

ResTra Fog

Rescue Training Fogger

RTF-400 Battery

Operating Manual



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ResTraFog

by Smoke Factory GmbH

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1 PREAMBEL

1. Preambel

All Smoke Factory fog machines are quality products at the cutting edge of technology. Our many years of experience, the continuous development and optimization of our products, especially from a practical point of view, have made us one of the leading manufacturers of fog machines in the field of stage technology. The very close interlocking of development, production and assembly work in our factory near Hanover are the guarantee for the quality seal "Made in Germany".

Congratulations on your purchase of a Smoke Factory fog machine. We thank you for your trust with the certainty that you will work safely and comfortably with this device in the future. Our Smoke Factory employees are qualified professionals with years of experience who understand your task and turn it into precisely tailored solutions with the concentrated know-how of the entire Smoke Factory team. Give us your task! We will be happy to advise you and will certainly find the optimal solution for you from our fog machine program. Please take your time to read these operating instructions carefully in order to operate the machine in the best possible way. Please pay particular attention to the safety-relevant aspects and always act responsibly. We wish you a lot of fun with the Smoke Factory fog machine.

-Mario Rincon, General Manager



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3 GENERAL

2. Scope of delivery

- 1 RTF-400 Battery (fog unit)
- 1 battery pack
- 1 charger
- 1 bottle 250 ml empty

3. General

This document contains the operating instructions for the “RTF-400 Battery” machine, hereinafter referred to as the “machine”.

Elements mentioned in the text that are visible on the user interface of the machine are shown in ***bold italics***.

The RTF-400 Battery is a compact mobile fog machine. The microprocessor controlled fog machine is operated with a maintenance-free 12 V lead-acid battery. The device operates according to the vaporizing principle, which means that a glycol-based fluid is evaporated and condenses to fog when leaving the fog nozzle. RTF-400 Battery works energy-efficient and heats only during the fog process. No more than a current of 1.5 mA is flowing through the electronics of the RTF-400 Battery in sleep mode. The battery is not significantly discharged in sleep mode. When the battery pack is fully charged, the RTF-400 Battery has a standby time of about 250 hours.

The fog process runs according to the following schedule:

- Heating (1 second, without pumping fluid)
- Pump running, fog is pushed out
- Post-run time (15 seconds, residual fluid is evaporated)

ATTENTION!

The RTF-400 Battery must never be stored or transported with an inserted/connected battery pack. There is the risk of permanent irreparable damage to the battery by deep discharge.

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4 TECHNICAL SPECIFICATIONS

4. Technical specifications

4.1. Dimensions and weight

In the following section you will find the dimensions and weights of the individual components.

4.1.1. Fog machine incl. battery pack

- Procedure: Hazemaker based on vapor. fog generator
- Power: 400 Watt
- Supply voltage: 12 V DC/50-60 A via battery pack
- Capacity fluid tank: 250 ml
- Fog emission: infinitely variable
- Fog time: Continuous fog about 10 minutes
- Operating options: Start button, 0-10 V analog, Cable remote control (optional accessory), radio remote control (optional accessory), DMX 512 (optional accessory), timer (optional accessory)
- Heating-up time: ~1 sec.
- Temperature control: Microprocessor-controlled
- Ambient temperature: 5 °C to 45 °C
- Fluid consumption: 10 ml/min. with continuous fog
- Length: 22,3 cm
- With: 10 cm
- Height: 21 cm
- Weight: 5,6 kg (incl. battery pack an fluid tank)

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4 TECHNICAL SPECIFICATIONS

4.1.2. Battery pack

- Type: Lead-acid battery
- Voltage: 12 V
- Power: 12 Ah
- Recharge time: 10-12 hours via charging socket
- Connection: Speakon NL4FX high current connector
- Fuse: 2x 30 A blade type fuses
- Ambient temperature: 5 °C bis 45 °C
- Length: 22 cm
- With: 10 cm
- Height: 11,5 cm
- Weight: 4,5 kg

Note

During long periods of non-use recharge the battery pack every 2 months.

4.1.3. Charger

- Typ: MPP 15 or similar
- Input voltage: 90-240 V AC/50-60 Hz
- Output voltage: 12 V DC/1.000 mA
- End-of-charge voltage: 13,8 V DC
- Ambient temperature: 0 °C bis 40 °C
- Charging indicator:
 - LED lights green: Battery is charged
 - LED lights red/orange: Charging process
- Weight: 165 g
- Dimensions: 8,75 x 5,15 x 3,4 cm

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4 TECHNICAL SPECIFICATIONS

4.2. Connections

Below you will find an overview of the connections.

