Licht Technik
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Motoryoke YipMan

MB-DY V1

Software version 4.58

Functional description

Fabrication and marketing
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Last updated on: 31/07/2020 Rev.: 1.00

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

Please read first the

operating and safety instructions

on page 6

Inhaltsverzeichnis

Introduction

Dear customer,
we gratefully thank you for purchasing our product!
You acquired a product which is state of the art and meets all requirements of the national and european standards. The conformity is proofed.
To ensure this state and a safe operation, you have to obverse this manual and especially the operating and saftey instructions.

Appropriate use

The motoryoke was designed to move a headlight, speaker, beamer or something like that.
The outdoor use is limited, because the housing is spray water proof but not completely sealed.
The contact to water should be avoided.
The use of cleaning fluids should be avoided, this could lead to damages.
For cleaning use a dry, lintfree towel or rag.
The complete product must not be modified and opened.
The safety and operating instructions must be observed.

The Licht-Technik motoryoke YipMan

With the Licht-Technik motoized yoke, we can offer an flexible, versatile, precise, durable and reliable device for positioning of different devices.

Company Licht-Technik developes motoryokes since 1991 for film, TV an theatre lighting.

Only high quality parts from leading manufacturers are used.

The aluminium housing supports high stability and quality with a low dead load.

The devices are manufactured with modern CNC machines. Therefore we can keep a constant high quality level.

The noise is optimized steadily to support an extreme quiet positioning.

We manufacture and develop the yokes in close cooperation with our customers to meet their wishes and requirements.

The control is realized by the **DMX-512 USITT**-interface. The rough and fine positioning (16-Bit, two channels) and the speed for each main-axis (PAN/TILT) can be controlled. In addition, we can support a rotation function with one DMX-channel

The built in **32-Bit Processor** provides a high throughput of the computer, quick positioning and uncomplicated handling. Even when triggering several motoryokes the precise control system provides a high synchrony of the movement.

Because of the absolute value device, the motoryoke does not perform any **initialisation runs** after power up. In addition a power down does not affect the current position, also because of the self-locking gearboxes.

The lighted **LCD display** (the light can be switched off) leads the user in plain text instructions through the various programming steps. The instructions are available either in english or german language.

The motoryoke has a mechanical and electronical **torque delimitation** on the PAN and rotation axle. The mechanical torque limitation is realised with a friction **clutch** and prevents a personal injury of people working on the yoke. Furthermore the drives and gearboxes will not be damaged (except Tilt-axle) when moving the yoke in case of power off.
The **electronical torque delimitation** switches off the motors in case of blocking (e.g. blocking because of moving onto a wall or decoration). The display shows an appropriate error message.

The **controlling** of the two main axles (PAN and TILT) is done with 2 DMX-channels per axle. With only one channel (8-Bit) a resolution of 256 steps could be realised. With two channels (16-Bit) a resolution of **65536 steps** is possible. The first channels of each axle represents the rough position information (at 360° range of rotation about 1.4 degrees per step). The second channel represents the fine position information. The speed of the motoryoke is determined with one channel (PAN and TILT together) or with two channels (PAN and TILT separated).

Safety- and operating instructions

Danger to life!

Before opening the housing disconnect the device from the mains !!!

Do **not** try in any case to **touch** the electronic through openings, also with any objects. This can cause an **electrical accident** that can lead to death!

Please note: The **switching** or rising/falling from one input voltage range to another during operation can lead to damage of the device!
When using a **generator**, first start the generator and wait for stable mains supply voltage! After that switch on the power supply

When using a generator, leave the device switched off until the mains voltage and frequency of the generator is stable. Starting the generator with switched on device will damage the device!!!

The motoryokes are tested by the german trade association (*Berufsgenossenschaft).* The devices conform with BGV C 1 and **correspond** to the newest safety regulations.

Never exceed the maximal possible **load of the mounting point**. (Rigg etc.)

Make sure that the **maximum load** of the fastening spigot will not be exceeded.

Never exceed the **maximum load** of the motoryoke. It is written on the identification plate and in the technical data section, page .

The Motoryoke must only be operated in the **operating position** provided for this purpose. Operating position is vertically hanging down, fastening spigot on the top.

Make sure that all fixtures of the yoke are **tightened**. Observe the torque of the screws or nuts.

Fast the headlight and all accessories like color changer, dimmer shutter and barndoor with **safety belts**.

The user is **responsible** for the correct use of safety parts!

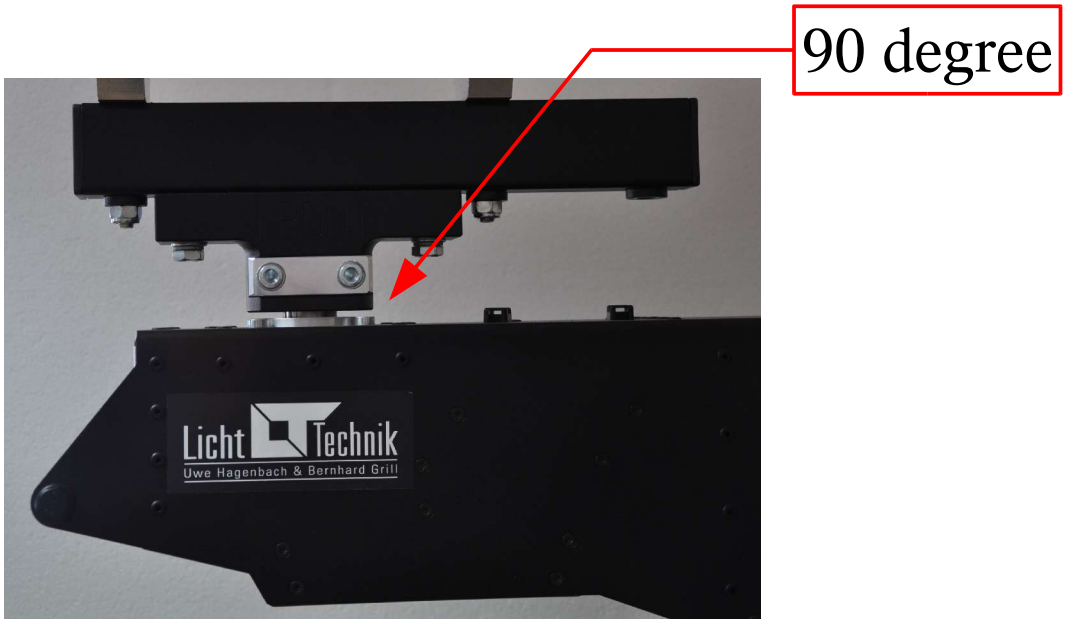
Make sure that all parts which are mounted on the headlight or moving devic are right **tightened**.

Lever forces must not have an effect on the Motoryoke. This means that the installed motoryoke must not be **shifted** or **bended**! It is also forbidden when fastening spigot is opened.

