



MH-OEM

OEM housing without laser sources

USER MANUAL



Please read this manual carefully before use!

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Checking Parts

Please check if the following parts are included:

- 1 x MH-OEM Laser
- 1 x Power cable
- 1 x User manual

SAFETY INSTRUCTIONS

If the device has been exposed to great temperature changes, do not switch it on immediately. Condensation water may damage your device. Leave the device switched off until it has reached room temperature.

The laser must only be used for shows. Any operation has to be attended and supervised by a skilled and well-trained operator.

Never leave this device running unattended and keep it away from children and unauthorized persons.

Keep away from heaters and other heat sources. In order to safeguard sufficient ventilation, leave 50 cm of free space around the device.

Never direct the laser beam to people or animals.

CAUTION LASER DIODE: If you open the device for cleaning, always disconnect from mains!

-HEALTH HAZARD! Never look directly into the light source, as sensitive persons may suffer an epileptic shock!

These lasers are considered a definite eye hazard, particularly at the higher power levels, which WILL cause eye damage. So these laser series models supplied with a key switch to prevent unauthorized use, warning labels and aperture labels affixed to the laser.



Installation safety

Prior to installation and operation of the laser, the paths of the beams and effects should be considered, particularly with respect to how they will reach the audience. If direct audience scanning is desired, then the laser energy in the effects needs to be considered to decide if the effects are safe for direct viewing. Always ensure, that the maximum permissible exposure (MPE) is not exceeded in the area accessible to the public. So install the laser in such a way, that minimum distances and heights ensure the MPE is never exceeded in the public area.

OPERATING THE LASER

The operator has to make sure that laser radiation – also reflected laser radiation – higher than the maximum permissible level is avoided by technical or organisational measures. (Especially with respect to the MPE, see above.)

Make sure to use the correct voltage

If the device is used in a flying installation, the mounting brackets and an appropriate safety-rope must be fixed.

In some countries, the operator must notify the accident insurance and the authority for industrial safety, before operating a laser. For more information, contact the relevant authorities.

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

If this device will be operated in any way differently than described in this manual, the product may suffer damages and the guarantee becomes void. Furthermore, any other operation may lead to dangers like short-circuit, burns, electric shock, etc.

Keep surrounding dry and clean. This unit should be kept dry, do not use in the rain or damp and dusty environment. Projector should be put in a water-proof housing when operated outside.

Regularly open the device (see "cleaning" further down) to check for dust inside, or if fog fluid condenses in the housing (if so rearrange hazer and/or laser position).

Operating temperature is 10~35°C. In a new installation, check after some 15-30 minutes whether the outlet air gets too warm. Regularly check the inside for dust deposits, especially around the fans. Let laser cool off 10 minutes after 2 hours of operation, to ensure maximum lifetime for the diode.

Distance between laser aperture and projection screen should be not less than 1 meter.

Do not turn device on and immediately off again frequently.

Do not look into the laser beam directly, especially not with optical instruments.

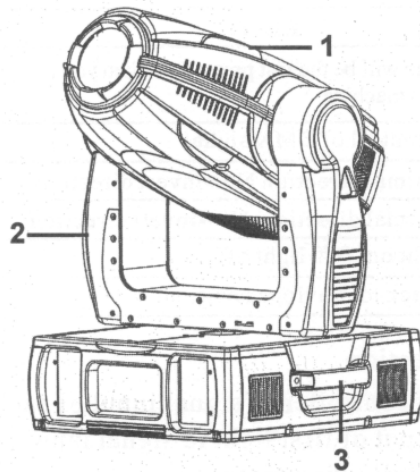
Do not touch the device with wet hands.

When the laser diode becomes dim or broken, please contact your dealer timely.

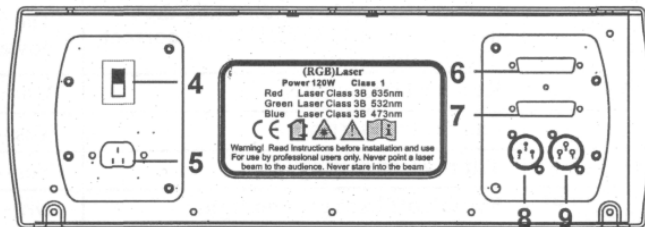
When returning laser to dealer/manufacturer always use original packaging.

Maintenance should be performed every 15-day period. See "cleaning" further down.

