

MAINFORCE 1940

19x40W LED beam wash moving head



USER MANUAL

Keep this manual for future needs

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Caution!



Be careful with your operations. With a dangerous voltage you can suffer a dangerous electric shock when touching the wires!



Avoid looking directly into the light source!

Wear protective glasses and other PPE (personal protective equipment) when working on or near the fixture.



Always make sure you are connecting this product to the proper voltage in accordance with the specifications in this manual or on the product's specification label. Make sure it is grounded when using it!

Unplug mains lead before opening the housing!

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

Make sure to replace the fuse with another of the same type and rating.



For your own safety, please read this user manual carefully before you initial start-up.

Follow operating safety precautions and pay attention to warning signs methods and equipment on the user manual.



Warning! This symbol indicates a hot surface. Certain parts of the housing can become hot during operation. After use, wait for a cool-down period of at least 10 minutes before handling or transporting the device.



T = 45°C

Indoor use only! To prevent risk of fire or shock, do not expose this product to rain or moisture. IP 20 rating.

The ambient temperature must always be between -5° C and +45° C.

Every person involved with the installation, operation and maintenance of this device has to

- be qualified
- follow the instructions of this manual
- consider this manual to be part of the total product
- keep this manual for the entire service life of the product
- pass this manual on to every further owner or user of the product
- download the latest version of the user manual from the Internet

Introduction

Thank you for having chosen Mainforce 1940. You will see you acquired a powerful and versatile device. Unpack your item. Before you initial start-up, please make sure that there is no damage caused by transportation. Should there be any, consult your dealer and do not use the device.

Safety instructions

This fixture is an extremely sophisticated piece of electronic equipment. To guarantee a smooth operation, it is important to follow the guidelines in this manual. The manufacturer of this device will not accept responsibility for damages resulting from the misuse of this fixture due to the disregard of the information printed in this manual.

This device has left our premises in absolutely perfect condition. Always disconnect from the mains, when the device is not in use or before cleaning it. Keep away children and amateurs from the device! There are no serviceable parts inside the device. Maintenance and service operations are only to be carried out by authorized dealers.

Installation

Read 'Safety information' before installing the fixture

The fixture is designed for indoor use only and must be used in a dry location with adequate ventilation. Ensure that none of the fixture's ventilation slots are blocked.

Fasten the fixture to a secure structure or surface. Do not stand it on a surface or leave it where it can be moved or fall over. If you install the fixture in a location where it may cause injury or damage if it falls, secure it as directed in this user manual using a securely anchored safety cable that will hold the fixture if the primary fastening method fails.

Fastening the fixture to a flat surface

The fixture can be fastened to a hard, fixed, flat surface that is oriented at any angle. Ensure that the surface and all fasteners used can support at least 10 times the weight of all fixtures and equipment to be installed on it.

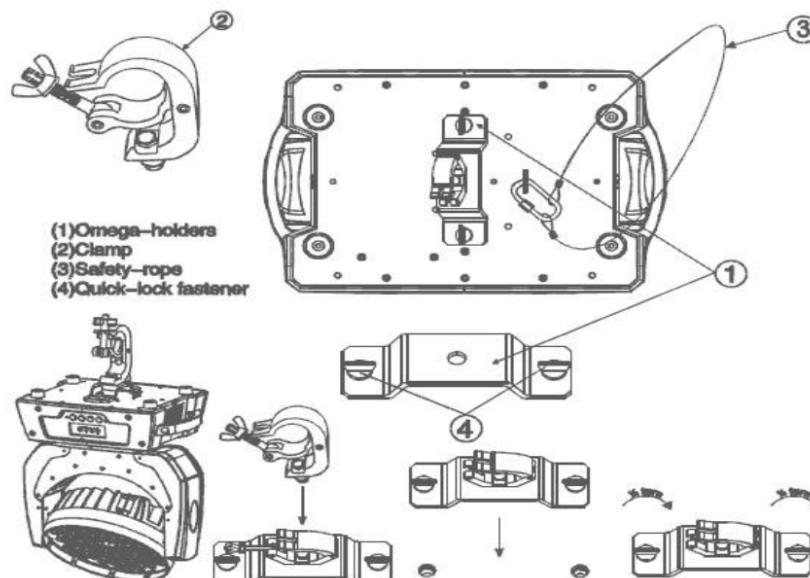
Fasten the fixture securely. Do not stand it on a surface or leave it where it can be moved or fall over. If you install the fixture in a location where it may cause injury or damage if it falls, secure it as directed below with a securely anchored safety cable that will hold the fixture if the primary fastening method fails.

