

Magnum 1500

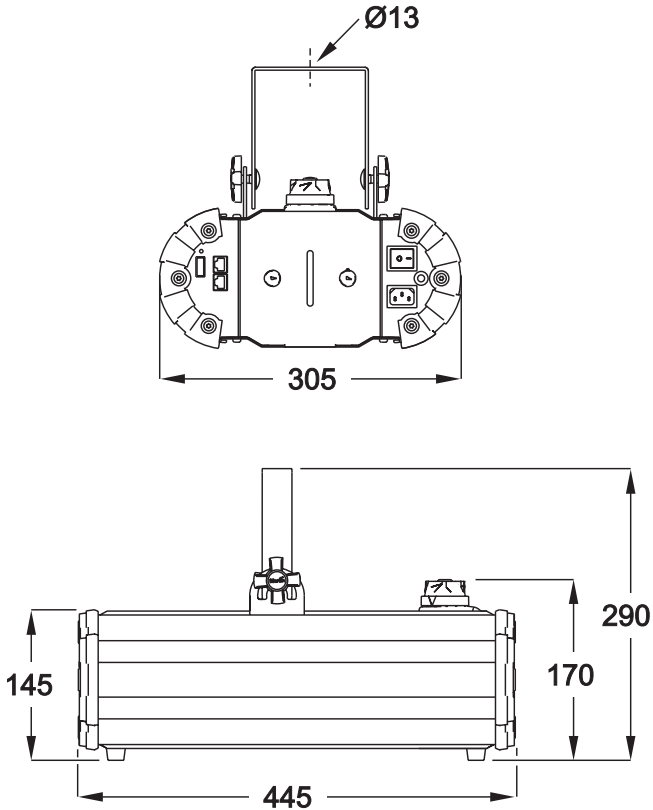
user manual



Martin

DIMENSIONS

All dimensions are in millimeters



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Disposing of this product

Martin® products are supplied in compliance with Directive 2002/96/EC of the European Parliament and of the Council of the European Union on WEEE (Waste Electrical and Electronic Equipment), as amended by Directive 2003/108/EC, where applicable.

Help preserve the environment! Ensure that this product is recycled at the end of its life. Your supplier can give details of local arrangements for the disposal of Martin products.

INTRODUCTION

Thank you for selecting the Magnum 1500.

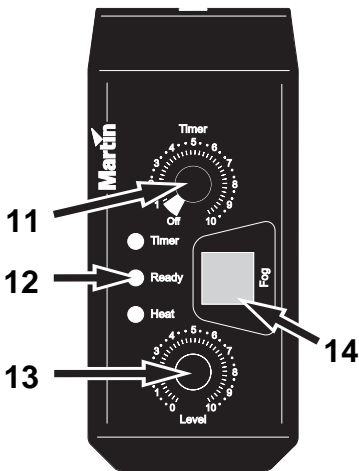
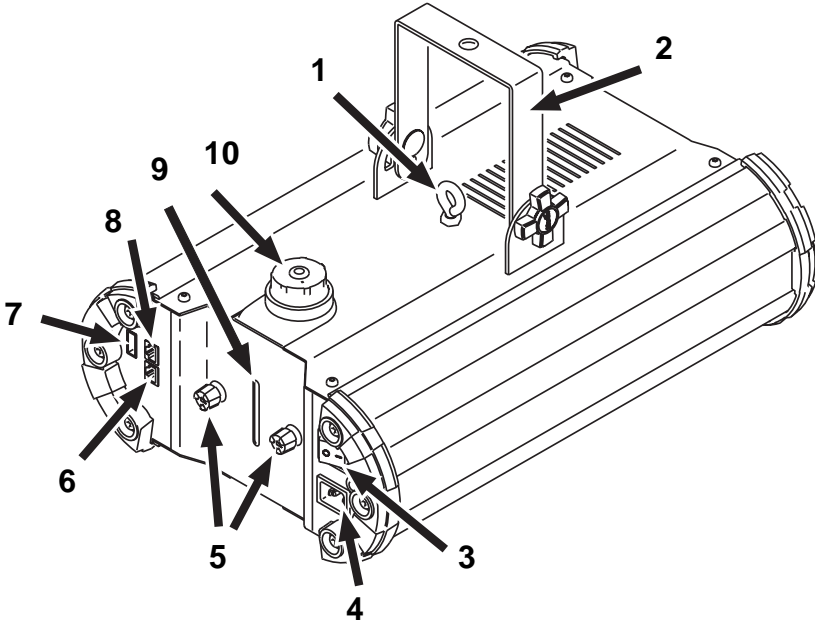
The Magnum 1500 is a compact and efficient fog generator for semi-professional use. It uses a water-based fluid with an aluminum and copper heat exchanger to create a white fog for entertainment and theatrical use. The Magnum 1500 can be controlled using the remote control unit supplied with the product. It can also be controlled via DMX by adding a module available as a separate accessory.

The most recent version of this manual is available in the Support area of the Martin website at: <http://www.martin.com>

Features

- Onboard 2.3 liter (0.6 US gal. / 0.5 imperial gal.) fluid container.
- Remote control with instant fog output or timer-controlled output with variable run times and fog volume.
- Multiple remote control linking (allows up to 4 Magnum 1500s to be controlled via one remote control unit).
- DMX control (independent or grouped multiple control on DMX link) with optional DMX interface.
- 5 meter (16.4 ft.) remote cable.
- Copper and aluminum heat exchanger.
- High pressure pump.
- Efficient insulation.
- Fail-safe thermal cut-out protection.

Magnum 1500 overview



OVERVIEW

1. Safety attachment eye-bolt
2. Mounting bracket
3. Main on/off switch
4. AC power input (EU model illustrated)
5. Fluid bottle release thumbscrews
6. Remote control out
7. Service port
8. Remote control in
9. Fog fluid level check window
10. Fog fluid bottle
11. Timer dial
12. Status indicator LEDs
13. Fog output level dial
14. Instant fog button

Safety information

Warning! *This product is not for household use. It presents risks of lethal or severe injury due to electric shock, burns, falls and breathing problems.*

Read this manual before powering or installing the machine, follow the safety precautions listed below and observe all warnings in this manual and printed on the machine. If you have questions about how to operate the machine safely, please contact a Martin distributor for assistance or call the Martin 24-hour service hotline on +45 70 200 201.

Refer any service operation not described in this manual to a qualified technician.