That applies also to the **transport**. It is absolutely forbidden to hang up the yoke on its spigot when transported!

If you want to use a transport **carriage**, it must be certified by Licht-Technik!

The fastening spigot must be **checked visual** once a year. The spigot must be in right angel to the housing. This must be checked in **front** and **side** view. A **protractor** can be a help.



Furthermore, the **spigot** itself and the **surface** of the yoke must not be deformed. Make sure that the spigot is not loose or unformal.
If the spigot is visibly **damaged** or deformed the motoryoke must not be used anymore. The device has to be sent to Licht-Technik.

A safety device that was **once loaded** or is visibly damaged **must not** be used anymore.

When working on the motoryoke, it must be **switched off** or the power line must be interrupted. Make sure that the Motoryoke cannot be moved by the control panel.

The operator must make sure that **no person** is in the swivelling range of the motoryoke. Inform your coworker and colleagues that the motoryoke is behaving like a work robot. When the position is changed at the control panel the device is trying to move on this position. There is the danger of being bruised and get frightened.

Admissible ambient **temperature**: 0..45 degree Celsius.
The motoryoke must not be **lit directly** by a mounted lamp. Limit the range of rotation (TILT axle) so that the headlight **does not shine** on the motoryoke.

Check the whole swivelling range of the headlight. The manufacturers of the lamps specify **minimum permissible distances** to inflammable materials. Make sure that these distances are attended in every position of the lamp.
The manufacturers of the lamps specify maximum **inclination**. HMI headlights are not allowed to operate with the ignition electronic on the top.

The motoryoke must be kept **dry**. In case of water condensation a waiting period of up to 2 hours is necessary until acclimatisation is reached.

If **knobs** for manual moving are mounted, they can only be used if the motoryoke is in power off condition. If the device is switched on and the knobs are rotated manually the motors and/or gearboxes can be damaged.

Make sure to mount the payload in the weight **balancing point**. The motoryoke must only be operated with balanced tilt, otherwise the motor and/or gearbox can be damaged.

Observe the right cabling. The **cable-loop** must be wide enough and the correct cable-route must be observed. The cables with the safety belt are last fixed left beside the safety hole of the motoryoke.

Wrong routed cables can lead to defective cables, because of the mechanic and thermic influence!

Check the complete **pan moving range** before starting the equipment by turning by hand! Too short cable loops can block the pan axis!

Never use the standard DMX-IN and the special control IN at the **same** time. Only one can be used!

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 equipment shows visible damages
- the equipment is no longer functional
- parts of the equipment are loose or slackened
- connecting lines show visible damages

Attention:
Before starting the equipment the user must check the usefulness of the device for its intended use.

We reject every **liability**:

- Damages and indirect damages or every kind of costs, which result from the use of Licht-Technik products.
- Any damages which result from negligence, improper use and setup, wrong setting into operation and use, ignoring of valid safety regulations, unsuitable use, bad maintenance of Licht-Technik products.

Quick start guide

Prior starting, observe the safety and operating instructions on page 6!!!

Follow the description **step by step** to mount the lamp and program the yoke!
For **cable connections**, please refer to section *cabling, page*

Assembling position:

First, the yoke must move to build-in position. The yoke must hang in a rigg. Connect power cable, but let it switched off. Push the **UP** button and switch **on**. This is the indicator for the electronic, that a lamp will be mounted.
No DMX-signal is needed. At the moment **NO** lamp or moving device is necessary!

Press the **UP** button and **power up** the yoke.
Wait until “adjust” is indicated. Release the button.
The electronic moves the axes including focus (if used and connected) to the build-in position.

Wait until “ready” is shown.
The yoke is ready to mount the lamp.
Power off the yoke or switch it off

Assembling the moving device

Cabling and **connecting** possibilities are described on page 12

Start with **mains in** only!

Do **not** connect the DMX line!

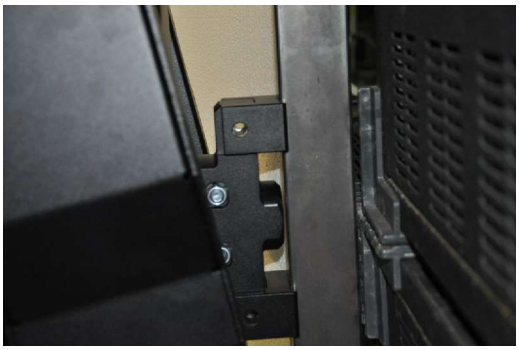
Power **on** the motoryoke

Use the **quick start guide** on page 9.

When all axles have been moved to loading position, assemble the payload:

1. Move the connection together

2. Connect it



3. Lock the connection with the ball lock pins:

The ball lock pins can be opened by depressing the orange area!

Identification

The motoryokes are **identified** by a number on the identification plate as follows:

MB – XX

MB = Motoryoke. On every motoryoke identification plate.

XX = ST: Type: Studio yoke
R: Type: tube yoke
SH: Type: Show yoke
D1: Type: Flexible in width
DY: Type: One point connection (YipMan)

The DMX-standard in lighting

Because of many problems with **analogue** data-signals from the control panels to the dimmers the DMX-standard was developed in 1990. DMX only needs **two** wires to control up to 512 dimmers digitally. On the other hand, the old analogue method needs one wire for every dimmer. Many kilometers of cable have been saved.

The DMX-signal is based on the industrial **RS485** interface. It is designed for maximum lengths up to 1200m. Normally this length is under condition in theatre or studio **not possible** (strong electrical fields because of the HMI lamps). As a result of internal tests we recommend a maximum length of **200m** (only DMX line, 5pin). On every DMX transmitter a maximum of 32 DMX receiver can be connected. All devices must be connected in a **row** (cabling from A to B, from B to C, from C to D etc.). The last device in such a row must be terminated with a resistor (470 Ohm). If more than 32 devices should be connected a booster or **splitbox** must be inserted.

A **splitbox** is a device with one DMX input and several DMX outputs. The signal is refreshed. Thus it is possible to use different DMX lines.

The reliability of data transmission was increased because of using DMX. One of the greatest advantages is universally usefulness. Now devices from different manufacturers can be controlled by every control panel.

