

TEMPEST[™] ***SHADOW 1***

OPERATIONS MANUAL

Tempest Technology Corporation
4708 N. Blythe Ave. • Fresno, CA 93722
800.346.2143 • t: 559.277.7577 • f: 559.277.7579
www.tempest-edge.com • response@tempest-edge.com

TEMPEST SHADOW 1

by Rosco

Operation Manual

TABLE OF CONTENTS

INTRODUCTION	1
IMPORTANT SAFEGUARDS.....	2
HOW THE MACHINE WORKS.....	3
OPERATING INSTRUCTIONS.....	4
DO'S AND DON'TS.....	6
MAINTENANCE.....	7
FOG DISTRIBUTION	7
REPAIRS.....	8
STORAGE AND SHIPMENT	8
LIMITED WARRANTY.....	9
TECHNICAL SPECIFICATIONS.....	10
OPTIONAL ACCESSORIES.....	10

INTRODUCTION

This manual offers a detailed explanation of the operation of the TEMPEST SHADOW 1 smoke machine. To assure efficient and safe operation, please take a few minutes to read this material.

The TEMPEST SHADOW 1 smoke machine is a thermal aerosol generator designed for variable fog output. It is part of a system, the other basic component being Rosco Smoke Simulation Fluid, and they should always be used together. This unique fluid formulation is safe when used according to instructions. It is water-based and contains no petroleum distillate. The operating temperature, pump pressure, and output nozzle orifice of the machine have been specifically set to maximize aerosolization of the Rosco fluid. When used properly, the system should operate for many years.

IMPORTANT SAFEGUARDS

READ AND UNDERSTAND THESE SAFETY PRECAUTIONS BEFORE OPERATING THE MACHINE. FAILURE TO PROPERLY FOLLOW THESE PRECAUTIONS MAY LEAD TO A FIRE, EXPLOSION, OR ELECTRICAL SHOCK.

FOG FLUID HEALTH CAUTION: VAPOR FROM THIS FLUID, LIKE ANY OTHER COMMON MATERIAL IN A VAPORIZED STATE, MAY BE IRRITATING TO OR CAUSE ALLERGIC SYMPTOMS IN SOME PERSONS WITH ALLERGENIC SENSITIVITY. DO NOT EXPOSE AT CLOSE RANGE TO KNOWN ASTHMATICS.

1. This machine uses electrical power at common commercially available voltages. When directly contacted, such voltages are hazardous to human life. All precautions commonly applicable to the use of electric power generally are applicable to the use of this machine. This machine is designed to operate from three-wire power systems where one of the wires is a safety ground. DO NOT disconnect the safety ground or use extension cords or "cheater" plugs to connect this machine to a two-wire system. Operation without a safety ground may result in a hazardous electrical shock.
2. Check the current and voltage rating of your machine. Extension cords must be properly sized and rated for voltage, current and length. Check your local electrical code for the correct gauge extension cord. If an extension cord shows signs of wear or gets warm to the touch, discontinue its use and obtain a cord with a higher current rating. Improper extension cords are not only hazardous, but may result in poor machine performance due to excessive voltage drop.
3. Never use any machine that shows signs of improper use. Even slight damage may be an indication of a major problem. If the machine looks questionable, use it only under strict observation. If the machine shows any unusual behavior, disconnect machine immediately from power and send machine to a Service Center for repair.
4. Do not operate the machine in a tightly confined space where the ambient temperature might exceed 105 °F (40 °C). A continuous flow of air is required to maintain temperature within the machine housing. Sensitive electronic components deteriorate rapidly under high heat conditions. Operation of the machine in an enclosure of less than ten cubic feet (one cubic meter) is dangerous, and automatically voids the warranty.

Enclosing any heating device so it is invisible to the operator creates a potential fire hazard, no matter what the ambient temperature of the enclosure. To do so with any high-amperage device is to assume substantial risk. Tempest strongly recommends against it.

5. In any facility, the smoke concentration should be controlled. The smoke should never mask emergency exits, safety signs, staircases or other safety constructions.

6. After long use, or if the machine is not properly set, some liquid droplets or wet area may appear in front of the machine's outlet. This liquid should be wiped up to prevent a condition where someone might slip and fall.
7. Machines are designed for continuous use over an 8-hour day, but to protect components, it is wise to turn off the machine when it is not in use. In permanent installations, it is advisable to equip the circuit with a night cut-off device.
8. During the warm-up phase and during operations, people should not stand within one meter of the front of the machine. Flammable material like paper, fabric, etc., should never be placed directly on or around this equipment, or any other electrical device with a heating element.
9. The smoke should be blown into an open space and should not be directed at people or objects. Never blow smoke on hot surfaces, into glowing heating elements or into open flames. The normally non-flammable and non-toxic smoke could react on very hot surfaces and be burnt or decomposed.
10. Unauthorized repair or alteration of any safety devices can lead to improper operation and accidents. Repairs should be performed only by an authorized Service Center.

