Set- Up

Before you use the NOxBOX Ltd NOxBOX$_i$ intelligent Nitric Oxide delivery and monitoring system it is important to follow these steps:

Ensure the device does not require maintenance (monthly) and that the maintenance is not due during the expected duration of the therapy such as:

- NO sensor high calibration
- NO_2 sensor high calibration
- Pump calibration
- Vent calibration

Checklist

- Ensure the device is clean and free from damage
- Ensure the water trap is empty and has been cleaned from previous use
- Ensure all single use items from previous patient have been discarded

Equipment you will need for set-up:

- A NOxBOX$_i$ system test kit (NOXBOX-I TEST)
- A NOXKIT (inspiratory limb size dependant)
- Two cylinders of delivery gas

Additional items

- NOxAIR Environmental monitors
- EMER kit- Emergency backup
- Oxygen hose for NOxMixer
- A 22mm one-way valve for HFO ventilator circuits (FXS555)

NOTE: If you do not have the parts listed above or the device has not been maintained the NOxBOX$_i$ may not be suitable for use and you may be unable to set-up the device. Failure to follow these procedures may result in harm to to the operator or the patient.

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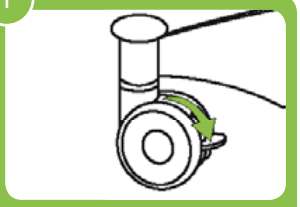
CE 0086

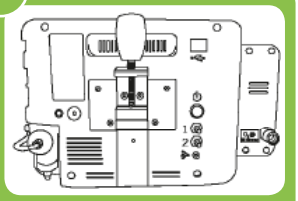
NOxBOX® Ltd bsi. ISO 13485 Medical Devices Quality Management

1



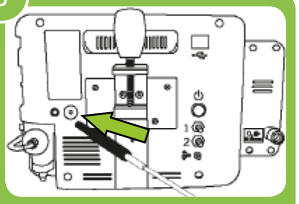
Engage trolley brakes to stabilise system prior to use.

2



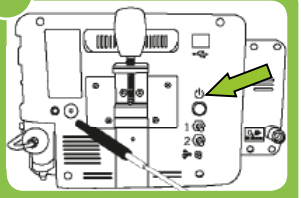
Carefully attach monitor to trolley and fully tighten clamp.

3



Connect power supply to suitable rated mains outlet.

4

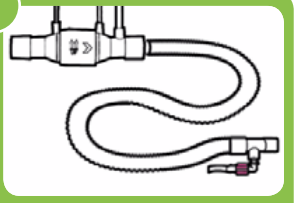


Press power button to start system.

5

Once zero test is complete, follow instructions on screen to set-up system. Experienced users may choose to skip directly to system tests or skip to dose.

6

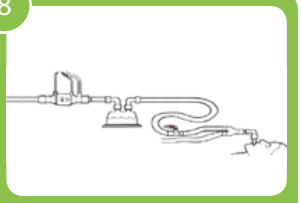


System test circuit set-up: NOxFlow™ arrow points in direction of flow. 1m vent tubing between sample point and NOxFlow™.

7

Perform system test to ensure correct system functionality prior to connecting to patient.

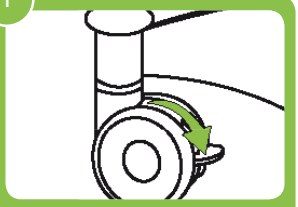
8



Connect to patient circuit; sample near patient Y-piece. Retain NOxFlow™ orientation for flow and 1m distance from sample point.

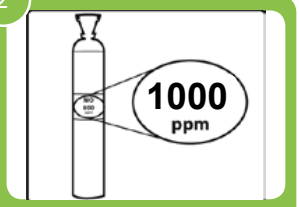
Cylinder setup

1



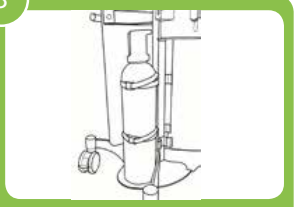
Engage trolley brakes to stabilise system prior to changing cylinder.

2



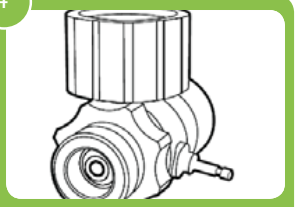
Check cylinder concentration matches the setting for the system.

3



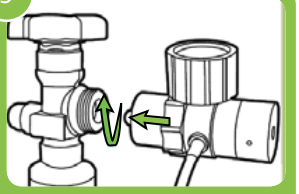
Load cylinders onto trolley. Secure with straps.

4



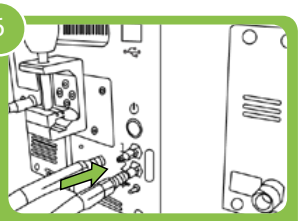
Check regulator surfaces and O ringsare damage free. Do not use damaged equipment.

5



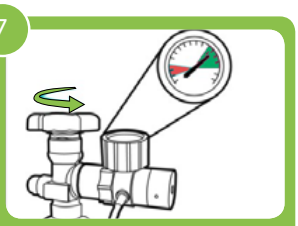
Attach regulator to cylinder. Screw firmly by hand. Attach supply line to regulator.

6



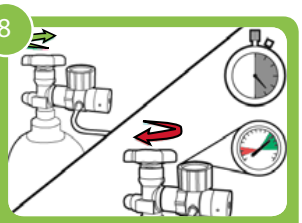
Apply supply line to port on rear of monitor

7



Slowly open cylinder valve. Read gauge. If needle in red zone, replace cylinder before starting treatment.

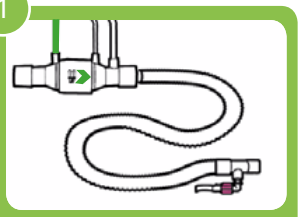
8



Perform a leak test: open the cylinder valve then close. Observe gauge for 30 seconds, needle should remain stationary.

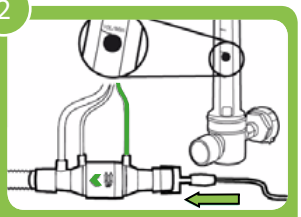
System tests

1



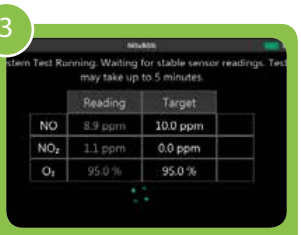
System test circuit set-up: NOxFlow arrow points in direction of flow. 1m vent tubing between sample point and NOxFlow.

