

# January 2018 Med Tips

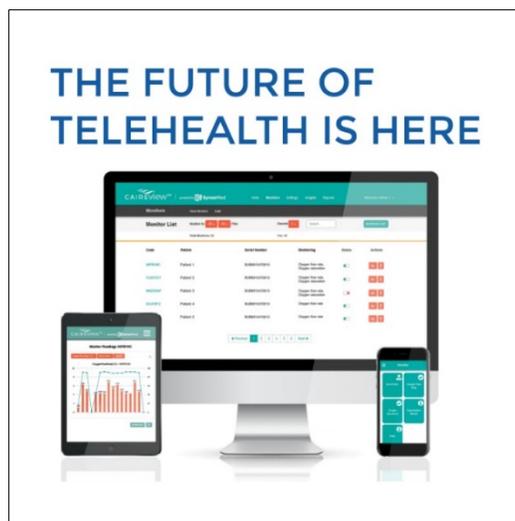
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## Periodic Inspections for European CAIRE Liquid Oxygen Reservoirs and Portables

The ADR (European Agreement Concerning the International Carriage of Dangerous Goods by Road) and regulation EN1251-3 (Cryogenic vessels – Transportable vacuum insulated vessels of not more than 1000 litres) require that periodic inspections are performed on closed cryogenic vessels every 5 and 10 years. All CAIRE Liquid Oxygen Reservoirs and Portables fall under these requirements. Chart European facilities in UK, Germany and Italy are fully accredited to perform the required inspections and also offer a further TPED accreditation service. Please contact customer service for further information. This month CAIRE Liquid Oxygen Reservoirs and Portables manufactured in **January 2013 and January 2008** are due for inspections. The manufacture date of your equipment can be identified on the vessel's data plate. **All CAIRE Liquid Oxygen Reservoirs and Portables located within the European Union** fall under these requirements.

## Coming in Q1 2018 – CAIREview™ powered by SynsorMed

CAIRE Inc.'s new telehealth solution – CAIREview™ powered by SynsorMed – made its official debut at Medtrade Fall, and received the Bronze New Product Pavilion 2017 Providers' Choice Award, sponsored by HomeCare Magazine. Available on Android and iOS platforms, CAIREview will allow the medical equipment provider to monitor the patient's oxygen use via Bluetooth technology to see oxygen flow rates, track the location of their asset, troubleshoot alarm codes and avoid costly after-hours visits. The Companion 5™ stationary oxygen concentrator and the Eclipse 5® portable oxygen concentrator will be the first devices equipped with the software, expected to roll out in Q1 2018 in the US. CAIREview was developed through a strategic relationship with Atlanta-based SynsorMed, known for its expertise in the field of mobile patient monitoring.



## Eclipse® annual preventative maintenance

Are you performing the annual preventative maintenance on your Eclipse® portable oxygen concentrators? If not, you should be. It's a very simple procedure that can extend the service life of Eclipse units and increase a unit's reliability. Below you can see each step laid out in an easy-to-follow format that includes pictures. To make it even easier, CAIRE offers a preventative maintenance kit that has everything you need to perform the maintenance on any Eclipse model. The part number for the kit is 5022-SEQ.



1. Disconnect the Eclipse from external power and remove the power cartridge.



2. Place the Eclipse front side down on an approved ESD mat or work bench.



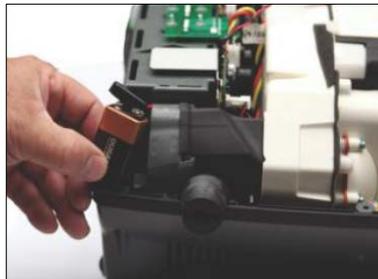
3. Remove the ten #1 Phillips screws that hold the front and rear covers together.