Preventing electric shocks

- Always ground (earth) the machine electrically.
- Use only a source of AC power that complies with local building and electrical codes, and that has both overload and ground-fault (earth-fault) protection.
- Check the voltage is correct for use with the machine. The voltage setting is printed on the machine's serial label.
- Disconnect the machine from AC power before refilling the fluid tank, resetting the thermal protection cutout, removing covers or servicing.
- Disconnect the machine from AC power when not in use.
- Do not expose this machine to wet outdoor conditions – the machine is not waterproof.
- Do not spill fluid over the machine. If fluid is spilled, disconnect the machine from AC power and clean with a damp cloth. If fluid is spilled onto electronic parts, contact an approved Martin dealer for advice.
- Do not remove the covers or attempt to repair a faulty machine.
- Refer all service to an authorized Martin service dealer.
- Do not operate the machine if the power supply cord is damaged. A damaged power supply cord must be replaced with a new item, available from your Martin dealer.
- Do not operate the machine with damaged or missing parts.
- Moisture and electricity do not mix. Do not aim fog output at electrical connections or devices.

Preventing burns and fire

- Allow the machine to cool for at least 20 minutes before handling or opening – the machine becomes hot during use.
- Use only genuine Martin or JEM fluid in the machine.
- Never attempt to bypass the thermostatic switch or fuses. Always replace defective fuses with ones of the specified type and rating.
- Ensure that the air flow around the machine is free and unobstructed.
- Provide a minimum clearance of 0.1 meters (4 inches) around the machine.
- Do not touch the output nozzle during or after use; it may stay hot for several hours.
- Do not operate the machine if the ambient temperature (T_a) exceeds 40° C (104° F).
- Keep the nozzle at least 0.6 meters (24 inches) away from people and objects.
- Do not install the machine with the nozzle pointing more than 30° up or down from horizontal.

Preventing injuries due to falls

- Work from a stable platform and block access below the work area whenever installing, servicing or removing the machine.
- Do not hang the machine directly over people's heads.
- When suspending the machine above ground level, verify that the structure can hold at least 10 times the weight of all installed devices.
- Verify that all external covers and rigging hardware are securely fastened and use an approved means of secondary attachment such as a safety cable.
- Fog and smoke machines can cause condensation. Do not point the output at high traffic areas with smooth floors. Floors and surfaces may become slippery. Check these frequently and wipe dry as necessary to avoid any danger of slipping.

Preventing breathing problems

- Always use fog and smoke machines in well-ventilated areas. Excessive use could affect sufferers of asthma or other respiratory conditions.
- Never point the output directly at a person's face or at face height.

Unpacking

The packing material is carefully designed to protect the machine during shipment - always use it to transport the machine.

The Magnum 1500 is supplied with:

- Remote control unit with 5 meter (16.5 ft) cable (RJ45 connector)
- Power cable
- User manual

The Magnum 1500 is supplied with the fluid bottle empty to avoid spillage during shipment. The fluid bottle must be filled before using for the first time (see "*Filling the fluid bottle*" on page 17).

Your Martin/JEM dealer can supply suitable fluid. Use only one of the following fluid types:

- JEM/Martin Pro Smoke Super
- JEM/Martin Regular DJ (DJ mix)

Warning! ***Using any other type of fluid can cause a health hazard and cause damage to the machine that is not covered by the product warranty.***

INSTALLATION

Physical installation

The Magnum 1500 may be either suspended from a suitable support by means of its adjustable mounting bracket or placed on a flat level surface. Do not install the machine by any other means, as this can cause overheating or malfunction.

Warning! *To allow adequate cooling, the Magnum 1500 must be located at least 0.1 meters (4 in.) from any surface.*

The Magnum 1500 must be located well away from flammable materials.

The Magnum 1500's surface temperature can reach 50°C (122° F) and the nozzle can reach 200°C (392° F). The machine must be positioned well out of reach of the public in a location where accidental contact is impossible.

Do not install the Magnum 1500 at an angle of more than 30° up or down from horizontal.

To avoid fluid leakage, the fluid bottle filler cap must always point upwards. If necessary, the fluid bottle can be repositioned (see "Repositioning the fluid bottle" on page 12).

Suspending from a support

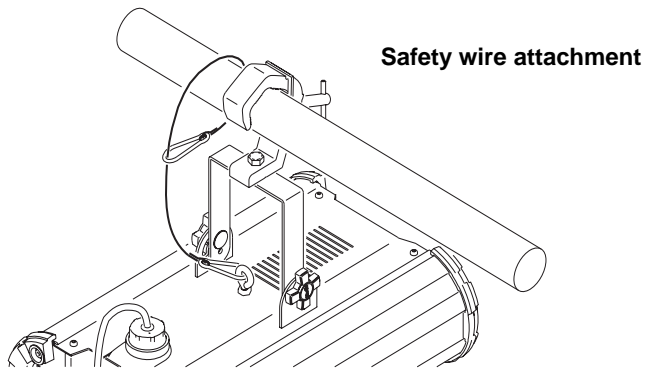
Warning! *Block access below the work area and work from a stable platform when installing.*

Always use a secure means of secondary attachment that can hold at least 10 times the weight of the machine.

1. If using a rigging clamp (not included), verify that the clamp is undamaged and can bear at least 10 times the machine's weight. Bolt the clamp securely to the machine's mounting bracket with a grade 8.8 (minimum) M12 bolt and lock nut, or as recommended by the clamp

manufacturer, through the 13 mm hole in the center of the mounting bracket.

2. If fastening the machine directly to a mounting surface using the adjustable mounting bracket, verify that all fasteners used and the mounting surface can bear at least 10 times the machine's weight. The mounting bracket may be fastened to a surface using the 13 mm hole in the mounting bracket.
3. Verify that the structure used to support the machine can support at least 10 times the total weight of all installed fixtures, clamps, cables, auxiliary equipment, etc.
4. Install a safety wire that can hold at least 10 times the weight of the machine through/over the support and through the eye-bolt on the housing below the mounting bracket (see illustration).



Do not simply attach the safety wire to the mounting bracket, as this will leave the machine unsecured.

5. Loosen the swivel locks and position the machine at any angle within 30° of horizontal. Turn the swivel locks clockwise to tighten. Check that the machine is securely clamped in position.

Placing on a horizontal surface

If preferred, the Magnum 1500 can be installed on a level horizontal surface, resting either on its rubber feet or on its mounting bracket. The mounting bracket can be used to support the machine at an angle. If the machine is to be placed on a horizontal surface:

- Ensure that the surface is level, stable and capable of supporting at least ten times the weight of the machine.
- Attach the machine securely so that it cannot slide or fall off the surface.