2



Re-open NO cylinder. Connect O_2 supply to NOxFlow™ inlet. Set O_2 flow to 10 L/min. Press "Next" on system screen to run test.

3

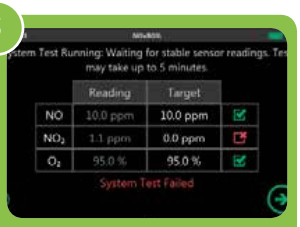


System test takes approx. 5 minutes to run. This purges NO2 and ensures correct NOxBOX$_i$ operation.

4

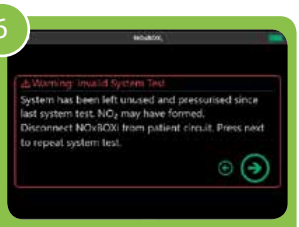
System test passed. Stop O_2 flow and disconnect from NOxflow. Ready to connect to patient.

5



System test failed. Check: NOxFlow orientation; O_2 flow at 10 L/min, NO cylinder connected and valve open. Re-run test.

6



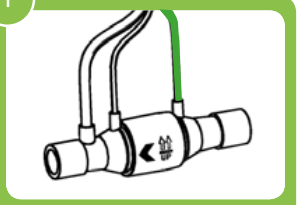
Put unit in stand-by mode by setting dose to zero and disconnecting supply hoses, otherwise the unit may time out and may require you to repeat step 3.

7

Connect to patient circuit. Enter dose and check alarm levels before commencing treatment.

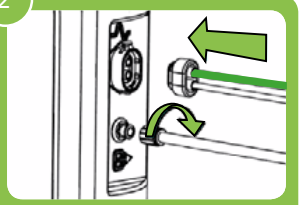
Ventilator connections

1



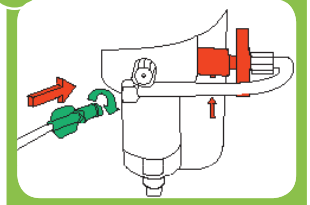
The NOxFlow™ is single patient use. Unwrap and carefully uncoil the lines.

2



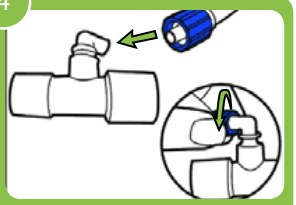
Push and click-to-lock twin sensor line to unit.
Twist dose line luer to unit.

3



Connect sample line and hydrophobic filter.

4



Select a vent connector with luer port from the NOXKIT™. Connect the male luer of the sample line.

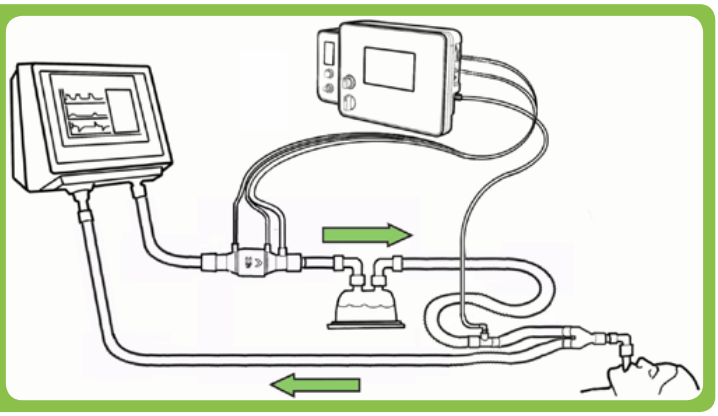
5

NOxFlow™ is situated in the inspiratory limb, before the humidifier.

The sample line is up to 30cm from patient. Situated in the inspiratory limb just prior to the patient Y-piece.

NOxFlow should be approx. 1 metre back from the sample point. Ideal range 0.7 m – 1.3 m.

For system test, high frequency and manual bagging circuit diagrams please refer to Technical Guide.



Dose setting & main screen features

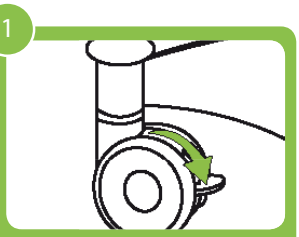
To set or change dose press 'edit dose'. The NOxBOXi will then guide you through setting the dose and high/low alarms. Once confirmed the delivery and monitoring will adjust accordingly.

Maximum dose - 80ppm
Minimum dose - 0.1ppm

The navigation tabs access the alarm history and user settings screens.
Alarm history: shows last 10 alarms for current treatment. Unresolved alarms are listed at the top.
User settings: change user settings, access Manual Override calculator, Sensor Zero and Service Engineer area.

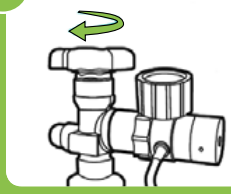
Cylinder replacement

1



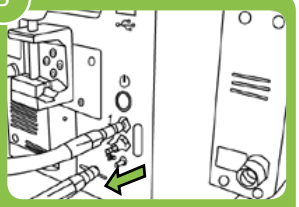
Engage trolley brakes to stabilise system prior to changing cylinder.

2



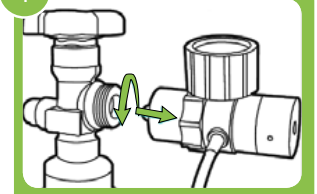
Fully close cylinder valve.

3



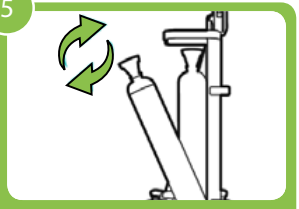
Detach hose from monitor and depressurise on purge needle.

4



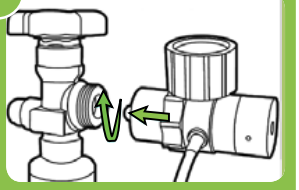
Check regulator gauge pressure is relieved and remove regulator from depleted cylinder.

5



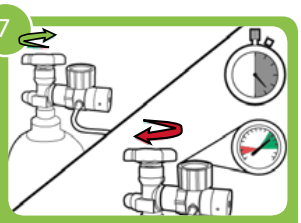
Remove depleted cylinder from trolley and replace with new supply cylinder. Check the concentration matches the value displayed on-screen.

