

# SSCOR DCell Suction

Model DM10-001

# SSCOR

*Clearing The Airway Is Our #1 Priority*

## Operating Instructions & Maintenance Manual



**The world's 1st and only full size portable suction device powered by ALKALINE BATTERIES.**

**SSCOR, INC.**

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## Caution-Notice

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1. Federal law restricts this device to the sale, distribution, and use by, or on the order of a physician, emergency medical technician, or other medical practitioner. For use by medical personnel trained in suctioning techniques and in the use of medical suction equipment.
2. **SSCOR** suction units are not designed or intended for use in extended procedures that require prolonged high vacuum/low airflow applications, as is the case in wound drainage or endoscopic use or in any other procedure that produces high vacuum levels within an occluded system for an extended period of time. Turn the suction unit off when it is not in use.
3. This manual is restricted to the discussion of the use and maintenance of this device. It does not attempt to discuss professional techniques in suctioning procedures.
4. Operator should be thoroughly familiar with these operating instructions before this device is used.
5. Do not use in the presence of flammable agents or anesthetics.
6. Before testing for vacuum over -300mmHg look for an expiration date on the canister (where applicable) and change the canister if the canister has passed the expiration date to minimize the possibility of implosion, which can occur when a canister is aged or damaged.
7. Do not use the batteries after the "Use By" date on the battery label.
8. Do not store batteries in the **SSCOR** DCell Suction device if it is not expected to be used for several months.
9. Keep battery contact surfaces and battery compartment contacts clean by rubbing them with a rough cloth each time you replace batteries.
10. Make sure you insert batteries into your device properly, with the + (plus) and – (minus) terminals aligned correctly. Always install batteries per the labeling on the battery holder.
11. Store batteries in a dry place at normal room temperature. Extreme temperatures reduce battery performance.
12. Any battery may leak harmful chemicals which may damage skin, clothing, or the inside of the battery holder. To avoid risk of injury, do not let any material leaked from a battery come in contact with eyes or skin. If batteries leak, replace the battery holder.
13. Any battery may rupture or explode if put in a fire or otherwise exposed to excessive heat. To avoid risk of injury, do not expose batteries to excessive heat, or moisture.
14. Use only D Cell alkaline batteries from a reputable manufacturer.
15. Do not use different brands or chemistries of batteries in the same battery holder.
16. Do not use Lithium batteries in the battery holder.
17. When replacing batteries, always replace the whole set.
18. Batteries will not recharge when installed in the suction device.
19. Follow battery manufacturer's instructions as to proper handling, storage and disposal of batteries.
20. When using the **SSCOR** DCell Suction Device, ensure that the canister is in an upright position.
21. Connect the suction tubing from the device to the vacuum port of the canister prior to use.
22. Do not use inappropriate chargers.



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## General Description

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A battery pack containing 12 fully charged alkaline batteries at full capacity will power the device for approximately 6-9 hours. This run time is defined as the period of time the device generates more than 300mmHg negative pressure. This run time specification is based upon tests conducted using new Duracell® CopperTop batteries. Run times are affected by many variables which include the brand of battery, the age of the battery, and ambient temperature. The red LED on the control panel will light indicating the batteries are losing capacity and new batteries should be installed in the 12 X D battery holder. See page 5 for instructions on battery replacement. For replacement parts and accessories, please visit [shop.sscor.com](http://shop.sscor.com).

The **SSCOR** DCell Suction device is designed for hospital crash carts, patient transport and emergency medical service. Suction power can be regulated when full power may be considered harmful to the patient. **SSCOR** suction units are designed to provide instant, effective suctioning, independent of external sources of power and can be pre-set to be activated immediately upon reaching the distressed patient. All controls are clearly labeled and easily accessible.



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## Warranty

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SSCOR warrants that each new product is free from defects in material and workmanship under normal use and service for a period of five years from date of original purchase from **SSCOR, Inc.** If returned to **SSCOR**, we will arrange for repairs or replacement within the terms of the warranty. The product should be decontaminated and returned properly packaged and postage prepaid. Loss or damage in transit to the factory shall be at the purchaser's risk. Loss or damage of return shipment from **SSCOR** shall be at the purchaser's risk. Please go to the support page at [www.SSCOR.com](http://www.SSCOR.com) to request a return authorization number.

### Conditions:

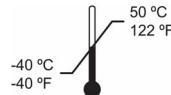
This warranty covers none of the following:

1. The warranty shall not apply to any **SSCOR** device in which a component has been altered; determined to be using a non **SSCOR** component; or altered in any way so as, in **SSCOR**'s judgment, to affect its safety or efficacy.
2. **SSCOR** product which has been subject to misuse, negligence, or accident.
3. The serial number has been altered, effaced or removed.
4. **SSCOR** product which has been setup otherwise than in accordance with the instructions furnished by **SSCOR**.
5. Maintenance and repair due to normal wear and tear.
6. Installation of product in a way not shown in instruction for use furnished by **SSCOR**.
7. Faults in the system which **SSCOR** product is installed.
8. Batteries, Disposables items (canisters, patient tubing, and catheters), replacement parts, cosmetic irregularities that do not degrade the safety and efficacy of the **SSCOR** product.

