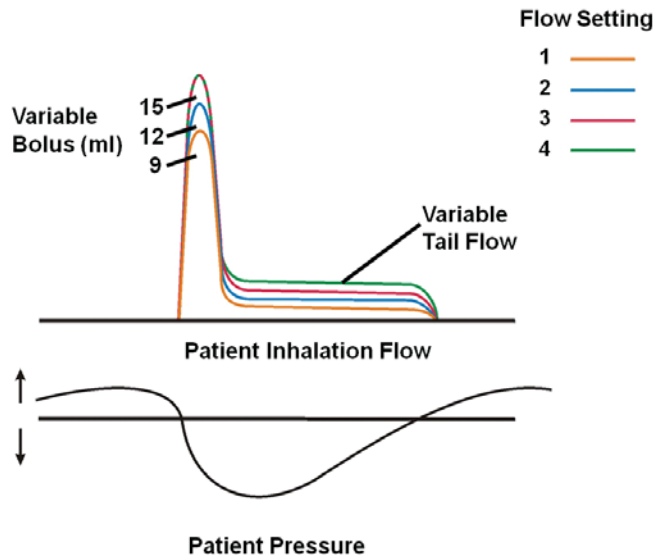


March 2016 Med Tips

Helpful Hints and FAQs

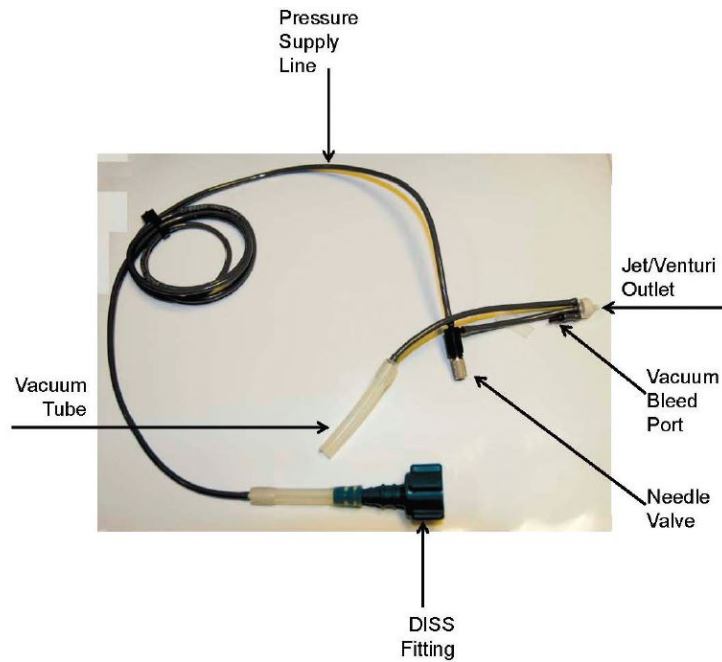
HELiOS™ Portable Pulse Flow Test

The HELiOS™ portable units deliver oxygen flow in two stages through the conservator. The pulse delivery is triggered when the user inhales. The pressure from inhaling will cause a diaphragm inside the conservator to open and deliver flow. The first stage of oxygen delivery is called a bolus. This is shown below as the initial spike in flow. The second stage of delivery is known as tail flow. This describes a set rate of delivery for the remaining duration of the user's breath. The tail flow is the measurable value for demand flow. Once the user exhales, this pushes the diaphragm closed and stops delivery of oxygen until the next breath.



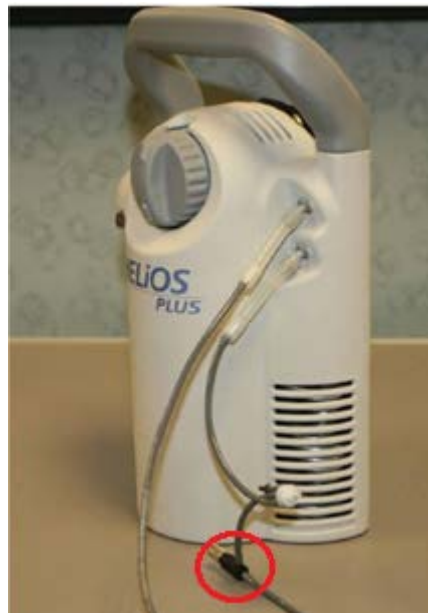
H300 & H850 Demand Delivery Curve

In order to test the demand flow, a Jet Venturi [PN: B-778210-00] assembly can be used. This will simulate the negative pressure needed to initiate the demand pulse and maintain the tail flow indefinitely. The longer tube should be connected to a gaseous oxygen source with a regulator capable of 0-100 psi. The shorter end of the tube should be placed on the lower cannula port on the front of the portable as shown in the figure below.



