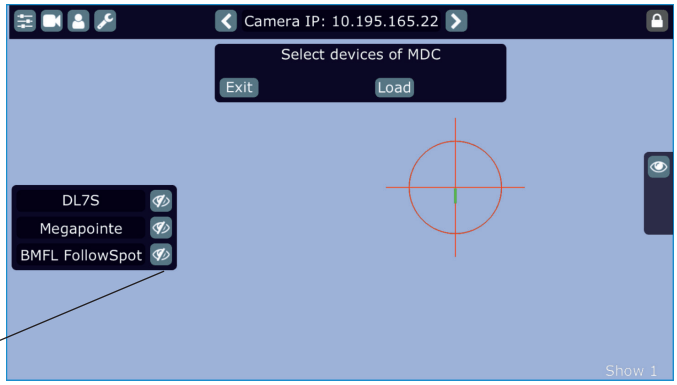
The stage is lighted by the five devices in a row and three of them will be used for the follow spot operation.



1. Enter the "Multi Dev. Control" menu on the screen and select the option "Setup MDC".

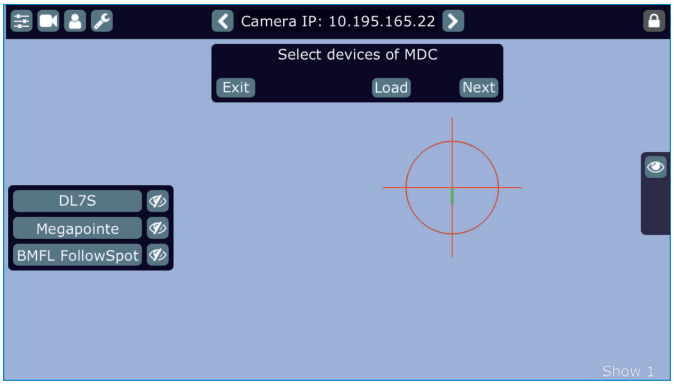


2. Select item " Setup MDC" and the following massage will appear on the screen:



blackout buttons

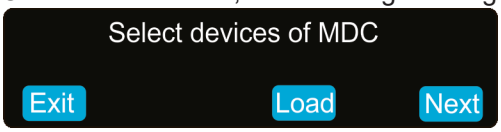
Select fixtures which will be used for the multi device control (e. g. DL7S, MegaPointe, BMFL FollowSpot).



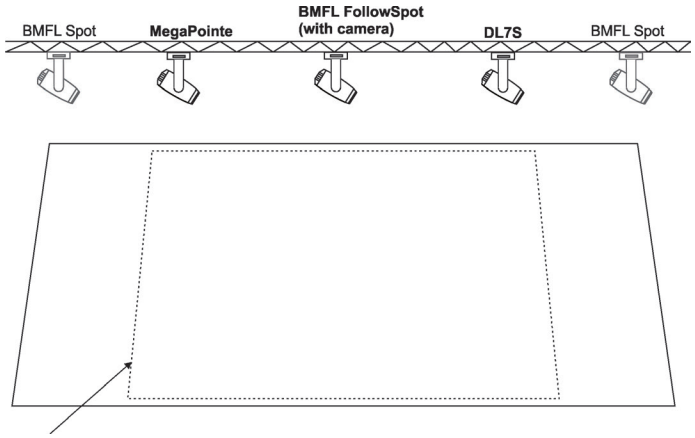
Exit -cancels Setup MDC
Next - goes to next step

Selected fixtures are highlighted

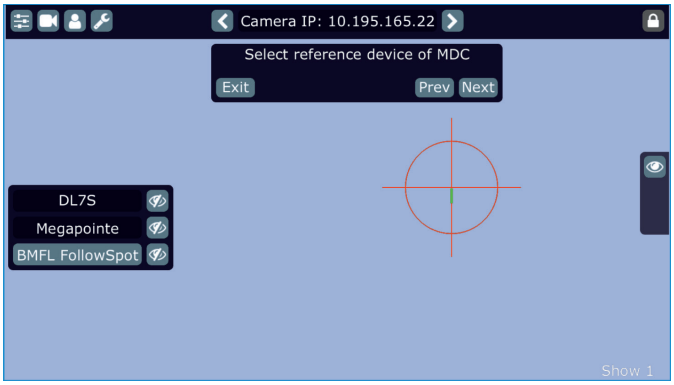
Note: In case that setup of DMC has been created, the following message will appear:



Select the option "Load" if you want to load existing setup and modified it.
Touch the Next button.
Three fixtures are selected for the multi device operation.



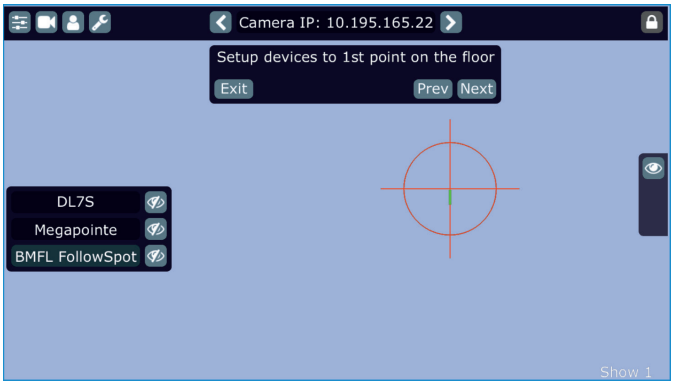
3. The following massage will appear on the screen:



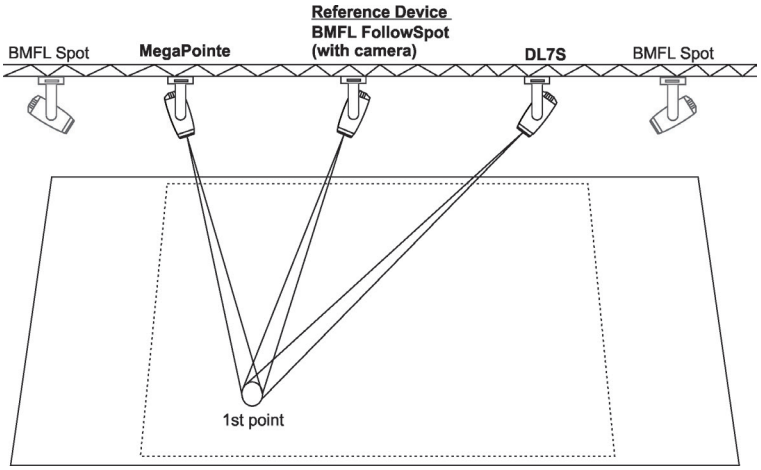
Exit -cancels MDC setup
Next - goes to next step
Prev - goes to previous step

Select desired reference device from devices intended for the multi device control (the reference device should be a device with a camera /BMFL FollowSpot with camera or RoboSpot Motion camera)/ and should not be placed on the edge of fixtures row, optimal position is in the middle of fixtures /if it is possible/, in this case it is the BMFL FollowSpot).
The pan/tilt position of the reference device is directly controlled by means of the RoboSpot handles.
The pan/tilt positions of remaining devices in the multi device control are calculated in relation to the reference device.
Touch the Next button.

4.The Following massage will appear on the screen:

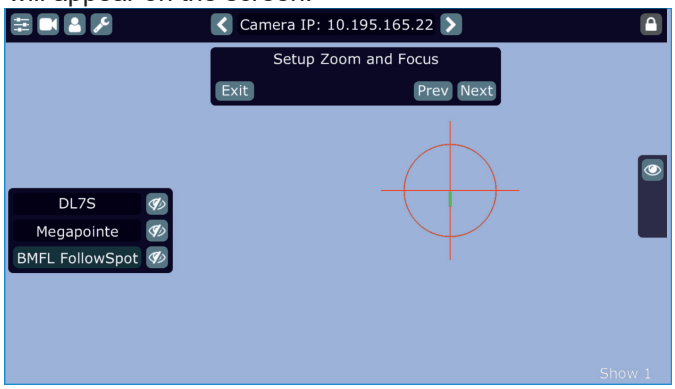


Zoom and iris are automatically set to the narrow beam at all devices used in the follow spot operation. Activate one fixture (by touching its button), e.g. BMFL FollowSpot, focus it (by means of the FollowSpot Controller) and aim it to the first point on the floor (by means of the RoboSpot handles) as exactly as possible. Repeat this action for another two fixtures.

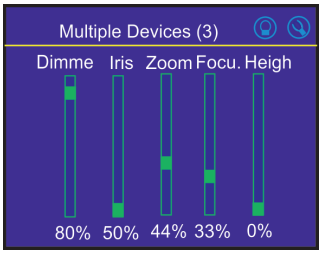


Touch the Next button.

5. The following massage will appear on the screen:

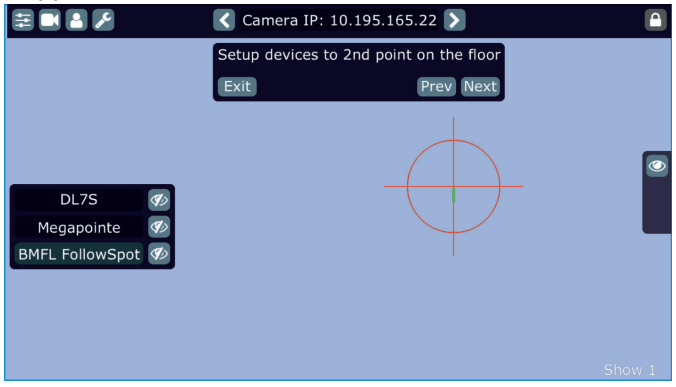


Use the jog-wheels or handle faders or faders on the FollowSpot Controller screen (depending on fixture mapping) to set desired zoom and focus in the point 1 for each fixture.

