##### Salter AIRE *Elite™* Compressor

###### Instruction Manual

**Part No: 8350-1 / 8352-1 / 8353-1**

 

Thank you for selecting the **Salter AIRE** ***Elite*** Compressor. Salter Labs is an innovative, industry-leading manufacturer of respiratory
care devices. Please contact your local Salter Labs dealer for information about additional products.

**SAVE THESE INSTRUCTIONS.**

**READ ALL INSTRUCTIONS BEFORE USE.**

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**1. Important Safeguards**

**NOTE, CAUTION, WARNING, AND SYMBOLS:**

Important information is highlighted by using the following:

NOTE Indicates information that user should pay special
attention to.

*CAUTION Indicates correct operating or maintenance procedures in order to prevent damage to or destruction of the equipment or other property.*

***WARNING Indicates potential danger that requires correct procedures or practices in order to prevent personal injury*.**

**Symbols:**

|  |  |
| --- | --- |
| **O** | Off, disconnection from the mains |
| **I** | On, connection to the mains |
| **～** | Alternating Current (AC) |
| **IP2X** | Protected against solid foreign objects having a diameter of 12.5 mm and greater. No protection against vertically falling water drops. Keep dry! |
| **iso-7000-0434** | Attention |
| **60417-iec-5172** | Class II |
|  Follow Instruction for Use | Refer to instruction manual/ booklet |
| **60417-iec-5333a** | “BF” symbol, indicate this product is according to the degree of protecting against electric shock for the type BF equipment. |
|  | Temperature limitation |
| WEEE | Disposal of Electrical & Electronic Equipment (WEEE): This product should be handed over to an applicable collection point for the recycling of electrical and electronic equipment. For more detailed information about the recycling of this product, please contact your local city office, household waste disposal service or the retail store where you purchased this product. |

*CAUTION U.S. Federal Law restricts this device to sale by or on the order of a physician.*

***WARNING To reduce the risk of burns, electrocution, fire or injury to persons:***

1. Always unplug this product immediately after using.
2. Do not use while bathing, showering, dish washing, or close to water sources of any kind.
3. Do not place or store product where it can fall or be pulled into a tub or sink.
4. Do not place in or drop into water or other liquid.
5. Do not reach for a product that has fallen into water.
Unplug immediately.
6. This product should never be left unattended when plugged in.
7. Close supervision is necessary when this product is used by, on or near children or invalids. Choking accident may result from a child swallowing a small part that has become detached from the device or its accessories.
8. Use this product only for its intended use as described
in this manual. Use this product only under doctor’s direction. Do not use attachments not recommended
by the manufacturer.
9. Never operate this product if a) it has a damaged cord or plug, b) it is not working properly, c) it has been dropped or damaged, d) it has been dropped into water. Return the product to a specified service center for examination
and repair.
10. Keep the cord away from heated surfaces.
11. Never block the air openings of this product or allow objects to fall or be inserted into the air vent openings or place it on a soft surface such as bed or couch, where the air openings may be blocked.
12. Never use while sleeping or feeling drowsy.
13. Never drop or insert any object into any opening or hose.
14. No modification of this equipment is allowed.
15. Do not modify this equipment without authorization of
the manufacturer.
16. If this equipment is modified, appropriate inspection and testing must be conducted to ensure continued safe use of the equipment.
17. Do not use in outdoors or operate where aerosol (spray) products are being used or where oxygen is being administered in a closed environment such as an
oxygen reservoir.
18. Do not wrap the power cord around the compressor
(main unit).
19. Disconnect the power plug by pulling the plug, not by pulling on the compressor (main unit), or the cord.
20. If the power cord or plug becomes frayed or otherwise damaged, do not use.
21. Do not place heavy objects on the power cord, or bend and pull the cord harder than necessary. These actions could cause an electric shock or fire.
22. Potential allergic reactions to accessible materials used in the Compressor Nebulizer equipment. If any signs of allergic reaction or hypersensitivity happen, stop the treatment immediately, and notify the doctor or nurse.
23. Potential contact injuries for patients used in the Compressor Nebulizer equipment. If any contact injuries happen, stop the treatment, and notify the doctor
or nurse.
24. The device enclosure may overheat, users do not touch more than 10 seconds.

***WARNING EMC Statement***

This equipment has been tested and found to comply with the limits for medical devices to the IEC 60601-1:2014. These limits are designed to provide reasonable protection against harmful interference in a typical medical installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to other devices in the vicinity. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to other devices, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

* Reorient or relocate the receiving device.
* Increase the separation between the equipment.
* Connect the equipment into an outlet on a circuit different from that to which the other device(s) are connected.
* Consult the manufacturer or field service technician
for help.

