

# User Manual



SureFlow<sup>™</sup>

**SureFlow**<sup>™</sup>

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# User Controls & System Status Indicators

Symbol	Definition
	Warnings and Cautions
	No serviceable parts inside. Do not open cover.
	Do not expose to open flames
	No Smoking Icon: Do not smoke near unit.
	Complies with the 93/42/EEC directive drawn up by the approved organization No. 0459
	Use no oil or grease.
	Read user manual before operation. See user manual for instructions.
	This symbol is to remind the equipment owners to return it to a recycling facility at the end of its life, per Waste Electrical and Electronic Equipment (WEEE) Directive. Proper disposal of waste of electrical and electronic equipment required.
	Name and address of manufacturer
	Authorized representative in the European Community
	Date of Manufacturer
	Serial Number
	Reference Number

AirSep Corporation is ISO 9001:2008 and ISO 13485:2003 w/ CMDCAS certified.



WARNING: REFER TO THE INSTRUCTIONS OR MANUAL FROM THE OXYGEN SOURCE MANUFACTURER FOR ALL WARNINGS, CAUTIONS AND NOTES THAT MAY BE APPLICABLE.

WARNING: OXYGEN PROMOTES RAPID BURNING. DO NOT ALLOW SMOKING OR OPEN FLAMES IN THE SAME ROOM WHERE OXYGEN IS BEING USED.

WARNING: CERTAIN OXYGEN CONCENTRATORS MAY REQUIRE A MINIMUM FLOWRATE TO PRODUCE HIGH CONCENTRATION OXYGEN. WHEN USING SUREFLOW WITH THESE MODELS THE MINIMUM FLOWRATE MUST BE ACHIEVED THROUGH COMBINED PATIENT USE, OR WHEN NECESSARY, BY ALLOWING SOME OF THE OXYGEN TO VENT OUT OF AN UNUSED OXYGEN OUTLET.



CAUTION: The oxygen source must not exceed 20 psig (138 kPa)

Note: This manual covers connecting the SureFlow to an oxygen concentrator source. If you intend to use another oxygen source, consult with the manufacturer or supplier of that oxygen equipment.

## Introduction

SureFlow™ is a new and uniquely engineered flow station developed by AirSep Corporation for economically administering medical-grade oxygen to multiple patients from an oxygen concentrator or other oxygen source (gas or liquid).

This product enables clinicians and medics around the world to manage and redirect the flow from a single oxygen source to a simple flow station to serve up to five individuals per SureFlow unit.

Two or more SureFlow units can be connected together to serve even more individuals simultaneously. Each flowmeter is adjusted separately to ensure precise control with a visual indication of flow for safety and comfort.

Dual flow models of NewLife® Intensity 8 and 10 LPM concentrators provide greater flexibility in delivering oxygen by allowing SureFlow to operate connected to one of the concentrator's flowmeters while the secondary flowmeter can supply oxygen for a nebulizer treatment or a higher flow patient.

SureFlow units also meet the low flow oxygen needs of pediatric patients in a critical care nursery in developing countries around the globe. The standard SureFlow is configured with 5 low-flow flowmeters, which display in 1/10 increments and can be used within a wide range of settings from 1/10 LPM to 1.0 LPM. SureFlow can also be specially ordered with a combination of 1 LPM and 5 LPM flowmeters, or with five 2 LPM flowmeters which display in 1/8 LPM increments.



# Components



## Procedures For Set-Up

### Using One SureFlow Oxygen Flow Station

The following step-by-step instructions apply to SureFlow flow stations used with oxygen concentrators, although you may use any medical-grade oxygen source that does not exceed 20 psig (138 kPa).

To supply oxygen to the SureFlow unit:

Note: During set-up, nothing is initially connected to the oxygen concentrator at this time. This is important to prevent the concentrator from being overdrawn when using with the SureFlow unit.

