The SB200 Winter

Owner's manual



Read the service and maintenance manual carefully before using the machine and take note of the safety instructions to avoid potential dangers. Store the operating manual away safely for future reference. More copies of the operating manual may be obtained from Snow Business.

Machine types: SB200W 230V 11.7 amps Serial number: SB200W-034 onwards Year of construction: 2015 onwards

Version: SB200W

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1 General safety instructions

The falling snow machine in question is assembled with moving and electrical parts. Misuse or nonobservance of the safety instructions may have serious consequences for the operator and his/her health and could result in injury.

Maintenance should be carried out by suitably qualified persons only, In addition, they must have read the service and maintenance section of the manual accurately and must adhere to the safety instructions:

- Read and comply with the instructions in the service and maintenance section of the manual.
- · Comply with all warning and safety instructions on the machine and in the operating manual.
- · This machine should only be used for the intended purpose the machine was designed for.
- · Disconnect the mains supply before assembly/disassembly.
- Only use the recommended snow fluid. Use of the wrong fluid may result in poor performance and/or damage to internal parts of the machine.
- To avoid the inappropriate use of the machine by strangers, or children do not leave a machine which is ready to operate unsupervised in an unsecure location.
- · Do not place the machine on an unstable surface.
- Only use the machine with a 230 volt mains supply protected by a 20 amp Circuit breaker.
- Ensure that the machines air intake grill is not obstructed before operation otherwise performance will be impaired and parts of the machine could be damaged.
- · Provide for sufficient supply of fresh air, to avoid damage through overheating of the blower.
- Only qualified personnel may disassemble service and repair the machine. The opening of the machine, removal of the outer cover, or similar parts, as well as the wrong assembly of the machine, increases the risk of dangerous electrical shocks and other risks.
- · Only use the machine within the authorised operating temperature range (see section 9) to avoid damage.
- · Do not make any changes to the machine. A change may lead to new safety risks and the loss of the claim on guarantee.
- · Observe the rules and regulations of the Health and Safety at Work Act to avoid accidents.

1.1 Obligations of the end user

All people who work with or who have been instructed to work with the machine must commit themselves, before they start working, to:-

- · Adhere to the standard instructions of the health and safety at work act.
- To read the chapter on safety and the warnings in this operating manual and to subsequently confirm with their signatures to their employer (if applicable) that they have understood these.

1.2 Dangers involved with use of machine

This machine has been designed to be safe in normal operation, however misuse of the machine may render it unsafe to use. Should the operator suspect that the machine has been misused or damaged in any way they should cease operation of the machine and report their concerns either to their own maintenance team or to Snowbusiness international Ltd.



1.3 Intended use

This machine is to be used for the purpose of creating an artificial falling snow effect using only fluids recommended by Snow business.

1.4 Guarantee and liability

Guarantee related claims and demands of liability following injury to people and damage to property are invalid when they are traced back to one, or more of the following causes:

- · Use of the machine for a purpose other than the intended use.
- · Improper assembly, putting into service, use and maintenance of the machine.
- Non-observance of the instructions in the operating manual related to transport, storage, assembly, putting into use, operation, maintenance and preparation of the machine.
- · Self-conceived structural changes to the machine.
- · Repairs carried out improperly.
- · Interference of foreign objects or acts of nature

2 Safety instructions, standard information

2.1 General

You have acquired a "state of the art" falling snow machine. This machine has been constructed in line with European guidelines and standards. It carries a CE-identification plate. This ensures the long-term availability of spare parts and guarantees that European safety standards have been met in its design and construction. This handbook contains information about the use and handling of your machine type *SB200W* including technical detail on the operation, maintenance and safety.