*CAUTION If there is a possibility of electro-magnetic interference with mobile phones, please increase the distance (3.3m) between devices or turn off the mobile phone.*

**2. Introduction**

***2.1 Intended Use***

The **Salter AIRE** ***Elite*** Compressor System is intended to provide a source of compressed air for aerosol therapy. It is used in conjunction with a jet (pneumatic) nebulizer to produce medicated aerosols for inhalation by pediatric and adult patients with respiratory symptoms.

*CAUTION Aerosolize liquid medication except Pentamidine for inhalation by the patients. Indications for therapy include asthma, chronic bronchitis, infection of the upper respiratory tract, chronic obstructive pulmonary disease (COPD) and other respiratory disorders in accordance with a medical doctor’s prescription. Except the usage mentioned above, please do not use this product for any other purpose. This device can be used with adults or pediatric patients under physician’s prescription.*

***2.2 Safety Precaution Instruction***

When using this electrical product, especially when children are present, one should always follow basic safety precautions. Do not install, maintain or operate this equipment without reading, understanding and following the proper **Salter AIRE *Elite*** Compressor System instruction manual, otherwise injury or damage may result.
***For 120V only-*** This appliance has a polarized plug (one blade is wider than the other). To reduce the risk of electric shock, this plug is intended to fit into a polarized outlet only one way. If the plug does not fit fully into the outlet, reverse the plug. If it still does not fit, contact a qualified electrician. Do not modify the plug in any way.

**3. Product Description**

1. Power Switch 2. Filter Cap (disposable filter inside)

3. Air-Outlet Connector 4. Integrated Carrying Handle

5. Power Cord 6. Nebulizer Cup Holder

7. Cooling Air Openings



**4. Operation**NOTE Before initial operation, the nebulizer cup assembly should be cleaned following instructions described in the “Cleaning” section.

***WARNING Before connecting the power cord, make sure the I/O (ON/OFF) switch is in the O (OFF) position.***

**The plug is also served to disconnect the device. Do not position the equipment so that it is difficult to operate the disconnecting device.**

***4.1 Daily Use Operation***

*CAUTION The Salter AIRE Elite Compressor System is designed for intermittent use only. Do not operate it continuously for more than 30 minutes for a single use without turning it off and following a cooling period for least 30 minutes.*

1. Before each use inspect the **Salter AIRE** ***Elite***Compressor and nebulizer cup assembly for damage or wear, replace as needed.
2. Place the **Salter AIRE** ***Elite*** Compressor on a table or other flat stable surface. Be sure you can easily reach the controls when seated. Do not use this device on the floor.
3. With the power switch in the O (OFF) position, plug the power cord into an appropriate electrical wall outlet.
4. Connect one end of the tubing to the compressor air-outlet connector.
5. Assemble the nebulizer cup and add indicated medication to the nebulizer’s cup before use.
6. Attach the other end of the tubing into the air-inlet connector founded at the bottom of the nebulizer cup.
7. Turn on the **Salter AIRE** ***Elite*** Compressor by
pressing the power switch to the I (ON) position
and begin treatment.
8. If treatment needs to be interrupted, simply press power switch to O (OFF) position.
9. When the treatment is complete, turn off the compressor by pressing the power switch to O (OFF) position and unplug the unit from the electrical outlet.

**Equipment is not suitable for use in the presence**

**of a flammable anesthetic mixture with air or with oxygen or nitrous oxide. This device has no AP or APG protection.**

*CAUTION During the treatment, the patient should not touch the outer case due to expected rise in unit temperature.*

***4.2 Safety Overload***

NOTE Do not exceed 30 minutes of continuous operation.

* 1. The motor of this device has a built-in thermal overload protector. Should the motor overheat, the protector will automatically shut off the motor. Should this occur, turn the I/O (ON/OFF) switch to the O (OFF) position and allow the motor to cool down for approximately 30 minutes before turn it on again.
	2. If the overload protector shuts off the motor frequently, you may have an unstable voltage situation.
	3. If the unit shuts down and cannot restart, it may need to be replaced. Call your provider immediately.