1. Supply power to the oxygen concentrator, and set the I/O switch to the I position to turn it on.
2. Set the flowmeter on the oxygen concentrator to the maximum capacity of the unit (for example 5 LPM, 8 LPM, or 10 LPM, depending on concentrator model).
3. Connect the oxygen hosing (supplied) to the outlet of the oxygen concentrator, as shown in Figure 1.



Figure 1

4. Connect the other end of the oxygen hosing to either inlet of the SureFlow unit (See Figure 2.).



Figure 2

5. As necessary, test for leaks at both ends of the hose by applying soapy water to each of the connection points. If bubbling occurs, then leaks are present, and the connection must be tightened properly until leaks are eliminated.

It may be more apparent if there is a leak(s) by allowing the concentrator to run with all flowmeters turned off at the flow station. If no leak is present, the flowmeter on the concentrator should read zero.

Another aid in determining the source of a leak(s) is to put your thumb over each outlet at the SureFlow station, one at a time. The flowmeter ball must drop to zero on each test, indicating no leak within the SureFlow station.

6. Attach up to five (5) cannulas at the oxygen outlets of the flow station, depending on how many patients will be receiving oxygen therapy. Cannula length for each outlet can be a maximum of 50 feet (15 meters).



Figure 3

Note: Before setting flowmeters, ensure that the SureFlow station is level, and that you are at the correct viewing angle to properly read and adjust the settings. (See Figure 3.) Whether the flow stations are mounted on a wall or located on a desk or table-top, make sure that you are positioned in front of the flowmeters to be adjusted (bending down to eye level as necessary), so that when looking at the flowmeter, each of its back and front black, horizontal line markings are in exact alignment (appear as just one horizontal line per increment). Proper adjustment will appear to split the flowmeter ball horizontally across the center of the ball as just one line.

- Set the desired flow on each flowmeter used at the flow station. The maximum flow will be dependant on the capacity of the oxygen concentrator used. The sum of the flow settings on the flow station's flowmeters must not exceed the capacity of the oxygen concentrator.



**WARNING: IT IS VERY IMPORTANT TO RE-ADJUST THE FLOWS AS NECESSARY ON ALL FLOWMETERS BEING USED ON THE FLOW STATION EACH TIME ADJUSTMENT OR DISCONTINUED USE TO ONE OR MORE OF THE FLOWMETERS IS MADE TO ENSURE ACCURATE PRESCRIPTIONS ARE ADMINISTERED THROUGH ALL OXYGEN OUTLETS ON THE UNIT. IT MAY TAKE SEVERAL ADJUSTMENTS TO STABILIZE THE FLOW ON THE SUREFLOW FLOWMETERS.**

- Observe that the flowmeter on the oxygen concentrator now indicates the total combined amount of flow in use at the SureFlow flow station.



**CAUTION:** It is desirable to establish a protocol to monitor and verify flows at all SureFlow outlets as well as from the oxygen concentrator on a periodic basis.



**WARNING: AIRSEP NEWLIFE INTENSITY OXYGEN CONCENTRATOR MODELS REQUIRE A MINIMUM FLOWRATE OF 2 LPM TO ACHIEVE HIGH CONCENTRATION OXYGEN. WHEN SUREFLOW IS USED WITH THE INTENSITY, ENSURE THE COMBINED FLOWRATE IS AT LEAST 2 LPM. IF COMBINED PATIENT USE IS BELOW 2 LPM, IT WILL BE NECESSARY TO VENT SOME OF THE OXYGEN TO ATMOSPHERE THROUGH AN UNUSED OXYGEN OUTLET ON THE SUREFLOW IN ORDER TO ACHIEVE A TOTAL FLOWRATE OF AT LEAST 2 LPM.**

## Oxygen from Dual Flow Concentrators

If the oxygen source for the SureFlow station(s) is made available from an oxygen concentrator with two flowmeters and two outlets, such as from AirSep's NewLife Intensity or NewLife Intensity 10, it is possible to use one of the flowmeters on the concentrator for SureFlow and to use the second flowmeter for another application.