This warranty is in lieu of all other warranties expressed or implied and of all other obligations or liabilities on **SSCOR**'s part, and **SSCOR** neither assumes, nor authorizes any representative or other persons to assume for it, any other liability in connection with the sale of **SSCOR** products.

This warranty gives you specific legal rights and you may also have other rights that vary from jurisdiction to jurisdiction. For countries where minimum warranty terms are determined by statute, the warranty term is the longer of the statutory period or the term listed above .

## Description of Symbols

Symbol	Location	Meaning
<b>12V</b> 	Control Panel Label	12V DC Power Input
	On/Off Switch	Turns Device On/Off
	Control Panel Label	Battery Voltage Indicator
	Serialized Label	Separate Collection for Electronic Equipment
	Serialized Label	Type BF Equipment
	Serialized Label	Attention—Consult Accompanying Documents
	Shipping Carton	Date of Manufacture
	Shipping Carton	Manufacturer
	Shipping Carton	Transport Storage Range
	Shipping Carton	Humidity
	Shipping Carton	Atmospheric Pressure

## Operating Instructions



### Running the unit from the 12xD Cell Alkaline battery holder

1. Press the ON/OFF switch ① on the control panel to start the vacuum pump.

### Adjusting the vacuum level

- Occlude the patient tube and turn the vacuum regulator ② clockwise to the stop.
- Observe gauge (located above the vacuum regulator). The vacuum reading should rise to -300mmHg from zero in 3 seconds. It should max out at approximately  $\geq -525\text{mmHg}$ . Lower levels of negative pressure will be observed at altitude.

2. Press the on/off switch on the control panel to stop the vacuum pump.



### WARNING:

The tandem port on the canister is not an inlet port. Do not connect tubing to the tandem port of the canister.

### Battery Level of Charge Verification

Once the unit is running from the internal battery pack, check the control panel and observe the battery voltage indicator to gauge the level of battery charge. The green LED when lit, indicates a high level of charge.



### WARNING:

The red LED when lit, indicates the battery voltage is nearly depleted and the negative pressure level of the device will soon be below 300mmHg. Immediately install fresh batteries into the battery holder or connect device to an appropriate 12V DC power source via part number 80529 or 80665.

### Replacing the 12xD Cell Batteries

When the red Battery Voltage LED is lit indicating low battery voltage, the batteries in the 12xD Cell battery holder should be replaced with fresh D Cell Alkaline batteries. To access the battery holder, open the top of the chassis ⑤ exposing the battery holder:

1. Disconnect the Molex on the 12xD Cell battery holder from the wiring harness;
2. Lift the 12xD Cell battery holder out of the chassis, noting the orientation of the battery holder. The battery holder only fits in this orientation. Do not lift the battery holder by the exposed wires, use the fabric pull tab to lift the 12xD Cell battery holder out of the chassis. Replacement battery holder may be purchased at [shop.sscor.com](http://shop.sscor.com).



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## Operating Instructions (Continued)

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Remove the discharged batteries from the 12xD Cell battery holder and dispose of the batteries according to local / regional / national requirements for the disposal of alkaline batteries. Install 12 new fresh D Cell alkaline batteries into the 12xD Cell battery holder - being careful to assemble the batteries in the correct orientation as indicated on the battery holder. When the battery holder is loaded with 12 new D Cell alkaline batteries, set the 12xD Cell battery holder back into the chassis. The battery holder only fits in one orientation. Re-connect the Molex on the battery holder to the wiring harness. Turn the device on to verify the batteries are correctly installed and the battery holder is connected to the wiring harness. Observe the battery voltage indicator on the control panel. The green LED should be lit indicating the batteries have a high level of charge.

### **Running the device using the #80665 DC power cord (Available for purchase on [shop.sscor.com](http://shop.sscor.com))**

Connect the DC power cord to the 12V DC cigarette lighter receptacle in the vehicle. Connect the DC power cord to the suction unit by securely attaching the charging plug into the receptacle. ③ If the suction unit is operated while it is hooked up to the vehicle it will utilize the vehicle power and save its own battery for emergency use. The DC power cord will not charge the 12xD Cell batteries when connected to the suction device. The 80665 DC Cord is not included with device it may be purchased at [shop.sscor.com](http://shop.sscor.com).