Mounting the fixture on a truss

The fixture can be clamped to a truss or similar rigging structure in any orientation. When installing the fixture hanging vertically down, you can use an open-type clamp such as a G-clamp. When installing in any other orientation, you must use a half-coupler clamp that completely encircles the truss chord.

To clamp the fixture to a truss:

1. Check that the rigging structure can support at least 10 times the weight of all fixtures and equipment to be installed on it.
2. Block access under the work area.
3. Fold the legs of the mounting bracket together and bolt a rigging clamp securely to the mounting bracket. The bolt used must be M10. It must pass through both mounting bracket legs and be fastened with a self-locking nut.
4. Working from a stable platform, hang the fixture with its clamp on the truss and fasten the clamp securely.
5. Secure the fixture with a safety cable as directed below.



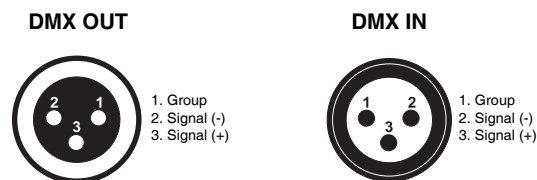
Securing with a safety cable

Secure the fixture with a safety cable (or other secondary attachment) that is approved for the weight of the fixture so that the safety cable will hold the fixture if a primary attachment fails.

Loop the safety cable through the eyebolt in the back of the fixture and around a secure anchoring point. Do not loop the safety cable around the fixture's mounting bracket only, as this will leave the fixture unsecured if it separates from the bracket.

DMX-512 connection/connection between fixtures

Occupation of the XLR-connection:



If you are using controllers with this occupation, you can connect the DMX-output of the controller directly with the DMX-input of the first fixture in the DMX-chain. If you wish to connect DMX-controllers with other XLR-outputs, you need to use adapter-cables.

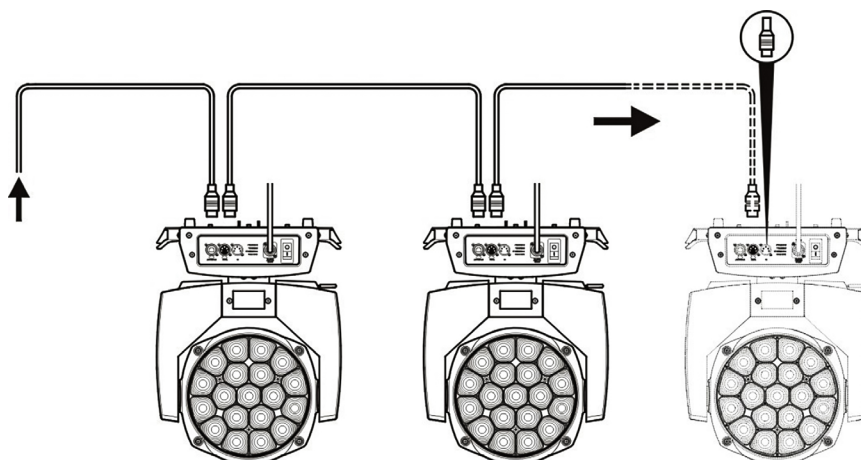
Building a serial DMX-chain:

Connect the DMX-output of the first fixture in the DMX-chain with the DMX-input of the next fixture. Always connect one output with the input of the next fixture until all fixtures are connected.

