MagVader Event with cartridge system

Functional description MagVader Event series V1.08

Fabrication and Marketing
Licht-Technik
Hagenbach & Grill

Caution! Operate the device only after having read and understood the operating instructions!

MagVader Event series

The MagVader of the Event-series is a versatile Color Changer and mechanical dimmer shutter for event, fresnel and spot headlights.

This device is designed for use in theatre- and opera houses, exhibitions, light shows and events like that. The built in 16-Bit Microcontroller enables a quick and safe processing, intuitive user interface and uncomplicated operation.

The device is controlled by DMX512 (USITT 1990). The position of color tape and shutter, the speeds, the fan intensity and the move mode of the color string can be controlled by DMX. In addition, the colors and the dimmer can be controlled by keyboard. In this case, no DMX signal is required.

After putting in the cartridge, the device automatically scans the frame positions. The positions of begin, end and (dark-) color frames are detected by the device because of the markers.

The Color string can be moved in linear, frame by frame and halfframe mode. Frame by frame mode means that only full color frames can be selected. In halfframe mode, two colors, each by a half can be moved into the light. Linear mode means that every position of the color string can be selected.

The built in potentiometer generates an absolute value of the tape position, thus no initalisation move must be performed.
The Marker and light sensor system provides an exact positioning of the color string.

The Dimmer shutter works with an encoder for positioning. This means, that an short initialisation run is necessary.

As an optional extra „dark color mode" is available, which moves the sensitive darker color frames from end to end in front of the light. The effect is a better heat distribution on the string. This requires a double length color frame. The device counts the dark colors as one frame.

For power supply we can offer the power supplies PS 104 and PS204 with integrated split box. An alternative are the *Licht-Technik* mixing panels with integrated power supply.

The lighted LCD display (light can be switched off) leads the user through the various program steps in plain language instructions. User instructions are available either in English or German language.

Table of content

Safety and operating instructions

The device must only be operated when being in the operating position for this purpose. Operating position is vertical with max. +/- 60 degree. But the motor unit must not be at the top position.

Admissible ambient temperature: 0 to +55 °C

The device is getting very hot because of the lamp. Let it cool down for at least one hour before touching.

The top and bottom vents must not be blocked or covered.

The equipment is designed to be used in dry and clean rooms.

The lamp must not shine outside the light hole. This means, the diameter of the light hole of the color changer must be the same or larger as the diameter of the lamp lens. For exmple: A 200mm color changer cannot be operated in front of a lamp with 300mm lens diameter.

"PAR" headlights without flood lense are not suitable for use with color changers.

The MagVader must be kept dry. In case of water condensation, a waiting time of 2 hours is necessary until acclimatisation is reached.

Observe the maximum load of fastening spigots which will be increased by the additional weight of the color changer.

Make sure that the device is safe fixed at the lamp.

Use a safety belt.

Power supply via DATA Power input of the shutter must only be realized via power supplies authorized by us (electrical separation from the mains).

Change the cartridge only in power on state of the device. On the other hand, the device can not recognize the change. The result are incorrect stops and pulling out the string.

When it has to be assumed that a safe operation is no longer possible, the equipment must be switched off immediately and be secured against unintended operation.

This is the case when:

- the device shows visible damages
- the device is not functional
- parts of the device are loose or slackened
- connecting lines show visible damages

Prior to starting the equipment the user must check the usefulness of the device for its intended purpose. In particular, Licht-Technik shall decline any liability for damages of the equipment as well as for consequental damages resulting of the device being used inappropriately, of inexpert installation, incorrect starting, use and noncompliance with the valid safety regulations.

Cabling

The standardized DMX-Signal is based on industrie´s RS485 Interface. It is designed for maximum lengths up to 1200m. This length is under condition in theatre or studio normally not possible. As a result of internal tests we recommend a maximum length of 200m (only DMX, 5PIN).
The maximum length of a Output (Data Power, 4PIN) must not exceed 80m because of the voltage drop.

Connect the light mixer panel and the Splitbox PS104/PS204 with a 5PIN XLR-DMX-cable. The splitbox is provided with a DMX out jack for connecting additional splitboxes. At each of the four DATA Power outputs for the devices a maximum of 4 MagVaders can be connected. However, the total number of MagVaders per splitbox must not exceed 12 devices (PS204) or 6 devices (PS104) respectively.

The last device of a serie should be connected with a terminating impedance (470 Ohm). It is plugged into the OUT connector of the last device of a row.
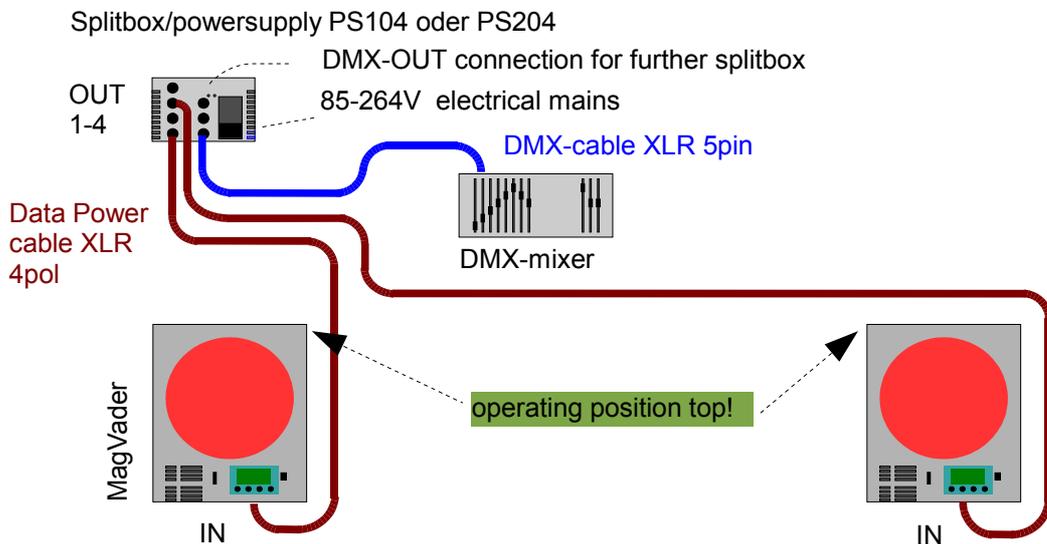
When operating with a *Licht-Technik* mixer panel it is not necessary to use a splitbox. These mixers come with a built in power supply.
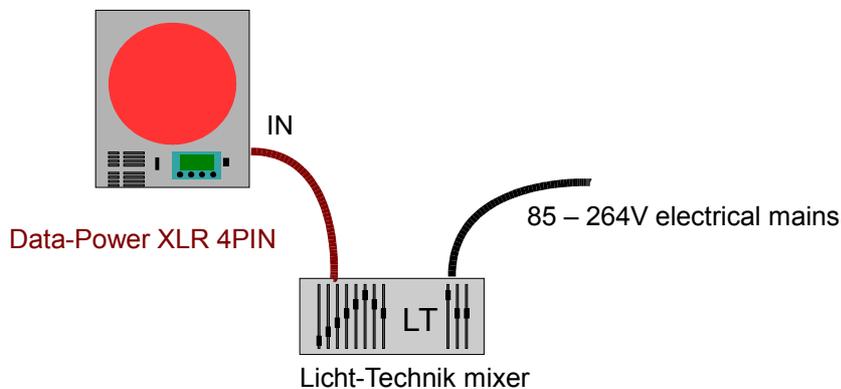
Maximum length of DATA Power cable is also 80m. The last device should be connected with a terminating impedance (470 Ohm). Total number of devices is 4.
If more devices should be connected, a PS104 (max. 6 MagVader Event) or PS204 (max. 12 MagVader Event) must be used. Cabling is like illustration on page 7.