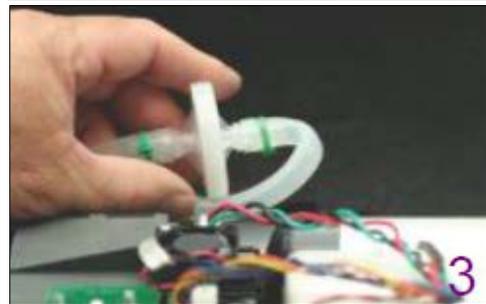
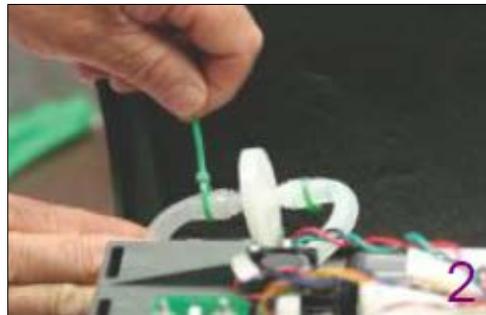
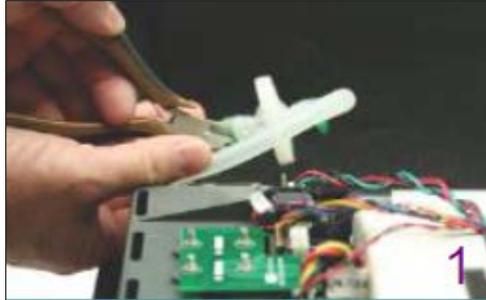
4. Turn the unit over onto its back and remove the front cover assembly. Be careful not to damage the control panel ribbon cable or the oxygen delivery tubing.

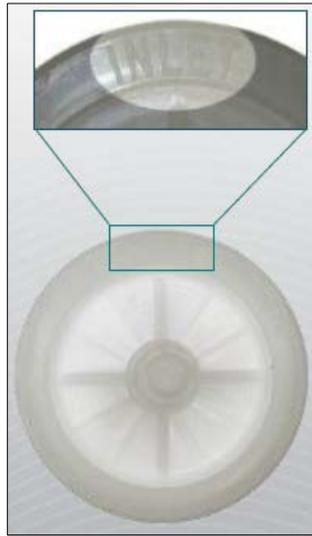


5. Remove the old 9V DC battery from the bottom of the unit and replace it with the new battery provided in the preventative maintenance kit. Use the foam adhesive tape, also provided in the kit, to secure the battery and prevent it from rattling inside the unit.

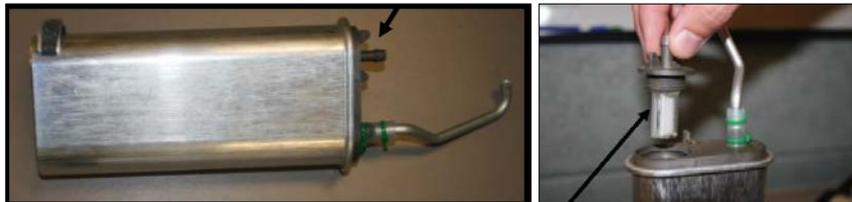


6. Eclipse units manufactured prior to 2011 will have a HEPA filter that is external to the product tank. Remove the old filter while paying attention to the flow direction on the filter face. Install the new filter, provided in the preventative maintenance kit, and secure with the zip ties that are also provided. The inlet side of the filter should connect to the tubing coming from the lower product tank. The outlet side of the filter should connect to the tubing coming from the upper product tank.