Jet Venturi assembly

A calibrated flow meter will need to be attached to the top cannula port and the portable will need to be filled from a properly saturated source of liquid oxygen. The unit is now ready for testing.



Jet Venturi installation

1. Make sure the needle valve, circled in red on the above picture, is closed on the Jet Venturi and set the conservator to the lowest demand setting.
2. Set the oxygen regulator to 22 psig and slowly open the needle valve on the Jet Venturi until a flow registers on the flow meter.

3. Compare the tail flow rate to Table 1 for the H300 or Table 2 for the H850 to see if the values are within specifications.
4. Adjust flow control knob to test all of the demand tail flow rates.

NOTE: While the Jet Venturi is connected, the continuous rates can be tested as well.

H300 Flow Tolerance

Flow Setting	Measured Flow	Specification (LPM)	Acceptable Range (LPM)
0	None	0.00	0.00
0.12	Continuous	0.12	0.02 - 0.22
0.25	Continuous	0.25	0.10 - 0.40
0.5	Continuous	0.50	0.35 - 0.65
0.75	Continuous	0.75	0.60 - 0.90
1	Tail Flow	0.50	0.35 - 0.65
1.5	Tail Flow	0.65	0.50 - 0.80
2	Tail Flow	0.75	0.60 - 0.90
2.5	Tail Flow	1.00	0.85 - 1.15
3	Tail Flow	1.50	1.30 - 1.70
3.5	Tail Flow	1.75	1.40 - 1.90
4	Tail Flow	2.00	1.70 - 2.30

H850 Flow Tolerance

Flow Setting	Measured Flow	Specification (LPM)	Acceptable Range (LPM)
D1.5	Tail Flow	0.65	0.5 - 0.8
D2	Tail Flow	0.75	0.6 - 0.9
D2.5	Tail Flow	1.00	0.85 - 1.15
D3	Tail Flow	1.50	1.3 - 1.7
D4	Tail Flow	2.00	1.7 - 2.3
0	None	0.00	0.00
C1	Continuous	1.00	0.85 - 1.15
C2	Continuous	2.00	1.7 - 2.3
C3	Continuous	3.00	2.6 - 3.4
C4	Continuous	4.00	3.5 - 4.5
C5	Continuous	5.00	4.4 - 5.7
C6	Continuous	6.00	5.3 - 6.8

Note: It may be necessary to attach a cannula to the unit to verify that the pulse is delivered for each of the user's breaths while inhaling normally.

AirSep® FreeStyle™™ Test Mode

Q: How do I get my AirSep® FreeStyle™ and AirSep® FreeStyle™ 5 into Test Mode to test the concentration?

A1: To get the FreeStyle™ into Test Mode, with the unit off, simply press the 2 button to turn it on and wait for the 10s warm-up period to finish (you will hear the internal fan turn on after 10s). Once the fan turns on, press and hold the 1 and 3 buttons at the same time and hold for 5s until all of the LEDs illuminate above the flow control setting buttons. The unit is in Test Mode and will start auto-pulsing.



To Put FreeStyle™ into Test Mode

A2: To get the FreeStyle™ 5 into Test Mode, with the unit off, simply press the 2 button to turn it on and wait for the 10s warm-up period to finish (you will hear the internal fan turn on after 10s). Once the fan turns on, press and hold the 1 and 5 buttons at the same time and hold for 5s until all of the LEDs illuminate above the flow control setting buttons. The unit is in Test Mode and will start auto-pulsing.



To Put FreeStyle™ 5 into Test Mode

FreeStyle™ Battery Replacement Fee

Q: If I have a FreeStyle™ or FreeStyle™ 5 POC that is under warranty, but the internal battery is out of warranty, what will be the cost to have the internal battery replaced if it is not performing to specifications?

A: If the battery is out of warranty, and requires replacement, it will be replaced for a fee unless the customer specifies that the battery is not to be replaced.

FreeStyle™ 3 Battery Replacement \$190.00

FreeStyle™ 5 Battery Replacement \$204.00

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 European CAIRE Liquid Oxygen Reservoirs and Portables fall under these requirements.

This month CAIRE Liquid Oxygen Reservoirs and Portables manufactured in **March 2011** and **March 2006** are due for inspections. The manufacture date of your equipment can be identified on the vessels data plate.

Charts 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.

United Kingdom +44 (0) 1189 367060

France +33 (0) 561 429 411

Germany +49 (0) 202 739 55420

Italy +39 049 879 9601

Email: customerservice.europe@chartindustries.com

Accessories and Parts

HELIOS™ Oxygen Supply Line:

50 ft (15.2 m) line used to connect the HELIOS™ H300 or H850 to a reservoir. When connected, the patient can breathe the oxygen from the reservoir using the portable unit as a conserver.