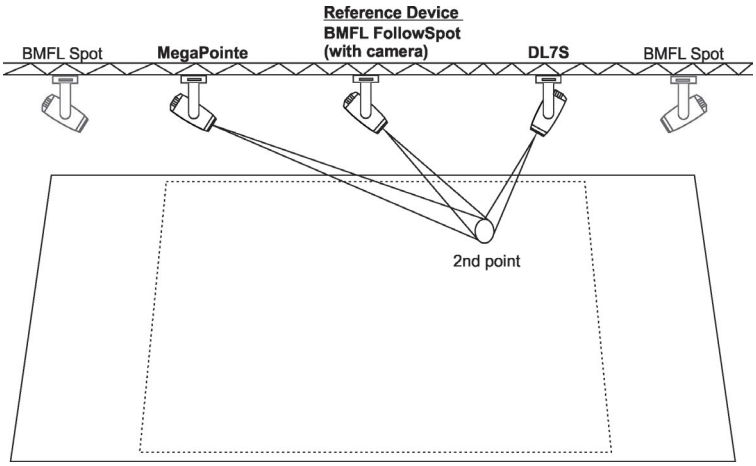


Touch the Next button.

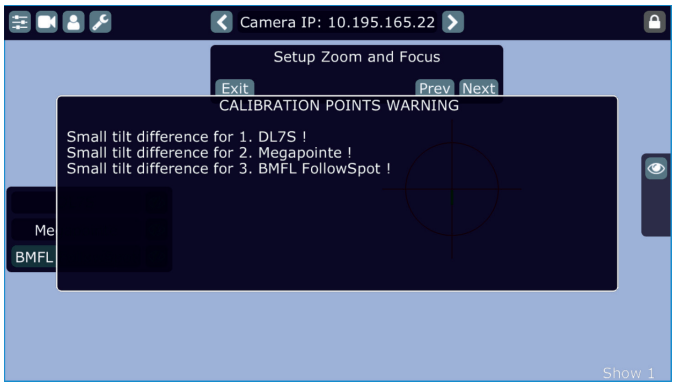
6. The following massage will appear on the screen:



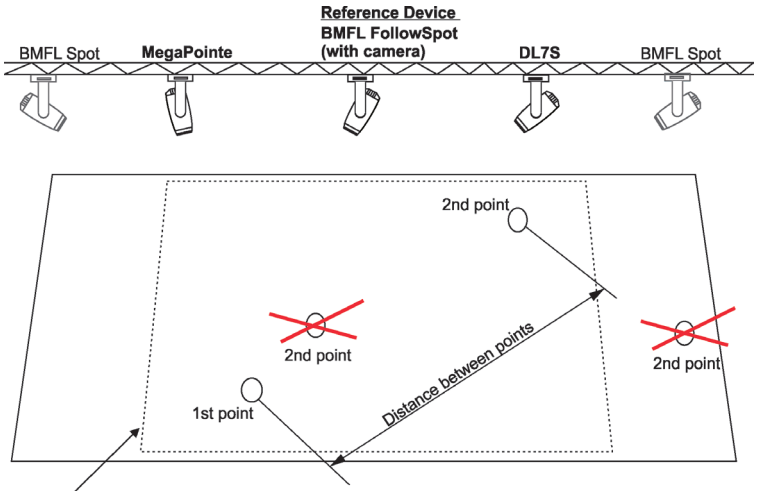
Zoom and iris are automatically set to the narrow beam at all devices used in the follow spot operation. Activate one fixture (by touching its button), e.g. BMFL FollowSpot, focus it (by means of the FollowSpot Controller) and aim it to the second point on the floor (by means of the RoboSpot handles) as exactly as possible. Repeat this action for another two fixtures.



Note.
If the pan/tilt values of fixtures in the second point are not sufficiently different from the first point, the following message may appear on the screen. In this case you have to select a new position point.



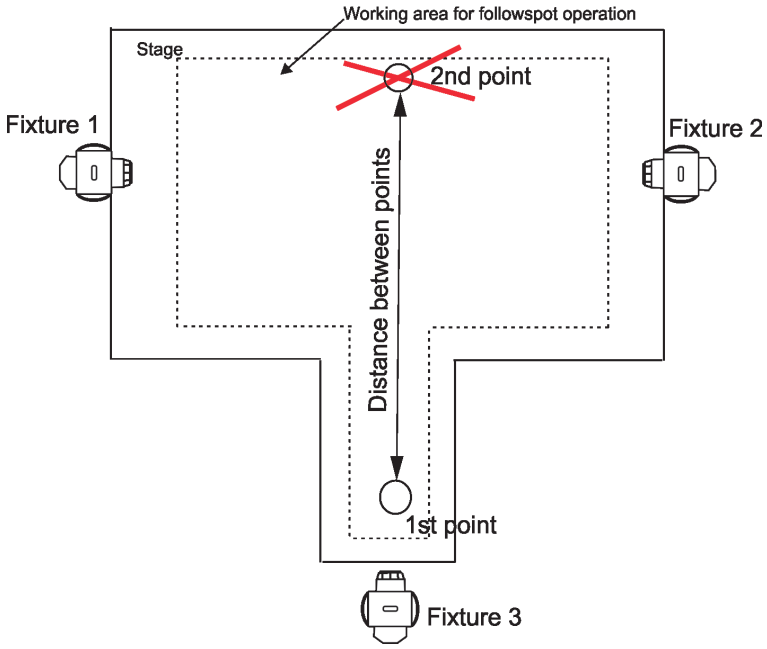
The two points should be placed sufficiently apart on the floor and situated inside the field which is intended for the follow spot operation. The two points should not be placed too close.



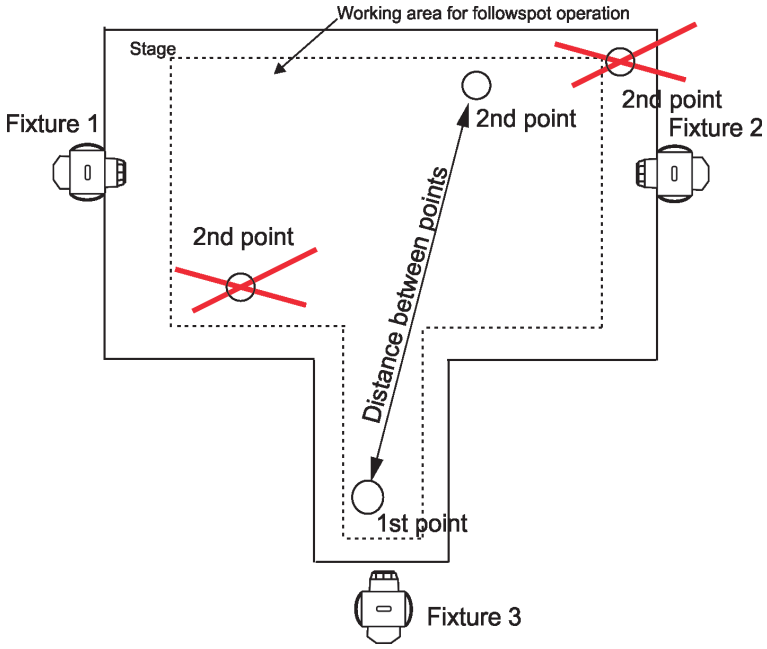
Working area for the follow spot operation

Two position points has to be placed on the stage in a way that all fixtures used in the follow spot operation have to change both pan and tilt values when go (light) from the 1st point to the 2nd point.

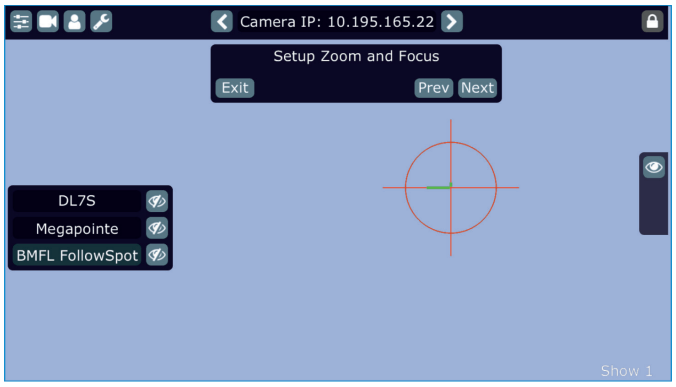
In the following example the fixture 3 does not change its pan value (only tilt value) when head moves from the 1st point to the 2nd point, the 2nd point is not select correctly.



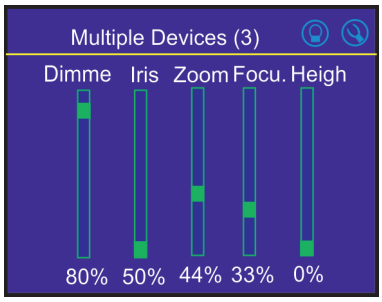
Better position for the 2nd point:



7. Touch the Next button, the following massage will appear on the screen:



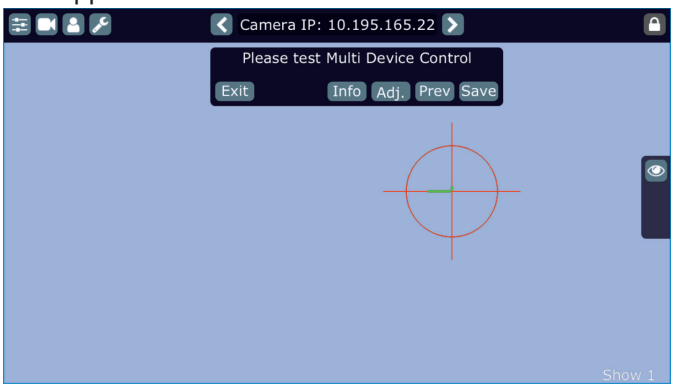
Use the jog-wheels or handle faders or faders on the FollowSpot Controller screen (depending on fixture mapping) to set desired zoom and focus in the point 2 for each fixture.



