

## June 2021 Med Tips

**Don't miss out on our upcoming Virtual Service Schools!**

### CAIRE Service School Training Webinars 2021

CAIRE offers Virtual 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. Registration for CAIRE's Service Schools is mandatory. Registration forms must be received two weeks prior to the start of the class in order to guarantee availability and materials.

Table 1 - Details of upcoming training.

Type	Language	Location	Training Dates	Registration by
CONC	English	Ball Ground, GA USA	August 09-11	August 2
LOX	English	Ball Ground, GA USA	August 12	August 5
LOX	German	Langenfeld, Germany	September 15	September 1
LOX	Italian	Padova, Italy	October 19-20	October 5
LOX	English	Ball Ground, GA USA	November 11	October 28
CONC	English	Ball Ground, GA USA	November 8-10	October 25
CONC	English	Wokingham, UK	November 16-18	November 2

#### 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
- Set up and use of test equipment
- Troubleshooting, repair and performance verification/testing procedures

#### 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
- Set up and use of test equipment

**Please submit your registrations forms no later than the dates in Table 1 above. If you are interested in the service schools mentioned above, and it is past the registration date, please reach out to the registration emails below. Depending on safety and travel restrictions due to COVID-19, CAIRE may at any time change the location of the training from virtual to in-person.**

To register for Service School, please email:

[Techservice.global@caireinc.com](mailto:Techservice.global@caireinc.com) for USA Training or [jim.gibson@caireinc.com](mailto:jim.gibson@caireinc.com) for European Training.

## PRODUCT UPDATES

### Availability of Spare Flow Control Valves, Secondary Relief Valves, Manifolds, and Economizers

The tables below clarify the service part usage for previous design and current design liquid oxygen portables and reservoirs. The tables list the appropriate service part for a given device, and the example figures for previous vs. current parts.

Table 2: Portables

Current Design (manufactured after 1/27/2020) Beginning S/N CBB3120041085	Previous Design (manufactured before 1/27/2020)	Type Valve	Model	Notes
<b>Flow Control Valves</b>				
11014539TS	11014521T	FCV 20 PSI - 6 LPM	Sprint/Stroller W/Meter	
14812860TS	14034703T	FCV 20 PSI - 15 LPM	Hi Flow Stroller W/Meter	
21366017S	14700235T	FCV 20 PSI - 2 LPM	Sprint/Stroller W/Meter	Pediatric
11014539TS	11014539TS	FCV 20 PSI - 6LPM	Sprint/Stroller W/Scale	
14812860TS	14812860TS	FCV 20 PSI - 15 LPM	Hi Flow Stroller W/Scale	
14700235T	14700235T	FCV 20 PSI - 2 LPM	Sprint/Stroller W/Scale	Pediatric
<b>Secondary Relief Valves</b>				
10491253T	13110225	SRV 30 psi new/ 65 psi old	Hi Flow Stroller	
<b>Manifolds</b>				
10564619S	21495020S	Manifold Assy 1.2L SF SVCE	Stroller/Hi Flow Stroller	
10812918S	21495021S	Manifold Assy 1.2L W/Auto Close VV, SVCE	Stroller/Hi Flow Stroller	
10812900S	21495022S	Manifold Assy 1.2L, Germany, SVCE	Stroller/Hi Flow Stroller	
10597787S	21495026S	Manifold Assy 1.2L TF, SVCE	Stroller/Hi Flow Stroller	

Table 3: Liberator

Current Design (manufactured after 4/1/2020) Beginning S/N CBB302014001	Previous Design (manufactured before 4/1/2020)	Type Valve	Model	Notes
<b>Flow Control Valves</b>				
21449808S	13110145	FCV 20 PSI - 15 LPM	Liberator - 20 PSI	16 Pos. Gen 4
21449806S	13110153	FCV 50 PSI - 15 LPM	Liberator - 50 PSI	16 Pos. Gen 4
21494787S	14700243T	FCV 20 PSI - 2 LPM	Liberator - 20 PSI	Pediatric
N/A	10480511T	FCV 20 PSI - 6 LPM	Liberator - 20 PSI	12 Pos. Gen 3
N/A	11018986T	FCV 20 PSI - 15 LPM	Liberator - 20 PSI	12 Pos. Gen 3
<b>Secondary Relief Valves</b>				
21215214	13110217	SRV 30 PSI	Liberator - 20 PSI	
21215227	*13110225	SRV 65 PSIG	Liberator - 50 PSI	*Was used on Hi Flow Strollers (manufactured until 1/27/2020)
<b>Economizer Regulators</b>				
21341644	10531833LAN	Econ. Regulator 20 psi	Liberator - 20 PSI	
21341648	10670260	Econ. Regulator 50 PSI	Liberator - 50 PSI	
21341652	10670251	Econ. Regulator 20 PSI Japan	Liberator - 20 PSI	