Description

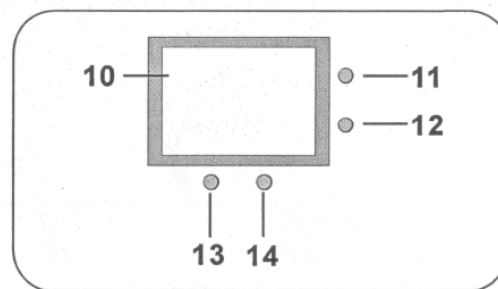


Laser light



Back panel

1.Light head	8.DMX output
2.Arm	9.DMX input
3.Handle clamp	10.Display screen
4.Power switch	11.UP
5.Power input	12.Down
6.ILDA DB 25F	13.Meau
7.ILDA DB 25M	14.Enter



Front panel

Signal switch instruction

1. The machine will work automatic as preset program or with DMX512 signal if there don't be connected any USB signal cable or ILDA DB 25F connector.
2. When you connect USB graphic card to USB input port, laser program will under control of I. Top laser software in the computer. For moving head function, you need to control it by DMX controller after set display board be DMX mode and DMX address code be 1.
3. When you connect ILDA DB-25F, laser program will work as ILDA drive mode to accept international standard laser show signal such as LD-2000 software of Pangolin company. For moving head function, you also need to control it by DMX controller after set display screen be DMX mode and DMX address code be 1.

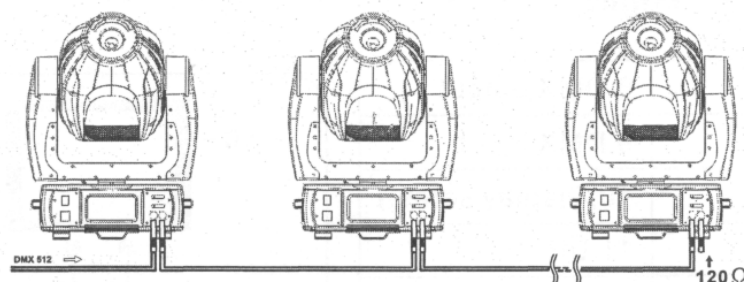
Operate Panel

Operate panel functions:

Mode	Function	Effect
Set address code	Set address code window and then use "UP" and "DOWN" to set correct DMX address code	The value will be the last presetone when you power on machine
DMX mode	Receive DMX signal	Under control of DMX signal
Pan reverse	Pan reverse setting	Yes--normal direction No--invert direction
Tilt reverse	Tilt reverse setting	Yes--normal direction No--invert direction
Back light of screen	Switch off background light	On--light on, Off--light off
Reset	Light reset	Light back to previous position

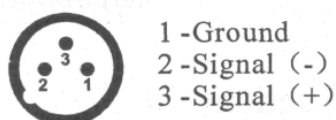
DMX-512 signal cable connection

Connect XLR-XLR signal cable from signal output of controller to signal input of each light. And then connect DMX signal cable from signal output of first light to signal input of second light and so on until all lights be connected well as following picture:



Occupation of XLR-connection

DMX-OUTPUT
XLR mounting-socket



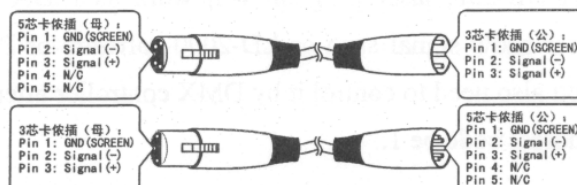
DMX-OUTPUT
XLR mounting-plug



Caution:

At the last fixture, the DMX-cable has to be terminated with a terminator. Solder a 120Ω resistor between signal (-) and signal (+) into a 3-pin XLR-plug and plug it in the DMX-output of the last fixture.

The transform of the controller line of 3 pins and 5 pins (plug and socket)



5. DMX 512 operation

The device is controlled by 24 DMX channels. The customized version is equipped with a memory (SD) ILDA playback card. Channel 6 switches between the internal control and the ILDA playback card.