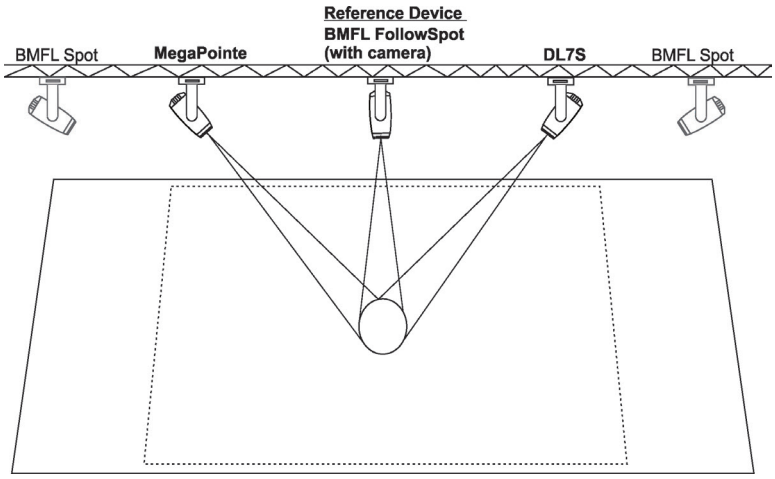
For information: if the option Multi device control is activated, both zoom and focus on all devices are set at 50%. The values are offsets in relation to the zoom and focus values set at the first and the second point.

Touch the Next button.

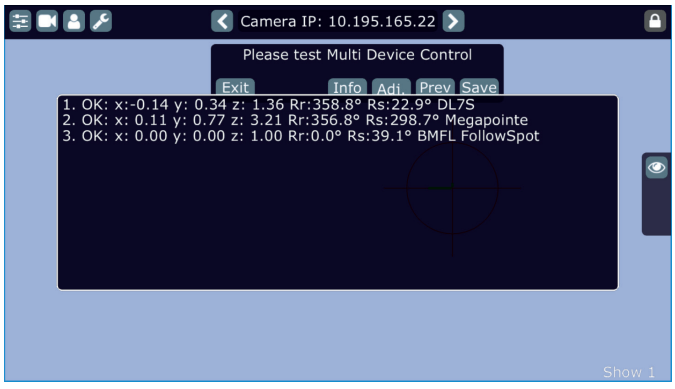
8. The following massage will appear on the screen:



Now you can test the multi device control (by means of the RoboSpot handles). If it is OK, touch the "Save" button or you can use the "Prev" button to move one or more steps back and change setting.



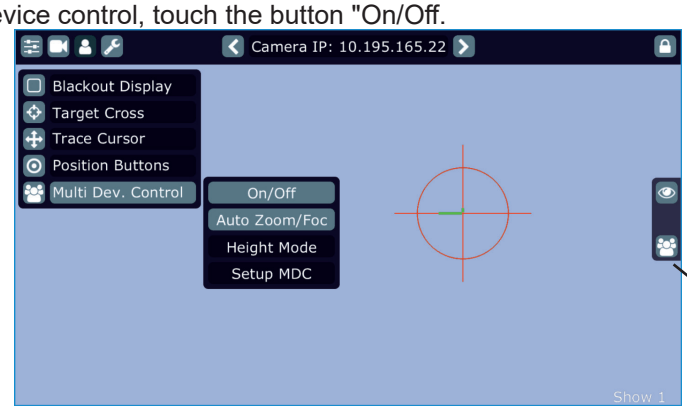
The button "Info" shows information about current positions of fixtures used in the follow spot operation. Example:



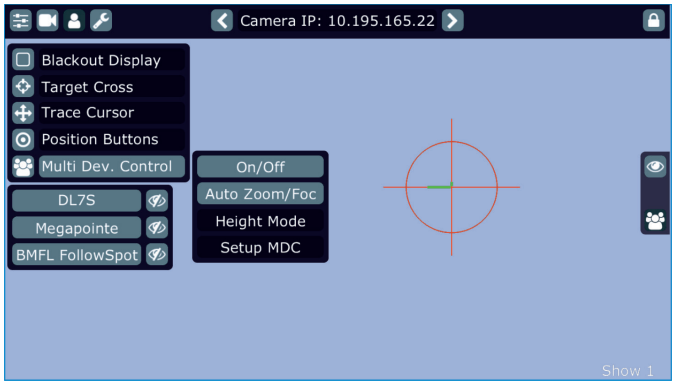
x,y,z - relative coordinates of the device in relation to the reference device
Rr - orientation of the device in relation to the reference device
Rs - orientation of the device in relation to the stage

The button "Adj." allows you to go back in the setting procedure and correct settings of devices in the first and second point (if it is needed).

To activate the multi device control, touch the button "On/Off.



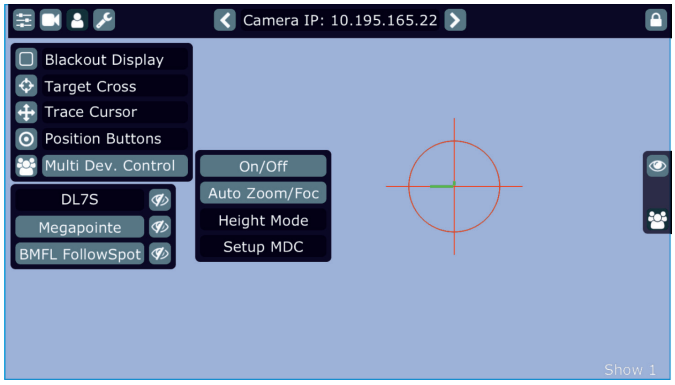
The icon shows fixtures used in the multi device control

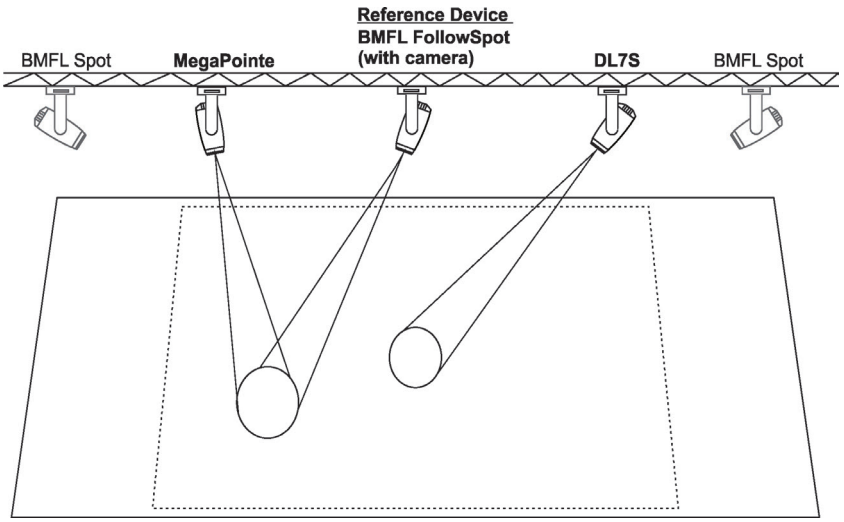


If the item "Auto Zoom/Foc." is active, the zoom and focus of fixtures used in the follow spot operation will be carried out automatically (in a range as was adjusted in "1st point" and "2nd point") during moving of the light image on the stage. If the item "Auto Zoom/Foc." is deactivated, zooming and focusing of fixtures has to be done manually.

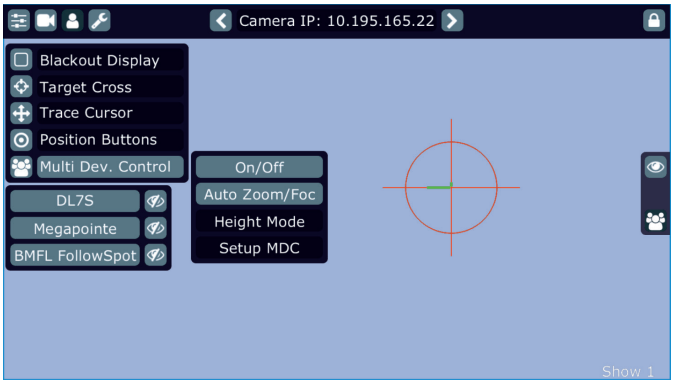
During the follow spot operation you can deactivate any device (except the reference device). The deactivated device remains in the original position and the rest of devices will continue in the follow spot operation. When you activate this device back, the device "jumps" to the follow spot operation.

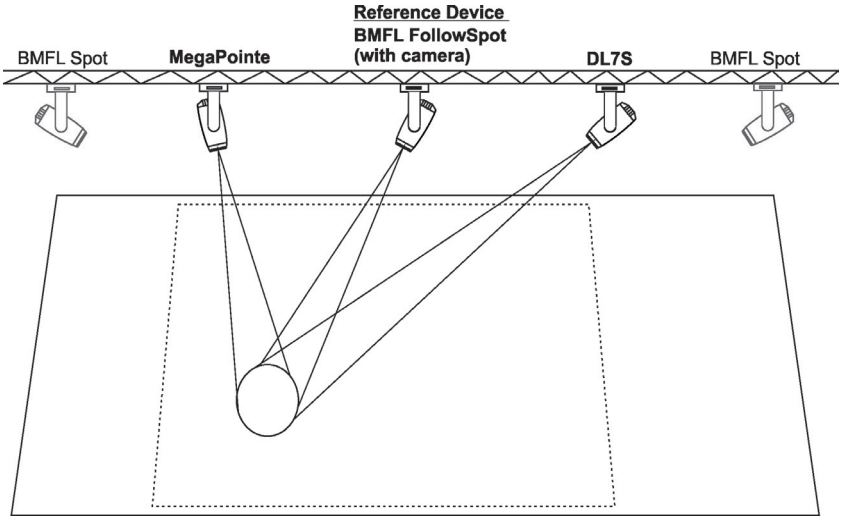
Example: Robin DL7S is deactivated (by touching the button DL7S).



