



# B1 Operating Instructions

## Battery Powered Smoke System

ID: 17041

# Please read these instructions fully before operating your Smoke Machine!

## Equipment Supplied

- B1 Smoke System
- Battery Pack / Cradle
- Charger
- 250ml Fluid Reservoir with Silicone Fluid Pipe

Please check whether all the products you ordered are supplied.

## General Operating Principle

The B1 is a battery operated, microprocessor-controlled fog generator. It is based (as most fog generators) on the vaporizer principle, i.e. a glycol fluid is evaporated and condenses into fog when leaving the fog nozzle. However, the B1 only heats when fog is actually needed.

Because of the sleep mode the machine uses only 1.5 milliamperes in idle status and consequently it may remain connected to the battery for many hours with minimal discharging – the standby-time is approx. 250 hours on a 12Ah battery

## Quick Reference

Only use the B1 in dry and well ventilated areas with:

- Sufficient distance (at least 60cm) from flammable materials
- Very little vibration
- An ambient operating temperature between 5°C and 45°C
- A relative air humidity of less than 80%

Having filled the reservoir with B1 smoke fluid and connecting a fully charged battery to the B1 you produce smoke by depressing and holding down the test button on the handle.

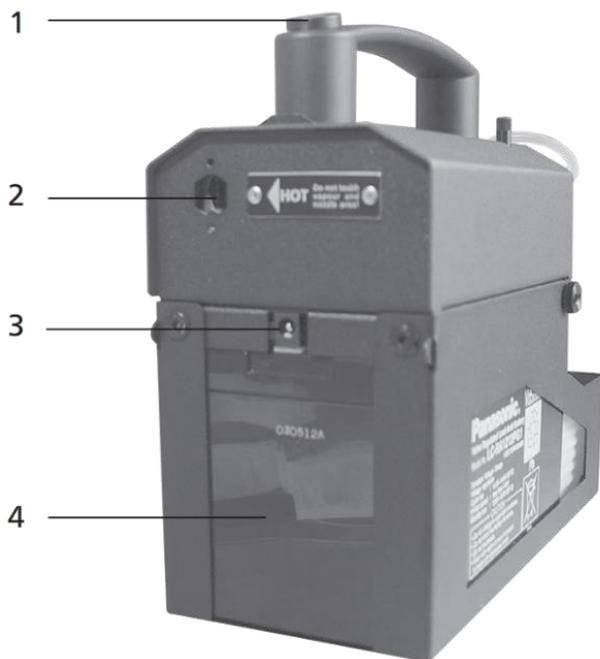
The sequence is then:

- 1 second delay (whilst the coil heats)
- Pump starts
- Smoke is produced

To stop producing smoke release the button - smoke will cease after approx. 10-15 seconds.

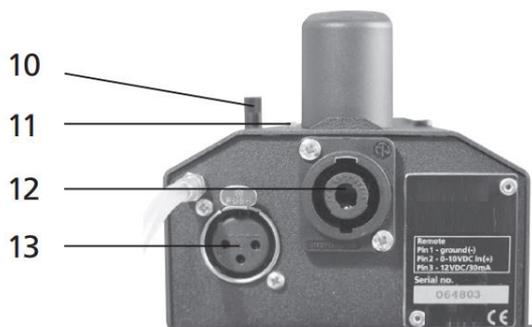
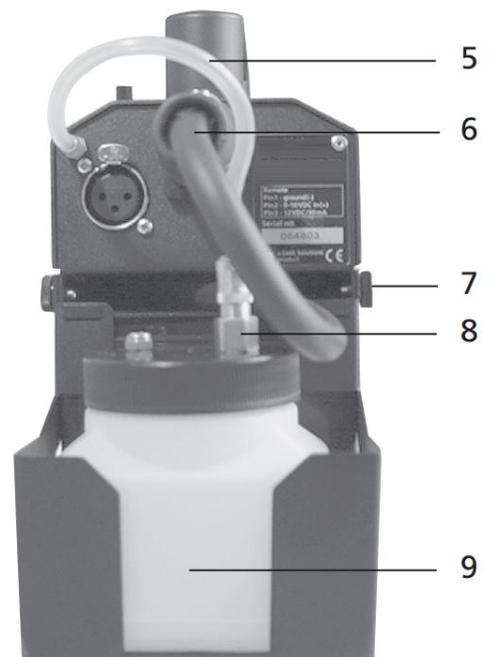
## **Concept Engineering / Smoke Systems Limited**