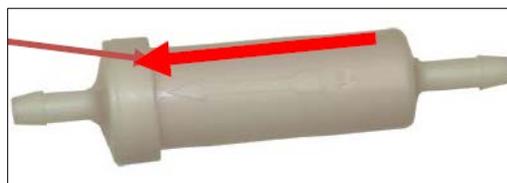
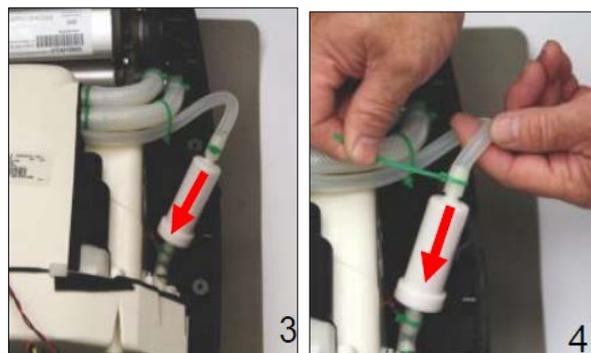
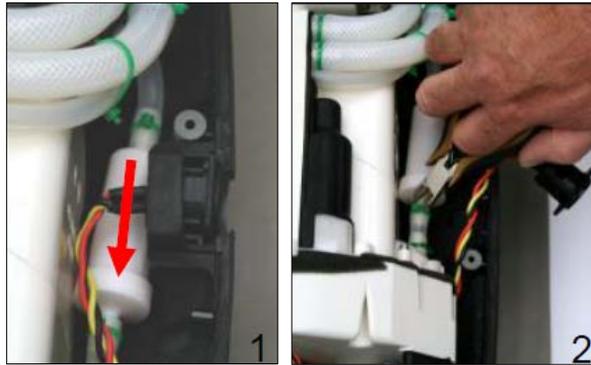




7. Eclipse units manufactured from 2011 to present will have a HEPA filter that is installed inside the product tank. You can access this filter by unscrewing the outlet barb. The HEPA filter is attached to the barb and should lift out once the barb is removed. Unscrew the HEPA filter from the bottom side of the barb and replace it with the new one provided in the preventative maintenance kit. Make sure to also replace the O-rings on the HEPA filter and the barb with the new ones provided in the kit.



8. Remove the old compressor inlet filter and replace it with the new one provided in the preventative maintenance kit. Secure the filter with the zip ties provided in the kit. Be sure to pay attention to the direction of flow on the filter. The arrow on the filter should point down towards the bottom of the unit.



9. Reinstall the electrical connector while paying close attention to its orientation. The “7.2A Max” should always be towards the bottom of the unit. Proper orientation is shown in the picture below. Ensure that the O-ring is properly installed on the connector prior to placing it in the case.



10. Before closing the unit we recommend cleaning the inside with a small vacuum or brush and operating the unit for 10 minutes. During this time you can verify there are no leaks, no kinked tubing, and no alarms.
11. Reassemble the case by installing the front cover, flipping the unit over, and securing the ten #1 Phillips screws. When installing the cover be sure not to kink the oxygen delivery tubing. Ensure that the gasket between the two case halves is installed correctly.



12. Replace the air inlet filter on the back of the unit with a new one provided in the preventative maintenance kit.



13. Clean the exterior of the unit with a damp cloth. It's recommended to use a mild solution of detergent and water when doing this. Do not expose the Eclipse to excess water. It may damage the unit.



14. Operate the Eclipse for at least 10 minutes on continuous flow while monitoring the unit for alarms. Finish testing and certifying the unit for "Return to Service" based on your normal operating practices.



## FreeStyle® DC Operation

The FreeStyle® DC operation is designed for use in the accessory outlets of automobiles, boats, or other motor vehicles. The FreeStyle is fully functional on DC power for use. It will also recharge the battery pack if needed any time DC power is available. The battery pack will recharge both if the unit is off or on and in use. Below are the proper steps to plugging in the FreeStyle to the DC Power. **Consult your patient's vehicle owner's manual for DC Accessory outlet compatibility and requirements before connecting to the DC Power Supply.**

1. Connect the universal power supply to the power connector inlet on the side of the FreeStyle. (Note the right angle of the plug.)



2. Connect the DC power cord to the inlet marked "ACCESSORY DC IN" on the universal power supply.



3. Connect the opposite end of the DC power cord to the automobile or other DC accessory outlet.



4. Turn on your motor vehicle.
5. Ensure the green light on the top of the Universal power supply is illuminated. This indicates that the power supply is receiving power from the outlet.