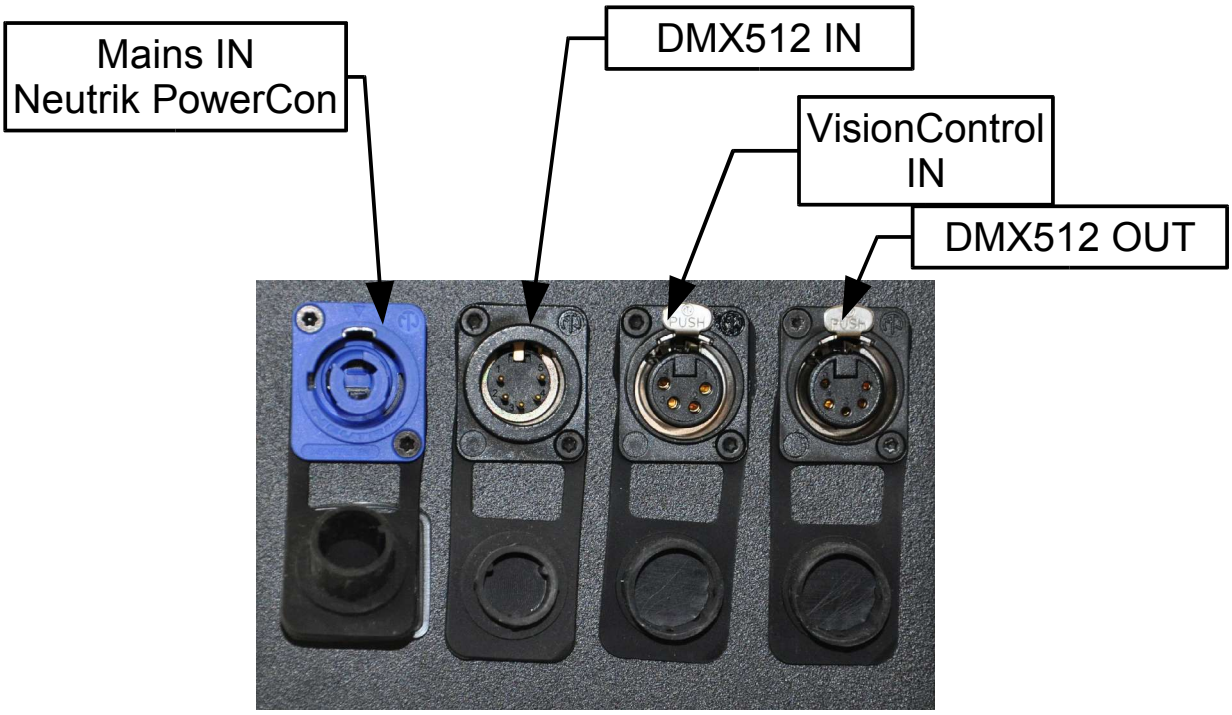
Cabling

Caution!
Please read the operating and safety instructions on page 6 (continuing) before cabling!

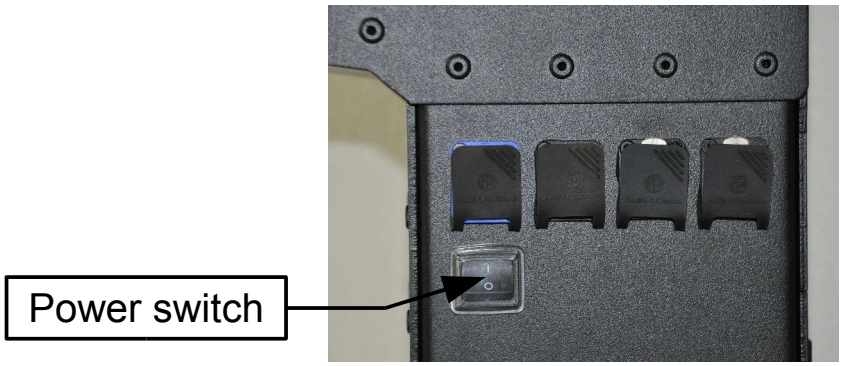
Make sure that the motoryoke is **switched off** before cabling!

Caution!
Make sure that the cables run in wide loop to the motoryoke. Check, if the cables are long enough for the complete moving range. The cables must not be stretched or bended in any case!

Connection possibilities:



Never use the inputs at the same time together!
Only one of the control-IN can be used!



A maximum of four units can controlled via Vision Control or LT-Pilot!

If you use a standard **DMX-desk**, please observe the **DMX-footprint** on page 19

If you use the **Vision-Control** or the **LT-Pilot** remote control system, please use the following channels and programming values:

DMX-addressing and unit assignment:

	Unit 1	Unit 2	Unit 3	Unit 4
DMX start address motoryoke	1	21	31	41
DMX address dimmer shutter (optional)	8	9	10	11
DMX address focus unit (optional), Control via Dimmer-Shutter function	8	9	10	11

The following **parameters** must be programmed possibly. (Please observe the corresponding manuals).

Motorized yoke:	P01 =	DMX address, see above
	P02 = 1	Rotation unit on (if used)
	P27 = 1	Speed channels for pan and tilt seperately
	P38 = 0	Rotation direction = normal.
Dimmer Shutter:	P01 =	DMX address, see above
	P15 = 3	Single channel mode

Getting started

Mount the motoryoke system at the desired place with observing the operating and safety instructions on page 6!

Mount the moving device like described in *Assembling the device* on page 10.

Cable the system like described on page 12.

Switch on the motoryoke. After testing its internal program memory and the control it shows the overall operating hours. Now the motoryoke is moving to the programmed position. The second display line shows the DMX-address and value of the PAN-axle.

Caution!
Make sure that the motoryoke is not moved by the **control panel** before programming. Otherwise the motoryoke will move during programming if the position is changed at the panel!

Program the **middle position** exactly at the display via P05, refer to *programming the middle position* on page 22.

Program the **moving range** of the **PAN**-axle. Refer to *P11, PAN-axle moving range, page 24.*

Normally not necessary, but possible is the programming of the **TILT moving range**. Refer to *TILT-axle moving range,* page .

If you are using a control desk with **joystick**, **vision control** or **LT-Pilot** the speed channel setup in P27, page 29, must be programmed to 1!
If you are using a standard DMX desk P27 **can** be programmed to 1 or 0. Decide for yourself how you want to control the speed.

Further **programming possibilities** like DMX addressing are specified on the following pages.

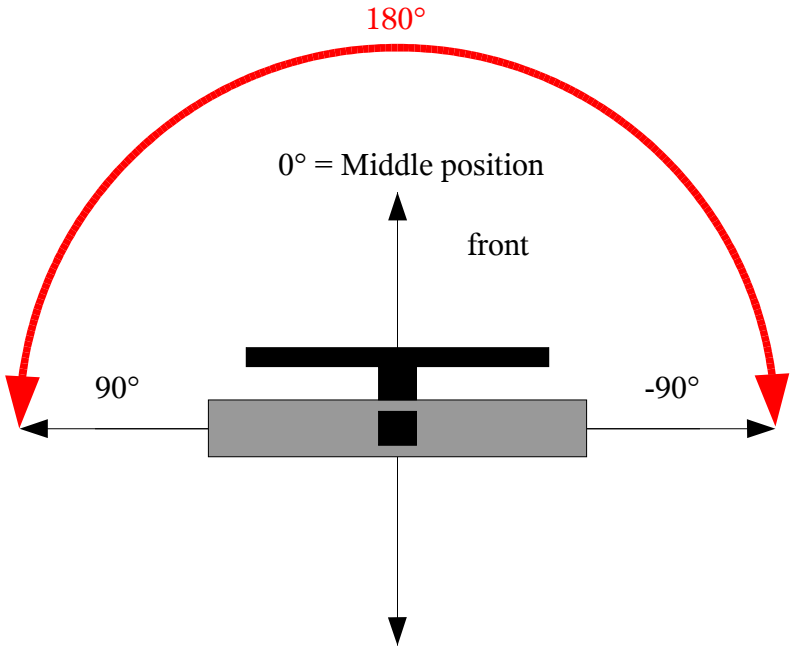
Tip:
When the motoryoke is in **programming mode**, all moving orders are ignored. Make sure that the device is in operating mode after programming, otherwise it will not move! Press two times the OK key for leaving the programming mode!