6



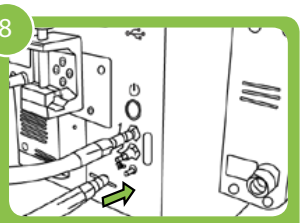
Check O rings and attach regulator to new cylinder.

7



Perform a leak test: Slowly open the cylinder valve then close. Observe gauge for 30 seconds, needle should remain stationary.

8



Purge pressure from hose, then reconnect the hose to inlet port monitor. Open valve on cylinder fully.

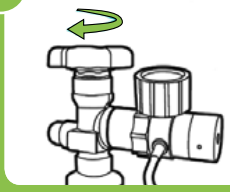
1

When ready to shutdown the system, briefly press the power button on the monitor .

2

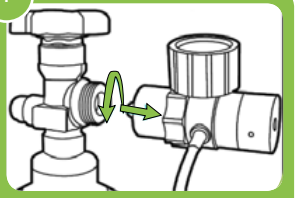
Confirm on-screen that shutdown is required. Follow on-screen instructions.

3



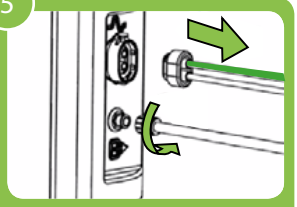
Fully close each cylinder and depressurise the supply lines using the purge needle.

4



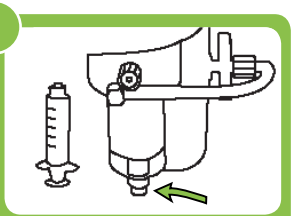
Check regulator gauge pressure is relieved and remove regulator from each cylinder and stow on system trolley.

5



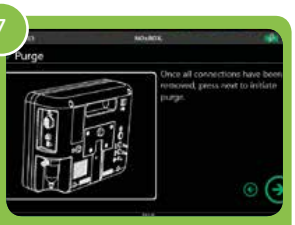
Remove all single patient use devices from monitor and dispose of according to local regulations.

6



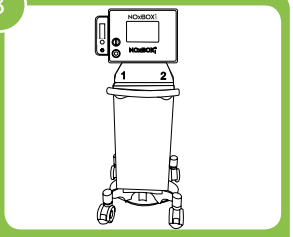
Drain water trap and dispose of drainage syringe.

7



On completion of last instruction screen, system will purge and shutdown safely ready for storage.

8



Remove power supply and store on trolley for transport. Ensure system is attached to suitable mains supply whilst in storage.

ALARMS TROUBLESHOOTING

The NOxBOX$_i$ is equipped with audible and visible alarm notifications; this chapter is a guide to the alarm conditions that can occur and common actions for alarm resolution. All alarms are graded into high priority or medium priority alerts.

NOTE: In all instances of alarms sounding, the health and condition of the patient must be ensured before attempting to resolve any issue with the NOxBOX$_i$ system.

Alarm Priorities

The system alarms are colour coded to help identify priority of detected issue. Additionally, the two alarm priorities each have an audible warning to help differentiate them.

Priority	Colour & Tone	Meaning
High	Red 5 tone pattern & Red L.E.D. alarm strip.	Critical problem detected. Condition poses immediate threat to patient health or correct functioning of the NOxBOXi monitor. Alarm condition should be diagnosed and resolved immediately.
Medium	Amber 3 tone pattern	Problem detected. Condition may impair the functioning of the NOxBOXi. If left unresolved, problem may worsen and cause a high priority alarm condition.

Notifications at Switch on

The below are a series of notifications which may be seen at start-up (before the home screen) if an issue is detected with the NOxBOX$_i$.

Notification	Priority	Possible Cause	Recommended
NOxBOX$_i$ System Diagnostics	High	The NOxBOX$_i$ performs self-tests at start-up and during operation to ensure safe performance is maintained. In the event that a critical test fails, the system will display a full-screen notice indicating that the system can no longer be used safely.	Press the on screen reset button.
Sensor Bias Lost	High	The Nitric Oxide sensor requires a constant very low trickle charge to maintain its calibration. In the event that the system is not stored on mains power charge, after an extended period of time the battery may completely discharge and the sensors will lose their calibration bias.	In the event of power loss, connect the unit to mains power and allow 6 hours for the unit to charge before calibrating the NO sensor and re-commissioning the unit.
			If another system is not readily available and patient requires therapy, engage the manual override mode, replace the system as soon as practically possible and alert the Service Engineer.
		The Nitric Oxide sensor is sensitive to extreme temperature variation, contact with VOCs (such as alcohol based cleaning products), strong fragrances, direct contact with moisture or vibrations (such as during transit in a vehicle).	Follow setup steps as normal, if sensor zero fails re attempt until the unit passes, this can take up to 30 minutes in some cases.
		The NO sensor may require replacing.	If another system is not readily available and patient requires therapy, engage the manual override mode, replace the system as soon as practically possible and alert the Service Engineer.

High Priority Alarms during therapy

The below are a series of alarms which may be seen during therapy (once the device has been setup) if an issue is detected with the NOxBOX$_i$.

Alarm	Priority	Possible Cause	Recommended Action
NO Low	High	Monitored levels of NO gas being delivered to the patient have dropped below the alarm setting boundary. NOxBOX$_i$ delivery system cannot maintain correct dose setting.	Check sample line is correctly attached to ventilator circuit and NOxBOX$_i$ water trap inlet.
			Check sample line and filter for blockages.
			Check water trap (including barrel thread) for damage and/or leaks.
			Check no ventilator circuit breaks or leakages have occurred.
			Check supply cylinder is connected, open; there are no leaks and the concentration matches the system settings.
			Check correct orientation of NOxFLOW.
			Check NOxFLOW dose line and connection is connected and there are no blockages or leaks.
			Check NOxFLOW flow detection lines and connection (including O rings) are connected and there are no blockages or leaks.
		The ventilator minute volume may be too low.	Check ventilator minute volume (see NOxBOX$_i$ technical guide for flow specifications), you may need to increase the ventilator bias flow.
		The NO low alarm may be inappropriately set by user.	Check NO low alarm value and reduce value if ventilator settings deem necessary.
		The NO sensor may require replacing.	If another system is not readily available and patient requires therapy, engage the manual override mode, replace the system as soon as practically possible and alert the Service Engineer.
NO High	High	Monitored levels of NO gas being delivered to the patient have risen above the alarm setting boundary. NOxBOX$_i$ delivery system cannot maintain the correct dose setting.	Check supply cylinder concentration matches the system settings. If possible, change the NO supply cylinder for the correct concentration. If not, call Service Engineer to resolve.
			Check no ventilator circuit break/leakage has occurred that may cause build-up of NO concentration due to lack of ventilator flow.
			Check correct orientation of NOxFLOW.
			Check NOxFLOW connection (and O rings) to NOxBOX$_i$.
		The NO high alarm may be inappropriately set by user.	Check NO high alarm value and increase value if ventilator settings deem necessary.
		The NO sensor may require replacing.	If another system is not readily available and patient requires therapy, engage the manual override mode, replace the system as soon as practically possible and alert the Service Engineer.