6. If the battery pack is in need of re-charge, the battery status indicator lights should blink accordingly to show charging.
7. Turn on the FreeStyle by pressing the numeric flow selection button of the pulse flow setting prescribed by your physician.



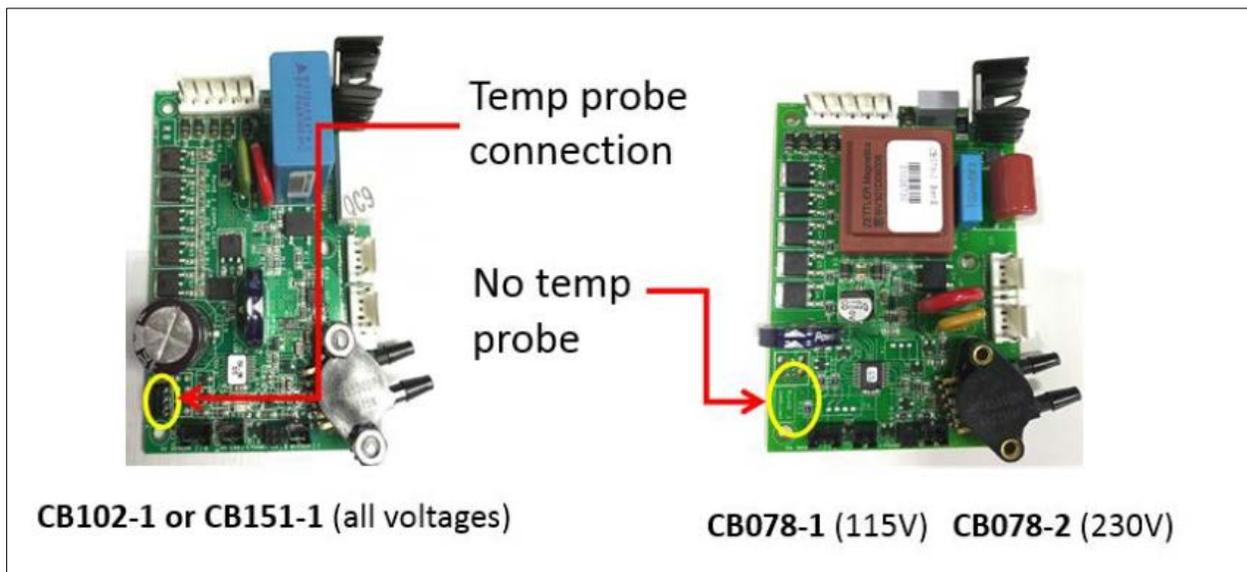
### FreeStyle®, FreeStyle® 5, Focus™ Sieve Beds

The Sieve Bed service part numbers for the FreeStyle®, FreeStyle® 5, and Focus™ now include the O-rings required to be installed along with the beds. The O-rings can still be ordered separately if needed. Please contact customer service for the proper part numbers if you need to order.

### Change to VisionAire™ 5 Main Circuit Board

Effective September 2017, the VisionAire™ 5 main circuit board will change entirely from CB151-1 to CB078-1 (for 115V models) and CB078-2 (for 230V models). CB078 has been used on some 120V models since Sept 1<sup>st</sup>, 2014 and will now be extended to all models of the VisionAire 5.

The updated board will no longer have the temperature sensor probe connection. As a result, the 5-beep high temperature alarm will no longer be featured on VisionAire units made with these updated boards. The VisionAire units have a thermal protection switch attached to the compressor stator that will shut down the compressor in the event the compressor overheats. In the event of an overheating condition, the low pressure (3-beep alarm) will sound, due to the lack of flow from the compressor.



### Testing the Focus™

When working with the Focus™, it is important to verify the oxygen concentration prior to finishing your repairs. The steps below outline how to place the Focus into test mode.