|	*Licht-Technik* Mixer	PS104	PS204
Maximum number of MagVader per output	3	4	4
Maximum number of MagVader total	3	6	12

Dimensions of string and frames

We recommend filters of Rosco™ type Supergel©.

In addition, cut your gels to fit on the rolls in the same way like the gel is on original gel roll. You can avoid disturbing movement noise and a excessive wear of the foil.

Normal length

Normal length is the described frame or dark color frame size below.
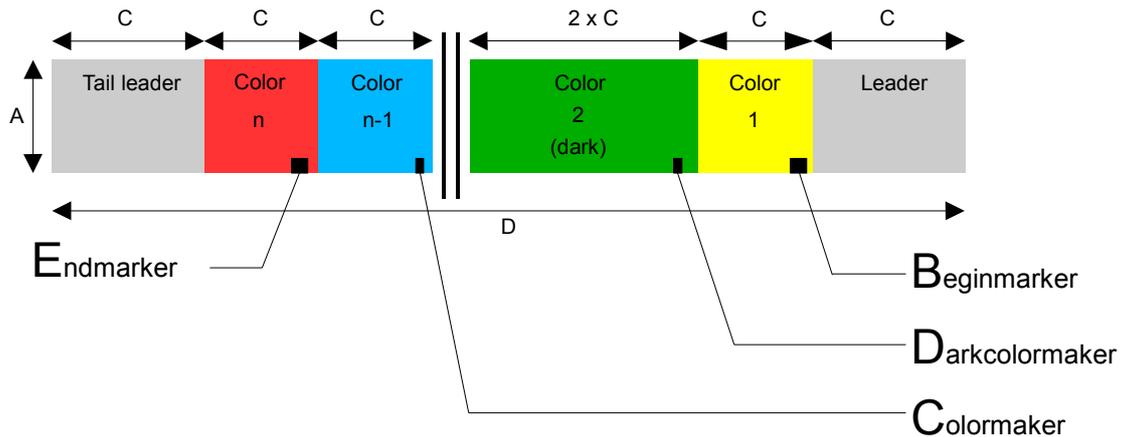
Type	height A (mm)	(tail-) leader B (mm)	color C (mm)	dark color 2 x C	stringlength D (mm)	max colors
MV175	206	280	280	560	7560	25

Tapes with normal frame dimensions can have up to 25 colors (depends of the size of device). A dark color frame must be considered as two normal colors. For example: A string with the length of 20 colors and two dark colors has a maximum of 18 different color frames.

White diffusion proved itself extremely efficient as leader and tail-leader, since this type of material is fitting very closely and can compensate any inaccuracies resulting from the tape in procedure. We recommend to use a transparent adhesive tape with high temperature stability for this purpose.

Other dimensions

Other dimensions are individually strings cut by the user. With these, the user can realize rainbow or sunrise effects for example.

The number of colors, the length of the frames and the position of the marker can be varied within the following restrictions:

- minimum number of markers: 2 (Begin and end).
- do not exceed the maximum number of markers (depends of the size of the device) inclusive begin- and endmarker.
- do not exceed the maximum tape length (length D, see table page 9)
- do not vary the height of the tape (length A, see table page 9)
- do not vary the (tail-)leader of the tape (length B, see table page 9)

The positioning of aluminium markers is described in the next chapter.

Positioning of aluminium markers

The color changer can recognize the individual color positions with the light sensor and attached aluminium markers. This allows an exact positioning even when the foil strips have expanded because of heat.

The markers can be attached either when the string is inserted or not. You can stick them at the rear or front side of the tape. They have to consist of a light impermeable material (aluminium). They can also be ordered from our company.

Dimensions of the markers:

Type of marker	Dimensions (H x L)	
Begin- and Endmarker	25 x 25	
Color marker	6,5 x 25	vertically
Dark color marker	13 x 25	vertically

Startmarker:
It is attached at the beginning of the first color frame. The middle of the Marker should be in the light sensor when the color frame is in middle position.
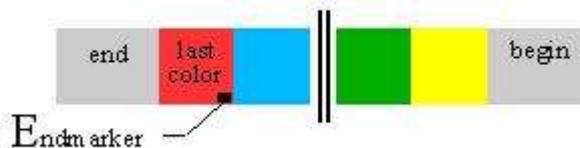

Endmarker:
It is placed at the beginning of the last color. The middle of the marker should be in the light sensor when the color frame is in middle position.

Colormarker:
It is placed upright at each color frame at the position shown below. It should be inside the light sensor when the color frame is in middle position.
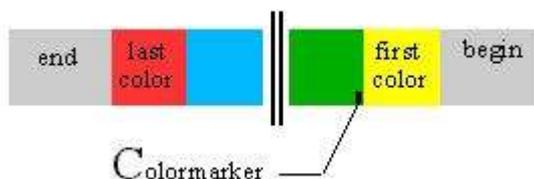
Dark color marker:
It is placed upright at each color frame at the position shown below. It should be inside the light sensor when the color frame is in middle position.
Note that the first and the last color must not be a dark color!
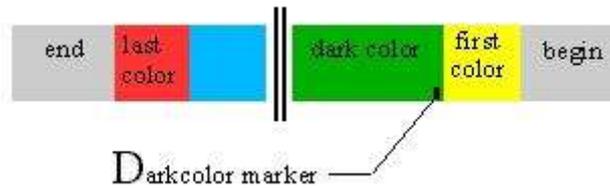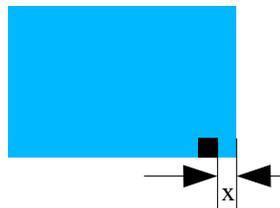

The postion of the markers on the color frame:

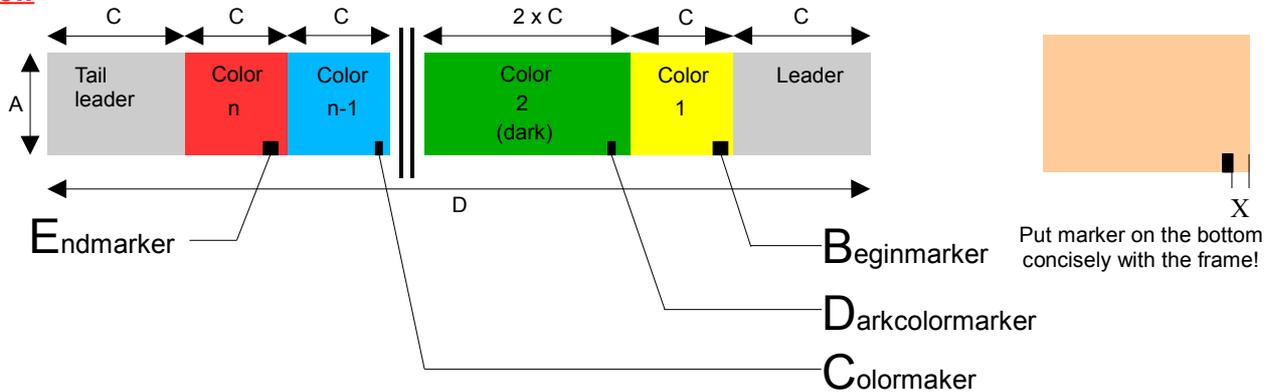|	Position x
	MV175
Startmarker	50
Endmarker	50
(Dark-) Colormarker	50

Put the marker concisely to the bottom of the frame!

Dimensions of strings of Licht-Technik color changers

(All dimensions in mm!)

Sizes of markers: Begin- and Endmarker: 25 x 25mm
Colormarker: 6,5 x 25mm vertical
Darkcolormarker: 13 x 25mm vertical (**CC/Cyclo V2.1, Sh-CC V1.1 and higher**)

At the bottom end, the marker has to be placed consicely with the bottom end of the gel!

Put marker on the bottom concisely with the frame!

Endmarker **B**eginmarker **D**arkcolormarker **C**olormaker

MagMax™

Type		Color-code Cartridge	Height A	Color Length C	String Length D	Max. Colors	Color marker	Begin marker	End marker	Revolutions for foil tensioning
MM200			216	280	6160	20	50	80	15	
MM250			275	380	7980	19	70	75	45	
MM300			318	450	9000	18	70	75	45	
MM350			358	480	8640	16	65	75	45	
MM430			450	530	8480	14	60	75	20	
MM500			520	640	8960	12	65	80	30	
MM500XL			700	640	8960	12	65	80	30	
MM8-Lite			700	530	8480	14	60	75	20	

MagMax™ Mk2 — MagVader

Type		Color-code Cartridge	Height A	Color Length C	String Length D	Max. Colors	Color marker	Begin marker	End marker	
	MV175 Event		206	280	7560	25	50	50	50	5-6
MM200 Mk2		Green	225	305	6710	20	65	80	35	5-6
MM200 MK2-25		Green	225	305	8235	25	65	80	35	6-7
MM250 Mk2	MV200	Red	276	370	8140	20	65	80	35	5-6
MM300 Mk2	MV250	Black	320	440	9680	20	65	80	35	10-11
MM300 Mk2-25		Black	320	440	11880	25	65	80	35	12-14
MM350 Mk2	MV300	Yellow	370	490	9800	18	80	95	40	10-11
MM430 Mk2	MV350	Blue	450	550	9900	16	80	95	40	12-14
MM500 Mk2	MV430	Grey	530	630	10080	14	80	95	40	20-22

CC-Serie — SH-CC

Use dark color markers only with Version 2.1 (CC) respectively 1.1 (SH-CC) or higher

Type			Height A	Color Length C	String Length D	Max. Colors	Color marker	Begin marker	End marker	
CC150			174	215	6880	30	40	30	30	
CC175			192	240	7680	30	40	30	35	
CC200	SH-CC185		225	305	9760	30	50	50	50	
CC250			276	370	9990	25	65	50	50	
CC270	SH-CC270		276	370	9990	25	65	50	50	
CC350	SH-CC325		370	465	9300	18	75	60	50	
	SH-CC460		498	580	10440	16	75	60	50	

MagMax™ Cyclo Series

Use dark color markers only with Version 2.1 or higher

See Cyclo Series manual

The revolutions for tensioning should be a reference point valid for new gels and the maximum of color frames!

Getting started

Please read the safety and operating instructions on page 5 **before** setting into operation. After that, cable the MagVader like illustrated on page 7 or page.

After switching on, the LCD-display shows the *Licht-Technik* moving text in the first line. The second line shows the programmed DMX address and the corresponding DMX value (8 Bit real DMX value, 0..255). For example: A001:128. This is the normal operation mode.

If the cartridge is not inserted, the device will show "insert cassette" for a few seconds. After that, the shutter is ready for working. The Licht-Technik moving text indicates at the start "insert cassette".

Insert the cartridge only in power on state of the device. On the other hand, the device can not recognize the change. The result are incorrect stops and pulling out the string.

If a cartridge is inserted and scanned, the device is ready to be controlled by the light panel after programming the DMX adresses (menu P01 - P06. Refer to page 18,continuing).

This the normal operation mode. In this mode it is possible to switch the LCD backlight with the UP key on or off respectively.

If you press the DOWN key the number of colorframes will be shown in the second line of the display.