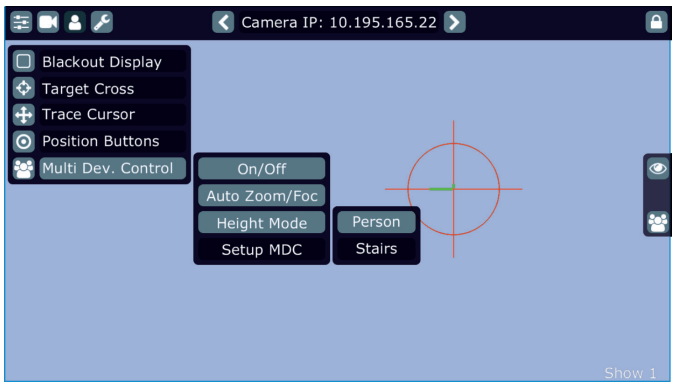


Robin DL7S is activated (by touching the button DL7S).



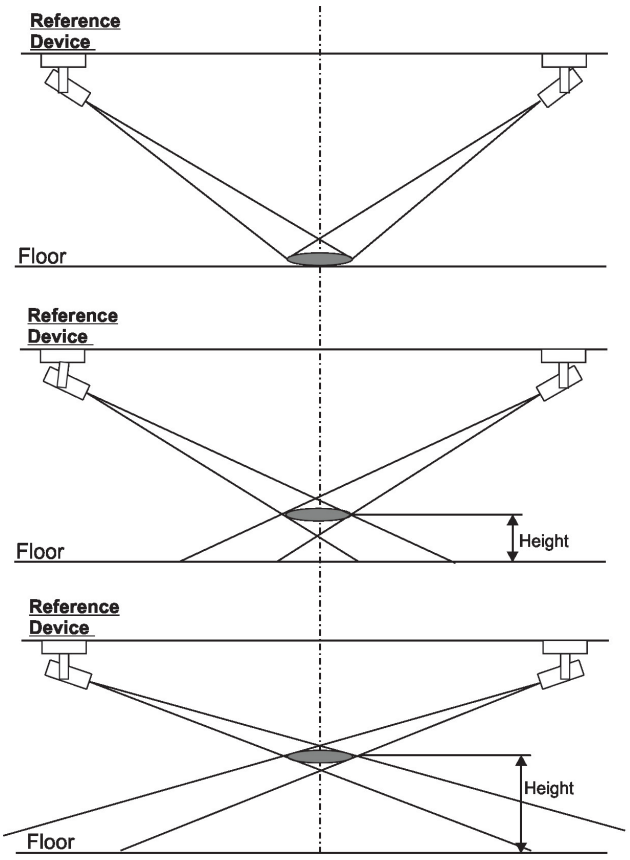


9. When the Multi Device Control is on, select suitable Height Mode.

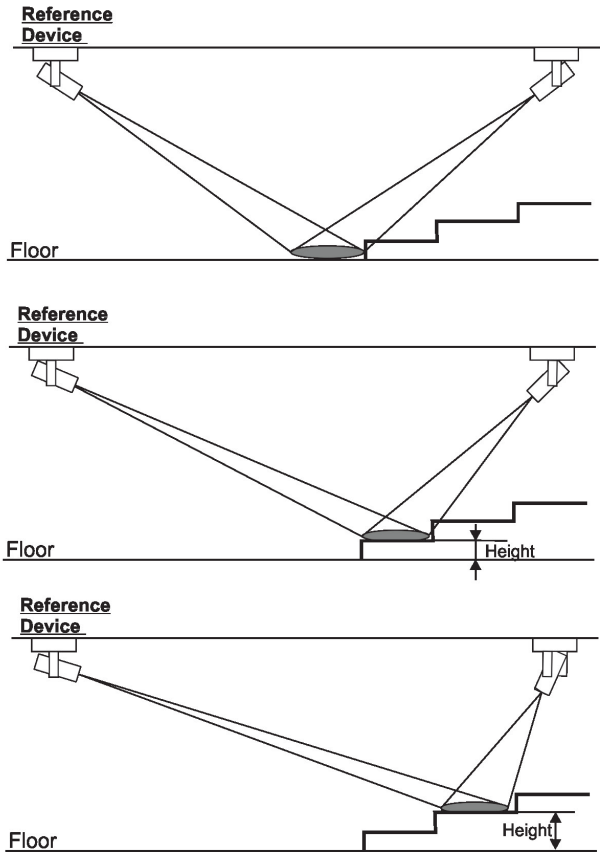


Note: the item Height has to be mapped to some fader or jog-wheel in order to control it during multi device operation.

Person mode

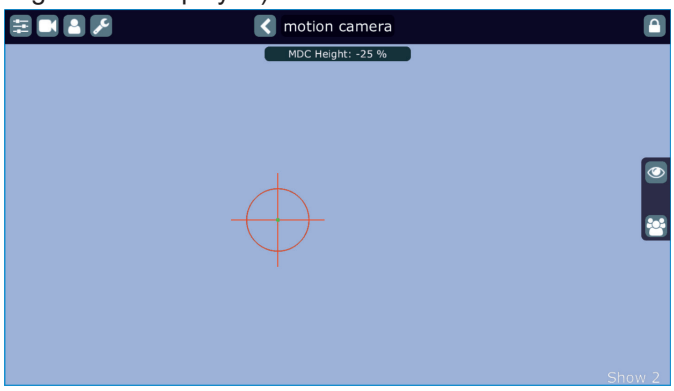


Stairs mode



Setting a negative height level in a multi device control

When you move with a control element (fader or jog-wheel) to which a height is mapped, the height bar with the actual height in % from a zero level is displayed on the screen (if the fader or jog-wheel is exactly in the zero level position, the height is not displayed).

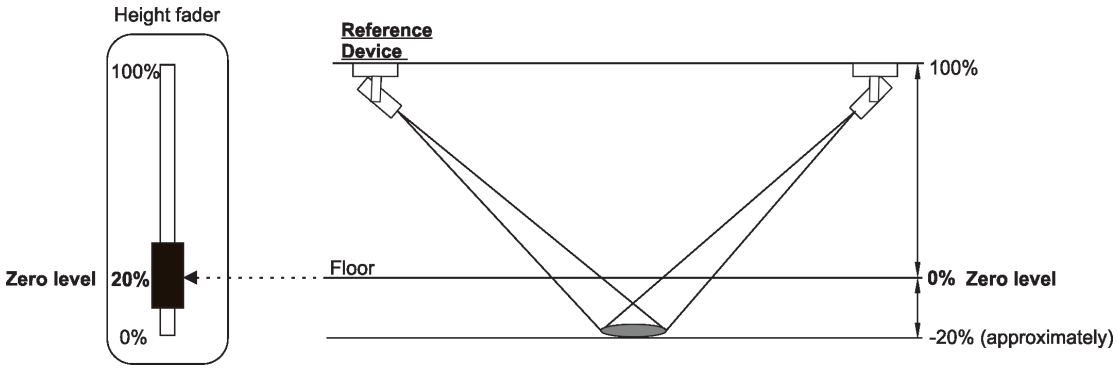


If the zero level of the height is set above a bottom level of the fader (or jog-wheel), you will be able to control light beams under the zero level (under a stage).

To set the zero level, touch and hold your finger on the height bar for 2 seconds. The following screen will appear:

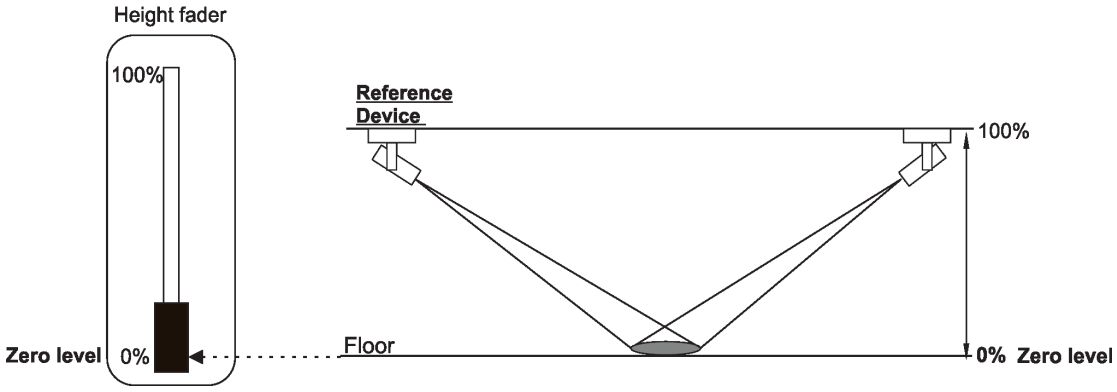
Use the he fader or jog-wheel (according to the height mapping) to set desired zero level and confirm it by touching the button Set. The zero level can be set in range of 0%-50%, (values above 50% are behaviour as 50%).

Example 1.