1. Turn the power switch on. Wait for the red and green LEDs to stop flashing and the green LED to remain on.



2. Within 2 seconds of the green LED staying on, power the unit off.
3. Turn the unit on and off three times while the startup buzzer is alarming, leaving the unit on the third time.
4. The red and green LEDs will remain solid for 10 seconds, followed by an audible tone indicating that test mode is active.



5. After the 2 minute warm up time, connect a calibrated analyzer and measure the oxygen concentration.
6. To exit the test mode, power off the Focus with the in-line power switch and turn back on for normal use.

### **Eclipse® DC Power Supply**

The DC power supply is intended for use with DC accessory outlets, such as those found in motor vehicles. Input voltage to the DC power supply is 11.5-16VDC. Sized to be compatible with most passenger vehicle electrical systems, it is capable of delivering up to 150W of 26VDC output to the Eclipse®.



The Eclipse 5 will run at all flow settings when being operated with the DC power supply in a vehicle including 3.0 LPM on continuous flow and all pulse setting 1-9. The Eclipse 5 will charge the power cartridge while being operated with the DC power supply while running at 2.0 LPM or below with continuous flow. The power cartridge can charge at all pulse flow rates, however, charging functionality may stop depending on the breathing rate of the user. If the Eclipse 5 power cartridge is being charged, the battery symbol will display with a waterfall animation.

**Do not use the DC supply to power the Eclipse once the vehicle's engine is turned off, as this may drain the car's battery.**

### **Connecting the DC Power Supply**

- 1) **Consult your patient's vehicle owner's manual for DC Accessory outlet compatibility and requirements before connecting to the DC Power Supply.**
- 2) Secure your Eclipse 5 and DC power supply in your vehicle. Ensure that alerts and alarms are observable.
- 3) Start the vehicle's engine.
- 4) Insert the supply plug into the DC accessory outlet.

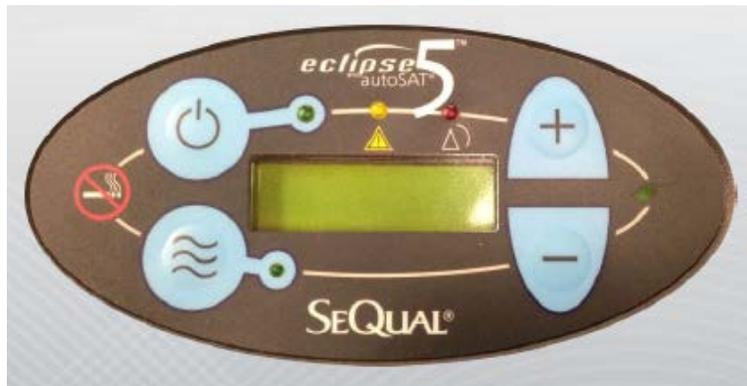
- 5) Attach the power supply plug to the Eclipse 5.
- 6) When the device is properly connected and receiving power from the DC power source, a green indicator light on the DC power supply will illuminate.
- 7) Power the Eclipse 5 on.

## Eclipses 5® IEC 3<sup>rd</sup> Edition Compliance

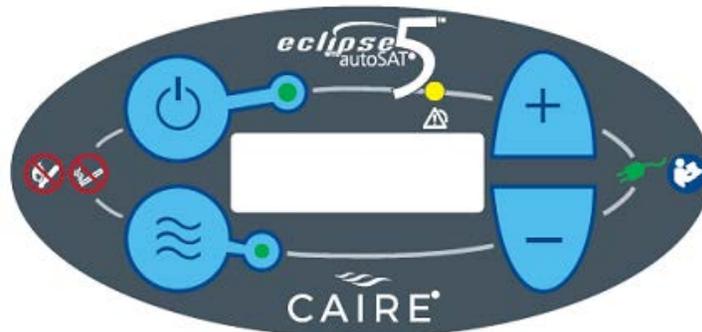
To ensure Eclipse devices are compliant with the IEC 80601-2-69 in 2018, the Eclipse 5® will no longer have a red alarm indication. This change will be accompanied by a revised touch panel, new circuit board part number, and an updated alarm code troubleshooting table.