Please refer to Service Bulletin PN 21495031.

## Helpful Hints & FAQs

### **Ejector Assembly Rod – Companion Stationary LOX Units**

Once stock is depleted, the ejector assembly rod material used in manufacturing will change from an anodized to an un-anodized rod. The item part number will not change, but will stay either B-775112-00 for the ROD QC RELEASE ASSY, or part number B-775106-SV for the ASSY, QC RELEASE if you need the quick release assembly.

**Note:** White cap item number B-775113-00 is not included; please order it separately if needed.



*Previous blue rod's color.*



*Current silver rod's color.*

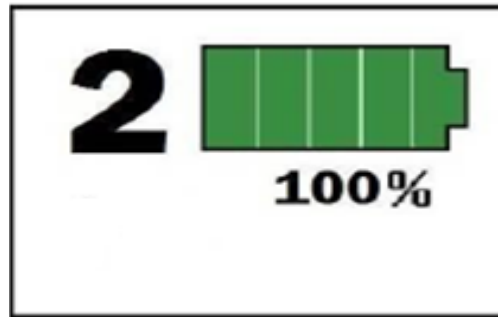
## FreeStyle Comfort Troubleshooting Guide

### 1. Customer Complaint: Unit not powering on.

Instruct the patient to follow the steps below to verify device operation before scheduling a driver to pick up the equipment or requesting the patient send the device back to you:

- a. Connect the battery (whether charged or not)
- b. Plug the unit into AC power
- c. Turn on the unit to ensure that it operates normally on AC power
- d. If the unit does operate, turn it off and allow the battery to charge to 100% (This can take approximately 3.5 hours for a single battery and 6 hours for the double battery.)
- e. Next, remove AC power and start the unit up on battery power to ensure it also operates on battery power





## 2. Other alarms that can be cleared in the field:

Issue Found	Alarm Code(s)	Suggested Solution
Low Battery Warning or Shutdown	0x0100, 0x0010	Recharge battery
Breath Rate Exceeded	0x0200	Ensure user is breathing normally. Ensure fans or other airflow disturbances are not over-triggering the unit
Battery or Case High or Low Temp	0x1000, 0x0001, 0x0002	Allow unit to cool/warm to room temp. Ensure vents are free of blockages

**Note:** These alarms should be tested thoroughly before returning to CAIRE for repairs, as they are related to environment and/or battery charge level.

## 3. Testing the Comfort

Whenever a unit is returned from a patient, perform the following steps to determine if the device is suitable to put back into the field or in need of further testing:

- a. Attach battery
- b. Plug into AC power
- c. Allow battery to charge fully
- d. Turn on and put unit into test mode (**to enter test mode press + +, - -, + -, + -, -**)

- e. Attach calibrated O2 analyzer
- f. Record O2 measurement after 5 mins
- g. Record any alarms displayed on the screen. See technical manual for addressing the various alarm codes.

**Note:** Alarm codes 0008, 0100, 0010, 0200, 0001, 1000 all indicate either abnormal running environment for the device or normal low battery.

The unit is considered acceptable for field service after the steps above have been completed and the unit meets specifications stated the user manual (CAIRE PN: MN232), with no alarm codes present.

Please refer to Service Bulletin PN 21438614.