WARNING: USE OF ANY FLUID OTHER THAN ROSCO SMOKE SIMULATION FLUID OR MODIFICATION OR ATTEMPTED UNAUTHORIZED REPAIR OF THE TEMPEST SHADOW 1 WILL IMMEDIATELY INVALIDATE THE WARRANTY.

HOW THE MACHINE WORKS

When the heat exchanger has reached proper operating temperature, the operator switches power to the siphoning pump, which draws the fluid from an external reservoir into the heat exchanger. The fluid is rapidly heated and vaporized. The vaporized fluid is then discharged through the nozzle into the atmosphere where, upon mixing with the cooler air, it turns into an aerosol consisting of millions of fine particles.

NOTE: The terms “fog” and “smoke” are used interchangeable. However the TEMPEST SHADOW 1 does not produce smoke, but a mist or aerosol.

OPERATING INSTRUCTIONS

1. POWER HOOK-UP

Plug one end of the power cord into the dedicated socket located on the rear of the machine and the other end into a socket rated at the proper voltage and amperage. The machine requires a dedicated power circuit. Turn on the main power switch (I/O) located at the rear of the machine.

2. REMOTE CONTROL

If it is not already plugged in, plug the remote control into the socket in the cavity on the back of the machine. Push the grey button marked ON. This will enable the electronics and the unit will start to heat up. The red LED on the Remote Control should light up indicating that the electronics are enabled. The red LED on the top of the machine should light as well indicating that the machine is heating up.

Note: The Tempest Shadow 1 smoke machine will operate either from the Remote Control or as a unit in a daisy chain (see below).

3. WARM UP

Let the machine warm up for about eight minutes until the green LED on the top of the machine turns on. The machine is now ready to use, as long as the green LED remains on and the fluid reservoir contains fluid.

4. FLUID DELIVERY

Place a 4-liter size bottles of any Rosco Smoke Simulation Fluid in the cavity located at the rear of the machine. Place the end of the tube coming out of the top of the machine into the bottle. A cap is provided that fits on the bottle.

NOTE: The machine only works with uncontaminated Rosco Smoke Simulation Fluid. Other manufacturers' fluids may cause spitting and serious clogging problems and could result in the production of an unhealthful aerosol. **The use of other fluids voids the warranty of the Tempest Shadow 1 smoke machine.**

5. PRODUCING SMOKE

To produce smoke, push the red FOG switch located on the remote control. Push the switch again to stop producing smoke. The volume of the smoke can be varied by turning the knob marked Volume Control. **Note:** At higher outputs the machine will give a large burst and then ramp back the volume. This is to allow the machine to run continuously and is normal.

CAUTION: If the fluid bottle is empty, DO NOT run the pump. Running the machine without fog fluid can seriously damage the pump.

6. TIMERS

The Tempest Shadow 1 remote control is equipped with timers as standard equipment. To enable the timers, push the grey TIMER button on the remote. The green TIMER LED will be lit. To set the amount of time that the machine will make fog, adjust the ON TIME knob. To

set the delay between bursts, adjust the OFF TIME knob. The range of time for both ON TIME and OFF TIME is 2-18 seconds.

NOTE: The numbers indicated by the ON TIME and OFF TIME knobs are relative and should be used for reference only.

7. DAISY CHAIN (OPTIONAL)

The Tempest Shadow 1 has the capability to control up to 4 machines from a single controller. In this “Daisy Chain” process, the machine that controls the others is called the MASTER and the others are called SLAVES. Make sure that a Remote Control is attached to the MASTER machine as outlined in Step 2 and all Remote Controls are removed from all the SLAVE machines. Connect a cable with a male 3-pin XLR connector at each end to *the link socket on the top* of the MASTER machine and connect the other end to *the remote connection* on the first SLAVE machine. Repeat the process from the first SLAVE machine to the next. As many as 4 machines may be operated from a single remote. Operate the remote as outlined in Steps 5 and 6 above.

DO'S & DON'TS

- DO Read the entire manual before operating the machine and pay particular attention to all CAUTIONS AND WARNINGS.
- DO Use ONLY Rosco manufactured fluids.
- DO Use an extension cord which is properly rated for voltage, current and length and which is free from nicks or other signs of wear.
- DO Before each operating period, check to see that the machine is clean and free of foreign objects.
- DO Test first for dry smoke. Turn the FOG switch on. Place a piece of cardboard or paper 50 cm in front of the machine. If the surface is at all wet return the machine to your dealer for servicing.
- DO Ensure that the machine is adequately ventilated.
- DO Use proper caution when handling hot surfaces
- DO Use the **minimum** amount of smoke required to achieve the desired effect.
- DO NOT Use the machine near a person who has asthma or similar inhalation disorder.
- DO NOT Use any foreign substances in the machine.
- DO NOT Use a machine that is damaged or operating improperly in any way.
- DO NOT Use a machine that leaks fluid from the housing.
- DO NOT Leave the machine switched on for prolonged periods without producing smoke.
- DO NOT Enclose the machine.
- DO NOT Install the machine in such a fashion that the operator cannot see the whole machine including indicator lights.
- DO NOT Touch the shielded nozzle of the machine. Allow sufficient cooling time after operation before attempting to perform maintenance.
- DO NOT Direct the smoke continuously against the same spot. This may eventually cause fluid to recondense on walls, furniture, sets, etc.