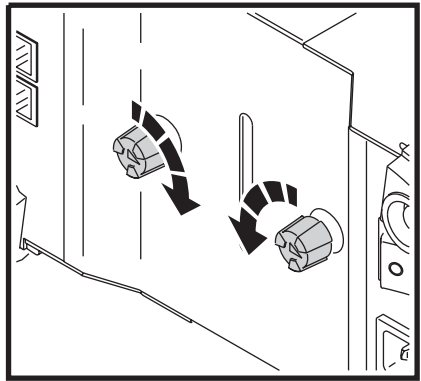
- Eliminate any risk of accidental contact.
- Do not aim the machine at face height.
- Keep the nozzle at least 60 centimeters (24 inches) away from people and objects.

Repositioning the fluid bottle

Resting the Magnum 1500 on its mounting bracket means operating it upside-down. This does not affect operation, but to avoid leaks the fluid bottle must also be repositioned so that the filler cap remains at the top.

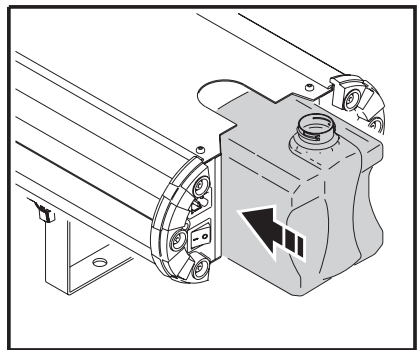
To reposition the fluid bottle:

1. Open the fluid bottle compartment by twisting the two thumbscrews a quarter-turn in towards the centre of the machine and pulling the cover off the machine.



Fluid bottle compartment cover thumbscrews

2. Slide the fluid bottle out of the compartment.
3. Turn the Magnum 1500 over so that the mounting bracket sits underneath it. Slide the fluid bottle back into its compartment with the filler cap pointing upwards, being careful not to trap or kink the fluid hose.
4. Replace the compartment cover and re-tighten the thumbscrews.



Fluid bottle removal/replacement

AC power

The Magnum 1500 is available in two models:

- US model (120 V, 60Hz for 105-115 VAC power supplies)
- EU model (230 V, 50Hz for 220-245 VAC power supplies)

The Magnum 1500 is supplied set up to match local voltage and frequency settings. The factory default setting is shown on the serial number label.

Warning! *For protection from fire and electric shock, the Magnum 1500 must be grounded (earthed). The power supply must have overload and ground-fault (earth-fault) protection.*

Check that power cables are undamaged and rated for the current requirements of all connected devices before use.

Check the power supply setting before applying power.

Installing a plug on the power cable

The power cable must be fitted with a grounding-type cord cap (earthed-type mains plug) that fits your power distribution system. Consult a qualified electrician if you have any doubts about proper installation.

Following the cord cap manufacturer's instructions, connect the yellow and green wire to ground (earth), the brown wire to live, and the blue wire to neutral. The table below shows some pin identification schemes:


Wire	Pin	Marking	Screw color
brown	live	"L"	yellow or brass
blue	neutral	"N"	silver
yellow/green	ground		green

Table 1: Cord cap wiring

Installing control hardware

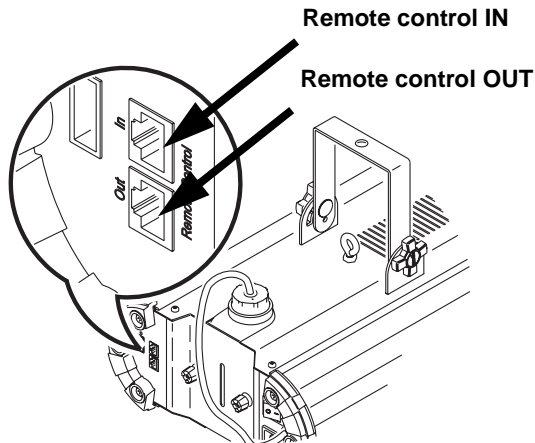
The Magnum 1500 can be operated using:

- the remote control unit supplied with the machine, or
- a DMX controller using an interface that is available as an accessory from your Martin dealer (P/N 91612000). Installing DMX control hardware is covered in “*DMX installation*” on page 27 of this manual.

Remote control unit installation

To install the remote control unit:

1. Power the machine off.
2. Plug the RJ-45 connector on the remote control cable into the IN socket on the connections plate (see illustration).



3. When you power the machine on again, check that the HEAT indicator on the remote control is lit to show that the machine is warming up.

Multiple linking with a remote control unit

The Magnum 1500's multiple linking feature allows more than one machine to be controlled using the remote control. If machines are linked, all machines receive the same instructions from the remote control and behave identically. Up to four Magnum 1500s can be linked to the remote control.

For multiple link operation, machines must be linked using shielded data cable with at least one twisted pair that is designed for RS-485

applications. The cable must be fitted with RJ-45 connectors. Your Martin dealer can supply suitable high-quality cable in various lengths.

Important! Make sure multiple link cables are connected in a daisy-chain, output to input: if an output is linked to an output, damage can occur which is not covered by the product warranty.

To link Magnum 1500s:

1. Power off all machines.
2. Connect the remote control unit to the IN socket on the first Magnum 1500 on the link.
3. Lead a suitable cable from the OUT socket on the first Magnum 1500 to IN on the next Magnum 1500. If more machines are to be operated together, continue linking them, connecting output to input. Up to 4 machines can be connected to one remote control in this way.
4. Apply power to the machines and allow them to warm up. All machines will now respond to commands sent from the remote control.

OPERATION

The Magnum 1500 can be operated using the remote control unit supplied with the machine or by means of a DMX controller using a DMX interface module (P/N 91612000) that is available separately as an accessory from your Martin dealer. Extra information about DMX operation is covered in “*DMX controller operation*” on page 33 of this manual.

Before powering on, check that:

- The Magnum 1500 is correctly and safely installed.
- The fluid bottle is full (see “*Filling the fluid bottle*” on page 17).
- The pump has been primed if the machine is new or has not been used for some time (see “*Priming the pump*” on page 18).

For the Magnum 1500 to work, the remote control must be connected, or the machine must be linked to an active control device (a DMX controller or another Magnum 1500 on a multiple link).

Power on at the Magnum 1500 on/off switch. The HEAT indicator LED on the remote control will light and the LED on the machine close to the remote control sockets will light red to indicate pre-heating. The machine should be ready for operation in less than eight minutes.