The Eclipse 5, including the AC power supply, will be IEC 60529 IP22 compliant rather than IPX1. The AC power supply will be changed to a two-prong cord type, Type II power supply. IEC 60601-1 applied part classification for the device changes from Type B to Type BF. The older Eclipse 5 units can use the new power supply. In order for the new Eclipse 5 to be used with the old power supply, the CSA labeling would need to be removed from the unit. The applied part would then change from Type BF to Type B.

**Previous Eclipse 5 Touch Panel**



**Updated Eclipse 5 Touch Panel**



**New Alarm Specification Changes**

With the new display panel, there will no longer be a red indication for an alarm code. The new panel will display a yellow LED, audible alarm, and an associated fault code.

This is an example of the previous alarm tables.

Typical Condition	Condition	Alarm Code	Alarm Display	Green Indicator	Yellow Indicator	Red Indicator	Audible Alarm	What to Do
	"9-Volt Battery"	004	O2<70%	On	On	On	"3 Beeps" at <u>Start-Up only</u>	The internal 9-volt battery needs replaced.
	Warming Up	004	O2<70%	On	On	On	Off	<b>Wait</b> - the system typically take 3-4 minutes to reach specified performance
	"O2 Concentration- <70%"	004	O2<70%	Off	Off	Blinking	"3 Beeps"	Continue Use. Check or clean air intake filter. If condition persists, service is required.
	"Loss of External Power" (without charged Power Cartridge installed) *NOTE: Stars will be flashing in the LCD "*****"	N/A	***** Flashing	Off	Off	Blinking	"On steady"	Instruct patient to seek an alternative oxygen supply until external power is restored or install a charged Power Cartridge.
	"System Fault"	N/A	FAIL XX	Off	Off	On	"On steady"	10 seconds then silent, Instruct patient to use back up oxygen supply. Service is required.

### Updated Alarm Tables

Alarm	LCD Text	Yellow	Audio	Code
All OK, warm-up done	NO ALARM	OFF	OFF	0
No breath for 15 seconds	P <--> C	ON	1 beep 200ms, repeat after 20 seconds	200
Warm-up period (0-120 seconds after power on):	O2 < 85%	ON	OFF	8
One wire communication loss	ONE WIRE	ON	1 beep 200ms, repeat after 20 seconds	100
Cannot Charge Battery	CHARGER	ON	1 beep 200ms, repeat after 20 seconds	1
%O <sub>2</sub> < 85%	O2 < 85%	ON	1 beep 200ms, repeat after 20 seconds	8
Flow rate error	FLOWRATE	ON	1 beep 200ms, repeat after 20 seconds	20
Warm battery	WARM BAT	ON	1 beep 200ms, repeat after 20 seconds	2
Low battery	LOW BAT	ON	1 beep 200ms, repeat after 20 seconds	10
Loss of power (No Battery, no external power)	*****	ON	1 beep 200ms, repeat after 20 seconds for 200 seconds	40
Malfunction	FAIL XX	ON	1 beep 200ms, repeat after 20 seconds for 200 seconds	80

## NewLife/VisionAire IEC 3<sup>rd</sup> Edition Compliance

In 2018, to ensure NewLife Intensity and VisionAire devices are compliant with IEC 60601-1 3.1 both products will have new alarm conditions, new alarm lights, and labels. As part of the product update, both VisionAire and NewLife newly manufactured units will have identical alarm conditions going forward. These devices will now be IEC60529 IP21 rather than IPX1. This change will be accompanied by a revised alarm label, new circuit board part number, and updated alarm code troubleshooting tables.