DMX-512 connection with DMX terminator:

For installations where the DMX cable has to run a long distance or is in an electrically noisy environment, such as in a discotheque, it is recommended to use a DMX terminator. This helps in preventing corruption of the digital control signal by electrical noise. The DMX terminator is simply an XLR plug with a 120 resistor connected between pins 2 and 3, which is then plugged into the output XLR socket of the last fixture in the chain.

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



Connection with the mains:

The Mainforce 1940 is equipped with auto-switching power supply that automatically adjusts to any 50-60Hz AC power source from 90-260 Volts.

This fixture must be earthed. To use the fixture, a plug must be fixed.
The correct assembly of a sufficient plug may be done by professional persons only.
Connect the device to the mains with the enclosed power supply cable.

The occupation of the connection cables as below:

Cable color	Connection	International
Brown	Live	L
Blue	Neutral	N
Yellow/green	Earth(Ground)	

Operation

The Mainforce 1940 can operate in three different modes. In each mode you can run the fixture as a stand alone fixture or in a master/slave configuration. This next section will detail the differences in the operating modes.

Addressing

All fixtures should be given a DMX starting address when using a DMX signal, so that the correct fixture responds to the correct control signals. This digital starting address is the channel number from which the fixture starts to listen to the digital control information sent out from the DMX controller. The allocation of this starting address is achieved by setting the correct number on the display located on the base of the device.

You can set the same starting address for all fixtures or a group of fixtures, or make different address for each fixture individually.

If you set the same address, all the units will start to listen to the same control signal from the same channel number. In other words, changing the settings of one channel will affect all the fixtures simultaneously.

If you set a different address, each unit will start to listen to the channel number you have set, based on the quantity of control channels of the unit. That means changing the settings of one channel will affect only the selected fixture.

In the case of the Mainforce 1940, which is 21/35/78/97 channels fixture.

Universal DMX Control

This function allows you to use a universal DMX-512 controller to control the chases and patterns, dimmer and strobe. A DMX controller allows you to create unique programs tailored to your individual needs.

Auto run mode

In this mode, you can run internal program without a controller.

1. Press the MENU button until **"RUN"** is displayed, and press ENTER.
2. Press the UP or DOWN button to select **"Auto 1"** or **"Auto 2"**.
3. The unit will now run auto mode without a DMX controller.

Sound Mode

This mode allows either single unit or several units linked together, to run to the beat of the music.

1. Press the MENU button until **"RUN"** is displayed, and press ENTER.

2. Press the UP or DOWN button so that “**Sound**” is displayed.
3. The unit will now run to the beat of the music.

Master-Slave Operation

This function will allow you to link up to 16 units together and operate without a controller. In a Master-Slave set up one unit will act as the controlling unit and the others will react to the controlling units programs. Any unit can act as a Master or as a Slave.

1. Using approved DMX data cables, daisy chain your units together via the XLR connector on the rear of the units.
2. For the Master unit press the **Run- Auto 1 / Auto 2**.
3. For the slave units press the **DMX address** icon in the touch screen. Set the DMX address to 001.
4. The slave units will now follow the Master unit.