## CAIRE Website

The CAIRE website can be found at the following address <https://www.caireinc.com/>. For our current documents— brochures, parts lists, manuals, and more—follow the link to our Knowledge Center, located here: <https://www.caireinc.com/providers/business-support-programs/knowledge-center/>

A screenshot of the CAIRE website homepage. The browser address bar shows "https://www.caireinc.com". The website header includes the CAIRE logo, navigation links for "Corporate", "Medical", "Commercial", "News + Events", and "Contact Us", and a "中国" (China) link. Social media icons for Facebook, Twitter, LinkedIn, and YouTube are also present. The main content area features a large image of Earth from space with the CAIRE logo and the tagline "O2 IS WHAT WE DO." Below this, a green banner contains the text: "CAIRE is expanding global efforts to serve healthcare providers, provide essential oxygen solutions to the fight against COVID-19." and a "READ MORE" button.

## Document update

We advise our valued customers to monitor and check that they are using the most recent revision of any documents for the model of equipment they have. The following documents have been recently updated.

- 20631679\_H TSM ECLIPSE 5
- MN240-1-E MNL, TECH, NEWLIFE 5L, 10L, ENG IEC 60601

## Med Tips Distribution!

**Need to update your Med Tips contact information or add a member of your team to our distribution list? Email us today with your new information!**

**CONTACT:** For technical questions or concerns, contact Technical Service:

USA: 800-482-2473

[techservice.global@caireinc.com](mailto:techservice.global@caireinc.com)

Europe: +44 (0) 118 936 7060

[techservice.global@caireinc.com](mailto:techservice.global@caireinc.com)

For ordering information or general inquires, contact Customer Service:

USA: 800-482-2473

[customerservice.usa@caireinc.com](mailto:customerservice.usa@caireinc.com)

Europe: +44 (0) 118 936 7060

[customerservice.europe@caireinc.com](mailto:customerservice.europe@caireinc.com)

*© Copyright 2021 CAIRE Inc. All Rights Reserved. CAIRE Inc. reserves the right to discontinue its products, or change the prices, materials, equipment, quality, descriptions, specifications and/or processes to its products at any time without prior notice and with no further obligation or consequence. All rights not expressly stated herein are reserved by us, as applicable.*

*Please consult the applicable product instructions for use for product indications, contraindications, warnings, precautions, and detailed safety information.*



# SERVICE BULLETIN

PN: 21495031

**RELEASE DATE:** June 8, 2020  
**REVISION DATE:** July 28, 2020 (Rev. B); May 01, 2021 (Rev. C)

**MODEL:** Liberator® Reservoir, Sprint™, Stroller®, and Hi Flow Stroller®

**ISSUE:** Availability of Spare Flow Control Valves, Secondary Relief Valves, Manifolds, and Economizers

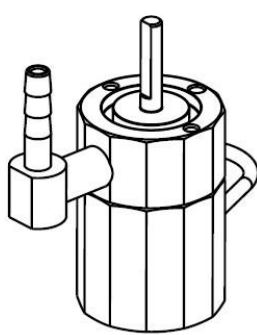
**NOTES:** This bulletin is meant to clarify the service part usage for previous design and current design liquid oxygen portables and reservoirs. Refer to the tables below for the appropriate service part for a given device and the example figures for previous vs. current parts.

**Table 1: Portables**

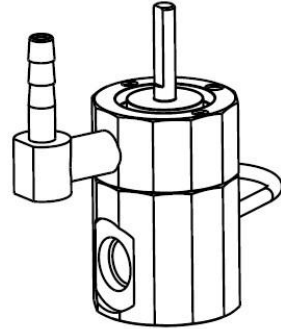
Current Design (manufactured after 1/27/2020) Beginning S/N CBB3120041085	Previous Design (manufactured before 1/27/2020)	Type Valve	Model	Notes
<b>Flow Control Valves</b>				
11014539TS	11014521T	FCV 20 PSI - 6 LPM	Sprint/Stroller W/Meter	
14812860TS	14034703T	FCV 20 PSI - 15 LPM	Hi Flow Stroller W/Meter	
21366017S	14700235T	FCV 20 PSI - 2 LPM	Sprint/Stroller W/Meter	Pediatric
11014539TS	11014539TS	FCV 20 PSI - 6LPM	Sprint/Stroller W/Scale	
14812860TS	14812860TS	FCV 20 PSI - 15 LPM	Hi Flow Stroller W/Scale	
14700235T	14700235T	FCV 20 PSI - 2 LPM	Sprint/Stroller W/Scale	Pediatric
<b>Secondary Relief Valves</b>				
10491253T	13110225	SRV 30 psi new/ 65 psi old	Hi Flow Strollers	
<b>Manifolds</b>				
10564619S	21495020S	Manifold Assy 1.2L SF SVCE	Stroller/Hi Flow Stroller	
10812918S	21495021S	Manifold Assy 1.2L W/Auto Close VV, SVCE	Stroller/Hi Flow Stroller	
10812900S	21495022S	Manifold Assy 1.2L, Germany, SVCE	Stroller/Hi Flow Stroller	
10597787S	21495026S	Manifold Assy 1.2L TF, SVCE	Stroller/Hi Flow Stroller	