To get the maximum performance out of your machine and get to know all the safety-technical aspects, a fundamental study of this operating manual is imperative. As with any machine which is used improperly, or serviced incorrectly, this machine could be dangerous if so used, or serviced. Therefore, you should please give special attention to our safety instructions. The SB200W offers you the following features and advantages:-

- A tough outer flight case with wheels which doubles as a weatherproof and soundproof operating case to IP24 standard.
- · Multiple gun mounting options.
- · Wired remote control with flake size adjustment, fan speed adjustment, pulse timer & on/off.
- · Programmable 24/7 on/off timer.
- · Full 3 channel DMX control, including flake size adjustment, fan speed adjustment & on/off.
- · Fluid tank empty detection with auto pump shut-off.
- Quiet operation.
- · Ability to use a wide range of fluids.

Snow Business International offers reliable and fast after sales service with every machine delivered. For answers to technical questions, or questions about servicing, please contact us during our office hours which can be found on our website.



2.2 Explanation of symbols and instructions

For greater clarity and to emphasize instructions related to safety, the following icons will be used:



This symbol indicates real danger threatening the lives and health of people. Non-observance of these instructions may lead to serious injury.



This symbol indicates possible danger threatening the lives and health of people. Non-observance of these instructions may seriously damage the health of people and may even result in life-threatening injury.



This symbol indicates a real danger of electrocution. Non-observance may seriously damage the health of people and may even result in life threatening injury.



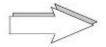
This symbol indicates that the user should refer to this operator's manual.



This symbol indicates a temperature limitation.



Separate collection, handling and disposal for waste electrical and electronic equipment and its components



This symbol indicates important information.



2.3 Informal safety measures

The operating manual must be stored at the place of operation at all times. In addition to the operating manual, the generally prevailing and local rules for accident-prevention and environment protection must be kept at hand and observed. All safety and danger instructions on the machine must be kept in a condition which ensures their legibility. The operating instructions can also be downloaded from www.snowbusiness.co/



2.4 Training of operators

Please read the manual before:-

- Operating the machine
- Mounting and rigging the machine.
- Servicing, cleaning and maintaining the machine.

This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision."



2.5 Safety measures with normal use

Before starting the machine, check the security of electrical connections and the fluid level.



2.6 Dangers of electrical energy

Only an authorised electrician may execute electrical work. The electrical equipment of the machine must be checked regularly. Defects such as, loose connections, scorched/damaged cable, or broken connectors must be repaired immediately.

2.7 Maintenance and service, trouble elimination

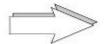
Carry out the prescribed adjustments, maintenance work and inspections timely. The machine must remain disconnected from the power supply during all maintenance, inspection and repair work (See section 5).





2.8 Structural changes to machine

No changes, additions, or modifications may be made to the machine, without the permission of Snow Business International Ltd. Only use spare parts and parts subject to wear which are original. It cannot be guaranteed that parts bought from third parties were manufactured and finished to the required standards for use and safety.



2.9 Cleaning of the machine

Disconnect the machine from the power supply before cleaning. The machine should be cleaned with a damp soapy cloth only.

2.10 Operating noise

The normal on-going noise level of the machine measured outside the case, amounts to a maximum of 70db case, 75db gun.

2.11 Copyright

Copyright on this operating manual remains with Snow Business Ltd. The operating manual is intended for the use of the operator and his/her staff only. It contains information and instructions which may not be:-

- · Faxed
- Distributed
- · Or otherwise communicated to others, either in full or in part without express permission of Snow Business International Ltd.

2.12 Taking possession of the machine

When the machine is delivered, it must be checked for completeness against the delivery note.

Please check if the machine has been damaged in transit. Possible damage must be reported in writing to us within 8 days of delivery.

2.13 Registration

The buyer of a used machine, in other words, a machine which was not obtained directly from Snow Business International Ltd, is obliged to provide their address, with the data on the machine plate, to the manufacture, or his assignee, in writing within 4 weeks after the date of buying the machine.



2.14 General

Safety instruction: All cleaning and assembly work, including the transport of the machine, should only be executed with the power supply disconnected. Non-observance of this safety instruction may result in serious dangers from inadvertent start-up, or other sources of danger.