PAN – axis moving range

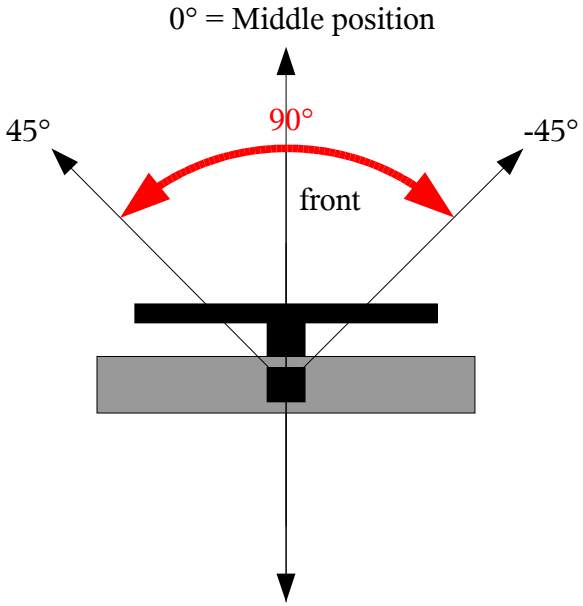
Basically:

The PAN-axle is the axle which moves the lamp **horizontally**.

The **moving range** of the main axles can be adapted individually. For the PAN-axle are two parameters required. The **middle position** and an **angle** in which the motoryoke should move. If an angle of 90 degrees is programmed, the motoryoke moves from its middle position 90° to the left and 90° to the right. The whole moving range is 180°.



If an angle of 45° is programmed, the yoke will move 45° to the **left** and **right**. The moving range is 90°.



This setup is useful when the motoryoke is hanging in a **corner** for example.

Setting the PAN middle position:

The middle position normally is the position in which the installed device is **used most**.

It can be set at menu ***P05, PAN-axis middle position***, page 22.

You should start with the pan axis in the **current adjusted** middle position. If you do not know if this is the case, power up the device and set the DMX-channel for position to 50%. Do not forget to set the speed value to 100%. Channels are 1 (position) and 5 (speed) at factory presettings.

The **moving angle** can be set in menu *P11, PAN-axle moving range, page 24*. It can be in a range within 10 and 160°. Recommended is 90°.

Caution !!

Check the **entire moving** range of the lamp:

The lamp-manufacturer specify **minimum distances** to inflammable materials. Never fall below the minimum distance in no position of the lamp!

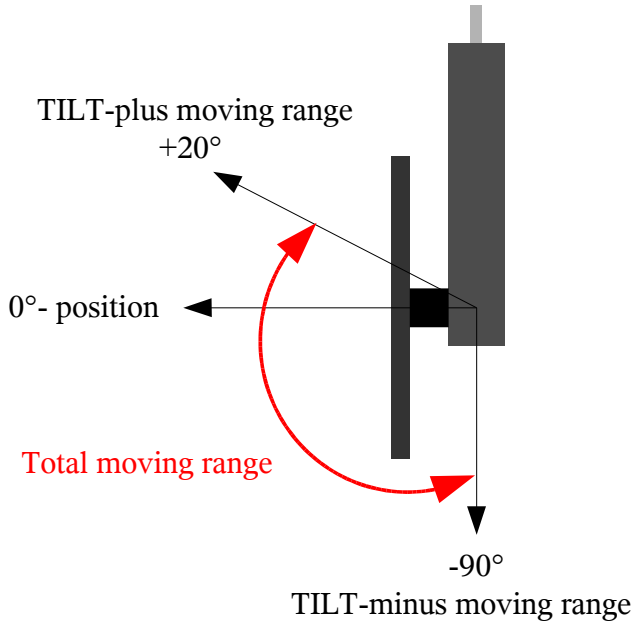
Make sure that no cable will be **broken**, **bended**, **stretched** or **damaged** anyhow by reason of turning the motoryoke!

TILT – axis moving range

Basically:
The TILT-axle is the axle which moves the lamp **vertically**.

Normally the factory presettings are **suitable** and nothing must be set. The lamp can be moved from vertically down to a few degrees on the top.

The 0-degree position represents the vertical position of the mounting socket. From this position a **positive** moving range and a **negative** moving range is defined. The positive range is much smaller than the negative range. This is the reason why it can not be determined where the 50% DMX position is.
TILT moving range is in opposite to the PAN moving range asymmetric. It is set in two menus. (P12, page 25 and P13 page 26).



Do not forget to press **two** times the **OK** key to get back to working level after programming.
Check the complete new moving range with the **DMX-signal.**

Caution !!

Check the entire **moving range** of the lamp:

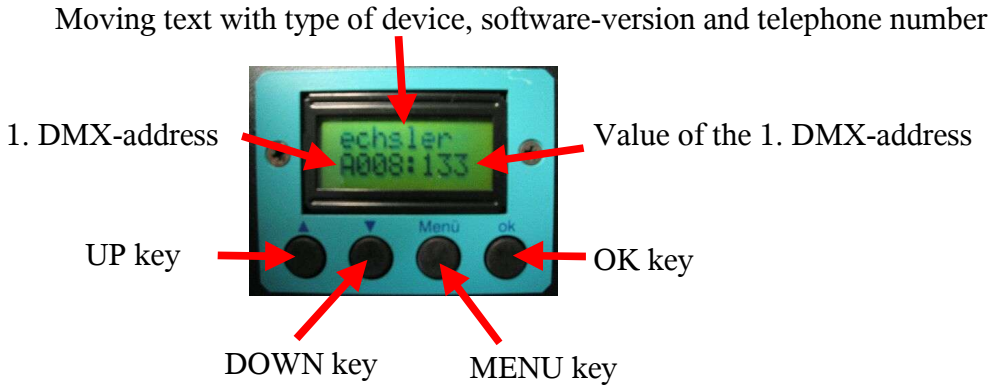
The lamp-manufacturer specify **minimum distances** to inflammable materials. Never fall below the minimum distance in no position of the lamp!

Check that the **motoryoke** will not be illuminated when lamp is on top position.

Make sure that no cable will be **broken**, **bended**, **stretched** or **damaged** anyhow by reason of turning the motoryoke!