NO_2 High	**High**	Monitored levels of NO_2 gas being delivered to the patient have risen above the alarm setting boundary.	High NO dose settings on low ventilator flows with High O_2 content may cause higher NO_2 build-up than expected. Increase ventilator bias flow to help reduce stagnation in delivery.
		Poor quality NO cylinders can contain high levels of NO_2	Connect a second supply cylinder to the alternate inlet port. Open the cylinder and disconnect the previous cylinder, forcing a cylinder changeover to see if this resolves the issue.
		The NO_2 high alarm is set to a default value of 1.0ppm. **NO_2 is extremely toxic and poses risk to patient health.**	The alarm value can be increased to a maximum of 5.0ppm if required. Please see INO guidelines for more information on maximum NO_2 values during INO therapy.
		Incorrect placement of NOxFLOW and sample line.	See ventilator circuit diagram for correct placement of NOxFLOW and sample line.
		Whilst in standby mode NO_2 can build up in supply lines.	Purge supply lines (see cylinder change procedure).
		Stagnant gas in manual bag circuit causing NO_2.	Purge manual bag circuit before connecting to patient (see manual bagging procedure).
		The NO_2 sensor may require replacing.	If another system is not readily available and patient requires therapy, engage the manual override mode, replace the system as soon as practically possible and alert the Service Engineer.
O_2 Low	**High**	Monitored levels of O_2 gas being delivered to the patient have fallen below the alarm setting boundary.	Check sample line for blockages.
			Check water trap (including barrel thread) for damage and/or leaks.
			Check sample line is correctly attached to ventilator circuit and NOxBOX$_i$ water trap inlet.
			Check no ventilator circuit breaks or leakages have occurred.
		The NO gas is balanced in N2, this is an asphyxiant gas. At high NO dose levels for low concentration cylinders (e.g. 200 ppm) the level of gas delivered into the ventilator stream can reduce the % v/v of O_2 being delivered to the patient.	Check O_2 concentration setting at ventilator.
			Adjust O_2 alarm value if deemed necessary.
		The O_2 sensor may require replacing.	If another system is not readily available and patient requires therapy, engage the manual override mode, replace the system as soon as practically possible and alert the Service Engineer.

Water Trap Full	**High**	Water trap is filled with condensate from sample line. If the water trap is allowed to overflow, the sample path will block and water ingress to the NOxBOX$_i$ system could damage the internal mechanisms and gas sensors. Delivery accuracy is compromised and patient safety could be put at risk.	Use disposable male-luer lock syringe contained in NOXKIT to empty fluid from water trap via the self-sealing drain tap located at the bottom of the water trap. Dispose of entire syringe and contents according to local directives (e.g. sharps waste).
			The water trap uses a small float to activate the alarm, if no moisture is present gently tap the barrel to see if the alarm float is in the off position. 
			If issues persist, remove the barrel and check position of alarm float. Removing the water trap barrel will dilute NO sample causing inaccurate dose and readings. Take care not to damage/cross thread the water trap thread when replacing the barrel.
Sample Line block	**High**	Sample line to monitor has become blocked, pinched or occluded. Sample monitoring is affected which may compromise delivery accuracy and patient safety.	Check sample line for any pinch/crush points from external bodies, or blockages that may have occurred.
			Check water trap does not require emptying.
			Change sample line and hydrophobic filter.
			If another system is not readily available and patient requires therapy, engage the manual override mode, replace the system as soon as practically possible and alert the Service Engineer.
Battery Critical	**High**	NOxBOX$_i$ is running from internal battery and battery charge level has been detected as critical. System power could fail within the next 10 minutes. **Power failure will stop automatic intelligent delivery of NO.**	Reconnect the NOxBOX$_i$ system to the mains using the NOxBOX$_i$ power supply. This will ensure continued powered operation of the NOxBOX$_i$ and will start to recharge the internal battery.
			Check green (mains power) L.E.D on mains power plug is lit indicating mains supply OK. If not, try a different mains power socket/supply.
			Disconnect power supply and reconnect, check blue (charging) L.E.D is lit indicating mains supply OK. If not, try a different mains power/supply.
			If possible replace NOxBOX$_i$ power supply and alert service engineer.

			In the event that no mains power can be restored to the device, be prepared to engage the manual override mode.
Cylinder Supply Critical	**High**	NOxBOX$_i$ detects that available NO gas supply is running low, and no alternate cylinder supply is detected. Without action to replenish the NO gas supply treatment delivery will cease.	Install a new gas cylinder supply and connect to the alternate gas inlet port at the rear of NOxBOX$_i$.
			If a new gas cylinder is already installed, ensure the cylinder valve is fully open and connected to inlet port at rear to allow the device to use the supply for delivery.
			Check the supply cylinder regulator gauges indicate adequate cylinder pressure (>20bar). If regulator gauge indicates adequate pressure, check for leaks. If issues persist, replace regulator and alert service engineer.
Vent Idle	**High**	The NOxFLOW has not detected any vent flow activity for an extended period of time (typically over 30 seconds) during delivery.	Check correct orientation of NOxFLOW; the green arrow printed on the NOxFLOW should be pointing towards the patient in the direction of the ventilator flow.
			Check NOxFLOW flow detection lines and connection (including O rings) are connected and there are no blockages or leaks.
			Check there is not a serious leak or break in the ventilator circuit. Attend to the ventilator circuit requirements.
			Check the ventilator is connected and supplying sufficient flow.
Critical Delivery Fault	**High**	The NOxBOX$_i$ has detected a critical fault within the intelligent delivery system, and can no longer guarantee safe delivery function.	If another system is not readily available and patient requires therapy, engage the manual override mode, replace the system as soon as practically possible and alert the Service Engineer.
		Occlusion on NO outlet.	Check for occlusions on the NO outlet, delivery line or NOxFLOW. Once resolved reset the dose to resume delivery.
Touch screen won't respond.	**High**	The NOxBOX$_i$ has detected a critical fault within the intelligent delivery system, and can no longer guarantee safe delivery function. **NO delivery to the patient may have stopped.**	If another system is not readily available and patient requires therapy, engage the manual override mode, replace the system as soon as practically possible and alert the Service Engineer.