2.15 Installation site

Inside the casing of the machine are many different electrical units which must not, in some cases, come into contact with water. It must, therefore, be assured that the machine is stood on dry ground, not only while it is working, but also when it is switched off and resting. It is advisable in hot weather not to stand the machine in direct sunlight as this may cause overheating of the internal parts of the machine. It should also be ensured that the air supply at the installation site is sufficient. When the air supply is insufficient overheating of the motors may take place. Air-intake grills which are partly blocked will impair the air supply to the machine. The machine is designed to create large volumes of falling snow. When used indoors small rooms will quickly become saturated with snow if the flake size is too large. The flake size should be turned down so as to match the snow production with the volume of the space into which it is being blown.



2.16 Place of machine use

The machine was conceived for use on film sets, in theatres and at live events. Compliance with the permitted operating temperatures is a precondition for the secure and trouble-free use of the machine. In the Chapter Technical data (section 9) you may read what the permitted operating temperatures are.

2.17 Foreign objects

Contamination of the snow fluid may lead to blocking of the fluid filter. If the filter has become blocked it should be removed from the fluid tank and back flushed with clean water or compressed air to clear it. Any contaminated fluid should be disposed of. The grill built into the rear of the machine is sufficient to stop large objects being sucked into the air intakes of the machine. However dust and small objects may get past the grills. These objects may build up in the snow gauze of the machine. Refer to section 5.3 for details of how to remove and clean the gauze.

2.18 Electrical connection

The machine may only be connected to a power supply of 230V / 50Hz alternating voltage with a UK 3 pin plug fitted with a 13 amp fuse. The power supply should be protected by a 20 amp circuit breaker. Deviations in voltage and frequency of \pm 5 % poses no danger of damage to the machine and is permitted. While the machine is used, the electricity cable must not be rolled up on a drum, or similar object, but should be completely unrolled to prevent it overheating.

Please comply with the manufacturer's instruction when using this device in conjunction with electrical generator equipment.



3 General information

3.1 Description of the machines

The SB200W produces an artificial falling snow effect by combining snow fluid, air and water together to form dry foam. The machines are designed to be either run from a wired remote control or a DMX controller. DMX control requires 4 channels of the controller to be used (CH4 not used but should be reserved). Using an address selector on the inner lid of the machine up to 255 Start channels can be selected thus allowing multiple machines to run on the same DMX Bus. Plugging in of the wired remote automatically overrides the DMX control, DMX control is returned upon its removal.

The status warning light on the control panel of the machine warns the user of a machine fault.





When the machine is switched on the blowers will automatically come on. This is a safety measure, it prevents the machine from flooding were the fan to be switched off and the fluid pump left on.

3.2 The internal control panel SB200W

- 1. DMX selector
- 2. DMX in
- 3. DMX out
- 4. Remote socket
- 5. Booster socket
- 6. Timer on/off switch
- 7. Timer fuse
- 8. Status LED
- 9. Pump and heater fuses
- 10. Mains ON/Off
- 11. Mains Fuse
- 12. CE label
- 13. Timer hand controller
- 14. 24/7 timer.



3.3 The external view SB200W



- 1. SB200 W machine
- 2. Air hose
- 3. Uk 3pin to c-form plug adapter
- 4. Timer hand controller
- 5. Fluid line connector (on later models the hand pump is removed)
- 6. Snow gun
- 7. Fluid line connector (on later models the spiral tube and non-return valve is removed)
- 8. Air hose connector



3.4 The accessories



- 1. Hose (Nos spiral hose or non-return valve on later models)
- 2. Timer hand controller
- 3. Fluid tank connector assembly (no hand pump on later models)
- 4. C-form to 3pin plug adapter
- 5. Gun



4 Operating the machine



4.1 Loading and unloading of machine

The machine may be moved using the handles on the main part of the outer case of the machine and its casters or by grasping the machine at each end. The machine is heavy and requires 2 people to lift it.



4.2 Moving and setting up of machine and the snow gun

The machine should be stood on a flat surface which satisfies the following conditions:-

- Solid, dry ground.
- Free from dust and loose objects (which may be sucked into the air intake).

The Snow Gun may be mounted on a lighting stand or hand held.