**5. Cleaning**

***5.1 Compressor Outer Case Cleaning***

***WARNING Electric shock hazard. Do not remove outer case of this unit. All disassembly and maintenance of this unit must be done by a qualified service technician. Refer servicing to qualified service personnel.***



***WARNING This unit does not require oil. Do not attempt to lubricate any internal parts.***

***WARNING Unplug unit before cleaning. Do not submerge in water for cleaning.***

1. Wipe the main unit with a damp cloth every few days to keep it dust-free.
2. Do not use any powdered type cleaners or soap. Do not submerge the unit into water.

***5.2. Nebulizer Cup Cleaning***

Clean the nebulizer after each use. Refer to the cleaning instructions supplied with your nebulizer

***WARNING To prevent possible risk of infection from contaminated medication, cleaning of the nebulizer is recommended after each treatment.***

NOTE The nebulizer kit is for single patient use only.

NOTE Please follow national requirements to dispose the
unit properly.

**6. Storage**

Keep the unit and accessories dry. Avoid direct sunshine.
See specifications in Section 10 for appropriate environmental storage conditions.

**7. Maintenance**

***7.1 General Information***

1. This unit is oil-less. Do Not Lubricate.
2. Risk of electric shock. Do not disassemble the main unit.

***7.2 Filter Change***

NOTE Inspect the filter once every month and replace as necessary or when filter turns gray. Please follow the below instructions as right figures.

1. Open the filter cap.
2. Inspect the filter and if dirty, remove filter with a small, pointed object. Discard the filter.
3. Replace with a clean filter. Additional filters should be purchased from your provider.
4. Put the filter cap back.

*CAUTION Do not use cotton or any other material as a filter.
Do not wash or reuse the filter. Do not operate the unit without
a filter.*

***7.3 Service***

Except for the above instructed user maintenance, all device servicing must be performed by a Salter Labs® authorized service representative. There are no serviceable parts inside the unit. Contact your Salter Labs dealer or authorized service center if your unit needs repair.

***WARNING Do not tamper with or attempt to repair the device. Refer servicing to qualified service personnel.***

**8. Expected Service Life**

The products are intended to offer safe and reliable operation when used or installed according to the instructions provided by Salter Labs. Salter Labs recommends that the system be inspected and serviced by authorized technicians if there are any signs of wear or concerns with device function and indication on products. Otherwise, service and inspection of the devices generally should not be required.

**9. Troubleshooting**

If your **Salter AIRE** ***Elite*** Compressor fails to function, consult the Troubleshooting guide below. If the problem persists, consult your equipment provider.

|  |  |
| --- | --- |
| **Problem** | **Cause and Solution** |
| Device doesn’toperate | * Check if plug is properly fit into an appropriate electrical outlet.
* When device has been run continuously for over 30 minutes right before using, an auto shut down may activate by built-in thermal protector, cool down device for 30 minutes before next usage.
 |
| WeakNebulization | * Check for proper electrical voltage.
* Check tubing for blockage or air leakage at connection to **Salter AIRE** ***Elite*** Compressor or nebulizer cup, replace as needed.
* Check the nebulizer cup if it is properly assembled and not damaged. If there is any damage, replace as needed.
* Check if filter is too dirty, replace as needed.
 |

**10. Specifications**(All specifications are subject to change without notice.)

|  |  |  |
| --- | --- | --- |
| **Electrical Rating****(Note: Refer to the rating label on the product)** | 120VAC,60Hz,1.2A (For 120V System) | 230VAC, 50Hz, 0.6A (For 230V System) |
| **Maximum Compressor Pressure** | ≧30 psi |
| **Nebulizer Flow Rate** | ≧5.5 lpm | ≧5.0 lpm |
| **Classification** | Class II.BF equipment.IP2XNo AP/APG protection. |
| **Applied part** | Mouthpiece or Nasal mask |
| **Dimensions (W x D x H)** | 14.6 × 20.3 × 9.5 cm /5.7” × 7.9” × 3.7” |
| **Weight (approx.)** | 1.8 kg / 4.0 lb |
| **Fuse (non-user serviceable)** | F5AL 250V  | T1.6AL 250V |
| **Expected Service Life** | 3 Years (minimum) |
| **Warranty** | 5 Years |
| **Environment** | **Temperature** | Operation: 10℃ to 40℃/ 50℉ to 104℉ |
| Storage: -15℃ to 50℃ / 5℉ to 122℉ |
| Transport: -15℃ to 70℃/ 5℉ to 158℉ |
| **Humidity** | Operation: 10% to 90%RH non-condensing |
| Storage: 10% to 90%RH non-condensing |
| Transport: 10% to 90% RH non-condensing  |
| **Atmospheric****Pressure** | Operation: 700-1060 hPa |