Medium Priority Alarms during therapy

Alarm	Priority	Possible Cause	Recommended Action
Zero Calibration	Medium	Every 24 hours during use the NOxBOX$_i$ prompts the user to perform a sensor zero. This operation ensures the most accurate system performance by checking the gas sensor reading performance. NOTE: This test takes up to 2 minutes to perform. During this time the monitored patient gases will be offline. The NOxBOX$_i$ continues to deliver NO during this time.	No special connections are required; the zero calibration is fully automatic. Press the tick to start the zero calibration. The zero calibration can be delayed if the system is not currently in a stable dose delivery state: e.g. If the patient dose has recently been changed and the system is still stabilising to the new dose level, dismiss this alarm message and perform the zero when the notice next appears.
Zero Calibration Fail	Medium	A sensor may have become unstable or residual gas may be present in the system.	Check ambient NOxAIR monitor for high levels of NO. If high levels are detected, check the regulator(s) and supply line(s) for leaks.
			Repeat zero calibration.
			Check the zero port (rear) has not been blocked.
			If another system is not readily available and patient requires therapy, engage the manual override mode, replace the system as soon as practically possible and alert the Service Engineer.
Cylinder Low	Medium	This will appear when an alternate viable gas supply is detected, but the current feed cylinder is nearly depleted.	Replace the cylinder with a fresh supply to resolve this alarm.
			Alternatively, once the cylinder is empty, close the cylinder valve fully, remove the feed hose from the rear of the system and release the pressure using the purge needle on the monitor. Please note, once the second cylinder begins to deplete, if this first cylinder has not been replaced in the interim period, the 'cylinder supply critical' alarm will be triggered.

High Calibration Overdue	**Medium**	To keep the NOxBOX$_i$ functioning accurately, it is important that the system sensors be fully calibrated by a suitably qualified Service Engineer once a month. The system records the last date of each successful calibration in the service engineer section.	This action may be performed whilst the system is in use via the service engineer area. However Bedfont strongly recommend that the sensor high calibrations are not performed during therapy to minimise risk to the patient. To resolve, the system sensors must be calibrated by the appointed Systems Engineer using calibration gases.
Manual Override	**Medium**	Manual Override mode is engaged. The system alarms to alert the user that the system is not delivering in intelligent mode. Changes to the ventilator setting or patient demand cannot be automatically corrected on the system. A specific dose setting cannot be dialled in and achieved. The patient must be closely monitored and ensure the gas alarms are correctly set to alert for any abnormal gas delivery behaviour.	This alarm will resolve when the system is returned to normal Intelligent Delivery Mode.

General Troubleshooting

NOxBOX$_i$

Issue	Possible Cause	Recommended Action
NOxBOX$_i$ turns on and off immediately. NOxBOX$_i$ attempts to start up but shuts down. NOxBOX$_i$ won't turn on at all.	Low battery power.	Connect NOxBOX$_i$ to mains power and turn on NOxBOX$_i$.
		Check mains power is connected and battery is charging (see battery critical).
	An internal fault has occurred; the system shuts down to protect integral components.	If another system is not readily available and patient requires therapy, engage the manual override mode, replace the system as soon as practically possible and alert the Service Engineer.
Zero Calibration Fail	One or all of the sensors have failed the zero (low) calibration. Ambient conditions may be affecting the zero sample.	Check ambient NOxAIR monitor for high levels of NO. If high levels are detected, check the regulator(s) and supply line(s) for leaks.
	One or all of the sensors may have become unstable or residual gas may be present in the system.	Repeat zero calibration.
		Check the zero port (rear) has not been blocked.
		If another system is not readily available and patient requires therapy, engage the manual override mode, replace the system as soon as practically possible and alert the Service Engineer.
System Test Fail	The NOxBOX$_i$ has failed the safety test and cannot accurately deliver and monitor Nitric Oxide inintelligent mode.	Check the Oxygen source is flowing.
		Check the NOxFLOW is connected to the Oxygen source and the NOxBOXi-TEST kit.
		Check the correct orientation of NOxFLOW.
		Check the NOxFLOW is connected to the NOxBOXi.
		Check NOxFLOW flow detection lines and connector O rings for damage.
		Check sample line is connected to the water trap and the NOxBOXi-TEST kit.
		Check water trap (including barrel thread) for damage.
		Repeat the system test.
		If second test fails, replace the NOxFLOW and sample line.
	One or all of the sensors may have become unstable.	If another system is not readily available and patient requires therapy, engage the manual override mode, replace the system as soon as practically possible and alert the Service Engineer.
Fluctuations/ Oscillations in excess of 3ppm.	May be due to Noxflow.	Ensure O-ring and NOxFLOW are present and connected.
	Mass flow sensor due for service.	Contact Service Engineer.
	HFO frequency.	Adjust the frequency slightly based upon your clinical judgement.

NOxMixer

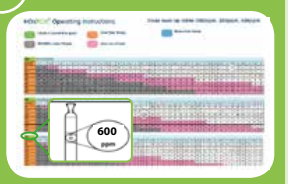
Issue	Possible Cause	Recommended action
NOxMixer is not delivering a dose (NO monitor shows no NO dose)		Ensure mode selector valve is correctly oriented. Ensure all lines are connected.
Flow meter ball stuck	Moisture ingress	Contact service engineer
Control knob not working	Could be loose/faulty/broken	Contact service engineer
NOxMixer unit emits sound when used.	Due to vibration	Ensure that O_2 input line is connected correctly and secured. Ensure that all lines are connected and secured. If sound is still apparent, disconnect the unit and contact service engineer.
NOxMixer flow does not register a flow rate.		Check Oxygen supply is connected and turned on.