## Overview



- 1: · Start button
- 2: · Fog nozzle
- 3: · Socket for charger
- 4: · Battery pack  
(Battery with housing,  
PCB, fuse and connector)

- 5: · Fluid tube
- 6: · Battery connector (Speakon)
- 7: · Screws („Rändel“)
- 8: · Quick-connector for fluid tube
- 9: · Fluid tank



- 10: · Adjusting knob
- 11: · LED/Battery status display
- 12: · Socket for battery plug
- 13: · 3pin-XLR-socket

## **Technical Data (Smoke Machine)**

<b>Power requirement</b>	400 Watts
<b>Voltage</b>	12 V battery
<b>Warm up time</b>	1 second
<b>Fluid tank capacity</b>	250ml
<b>Fluid consumption</b>	10ml per minute (continuous / maximum)
<b>Temperature control</b>	Microprocessor
<b>Control / Activation</b>	Test button XLR connection for remote operation
<b>Dimensions</b>	16cm x 10cm x 7.5cm
<b>Weight</b>	970g

## **Preparation / Installation**

Fully charge the B1 battery, see “The Charger – Operation”.

Pour B1 Smoke Fluid into the fluid bottle and firmly lock the bottle. Plug the connecting spout of the fluid tubing into the quick connector of the fluid bottle (audible click). Check the fluid bottle and smoke fluid are clean, so that no dirt (fluff etc.) can be sucked in by the pump. Even the smallest impurity immediately leads to clogging of the machine.

Connect the battery pack to the machine. Plug in the battery connector (Speakon) (6) into the socket (12), at the back of the machine. Press Smoke switch (grey) (1) to create smoke.

## **Remote Operation**

You may control remotely using an optional XLR Remote, DMX Interface, Timer Interface or Radio Remote Control.

## **Battery Status Display / Sleep Mode**

The yellow light-emitting diode (LED) on the B1 indicates how strong / efficient the battery still is when it receives an activation signal, and / or when it must be recharged.

- LED flashes slowly: Battery capacity of 15% - 100%, the battery is fully operational.
- LED flashes fast: Battery capacity below 15%, the battery should be changed and/or charged.
- LED lights up permanently: the battery is flat or the vaporizer is damaged.
- LED does not light although the battery is connected: Approx. 40 Seconds after the last fogging the B1 changes into the sleep mode automatically. It then only needs a current of 1.5 mA. To awake the machine press the Test Button on the B1 or send a remote signal to produce smoke

## Safety Notes

- Very hot vapour escapes from the nozzle. Avoid objects coming into contact with the smoke within 60cm of machine
- Occasionally very hot droplets of fluid may escape when in operation, so never aim at persons directly and keep a minimum distance of 3 m to the nozzle.
- Never touch the nozzle when in operation
- If the machine is used is housed in an enclosure, allow minimum of 75mm on all sides for cooling. Ensure the enclosure in non-flammable
- Keep a minimum distance of 60cm to all flammable, combustible objects and objects sensitive to heat.
- Never point the fog at sources of ignition
- Never open the machine and leave the machine unattended when connected to a power supply.
- We recommend a visibility of 2 m+ when people are in smoke filled environments
- Only use the supplied B1 Smoke Fluid. Different types of fluid do not generate the fog you require and can damage your fog generator and void your warranty
- Do not drink the fog fluid. Keep it away from children. In case of eye contact, rinse with a lot of water. Consult a doctor should you have accidentally swallowed some fluid.
- Spilled fluid or splashed fluid droplets can cause slip hazard. Mop up the fluid and dispose of it according to the regulations. B1 Smoke Fluid is completely water-soluble and biodegradable.
- Smoke may activate smoke detectors.

We recommend: that those suffering from severe respiratory conditions / asthma should not be exposed to dense concentrations of artificially produced fog

## Smoke Fluid

**Use only original B1 Smoke Fluid.**

Use of other liquids can block the vaporizer and void the warranty.

Please do not use B1 Smoke Fluid if it looks blue or green. This can clog the vaporizer.