**CAUTION:** The #80529 power adapter will not charge the 12xD Cell batteries when connected to the suction device. If the 80529 power adapter is connected to the **SSCOR DCell Suction** device and the battery voltage indicator shows a red LED, the output from the power adapter is not sufficient to power the **SSCOR DCell Suction** device. The device is running from its internal batteries. The 80529 power adapter is not included with the device it may be purchased at [shop.sscor.com](http://shop.sscor.com).

#### **WARNING:**



To avoid risk of shock, this equipment must only be connected to a supply mains with protective earth.



The 80529 Power Adapter is for Indoor Use Only.



#### **WARNING:**

Periodic checking or replacement of "D" Cell Alkaline batteries is required.



If for any reason poor battery quality is suspected, perform a battery test as described below.

#### **BATTERY TEST:**

Turn the **SSCOR DCell Suction** device on and run the unit for 30 seconds. Occlude the patient port of the canister and observe the negative pressure gauge. The negative pressure gauge should rise above 300mmHg in 3 seconds and reach 525mmHg. Observe the battery condition indicator LED ④. If it lights red, it is time to install 12 fresh D Cell batteries into the **SSCOR DCell Suction** battery holder. Dispose of the batteries according to local /regional / national requirements for the disposal of electronic waste.



Do not store batteries in the **SSCOR DCell Suction** device if it is not expected to be used for several months.



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## Trouble Shooting

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Problem	Possible Cause	Corrective Action
Does not function when switch is on (DC Power)	Battery discharge	Replace Batteries
	Molex connections disconnected	Lift battery cover and check to see Molex connections are secure
	Defective PC Board	Replace PC Board
	Fuse Blown	Replace Fuse
Red LED	Low battery capacity	Replace Batteries
Battery condition indicator lights not lit	Defective PC Board	Replace PC Board
No suction when pump is running	Vacuum line is disconnected	Re-connect vacuum line
	Canister Defective	Replace canister
	Canister lid loose	Tighten canister lid
	Catheter thumb vent is open	Occlude thumb vent
	Defective pump(s)	Replace pump(s)



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## General Specifications

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Characteristics	Specifications
Size	12"H x 9"W x 11"D 30.48cm H x 22.86cm W x 27.94 cm D
Weight	9.5 LBS. / 4.3Kg
Vacuum Pump	12V DC Exceeds 525mmHg. Clinical Airflow >=30 LPM with 12 fully charged D Cell alkaline batteries at full capacity
Variable Regulator	Controls negative pressure
Battery	12 x D Cell alkaline batteries 12 x D Cell battery holder part number: 040-00001
Wiring Harness	Uses (1) 2A 250V slow acting fuse UL Listed and CSA Certified Type (1½ x ¼)
Collection Canister	1200cc/ml <b>SSCOR</b> Part #48041
Patient Tubing	Vinyl tubing 9/32" ID, 72"L <b>SSCOR</b> Part #43200
<b>SSCOR</b> Suction Catheter	<b>SSCOR</b> SDC Catheter Part #200-00002 or <b>SSCOR</b> HI-D Catheter Part #44241

## Environmental Conditions

Operating Temperature Range:

0 °C (+32 °F) – +40 °C (+104 °F)

Operating Relative Humidity:

0 - 93% (non condensing)

Operating Atmospheric Pressure:

10.2 Psi (70 kPA) – 15.4 Psi (106 kPA)

Operating Altitude:

<2000m

Storage & Transport Temperature:

-40 °C (-40 °F) – +50 °C (+122 °F)

Storage & Transport Relative Humidity:

0 - 95% (non condensing)

Storage & Transport Atmospheric Pressure:

7.3 Psi (50 kPA) – 15.4 Psi (106 kPA)



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## Maintenance

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### Preventive Care

Observe the following maintenance routine to ensure readiness at any time:

1. Do not store batteries in the **SSCOR** DCell Suction device if it is not expected to be used for several months.
2. Test the **SSCOR** aspirator at regular intervals; See page 6.
3. Make sure the **SSCOR** aspirator is always clean and ready for use.
4. The canister contains a float valve to prevent fluids from reaching the vacuum pump, however, if the procedure produced an excessive quantity of fluids, check the vacuum line (#) for evidence of moisture. If the vacuum line between the device and canister is moist, it is possible that fluids have reached the vacuum pumps. See Disinfection Instructions below.
5. For technical assistance, call +1 818-504-4054.

**Note:** No part requires lubrication and lubricants should not be used.

### Sanitation

As soon as possible after use, the single use disposable canister, patient tubing and catheter should be discarded according to local / regional / national requirements for the disposal of hazardous waste materials. Clean using a mild detergent and if necessary disinfect with a mild disinfectant such as 10 to 1 bleach and rinse using clear water to remove any residue.

Do not reuse any single use disposable parts; do not submerge the device into any liquid, this will void the warranty and cause the device to malfunction.