With the OK key you can force the scrolling text to start new at the beginning to read the software version quickley.
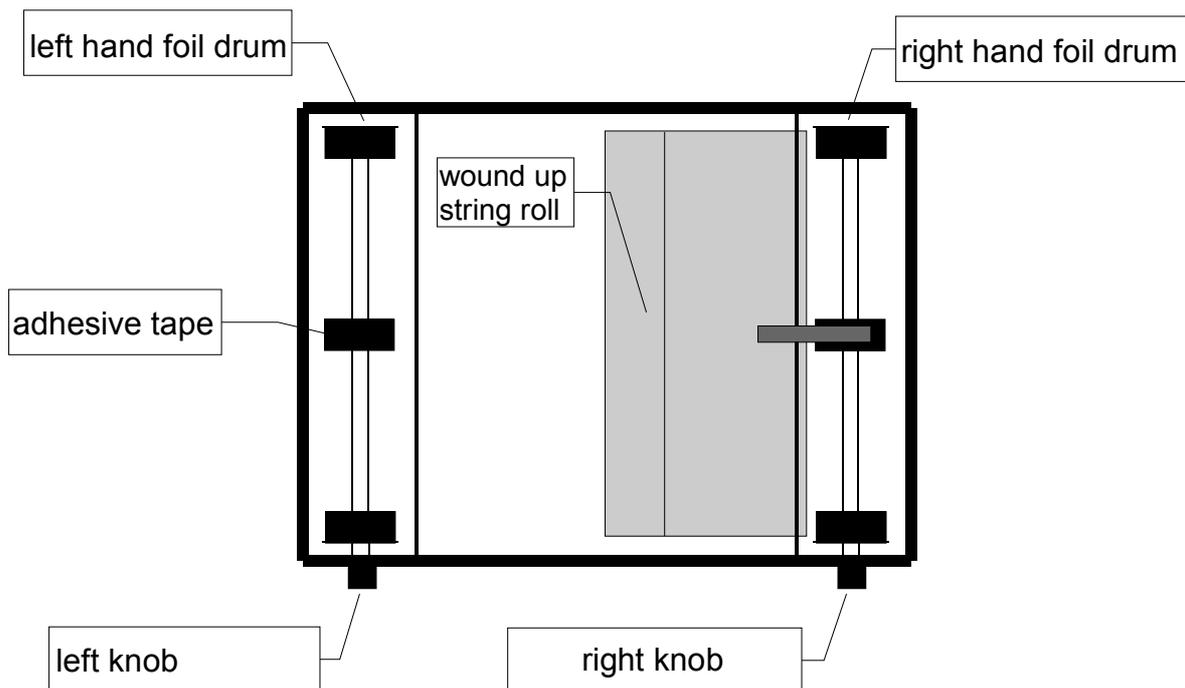
The MENU-key allows the user to reach the programming mode. Please refer to page 18 for further programming possibilities.

The factory pressettings (refer to page 42) can be resetted by pressing the keys Up and Ok <u>during switching on</u> the device.

Please refer to the Description of programming on page 18 (continuing) for further programming possibilities.

Please note that the tape can not be moved during programming!

Inserting the foil strip into the cartridge

left hand foil drum

right hand foil drum

wound up
string roll

adhesive tape

left knob

right knob

Important!
Always fix the string only on the middle drum. Never on the bottom or top drums!!

Wind up the foil strip in a way that the open end shows the leader. Insert the color tape, as indicated, into the cartridge and, by means off left-hand knob, wind the complete color tape onto the right-hand foil drum. Now center and tape the tail-leader on the left-hand foil drum. Tense the foil strip by retaining the right-hand stop button and turning the left-hand knob against the clockwise direction.

Note: Too much tension is the reason for failure and broken springs.
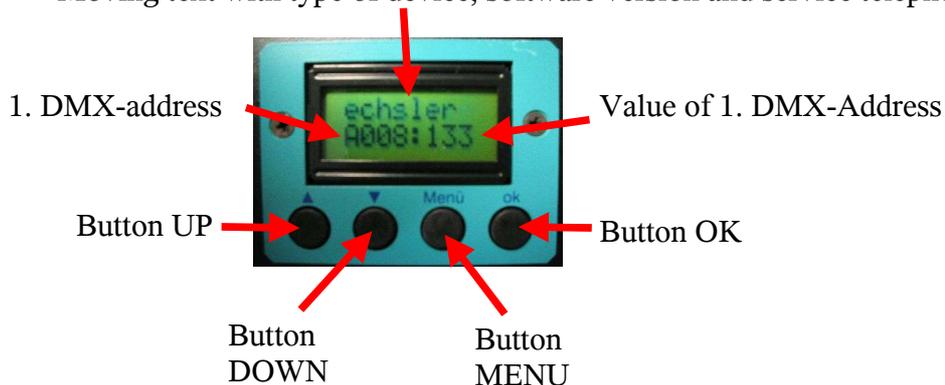
Important: Check if all of the individual aluminium markers are moving through the sensor.

Control elements

Cartridge lock

UP button   DOWN button   MENU button   OK button
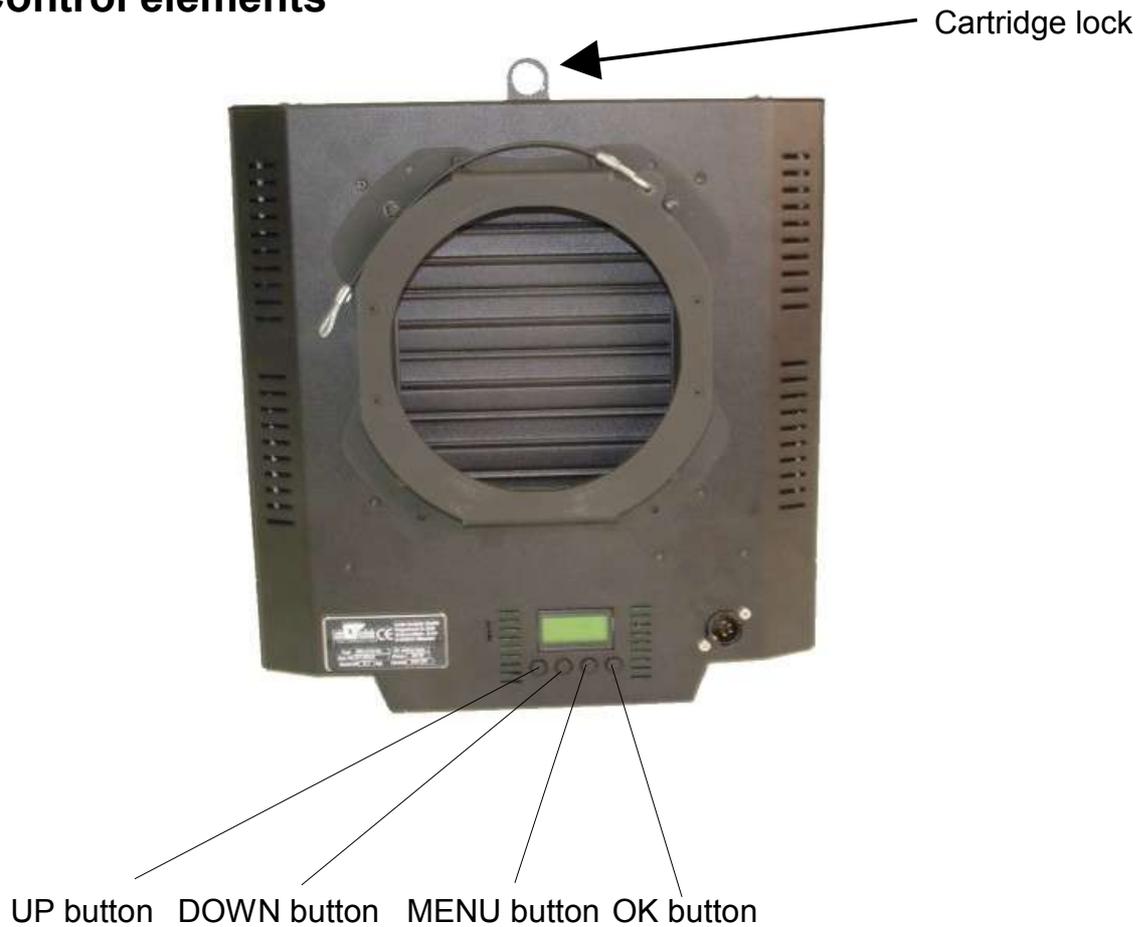
User interface

Moving text with type of device, software version and service telephone number

1. DMX-address

Value of 1. DMX-Address

Button UP

Button OK

Button DOWN

Button MENU

The **LCD-Display** indicates several information in normal operation mode. The first line shows a moving text with service telephone number. The second line shows the current DMX address and the incoming value (0..255).