**NOTE:** Portable Scale units in Table 1 did not undergo the FCV change. Included for reference.

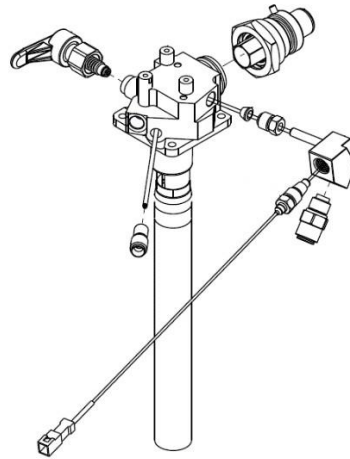
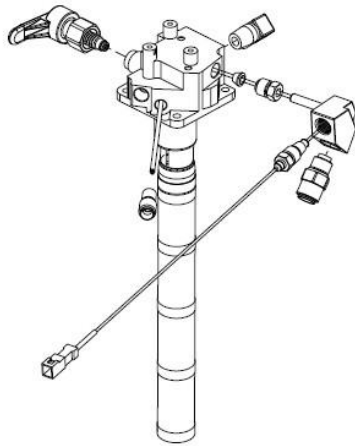


11014539T  
FCV 20PSI 0-6 LPM G3 PORT TPED  
14812860T  
FCV 20PSI 0-15 LPM G4 PORT

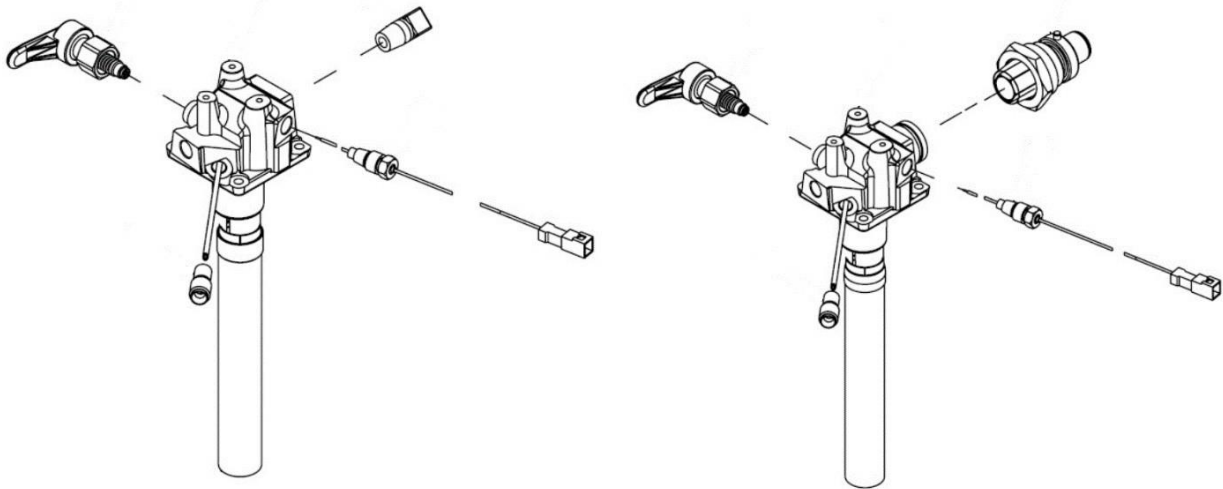


11014521T  
FCV 20PSI 0-6 LPM G3 PORT TPED  
14034703T  
FCV 20PSI 0-15 LPM G4 PORT

**Figure 1: Portable Flow Control Valves**



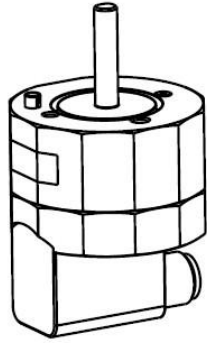
**Figure 2: Manifold Assembly - Current version**