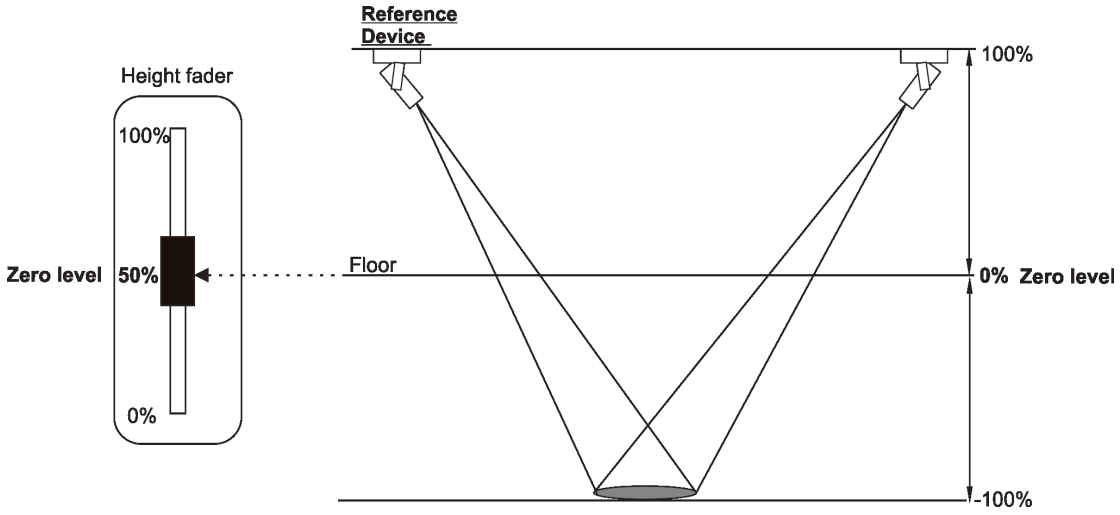


The zero level is set in 20% of slider´s track, when you slide the slider down (towards its bottom stop), the light image will move under zero level (floor).

Example 2.



The zero level is set in 0% of slider´s track,the light image can be moved above floor only.

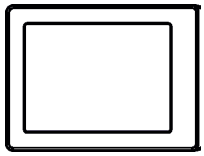


The zero level is set in 50% of slider´s track, when you slide the slider down (towards its bottom stop), the light image will move under zero level (floor). The height from the Zero level to 100% is the same as from the Zero level to -100%. Height movement through height fader in the range of Zero level -100% (Zero level - -100%) will be more coarse than in the example 1 or 2.

Common rule for all three examples stated above: Max. value of height (100%) corresponds to the height of the reference device above the zero level.

6. Control menu

The FollowSpot Controller is equipped with the QVGA Robe touch screen with battery backup which allows you to set the device behaviour according to your needs.

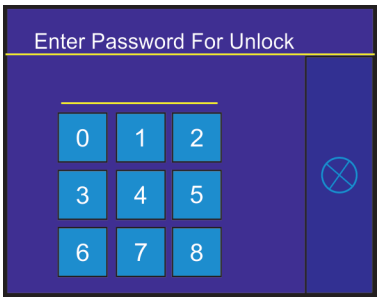


Icons used in the touch screen menu:

- [back arrow] used to move back to the previous screen (or menu level).
- [up arrow] used to move up on the previous page.
- [down arrow] used to move down on the next page.
- [confirm] used to save adjusted values and leave menu or to perform desired action.
- [cancel] used to leave menu without saving changes.
- [display on/off] used to switch on/off the display.
- [menu enter] used to enter fixture menu.

Note: buttons of control panel are not functional.

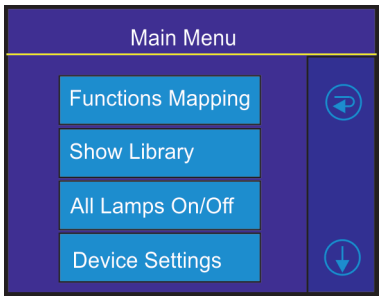
Touch the icon to display the password entering screen:



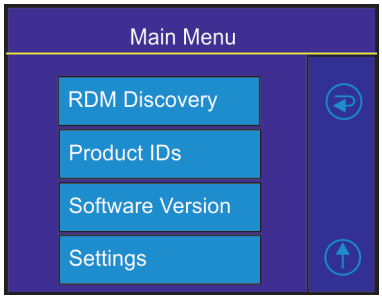
Enter the default password (5242) to enter the main menu of the FollowSpot Controller. The password prevents unauthorized person from changing setting of the FollowSpot Controller (password can changed or switched off via the menu Settings).

Main menu

Page 1



Page 2



6.1 Menu Functions Mapping

By entering the menu you can assign effects from the list of available effects to the jog-wheels and faders. List of available effect channels depends of the used moving head. The item **All** - releases all assigned effects at one go.

Note: The FollowSpot Controller does not allow to control full DMX range (0-255) of some effects, available DMX values for each effect are stated in the tables below.
The item "Heigh." (Height) is not stated in tables below and serves for Multi Devices Control.

Fixture	Effect	Available DMX values
Robin BMFL FollowSpot	Dimmer	0-255
	Iris	0-179
	Focus	0-255
	Zoom	0-255
	L Frost	0-254
	M Frost	0-254
	H Frost	0-254
	Color 1	0,130-189
	Color 2	0,130-189
	Cyan	0-255
	Magenta	0-255
	Yellow	0-255
	CTO	0-255

Fixture	Effect	Available DMX values
Robin BMFL Spot	Dimmer	0-255
	Iris	0-179
	Focus	0-255
	Zoom	0-255
	L Frost	0,1-50
	M Frost	0,87-136
	H Frost	0,173-222
	Color 1	0,130-189
	Color 2	0,130-189
	Cyan	0-255
	Magenta	0-255
	Yellow	0-255
	CTO	0-255
	DgW. pos	0-127
	DgW. r1	0-255
	DgW. r2	0-255
	RGW 1	0,32-59
	RGWr 1	0-255
	RGW 2	0,32-59
	RGWr 2	0-255
	Prism	0-127
	Pris r	0-255

Fixture	Effect	Available DMX values
Robin BMFL Blade	Dimmer	0-255
	Iris	0-191
	Focus	0-255
	Zoom	0-255
	L Frost	0,1-50
	M Frost	0,87-136
	H Frost	0,173-222
	Color 1	0,130-189
	Color 2	0,130-189
	Cyan	0-255
	Magenta	0-255
	Yellow	0-255
	CTO	0-255
	Efw. pos	0-127
	Efw. rot	0-255
	SGW	0, 8-103
	RGW 1	0,32-59
	RGW r1	0-255
	Prism	0-127
	Pris r	0-255
	FS rot	0-255
	FS 1 m	0-255
	FS 1 s	0-255
	FS 2 m	0-255
	FS 2 s	0-255
	FS 3 m	0-255
	FS 3 s	0-255
	FS 4 m	0-255
	FS 4 s	0-255

Fixture	Effect	Available DMX values
Robin BMFL WashBeam	Dimmer	0-255
	Iris	0-179
	Focus	0-255
	Zoom	0-255
	L Frost	0-254
	M Frost	0-254
	H Frost	0-254
	Color 1	0,130-189
	Color 2	0,130-189
	Cyan	0-255
	Magenta	0-255
	Yellow	0-255
	CTO	0-255
	Efw. pos	0-127
	Efw. rot	0-255

Fixture	Effect	Available DMX values
Robin BMFL WashBeam	RGW 1	0,32-59
	RGWr 1	0-255
	FS rot	0-255
	FS 1 m	0-255
	FS 1 s	0-255
	FS 2 m	0-255
	FS 2 s	0-255
	FS 3 m	0-255
	FS 3 s	0-255
	FS 4 m	0-255
	FS 4 s	0-255

Fixture	Effect	Available DMX values
Robin DL7S	Dimmer	0-255
	Iris	0-179
	Focus	0-255
	Zoom	0-255
	Frost	0-179
	V Colour	0-132
	Cyan	0-255
	Magenta	0-255
	Yellow	0-255
	Red	0-255
	Green	0-255
	Blue	0-255
	Amber	0-255
	C Blue	0-255
	L Green	0-255
	CTO	0-255
	Efw. pos	0-127
	Efw. rot	0-255
	SGW	0, 65-109
	RGW	0, 32-59
	RGW r	0-255
	Prism	0-127
	Pris r	0-255
	FS rot	0-255
	FS 1 m	0-255
	FS 1 s	0-255
	FS 2 m	0-255
	FS 2 s	0-255
	FS 3 m	0-255
	FS 3 s	0-255
	FS 4 m	0-255
	FS 4 s	0-255

Fixture	Effect	Available DMX values
Robin DL4S	Dimmer	0-255
	Iris	0-179
	Focus	0-255
	Zoom	0-255
	Frost	0-179
	V Color	0-247
	Red	0-255
	Green	0-255
	Blue	0-255
	White	0-255
	CTO	0-255
	Efw. pos	0-127
	Efw. rot	0-255
	RGW	0, 32-59
	RGW r	0-255
	Prism	0-127
	Pris r	0-255
	FS rot	0-255
	FS 1 m	0-255
	FS 1 s	0-255
	FS 2 m	0-255
	FS 2 s	0-255
	FS 3 m	0-255
	FS 3 s	0-255
	FS 4 m	0-255
	FS 4 s	0-255

Fixture	Effect	Available DMX values
Robin Pointe	Dimmer	0-255
	Focus	0-255
	Zoom	0-255
	Frost	0-189
	Color	0, 130-189
	SGW	0, 4-87
	RGW	0, 32-59
	RGW r	0-255
	Prism	0-127
	Pris r	0-255