Previously manufactured units shipped prior to 2018 that were built without these new alarms and labels are not required to be updated to the new standard.

**Current VisionAire Alarm Panel**



**Updated VisionAire Alarm**

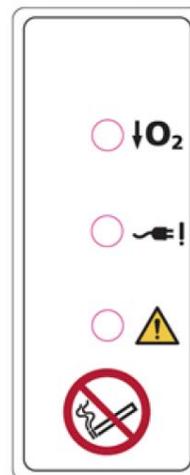


**NewLife Alarm Panel**

**Previous NewLife Alarm Panel**



**Updated NewLife Alarm Panel**



## Updated Alarm Conditions for both VisionAire and Intensity

**General Malfunction:** If any of the conditions listed below occurs, the general light

(  ) will illuminate and an audible intermittent alarm will activate. This includes:

- Obstruction to the flow of oxygen such as a pinch or kink in the delivery cannula, triggered by high product tank pressure
- High device product tank pressure condition of greater than 33 psig (+/-1)
- Low device product tank pressure condition of less than 5 psig (+/-1)
- High device temperature of greater than 135°C (275°F), triggered by low product tank pressure if the thermal switch located within the compressor trips (shutting down the compressor)

**Oxygen Monitor:** The oxygen monitor detects any drop in concentration below 82%. If this occurs, the low oxygen concentration warning light (  ) will illuminate. If the low O2 condition persists, an audible intermittent alarm will also activate in addition to the light.

**Power Failure:** In the event the unit is operating and a loss of power occurs, the power warning light (  ) will illuminate and an audible intermittent alarm will activate.

## Helpful Hints and FAQs

### Spirit Backpack Accessory

The Spirit backpack part number 13214825 has been obsoleted, and will no longer be offered when current stock is depleted. The replacement part number will be 10018138.



### **Companion® Reservoir Humidifier Adaptor**

Q: Can you add a humidifier bottle to the Companion® Reservoir?

A: Yes, you would need to order part number B-775314-00 Humidifier Adapter, and part number HU003-1 Humidifier Bottle.



**PN: B-775314-00**

### **Oxysafe Nozzle Part Number Change**

The Oxysafe Nozzle part number 20773184 has been replaced with part number 21126636.



### **NewLife® Light Grey Panel Discontinuation**

The light grey panels for the NewLife® Intensity 8 and 10 have been discontinued. Remaining parts will be sold until stock has been depleted.

### **LifeStyle™ End of Service Life**

The LifeStyle™ Portable Oxygen Concentrator service life will end 3/18/2018. Remaining part supplies will be available until stock is depleted.

### **Generation 2 Strollers**

Please take note, we no longer offer parts or service for the Gen 2 Strollers.

### **Part Number Clarity**

When ordering parts, be sure to double check if you need a “0” or an “O” in the part number. As an example, FO is a prefix for foam items and F0 is a prefix for fittings.

### **Replacing Teflon Tape On Valve Connections**

**When replacing any valves that require Teflon tape, please follow the steps below.**

1. Clean out the old Teflon tape from the valve before installing the new tape.
2. The Teflon tape should be 1 ½-2 wraps and should have only the 1<sup>st</sup> thread bare
3. When replacing parts, we recommend 1 ½ to 3 turns past finger tight

## AirSep® Plastic Case Color Changes

The list below details the part changes from the Light Gray to Dark Gray replacement panels. The Light Gray part numbers are no longer stocked and cannot be ordered.