### Disinfection

Use personal protective equipment such as gloves, a smock, and face and eye protection when handling units that are suspected to be contaminated.

Caution: Disconnect the unit from any power source prior to cleaning the unit. When cleaning the interior of the chassis, disconnect the battery from the PC Board to prevent damaging the PC Board.

Part	Cleaning & Disinfecting
Collection Canister	<b>SSCOR</b> #48041. Disposable item, re-use not permitted. Use new canister for each patient.
Patient Tubing (Type BF Applied Part)	<b>SSCOR</b> #43200. Disposable item, re-use not permitted. Use new patient tubing for each patient.
<b>SSCOR</b> Suction Catheter (Type BF Applied Part)	<b>SSCOR</b> SDC Catheter part # 200-00002 or <b>SSCOR</b> HI-Catheter part # 44241. Disposable item, re-use not permitted. Use new <b>SSCOR</b> Suction Catheter for each patient.
Vacuum Pump	<b>SSCOR</b> #90207. Wipe with damp cloth or disinfectant wipe. Sterilization not permitted. Vacuum pump should be replaced if contaminated.
PC Board	<b>SSCOR</b> #050-00001. Sterilization not permitted. PC Board should be replaced if contaminated.
Plastic Chassis	Wipe with damp cloth or disinfectant wipe. Sterilization not permitted.

## Internal Access

### WARNING



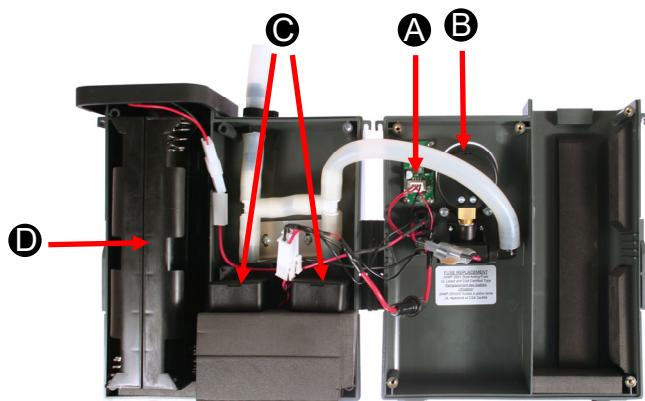
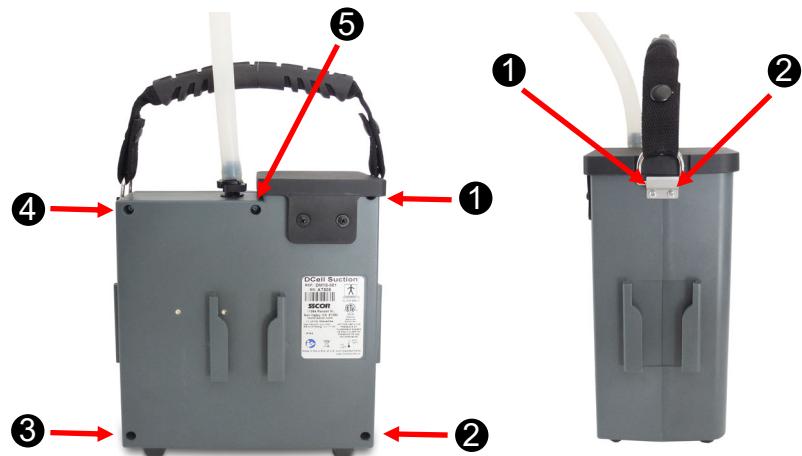
DO NOT ATTEMPT TO SERVICE THIS EQUIPMENT  
IF YOU ARE NOT A BIOMEDICAL TECHNICIAN.



NO MODIFICATION OF THE EQUIPMENT IS ALLOWED.  
UNAUTHORIZED SERVICE ATTEMPTS, OPENING OR TAMPERING  
WITH THE COMPONENTS OF THE **SSCOR DCELL SUCTION™** CAN DAMAGE  
OR DISABLE THE DEVICE, AND WILL VOID THE WARRANTY.

TAKE APPROPRIATE ESD ABATEMENT MEASURES WHEN HANDLING ALL INTERNAL COMPONENTS.

To open the device, first remove the 5 screws around the perimeter of the back chassis. Next, remove the two screws holding the D-Ring of the carry handle on each side of the device. The device will then open. To close the device, replace the screws and tighten. Make sure all pneumatic and wiring connections are secure before closing the chassis.



(A) PC BOARD-ELECTRICAL CIRCUITS

Do not attempt to service the PC Board. Return to **SSCOR** for service

(B) Regulator

Do not attempt to service the regulator. Return to **SSCOR** for service

(C) Vacuum Pumps

Do not attempt to service the vacuum pumps. Return to **SSCOR** for service

(D) Battery Holder

Do not attempt to service the battery holder. Return to **SSCOR** for service.