The four buttons enables the user to program the device. That is described in the next chapters.

General programming hint

Do not forget to bring back the device in normal operating mode after programming (Press **two times OK**). Otherwise the shutter will not move.

Some menus are not accessible in some modes. For example if the shutter is in single channel mode, the menu P05 (speed for shutter) is not accessible and necessary.

Display lighting ON/OFF

During normal operation mode the LCD backlight is switched off to avoid a disturbing light. Only if an error occurs or during programming the light will be switched on automaticly. The user can also switch it on manually to see what is indicated.

Condition: Color changer is on working level (default state)

Operation:

depress. Display light **ON**

depress. **Display light OFF**

Reset to factory presettings

The following explains how to reset the device to factory presettings (refer to page 42).

Operation:

Power down shutter.

Menü + depress.

Power up shutter and wait until

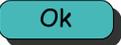reinit okay is indicated.

Release all buttons.

Wait until initialisation run is done.

P01 DMX address color changer position

At this point the **DMX address of the color changer position** can be adapted to the address of the light mixer panel.

Range of values: Address 1..512

Operation:

Menü	depress	Now you are at the menu level. The last adjusted menu point is displayed, e.g.: P02: DMX-Address string speed
▲ ▼	depress	...until P01: DMX-Adress string Position is displayed.
Menü	depress	The second line indicates the currently adjusted value.
▲ ▼	depress	Adjust the desired address.
Ok	depress	You are back on menu level.
Ok	depress	The equipment is ready for operation.

P02 DMX address color changer speed

At this point the **DMX address for string speed control** of the color changer can be adapted to the address of the light mixer panel.

If the value is set to 0, the internal adjusted speed of P20, page 31, will be used. In this case it is possible to operate the color changer without a seperate speed channel.

Range of values: Address 0..512

Operation:

Menü	depress	Now you are at the menu level, the last adjusted menu point is displayed, e.g.: P01: DMX-address string position
▲ ▼	depress	until P02: DMX address string speed is displayed.
Menü	depress	The second line indicates the currently adjusted value.
▲ ▼	depress	Adjust the desired DMX address.
Ok	depress	You are back at menu level.
Ok	depress	The equipment is ready for operation.
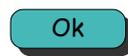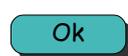
Caution!

If the speed channel is set to 0 the value that is adjusted at menu P20 color changer internal speed, if P02=0 (refer to page 31) will be used as speed value. In this case it is possible to operate the color changer without a seperate speed channel. This means, there is no speed control by the light mixing panel!
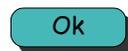
P03 DMX address fan intensity

At this point the **DMX address for fan intensity** can be adapted to the address of the light mixer panel.

If the value is set to 0, the internal adjusted speed of P22, page 33 will be used. In this case it is possible to operate the color changer without a seperate fan intensity channel.

Range of values: Address 0..512

Operation:

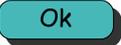|		
Menü	depress	Now you are at the menu level, the last adjusted menu point is displayed, e.g.: P01: DMX-address string position
▲ ▼	depress	until P03: DMX address fan intensity is displayed.
Menü	depress	The second line indicates the currently adjusted value.
▲ ▼	depress	Adjust the desired DMX address.
Ok	depress	You are back at menu level.
Ok	depress	The equipment is ready for operation.

Caution!

If the fan intensity channel is set to 0 the value that is adjusted at menu P22 internal Fan intensity (refer to page 33) will be used as fan intensity value. In this case it is possible to operate the color changer without a seperate fan channel. This means, there is no fan control by the light mixing panel!

P04 DMX address shutter position

At this point the **DMX address of the shutter position** can be adapted to the address of the light mixer panel.

Range of values: Address 1..512

Operation:

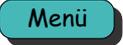|		
Menü	depress	Now you are at the menu level. The last adjusted menu point is displayed, e.g.: P01: DMX-address string position
▲ ▼	depress	...until P04: DMX-Address shutter position is displayed.
Menü	depress	The second line indicates the currently adjusted value.
▲ ▼	depress	Adjust the desired address.
Ok	depress	You are back on menu level.
Ok	depress	The equipment is ready for operation.

P05 DMX address shutter speed

At this point the **DMX address for shutter speed control** of the MagVader can be adapted to the address of the light mixer panel.

If the value is set to 0, the internal adjusted speed of P21, page 32, will be used. In this case it is possible to operate the color changer without a seperate shutter speed channel.

Range of values: Address 0..512

Operation:

Menü	depress	Now you are at the menu level, the last adjusted menu point is displayed, e.g.: P01: DMX-address string position
▲ ▼	depress	until P05: DMX address shutter speed is displayed.
Menü	depress	The second line indicates the currently adjusted value.
▲ ▼	depress	Adjust the desired DMX address.
Ok	depress	You are back at menu level.
Ok	depress	The equipment is ready for operation.
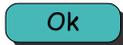
Caution!
If the speed channel is set to 0 the value that is adjusted at menu P21 shutter internal speed, if P05=0 (refer to page 32) will be used as speed value. In this case it is possible to operate the color changer without a seperate speed channel. This means, there is no speed control by the light mixing panel!

P06 DMX-adress color changer move mode

At this point the **DMX address for color changer move mode** can be adapted to the address of the light mixer panel. With this value, the value of P11 (move mode color changer, page 27) can be set.

If this value is set to 0, this function is switched off.

This DMX-address is not automatically set whith P08 (page 24) function. This is to avoid unintended programming of P11.

DMX-range of value for setting P11:

10 - 20:	Frame-by-Frame - Mode	(P11=1)
21 - 30:	Halbframe - Mode	(P11=2)
31 - 40:	Linear - Mode	(P11=0)
all others:	no modification of P11	

A new move mode for P11 is set, when DMX value is 5 seconds in the corresponding range of value.
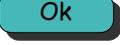
Range of value: Adress 0..512

Operation:

Menü	depress	Now you are at the menu level, the last adjusted menu point is displayed, e.g.: P01: DMX-address string position
▲ ▼	depress	until P06: DMX address color changer move mode is displayed.
Menü	depress	The second line indicates the currently adjusted value.
▲ ▼	depress	Adjust the desired DMX address.
Ok	depress	You are back at menu level.
Ok	depress	The equipment is ready for operation.