When the Magnum 1500 reaches operating temperature, the READY indicator LED on the remote control will light and the LED on the Magnum 1500 close to the remote control sockets will change from red to orange. The machine is now ready for use.

The LED on the Magnum 1500 may change between orange and green periodically. This is normal. Orange indicates that the heating element is active, green indicates that the heating element is inactive. The HEAT indicator LED on the remote control will also light when the heating element is active. The LED lights red when output is interrupted during pre-heating.

Heating element activity is reduced to almost zero if the Magnum 1500 runs low on fluid. If the LEDs show that the heating element is almost never active, power the machine off and check the fluid level.

Checking fluid level

Important! *Check the fluid level regularly. Running the machine without fluid will eventually cause damage to the pump which is not covered by the product warranty.*

Check fluid level regularly. If the machine is horizontal, the level in the fluid bottle can be checked via the window on the fluid bottle compartment cover. If the machine is at an angle, the cover must be opened and the bottle removed to check the fluid level.

Filling the fluid bottle

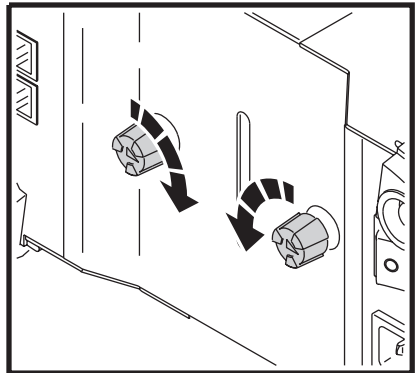
Warning! *Always disconnect the machine from power before working with the fluid system. The fluid bottle must be removed from the machine for filling.*

Use only Martin or JEM fog fluid of the following types:

- **Regular DJ Fluid (DJ mix)**
- **Pro Smoke Fluid (ZR mix)**

To fill the fluid bottle:

1. Disconnect the machine from the power supply.
2. Remove the fluid bottle compartment cover by twisting the two thumbscrews a quarter-turn in towards the centre of the machine and pulling the cover off the machine.



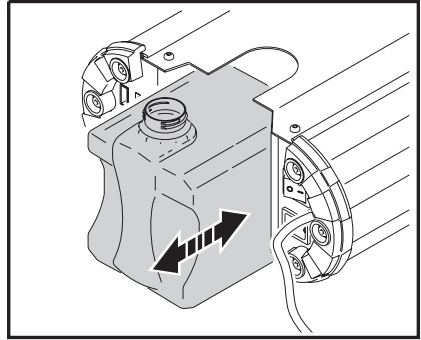
3. Slide the fluid bottle out of the compartment and remove the cap with attached fluid suction hose from the bottle.

4. Fill the bottle with Martin or JEM Pro Smoke Fluid (ZR mix) or Regular DJ Fluid (DJ mix) only.

5. Check that the filter on the end of the fluid suction hose is clean and replace the cap tightly, ensuring that the hose reaches the bottom of the bottle.

6. Slide the fluid bottle back into its compartment, being careful not to trap or kink the fluid hose.

7. Replace the compartment cover before reapplying power.



Priming the pump

The pump must be primed when the Magnum 1500 is used for the first time, or if it has not been used for an extended period.

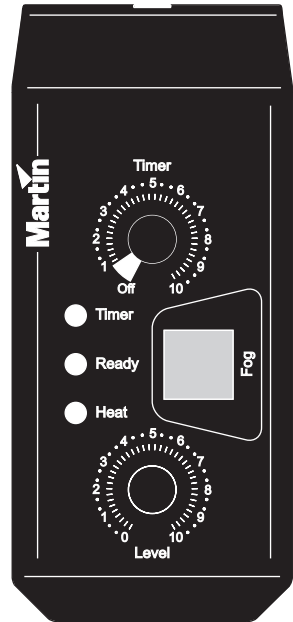
To prime the pump:

1. Check that the fluid bottle is full. Power the machine on and allow it to reach operating temperature.
2. If using the remote control, set the TIMER on the remote control to zero, set LEVEL to maximum and press the FOG button for 10 - 15 seconds.
3. If using DMX, set the machine to maximum fog output for 10 - 15 seconds.

Remote control operation

The remote control supplied with the Magnum 1500 gives feedback on the status of the machine. It also allows you to create instant fog or set a timer to create fog at intervals. Duration and volume of fog production can be varied during timer operation.

- Use the TIMER knob to set fog output run times from zero to 10 (maximum).
- Use the LEVEL knob to set the volume of fog output from zero to 10 (maximum).
- If you set the TIMER knob to 0, you can produce instant fog by pressing the FOG button.
- The TIMER indicator lights when the timer function is active.
- The READY indicator lights when the Magnum 1500 is ready to produce fog.
- The HEAT indicator lights when the heating element is active. It should light continuously during pre-heating, light occasionally during operation and light continuously during re-heating.



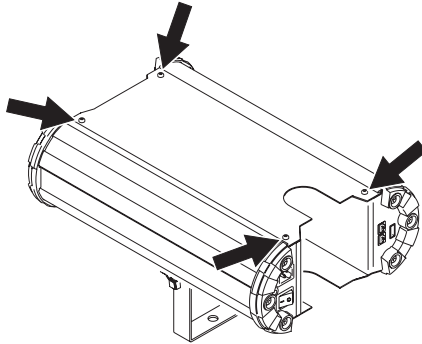
Note that the Magnum 1500 is not designed to give continuous output at the highest levels. If you set the output level to 10 (maximum), output will be interrupted after approximately 50 seconds while the machine re-heats. Re-heating takes less than 2 minutes. The level at which output is continuous will vary depending on ambient and fluid temperatures, but output levels up to at least 5 are normally continuous.

Resetting the thermal cutout

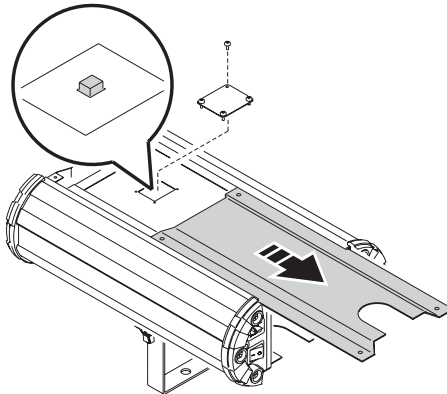
The Magnum 1500 is fitted with a thermal cutout to protect against overheating. If for any reason the heating element temperature exceeds normal operating level, the thermal cutout shuts down the power.