READ THE COMPLETE MANUAL TO INSURE SAFE OPERATION.

MAINTENANCE

1. The main fuse of the TEMPEST SHADOW 1 smoke machine is located on the circuit card inside the machine. **NOTE:** Be sure to check the specifications when replacing any fuses.

WARNING: DISCONNECT THE TEMPEST SHADOW 1 FROM POWER BEFORE CHECKING OR REPLACING THE FUSE. FAILURE TO DO SO COULD BE HAZARDOUS AND RESULT IN AN ELECTRICAL SHOCK.

2. After every operation, the siphon hose should be removed from the external reservoir. The machine should be turned on and fog produced. When there is no more fog coming out of the machine, the machine should be **immediately** turned off.

3. After every operation, **only after the machine has cooled**, it should be wiped with a clean damp cloth or paper towel. This practice prevents the build up of dirt and dust which may enter the machine and damage sensitive internal components. Do not use solvents for cleaning. Soap and water are effective.

4. Before and after the machine is stored for an extended period, the machine should be properly cleaned. The best method for cleaning is using distilled or de-ionized water. To flush the machine, turn it on and, when ready to use, put the fluid pick-up tube into a container of distilled or de-ionized water. Run the water through the machine and flush for three minutes. The tube should be removed from the water and the machine run until nothing comes out of the nozzle. The machine should be **immediately** turned off.

5. During use, operation of all switches and indicator lights should be monitored. Lights that blink or flicker when they should be on or off, for example, are an indication of problems in the machine's circuitry.

SMOKE DISTRIBUTION

The smoke distribution in an enclosed area depends on air flow and temperature. Natural air movement, air conditioning and other ventilation systems will affect movement of smoke. Test under realistic conditions before using. If a space must be filled very quickly, move the machine up and down and side to side. To conduct smoke to particular areas, use a hose adaptor and ducting hose (see OPTIONAL ACCESSORIES). Make sure that there is an air space of 2-3 in. between the nozzle and any ducting hose. Do not use ducting hose smaller than 4 in. diameter. The TEMPEST SHADOW 1 works properly only in a horizontal position. Do not tilt the machine during operation.

REPAIRS

If the machine fails and repairs are required, call or write TEMPEST TECHNOLOGY CORPORATION

TEMPEST TECHNOLOGY CORPORATION

4708 N. Blythe Ave.

Fresno, CA 93722

800.346.2143

559.277.7577

Fax: 559.277.7579

E-mail: response@tempest-edge.com

STORAGE AND SHIPMENT

If you do not anticipate using your machine for an extended period, prepare your machine for storage as follows:

1. Perform maintenance as outlined in "Maintenance" section.
2. Wipe the outside of the machine clean.
3. Store in a sealed cardboard box.
4. Whenever the unit is shipped, considerable care should be taken in packing to avoid damage in transit.

LIMITED WARRANTY

TEMPEST TECHNOLOGIES CORPORATION warrants to the original purchaser that the TEMPEST SHADOW 1 will be free from original defects in workmanship and material for a period of twelve months from the date of purchase. During the warranty period, machines will be repaired or replaced at the option of TEMPEST.

The warranty does not extend to any parts of the TEMPEST SHADOW 1 that have been subject to misuse or accident. Neither does the warranty cover any machine that has been opened, modified or repaired other than by TEMPEST or its designated repair station.

The warranty will not apply if procedures described in the Operations Manual are not followed. It is the user's obligation to clean and maintain the TEMPEST SHADOW 1 according to these instructions, and to follow acceptable practices for handling electrical devices.

NOTE: USE OF ANY FLUID OTHER THAN A ROSCO BRAND FLUID WILL VOID WARRANTY.

TEMPEST SHADOW 1

TECHNICAL SPECIFICATIONS

POWER REQUIREMENTS

120V, 60 Hz., 12Amps

PARTICLE SIZE

0.25-60 microns

DIMENSIONS

Height: 8.5 in. (21.6 cm)

Width: 9.75 in. (24.8 cm)

Length: 19.5 in. (49.5 cm)

WEIGHT

22.5 lb. (10.3 kg)

REMOTE CONTROL

Volume Control

Sequencers

On time: 2-18 seconds

Off time: 2-18 seconds

MAX. FLUID CONSUMPTION

3.6 liters/hour (60 ml/min.)

FUSE

12.5/120V

OPTIONAL ACCESSORIES

HOSE ADAPTOR

Metal frame that connects ducting hose to machine

Dimensions: 4 in. (10.2 cm) x 6.75 in. (17.14 cm)

DUCTING HOSE

Flexible, plastic hose, connects to hose adaptor for ducting of fog

Dimensions: 4 in. (10.2 cm) x 25 ft. (7.62 m)