Control Menu Map

Default settings=**bold** print

Main Menu	Level 1	Level 2	Function
Address	001 - 512		DMX address setting
Setting	DMX mode	21CH/35CH/78CH/97CH	Channel mode
	Run Mode	DMX /Auto/Sound	Control mode
	Pan Inverse	ON / OFF	Pan reverse movement
	Tilt Inverse	ON / OFF	Tilt reverse movement
	Fan control	Silent / low speed / medium speed / high speed	Setting
	Dimming curves	Linear / Backfinger / Forward / S-curve	
	Fast light harvesting	ON / OFF	
	No DMX state	Zero / Hold	
Manual mode	Red	000 - 255	Manual mode
	Red fine	000 - 255	
	Red	000 - 255	
	Green fine	000 - 255	
	Blue	000 - 255	
	Blue fine	000 - 255	
	White	000 - 255	
	White fine	000 - 255	
Info	Time Information	Start-up time	Info
		Total time	
		Number of switch-on times	
	Sensor Detection	Horizontal Sensing	
		Vertical Sensing	
		Focus Sensing	
		Rotary Sensing	
	Software Version	Display Version	Software Version
		Motor version	
		Dimmer Version	
Factory	Password	xxx	Advanced settings/ calibration(Only qualified technicians should perform this function. Inquire your local dealer for password.)

Factory	Pan Calibration	000 - 255	Input correct password for calibration
	Tilt Correction	000 - 255	
	Magnification Correction	000 - 255	
	Zoom Rotation	000 - 255	
	Red Correction	000 - 255	
Reset	XY Reset	Yes/No	Reset
	Effect Reset	Yes/No	
	All reset	Yes/No	
	Factory Settings	Yes/No	
Display Settings	Language	English / CH	Language Selection
	Display Flip	Close / Open	Display Reverse 180°
	Display Mode	60s / Show	Display backlight

DMX Protocol

Standard Model

Channel Modes	DMX value	Function Control
21 CH		
1	000-255	Red
2	000-255	Red fine
3	000-255	Red
4	000-255	Green fine
5	000-255	Blue
6	000-255	Blue fine
7	000-255	White
8	000-255	White fine
9	000-255	CTO colour temperature
10	000-255	Marco Function
11	000-255	Strobe
12	000-255	Dimmer
13	000-255	Dimmer fine
14	000-255	Pan movement by 540°
15	000-255	Pan fine
16	000-255	Tilt movement by 270°
17	000-255	Fine fine
18	000-255	Function
19	000-255	Reset
20	000-255	Zoom
21	000-255	Rotate

Built-in shape mode

Channel Modes	DMX value	Function Control
35 CH		
1	000-255	Red
2	000-255	Red fine
3	000-255	Red

4	000-255	Green fine
5	000-255	Blue
6	000-255	Blue fine
7	000-255	White
8	000-255	White fine
9	000-255	CTO colour temperature
10	000-255	Marco Function
11	000-255	Strobe
12	000-255	Dimmer
13	000-255	Dimmer fine
14	000-255	Pan movement by 540°
15	000-255	Pan fine
16	000-255	Tilt movement by 270°
17	000-255	Fine fine
18	000-255	Function
19	000-255	Reset
20	000-255	Zoom
21	000-255	Rotate
22	000-255	Front Layer Selection
23	000-255	Front Layer Speed
24	000-255	Front Fade
25	000-255	Front Red
26	000-255	Front Green
27	000-255	Front Blue
28	000-255	Front White
29	000-255	Front Dimmer
30	000-255	Rear Dimmer
31	000-255	Front Fade
32	000-255	Front Density
33	000-255	Front Strobe
34	000-255	Rear Strobe
35	000-255	Rear Layer Selection

Extended Mode

Channel Modes	DMX value	Function Control
78 CH		
1	000-255	Red
2	000-255	Red fine
3	000-255	Red
4	000-255	Green fine
5	000-255	Blue
6	000-255	Blue fine
7	000-255	White
8	000-255	White fine
9	000-255	CTO colour temperature

10	000-255	Marco Function
11	000-255	Strobe
12	000-255	Dimmer
13	000-255	Dimmer fine
14	000-255	Pan movement by 540°
15	000-255	Pan fine
16	000-255	Tilt movement by 270°
17	000-255	Fine fine
18	000-255	Function
19	000-255	Reset
20	000-255	Zoom
21	000-255	Rotate
22	000-255	Red 1
23	000-255	Green 1
24	000-255	Blue 1
.....	000-255	Red.....
.....	000-255	Green.....
.....	000-255	Blue.....
76	000-255	Red 19
77	000-255	Green 19
78	000-255	Blue 19