For example, if the SureFlow is using a total combined flow of 4 LPM from a NewLife Intensity 10 (which has been set for its maximum capacity of 10 LPM), the flowmeter corresponding to the outlet connected to SureFlow reflects the 4 LPM flow in use. This allows a maximum of 6 LPM to be set on the secondary flowmeter for another oxygen application.

Note: The combined flows from the SureFlow flow station and the secondary flowmeter cannot exceed the total capacity of the oxygen concentrator. If adjustment to any of the SureFlow flowmeters is made to increase or decrease the amount of flow, the result will be that more or less flow will be available for the secondary flowmeter application.



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## Using Multiple SureFlow Oxygen Flow Stations

Two or more SureFlow flow stations can be connected together to divert the flow from a single oxygen concentrator or other oxygen source to even more oxygen outlets to serve additional patients. The maximum capacity of flow that can be set from all flowmeters combined from the flow stations must not exceed the capacity of the oxygen source used.

To supply oxygen to the SureFlow units:

Note: During set-up, nothing is initially connected to the oxygen concentrator at this time. This is important to prevent the concentrator from being overdrawn when using with the SureFlow units.

1. Supply power to the oxygen concentrator, and set the I/O switch to the I position to turn it on.
2. Set the flowmeter on the oxygen concentrator to the maximum capacity of the unit (for example 5 LPM, 8 LPM, or 10 LPM, depending on concentrator model).
3. Use a second 7 ft (2.1 m) oxygen hose (AirSep Part No. TU056-074), to connect the available end of the first flow station to an inlet fitting on the second flow station. (See Figure 4.)



Figure 4

4. If more than two flow stations are to be used, repeat step 3 with additional oxygen hosing and flow stations.
5. As necessary, test for leaks at all ends of the hose by applying soapy water to each of the connection points. If bubbling occurs, then leaks are present, and the connection must be tightened properly until leaks are eliminated.

It may be more apparent if there is a leak(s) by allowing the concentrator to run with all flowmeters turned off at the flow station. If no leak is present, the flowmeter on the concentrator should read zero.

Another aid in determining the source of a leak(s) is to put your thumb over each outlet at the SureFlow station, one at a time. The flowmeter ball must drop to zero on each test, indicating no leak within the SureFlow station.

6. Attach up to five (5) cannulas per flow station, depending on how many patients will be receiving oxygen therapy. Cannula length for each outlet can be a maximum of 50 feet (15 meters).

Note: Before setting flowmeters, ensure that the SureFlow station is level, and that you are at the correct viewing angle to properly read and adjust the settings. (See Figure 3.) Whether the flow stations are mounted on a wall or located on a desk or table-top, make sure that you are positioned in front of the flowmeter to be adjusted (bending down to eye level as necessary), so that when looking at the flowmeter, each of its back and front black, horizontal line markings are in perfect alignment (appear as just one horizontal line per increment). Proper adjustment will appear to split the flowmeter ball horizontally across the center of the ball as just one line.

7. Set the desired flow on each flowmeter used at the flow stations. The maximum flow will be dependant on the capacity of the oxygen concentrator used. The sum of the flow settings on the flow station's flowmeters must not exceed the total capacity of the oxygen concentrator.



**WARNING: IT IS VERY IMPORTANT TO RE-ADJUST THE FLOWS AS NECESSARY ON ALL FLOWMETERS BEING USED ON THE FLOW STATIONS EACH TIME ADJUSTMENT OR DISCONTINUED USE TO ONE OR MORE OF THE FLOWMETERS IS MADE TO ENSURE ACCURATE PRESCRIPTIONS ARE ADMINISTERED THROUGH ALL OXYGEN OUTLETS ON THE UNIT. IT MAY TAKE SEVERAL ADJUSTMENTS TO STABILIZE THE FLOW ON THE SUREFLOW FLOWMETERS.**

8. Observe that the flowmeter on the oxygen concentrator now indicates the total combined amount of flow in use at the flow stations, which are connected.