NOxBOX$_i$® & NOxMixer Operating Instructions

To set flow rates

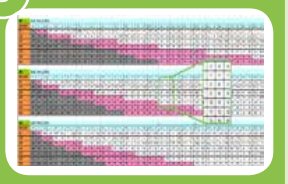
1

A



Use the look-up tables in this guide. To set flow rate, find the table matching NO supply concentration.

B



Find the vent flow setting to best match patient settings. The column lists the approx. dose per valve setting.

OR

A

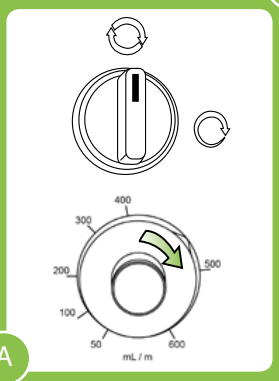
Using on-screen calculator access the manual override calculator from Settings.

B

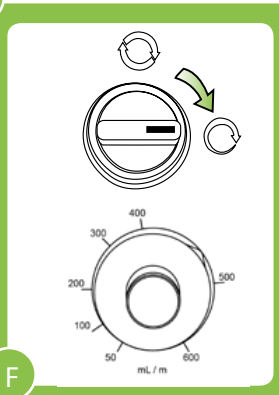
Adjust vent flow to best match patient settings. Table displays approx. dose per valve setting.

Manual override

2



A



F

If Manual Override is required:

A. First check suitable flow rate is set.

B. Check that oxygen flow meter is turned off.

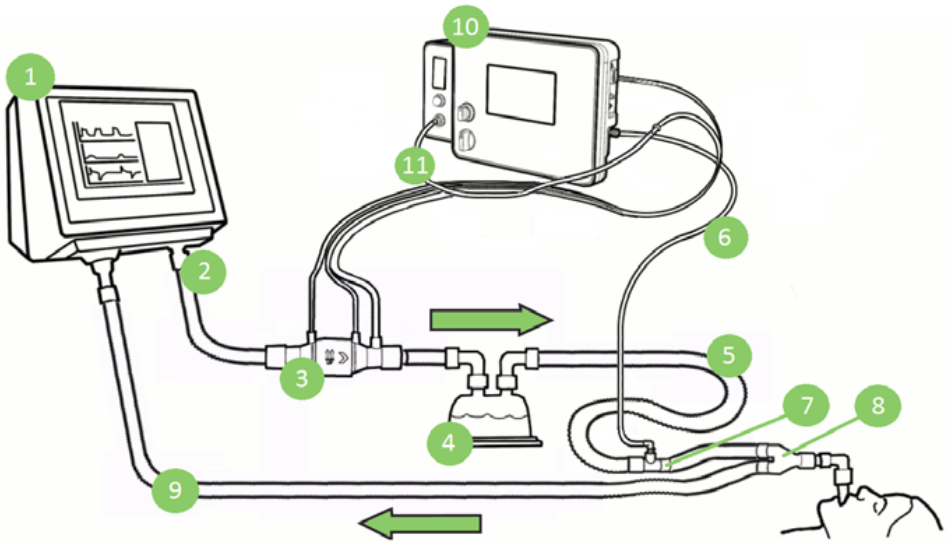
C. Attach the Schrader probe of Oxygen hose to Oxygen cylinder or wall outlet) and the other end to the inlet port situated at the back of NOxMixer. For pressure information, please check the specifications.

D. Set Oxygen flow to desired rate on the NOxMixer.

E. Connect the manual bagging line to the outlet of NOxMixer.

F. Then engage mode selection valve to the position seen on right hand side image.

NOTE: All dose information for the Manual Override are approximations. Monitoring must be used to ensure the patient is receiving the correct dose.



1. Ventilator
2. Ventilator Inspiratory Port
3. NOxFLOW™ (use 22F or 15M to vent tube adaptors)
4. Humidifier
5. 0.7m-1.3m Corrugated Tubing (15mm or 22mm)
6. NOxBOX$_i$ Sample Line
7. 10M-10F, 12M-12F, 15M-15F or 22M-22F luer port connector
8. Patient Y-piece
9. Expiratory limb
10. NOxBOX$_i$ with NOxMixer
11. Emergency backup

NOTE: To improve accuracy, it is recommended to have up to 30cm between the patient Y-Piece (8) and the sample line (7).

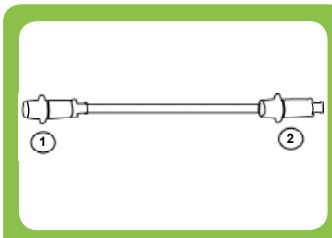
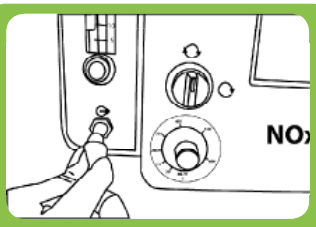
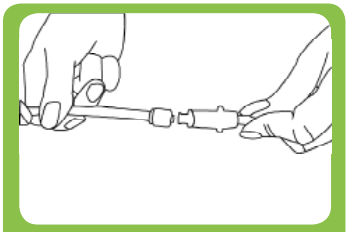


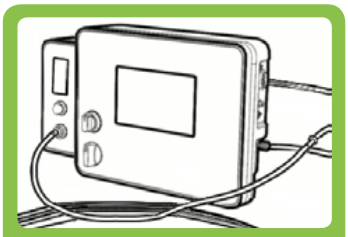
Image showing two ends of EMER tubing. End 1-without luer
End 2- with luer



Attach the end of the tubing without the luer to the outlet of NOxMixer.



Disconnect the NO dose line from NOxBOX$_i$. Attach the luer end of the tubing, to the NO dose line.



Switch to manual override once connected to engage emergency backup mode. Refer to page 19, image F.

WARNING: Ensure Oxygen flow meter is turned off when using in conjunction with the ventilator to avoid Oxygen overdosing.

Note: Refer to manual override page 19, number 1 to set flow rates.