Plastic assemblies		
Light Gray	Dark Gray	Description
CA034-1	CA034-11	CABINET ASSY, BACK PANEL,
CA035-7S	CA035-17S	CABINET, ASSY, FRONT PANEL, ELITE
CA036-4	CA036-14	CABINET, ASSY, SIDE PANEL, SPARE
CA218-1S	CA218-11S	CABINET,8L, ASSY, FRONT PANEL,
CA254-1S	CA254-11S	CABINET,10L, ASSY, FRONT PANEL
CA265-2S	CA265-12S	CABINET, ASSEMBLY, BACK PANEL
CA266-1S	CA266-11S	CABINET, ASSY, ROLLER BASE,115V
CA266-2S	CA266-12S	CABINET, ASSY, ROLLER BASE, 220V
CA280-1S	CA280-11S	CABINET, VA, ASSY, FRONT PANEL
CA280-2S	CA280-12S	CABINET, VA, ASSY, FRONT PANEL, O2
CA282-1	CA282-11	CABINET, ASSEMBLY, SHELL, VISIONAIRE
CA285-1S	CA285-11S	CABINET,3L, ASSY, FRONT PANEL, VISIONAIRE 3
CA285-2S	CA285-12S	CABINET,3L, ASSY, FRONT PANEL, O2, V3
CA285-3S	CA285-13S	CABINET, ASSY, FRONT PANEL, O2, VISIONAIRE 2
CA005-1	CA005-11	CABINET, FRONT PANEL
CA003-1	CA003-11	CABINET, CONTROL PANEL, NO OUTLET HOLE

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### Website Information:

The following link will take you to the CAIRE's Respiratory Healthcare page shown below:

[www.cairemedical.com/provider](http://www.cairemedical.com/provider)

If you are in search of product information, manuals, cutsheet, or service bulletins, you can select the Knowledge Center tab above, or follow the direct link here:

<http://caireinc.io/2AiPUSQ>



Don't miss out on our upcoming Service Schools!

## European Service School

### TECHNICAL TRAINING 2018

<u>Date</u>	<u>Type of Training</u>	<u>Location</u>	<u>Language</u>
14-15 February	MVE	Wuppertal	English
6-7 March	LOX	Wuppertal	German
14-15 March	LOX	Padova	Italian
27-28 March	LOX	Wuppertal	English
2-3 April	LOX	Fonsorbes	French
4-6 April	Concentrator	Fonsorbes	French
10-12 April	Concentrator	Wuppertal	German
17-19 April	Concentrator	Padova	Italian
24-26 April	Concentrator	Wuppertal	English
11-12 June	LOX	Barcelona	Spanish
13-15 June	Concentrator	Barcelona	Spanish
8-9 August	LOX	Wuppertal	German
22-23 August	LOX	Wuppertal	English
4-6 September	Concentrator	Wuppertal	German
10-11 September	LOX	Fonsorbes	French
12-14 September	Concentrator	Fonsorbes	French
3-4 October	LOX	Padova	Italian
17-18 October	MVE	Wuppertal	English
23-25 October	Concentrator	Padova	Italian
6-8 November	Concentrator	Wuppertal	English

We would like to remind you that spaces are limited.

If you wish to attend, please contact Jim Gibson to make the booking.

Email address: [Jim.Gibson@chartindustries.com](mailto:Jim.Gibson@chartindustries.com)

USA Service School

**TECHNICAL TRAINING 2018**

<b>Date</b>	<b>Type of Training</b>	<b>Location</b>	<b>Language</b>
16-18 April	Concentrator	Ball Ground	English
17-19 September	Concentrator	Ball Ground	English
20-21 September	LOX	Ball Ground	English

We would like to remind you that spaces are limited.

If you wish to attend, please contact Tech Service to make the booking.

Email address: [techservice.usa@chartindustries.com](mailto:techservice.usa@chartindustries.com)

**Have you moved or added a new location?**

Reach out to us today and give that information to our customer service team!

Call: 1-800-482-2473

Email: [customerservice.usa@chartindustries.com](mailto:customerservice.usa@chartindustries.com)

**PLEASE CONSULT THE APPLICABLE PRODUCT INSTRUCTIONS FOR USE FOR PRODUCT INDICATIONS, CONTRAINDICATIONS, WARNINGS, PRECAUTIONS, AND DETAILED SAFETY INFORMATION.**