If this occurs, you will need to manually reset the thermal cutout. To do this:

1. Isolate the machine from power by disconnecting the power cable and allow the machine to cool for at least 20 minutes.
2. If the machine is resting on its rubber feet, remove the fluid compartment cover, remove the fluid bottle and turn the machine over so that it is resting on its mounting bracket.



3. Remove the four T20 Torx screws in the rubber feet and slide the baseplate away from the nozzle end of the machine to give access to the reset switch cover.
4. Remove the four T20 Torx screws from the reset switch cover and lift the cover off the machine..



5. Press the plastic reset switch to reset the thermal protection cutout.
6. Replace all covers and screws before reapplying power.

If the thermal cutout operates repeatedly, contact your Martin dealer for service.

SERVICE AND MAINTENANCE

Any service procedure not described here should be referred to a qualified technician.

Warning! *Disconnect the machine from the power supply and allow to cool for at least 20 minutes before handling. Be extremely careful of the nozzle, which can remain hot for several hours after the exterior of the machine has cooled.*

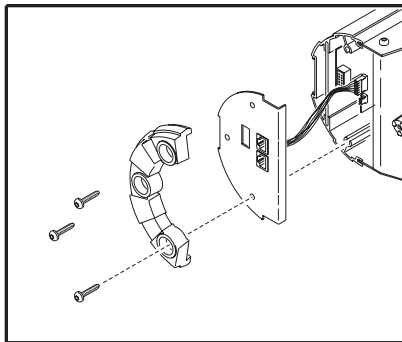
Replacing the main fuse

The Magnum 1500 uses a time-delay fuse for protection against current overload. An indication that the fuse may have blown is that the indicator LEDS do not light if power is applied when the machine is correctly connected to power and to either the remote control or a valid DMX signal.

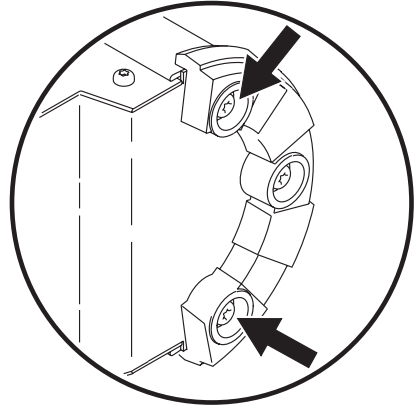
Never bypass the fuse or replace it with one of another size or rating.

To replace the main fuse:

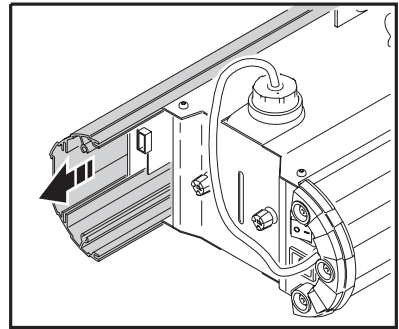
1. Disconnect the machine from AC power and allow to cool.
2. Remove the three T25 Torx screws from the rubber protection molding around the control interface module, pull off the rubber molding and, being careful not to strain any wires, gently pull the interface module away from the housing.



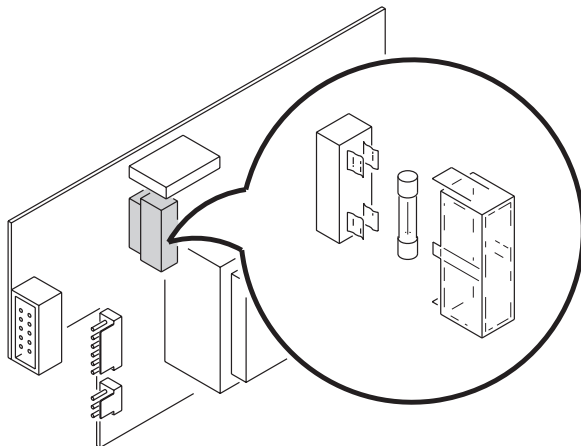
3. Remove the two outer T25 Torx screws from the rubber protector molding at the opposite end of the machine, as illustrated, to release the side cover on that side of the machine.



4. Slide the side cover completely off the machine to give access to the control circuit board.



5. The main fuse is located in a fuseholder on the control circuit board. Gently pull the circuit board out a few centimeters to give access to the fuseholder.



6. Pull the fuseholder cover off the base and remove the fuse from its clip. It may improve access if you temporarily disconnect the spade connector underneath the fuse holder.
7. Replace the fuse with one of the same type. The fuse rating is listed on the serial number label and in “*Magnum 1500 specifications*” on page 34 of this manual.
8. Replace the fuseholder cover and any connectors.
9. Reassembly is the reverse of the disassembly procedure. Be careful not to trap any wires when replacing covers. Do not reapply power until all covers and screws are in place and secure.

If the fuse blows repeatedly, disconnect the machine from the power supply and from control equipment and contact your Martin/JEM dealer.

Uploading new software

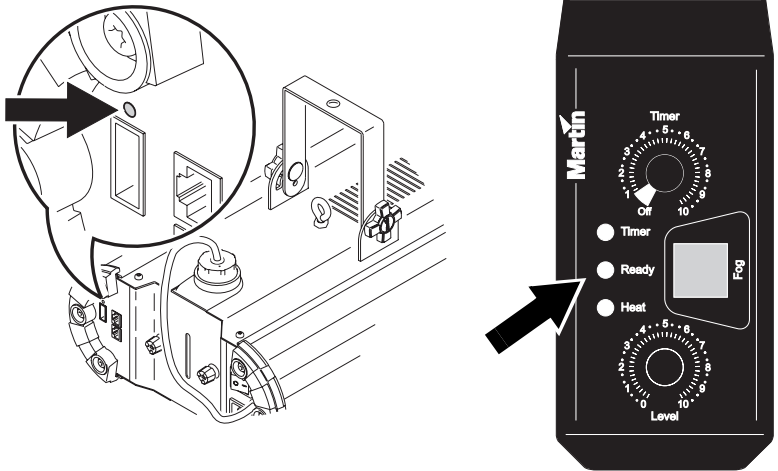
The Magnum 1500's software can be reloaded or upgraded via the service port. The heater must be re-calibrated if new software is installed. Pump output can only be calibrated via software updates. Martin/JEM service agents can carry out software updates for you.

