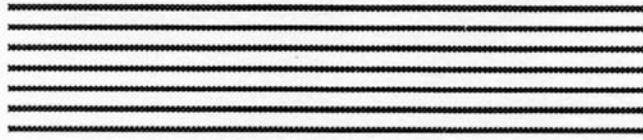


# JEM



# ZR31 High power smoke generator

## Instruction manual

VERSION 1.0

FOR OPTIMUM PERFORMANCE AND SAFETY  
PLEASE READ THOROUGHLY PRIOR TO USE.



# Introduction to ZR31

Thank you for purchasing the JEM ZR31 smoke machine. We trust you will be satisfied with your choice and will have many years of trouble free use.

**Please read this manual thoroughly before you switch on!**

## Machine specifications:-

	<u>220/240 volt</u>	<u>100/120 volt</u>
Heater wattage-	2500 watts	2000 watts
Pump wattage-	80 watts	80 watts
Amperage(heaters)-	10 amps	18 amps
Remote control cable-	7 metres	7 metres
Cycle timer-	yes	yes
Fog density control-	yes	yes
0 - 10 volt input-	yes	yes
DMX 512-	yes	yes
Fluid capacity-	5 litres	5 litres

## Connecting your machine to the mains:-

Carefully unpack your machine and remove any cable ties from the mains lead. Carefully strip the insulation off the three wires and connect as follows:-

- Brown - L ( live)
- Blue - N (neutral)
- Green/yellow - E (earth)

**THIS MACHINE MUST BE EARTHED!**

# HOW TO GET STARTED:-

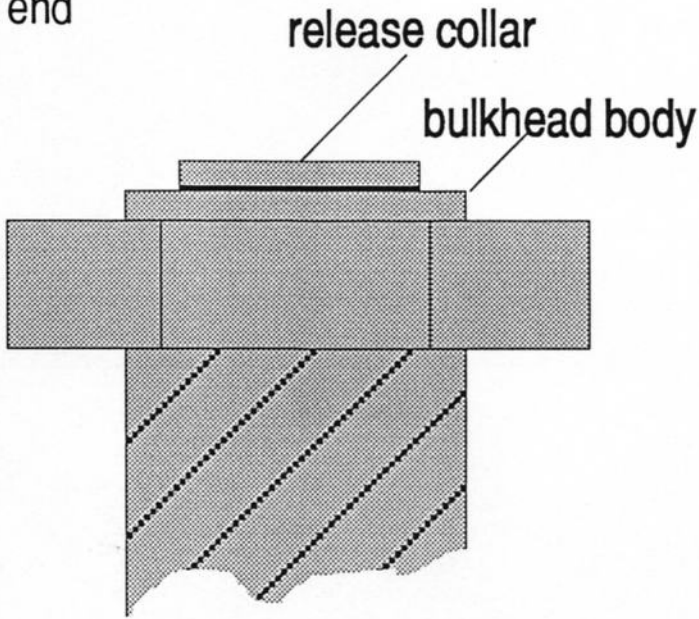
Once you have connected your machine to the correct power supply please follow these steps:-

1. Choose the control option that you require ie. remote, DMX or 0 - 10 volt.
2. Ensure the machine has a supply of JEM fluid connected.
3. Position the machine in a safe and well ventilated area.
4. Switch the machine on using the red mains switch (this will illuminate when in the on position).
5. If you are using the JEM universal remote press the ON button this will then turn the machines heaters on and after a short while (7 to 10 minutes) your machine will have reached operating temperature( the green READY LED will be lit).
6. Your machine is now able to operate. Ensure the supply line is connected and press the red button marked FOG. This will start the pumps. There will be a slight mechanical noise until the pumps are priming(approximately 20 seconds). Priming is only necessary after replacing a bottle of fluid.
7. If your machine has no output or output is low try turning the knob marked DENSITY LEVEL clockwise this will increase the output.
8. You may operate your machine using the auto mode by pressing the button marked AUTO and you will have full control over your machines output.
9. If your machine is used continuously on a high output eventually it will stop operating (this is a normal occurrence) and the green READY LED will go out. This just means that the temperature of your machine is low and it needs to reheat, this will only take a few seconds(5 to 10 seconds) then the green READY LED will illuminate and your machine is again ready to operate.
10. The machines LED heating cycle:-
  - Heating.....(unable to fire)
  - Heating and ready..... (able to fire)
  - Ready..... (not heating able to fire)

# Connecting your fluid feed to the bulkhead:-

## Connecting:-

1. Hold the nylon pipe close to one end
2. Push pipe firmly into bulkhead
3. Gently try to pull the pipe out. It should not move.