When the gun is suspended from a lighting truss it is advisable to use a safety lanyard. If in any doubt the advice of a suitably qualified rigger should be sought before mounting the gun on a lighting truss.



If the gun is mounted on a lighting stand using the lighting stand spigot the stand must be:-

- Capable of supporting at least 10KG.
- Stood on firm level ground.
- In the event of high winds weighted or tied down in such a way as to prevent it from toppling over.

You should always wear a hard hat when working with items above head height and re-enforced toe-cap working boots are advisable.



4.3 Stand-alone operation

The machine is designed to run on its own switched on and off by its timers. It is advisable to check the machine as often as is practical and special attention should be taken to ensure it doesn't run out of fluid.

4.4 Timer hand controller operation

In order for the timer hand controller to operate it should be plugged into the 5pin remote socket. N.B. when plugged in the wired remote overrides the DMX control function. The remote is powered from the main SB200W unit and does not require a battery. When the remote is plugged in and the SB200W unit powered the red power led will be illuminated. To switch on the machine the on/off/timer switch should be switched to the on position. Once this is done the Green "Running" led will illuminate. The left hand control knob controls the air speed of the machine. The scale represents air speed in meters per second. With the control switched on the minimum air speed is 15 meters per second (see 3.1).

The right hand control knob governs the flake size by controlling how much fluid is pumped to the machines nozzle. A large variation of flake size and snow volume can be achieved by adjustment of the two controls. The centre knob controls the timer function. To set the timer switch the machine to timer and twist the timer control knob (within 5 seconds) Next set the run time by twisting the knob back and forth and pushing the knob to set seconds, minuets and hours. Next set the cycle time in the same way. The cycle time is the total time for each on/off cycle. For example 1 min every 5 mins set run time to 1 min and cycle time to 5 mins and the timer will work out for you that that is 1 min on and 4 mins off. Once you have set hours in cycle time and pushed the knob there will be a five second count down and the cycle will commence. To stop it turn timer to off. N.B. If power is lost at any point the timer will automatically re-start when the power is re-connected. If you make a mistake or wish to change the timer setting just go around again. The last program is always held in the memory of the hand timer.

4.5 24/7 Timer control

The 24/7 timer control is used in conjunction with the timer hand controller. It can be used to turn the machine on in the morning and off at night. Programing the timer by hand is a complicated procedure and should you wish to utilise this function we recommend that you purchase a programmer and dongle. The RS part numbers are, Programmer RS453-934 and Dongle 453-930. Alternativley we can obtain these for you at extra cost.



4.6 DMX operation

To operate the machine using DMX connect it to the DMX network using a suitable 5 pin DMX cable (3 pin connectors can be fitted if required please contact Snow Business). If it is the last machine in the network a suitable terminator should be plugged into the outgoing DMX socket on the rear of the machine.

The 10 way DIP switch is used to set the required DMX512 start address, using switches 1 through 9, switch 10 sets action upon no DMX512 signal (ie zero all outputs or hold last level). Note that when start address 0 is chosen all output levels are set to zero, this setting is DMX512 receive OFF.

Binary coding is used for start channel setting where 0 = Switch OFF and 1= Switch ON, most calculators can convert from decimal to binary as does the Microsoft Windows calculator program when in scientific view. Alternatively there are several App's for mobile phones designed to calculate dip switch settings. In total 512 start addresses can be set but because 4 channels are required for the machine to operate the last channel that can be set as a start channel is 510.

The four channels required are:-

- CH1 on/off (+50% on <50% off).
- CH2 is blower Control.
- CH3 flake size.
- CH4 Reserved but not used.

4.7 Testing correct operation

Operate the machine as in 4.4 if the machine is operating correctly there should be a good amount of evenly sized snowflakes emitted from the Gun. If there are no flakes, too many or intermittent flakes then the machine is not operating correctly. In this event first check the warning indicator on the machines control panel. If it is flashing then the machine has run out of fluid. A solid Green light indicates no fault so in this case refer to the trouble shooting guide under 6.