TROUBLESHOOTING

Problem	Probable cause(s)	Suggested remedy
LEDs light, but no fog output when machine is fired using Fog or Timer switch	Heater not at operating temperature	Allow time to warm up, wait for READY LED on remote control to light or LED on machine to light orange or green
	Fluid below minimum level	Refill
	Airlock in pump	Prime pump
No light from LEDs on remote control or connections module	No power	Check power supply, on/off switch and connections
	Control device not connected	Check connections
Fog disperses too quickly	Wrong grade of fluid used for the application	Consult your Martin dealer
Fuse blows repeatedly	Electrical malfunction	Refer to service technician
LED on machine lights, but no fog output when machine is fired using DMX	Incorrect DMX address	Check DIP-switch settings
	Machine not ready	Allow time to warm up, wait for LED on machine to change from red to orange or green
	No DMX termination	Fit termination plug to last device on DMX link
	Airlock in pump	Prime pump

SERVICE CODES

If an error occurs during operation, the READY indicator LED on the remote control and the LED above the service port close to the remote control sockets both flash service codes that can be useful troubleshooting aids.



If the Magnum 1500 flashes a service code, reset the machine by powering off and on again. If the code persists, refer to your Martin dealer.

Service code	Message
One short blink every second (approx.)	Overheating error or calibration error
LEDs flash constantly	Calibration mode
Two short blinks every second (approx.)	Calibration completed

OPTIONAL DUCTING ADAPTER

Fog/smoke ducting gives flexibility in directing fog output. It can also allow you to install the Magnum 1500 in a safe location with convenient access for refilling, service, etc.

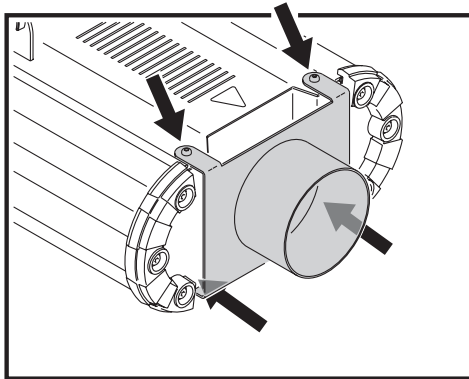
The Magnum 1500 can be connected to standard 4-inch (102 mm) fog/smoke ducting using an adapter. Your Martin dealer can supply this adapter as an accessory pack (P/N 92625008) that also contains 5 m (16.4 ft.) of ducting.

Installing a ducting adapter

Warning! *Airflow is necessary at the entrance to the ducting. Never block the air gap between the Magnum 1500 and the ducting adapter.*

To install the optional ducting adapter:

1. Working at the nozzle end of the machine, remove the two T20 Torx screws that hold the rubber feet in place on the bottom of the machine, and remove the two screws in the same place on the top of the machine.



2. Place the ducting adapter over the nozzle so that the adapter mounting holes line up with the holes in the housing, and replace the screws and rubber feet.

MAGNUM 1500 DMX INTERFACE MODULE

The Magnum 1500 can be controlled using a DMX controller on a serial data link if a DMX interface module is installed. This module is available separately as an optional accessory (DMX Interface Module, Magnum 1500, P/N 91612000).

Up to 32 devices can be controlled via DMX on one serial data link. The link must be daisy-chained in one single line, maximum 500 meters (1640 ft.) long. More devices can be added and the link can be extended beyond 500 meters or branched using an optically isolated splitter/amplifier such as the Martin RS-485 Opto-Splitter (P/N 90758060).

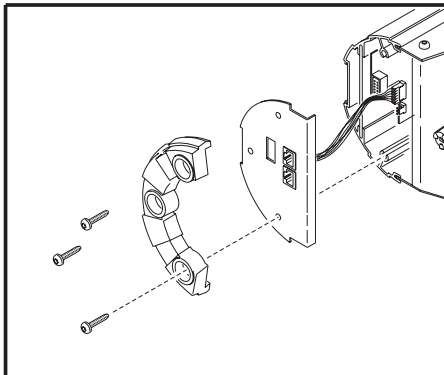
DMX installation

To use a DMX controller with the Magnum 1500, you must remove the remote control module that is fitted as standard and fit a DMX module in its place.

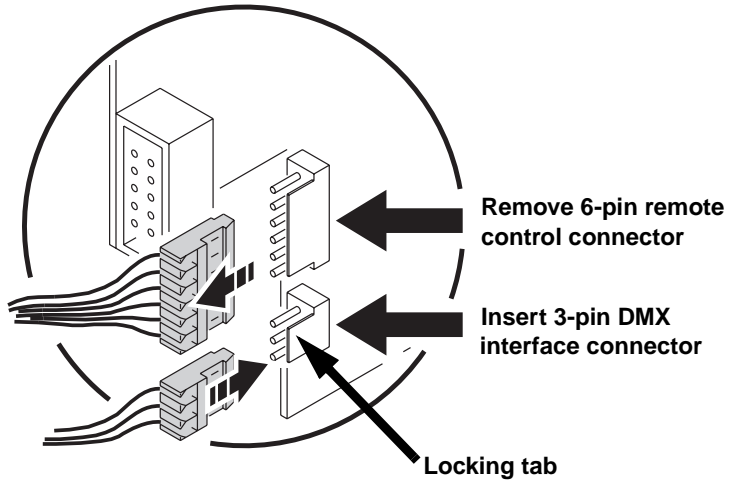
Installing a DMX module

To install a DMX control module:

1. Disconnect the power supply cable and allow the machine to cool for at least 20 minutes.
2. Remove the three T25 Torx screws on the remote control connections module and remove the black rubber protection molding.

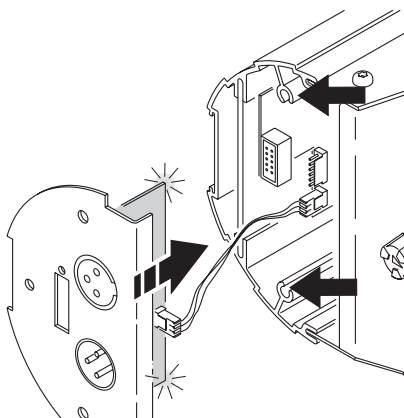


3. Being careful to avoid straining any wires, pull the module gently outwards and to one side. Note the position of the module's wiring connector, with the wires facing away from the locking tab on the circuit board connector, and disconnect it from the 6-pin plug on the circuit board inside the housing. Then remove the module completely.