**11. Accessories**

**Model Description**

8501-1-2 Salter AIRE Elite Replacement filters

8258-0-1 Compressor Carrying bag

8660 NebuTech® Nebulizer – Reusable

8960 NebuTech Nebulizer – Disposable

8967 NebuTech Nebulizer with Pediatric Mask

8984 NebuTech Nebulizer with Adult Mask

8900 Nebulizer with Tee Adapter

8906 Nebulizer with Pediatric Mask

8924 Nebulizer with Adult Mask

**12. Appendix A: EMC Information**

**Guidance and Manufacturer’s Declaration-
Electromagnetic Emissions:**

This device is intended for use in the electromagnetic environment specified below. The user of this device
should make sure it is used in such an environment.

|  |  |  |
| --- | --- | --- |
| **Emissions Test** | **Compliance** | **Electromagnetic Environment-Guidance** |
| RF emissionsCISPR 11 | Group 1 | The device uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment |
| RF emissionsCISPR 11 | Class B | The device is suitable for use in all establishments, including domestic establishments and those directly connected to the public low-voltage power supply network. |
| Harmonic emissionsIEC61000-3-2 | Class A |
| Voltage fluctuations / Flicker emissionsIEC61000-3-3 | Complies |

**Warning:**

1. The device should not be used adjacent to or stacked with other equipment.
If adjacent or stacked use is necessary, the device should be observed to verify normal operation in the configuration in which it will be used.

2. Use of accessories, transducers and cables other than those specified or provided by the manufacturer of this equipment could result in increased electromagnetic emissions or decreased electromagnetic immunity of this equipment and result in improper operation.

3. Portable RF communications equipment (including peripherals such as antenna cables and external antennas) should be used no closer than 30 cm (12 inches)
to any part of the Compressor, including cables specified by the manufacturer. Otherwise, degradation of the performance of this equipment could result.

**Guidance and Manufacturer’s Declaration-
Electromagnetic Immunity:**

This device is intended for use in the electromagnetic environment specified below. The user of this device
should make sure it is used in such an environment.

|  |  |  |  |
| --- | --- | --- | --- |
| **Immunity Test** | **IEC60601 test level** | **Compliance** | **Electromagnetic Environment-Guidance** |
| Electrostatic Discharge (ESD) IEC61000-4-2 | ±8kV contact±15kV air | ±8kV contact±15kV air | Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%. |
| Electrical fast transient/ burstIEC61000-4-4 | ±2kV for power supply line±1kV for input/out line | ±2kV for power supply line±1kV for input/out line | Mains power quality should be that of a typical commercial or hospital environment. |
| SurgeIEC61000-4-5 | ± 1 kV line(s) to line(s)± 2 kV line(s) to earth | ± 1 kV line(s) toline(s) | Mains power quality should be that of a typical commercial or hospital environment. |
| Voltage dips, short interruptions and voltage variations on power supply input linesIEC61000-4-11  | Voltage Dips:i) 100% reduction for 0.5 period,ii) 100% reduction for 1 period,iii) 30% reduction for 25/30 period,Voltage Interruptions:100% reduction for 250/300 period | Voltage Dips:i) 100% reduction for 0.5 period,ii) 100% reduction for 1 period,iii) 30% reduction for 25/30 period,Voltage Interruptions:100% reduction for 250/300 period | Mains power quality should be that of a typical commercial or hospital environment. If the user of this device requires continued operation during power mains interruptions, it is recommended that the device be powered from an uninterruptible power supply or a battery. |
| Power frequency(50/60Hz) magnetic fieldIEC61000-4-8 | 30 A/m | 30 A/m | Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment. |
| NOTE: UT is the AC mains voltage prior to the application of the test level |

**Recommended separation distances between portable and mobile RF communications equipment and this device:**

This device is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of this device can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and this device as recommended below, according to the maximum output power of the communications equipment.

|  |  |
| --- | --- |
| **Rated maximum output power** | **Separation distance according to frequency of transmitter (**m) |
| **150 kHz to 80 MHz** | **80 MHz to 800 MHz** | **800 MHz to 2,7 GHz** |
| 0.01 | 0.1 | 0.06 | 0.12 |
| 0.1 | 0.31 | 0.19 | 0.38 |
| 1 | 1 | 0.6 | 1.2 |
| 10 | 3.1 | 1.9 | 3.8 |
| 100 | 10 | 6 | 12 |
| For transmitters rated at a maximum output power not listed above, the recommended separation distance *d* in meters (m) can be estimated using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.**Note 1:** At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.**Note 2:** These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects, and people. |