P08 One address mode DMX-address

At this point you can decide if the **DMX addresses** should be programmed **individual** or **only the first address** is set and the others follow. At Licht-Technik equipment you can go both ways: Adjust only one address (except P06) or all 6 addresses.

An exception is P06. This is to avoid unintended programming of P11.

Range of values:
P08 = 1   set only the first address (P01) the others will follow to this.
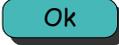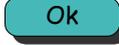P08 = 0   you can adjust all 6 addresses individually.

Operation:

Menü	depress	Now you are at the menu level, the last adjusted menu point is displayed, e.g.: P01: DMX-address string position

| ▲ ▼ | depress | until P08: DMX addresses 0:individual 1: only first address is displayed. |

| Menü | depress | The second line indicates the currently adjusted value. |

| ▲ ▼ | depress | Adjust the desired addressing mode. |

| Ok | depress | You are back at menu level. |

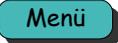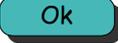| Ok | depress | The equipment is ready for operation. |

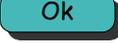**Note:**
If a 1 is programmed at this menu, you can not set the DMX-addresses in P02, P03, P04, P05, P06. Only the address for color changer position (Menu P01) can be set. For exampe, the color changer speed address ist automatically one higher than the address for color changer position . The fan intensity address is automatically two higher than the address for color changer position and so on.

P09 Dark color mode speed

At this menu you can program the **moving speed for dark colors**.

Range of values: 0..255

Operation:

Menü	depress	Now you are at the menu level, the last adjusted menu point is displayed, e.g.: P01: DMX-address string position
▲ ▼	depress	until P09: Dark color mode speed is displayed.
Menü	depress	The second line indicates the currently adjusted value.
▲ ▼	depress	Adjust the desired speed.
Ok	depress	You are back at menu level.
Ok	depress	The equipment is ready for operation.

P10 Dark colors

At this point the dark colors can be **checked** and, if necessary, **corrected**. It is not necessary that the corresponding marker is a dark color marker. Please note that the first and the last color cannot be set as a dark color, since these frames are marked with a begin- or an endmarker, therefore they can´t be marked with a dark color marker.

Range of values: 1 to number of colors

Operation:

| Menü | depress | Now you are at the menu level, the last adjusted menu point is displayed, e.g.:
P01: DMX-address string position |

| ▲ ▼ | depress | until P10: dark colors is displayed. |

| Menü | depress | The second line indicates either:
      C02:----   if color 2 is a dark color.
  or
      C02:dark if color 2 is a dark color. |

Now you can choose a color number with the keys ▲ ▼ The color changer

is moving to the selected color. By depressing (Menü) you can toggle the

current color to be a dark color or not. The display indicates accordingly to your settings.

| ▲ ▼ | depress | You are back at menu level. |

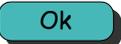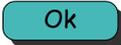| Ok | depress | The equipment is ready for operation. |

P11 Color changer move mode

At this point you can switch between **linear**, **frame-by-frame** and **halfframe** mode. In linear mode, every position of the color tape is responsive to the light mixer panel.
In frame-by-frame mode only full colors are responsive to the panel – under the condition that each full color is marked with an aluminium marker (refer to section *Positioning of aluminium markers,* page 11).
In halfframe mode the device positions at the middle position between two markers. So there are two colors, each by 50%, are in the light.

Range of values:　0 = Linear mode
　　　　　　　　　　1 = Frame-by-frame mode
　　　　　　　　　　2 = Halfframe mode

Operation:
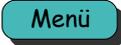
Menü	depress	Now you are at the menu level, the last adjusted menu point is displayed, e.g.: P01: DMX-address string position
▲ ▼	depress	until P11: move-mode: 0: linear 1:frame by frame 2:halfframe is displayed.
Menü	depress	The second line indicates the currently adjusted value.
▲ ▼	depress	Adjust the desired move mode.
Ok	depress	You are back at menu level.
Ok	depress	The equipment is ready for operation.

P15 Shutter move mode

At this point you can set the **move mode** of the shutter.

Range of values: 0: Speed mode
                        1: 16-Bit-mode
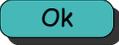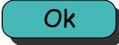   2: Single channel mode

Operation:

(Menü) depress   Now you are at the menu level, the last adjusted menu
                   point is displayed, e.g.:
         P01: DMX-address string position

(▲) (▼) depress   until P15: Speed mode 0:speed 1:16-Bit 2:one
                  channel is displayed.

(Menü) depress   The second line indicates the currently adjusted value.

(▲) (▼) depress   Adjust the desired move mode.

(Ok) depress   You are back at menu level.

(Ok) depress   The equipment is ready for operation.

Please note:
- In Single-Channel and 16-Bit-mode, no speed channel is required.
-16-Bit-mode addresses: First channel (P01) is high order the following channel (P01 +1)
 is low order ("fine").

Hint:

Use the Single-Channel or 16-Bit-mode mode if possible. The speed mode uses for every positioning the programmed speed. Especially when moving the fader by hand, the light will jerk. In single-channel mode the shutter calculates the speed itself from the position channel and moves very soft and jerking free.

P18 Shutter center position compensation

This function helps to correct the **opened position**. The device will move immediately to the new limit postion.

Range of values: 0..5000 steps

Operation:
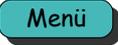
Menü   depress   Now you are at the menu level, the last adjusted menu point is displayed, e.g.:
P01: DMX-address string position

▲ ▼   depress   until P18: shutter center position compensation is displayed.
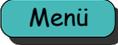
Menü   depress   The second line displays the currently adjusted value

▲ ▼   depress   Adjust the desired value
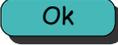
Ok   depress   You are back at menu level again
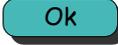
Ok   depress   The equipment is ready for operation now.

P19 Zero position compensation

This function helps to correct the **closed position**. The device will move immediately to the new limit postion.
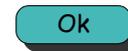
Range of values: 0..5000 steps

Operation:

Menü	depress	Now you are at the menu level, the last adjusted menu point is displayed, e.g.: P01: DMX-CHannel position.
▲ ▼	depress	until P19: shutter closed position compensation is displayed
Menü	drücken	The second line displays the currently adjusted value
▲ ▼	depress	Adjust the desired value
Ok	depress	You are back at menu level again
Ok	depress	The equipment is ready for operation now.

P20 Color changer internal speed

At this point you can define at which **speed** the color changer shall carry out positioning process when **no DMX channel** for speed control is programmed (P02, page 19 is set to 0).