Channel	Value	Internal	SD Card
1	0..255	Pan	Pan
2	0..255	Pan fine	Pan fine
3	0..255	Tilt	Tilt
4	0..255	Tilt fine	Tilt fine
5	0..252	Pan&tilt speed	Pan&tilt speed
	253..255	Reset	Reset
6	0..127		Switch to internal
	128..255	Switch to SD card	
7	0..255	Bank	Bank
8	0..255	Pattern	Frame
9	0..255	Size	Size
10	0..255	Colourgroup	Colourgroup
11	0..255	Intensity blue	Intensity blue
12	0..255	Intensity green	Intensity green
13	0..255	Intensity red	Intensity red
14	0..255	Master intensity	Master intensity
15	0..255	V-roll	V-roll
16	0..255	H-roll	H-roll
17	0..255	Z-roll	Z-roll
18	0..255	V-move	V-move
19	0..255	H-move	H-move
20	0..255	V-stretch	V-stretch
21	0..255	H-stretch	H-stretch
22	0..255	HV-stretch	HV-stretch
23	0..255	Drawspeed	Drawspeed
24	0..255	Pointspeed	Pointspeed

6. MAINTENANCE

Always disconnect from mains before cleaning/opening the laser. Remove the cover of the moving head, and the top covers of the base to perform cleaning.

Regularly clean the interior from dust, especially ensure operation of the fans. To clean the mirrors, ideally use acetone and lens cleaning paper (fold paper to get an edge with which to clean the mirrors). If not available, you can also use window cleaner, and a paper towel. Be careful, even light scratches reduce the output power of the laser; always clean with strokes in one direction, to minimize the effect of scratches. Mirrors need cleaning, when a "halo" is noticeable around the beam, or an unusual high amount of diffuse light can be seen inside the device.

When fog fluid condenses in the device, clean all traces, and rearrange the position of hazer and/or laser.

Never look directly into the light source.

Always disconnect from the mains when the device is not in use or before cleaning it.

7. TECHNICAL SPECIFICATIONS

LW50k scanner system, deflection angle: max. 60° optical

- scanspeed: max. 50.000pps
- ILDA: 25pin ILDA Standard Sub-D shaped 25pin connector
- Control mode: ILDA, DMX 512, sound & automatic mode
- DMX 512: 20 channels; basic patterns: 160
- Movement: Pan: 530° Tilt: 280° 16bit resolution
- Display: digital display at the back
- Accessories: power cable, mountings, manual.
- Delivery in flightcase.
- Power supply: 220~240V AC 50/60 Hz
- Power consumption: 200W
- Size: 539 x 492 x 843 mm (L x W x H);
- weight: 60 kg; incl. Flightcase: 91 kg

PLEASE NOTE

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

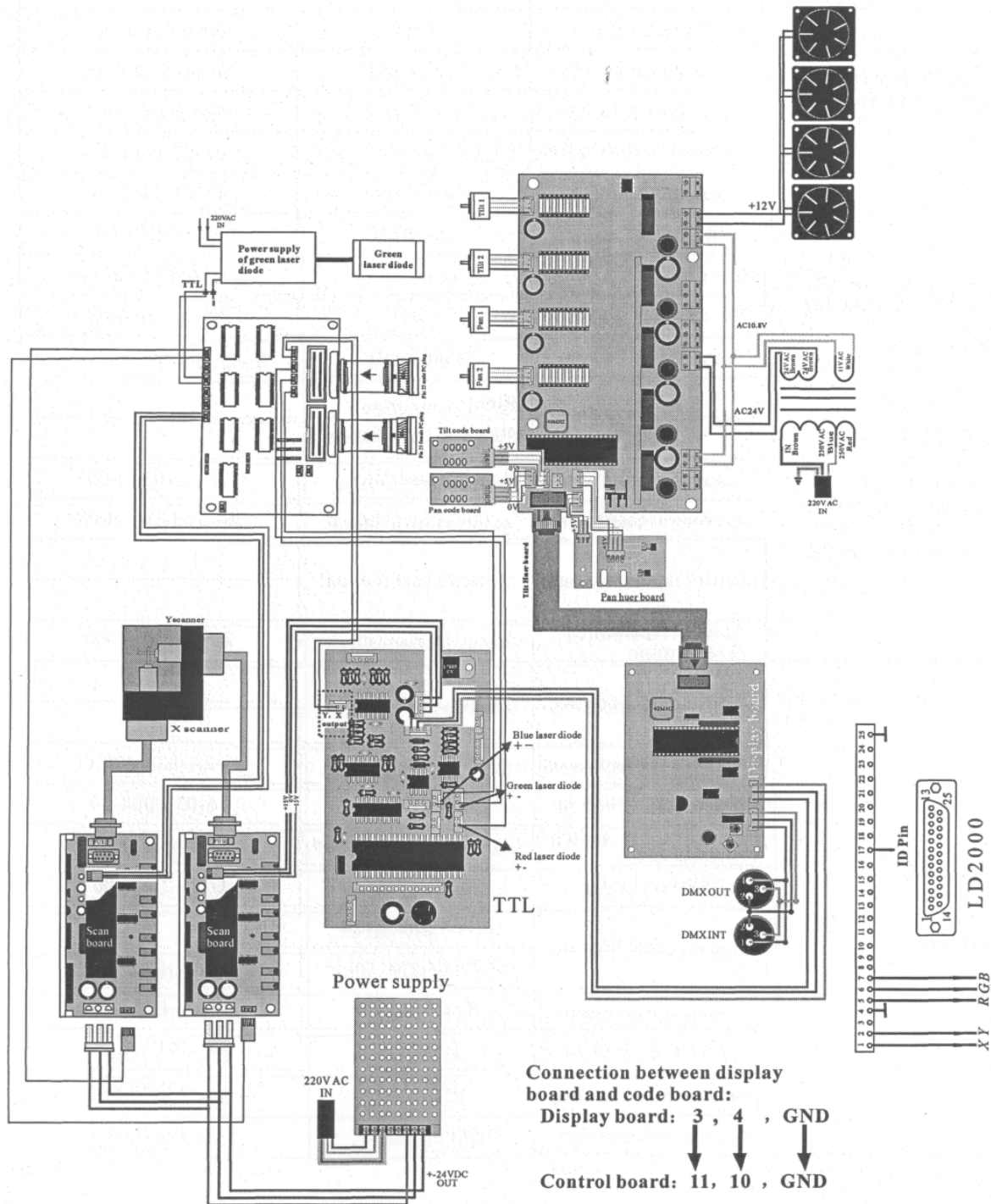
Laserworld cannot be made liable for damages caused by incorrect installations and unskilled operation!