4.2.1. Power supply

- Speakon NL4FX high-current connector via supplied battery pack

4.2.2. Communication and pin assignment

- Analog remote control: 3-Pol XLR female 0 - 10 V
 - Pin 1= Ground
 - Pin 2 = 0-10 V+ DC in
 - Pin 3 = 12 V+ DC out
 - max. 50 mA

4.2.3. Fluid

- Hose with plug-in nozzle for quick coupling on the tank cap

Note

The RTF-400 Battery has to be operated only with Rescue Training Fogger Battery Fog. Using fluids or additives from foreign vendors will result in clogging of the heating unit and will void the warranty.

Do not use fog fluid which is more than five years old. Fog fluids do not have an unlimited storage life.

ATTENTION!

Do not use cleaning fluid or citric acid etc.

For further information about „fog fluids“ please contact your local dealer or us directly.

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5 SAFETY INSTRUCTIONS

5. Safety instructions

- **Caution, hot vapour!**
- Keep a safe distance of at least 1.50 m from the mist outlet for people and heat-sensitive objects.
- It is strictly forbidden to handle the mist outlet during operation! A minimum distance of 60 cm must be maintained with flammable materials.
- During operation of a fog machine, hot fluid droplets may occasionally escape. Do not allow these to become a danger to people.
- Sick persons or persons with pre-existing respiratory or pulmonary problems or a tendency to allergies should avoid contact with theatre fog!
- The user bears sole responsibility for damage resulting from improper use or non-compliance with the operating instructions. The manufacturer accepts no liability. Modifications to the safety-relevant components of the appliance are strictly prohibited!

Caution!

- Never leave switched-on devices unattended!
- Never fog into ignition sources such as naked flames or pyrotechnic effects!
- Never allow visibility to fall below 2 metres! You are responsible for the risk of accidents to persons in the fogged room.
- Never open an appliance that is connected to the mains!
- Do not ingest or apply fog fluids externally!
- Keep away from children!

In case of eye contact, rinse eyes with plenty of water. In case of accidental ingestion, consult a doctor immediately. Spilt fluid or splashed fluid droplets can cause slipping. Pick up the fluid and dispose of it properly!

ResTraFog fog fluids are completely water-soluble and biodegradable. The method used by ResTraFog to produce fog with vaporiser fog machines is the most safe. We are not aware of any case in which a normally healthy person has been harmed in any way by this artificial fog. The prerequisite is the use of professional fog machines with the correct vaporisation temperatures and the appropriate fog fluids.

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6 DESCRIPTION OF THE DEVICE

6. Description of the device

- [1] Start button
- [2] Fog nozzle
- [3] Socket for charger
- [4] Battery pack (Battery, PCB, fuse, connector)
- [5] Fluid tube
- [6] Speakon connector for battery pack
- [7] Knurled screw
- [8] Snap-on connector for fluid tube
- [9] Fluid tank
- [10] Rotary knob
- [11] LED battery status display
- [12] Socket for speakon connector
- [13] 3 pin XLR socket



Figure 1: RTF-400 Battery Front

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7 COMMISSIONING



Figure 2: RTF-400 Battery Back

7. Commissioning

- Connect a fluid canister with appropriate fog fluid to the machine at [8].
- If desired, connect cables for external control at [13].
- Insert the speakON plug [6] into the speakON socket [12] (connect battery pack to the device).
- Press the trigger button [1] to start the fogging process.
- Adjust fog output using the rotary knob [10].
- Release the trigger button [1] to stop the fogging process.

ATTENTION!

Pay special attention to the cleanliness of the fluid tank to prevent contaminants from being sucked into the pump. Even minor contaminants can clog the device.

7.1. Selection of the Location

The location of the RTF-400 Battery should meet the following requirements:

- Free of vibration and shocks.
- Clean and dust-free air.

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8 OPERATING THE RTF-400 BATTERY WITH EXTERNAL CONTROL

- Non-flammable surface.
- Ventilation with fresh and fog-free air.
- Ambient temperature between 5°C and 45°C.
- Relative humidity below 80%.

ATTENTION!

In cases of integrating the RTF-400 Battery into props or similar, ensure a fog-free air supply. Excessive fog in the surrounding air can condense in the device and cause moisture damage.

7.2. Filling the Fluid Tank

- Release the plug from the quick coupling by pressing the metal button.
- Unscrew and remove the tank cap. Refill fluid.
- Replace and tighten the tank cap.
- Firmly insert the plug back into the quick coupling until a noticeable click is heard.

7.3. Fluid

ATTENTION!

The RTF-400 Battery should only be used with Rescue Training Fogger Battery Fluid. Using other fog fluids or additives may clog the heating element and void the warranty. Do not use fog fluid that is older than five years. Fog fluids have a limited shelf life. Do not use cleaning fluids, citric acid, etc.

