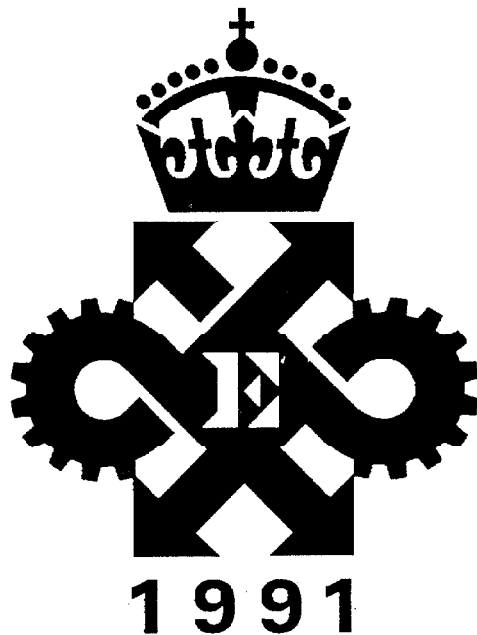




ZR20 MKII



INSTRUCTIONS FOR USE



INTRODUCTION

ZR20 MkII is a solid state high power portable fog generators incorporating the very latest developments and technology. The heart of the ZR20 is a laser trimmed platinum film sensor, unique to JEM, which provides precise temperature control. This sensor can detect temperature changes in a fraction of a second, allowing the circuit board to respond immediately to the needs of the machine. The sensor conforms to BS1904 Grade 2 Din 43760

The ZR20 MkII is powered by very powerful 1500 Watt high density heater and the pumping system is via a high-pressure oscillating pump developing up to 165 psi. The ZR20 is thermally protected by a temperature limiter - in the unlikely event of failure causing the heater to latch on, the limiter will automatically shut the power off to the heater. The limiters used are approved by VDE DEMKO KEMA SEMCO SEV BSI NEMKO UL VTE OVE.

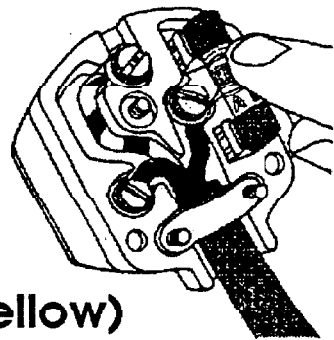


Be sure your machine is connected correctly. Do not cover the vents in the machine. Use in well ventilated areas.

N Neutral (Blue)

L Live (Brown)

E Earth/Ground (Green/Yellow)



INSTRUCTIONS FOR USE

Plug the ZR20 MkII into the mains and connect the remote to the machine. Ensure the fluid bottle has plenty of JEM smoke fluid.

Press the latching red 'ON' button to turn the machines heaters on.

The remote has a 'HEAT' LED which will glow red showing the machine is heating. After approximately 10 minutes the green 'READY' LED will illuminate showing that the machine can now be operated, but the J2/J3 will be at its minimum operating temperature until the red 'HEAT' LED turns off.



The machine will not operate in the RED ONLY mode.

HEATING INDICATORS

The ZR20 MkII is a powerful machine and is best operated in short bursts, rather than in prolonged bursts. Short bursts of fog will also produce a better, thicker fog.

'HEAT' LED ON ALONE Heaters on. Pump off.

**'READY' LED AND
'HEAT' LED ON** Pump operational but still heating. Machine is at its minimum temperature.

'READY' LED ON ALONE Heaters off and machine at maximum temperature.

If for any reason the vapourising system is not hot enough, the pump will switch off and the 'HEAT' light will come on while the machine re-heats.

OPERATION

When the ZR20 MkII is up to temperature the machine may be operated manually with the black 'FOG' button. The output of the machine is controlled with the 'DENSITY LEVEL' control from a very low level (control fully anti-clockwise) to full output (control fully clockwise). The 'SMOKE' LED will illuminate to confirm output of the machine.

Alternatively full automatic operation may be selected through adjusting the 'OPERATE TIME' and 'DELAY TIME' controls until the required output pattern is shown on the 'CYCLE' LED. The Timer may then be engaged with the black latching 'AUTO' switch.



Always ensure that there is plenty of JEM Fog Fluid in the machine. Do not allow foreign bodies to contaminate the fluid and never dilute the fluid with tap water. Allowing the pump to run dry continuously may damage the pump.

For clubs with a high fluid consumption, we supply a range of external tanks from 25 to 210 litres. When using these, make sure that the pipe between the external tank and the bulkhead is a maximum of 2¹/₂ metres long. The external tanks should also be mounted at the same height as the J2/J3.

PLATINUM FILM SENSOR

The platinum film sensor is extremely fragile and so great care must be taken when replacing this piece of equipment. It is located in a tube at the rear of the heater block. There is a 20 micron film of glass covering the platinum in the sensor.