Fixture	Effect	Available DMX values
Robin MegaPointe	Dimmer	0-255
	Focus	0-255
	Zoom	0-255
	Frost	0-50, 87-136, 173-222
	Cyan	0-255
	Magenta	0-255
	Yellow	0-255

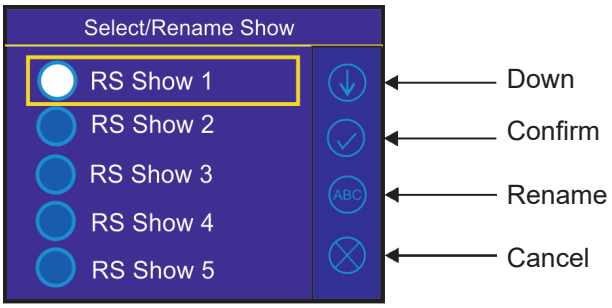
Fixture	Effect	Available DMX values
Robin MegaPointe	Color	0, 130-189
	V Color	0-132
	Efw. pos	0-127
	Efw. rot	0-255
	SGW	0, 4-87
	RGW	0, 32-59
	RGW r	0-255
	Prism 1	0-27
	Pris1 r	0-255
	Prism 2	0-27
	Pris2 r	0-255
	Beam	0-19
	Beam r	0-255

Fixture	Effect	Available DMX values
Robin T1 Profile Robin T1 Profile FS	Dimmer	0-255
	Iris	0-179
	Focus	0-255
	Zoom	0-255
	Frost	0-50, 87-136, 173-222
	V Color	0-132
	Red	0-255
	Green	0-255
	Blue	0-255
	Amber	0-255
	L Green	0-255
	CTO	0-255
	Efw. pos	0-127
	Efw. rot	0-255
	RGW	0, 32-59
	RGW r	0-255
	Prism	0-127
	Pris r	0-255
	FS rot	0-255
	FS 1 m	0-255
	FS 1 s	0-255
	FS 2 m	0-255
	FS 2 s	0-255
	FS 3 m	0-255
	FS 3 s	0-255
	FS 4 m	0-255
	FS 4 s	0-255

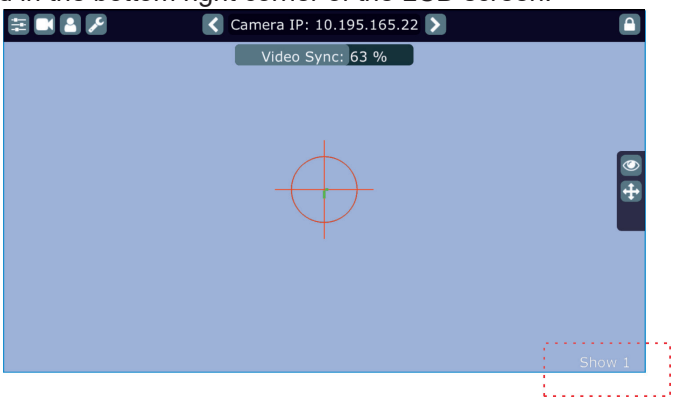
6.2 Menu Show Library

Select/Rename Show - the menu item offers 10 shows. In the show is saved setting of the RoboSpot system:
Functions mapping
FollowSpot Controller presets
Sensitivity of jog-wheels
Faders switching and inversion
Position buttons
DMX addresses and modes of connected devices
RDM information about connected devices (only if the option "Manual" is selected in the menu "Discovery Settings")

Note: values in the menu Ethernet settings (menu Settings) are not saved to the show.
The show can be saved on a USB flash drive and loaded back to the RoboSpot .



To select a show.
Select desired show by touching its button and confirm it. The notice: "Switch To Show OK" will appear for a moment on the screen.
Selected show is displayed in the bottom right corner of the LCD screen.



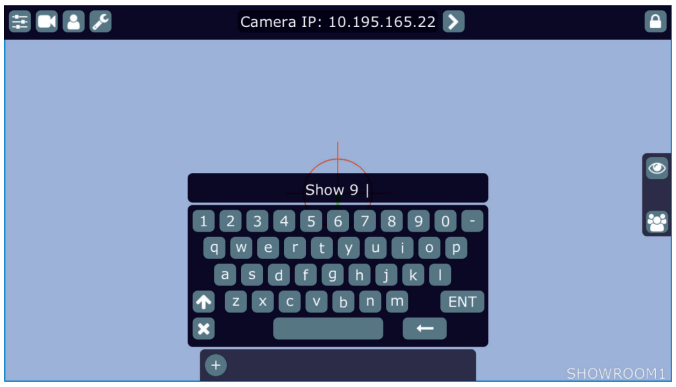
Error and notice messages:
"Already In selected Show"- it means that you are trying to switch to active show .
"Switch To Show Error" - it means that some problem in desired show file occurred.

All changes in setting of the RoboSpot made by the user are immediately saved into the selected show.

To rename a show.
1. Select desired show by touching its button.
2. Touch the Rename icon. The virtual keyboard will appear on the LCD screen with selected show, e.g. Show 9.
3. Now you can edit the name of the show and confirm it by the key ENT.

Export Show - the menu item allows you to save a show on a USB flash drive connected to the USB port of the RoboSpot. Supported file systems of the USB flash drive are: FAT16, FAT32, EXT2, EXT3, EXT4.

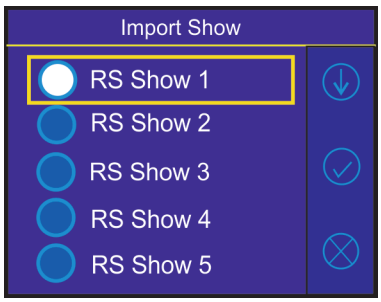
To export a show.
1. Connect a USB flash drive to the RoboSpot.
2. Select desired show (e.g. Show 9) and confirm it.
2. The virtual keyboard will appear on the screen with a name of the show file. You can edit the name of the show and confirm it by the key ENT. The show file on the USB flash drive will have extension rsl (e.g. RSShowLibrary-06.rsl).



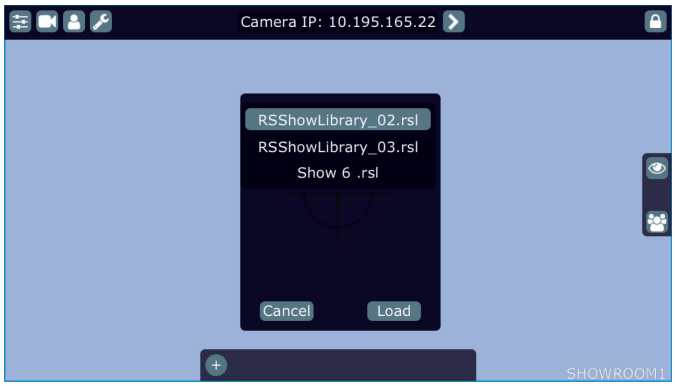
If the import is successful, the notice: "Export Show OK" will appear for a moment on the screen.

Error and notice messages:
"Export Show Error ID:" - it means that the show library export failed. If ID=-1, it means that show file cannot be saved on the USB flash drive(e.g. the USB flash drive is set read-only)
"USB flash drive is not present "- it means that the USB flash drive is not connected to the USB port of the RoboSpot.

Import Show - the menu item allows you to load a show file saved on a USB flash drive connected to the USB port of the RoboSpot.



To import a show.
1. Connect a USB flash drive to the RoboSpot.
2. Select a show (e.g. Show 5) to which you want to load a show file from the USB flash drive and confirm it.
3. The list of available show files on the USB flash drive will appear on the LCD screen e.g.

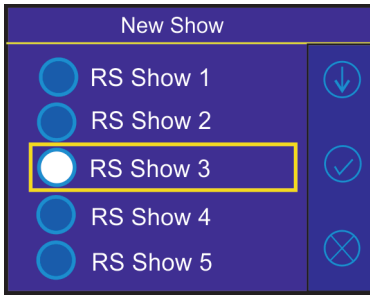


4.Select desired show file (e.g. Show 6.rsl) and touch the button "Load" to import selected show file to the RoboSpot. If the import is successful, the notice: "Import Show OK" will appear.

Error and notice messages:
"No show files on USB flash drive" - it means that no show file was found on the USB flash drive.
" Import Show Error! " it means that some problem has occurred during writing of show file to the internal memory drive of the RoboSpot
"USB flash drive is not present " - it means that the USB flash drive is not connected to the USB port of the RoboSpot.
" Err: Cannot find show file " - it means that the show file cannot be loaded from the USB flash drive.
" Err: Wrong version of show file" - it means that the show file has a wrong format.

Note. You can load to selected show any show file, for example, to the show 10 you can load the file RSShowLibrary-02.rsl. Original show file in the show 10 will be overwritten.

New Show - the menu item allows you to crate a new show.



Select a show (e.g. RS Show 3) in which you want to create the new show and confirm it. Original show (saved in RS Show 3) will be deleted.

6.3 Menu All Lamps On/Off

The menu item allows you to switch on/off lamp in the Robin BMFL FollowSpot and fixtures connected to this Robin BMFL FollowSpot.

6.4 Menu Devices Settings

By entering the menu list of available devices will be displayed, e.g.

BMFL Follow Spot: 033 (Robin BMFL Follow Spot)

RoboCamera: 001 (RoboSpot MotionCamera)

Touch desired device and the following menu items will appear.