For more information on fog fluids, consult your dealer or contact us directly.

8. Operating the RTF-400 Battery with External Control

The following section explains the operation and control of the RTF-400 Battery.

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8 OPERATING THE RTF-400 BATTERY WITH EXTERNAL CONTROL

8.1. Operation via Analog Input

Connect the RTF-400 Battery to an analog console or the optional cable remote via the 3-pin XLR socket [13].

- Insert the connection cable of the console/cable remote into the XLR socket [13] on the device.
- Adjust the pump level using the rotary knob on the cable remote or fader on the analog console.
- Start the fogging process with the On/Off switch on the cable remote.
- Set the desired maximum fog output using the rotary knob [10] on the device. The device will only generate full output if both the XLR remote and the fog machine are set to 100%.

8.2. Operation via Wireless Remote Control

The RTF-400 Battery can be controlled using the optional wireless remote control.

- Plug the wireless remote receiver into the XLR socket [13] on the device.
- Pressing the top button on the wireless remote control activates fogging (see also wireless remote control instructions).
- Adjust the desired fog output with the rotary knob [10] on the device.

8.3. Operation via DMX 512

Connect the optional DMX converter (DMXit) to the 3-pin XLR socket [13] on the device. Connect the DMX converter to a DMX console, which can now control the RTF-400 Battery.

8.4. Operation via Timer

Connect the optional timer (TIMEit) to the 3-pin XLR socket [13] on the device. In the timer, fog and pause times, as well as fog intensity, can be programmed.

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10 BATTERY PACK

9. Shutting Down

- The device will continue to run for 15 seconds after releasing the trigger button.
- The RTF-400 Battery automatically switches to sleep mode approximately 40 seconds after the last fogging process (power consumption only 1.5 mA).

Note

The RTF-400 Battery should never be stored or transported with the battery connected. There is a risk of permanent, irreparable battery damage due to deep discharge.

During long periods of non-use, recharge the battery pack every 2 months.

10. Battery Pack

The RTF-400 Battery is equipped with a maintenance-free 12V lead-gel battery pack, which is optimally designed for the device's operation. The battery pack is connected to the device via a speakON connector [12].

10.1. Capacity

The battery pack has a capacity of 12 Ah. It is fully charged upon delivery. With proper care and storage (see also section 10.5), the battery pack retains its capacity for several years and can handle several hundred charge/discharge cycles. One battery charge is sufficient for 100 fog bursts of 4-5 seconds or a continuous fog time of 10 minutes.

10.2. Battery Status Indicator / Sleep Mode

The yellow LED [11] on the RTF-400 Battery indicates the battery status.

- Blinks every 3 seconds: Battery capacity 15-100% (fully functional).
- Blinks 2-3 times per second: Battery capacity <15% (replace/charge battery).
- Constantly lit: Battery is empty, or the vaporizer is defective.
- Not lit: RTF-400 Battery is in sleep mode. Pressing the trigger button [1] wakes the device.

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10 BATTERY PACK

The RTF-400 Battery automatically switches to sleep mode about 40 seconds after the last fogging process (power consumption only 1.5 mA).

10.3. Charging the Battery Pack

The RTF-400 Battery comes with a charger. Use only this charger to charge the battery pack.

- Connect the charger to the charging port [3].
- The LED on the charger lights up red/orange.
- The LED on the charger turns green when the battery pack is fully charged. Charging time is approximately 12 hours.

10.4. Replacing the Battery Pack

Replacing the battery pack is very easy. Spare battery packs can be quickly installed to extend runtime.

- Unplug the speakON connector [6] from the device.
- Unscrew the two knurled screws [7].
- Pull the fog unit, including the fluid tank, out from the back.
- Slide the fog unit, including the fluid tank, onto the new battery pack.
- Screw the two knurled screws [7] back in.
- Plug the speakON connector [6] into the speakON socket [12] on the device.

10.5. Care and Storage

Lead-gel batteries are robust, low-maintenance, and particularly durable. Proper care and storage of the battery pack help retain capacity and extend lifespan. If not in use, recharge the RTF-400 Battery's battery pack every 2 months.

ATTENTION!

Never store or transport the RTF-400 Battery with the battery connected—risk of deep discharge.

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11 CHARGER

10.6. Battery Pack Safety Notes

- Warning of high discharge currents:
 - Never short-circuit the battery pack.
 - Do not alter the cross-section of the cables.
- Always maintain sufficient distance from heat sources. Performance decreases with rising temperature.
- Never use the battery pack in fully sealed enclosures, as hydrogen release poses an explosion risk. Proper ventilation is essential.
- Do not disassemble the battery pack, as it contains acid that can damage clothing and skin. In case of eye contact, rinse immediately with clean water and seek medical attention.
- Never expose the battery pack to open flames. Risk of explosion!