5 Maintenance

The machine is designed to give a long and low maintenance life. In order to ensure this is the case, please undertake the following tasks at the intervals given. (Always insure the machine is disconnected from the power supply before undertaking any maintenance task).

5.1 As needed

Wipe the machine over with a damp soapy cloth to clean it.

5.2 Before every use

Ensure that there is no visible damage to any part of the machine. Pay special attention to the power lead and connection. If the power lead has become damaged in any way it should not be used. Please contact Snow Business for a replacement. Check all air intakes for obstruction or blockage, if any are found remove them before operating the machine. Look down the nozzle (with the machine switched off) and inspect the gauze for damage. If the gauze is damaged it will need to be replaced, ring Snow Business to order a replacement.

5.3 At least once a year

Remove the machine's gauze (inside the nozzle) by gripping the end with pliers and pulling. Once removed inspect for contamination or damage. The gauze can be cleaned by rinsing it under a tap. If the gauze is damaged it will need to be replaced. In dusty areas or when used in conjunction with artificial snow or set dressing materials of any kind it may become nessacery to remove and clean the gauze more often. A drop off in snow production and quality is a sure indicator that the gauze has become contaminated.

There are no internal parts that can be maintained by the owner of an SB200W. In the event of a failure of any of the internal parts of the machine please contact Snow Business to arrange for repair. Unauthorised repairs will invalidate the machines warrantee and may place the operator in danger.



6 Trouble shooting guide.

If the machine appears to be dead:-

- Check there is power to the machine and it is switched on (on/off switch position 1). N.B. If power is
 present the on/off switch, will be illuminated. If the switch is not illuminated check the circuit breaker
 on the external power supply panel and then the fuse in the plug. If both are OK or if the supply
 continually trips or the fuse continually blows then the machine will need to be returned to Snow
 Business for repair.
- Check that the Timer hand controller is properly connected if fitted.
- Check that the DMX connector is properly fitted if connected, that the DMX is working and the
 controller and machine address settings are correct. If the machine is the last machine in a long line
 of machines an appropriate DMX terminator should be used in the DMX output socket.
- If the on/off switch is illuminated and the green warning lamp light is continually on but nothing happens when the machine is switched on then it is likely that the machine has developed an internal fault and will need to be repaired by Snow Business.

If the machine turns on and the fans run but there is no snow.

- Turn the machine off and then on again (to reset the pump protection time-out).
- Check there is fluid in the tank.
- If there is fluid in the tank check that the strainer inside the tank has not become blocked, if it is clean with water or compressed air.
- Remove the fluid line from the front of the machine and prime it using the hand pump. When fluid is exiting the pipe pop your finger over the end and quickly re-fit it.
- If the strainer is not blocked and the fluid line is primed check the pump fuse. If the fuse is blown replace the fuse.
 - with a 5 amp 5 x 20 slow blow fuse. N.B. if the fuse blows again straight away it is likely that the pump has become damaged or that there is an internal wiring fault. In this case the machine will need to be returned to Snow Business for repair.

If the Machine is creating rain not snow.

 With the machine switched off inspect the gauze inside the gun is not damaged or missing. If the gauze is damaged or missing it will need to be replaced.

If the green warning light is flashing

• Once with a pause, the machine is out of fluid.