Set Device Label - the menu item allows you to rename actual device. Touch the item until the keyboard will apear on the touch screen. Use the key **<--** to delete original name of the device and type a new name. Confirm it by means of the key ENT.
Pan Offset - allows you to set a pan offset in the range of +/-100% .
Tilt Offset - allows you to set a tilt offset in the range of +/-100%.
Zoom Offset - allows you to set a zoom offset in the range of +/-100%.
Focus Offset - allows you to set a focus offset in the range of +/-100%.
Lamp On/O - allows you to switch on/off lamp of the device
Pan/Tilt reverse - allows you to reverse the pan/tilt movement of the device.
DMX Address - allows you to set DMX address of the device.
DMX Preset - allows you to select DMX mode of the device.
Device Default Settings - sets all items stated above (except DMX Address and DMX Preset) to the default (factory) values.

Set To Def. In Preset - sets items of devices displayed in the menu "Devices Settings" to default values. This function affects the active user preset only.

Set All To Defaults - sets items of devices displayed in the menu "Devices Settings" to default values. This function affects all user presets.

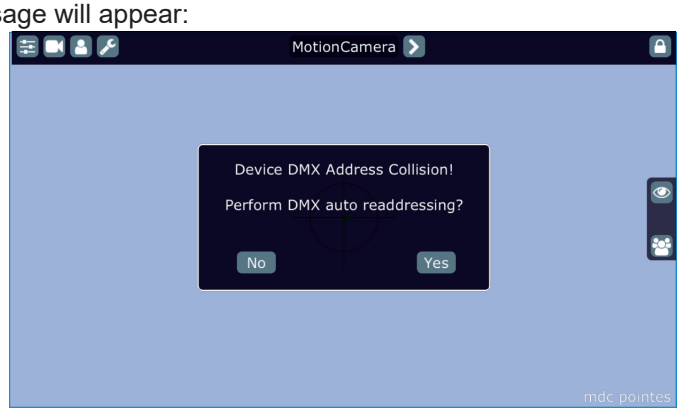
6.5 Menu RDM Discovery

The menu item serves for searching devices and should be used when you connect/disconnect some fixture to the RoboSpot. The behaviour of the function depends on setting the item "Discovery Settings" (menu Settings).
If the item "Discovery Settings" is set to Auto, no message appears after finishing this procedure.
If the item "Discovery Settings" is set to Manual, the following message will appear:

Do You Want To Save
Discovery Config
To RoboSpot Base

If you confirm it, the list of discovered fixtures will be saved and at every switching the RoboSpot on, fixtures from the list will be loaded to the RoboSpot without discovery procedure running at the RoboSpot starting-up.
If the item "Discovery Settings" is set to Auto and no device is connected to the RoboSpot, the graphic touch screen of the Follow Spot Controller displays message "Waiting for devices". To terminate the message and enter the menu, touch this graphic touch screen for 6 seconds until you get into menu screen.

In case that some fixtures connected to the RoboSpot are on the same DMX address or have overlaping channels, the following message will appear:



If you select option the Yes, collision fixtures will be automatically readdressed.
If you select No, DMX addresses wil stay without change.

6.6 Menu Product IDs

Select this menu item to read an RDM UID, MAC Address and RDM Label.

6.7 Menu Software Version

Select this item to read the software version of the fixture modules:

Display System - a display processor
Module C - a control panel processor
Module RPI - a control computer in the fixture base

6.8 Menu Settings

The menu allows you to set the behaviour of the RoboSpot according to your needs.

System Test - the menu allows you to test jog-wheels, faders and pan/tilt movement of the RoboSpot.

Ethernet Settings - the menu allows you to set the RoboSpot for the Ethernet operation

Ethernet Mode

Artnet - Fixture receives Artnet protocol
gMAI - Fixture receives MANet I protocol
gMA2 - Fixture receives MANet 2 protocol
sACN - Fixture receives sACN protocol

IP Address/Net Mask - select this menu to set IP address. IP address is the Internet protocol address.The IP uniquely identifies any node (fixture) on a network.
There cannot be 2 fixtures with the same IP address on the network!

Default IP Address -Preset IP address, you can set up only first byte of IP address (2 or 10) e.g. **002**.019.052.086.
Custom IP Address - The option enables to set up all bytes of IP address.
Net Mask - The option enables to set up all bytes of Net Mask.

ArtNet Universe - use this item to set a Universe (0-255). The Universe is a single DMX 512 frame of 512 channels.

MANet Settings - use this menu to set parameters for MANet operation.

MANet Universe I/II - The value of this item can be set in range 1-256.
MANet Session ID - The value of this item can be set in range 1-32.

sACN Settings - use this menu to set parameters for sACN operation.

sACN Universe - The value of this item can be set in range 1-32000.
sACN Priority - The value of this item can be set in range 0-255.

Discovery Settings - the menu item allows you to set a behaviour of the RoboSpot during RDM discovery process (menu item RDM Discovery) and after switching the RoboSpot on.

Auto - the RoboSpot searches connected devices after each switching it on and does not save the list of discovered devices. Also If the option RDM Discovery is run, the list of discovered devices is not saved.
Manual - the RoboSpot searches connected devices and save the list of discovered devices. When the RoboSpot is switched on, the saved list of discovered devices will be load to the RoboSpot and (even in case that fixtures are not be connected to RoboSpot) the RoboSpot will not run the discovery procedure.

Controls invert - the menu item allows you to invert pan/tilt and faders of the RoboSpot.
Default settings of faders: fader down-minimum (0 DMX), fader up-maximum (255 DMX).

Faders Switch - swaps functions of faders.

Camera Rotation - the function rotates a camera picture on the monitor 180 degrees from the current orientation.

Camera Zoom invert - the function inverts a camera zoom.

Password Settings - the menu item allows you to change the password or switch it off at a current user show.

The password applies to the FollowSpot Controller as well as the RoboSpot screen and also to all user shows.

You cannot have a different password for each user show.

Change password - use this option to change password. Default (factory) password is 5242.

Protect with Password - If this function is on, the password is required at entry the menu at the current user show.

Note: both menu items stated above require inserting of password to enter them even the password is set off ! You have to remember the last set password!

Recalibrate Touchscreen - the item starts calibration of the touchscreen. Follow instructions on the screen.

Default Settings - The menu item allows you to set the items stated above (except Ethernet Settings) to default values.
Note: the password will not be set to a default password (set password will remain without change) but the option Protect with Password will be set to On.

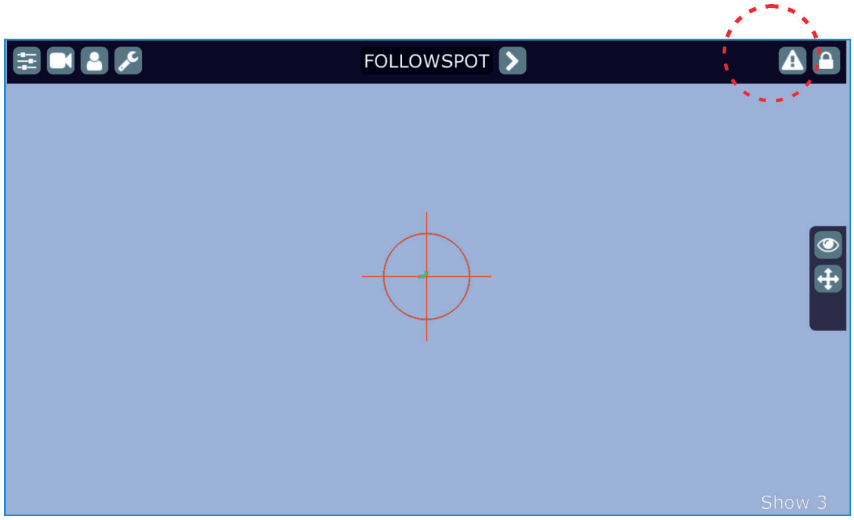
7. Software update

RoboSpot software update is done via a network connection between a computer running a ROBE RDM Uploader software through the CAMERA input (RJ45) of the RoboSpot base station. It is important to note, that computer IPv4 address has to be set to 10.x.x.x network (for example 10.0.1.10) with netmask 255.0.0.0 . During the update, the FollowSpot Controller has to be attached to the RoboSpot.
Do note, that to enable all new features, you must update the RoboSpot base station and also all BMFL fixtures controlled by the RoboSpot system.

To update software in the Robospot.
1. Connect a computer running ROBE RDM Uploader to the internet and update software libraries (Libraries → Update)
2. Connect the computer and the RoboSpot base station via Ethernet cable. Use Camera input RJ45 socket on the RoboSpot base station for this connection.
3. Set computer to address 10.x.x.x/255.0.0.0 (do note the 10.x.x.x). Do not change any IP settings on the RoboSpot.
4. Use the ROBE Uploader → Devices → Discovery and Devices → Update. This will update RoboSpot together with the attached FollowSpot Controller panel. The message "Flashing Mode. Please do not touch any buttons!" will appear on the RoboSpot screen during updating process.

8. Error and information messages

Error message message is signalled by the warning icon in the right top corner of the RoboSpot screen:



Touch the warning icon to display a message. Touch the screen to hide the message.
List of error and information messages:

Display Communication Error.
This message informs you the FollowSpot Controller is not installed in the FollowSpot Controller base or the connection between the FollowSpot Controller and a computer in the RoboSpot base is faulty.

No actual software in FollowSpot Controller.
Please update to the latest software.
This message informs you the software update of the RoboSpot system should be done.

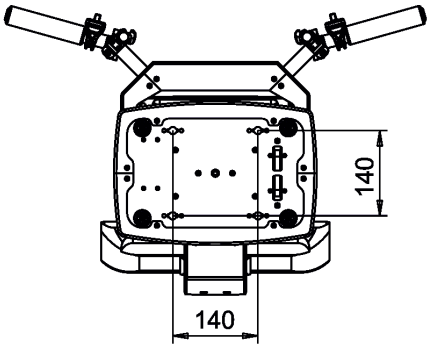
No actual software in RoboSpot Controller.
Please update to the latest software.
This message informs you the software update of the RoboSpot system should be done.