NOTE: If the B1 will not be in use for a long period, please empty the fluid tank and pour the B1 Smoke Fluid back into the original fluid bottle despatched with the unit. **We recommend changing the B1 fluid annually.**

## The Battery Pack

The supplied battery is a maintenance free 12V lead-gel accumulator which is calibrated in the best possible way with the connected loads of the B1. It can be used in any attitude. The 12v battery is connected to the B1 via a SpeakOn NL4FX high current plug. When used correctly, the battery maintains its capacity for several years and / or several hundred charge/discharge cycles.

The battery has a capacity of 12 Ah and is normally supplied in a charged state. A fully-charged battery can generate more than 100 fog emissions of 4-5 seconds. Alternatively, it can produce fog continuously for approximately 10 minutes.

Lead-gel batteries are a very robust bank of capacitors which need little care and maintenance. **However, their working life can be shortened rapidly by storing them when discharged. Always ensure they are fully charged prior to storing, and ensure the SpeakOn connector to the B1 is disconnected from the machine prior to storage. Even in storage, we recommend that the battery is charged every 2/3 months.**

## Safety Regulations (Battery)

The supplied battery can supply high discharging currents, therefore:

- Never short-circuit the battery.
- Never change the cable sizes or short circuit the Speakon cable.

Positioning the battery:

- Make sure the battery is not placed near sources of heat. Batteries can explode if subjected to significant heat / fire.

Using the battery in enclosures:

- Don't use the battery in completely sealed casings or units.
- Ensure adequate ventilation.

Dismantling the battery:

- Don't dismantle batteries as they do contain electrolytes which may damage clothing or hurt the skin. If the electrolyte comes in contact with skin or eyes, immediately rinse with water or consult a doctor.

## Technical Data (Battery)

<b>Model</b>	Panasonic LC-RA1212PG Lead-gel battery
<b>Output Voltage</b>	12V / 12Ah
<b>Temperature Range</b>	5°C to 45°C
<b>Dimensions</b>	22 x 10 x 11.5cm
<b>Weight</b>	4.5kg

## **The Charger**

An automatic charger for the 12V lead-gel battery is supplied. Charge the battery of the B1 with the SpeakOn connector to the B1 machine disconnected.

- Connect the charger to a power socket (100-240V~/50Hz-60Hz).
- Connect the output line of the charger with the battery to be charged.
- Check whether the charger display (LED) lights red / orange (if so the battery does need charging)
- A green LED on the charger shows that the battery is fully charged.
- When finished disconnect the charger from the socket.
- Disconnect the battery from the charger.

If the control display lights up red permanently, this might indicate a problem with the battery:

- Short circuit within the battery or in the output lines
- The battery voltage cannot reach 13.8V (especially in the case of old batteries).
- Protect the unit against rain.
- Use the charger exclusively for charging the B1 battery.

## **Technical Data (Charger)**

<b>Model</b>	MPP 15
<b>Input Voltage</b>	90 – 240v~/50Hz-60Hz
<b>Output Voltage</b>	12 V=/1000 mA
<b>Temperature Range</b>	0°C to 4°C
<b>Display</b>	≤75 mA LED lights green (battery is fully charged) ≤300 mA, U <sub>b</sub> > 6V LED lights re (battery is in charge)
<b>Dimensions</b>	8.75 x 5.15 x 3.4cm
<b>Weight</b>	165g

## **General Service & Maintenance**

There will be no fog if:

- The battery is discharged (yellow charge indicator (LED) lights up permanently on the B1, the pump automatically cuts off) = charge the battery
- The fluid tank is empty = refill the fluid tank (do not run the fluid tank dry if possible as pump damage can occur)
- The vaporizer is clogged or broken

The yellow LED lights permanently if:

- The battery is discharged = disconnect the machine from the battery and charge the battery
- The vaporizer is clogged or broken

To get the best out of the B1:

- Make sure the fluid bottle is clean and free from any contamination / dirt
- Wipe the unit from time to time, especially if you use it in a confined enclosure.

## **Concept Engineering / Smoke Systems Limited**

## **Warranty Conditions**

The B1 is guaranteed for 12 months against faulty parts or manufacture, provided it is used in accordance with these instructions. The B1 is a sealed unit and must be returned for service / maintenance to Concept.