Headlights generally must **not** be operated with the ignition electronic on the top. Observe the specifications of the lamp manufacturer!

User interface



In normal operating mode the **LCD-display** indicates different information. The first line shows the Licht-Technik moving text with details on type of device, software version and telephone number. The second line indicates the first DMX-address and its incoming value (8-Bit, 0..255). For the motoryoke, this address is the PAN-address.
With the four **keys** the device can be programmed. Instruction for this, is on the following pages.

Display lighting ON/OFF

In 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 automatically. The user can also switch it on manually to see what is indicated.

Condition: Motoryoke is on working level

Operation:

depress. Display lighting **ON**

depress again. Display lighting **OFF**

DMX channels motoryoke

The following chapters require the **DMX-channel assignment** of the motoryoke. Please note the difference which is programmed in *P27, PAN/TILT DMX speed channel setup, page 29*. This menu determines if the speed is given by **one** or by **two** channels. Therefore, the motoryoke requires between 5 (without optional components) and 12 DMX-channels.

If a **Joystick, Vision-control** or **LT-Pilot** is used, P27 (*page 29*) has to be set to 1. If a standard-DMX desk is used both possibilities are possible. Choose the one you want but keep the channel layout in mind!

Channel	Motoryoke (P27=0)	Motoryoke (P27=1)
1	PAN roughly	PAN roughly
2	PAN fine	PAN fine
3	TILT roughly	TILT roughly
4	TILT fine	TILT fine
5	**PAN/TILT speed**	**PAN speed**
6	Focus- or Rotation (optional)	**TILT speed**
7		Focus- or Rotation (optional)

The **first** address (PAN rough) is set in menu *P01, DMX-address motoryoke, page 20*. All other addresses **follow** after this first address according to this table.

Examples:

1. Motoryoke P27 = 1 (like right column in table). The next free DMX-channel would be number **8**. For use of an fan-focus for expample.
2. Motoryoke P27 = 0 (like left column in table). Next free channel would be channel **6**.

Please note!

Color changer, dimmer shutter and the combined device „MagVader“ are controlled by their **own** electronic. These devices are completely independent regarding the electronical control!

P01 DMX-Address motoryoke

At this point the **first** DMX-address of the motoryoke can be adapted to the desired DMX-address of the light mixing panel. This address represents the PAN-DMX-address. All other addresses follow this address. Refer to *DMX-channels motoryoke, page 19*

Range of values: Address 1..512

Operation:

	depress	You are now on menu level. The last adjusted menu point is displayed, e.g.: Menu P02: rotation-module on/off
	depress	... until Menu P01 is displayed.
	depress	The second line displays the currently adjusted value.
	depress	Adjust the desired DMX address.
	depress	You are back on menu level.
	depress	The equipment is ready for operation.

P02 Rotation unit ON/OFF

At this point an optional **rotation** module can be switched ON or OFF.

The speed of the rotation axle is fixed, so no speed channel has to be set.

See *DMX channels motoryoke*, page 19.

If no rotation unit is used, set this value to 0.

Range of values: 0: No rotation module installed
1: Rotation module installed

Operation:

Menü	depress	You are now on menu level. The last adjusted menu point is displayed, e.g.: Menu P01: DMX address motoryoke
▲ ▼	depress	... until Menu P02 is displayed.
Menü	depress	The second line displays the currently adjusted value.
▲ ▼	depress	Adjust the desired value.
Ok	depress	You are back on menu level.
Ok	depress	The equipment is ready for operation.

P05 PAN-axis middle position

With this function the **PAN-axis** middle position can be set.
Please read first chapter *PAN-axis moving range, page 15*.

Range of values: 2000..2100 unit (value of the absolute value device)

Recommended value: 2048. So that the spigots stay the same way as the yoke

Operation:

depress You are now on menu level. The last adjusted menu point is displayed, e.g.:
Menu P01: DMX address motoryoke


depress ... until Menu P05 is displayed.

depress The second line displays the currently adjusted value.


depress Adjust the desired value.

depress You are back on menu level.

depress The equipment is ready for operation.

Caution !!

Check the **entire moving** range of the lamp:

The lamp-manufacturer specify **minimum distances** to inflammable materials. Never fall below the minimum distance in no position of the lamp!

Make sure that a mounted lamp will never shine **onto** the motoryoke

Make sure that no cable will be **broken**, **bended**, **stretched** or **damaged** anyhow by reason of turning the motoryoke!

P06 TILT-axis 0-degree position

With this function the **TILT-axis fine adjustment** of the 0-position can be made. Please read first chapter *TILT-axis moving range, page 17*. This function can only be used for **fine** adjustment.
The TILT axis is **not symetrical**. It can not be determined which DMX value correspondes to this position.

Wertebereich: 3000..4000 units (value of the absolute value device)

Empfohlener Wert: ca. 3000 units, so that the payload coupler is vertical

Operation:

depress You are now on menu level. The last adjusted menu point is displayed, e.g.:
Menu P01: DMX address motoryoke


depress ... until Menu P06 is displayed.

depress The second line displays the currently adjusted value.


depress Adjust the desired value.

depress You are back on menu level.

depress The equipment is ready for operation.

Caution !!

Check the **entire moving** range of the lamp:

The lamp-manufacturer specify **minimum distances** to inflammable materials. Never fall below the minimum distance in no position of the lamp!

Make sure that a mounted lamp will never shine **onto** the motoryoke

Make sure that no cable will be **broken**, **bended**, **stretched** or **damaged** anyhow by reason of turning the motoryoke!

P11 PAN-axis moving range

At this point the **PAN-axis moving range** can be programmed. The moving range has as reference point the PAN-axis middle position which can be set in P05, *PAN-axis middle position, page 22*. For example: If this menu is programmed to 90°, the motoryoke moves 90° to the left **and** 90° to right from middle position.

Before programming this point read chapter *PAN-axis moving range, page 15* and *P05 PAN-axis middle position, page 22*!

Range of values: 10 - 190 degree

Recommended value: 45 - 180 degree

Operation:

	depress	You are now on menu level. The last adjusted menu point is displayed, e.g.: Menu P01: DMX address motoryoke
	depress	... until Menu P11 is displayed.
	depress	The second line displays the currently adjusted value.
	depress	Adjust the desired value.
	depress	You are back on menu level.
	depress	The equipment is ready for operation.

Caution !!

Check the **entire moving** range of the lamp:

The lamp-manufacturer specify **minimum distances** to inflammable materials. Never fall below the minimum distance in no position of the lamp!

Make sure that a mounted lamp will never shine **onto** the motoryoke

Make sure that no cable will be **broken**, **bended**, **stretched** or **damaged** anyhow by reason of turning the motoryoke!

P12 TILT-down (negative) moving range

At this point the **TILT-down moving range** can be set. For the TILT-axis the moving ranges (up and down) must be programmed individually. The negative moving range is defined as the „direction bottom“ range. The moving ranges have the 0-position as reference point. This point can be set in *P06, TILT-axis 0-position, page 23*.