4mm push-in bulkhead

## Disconnecting:-

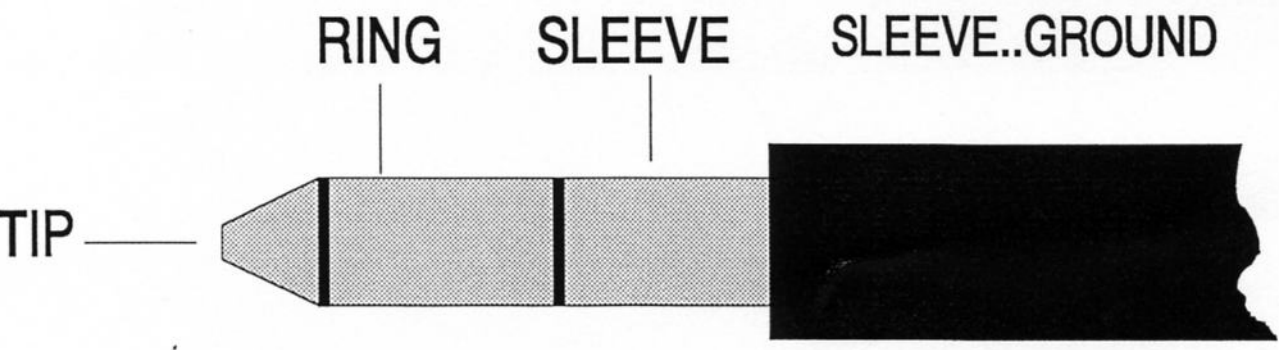
1. Hold the pipe firmly, close to the end.
2. Push down firmly with your fingers on the release collar.
3. Now pull the pipe free.

# 0-10 volt operation:-

The ZR31 may be operated from a 0-10 volt variable signal from a lighting control desk. This is connected via a 0.25mm stereo jack plug. Either a 0-10 volt variable voltage may be connected between the tip and sleeve or a variable resistor may be connected across ring and sleeve with the slider output on the tip.

The 0-10 volt sockets on two ZR31 machines may be linked together in order that the two machines can be operated from one remote control. Both machines must be fitted with universal remotes and they should both be switched on for this type of operation.

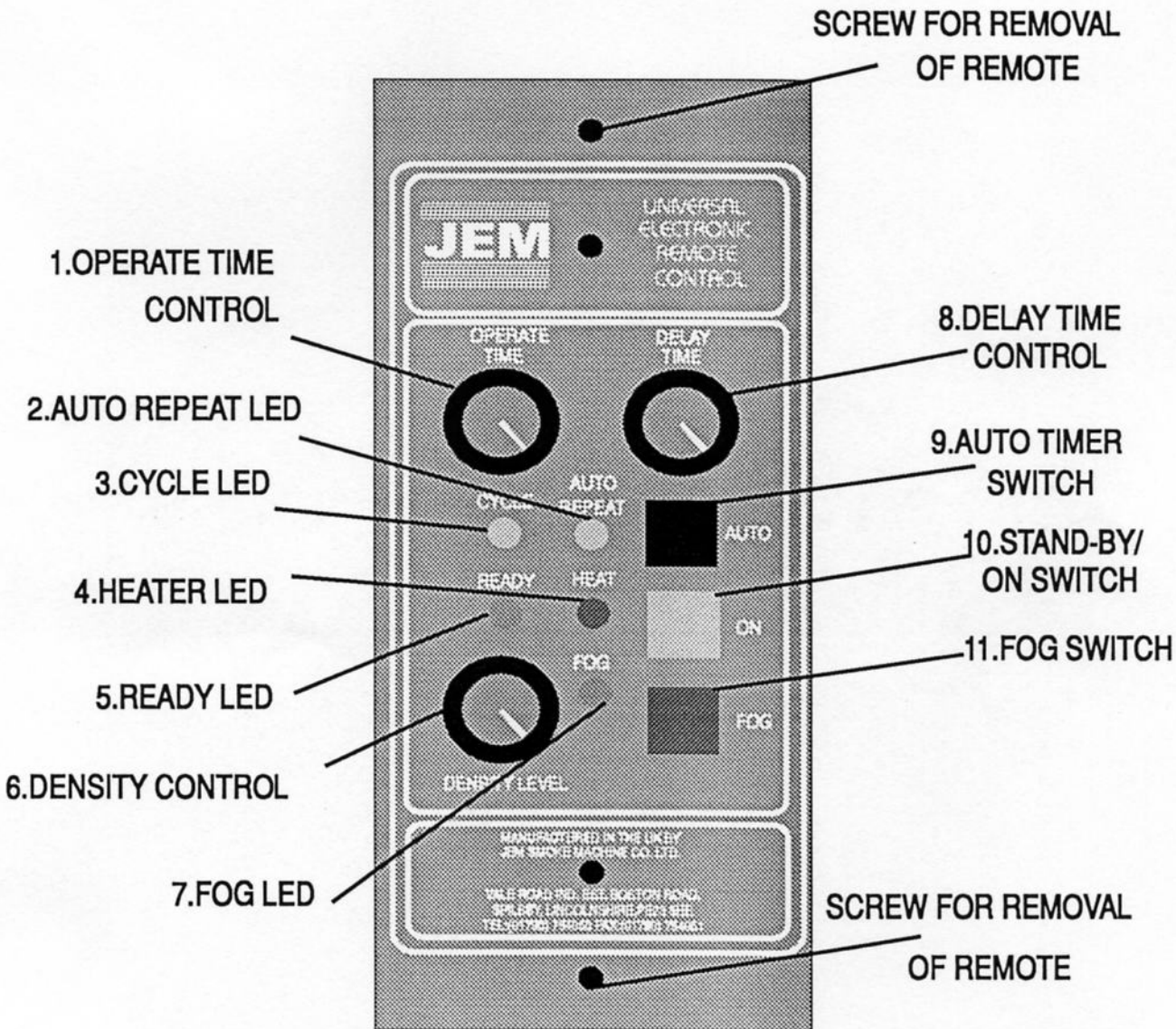
TIP.....0-10 VOLT INPUT  
RING.....+12 VOLTS OUTPUT  
SLEEVE..GROUND