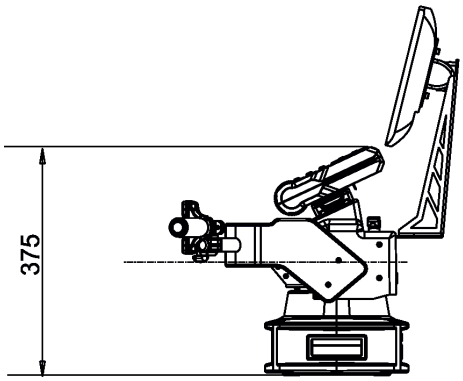
9. Technical specifications

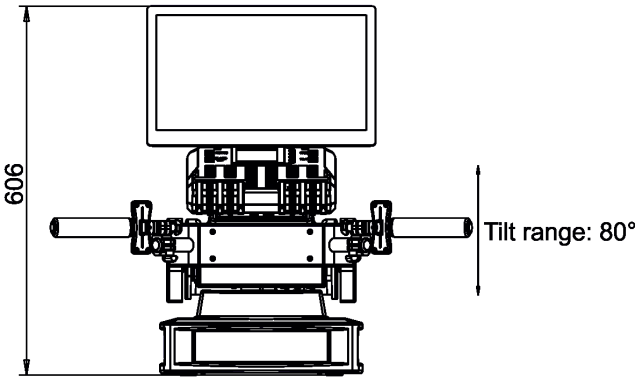
Supported fixtures:	Robin BMFL FollowSpot/Spot/Blade/WashBeam, Robin Pointe, MegaPointe, DL4S, DL7S,Robin T1 Profile, Robin T1 Profile FS
Input voltage:	100-240V AC
Power consumption:	15W (power factor=0.43, I=0.12A at 230V)
Fuse:	T 2 A
LCD Monitor:	ASUS VT168 H (panel size:15.6" , max. resolution:1366 x 768)
Setting & Control:	graphic touch screen
Protocols:	RDM, ArtNet, sACN,gMA I, gMA II
Control elements:	20 buttons, 4 jog-wheels and 2 faders
Connection:	DMX In/Out: Locking 3-pin and 5-pin XLR Ethernet: RJ 45 Camera: RJ 45 AC power: Neutrik PowerCon, A-type, NAC3MPA Monitor: HDMI USB lamp: 2x USB socket +5V/50mA 1 x USB
Pan rage:	+/- 80°
Tilt range:	+/- 40°
Fastening:	via adaptor on tripod

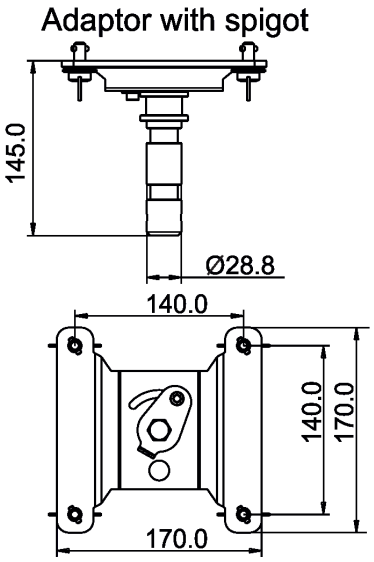
Weights: 16.5 kg (RoboSpot), 1.9 kg (Monitor Shied + Note Holder), 1.7kg (Adaptor), 8.7 kg (Tripod)

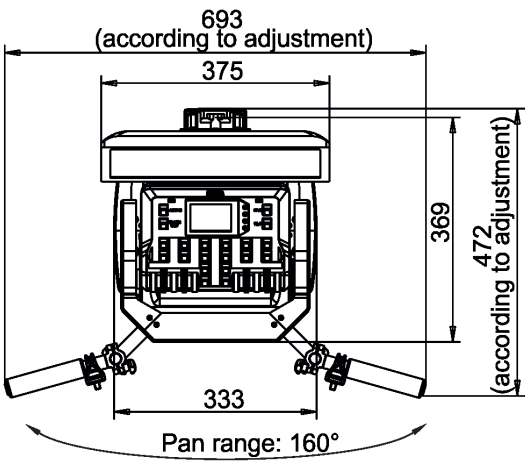
Dimensions (mm)



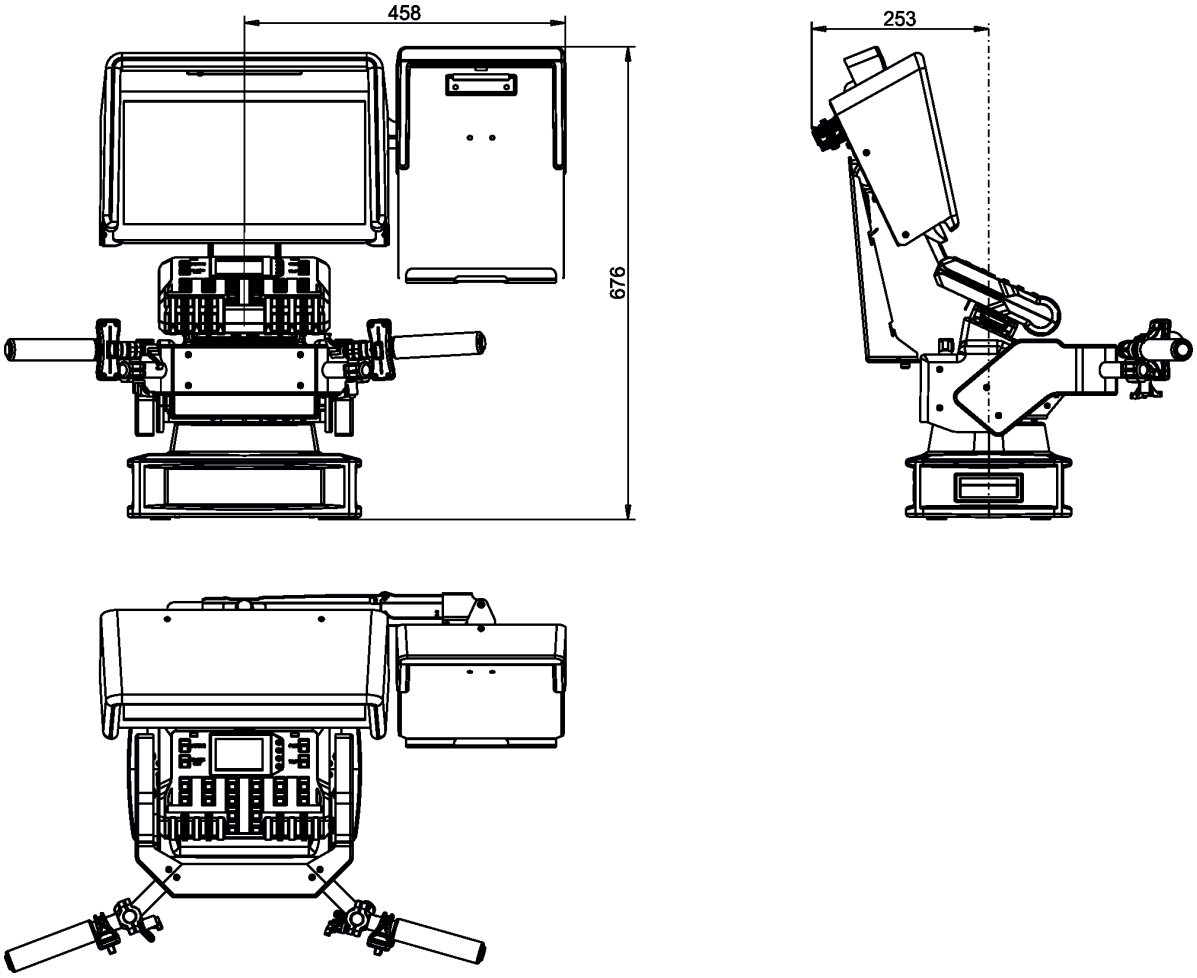








Dimensions with monitor shield and note holder (mm)



Included items

1 x RoboSpot
1 x Adaptor (including spigot) (P/N 9901504)
1 x Tripod for RoboSpot/FollowSpot/LightMaster (P/N 10980350)
1 x Power cable
1 x User manual

Optional accessory

Monitor Shield and Note Holder for RoboSpot BS (P/N 10980409)

10. Maintenance and cleaning

DANGER !
Disconnect from the mains before starting any maintenance work

A soft lint-free cloth moistened with cleaning fluid is recommended, under no circumstances should solvents be used! For cleaning of the LCD monitor use a fluid intended for this purpose.

Never use solvents for cleaning the device

More complicated maintenance and service operations are only to be carried out by authorized distributors.

10.1 Replacing the fuse

Replace the fuse by a fuse of the same type and rating only.

Before replacing the fuse, unplug mains lead!

1) Remove the fuse holder on the rear panel of the base with a fitting screwdriver from the housing (anti-clockwise).
2) Remove the old fuse from the fuse holder.
3) Install the new fuse in the fuse holder (only the same type and rating).
4) Replace the fuse holder in the housing and fix it.

10.2 Disposing of the product

To preserve the environment please dispose or recycle this product at the end of its life according to the local regulations and codes.

Specifications are subject to change without notice.
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November 8 2018
Made in CZECH REPUBLIC by ROBE LIGHTING s.r.o. Palackeho 416/20 CZ 75701 Valasske Mezirici