Before programming this point read chapter TILT-axis moving range, page 17 and P06, TILT-axis 0-position, page 23!

Range of values: 10..180 degree

Recommended value: 90 degree

Operation:

depress You are now on menu level. The last adjusted menu point is displayed, e.g.:
Menu P01: DMX address motoryoke


depress ... until Menu P12 is displayed.

depress The second line displays the currently adjusted value.


depress Adjust the desired value.

depress You are back on menu level.

depress The equipment is ready for operation.

Caution !!

Check the entire **moving range** of the lamp:

The lamp-manufacturer specify **minimum distances** to inflammable materials. Never fall below the minimum distance in no position of the lamp!

Check that the **motoryoke** will not be lit when lamp is on top position.

Make sure that no cable will be **broken**, **bended**, **stretched** or **damaged** anyhow by reason of turning the motoryoke!

Headlights generally must **not** be operated with the ignition electronic on the top. Observe the specifications of the lamp manufacturer!

P13 TILT-up (positive) moving range

At this point the **TILT-up moving range** can be set. For the TILT-axis the moving ranges (up and down) must be programmed individually. The positive moving range is defined as the „direction top“ range. The moving ranges have the 0-position as reference point. This point can be set in *P06, TILT-axis 0-position, page 23*.

Before programming this point read chapter TILT-*axis moving range, page 17* and *P06, TILT-axis 0-position, page 23*!

Range of values: 10..180 degree

Recommended value: **1**0 degree

Operation:

Menü	depress	You are now on menu level. The last adjusted menu point is displayed, e.g.: Menu P01: DMX address motoryoke
▲ ▼	depress	... until Menu P13 is displayed.
Menü	depress	The second line displays the currently adjusted value.
▲ ▼	depress	Adjust the desired value.
Ok	depress	You are back on menu level.
Ok	depress	The equipment is ready for operation.

Caution !!

Check the **moving range** of the lamp:

The lamp-manufacturer specify **minimum distances** to inflammable materials. Never fall below the minimum distance in no position of the lamp!

Check that the **motoryoke** will not be lit when lamp is on top position.

Make sure that no cable will be **broken**, **bended**, **stretched** or **damaged** anyhow by reason of turning the motoryoke!

Headlights generally must **not** be operated with the ignition electronic on the top. Observe the specifications of the lamp manufacturer!

P14 Focus / rotation 0%-value

At this point the **position of the focus or the rotation unit for 0% DMX-value** can be set.

This function is only available, when focus/rotation module is switched on. This can be done in menu *P02, rotation module ON/OFF, page 21.*

Caution!
The 0%-value must be **smaller** than the the 100%-value! (P14 smaller than P15)

You have the possibility to set this value automatically. When depressing the menu button again (see operation), the Focus unit moves to the mechanical stop and stops moving. Now the focus unit should be moved 20 values by depressing the UP-key. This is to avoid a crash during normal moving.

Caution!
Do **not** use the auto-adjustment function with the rotation!

Range of values: 10..4000 units (value of the absolute value device)

Operation:

depress You are now on menu level. The last adjusted menu point is displayed, e.g.:
Menu P01: DMX address motoryoke


depress ... until Menu P14 is displayed.

depress The second line displays the currently adjusted value.


depress Adjust the desired value, rotation is moving to this position

depress You are back on menu level.

depress The equipment is ready for operation.

P15 Focus/rotation unit 100%-value adjustment

At this point the **position of the focus or rotation unit for 100% DMX-value** can be set.

This function is only available, when focus module is switched on. This can be done in menu *P02, Focus module ON/OFF, page 21.*

Caution!
The 100%-value must be greater than the 0%-value! (P15 greater than P14)

You have the possibility to set this value automatically. When depressing the menu button again (see operation), the Focus unit moves to the mechanical stop and stops moving. Now the focus unit should be moved 20 values from the stop by depressing the DOWN-key. This is to avoid a crash during normal moving.

Caution!
Do **not** use the auto-adjustment function with the rotation!

Range of values: 10..4000 units (value of the absolute value device)

Operation:

depress You are now on menu level. The last adjusted menu point is displayed, e.g.:
Menu P01: DMX address motoryoke


depress ... until Menu P15 is displayed.

depress The second line displays the currently adjusted value.


depress Adjust the desired value, rotation is moving to this position

depress You are back on menu level.

depress The equipment is ready for operation.

P27 Speed PAN/TILT setup

At this point the number of **speed channels** can be set. The speed for PAN and TILT axis can be programmed to one channel for both axis or to two channels. One for each axis.

When using the Licht-Technik control panels with Joystick, vision conrtrol or LT-Pliot this Parameter must be set to 1.

Caution!
The **order of DMX-channels** is changed with this function! Refer to *DMX-channels motoryoke, page .*

Range of values: 0: Speed PAN and TILT together. One DMX-channel.
1: Speed PAN and TILT separated. Two DMX-channels.

Operation:

depress You are now on menu level. The last adjusted menu point is displayed, e.g.:
Menu P01: DMX address motoryoke


depress ... until Menu P27 is displayed.

depress The second line displays the currently adjusted value.


depress Adjust the desired value

depress You are back on menu level.

depress The equipment is ready for operation.

P30 Displaying the DMX-value

This function assists you in **checking** the values transmitted by the light mixer panel. At this point you can quickly detect whether the motoryoke is triggered with the **correct** values. It is possible to check all 512 DMX channels. Note that the value of the address programmed in this menu will be indicated in normal operation. After power up the programmed address in menu *P01, DMX address motoryoke* (page 20) will be displayed.

Range of values: Address 1..512

Operation:

depress You are now on menu level. The last adjusted menu point is displayed, e.g.:
Menu P01: DMX address motoryoke

depress ... until Menu P30 is displayed.

depress The second line displays the currently adjusted value.

depress Adjust the desired value

depress You are back on menu level.

depress The equipment is ready for operation.

The value of the last programmed address in P30 is indicated in normal operating mode after leaving this menu. After restart the first address (P01) of the yoke is shown.

P32 Selecting the user language

At this point you can choose in which language the texts and messages should be displayed.

Range of values: 0 = German
1 = English

Operation:

depress You are now on menu level. The last adjusted menu point is displayed, e.g.:
Menu P01: DMX address motoryoke

depress ... until Menu P32 is displayed.

depress The second line displays the currently adjusted value.

depress Adjust the desired value

depress You are back on menu level.

depress The equipment is ready for operation.

P33 PAN-axis loading position

At this point, the PAN axis **loading position** can be adjusted.
It is the position for **mounting** or **dismounting** the load.
It is very important for mounting or dismounting have the motoryoke on the **right** position.
Otherwise it is **not** possible to assemble the load. Especially, when **no** DMX is available.