0.25mm stereo jack plug

# ZR31 REMOTE CONTROL

The ZR31 remote control is a comprehensive controller for your high powered smoke machine, it not only has a versatile auto function but also lets the operator know the exact status of their machine.



## Remote control functions:-

- 1. OPERATE TIME: This determines the length of time the machine operates.
- 2. AUTO REPEAT LED: This shows that the auto function has been selected.
- 3. CYCLE LED: This shows the time your machine will fire in auto operation.
- 4. HEATER LED: This shows if your machine is heating.
- 5. READY LED: This shows that your machine is ready to operate.
- 6. DENSITY CONTROL: This determines the density of the smoke output.

## Remote control functions (cont):-

- 7.FOG LED:This shows that the machine is been operated.
- 8.DELAY TIMER SWITCH: This determines the length of time the machine waits until it operates again when in auto mode.
- 9.AUTO TIMER SWITCH: This puts the machine in auto mode.
- 10.STAND-BY/ON SWITCH: This turns the machine on and off.
- 11.FOG SWITCH: This operates the machine manually.

## DMX 512

### Connecting the ZR31 to DMX

Please ensure that the machine is turned on and connected to the correct power supply,also ensure there is fluid in the machine.Set the dip switches to the required address and check that the correct DMX cables are connected to the machines DMX sockets.