7 FAQ's

- 1. Can I use non recommended fluids in an SB200W? Snow business spends a lot of time testing the snow fluid it sells to insure that it won't damage clothing, painted surfaces, the machine itself or the people using it. We accept no responsibility for any damage caused by using non specified fluid.
- 2. How much fluid will my SB200W use? That all depends on how much you use the machine, if left to run continuously on a high flake size it will drain the 20 litter tank in 30 mins.
- 3. Can I leave my SB200W out in cold weather? Yes provided it is left switched on and the lid is closed it will be safe down to -7 deg C. However if the lid is left open or the power switched off the pump, tank and fluid lines will freeze and may become damaged.
- 4. I have left my SB200W out all night switched off and the fluid has frozen what should I do? Contact snow business and arrange for it to be inspected. It is likely that internal parts of the machine have been damaged and if you defrost the machine and switch it on fluid may be sprayed onto live electrical parts.
- My SB200W isn't working properly what should I do? See trouble shooting section 6.
- 6. Is it safe to use my SB200W in the rain? The SB200W is rated IP 24 but only if the lid is shut. Leaving the lid open will possibly allow rain to come in contact with live electrical parts.
- 7. Is it ok to use my SB200W in very hot weather? Exposing the machine to direct sunlight in very hot weather may result in the machine overheating, in extreme cases the thermal fuse in the motor may blow resulting in the failure of the machine requiring repair by Snow Business. It is advisable to shade the machine from direct sunlight and the machine should not be used above 40 deg C ambient temperature.
- 8. What area will the SB200W cover with falling snow? This is entirely dependent on wind speed and direction.
- 9. How do I replace the Gauze? See section 5.3
- 10. Can I control the machine via DMX? Yes the machine is designed to work with DMX.
- 11. Is the machine available with 3 pin DMX connectors? Yes please contact us.
- 12. Can I run multiple machines on the same DMX line? Up to 170 machines can be given an individual start address on any DMX 512 compatible system.
- 13. The machine is not drawing fluid, what do I do? See trouble shooting section 6.
- 14. Will the machine run on 110 volts? No the machine is designed to run on 230 volts AC only.
- 15. The machine has run dry, will it self-prime when I replace the fluid in the tank? Yes the pump should self-prime however if it struggles remove the fluid pipe from the front of the machine, pump the hand pump until fluid is expelled then quickly replace the fluid line.
- 16. Will the machine work on a slope? Yes, but you will need to secure it properly.
- 17. Can I change the flake size during operation? Yes.
- 18. Can the machine be left to run on its own? Yes but remember to keep checking the fluid level in the tank regularly as at max flake size the tank will run dry in 30 mins.



8 WEEE Take back scheme.

Under the European WEEE directive (Waste Electrical and Electronic Equipment) provided you purchase another piece of equivalent machinery from Snow Business, Snow Business will collect and dispose of your old machine free of charge at the end of its life. If you do not wish to purchase a new machine from Snow Business then you should dispose of your old machine in accordance with local regulations.

9 Technical Data

Weight 54 kg

Machine Dimensions 120cm long x 50cm wide x 55ch high

Current11.75 AmpsPower2.8 KWVoltage220- 240 volt

Noise Output 70 db case, 75 – 80db gun.

Permissible snow fluids ProFlake or EcoFlake fluid
Fluid consumption Dependent on flake size setting.

Internal tank capacity 20Ltrs
External tank capacity Unlimited

Ingress protection IP24 (Lid Closed)
Operating temperature range Event -5 to +40 deg C

Operating modes Wired remote, Stand-alone & DMX 512

Plug fuse 13 amp 6.3 x 20 slow blow Pump fuses 5 amp 5 x 20 slow blow

PCB fuse 500ma 5 x 20 fast blow (not user serviceable)



10 Declaration of conformity.

<u>We</u>

Snow Business international Ltd

of

The Snow Mill
Bridge Road,
Ebley,
Stroud,
Gloucestershire,
GL5 4TR
United Kingdom

Declare under our sole responsibility that the product described below

Brand and Model Name	Snow Business SB200W Sr No 034 onwards
Equipment	Special effects equipment – artificial snow
classification	generator

is in conformity with the following standards

SUBJECT	STANDARD
Electrical Safety	EN60335-1: 2012:
Electromagnetic Compatibility	EN61000-6-3: 2007 (Emissions)
Electromagnetic Compatibility	EN61000-6-1: 2007 (Immunity)
Compatibility	

thereby meeting the essential requirements of directive 2006/95/EC (the Low Voltage Directive) and directive 2004/108/EC (the EMC Directive)

I hereby declare that the equipment named above has been designed to comply with the relevant sections of the above referenced Standards and meets all essential requirements

of the Low Voltage Directive and the EMC Directive.

Signed Paul Denney Signature P Denney

Position Head of R&D

Location Stroud, England Date 06/03/2015