4. The DMX interface module has a 3-pin female wiring connector. This must be connected to the 3-pin male connector on the circuit board – *not* the 6-pin connector used by the remote control module (see illustration).
5. Hold the DMX module up to the housing and push the DMX interface connector in so that its wires face away from the locking tab on the circuit board connector. The locking ridge molded into the end of the DMX interface connector must face towards the locking tab on the circuit board connector. The wiring connector is an easy sliding fit. If you need to force it, you may be trying to insert it the wrong way round.

6. Line up the edge of the circuit board on the DMX adapter module so that it can slide into the groove in the screw hole in the housing and gently push the DMX adapter into place, being careful not to trap any wires.
7. Replace the black rubber molding and the three Torx screws.



DMX cable connection

A reliable data link requires suitable cable. Standard microphone cable cannot transmit DMX data reliably over long runs. For best results, use shielded cable with at least one twisted pair specifically designed for RS-485 applications. Your Martin dealer can supply suitable high quality cable in various lengths.

The Magnum 1500's XLR data sockets are wired with pin 1 to ground, pin 2 to signal - (cold), and pin 3 to signal + (hot). This is the standard pin assignment for DMX devices.

One or more adaptor cables may be required to connect the Magnum 1500 to the controller and/or other types of fixture, because some devices may have 5-pin XLR connectors and others may have reversed signal polarity (pin 2 hot and pin 3 cold). The required connector polarity is normally labelled on devices and specified in user manuals.

5-pin to 3-pin Adaptor	
Male	Female
1	1
2	2
3	3
4	
5	
P/N 11820005	

3-pin to 5-pin Adaptor	
Male	Female
1	1
2	2
3	3
	4
	5
P/N 11820004	

3-pin to 3-pin Phase-Reversing Adaptor	
Male	Female
1	1
2	2
3	3
P/N 11820006	

DMX connection pins and polarity

To connect a 5-pin XLR output to the Magnum 1500, use a 5-pin male to 3-pin female XLR adaptor cable (P/N 11820005). To connect the Magnum 1500 to a 5-pin XLR input, use a 3-pin male to 5-pin female adaptor cable (P/N 1820004). To connect to devices with reversed polarity, use a phase-reversing adaptor (P/N 1820006)

To connect a DMX data link:

1. Power off all devices.
2. Using suitable data cable, connect the controller's DMX output to the first device's DMX input.
3. Connect the DMX output of the first device to the DMX input of the next device.
4. Continue connecting devices output to input.
5. Terminate the link by inserting a male termination plug (available from your Martin dealer: P/N 91613017) into the DMX output of the last device. A termination plug is simply an XLR connector with a 120 Ohm, 0.25 W resistor soldered across pins 2 and 3.

Specifying DMX control addresses

The Magnum 1500 uses a single DMX control channel to receive instructions from the controller. This control channel is the Magnum 1500's DMX address. The DMX address must be set on the Magnum 1500 for instructions to be received successfully on this channel from the controller.

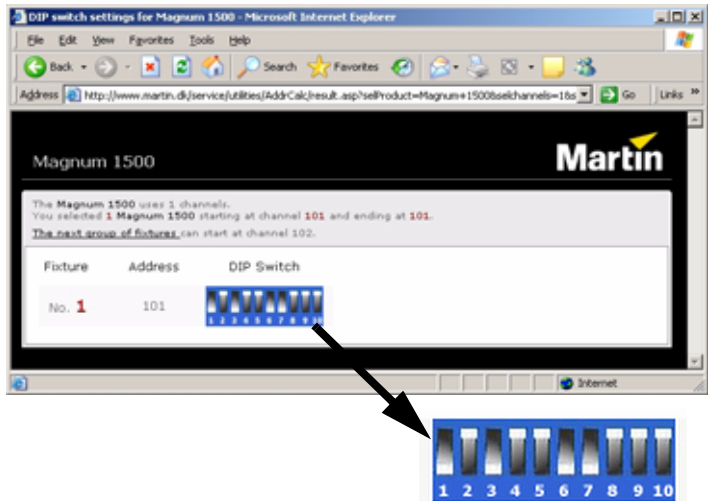
To control devices individually, each must have its own unique DMX address. To control devices as a group, they can all be given the same DMX address. They will then receive the same instructions and should behave identically. Setting up identical devices with the same DMX address can also be a good tool for troubleshooting unexpected behavior.

A Magnum 1500's DMX address can be set to any channel from 1 to 511 using DIP-switches 1 - 9 on the DMX module.

To set the DMX address:

1. Choose an available address for the Magnum 1500.
2. Look up the DIP-switch settings for this address using the Martin Address Calculator at <http://www.martin.dk/service/utilities/AddrCalc/index.asp> or look for the address in the DIP-switch settings table on page 32. For example, to

set the DMX address to 101, you need to set DIP-switch pins 1, 3, 6 and 7 to ON, as shown in the illustration below:



3. Power off the controller and all the machines you want to connect to the DMX link.
4. For each machine, set the DMX address by setting the DIP-switch pins 1 through 9 to the ON (1) or OFF (0) position as listed in the table on the next page. As an example, channel 101 is highlighted in the table.

DMX address DIP-switch settings

Find the DMX address you want to set in the following table. Read the settings for pins 1 - 5 to the left and read the settings for pins 6 - 9 above the address. "0" means OFF and "1" means ON. Pin 10 is always OFF for DMX operation.

For example, to set a DMX address to 101, set pins 1, 3, 6 and 7 to ON, and the other pins to OFF.