Part Number: B-701656-SV

Portable Test Fixture

Used to hold portable units during function testing. Prevents the portables from lying flat and makes easy access to all components. Especially useful for servicing HELIOS™ portables with the case removed.



Part Number B-778202-00

SeQual® Eclipse™ Universal Power Adapter



PN: 5591-SEQ

Universal Power Adapter with adapters to connect into standard wall outlets in Europe, UK,

New Zealand, North/South America, China, Japan, and Taiwan. Compatible with all portable and stationary oxygen concentrators.

Product Information

Companion 5™

CAIRE is proud to introduce the Companion 5™. The Companion 5™ is the most durable, reliable and technological advanced compact stationary Companion 5™ LPM oxygen concentrator available.



Features include:

Built for durability and longevity

- High capacity compressor and sieve beds
- Proprietary moisture-resistant MGB SecoBlend sieve mixture

Ease of Service

- Limited connections and modular design for easy service
- Intake filter accessible without opening case
- No cabinet filter to clean; no 9-volt battery to replace
- Large and easy-to-read hour meter displays diagnostic alarm codes.

Eco Friendly

- Less than 300 W power consumption at 3.0 LPM and Less than 300 W power consumption at 3.0 LPM and lower flow rates, reducing electrical costs
- Low noise output

Patent-pending Technology to Give You Peace of Mind

- autoFLOW™ technology optimizes overall performance
- Adjusts valve cycle timing based on flow rates
- Reduces compressor load by 25% at 2 LPM
- Decreases wear on all major components
- Consistent purity delivered at all flow rates
- ultraSILENT™ technology virtually eliminates purge (exhaust) noise

Don't Miss Out on our Upcoming Service Schools!

**CAIRE Service School Training Seminar
August 22 - 26, 2016
at Ball Ground, GA, United States**

CAIRE offers Service Schools covering both LOX and Concentrator lines.

Each class is a comprehensive program that focuses on the technical and service aspects of the CAIRE family products. Class time is divided between lecture and hands-on workshops. The seminars will help the student develop a better understanding of how liquid oxygen equipment or concentrators work, how to identify the symptoms and causes of potential problems and how to use the technical information that is available in the Technical Manuals. Attendance at CAIRE's Service Schools is free, but registration is mandatory. Registration forms must be received one week prior to the start of the class in order to guarantee availability and materials.

Concentrator Service School topics include:

- Concentrator hazards and safety precautions
 - Principles of pressure, flow and saturation
 - Functions of the major components of a portable/stationary concentrator
 - Theory of operation
 - Hands-on experience with the concentrators
 - Set up and use of test equipment
 - Troubleshooting, repair and performance verification/testing procedures with hands-on experience
- Day 1 covers these topics for AirSep® Portable and Stationary units. Product overview is offered for the AirSep® Focus™, AirSep® FreeStyle™, AirSep® FreeStyle™ 5, AirSep® NewLife®, and AirSep® VisionAire™.
 - Day 2 covers these topics for the AirSep® NewLife®, AirSep® VisionAire™ and SeQual® Eclipse™.
 - Day 3 covers these topics for the SeQual® Eclipse™ and plant tour.

LOX Service School topics include:

- Liquid oxygen (LOX) hazards and safety precautions
 - Principles of pressure, flow and liquid oxygen saturation
 - Functions of the major components of a liquid oxygen system
 - HELIOS™ system theory of operation
 - Reservoir and portable filling procedures with hands-on experience
 - Set up and use of test equipment
 - Troubleshooting, repair and performance verification/testing procedures with hands-on experience
- Day 1 covers these topics for liquid oxygen reservoirs.
 - Day 2 covers these topics for liquid oxygen portables.

2016 Training Dates

August 22 - 26, 2016

Concentrator Training: August 22, 23 & 24 in Ball Ground, GA

LOX Training: August 25 & 26 in Ball Ground, GA

November 14 -18, 2016

Concentrator Training: November 14, 15 & 16 in Ball Ground, GA

LOX Training: November 17 & 18 in Ball Ground, GA

September 14-15, 2016 and 28-29, 2016
LOX Training: September 14-15 in Wuppertal, Germany
LOX Training: September 28-29 in Padova, Italy

To register for Service School, please email:
techservice.usa@chartindustries.com for USA Training
jim.gibson@chartindustries.com for European Training

2016 Trade Shows

Show	Date	Location
Pulmonary Horizons	August 12-14, 2016	New York City, NY
European Respiratory Society	September 3-7, 2016	London, UK
Medtrade Fall	November 1-3, 2016	Atlanta, GA