The PAN loading position is **not as much** important than the TILT and rotation axis.

Normally it is the **same** as the PAN axis middle position, see *P05 PAN axis middle position, page 22*.

Range of values: 2000..2100 units (value of the absolute value device)

Recommended value: 2048 (value of the absolute value device)

Operation:

	depress	You are now on menu level. The last adjusted menu point is displayed, e.g.: Menu P01: DMX address motoryoke
	depress	... until Menu P33 is displayed.
	depress	The second line displays the currently adjusted value.
	depress	Adjust the desired value, rotation is moving to this position Wait until PAN is **not moving** anymore. Adjust the desired position
	depress	You are back on menu level.
	depress	The equipment is ready for operation.

P34 TILT-axis loading position

At this point, the TILT axis **loading position** can be adjusted.
It is the position for **mounting** or **dismounting** the load.
It is very important for mounting or dismounting have the motoryoke on the **right** position.
Otherwise it is **not** possible to assemble the load. Especially, when **no** DMX is available.

Normally it is the **same** as the TILT axis 0° position, see *P06 TILT axis 0° position, page 23*.

Range of values: 2000..2100 units (value of the absolute value device)

Recommended value: 2048 (value of the absolute value device)

Operation:

Menü	depress	You are now on menu level. The last adjusted menu point is displayed, e.g.: Menu P01: DMX address motoryoke
▲ ▼	depress	... until Menu P34 is displayed.
Menü	depress	The second line displays the currently adjusted value.
▲ ▼	depress	Adjust the desired value, rotation is moving to this position Wait until TILT is **not moving** anymore. Adjust the desired position
Ok	depress	You are back on menu level.
Ok	depress	The equipment is ready for operation.

P35 rotation-axis loading position

At this point, the rotation axis **loading position** can be adjusted.
It is the position for **mounting** or **dismounting** the load.
It is very important for mounting or dismounting have the motoryoke on the **right** position.
Otherwise it is **not** possible to assemble the load. Especially, when **no** DMX is available.

Normally it is the position when the load is in horizontal position. It is normally not the 0% and 100% position of the rotation

Range of values: 0..4096 units (value of the absolute value device)

Recommended value: Mean value of 0% and 100% position

Operation:

	depress	You are now on menu level. The last adjusted menu point is displayed, e.g.: Menu P01: DMX address motoryoke
	depress	... until Menu P35 is displayed.
	depress	The second line displays the currently adjusted value.
	depress	Adjust the desired value, rotation is moving to this position Wait until rotation is **not moving** anymore. Adjust the desired position
	depress	You are back on menu level.
	depress	The equipment is ready for operation.

P36 Interchanging PAN moving direction

With this function the **PAN moving direction** can be set.

Range of values: 0 = normal (standard)
1 = reverse direction

Recommended value: 0

Operation:

depress You are now on menu level. The last adjusted menu point is displayed, e.g.:
Menu P01: DMX address motoryoke


depress ... until Menu P36 is displayed.

depress The second line displays the currently adjusted value.


depress Adjust the desired value

depress You are back on menu level.

depress The equipment is ready for operation.

P37 Interchanging TILT moving direction

With this function the **TILT moving direction** can be set.

Range of values: 0 = normal (standard)
1 = reverse direction

Recommended value: 0

Operation:

depress You are now on menu level. The last adjusted menu point is displayed, e.g.:
Menu P01: DMX address motoryoke

depress ... until Menu P37 is displayed.

depress The second line displays the currently adjusted value.

depress Adjust the desired value

depress You are back on menu level.

depress The equipment is ready for operation.

P38 Interchanging rotation moving direction

With this function the **rotation moving direction** can be set.

Range of values: 0 = normal (standard)
1 = reverse direction

Recommended value: 0

Operation:

depress You are now on menu level. The last adjusted menu point is displayed, e.g.:
Menu P01: DMX address motoryoke

depress ... until Menu P37 is displayed.

depress The second line displays the currently adjusted value.

depress Adjust the desired value

depress You are back on menu level.

depress The equipment is ready for operation.

Technical data

Weight and dimensions motoryoke:

Weight:	41,5kg
Maximum payload:	120kg
Total weight:	161,5kg
Width:	42cm
Height:	1,40m
Depth:	69cm
Mains in:	100 – 240V AC, 47 – 63 Hz, max 2A.
Pan moving range (max):	320°
Tilt moving range (max):	110°
Speed Pan (max):	ca. 15° pro Sekunde
Speed Tilt (max):	ca. 2,6° pro Sekunde
Speed Rotation:	ca. 17° pro Sekunde
Memory precision:	< 0,5°
Protection class:	IP54

Mainboard fuse motoryoke: 6.3 A, slow blow

Pin assignment:

Data IN
Housing: Screen
PIN 1: Digital ground
PIN 2: Data - min. cross section 0,25mm²
PIN 3: Data + min. cross section 0,25mm²
PIN 4: not connected
PIN 5: not connected

Data IN Power OUT 4pin. XLR connector screened
Housing: Screen
PIN 1: 0 V (GND) min. cross section 0,75mm²
PIN 2: DMX-Data – min. cross section 0,25mm²
PIN 3: DMX-Data + min. cross section 0,25mm²
PIN 4: +24 V DC min. cross section 0,75mm²
The DMX wires must be **twisted pair** and shielded separately.

Focus / Rotation cable:
5pin. XLR connector min. cross section 0,25 mm^2, screen on housing
PIN 1: Motor -
PIN 2: Motor +
PIN 3: Potentiometer 1
PIN 4: Potentiometer 2
PIN 5: Potentiometer 3

Werkseinstellungen

Menu	Description	Value
P01	DMX-Address motoryoke	1
P02	Rotation ON/OFF	1 (ON)
P05	PAN-axis middle position	Individual
P06	TILT-axis 0-degree position	Individual
P11	PAN-axis moving range	160 degree
P12	TILT-axis minus moving range	90 degree
P13	TILT-axis plus moving range	10 degree
P14	Rotation 0% Ppsition	Individual
P15	Rotation 100% position	Individual
P27	Speed PAN/TILT together or separated	1 (separated)
P30	Show DMX value	1
P32	User language	0 (german)
P33	Loading position PAN	Individual
P34	Loading position TILT	Individual
P35	Loading position Rotation	Individual
P36	PAN moving direction interchange	0
P37	TILT moving direction interchange	0
P38	Rotation moving direction interchange	0

Maintenance

By regular maintenance a significant increase of **lifetime** and **reliability** can be achieved.