Be very careful not to scratch the glass and also make sure all insulation is in good condition. Once replaced and before re-connecting the wires, use a suitable test meter and check for a resistance of 100 ohms across the wires, with the aluminium block at room temperature. Also check to see that there is no reading between either sensor wire and the chassis. A reading between wire and chassis is a fault condition and indicates an insulation breakdown or possibly a broken sensor.

0-10V OPERATION

The ZR20 MkII may alternatively be operated from a 0-10V variable signal from a lighting control desk. The connections are through the 0.25" Stereo Jack Socket on the rear of the machine wired as follows:-

Tip	0-10V Input
Ring	+ve 12 V output
Sleeve	Ground

Either a 0-10V variable voltage may be connected between Tip and Sleeve or a variable resistor may be connected across Ring and Sleeve with the Slider Output on the Tip.

INSTALLATION

When installing or using the ZR20 MkII be sure that the front of the machine and an area of at least 20 feet to the front of the nozzle is unobstructed. Also note that the output nozzle at the front of the machine reaches extremely high temperatures. For further information on the installation of the ZR20 MkII, telephone our technical department.

SERVICING THE MACHINE

In the event of having to do any servicing on the machine use a JEM authorised dealer who will be qualified to work on this equipment. A preliminary inspection may be carried out by first disconnecting the machine from the mains supply before any attempt is made to gain access to the machine's interior. Remove the fluid bottle from the machine. Remember to carefully retain all screws etc. Do not dismantle pipework joints unless there is a clear need to do so. Problems can arise from air-leaks in the fluid line due to badly re-assembled joints or damaged pipes causing the pump to not prime properly. Look out for tell-tale signs of air bubbles or for signs of escaping fluid if this is suspected. It may be necessary to bleed the system if excess air is trapped in the line.

QUICK-RELEASE PIPE FITTINGS

The ZR20 MkII uses some push-in compression fittings that can be easily pulled apart by hand. To release a nylon pipe, simply press the brass ring at the base of the pipe inwards with your thumbnail and pull the nylon pipe out. To re-assemble, simply push the pipe firmly back into the fitting. The joint automatically seals itself. Other compression joints use a brass nut and olive joint, and should be dismantled by an engineer. A sealing compound will be needed to properly re-seal these types of joints.

PARTS AND LABOUR GUARANTEE

The ZR20 MkII has a 5 year guarantee:- 1 year parts and labour plus an additional 4 year parts guarantee. To qualify for the additional 4 year guarantee, your ZR20 must be checked over annually by JEM Smoke Machine Co. Ltd., or an authorised JEM dealer, JEM distributor or JEM qualified personnel. Machines produced from May 1986 are all fitted with fluid fillers which can be found on the inlet to the non-return valve. We recommend these are replaced or cleaned once a year by qualified service personnel. ***This guarantee is void if the ZR20 MkII is tampered with, misused, repaired by unauthorised personnel, suffers accidental damage or is modified in any way. JEM Smoke Machine Co. Ltd reserve the right to change or alter specifications without notice. JEM Smoke Machine Co. Ltd will not accept liability for freight, carriage, packing or any ancillary charges.***

OPTIONAL EXTRAS

Complete Ducting System inc. Adaptor
External Tanks from 25 to 210 Litres * Infra-red Density Sensing System

Q

WHAT DO I DO IF PROBLEMS ARISE!



A

1. DON'T DESPAIR! CHECK OBVIOUS POINTS LIKE THE FUSE AND IF YOU HAVE FLUID IN THE MACHINE. IS THE RED LIGHT ON PERHAPS? ACTUAL FAULTS ARE RARE!



A

2. IF ALL ELSE FAILS, CALL YOUR DEALER FIRST - OR CALL US! WE KNOW OUR MACHINES INSIDE OUT AND WILL KNOW WHAT TO DO!



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JEM SMOKE MACHINE CO. LTD.

INSTRUCTIONS FOR USE

Please read before using machine

WARNING

THIS MACHINE AND JEM FLUIDS HAVE BEEN TESTED AND APPROVED WORLDWIDE BY GOVERNMENT SAFETY AUTHORITIES AND INDEPENDENT LABORATORIES.

USE OF ANY OTHER FLUID IN THIS MACHINE COULD BE DANGEROUS TO YOUR HEALTH AND COULD ALSO SERIOUSLY DAMAGE YOUR MACHINE, WHICH WOULD THEN REQUIRE EXPENSIVE REPAIRS, AND WILL IN ADDITION RENDER THE JEM WARRANTY/GUARANTEE INVALID.

DO NOT UNDER ANY CIRCUMSTANCES USE ANY OTHER FLUID IN THIS PRODUCT - IT COULD BE DANGEROUS.