Dose look-up table
1000ppm, 900ppm, 800ppm, 500ppm

Clinder Concentration (ppm)

Flow valve setting

Minute flow volume

WARNING: Dose >40 ppm

Dose over 20ppm

1000	Minute Volume (L/Min)																																		
Dial	0.5	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	6.5	7	7.5	8	8.5	9	9.5	10	10.5	11	11.5	12	12.5	13	13.5	14	14.5	15	15.5	16	16.5	17	17.5	18	18.5	19	19.5	20
50	91	48	32	24	20	16	14	12	11	9.9	9	8.3	7.6	7.1	6.6	6.2	5.8	5.5	5.2	5	4.7	4.5	4.3	4.1	4	3.8	3.7	3.6	3.4	3.3	3.2	3.1	3	2.9	2.8	2.8	2.7	2.6	2.6	2.5
100	167	91	63	48	38	32	28	24	22	20	18	16	15	14	13	12	12	11	10	9.9	9.4	9	8.6	8.3	7.9	7.6	7.4	7.1	6.8	6.6	6.4	6.2	26	5.8	5.7	5.5	5.4	5.2	5.1	5
200	286	167	118	91	74	63	54	48	43	38	35	32	30	28	26	24	23	22	21	20	19	18	17	16	16	15	15	14	14	13	13	12	12	12	11	11	11	10	10	9.9
300	375	231	167	130	107	91	79	70	63	57	52	48	44	41	38	36	34	32	31	29	28	27	25	24	23	23	22	21	20	20	19	18	18	17	17	16	16	16	15	15
400	444	286	211	167	138	118	103	91	82	74	68	63	58	54	51	48	45	43	40	38	37	35	34	32	31	30	29	28	27	26	25	24	24	23	22	22	21	21	20	20
500	500	333	250	200	167	143	125	111	100	91	83	77	71	67	63	59	56	53	50	48	45	43	42	40	38	37	36	34	33	32	31	30	29	29	28	27	26	26	25	24
600	545	375	286	231	194	167	146	130	118	107	98	91	85	79	74	70	66	63	59	57	54	52	50	48	46	44	43	41	40	38	37	36	35	34	33	32	31	31	30	29

900	Minute Volume (L/Min)																																		
Dial	0.5	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	6.5	7	7.5	8	8.5	9	9.5	10	10.5	11	11.5	12	12.5	13	13.5	14	14.5	15	15.5	16	16.5	17	17.5	18	18.5	19	19.5	20
50	82	43	29	22	18	15	13	11	9.9	8.9	8.1	7.4	6.9	6.4	6	5.6	5.3	5	4.7	4.5	4.3	4.1	3.9	3.7	3.6	3.4	3.3	3.2	3.1	3	2.9	2.8	2.7	2.6	2.6	2.5	2.4	2.4	2.3	2.2
100	150	82	56	43	35	29	25	22	20	18	16	15	14	13	12	11	10	9.9	9.4	8.9	8.5	8.1	7.8	7.4	7.1	6.9	6.6	6.4	6.2	6	5.8	5.6	5.4	5.3	5.1	5	4.8	4.7	4.6	4.5
200	257	150	106	82	67	56	49	43	38	35	32	29	27	25	23	22	21	20	19	18	17	16	15	15	14	14	13	13	12	12	11	11	11	10	10	9.9	9.6	9.4	9.1	8.9
300	338	208	150	117	96	82	71	63	56	51	47	43	40	37	35	33	31	29	28	26	25	24	23	22	21	20	20	19	18	18	17	17	16	16	15	15	14	14	14	13
400	400	257	189	150	124	106	92	82	73	67	61	56	52	49	46	43	40	38	36	35	33	32	30	29	28	27	26	25	24	23	23	22	21	21	20	20	19	19	18	18
500	450	300	225	180	150	129	113	100	90	82	75	69	64	60	56	53	50	47	45	43	41	39	38	36	35	33	32	31	30	29	28	27	26	26	25	24	24	23	23	22
600	491	338	257	208	174	150	132	117	106	96	89	82	76	71	67	63	59	56	53	51	49	47	45	43	41	40	38	37	36	35	34	33	32	31	30	29	28	28	27	26

800	Minute Volume (L/Min)																																		
Dial	0.5	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	6.5	7	7.5	8	8.5	9	9.5	10	10.5	11	11.5	12	12.5	13	13.5	14	14.5	15	15.5	16	16.5	17	17.5	18	18.5	19	19.5	20
50	73	38	26	20	16	13	11	9.9	8.8	7.9	7.2	6.6	6.1	5.7	5.3	5	4.7	4.4	4.2	4	3.8	3.6	3.5	3.3	3.2	3.1	3	2.8	2.7	2.7	2.6	2.5	2.4	2.3	2.3	2.2	2.2	2.1	2	2
100	133	73	50	38	31	26	22	20	17	16	14	13	12	11	11	9.9	9.3	8.8	8.3	7.9	7.5	7.2	6.9	6.6	6.3	6.1	5.9	5.7	5.5	5.3	5.1	5	4.8	4.7	4.5	4.4	4.3	4.2	4.1	4
200	229	133	94	73	59	50	43	38	34	31	28	26	24	22	21	20	18	17	16	16	15	14	14	13	13	12	12	11	11	11	10	9.9	9.6	9.3	9	8.8	8.6	8.3	8.1	7.9
300	300	185	133	104	86	73	63	56	50	45	41	38	35	33	31	29	27	26	24	23	22	21	20	20	19	18	17	17	16	16	15	15	14	14	13	13	13	12	12	12
400	356	229	168	133	110	94	82	73	65	59	54	50	46	43	41	38	36	34	32	31	29	28	27	26	25	24	23	22	21	21	20	20	19	18	18	17	17	16	16	16
500	400	267	200	160	133	114	100	89	80	73	67	62	57	53	50	47	44	42	40	38	36	35	33	32	31	30	29	28	27	26	25	24	24	23	22	22	21	21	20	20
600	436	300	229	185	155	133	117	104	94	86	79	73	68	63	59	56	53	50	48	45	43	41	40	38	37	35	34	33	32	31	30	29	28	27	27	26	25	24	24	23