**Guidance and Manufacturer’s Declaration - Electromagnetic Immunity:**

This device is intended for use in the electromagnetic environment specified below. The user of this device should make sure it is used in such an environment.

|  |  |  |  |
| --- | --- | --- | --- |
| **Immunity Test** | **IEC60601 test level** | **Compliance** | **Electromagnetic Environment-Guidance** |
| Conducted RFIEC 61000-4-6Radiated RFIEC 61000-4-3 | 3Vrms150 kHz to 80 MHz 6Vrm­s ISM bandsa Between 150 kHz to 80 MHz80% AM at 1kHZ10 V/m 80 MHz to 2.7GHz 80% AM at 1kHZ385-6000 MHz, 9-28V/m, 80% AM (1kHz) pulse mode and other modulation | 3Vrms150 kHz to 80 MHz 6Vrms ISM bandsa Between 150 kHz to 80 MHz80% AM at 1kHZ10 V/m 80 MHz to 2.7GHz 80% AM at 1kHZ385-6000 MHz, 9-28V/m, 80% AM (1kHz) pulse mode and other modulation | Portable and mobile RF communications equipment should be used no closer to any part of this device, including cables, than there commended separation distance calculated from the equation applicable to the frequency of the transmitter. Recommended separation distance 150 kHz to 80 MHz 80 MHz to 800 MHz 800 MHz to 2,7GHzWhere P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in meters (m).Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey a should be less than the compliance level in each frequency ranged.Interference may occur in the vicinity of equipment marked with the following symbol: |
| **NOTE 1:** At 80 MHz and 800 MHz, the higher frequency range applies.**NOTE 2:** These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people. |
| a/ Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the device is used exceeds the applicable RF compliance level above, the device should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the device.b/ Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 10/m. |

|  |
| --- |
| **Manufacturer’s declaration-electromagnetic immunity****Test specifications for ENCLOSURE PORT IMMUNITY to RF wireless communications equipment**The 9R-029003(8353-1) is intended for use in the electromagnetic environment (for home healthcare) specified below.The customer or the user of the 9R-029003(8353-1) should assure that it is used in such an environment. |
| Test frequency(MHz) | Band a)(MHz) | Service a) | Modulation b) | Maximum power(W) | Distance(m) | Immunity Test Level(V/m) | Compliance Level(V/m)(for home healthcare) |
| 385 | 380 –390 | TETRA 400 | Pulsemodulation b)18 Hz | 1,8­ | 0,3 | 27 | 27 |
| 450 | 430 – 470 | GMRS 460,FRS 460 | FM c)±5 kHz deviation1 kHz sine | 2 | 0,3 | 28 | 28 |
| 710 | 704 – 787 | LTE Band 13,17 | Pulsemodulation b)217 Hz | 0,2 | 0,3 | 9 | 9 |
| 745 |
| 780 |
| 810 | 800 – 960 | GSM 800/900,TETRA 800,iDEN 820,CDMA 850,LTE Band 5 | Pulsemodulation b)18 Hz | 2 | 0,3 | 28 | 28 |
| 870 |
| 930 |
| 1 720 | 1 700 –1 990 | GSM 1800;CDMA 1900;GSM 1900; DECT;LTE Band 1, 3,4, 25; UMTS | Pulsemodulation b)217 Hz | 2 | 0,3 | 28 | 28 |
| 1 845 |
| 1 970 |
| 2 450 | 2 400 –2 570 | Bluetooth, WLAN,802.11 b/g/n, RFID 2450, LTE Band 7 | Pulsemodulation b)217 Hz | 2 | 0,3 | 28 | 28 |
| 5 240 | 5 100 –5 800 | WLAN 802.11a/n | Pulsemodulation b)217 Hz | 0,2 | 0.3 | 9 | 9 |
| 5 500 |
| 5 785 |
| NOTE If necessary to achieve the IMMUNITY TEST LEVEL, the distance between the transmitting antenna and the ME EQUIPMENT or ME SYSTEM may be reduced to 1 m. The 1 m test distance is permitted by IEC 61000-4-3. |
| 1. For some services, only the uplink frequencies are included.
2. The carrier shall be modulated using a 50 % duty cycle square wave signal.
3. As an alternative to FM modulation, 50% pulse modulation at 18Hz may be used because while it does not represent actual modulation, it would be worst case.

 |



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