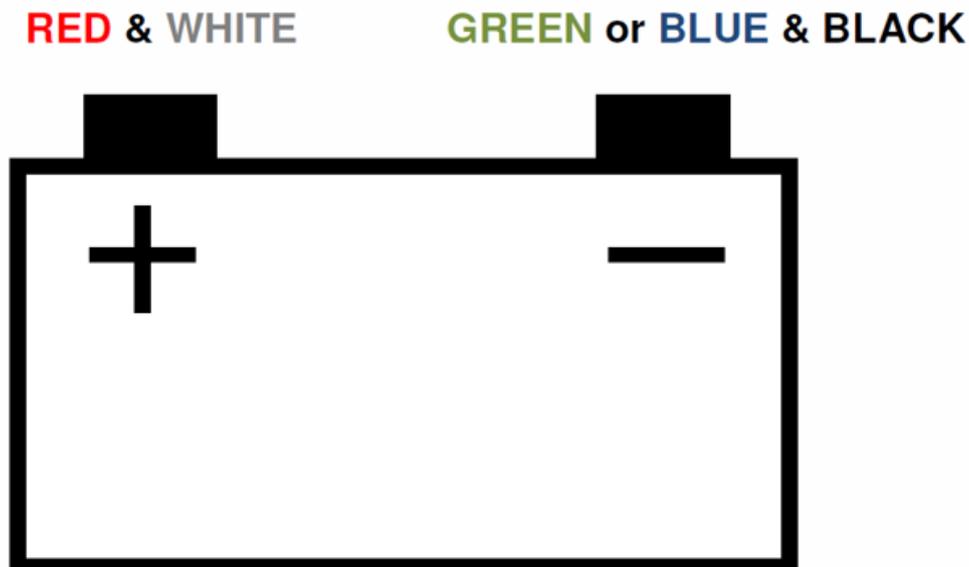
If you should send the unit for service, do not forget to remove any liquid from the fluid bottle.

## **External Battery Lead (Optional Item)**

The extended battery lead provided (to allow operation from an independent 12v DC battery of suitable capacity) the red and white leads are positive (+ve), the green (or blue) and black leads are negative (-ve).

For best performance keep this lead as short as practical, ideally cutting it back from the length provided to reduce voltage drop and optimise performance. This lead should be fused at 50 / 60A on the +ve or -ve line.

If a longer run to the battery is required, use heavy duty battery cable eg 10mm<sup>2</sup> (suitably fused at source to protect the cable), and step down to the external battery lead (fusing at 50 / 60A on either the +ve or -ve line) as close to the B1 as practical.



## Accessories / Consumables

### Heavy Duty Carry Case

**Order Code: (FC-ECO-B1)**

These custom made transport cases are specifically designed to protect the B1 smoke machine from the elements. Each case has space for the B1 (complete with battery pack), 500ml of smoke fluid & the charger. The case is waterproof, has a built-in pressure valve, corrosion proof & can be padlocked.



### Remote Operation

**Order Code: (B1-DMX, B1-TIMER, B1-RRC)**

The B1 DMX Module will allow you to operate the B1 via a 512 channel DMX control source. A clear digital display will indicate what channel the B1 is set for.

The B1 Timer is a simple plug in module that will allow users to digitally control how long the B1 will make smoke for and also the interval (rest) period.

This radio remote control has a range of 100 mtr's (line of sight). It comes as a complete set including both the receiver and transmitter. The remote is set for momentary smoke.



### Spare Battery Pack & Cradle

**Order Code: (B1-SBP)**

A spare battery pack and cradle is available for use with the B1. This battery (and the standard battery that comes with the unit) will last the B1 approx. 10 minutes on continuous maximum output. The spare battery pack comes complete with the integrated battery connection lead.



## Accessories / Consumables

### **B1 Ducting Adapter & Hose**

**Order Code: (B1-ADAP, HOSE-NEO-32)**

This 32mm adapter is custom made to suit the B1 Smoke Machine. It can be used in conjunction with the 32mm Hose (see below) to precisely place the smoke where it is needed.



### **Mains Adaption Kit**

**Order Code (B1-MAK)**

If longer running periods are required or you run out of battery, the mains adaption kit can be a useful accessory.



### **B1 Smoke Fluid**

**Order Code: (S/FLUID-B1-5L, S/FLUID-B1-2.5L, S/FLUID-B1-0.5L)**

Additional Smoke Fluid is available for the B1 in 5Ltr, 2.5Ltr or 500ml containers.



**Other items & spare parts are available – contact Concept for more information.**