DIP-Switch Setting					#9	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
0 = OFF					#8	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1
1 = ON					#7	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1
					#6	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1
#1	#2	#3	#4	#5																	
0	0	0	0	0	32	64	96	128	160	192	224	256	288	320	352	384	416	448	480		
1	0	0	0	0	1	33	65	97	129	161	193	225	257	289	321	353	385	417	449	481	
0	1	0	0	0	2	34	66	98	130	162	194	226	258	290	322	354	386	418	450	482	
1	1	0	0	0	3	35	67	99	131	163	195	227	259	291	323	355	387	419	451	483	
0	0	1	0	0	4	36	68	100	132	164	196	228	260	292	324	356	388	420	452	484	
1	0	1	0	0	5	37	69	101	133	165	197	229	261	293	325	357	389	421	453	485	
0	1	1	0	0	6	38	70	102	134	166	198	230	262	294	326	358	390	422	454	486	
1	1	1	0	0	7	39	71	103	135	167	199	231	263	295	327	359	391	423	455	487	
0	0	0	1	0	8	40	72	104	136	168	200	232	264	296	328	360	392	424	456	488	
1	0	0	1	0	9	41	73	105	137	169	201	233	265	297	329	361	393	425	457	489	
0	1	0	1	0	10	42	74	106	138	170	202	234	266	298	330	362	394	426	458	490	
1	1	0	1	0	11	43	75	107	139	171	203	235	267	299	331	363	395	427	459	491	
0	0	1	1	0	12	44	76	108	140	172	204	236	268	300	332	364	396	428	460	492	
1	0	1	1	0	13	45	77	109	141	173	205	237	269	301	333	365	397	429	461	493	
0	1	1	1	0	14	46	78	110	142	174	206	238	270	302	334	366	398	430	462	494	
1	1	1	1	0	15	47	79	111	143	175	207	239	271	303	335	367	399	431	463	495	
0	0	0	0	1	16	48	80	112	144	176	208	240	272	304	336	368	400	432	464	496	
1	0	0	0	1	17	49	81	113	145	177	209	241	273	305	337	369	401	433	465	497	
0	1	0	0	1	18	50	82	114	146	178	210	242	274	306	338	370	402	434	466	498	
1	1	0	0	1	19	51	83	115	147	179	211	243	275	307	339	371	403	435	467	499	
0	0	1	0	1	20	52	84	116	148	180	212	244	276	308	340	372	404	436	468	500	
1	0	1	0	1	21	53	85	117	149	181	213	245	277	309	341	373	405	437	469	501	
0	1	1	0	1	22	54	86	118	150	182	214	246	278	310	342	374	406	438	470	502	
1	1	1	0	1	23	55	87	119	151	183	215	247	279	311	343	375	407	439	471	503	
0	0	0	1	1	24	56	88	120	152	184	216	248	280	312	344	376	408	440	472	504	
1	0	0	1	1	25	57	89	121	153	185	217	249	281	313	345	377	409	441	473	505	
0	1	0	1	1	26	58	90	122	154	186	218	250	282	314	346	378	410	442	474	506	
1	1	0	1	1	27	59	91	123	155	187	219	251	283	315	347	379	411	443	475	507	
0	0	1	1	1	28	60	92	124	156	188	220	252	284	316	348	380	412	444	476	508	
1	0	1	1	1	29	61	93	125	157	189	221	253	285	317	349	381	413	445	477	509	
0	1	1	1	1	30	62	94	126	158	190	222	254	286	318	350	382	414	446	478	510	
1	1	1	1	1	31	63	95	127	159	191	223	255	287	319	351	383	415	447	479	511	

DMX controller operation

When the Magnum 1500 is powered on, the LED on the DMX module next to the DIP-switches lights to indicate that a valid DMX signal is being received, and the machine starts to warm up. The Magnum 1500 is ready for operation after approximately 10 minutes.

Set the level on the Magnum 1500's DMX control channel to zero to cut fog output to zero. Increase the level on the machine's DMX control channel to increase the level of fog output.

DMX control channel levels

Level	Percentage	Effect
0-27	0-10%	No fog output
28-255	11-100%	Fog output increases in 24 increments

MAGNUM 1500 SPECIFICATIONS

Physical

Size (L x W x H)	445 x 204 x 178 mm (17.5 x 8.0 x 7.0 in.)
Height with bracket attached.	375 mm (14.8 in.)
Dry weight	11.1 kg (24.5 lbs)

Construction

Housing	Steel/aluminum
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Installation

Minimum clearance in front of output nozzle.	60 cm (2 ft.)
Minimum clearance around machine	0.1 m (4 in.)
Orientation.	Maximum 30° from horizontal

Fluid system

Fluid pump	Oscillating piston high pressure
On-board fluid capacity	2.3 liters (4.0 Imp. pints/4.9 US pints)
Maximum fluid consumption:	
.	80 ml (0.14 Imp. pints/0.17 US pints) per minute
.	64 ml (0.11 Imp. pints/ 0.14 US pints) per max. run time (48 secs).

Thermal

Maximum ambient temperature (T_a)	40°C (104°F)
Exterior surface temperature under steady state condition	50°C (122°F)
Nozzle temperature.	up to 200°C (395°F)
Time required to cool before service	Minimum 20 minutes

Control and programming

Control options:	
.	Remote control unit (supplied)
.	DMX with optional DMX interface module
Control protocol	USITT DMX-512 (1990)
DMX channels	1
DMX addressing	DIP-switch

Connections

Remote control (standard)	RJ-45
DMX (option)	3-pin locking XLR, pin 1 shield, pin 2 cold (-), pin 3 hot (+)
PC/uploader	serial port

Maximum power and current (+/- 5%)

EU model

@ 220 V, 50 Hz	1140 W, 5.3 A
@ 230 V, 50 Hz	1240 W, 5.5 A
@ 240 V, 50 Hz	1350 W, 5.7 A

US model

@ 110 V, 60 Hz	880 W, 8.0 A
@ 115 V, 60 Hz	960 W, 8.4 A
@ 120 V, 60 Hz	1040 W, 8.7 A

Fuse

Main fuse (EU model)	6.3 AT (P/N 05020020)
Main fuse (US model)	10 AT (P/N 05020025)

Included items (EU model)

3 m (9.8 ft) IEC power cable 3x1.0mm ² with Schuko male connector	
3 m (9.8 ft) IEC power cable 3x1.0mm ² with no male connector	
User manual	P/N 35000160
Remote control with 5 m (16.4 ft) cable and RJ-45 connector	P/N 92765028

Included items (US model)

2 m (6.5 ft) US power cable 18AWG with US male connector (UL approved)	
User manual	P/N 35000160
Remote control with 5 m (16.4 ft) cable and RJ-45 connector	P/N 92765028

Accessories

Magnum 1500 DMX interface module	P/N 91612000
JEM/Martin fog fluid, Regular DJ	Various sizes available
JEM/Martin fog fluid, Pro Smoke Super (ZR Mix)	Various sizes available
DMX termination plug (end of link), XLR male	P/N 91613017
5-pin male to 3-pin female XLR adaptor cable	P/N 11820005
Ducting system (includes adapter and 5m (16.4 ft.) of 4 in. (104mm) ducting)	P/N 92625008
G-clamp	P/N 91602003
Half-coupler clamp	P/N 91602005

Ordering information

Magnum 1500 (230 V, 50 Hz EU model)	P/N 91120000
Magnum 1500 (110 V, 60 Hz US model)	P/N 91120100



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