Extended RGBW mode

Channel Modes	DMX value	Function Control
97 CH		
1	000-255	Red
2	000-255	Red fine
3	000-255	Red
4	000-255	Green fine
5	000-255	Blue
6	000-255	Blue fine
7	000-255	White
8	000-255	White fine
9	000-255	CTO colour temperature
10	000-255	Marco Function
11	000-255	Strobe
12	000-255	Dimmer
13	000-255	Dimmer fine
14	000-255	Pan movement by 540°
15	000-255	Pan fine
16	000-255	Tilt movement by 270°
17	000-255	Fine fine
18	000-255	Function
19	000-255	Reset
20	000-255	Zoom

21	000-255	Rotate
22	000-255	Red 1
23	000-255	Green 1
24	000-255	Blue 1
25	000-255	White 1
26	000-255	Red 2
27	000-255	Green 2
28	000-255	Blue 2
29	000-255	White 2
.....	000-255	Red
.....	000-255	Green.....
.....	000-255	Blue.....
.....	000-255	White.....
94	000-255	Red 19
95	000-255	Green 19
96	000-255	Blue 19
97	000-255	White 19

Fixture Cleaning

Due to fog residue, smoke, and dust cleaning the internal and external optical lenses and mirror should be carried out periodically to optimize light output. Cleaning frequency depends on the environment in which the fixture operates (I.e. smoke, fog residue, dust, dew). In heavy club use we recommend cleaning on a monthly basis. Periodic cleaning will ensure longevity, and crisp output.

To clean the fixture:

1. Disconnect the fixture from power and allow it to cool for at least 10 minutes.
2. Vacuum or gently blow away dust and loose particles from the outside of the fixture with low-pressure compressed air.
3. Clean the surfaces by wiping gently with a soft, clean lint-free cloth moistened with a weak detergent solution. Do not rub glass surfaces hard: lift particles off with a soft repeated press. Dry with a soft, clean, lint-free cloth or low-pressure compressed air. Remove stuck particles with an unscented tissue or cotton swab moistened with glass cleaner or distilled water.
4. Check that the fixture is dry before reapplying power.

Fuse Replacement

This fuse is located in a fuseholder next to the MAINS OUT socket on the connections panel.

To replace a fuse:

1. Disconnect the fixture from power and allow it to cool for at least 10 minutes.
2. Unscrew the cap of the fuseholder and remove the fuse. Replace with a fuse of the same size and rating only.
3. Reinstall the fuseholder cap before reapplying power.

Troubleshooting

Listed below are a few common problems that you may encounter, with solutions.

The fixture does not work, no light

- Check the connection of power and main fuse. Be sure the external fuse has not blown.
- Measure the mains voltage on the main connector.

No response to the sound

- Make sure the fixture does not receive DMX signal.
- Low frequencies (bass) should cause the unit to react to sound. Tapping on the microphone, quiet or high pitched sounds may not activate the unit.
- Check the sound sensitivity level. Make sure it is not set to a low sensitivity level.

Technical Data

Power supply:	AC 90-260V, 50/60Hz
Power consumption:	850W
Light source:	19*40W RGBW 4in1 LED
Color temperature:	2500K-9000K
Zoom range:	4-60°motorized
Power connection:	PowerCON in & out
Signal connection:	3-pin XLR in&out(5-pin optional)
DMX channels:	21/35/78/97
Control mode:	DMX 512, RDM, Auto, Sound, Master slave
Pan:	540°
Tilt:	270°
Housing:	Colour black, ABS+PC
LED lifetime:	50,000 hours avg
Size:	420 x 290 x 800mm
N.W.:	22kg
Accessories(included):	Power cable, safety rope
Accessories(optional):	Omega bracket, Clamp, DMX cable
Enviroment:	IP20

Please note: All information is subject to change without prior notice. 07.11.2023