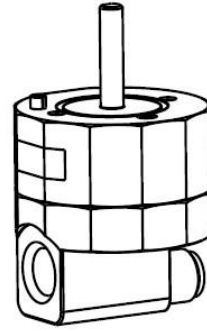
**Figure 3: Manifold Assembly - Previous Version**

**Table 2: Liberator**

<b>Current Design (manufactured after 4/1/2020) Beginning S/N CBB3020140001</b>	<b>Previous Design (manufactured before 4/1/2020)</b>	<b>Type Valve</b>	<b>Model</b>	<b>Notes</b>
<b>Flow Control Valves</b>				
21449808S	13110145	FCV 20 PSI - 15 LPM	Liberator - 20 PSI	16 Pos. Gen 4
21449806S	13110153	FCV 50 PSI - 15 LPM	Liberator - 50 PSI	16 Pos. Gen 4
21494787S	14700243T	FCV 20 PSI - 2 LPM	Liberator - 20 PSI	Pediatric
N/A	10480511T	FCV 20 PSI - 6 LPM	Liberator - 20 PSI	12 Pos. Gen 3
N/A	11018986T	FCV 20 PSI - 15 LPM	Liberator - 20 PSI	12 Pos. Gen 3
<b>Secondary Relief Valves</b>				
21215214	13110217	SRV 30 PSI	Liberator - 20 PSI	
21215227	*13110225	SRV 65 PSIG	Liberator - 50 PSI	*Was Used also on Hi Flow Strollers (manufactured until 1/27/2020)
<b>Economizer Regulators</b>				
21341644	10531833LAN	Econ. Regulator 20 psi	Liberator - 20 PSI	
21341648	10670260	Econ. Regulator 50 PSI	Liberator - 50 PSI	
21341652	10670251	Econ. Regulator 20 PSI Japan	Liberator - 20 PSI	
<b>Bracket Assembly</b>				
13307335S	21495392S	Bracket Lib S/A G4 Svce	Liberator	
<b>Economizer Assembly</b>				
13277851S	21495393S	Economizer S/A 20PSI Svce	Liberator - 20 PSI	

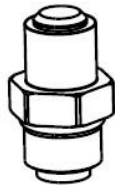


21449808  
FCV 20PSI 0-15 LPM G4 BASE



13110145  
FCV 20PSI 0-15 LPM G4 BASE

**Figure 4: Liberator Flow Control Valves**

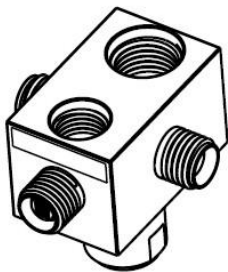


21215214  
RV 9/16-20UNF 30PSI TPED

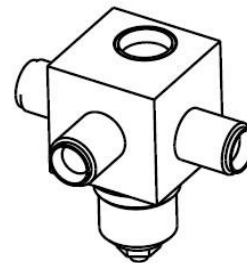


13110217  
RV 7/16-20UNF 30PSI TPED

**Figure 5: Liberator Secondary Relief Valves**



21341644  
REGULATOR 20PSI ECON W/PRV-SRV PORT



10531833LAN  
REGULATOR 20PSI ECON W/PRV PORT

**Figure 6: Liberator Economizer Regulators**

**CONTACT:** For technical questions or concerns, contact Technical Service:

USA: 800-482-2473

[techservice.global@caireinc.com](mailto:techservice.global@caireinc.com)

Europe: +44 (0) 118 936 7060

[techservice.global@caireinc.com](mailto:techservice.global@caireinc.com)

For ordering information or general inquires, contact Customer Service:

USA: 800-482-2473

[customerservice.usa@caireinc.com](mailto:customerservice.usa@caireinc.com)

Europe: +44 (0) 118 936 7060

[customerservice.europe@caireinc.com](mailto:customerservice.europe@caireinc.com)