**CAUTION:** It is desirable to establish a protocol to monitor and verify flows at all SureFlow outlets as well as from the oxygen concentrator on a periodic basis.

## Units Equipped with Barb Fitting Oxygen Outlets

When connecting oxygen concentrators with a barb fitting as the oxygen outlet, such as AirSep's VisionAire Oxygen Concentrator, the oxygen hosing will not be needed.

Instead, securely connect standard oxygen tubing to the barb fitting on the oxygen concentrator and then using an oxygen adapter (AirSep part number F0025-1) on the inlet of the SureFlow flow station, connect the other end of the tubing. (See Figure 5.) completely clockwise.

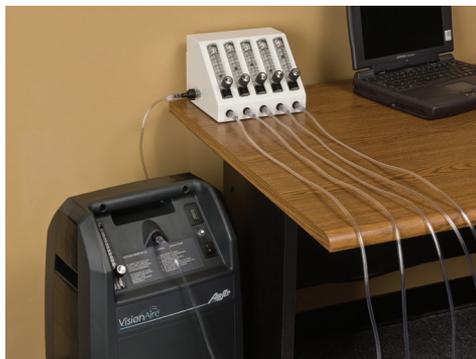


Figure 5



**WARNING:** AIRSEP VISIONAIRE OXYGEN CONCENTRATOR MODELS REQUIRE A MINIMUM FLOWRATE OF 1 LPM TO ACHIEVE HIGH CONCENTRATION OXYGEN. WHEN SUREFLOW IS USED WITH THE VISIONAIRE ENSURE THE COMBINED FLOWRATE IS AT LEAST 1 LPM. IF COMBINED PATIENT USE IS LESS THAN 1 LPM, IT WILL BE NECESSARY TO VENT SOME OF THE OXYGEN TO ATMOSPHERE THROUGH AN UNUSED OXYGEN OUTLET ON THE SUREFLOW IN ORDER TO ACHIEVE A TOTAL FLOWRATE OF AT LEAST 1 LPM.

## Cleaning

Do not use abrasive powders or chemicals. Clean only the exterior of the SureFlow unit, which can be disinfected with either a common chemical disinfectant or a diluted solution\* of household bleach (sodium hypochlorite 5.25%). To use effectively, mix a solution of 1:100 parts of bleach to water. Wear eye and skin protection and allow the solution to remain on the surface for 10 minutes. After using the disinfecting solution, rinse with water and wipe dry. Make sure unit is completely dry and then retest it before you return it to inventory.

\* The manufacturers of sodium hypochlorite products recommend various strengths of a bleach solution for killing bacteria, etc., based on the type of germ to disinfect; however, a generally recommended solution is ¼ cups (237 ml) of household bleach per gallon (3.79 L) of water.

## Specifications

Dimensions	9.7 in. W x 5.8 in. H x 7.2 in. D (24.6 cm W x 14.7 cm H x 18.3 cm D)
Weight	3.28 lb (1.49 kg) 5.6 lb (2.5 kg) – Shipping Weight
Maximum Inlet Pressure	20 psig (138 kPa)
Flowmeters	Low flow flowmeters can be used from 1/10 LPM to 1 LPM with .1 LPM increments with back lines for proper viewing angle.
Flowmeter Accuracy	0-1 lpm Flowmeter $\pm$ 3% of Full Scale 0-2 lpm Flowmeter $\pm$ 5% of Full Scale 0-5 lpm Flowmeter $\pm$ 5% of Full Scale
Operating Temperature	5 - 40°C (40° - 104°F)
Storage Temperature	-5° - 60°C (30° - 140°F)

# SureFlow™



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