11. Charger

The charger supplied with the RTF-400 Battery is an automatic charger for 12V lead-acid batteries.

11.1. Charging Process

The RTF-400 Battery comes with a charger. Only use this charger for charging the battery pack.

- Connect the charger to a power supply of 100-240V~/50-60 Hz.
- Connect the charger to the charging port [3] on the RTF-400 Battery.
- The LED on the charger lights up red/orange.
- The LED on the charger turns green when the final charging voltage is reached, and the battery pack is fully charged.
- Disconnect the charger from the RTF-400 Battery.
- Disconnect the charger from the power supply.

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12 CARE AND MAINTENANCE

Note

Indicator light shows red/orange:

- There is a short circuit in the battery pack/output cable.
- The final charging voltage of 13.8 V cannot or barely be reached - note an aged battery pack.

The charger must always be protected from water and high humidity.

12. Care and Maintenance

- Do not let the device overheat; adhere to the operating and ambient temperature. Avoid directing heat sources directly at the device.
- The RTF-400 Battery should not be operated without fluid, as this can cause the pumps to run dry.
- Wipe up any spilled fluid immediately, as moisture – including fluid – can damage the electronics.
- The RTF-400 Battery should be cleaned after each use, especially if used in a built-in state.
- The fluid tank should be thoroughly rinsed before each refill. This prevents premature clogging of the fluid due to contaminants.
- Ensure a continuous supply of fog-free air when positioning the RTF-400 Battery. Cooling air with high fog concentration can condense in the device and cause moisture damage.

ATTENTION!

Condensation droplets should only be removed when the device is cool to avoid burns!

PLEASE NOTE! The vaporizer does NOT need to be cleaned! Commercially available cleaning fluids (cleaners) can damage the vaporizer! The device's warranty is voided by the use of cleaners.

If the RTF-400 Battery is not used, recharge the battery pack every 2 months!

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14 WARRANTY CONDITIONS

13. Troubleshooting

The RTF-400 Battery does not produce fog:

- Check the charge of the battery pack (yellow LED [11] remains constantly lit, the pump automatically deactivates).
- Check the fluid level.
- Inspect the vaporizer for damage or contamination.

The yellow LED is constantly lit:

- The battery is discharged.
- The vaporizer is damaged or clogged.

14. Warranty Conditions

Effective only for the Federal Republic of Germany Rescue Training Fogger grants you warranty for the mentioned product according to the following conditions:

1. Free of charge, subject to the following conditions (No. 2-6) we will repair any defect or fault in the unit if it is caused by a proven factory fault and has been advised immediately after appearance and within 36 months (battery pack 6 months) of delivery to the end user. Insignificant deviations of the regular production quality do not guarantee replacement rights, nor do faults or defects caused by water, by generally abnormal environment conditions or an unavoidable accident.
2. Warranty Service will be done in the following way: Faulty parts will be repaired or replaced according to our choice with the correct parts. Faulty units have to be brought to us or our authorized service centers or to be sent to us or our service centers at the customers expenses. The invoice and/or receipt showing the purchase date and the serial number has to come with the faulty unit, otherwise we cannot honor the warranty. Parts that are replaced become our property.
3. The customer loses all rights for warranty services, if any repairs or adjustments are done to the units by unauthorized persons and/or if spare parts are used which are not approved by us. The right of warranty service is also lost if fluids other than the original Rescue Training Fogger-fluid have been used or if units are sent to us with full fluid bottles. Also non compliance with the instructions in this manual or mistakes by incorrect handling/treating of the machine will lead to a loss of guarantee and also any faults and damages caused by undue force.

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4. Carrying costs caused to warranty services are borne by the customer himself.
5. Warranty services do not cause an extension of the warranty time or the start of a new warranty time. The warranty for replaced parts ends with the warranty time of the whole device.
6. If a defect/fault can not be repaired by us in a satisfactory time frame, we will do one of the following within 36 months after sale (customer may choose):
 - replace the whole unit for free or
 - refund the lesser value or
 - take back the whole unit and refund the purchase price, but not more than the usual market price at the time of the refund.
7. Further claims, especially for damages, losses etc. outside the unit are excluded, if the liability is not statutory. Outside the Federal Republic of Germany the warranty conditions of our local agencies take effect. Our local agencies in and outside the Federal Republic of Germany will provide you with the warranty conditions any time. In case you do send the machine in for warranty repairs, please make sure that the fluid is removed from the bottle.

15. Contact

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B DOCUMENT CHANGES

B. Document Changes

Table 1: Document Changes

Date	Changes	Editor
29.10.2024	Initial Release	BST