*Copyright © 2021 CAIRE Inc. CAIRE Inc. reserves the right to discontinue its products, or change the prices, materials, equipment, quality, descriptions, specifications and/or processes to its products at any time without prior notice and with no further obligation or consequence. All rights not expressly stated herein are reserved by us, as applicable.*



# *SERVICE BULLETIN*

PN: 21438614

**RELEASE DATE:** July 1, 2019

**MODEL:** FreeStyle® Comfort®

**ISSUE:** FreeStyle Comfort Troubleshooting Guide

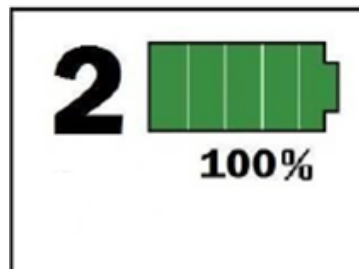
**NOTES:** This guide is meant to aid service technicians, delivery drivers, customer service representatives and those at medical equipment companies who interface directly with portable oxygen concentrator users using the CAIRE FreeStyle Comfort. Many device returns from patients are due to misunderstanding of device operation (such as returning a unit for low battery alarm). The following procedures and tips are meant to assist personnel and medical equipment companies with troubleshooting devices both in the field with patients and testing units in the service department.

The following procedures are meant to assist in field troubleshooting to determine if the FreeStyle Comfort unit needs to return to CAIRE for service repairs.

## 1) Customer Complaint: Unit not powering on.

Instruct the patient to follow the steps below to verify device operation before scheduling a driver to pick up the equipment or requesting the patient send the device back to you:

1. Connect the battery (whether charged or not)
2. Plug the unit into AC power
3. Turn on the unit to ensure that it operates on AC power normally.
4. If the unit does operate, turn it off and allow the battery to charge to 100%. (This can take approximately 3.5 hours for a single battery and 6 hours for the double battery.)
5. Next, remove AC power and start the unit up on battery power to ensure it operates on battery power also.



## 2) Other alarms that can be cleared in the field:

- **Low Battery Warning or Shutdown (alarm codes 0x0100 or 0x0010):** Recharge battery
- **Breath Rate Exceeded (alarm code 0x0200):** Ensure user is breathing normally. Ensure fans or other airflow disturbances are not over-tiggering the unit.
- **Battery or Case High or Low Temp (alarm codes 0x1000, 0x0001, 0x0002):** Allow unit to cool/warm to room temp. Ensure vents are free of blockages.

**Note:** These alarms should be tested thoroughly before returning to CAIRE for repairs as they are related to environment and/or battery charge level.

### Testing the Comfort

Whenever a unit is returned from a patient, perform the following steps to determine if the device is suitable to put back into the field or in need of further testing:

1. Attach battery
2. Plug into AC power
3. Allow battery to charge fully
4. Turn on and put unit into test mode (**to enter test mode press + +, - -, +, -, +, -**)
5. Attach calibrated O2 analyzer
6. Record O2 measurement after 5 mins.
7. Record any alarms displayed on the screen. See technical manual for addressing the various alarm codes.

**Note:** Alarm codes 0008, 0100, 0010, 0200, 0001, 1000 all indicate either abnormal running environment for the device or normal low battery.

The unit is considered acceptable for field service after the steps above have been completed and meets specifications stated the User Manual (CAIRE PN: MN232), with no alarm codes present.

**CONTACT:** For technical questions or concerns, contact Technical Service:

USA: 800-482-2473

[techservice.global@caireinc.com](mailto:techservice.global@caireinc.com)

Europe: +44 (0) 118 936 7060

[techservice.global@caireinc.com](mailto:techservice.global@caireinc.com)

For ordering information or general inquiries, contact Customer Service:

USA: 800-482-2473

[customerservice.usa@caireinc.com](mailto:customerservice.usa@caireinc.com)

Europe: +44 (0) 118 936 7060

[customerservice.europe@caireinc.com](mailto:customerservice.europe@caireinc.com)

*Copyright © 2019 CAIRE Inc. CAIRE Inc. reserves the right to discontinue its products, or change the prices, materials, equipment, quality, descriptions, specifications and/or processes to its products at any time without prior notice and with no further obligation or consequence. All rights not expressly stated herein are reserved by us, as applicable.*

*Please consult the applicable product instructions for use for product indications, contraindications, warnings, precautions, and detailed safety information.*