For service please contact your dealer, or see <http://en.laserworld.com/en/reclamation-service.html>

For service contact your dealer, or Laserworld. Use only Laserworld spare parts.

Subject to change without notice. Errors and omissions expected.

Electrical Drawing



Problem and answer

Problem	Caution	Replace parts	Series number of parts
No power to scan motor	Fuse broken	Fuse	09-00-3001-01
	Scan motor broken	Scan motor	26-2A-2111XY2-00
	Transformer broken	Transformer	06-00-B074-00
	Pin4 power switch broken	Pin 4 power switch board	08-05-0400-03
XY scan motor no power or can not display pattern or scan motor shaking	Scan motor broken	Scan motor	15-01-2215-00
	2.78E58BIC broken	78E58BIC	00-78E58-00
	Control board broken	Control board	26-2A-LT6V20-00
	Power supply broken	+24V	16-03-0004-00
	Scan board broken	Scan board	26-2A-FASTSCAN-00
No beam out, beam dimmer or no black-out, but other function OK	Scan mirror not clean	Refer to maintain clause on user manual	
	Laser diode broken	Green laser diode	07-01-0300-00
	Code control board broken	Code control board	26-2A-LT6V20-00
	Control mode incorrect	Refer to user manual	
	Control signal switch board broken	Control signal switch board	26-2A-Sigls4-00
Not under control, but laser diode, fans and other parts are OK	Control mode incorrect	Refer to user manual	
	Code control board broken	Code control board	26-2A-LT6V20-00
	Power supply broken	+24V	16-03-0004-00
	Control signal switch board broken	Control signal switch board	26-2A-Sigls4-00
	USB box broken	2008USB box	USB21-KT-00
	Signal cable broken	USB signal cable	
		Ld2000signal cable	27-08-0005-00
	Transformer broken	Transformer	06-00-B074-00
	Display IC broken	IC77E58	00-77E58-00
	Motor driver IC broken	IC77E58	00-77E58-00
	Stepping motor broken	Stepping motor	15-00-0082-01

Appendix: ILDADB25F PINOUTSDB 25 definens

1	X+	-5 to +5V
2	Y+	-5 to +5V
3	No Use	No use
4	Interlock A	Connected to Pin 17 inside the QM 2000
5	Red+	0v to +2.5v
6	Green+	0v to +2.5v
7	Blue+	0v to +2.5v
8	No Use	No use
9	No Use	No use
10	No Use	No use
11	No Use	No use
12	Not connected	No use
13	No Use	No use
14	X-	+5V to -5V
15	Y-	+5V to -5V
16	No Use	No use
17	Interlock B	Connected to Pin4 inside the Qm 2000
18	Red-	-2.5V to 0V
19	Green-	-2.5V to 0V
20	Blue-	-2.5V to 0V
21	No Use	No use
22	No Use	No use
23	No Use	No use
24	No Use	No use
25	Ground	Cable shielded

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