<u>Range of values:</u> 0..255
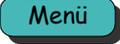
<u>Operation:</u>

Menü	depress	Now you are at the menu level, the last adjusted menu point is displayed, e.g.: P01: DMX-address string position
▲ ▼	depress	until P20: color changer internal Speed, if P02-Value 0 is displayed.
Menü	depress	The second line indicates the currently adjusted value.
▲ ▼	depress	Adjust the desired value.
Ok	depress	You are back at menu level.
Ok	depress	The equipment is ready for operation.
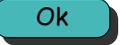
Caution!

This value is only the speed value if P02, page 19 is set to 0!

P21 Shutter internal speed

At this point you can define at which **speed** the shutter shall carry out positioning process when **no DMX channel** for speed control is programmed (P05, page 22 is set to 0).

Range of values: 0..255

Operation:

Menü	depress	Now you are at the menu level, the last adjusted menu point is displayed, e.g.: P01: DMX-address string position
▲ ▼	depress	until P21: shutter internal Speed, if P05 = 0 is displayed.
Menü	depress	The second line indicates the currently adjusted value.
▲ ▼	depress	Adjust the desired value.
Ok	depress	You are back at menu level.
Ok	depress	The equipment is ready for operation.

Caution!
This value is only the speed value if P05, page 22 is set to 0!

P22 Internal fan intensity

At this point you can adjust **internal fan intensity** if no DMX channel for the fan is programmed (P03, page 20 is 0).

Range of values: 0..255

Operation:

Menü	depress	Now you are at the menu level, the last adjusted menu point is displayed, e.g.: P01: DMX-address string position
▲ ▼	depress	until P22: internal fan intensity, if p03 = 0 is displayed.
Menü	depress	The second line indicates the currently adjusted value.
▲ ▼	depress	Adjust the desired value.
Ok	depress	You are back at menu level.
Ok	depress	The equipment is ready for operation.
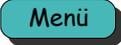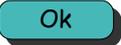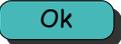
Caution!
This value is only the fan intensity value if P03, page 20 is set to 0!

P24 Number of color frames

At this point you can check the **number of colors** of the tape. If there is the value 0 the color string is not scanned or the cartridge is not inserted. In this case the color changer doesn´t move. At this menu nothing is programmable. It´s just for information.

Range of values: 0 .. number of color frames

Operation:

Menü	depress	Now you are at the menu level, the last adjusted menu point is displayed, e.g.: P01: DMX-address string position
▲ ▼	depress	until P24: number of color frames is displayed.
Menü	depress	The second line indicates the number of frames.
Ok	depress	You are back at menu level.
Ok	depress	The equipment is ready for operation.
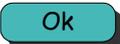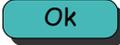
P28 Color changer handmode

At this point it is possible to move the color frames by **hand**. Only full color frames can be selected (like in frame-by-frame modus). A DMX signal is not necessary.

Range of values: 1 .. number of color frames

Operation:

Menü   depress Now you are at the menu level, the last adjusted menu
point is displayed, e.g.:
P01: DMX-address string position

▲ ▼ depress   until P28: color changer handmode is displayed.

Menü   depress   The second line indicates the current frame number. e.g.:
Color:01

Now you can choose a color with the keys ▲ ▼ The color changer moves to the current color number.

Ok   depress   You are back at menu level.

Ok   depress   The equipment is ready for operation.

P29 Shutter handmode

At this point it is possible to move the shutter by **hand**. A DMX signal is not necessary.

Range of values: 0 .. 255

Operation:

Menü	depress	Now you are at the menu level, the last adjusted menu point is displayed, e.g.: P01: DMX-address string position
▲ ▼	depress	until P29: shutter handmode is displayed.
Menü	depress	The second line indicates the currently adjusted value.
▲ ▼	depress	Adjust the desired value. The shutter moves to indicated position.
Ok	depress	You are back at menu level.
Ok	depress	The equipment is ready for operation.

P30 Show DMX

This feature helps to **check** the incomming **DMX** values. In addition at this point it is possible to set the DMX channel which value should be indicated in normal mode. The value of this address will be displayed in normal mode as long as the position-address is not changed (in P01) or the device is disconnected from power supply.

Range of values: Address 1..512

Operation:

Menü	depress	Now you are at the menu level, the last adjusted menu point is displayed, e.g.: P01: DMX-address string position
▲ ▼	depress	until P30: show dmx is displayed.
Menü	depress	The second line indicates the currently adjusted value.
▲ ▼	depress	Adjust and/or check the desired DMX address.
Ok	depress	You are back at menu level.
Ok	depress	The equipment is ready for operation.

P32 User language

Here you can select German or English **language**.

Range of values: 0: German
                               1: English
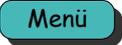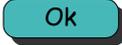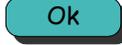
Operation:

> `Menü` depress Now you are at the menu level, the last adjusted menu
> point is displayed, e.g.:
> P01: DMX-address string position

> ▲ ▼ depress until P32: Language 0:German 1:English
> is displayed.

> `Menü` depress The second line indicates the currently adjusted value.

> ▲ ▼ depress Adjust 0 for German or 1 for English.

> `Ok` depress You are back at menu level.

> `Ok` depress The equipment is ready for operation.

P35 Unit number (Netspider only)

Here you can set the **unit number** for netspider systems. This number is only necessary in Netspider systems. In normal DMX systems, this number has absolutely no effect.

Range of values: 0..9999
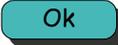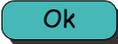
Operation:

Menü	depress	Now you are at the menu level, the last adjusted menu point is displayed, e.g.: P01: DMX-address string position
▲ ▼	depress	until P35: unit number (netspider only) is displayed.
Menü	depress	The second line indicates the currently adjusted value.
▲ ▼	depress	Adjust the desired unti number
Ok	depress	You are back at menu level.
Ok	depress	The equipment is ready for operation.

P51 Auto move (Demomode)

This mode is for **auto moving the string**. This means the string is moved automatically from one end to the other. A DMX signal is not necessary. The speed of moving is the internal color changer speed, set in P20, page 31. The fan can be controlled with the internal mode, set in P22, page 33.

Range of values: 0   Auto move off
                   1   Auto move on

Operation:

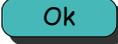| Menü | depress Now you are at the menu level, the last adjusted menu point is displayed, e.g.: P01: DMX-address string position |

▲ ▼   depress   until P51: Auto move (demomode) 0:off 1:on is displayed.

| Menü | depress   The second line indicates the currently adjusted value. |

▲ ▼   depress   Adjust the desired value.
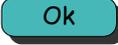
| Ok | depress   You are back at menu level. |

| Ok | depress   The equipment is ready for operation. |

Technical data

Weight and dimensions:

MV175 : (WxHxD)	340mm x 395mm x 115mm	3,7	kg
	13,38in x 15,55in x 4,52in	6,61	lb

Connected loads: 24 V DC, max 1,67A, 40W

PIN assignment:

Data-Power-cable: 4pin XLR connector
Housing: shield

PIN1	0V	cross-section min. 0,75 mm^2
PIN2	Data-	cross-section min. 0,25 mm^2
PIN3	Data+	cross-section min. 0,25 mm^2
PIN4	+24V DC	cross-section min. 0,75 mm^2

Data cable: 5pin XLR connector

PIN1	Shield	cross-section min. 0,25 mm^2
PIN2	Data-	cross-section min. 0,25 mm^2
PIN3	Data+	cross-section min. 0,25 mm^2
PIN4	not connected	cross-section min. 0,25 mm^2
PIN5	not connected	cross-section min. 0,25 mm^2

Please note: To avoid electrical and magnetical radio interferences, please use only screened cables. This improves also a safe operation of the devices.