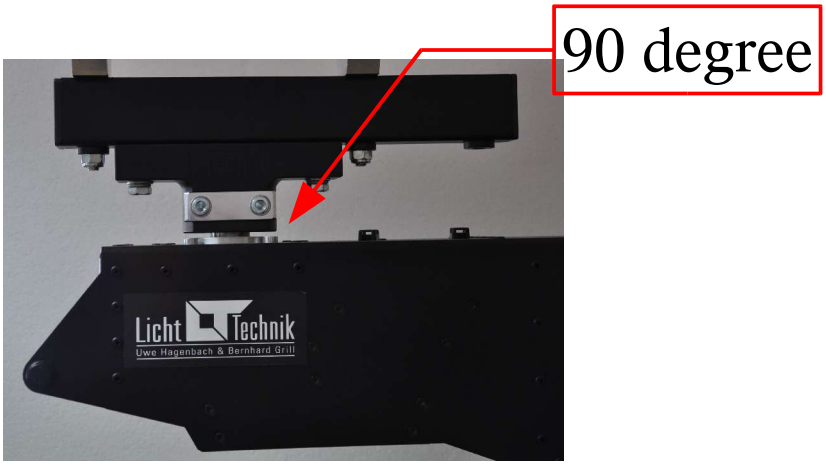
Regular maintenance increases safety significant!!

We recommend a maintenance once a year.

Obligatory are the following points:

1. Checking the fixing parts:

The fastening spigot must be **checked visual**. The spigot must be in right angel to the housing. This must be checked in **front** and **side** view. A **protractor** can be a help.



Furthermore, the **spigot** itself and the **surface** of the yoke must not be deformed. Make sure that the spigot is not loose.
If the spigot is visibly **damaged** or deformed the motoryoke must not be used anymore. The device has to be sent to Licht-Technik.

2. Checking the safety elements

Check the safetybelts and further safetyelements like shackles, rings, lugs, chains:

- Are the belts not frayed out?
- Are the threads of the shackles okay? Are the screws easy to turn?
- Are there no visible damages at the safety elements?
- Do the belts not rasp on other parts?

3. Checking the cables and supply lines

- Check the cables visibly for damages.
- Check the entire moving range of PAN and TILT, if the cables are not **broken**, **bended**, **stretched** or **damaged** anyhow**.**
- Are the cables not porous?

3. Checking the cables and supply lines

- Check the cables visibly for damages.
- Check the entire moving range of PAN and TILT, if the cables are not **broken**, **bended**, **stretched** or **damaged** anyhow**.**
- Are the cables not porous?

4. Checking the screw connections of the lamp fixings

- Check all clamping bolts if they are well fixed.

Following maintenance is **recommended**:

- Remove dust, especially on electronical parts. Electronic is very sensitive for dust and reacts with strange behaviour!
- Keep focus spindle inside the lamp turnable with *Loctite 8151* ™.
- Fatten the potentiometer-toothwheel with temperature stable bearing fat.
  Recommended: Use a brush to put the fat on it. Do not use to much. A few grams are enough.

Error messages

Only Licht-Technik trained personal is authorised to work on the motoryoke!

Error	Description	Possible reasons	Possible solutions
E20	DMX-Signal missing	Defective supply line (data power) to the motoryoke. (Pin2 and/or 3 broken) Defective supply line to the splitbox (Pin2 and/or 3 broken)	Check the DMX-signal cables. The LED „DMX ok“ at the splitbox must light DMX mixing panel not ready
E21	DMX-Signal interchanged	Defective supply line (data power) to the motoryoke. (Pin2 and/or 3 interchanged) Defective supply line to the splitbox (Pin2 and/or 3 interchanged)	Check the DMX-signal cables. The LED „DMX ok“ at the splitbox must light.
E23	DMX-noise	Too much cable length. Bad signal quality.	Check the DMX signal cables. Check the DMX-connections Use a terminating resistor
E28	EEPROM error. Program memory test failed	Aging Electrostatic charge	No solutions. Inform Licht-Technik
E29	RAM Error. Working memory test failed	Aging Electrostatic charge	No solutions. Inform Licht-Technik
E30 E31	PAN-motor blocked TILT-motor blocked	Cable to motor broken	Check connections/solder joints
		Cable to potentiometer broken	Check connections/solder joints
		Potentiometer defective	Change potentiometer
		Motor defective	Change motor
		Yoke is blocked mechanically	Remove blocking
		A foreign object is in/at the drive	Remove object
		Motor/potentiometer connections interchanged when replaced.	Check connections
			Inform Licht-Technik
E32	Rotation Motor blocked	Rotation axis blocked	Check easy movement of the axis. Put some fat on axis (Loctite™ 8151)
		Moving range in P14, P15 not correct	Set correct values
		Motor defective	Change motor
		Potentiometer defective	Change potentiometer
		Connection cable to Rotation drive defective	Check connections and possible short circuits
			Inform Licht-Technik

Malfunctions

- No display after power up.

The device houses a slow-blow fuse for feeble currents of 6.30 A protecting the equipment of wrong polarities on the supply line. When the fuse is blown, cable and polarity have absolutely be checked (pin1 = 0 V, pin 4 = +24V).

- No error message but motoryoke does not move

- Check DMX-addressing (*P01, DMX-Address motoryoke, page 20*).
- Is the speed-channel not set to 0? Check it with the DMX-tester in P30, page 30

- No error message but the Rotation module does not move

- Is the focus-module switched on? Check *P02, Focus module ON/OFF, page 21.*
- Is the focus-cable well connected?
- Check the incoming DMX-values with the DMX-tester in *P30, page 30.* The focus-channel is start-channel (*P01, page 20*) + 4 or 5 (depends on *P27, page 29*). Refer to *DMX-channels motoryoke, page 19*

Warranty

The warranty for our products 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 non-compliance 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

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.

Further information

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.

EC Declaration of Conformity

1. **Type of device/product** Motoryoke YipMan with Rotation drive

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** MB-DY-15

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 2014/35/EU DES EUROPÄISCHEN PARLAMENTS UND DES RATES vom 26. Februar 2014 zur Harmonisierung der Rechtsvorschriften der Mitgliedstaaten über die Bereitstellung elektrischer Betriebsmittel zur Verwendung innerhalb bestimmter Spannungsgrenzen auf dem Markt

RICHTLINIE 2006/42/EU DES EUROPÄISCHEN PARLAMENTS UND DES RATES vom 17. Mai 2006 über Maschinen und zur Änderung der Richtlinie 95/16/EG (Neufassung)

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
WEEE Reg.Nr.: DE 69311325

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

DIN EN 60598-1; VDE 0711-1:2015-10 – Leuchten – Teil 1: Allgemeine Anforderungen und Prüfungen (IEC 60598-1:2014, modifiziert); Deutsche Fassung EN 60598-1:2015

DIN EN 60204-1:2014-10; VDE 0113-1:2014-10 Sicherheit von Maschinen - Elektrische Ausrüstung von Maschinen - Teil 1: Allgemeine Anforderungen (IEC 44/709/CDV:2014); Deutsche Fassung EN 60204-1:2014

7. **A test report is available from company Licht-Technik Vertriebs GmbH**

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 18.9.2017

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Uwe Hagenbach (Geschäftsführer) Bernhard Grill (Geschäftsführer)