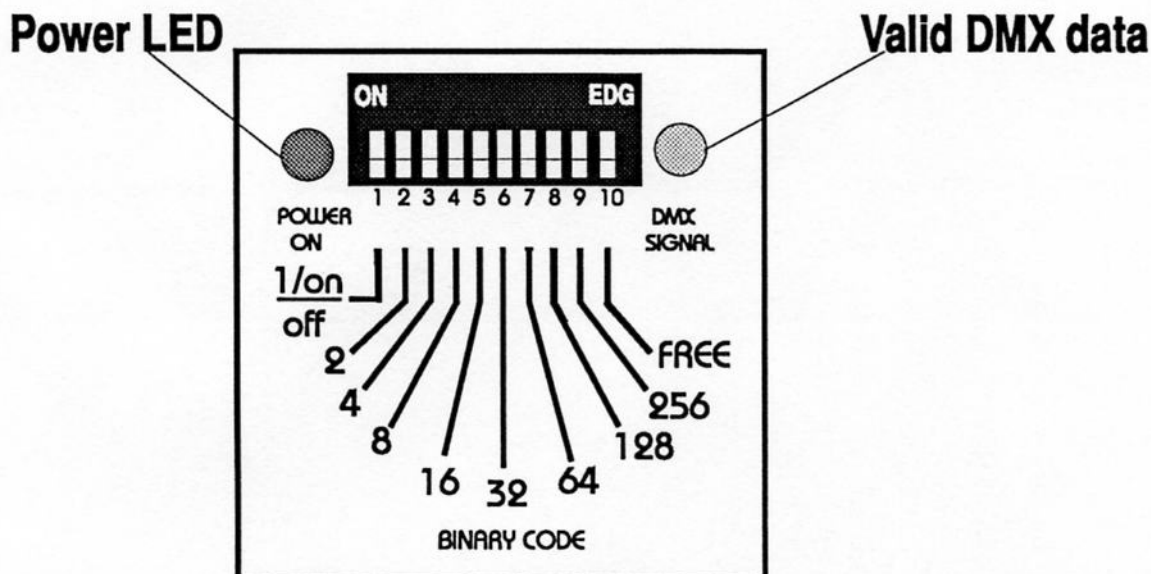
### Using the DMX 512

The ZR31 may be controlled via any lighting desk which has DMX 512. DMX in and DMX out sockets are provided so the ZR31 will fit any where in the dmx chain.The dmx interface used decodes the dmx into 0-10 volts dc and will allow the machine to heat up and fire without the remote installed.The address for the DMX lies under the remote control which is easily removed via the two screws.

Once the DMX has been selected and the control desk is switched on,the machine will start its heating process.This will take around ten minutes,the machine can then be operated via the control desk.

The machines output can be varied by using the fader that corresponds to the DMX channel that your machine is adressed to.The fader works like the density control on your remote control varying the output of the machine. the minimum output is dependant upon the type of control desk you are using;40% on the fader is usually the minimum output of the ZR31.

## DMX 512 address settings:-



**Note:-** Dip switch 1 is not on/off it is address 1

**The JEM ZR31 uses the standard binary address settings.**

### Example:-

To address your machine to DMX channel 50 select dip switches-  
2,5 and 6.     ( 2+16+32 =50)

To address your machine to DMX channel 200 select dip switches-  
8,7 and 4     ( 128+64+8 =200)

The green power LED will light up as soon as your ZR31 is switched on. If DMX is not connected to your machine or the machine has not been addressed then the yellow LED will start to flash. This is just to show that the machine is not set to run on DMX. Once the machine has been connected to DMX and addressed accordingly the yellow LED will stay on continuously.



JEM Guarantee:-

Your JEM ZR31 smoke machine comes with a five year guarantee comprising of:-

- 1 years parts and labour.
- 4 additional years parts only.

This guarantee will be invalid if:-

- You misuse,adapt or modify your machine.
- Allow unqualified personnel to work on your machine.
- Use any fluid other than JEM fluid.

Warning:-

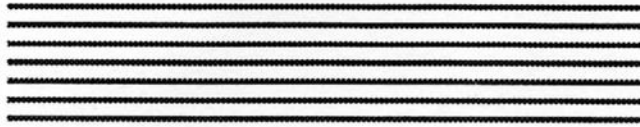
Operating The ZR31 At Minimum Output.

When operating this machine at minimum output,small droplets of fluid may occasionally be emitted from the output nozzel.This is a physical symptom which is quite normal in high powered smoke machines such as this.If continuous minimum output is required then it is advisable to fit a drip tray and to check the floor area in the close proximity to the machine and wipe clean if necessary.Failure to do this may result in the floor becoming slippery and causing personal injury.

JEM reserve the right to modify,adapt or change any specification relating to this product without prior notification.



# JEM



## TIPS ON SAFETY:-

### Do not:-

INSTALL DIRECTLY ABOVE PEOPLES HEADS  
USE ANY FLUID OTHER THAN A JEM FLUID.  
ALLOW UNQUALIFIED PERSONS TO WORK ON THIS MACHINE  
USE THIS MACHINE WHEN YOU KNOW THERE IS A PROBLEM.  
CONNECT TO A SUPPLY OTHER THAN THE ONE SPECIFIED.  
MODIFY, ADAPT OR CHANGE ANY PART OF THIS MACHINE.

### DO:-

READ THE INSTRUCTIONS THOROUGHLY  
ADHERE TO ALL THE SAFETY REQUIREMENTS.  
USE THE PROPER JEM FLUID.  
CONTACT YOUR DEALER WHEN YOU HAVE A PROBLEM.  
ENJOY THIS JEM PRODUCT.

THIS MACHINE WAS MANUFACTURED IN THE U.K. BY  
JEM SMOKE MACHINE COMPANY LIMITED.

VALE ROAD INDUSTRIAL ESTATE, BOSTON ROAD,  
SPILSBY, LINCOLNSHIRE, PE23 5HE. ENGLAND.

TEL:(01790) 754050 FAX:(01790) 754051

IF YOU REQUIRE TECHNICAL ASSISTANCE PLEASE CONTACT  
YOUR DEALER OR CONTACT JEM DIRECT.