The DMX wires must be twisted pair and shielded seperately.

Factory presettings

Menu	Description	Value	Remark
P01	DMX address color changer position	1	0%: Color 1 100%: last color
P02	DMX address color changer speed	2	0%: no speed 100%: full speed
P03	DMX address fan intensity	3	0%: no intensity 100%: full intensity
P04	DMX adress shutter position	4	0%: closed 100%: open
P05	DMX address shutter speed	5	0%: no speed 100%: full speed
P06	DMX adress color changer move mode	0	off
P08	One adress mode DMX-address	0	seperated
P09	Dark color speed	15	
P10	Dark colors	none	
P11	Color changer move mode	1	Frame by frame
P15	Shutter move mode	2	1-Channel mode
P18	Shutter center position compensation	individual	
P19	Shutter Zero position compensation	individual	
P20	Internal speed color changer	128	
P21	Internal speed shutter	255	
P22	Internal fan intensity	255	
P24	Number of color frames	none	
P28	Color changer handmode	1	
P29	Shutter handmode	128	
P30	Show DMX	1	
P32	Language	0	English
P35	Unit number Netspider	0	
P51	Color changer automove	0	off

Note:
The factory pressettings can be resetted by pressing the keys Up and Ok during switching on the device.

Error messages / Failures

No display after Power up:
  - Check cable connections to the device
  - The Equipment houses a slow-blow fuse for currents of 2A protecting the Color
    changer from wrong polarities in the supply line. When fuse is blown, it is absolu
    tely necessary to check cable and polarity (PIN1 = 0V, PIN4 = 24V).

Error 30: Color changer motor/potentiometer blocked
  - Check, if there is any foreign object inside the device
  - Check, if the drive can move easily
  - Check cable connections to motor and potentiometer
    connections are reversed, if motor or potentiometer was changed

Error 31: Shutter motor blocked
  - Check, if there is any foreign object inside the device
  - Check, if the drive can move easily
  - Check cable connections to motor

Error 28: EEPROM
  - Please contact *Licht-Technik*

Error 21: DMX signal reversed
  - Check input line if Pin 2 and Pin 3 are interchanged.
  - Check DMX supply cable to the Power supply unit (splitbox) if Pin 2 and Pin3 are
    interchanged

Error 20: DMX signal missing
  - Check if one or more pins of the input cable to the Shutter are broken.
  - Check DMX supply cable to the Power supplay unit (splitbox) if used, DMX OK
    LED must light.
  - The light mixer panel is not operative.

Error 41: Too many frames
  - Make sure that there are not more than the given number of markers used. Re
    fer to page 10.

Error 43: Color string too long
  - Make sure that the tape is not longer than dimension D (total length of tape).
    Refer to page 9.

Error during putting in/scanning the foil
  - Check if the markers are moving through the light sensor. Make sure that the
    markers are not inclined. They have to be exactly vertical.
  - Wrong markers and strong front light can lead to a malfunctioning of the sensor
  - Settings for dark and normal colors can be corrected at P10 dark colors
    (page 26)

If the error cannot be recovered, please contact company Licht-Technik

Warranty

The warranty for this MagVader is 2 years. It comprises any repair of failures – free of charge – which can be proved to result from defects of fabrication.

Warranty expires when:

- the device was modified or attempted to be repaired
- damages were caused by the intervention of foreign persons
- damages are due to noncompliance with the operating instructions
- the device was connected to an incorrect voltage or incorrect type of current
- the device was incorrectly operated or when damages were caused by negligent handling or misusage

Further information

This document and the information contained therein are subject to copyright and neither the whole nor any part of it may, and this is also valid for the described product, be reproduced, copied or recorded in any form without the prior written authorization of *Licht-Technik Vertriebs GmbH*.

The products of *Licht-Technik GmbH* are subject to constant development. Therefore *Licht-Technik* reserves the right to modify components, motors and also technical specifications any time and without prior notice.

All maintenance and servicing works related to the product must be carried out by the company *Licht-Technik. Licht-Technik* shall not assume any liability for losses or damages of any kind being the results of inexpert servicing.

MagVader Event series V1.08 Rev.: 1.09

Declaration of conformity

1.	**Type of device/product**	MagVader Event
2.	**Name and address of manufacturer**	Licht-Technik Vertriebs GmbH Osterwaldstraße 9-10 80805 München
3.	**The manufacturer is responsible for this declaration**	
4.	**Item of declaration**	MV-175-01

5.   The described item is conform to the following guidelines/regulations

RICHTLINIE 2014/30/EU DES EUROPÄISCHEN PARLAMENTS UND DES RATES vom
26. Februar 2014 zur Harmonisierung der Rechtsvorschriften der Mitgliedstaaten über die
elektromagnetische Verträglichkeit

RICHTLINIE 2011/65/EU DES EUROPÄISCHEN PARLAMENTS UND DES RATES vom 8. Juni 2011
zur Beschränkung der Verwendung bestimmter gefährlicher Stoffe in Elektro- und Elektronikgeräten

6.   Applied and conform to harmonized standards in particular

DIN EN 55015; VDE 0875-15-1:2016-04 - Grenzwerte und Messverfahren für Funkstörungen von
elektrischen Beleuchtungseinrichtungen und ähnlichen Elektrogeräten
(CISPR 15:2013 + IS1:2013 + IS2:2013 + A1:2015); Deutsche Fassung EN 55015:2013 + A1:2015

DIN EN 61547; VDE 0875-15-2:2010-03 Einrichtungen für allgemeine Beleuchtungszwecke –
EMV-Störfestigkeitsanforderungen (IEC 61547:2009); Deutsche Fassung EN 61547:2009
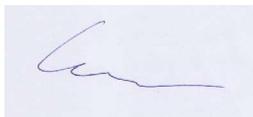
7.   Not applicable

8.   This declaration is invalid if the device is changed techically and/or unintended use.

Signed for   Licht-Technik Vertriebs GmbH

Place and date of description   München 6.9.2017

\---   \---
Uwe Hagenbach (Geschäftsführer)   Bernhard Grill (Geschäftsführer)