500	Minute Volume (L/Min)																																		
Dial	0.5	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	6.5	7	7.5	8	8.5	9	9.5	10	10.5	11	11.5	12	12.5	13	13.5	14	14.5	15	15.5	16	16.5	17	17.5	18	18.5	19	19.5	20
50	45	24	16	12	9.8	8.2	7	6.2	5.5	5	4.5	4.1	3.8	3.5	3.3	3.1	2.9	2.8	2.6	2.5	2.4	2.3	2.2	2.1	2	1.9	1.8	1.8	1.7	1.7	1.6	1.6	1.5	1.5	1.4	1.4	1.3	1.3	1.3	1.2
100	83	45	31	24	19	16	14	12	11	9.8	8.9	8.2	7.6	7	6.6	6.2	5.8	5.5	5.2	5	4.7	4.5	4.3	4.1	4	3.8	3.7	3.5	3.4	3.3	3.2	3.1	3	2.9	2.8	2.8	2.7	2.6	2.6	2.5
200	143	83	59	45	37	31	27	24	21	19	18	16	15	14	13	12	11	11	10	9.8	9.3	8.9	8.5	8.2	7.9	7.6	7.3	7	6.8	6.6	6.4	6.2	6	5.8	5.6	5.5	5.3	5.2	5.1	5
300	188	115	83	65	54	45	39	35	31	28	26	24	22	21	19	18	17	16	15	15	14	13	13	12	12	11	11	10	10	9.8	9.5	9.2	8.9	8.7	8.4	8.2	8	7.8	7.6	7.4
400	222	143	105	83	69	59	51	45	41	37	34	31	29	27	25	24	22	21	20	19	18	18	17	16	16	15	14	14	13	13	13	12	12	11	11	11	11	10	10	9.8
500	250	167	125	100	83	71	63	56	50	45	42	38	36	33	31	29	28	26	25	24	23	22	21	20	19	19	18	17	17	16	16	15	15	14	14	14	13	13	13	12
600	273	188	143	115	97	83	73	65	59	54	49	45	42	39	37	35	33	31	30	28	27	26	25	24	23	22	21	21	20	19	19	18	18	17	17	16	16	15	15	15

All dose information shown in these tables is for guidance only. The patient monitored gas levels should be used for actualy dose delivery information. All nitric oxide (NO) doses shown in parts per million (ppm) when introduced to continuous flow rates indicated. Doses of NO above 40 ppm are not recommended. Doses above 20ppm are considered clinically high.

NOxBOX$_i$® & NOxMixer Operating Instructions

Dose look-up table
450ppm, 400ppm , 300ppm, 250ppm

Clinder Concentration (ppm) | Flow valve setting | Minute flow volume

WARNING: Dose >40 ppm | Dose over 20ppm

450	Minute Volume (L/Min)																																			
Dial	0.5	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	6.5	7	7.5	8	8.5	9	9.5	10	10.5	11	11.5	12	12.5	13	13.5	14	14.5	15	15.5	16	16.5	17	17.5	18	18.5	19	19.5	20
50	41	21	15	11	8.8	7.4	6.3	5.6	4.9	4.5	4.1	3.7	3.4	3.2	3	2.8	2.6	2.5	2.4	2.2	2.1	2	1.9	1.9	1.8	1.7	1.7	1.6	1.5	1.5	1.4	1.4	1.4	1.3	1.3	1.2	1.2	1.2	1.2	1.1
100	75	41	28	21	17	15	13	11	9.8	8.8	8	7.4	6.8	6.3	5.9	5.6	5.2	4.9	4.7	4.5	4.2	4.1	3.9	3.7	3.6	3.4	3.3	3.2	3.1	3	2.9	2.8	2.7	2.6	2.6	2.5	2.4	2.4	2.3	2.2
200	129	75	53	41	33	28	24	21	19	17	16	15	13	13	12	11	10	9.8	9.3	8.8	8.4	8	7.7	7.4	7.1	6.8	6.6	6.3	6.1	5.9	5.7	5.6	5.4	5.2	5.1	4.9	4.8	4.7	4.6	4.5
300	169	104	75	59	48	41	36	31	28	25	23	21	20	18	17	16	15	15	14	13	13	12	11	11	11	10	9.8	9.4	9.1	8.8	8.5	8.3	8	7.8	7.6	7.4	7.2	7	6.8	6.7
400	200	129	95	75	62	53	46	41	37	33	31	28	26	24	23	21	20	19	18	17	17	16	15	15	14	13	13	13	12	12	11	11	11	10	10	9.8	9.5	9.3	9	8.8
500	225	150	113	90	75	64	56	50	45	41	38	35	32	30	28	26	25	24	23	21	20	20	19	18	17	17	16	16	15	15	14	14	13	13	13	12	12	12	11	11
600	245	169	129	104	87	75	66	59	53	48	44	41	38	36	33	31	30	28	27	25	24	23	22	21	21	20	19	18	18	17	17	16	16	15	15	15	14	14	13	13

400	Minute volume (L/Min)																																			
Dial	0.5	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	6.5	7	7.5	8	8.5	9	9.5	10	10.5	11	11.5	12	12.5	13	13.5	14	14.5	15	15.5	16	16.5	17	17.5	18	18.5	19	19.5	20
50	36	19	13	9.8	7.8	6.6	5.6	4.9	4.4	4	3.6	3.3	3.1	2.8	2.6	2.5	2.3	2.1	2.1	2	1.9	1.8	1.7	1.7	1.6	1.5	1.5	1.4	1.4	1.3	1.3	1.2	1.2	1.2	1.1	1.1	1.1	1	1	1
100	67	36	25	19	15	13	11	9.8	8.7	7.8	7.1	6.6	6.1	5.6	5.3	4.9	4.7	4.4	4.2	4	3.8	3.6	3.4	3.3	3.2	3.1	2.9	2.8	2.7	2.6	2.6	2.5	2.4	2.3	2.3	2.2	2.2	2.1	2	2
200	114	67	47	36	30	25	22	19	17	15	14	13	12	11	10	9.8	9.2	8.7	8.2	7.8	7.5	7.1	6.8	6.6	6.3	6.1	5.8	5.6	5.4	5.3	5.1	4.9	4.8	4.7	4.5	4.4	4.3	4.2	4.1	4
300	150	92	67	52	43	36	32	28	25	23	21	19	18	16	15	14	14	13	12	12	11	11	10	9.8	9.4	9	8.7	8.4	8.1	7.8	7.6	7.4	7.1	6.9	6.7	6.6	6.4	6.2	6.1	5.9
400	178	114	84	67	55	47	41	36	33	30	27	25	23	22	20	19	18	17	16	15	15	14	13	13	12	12	12	11	11	10	10	9.8	9.5	9.2	8.9	8.7	8.5	8.2	8	7.8
500	200	133	100	80	67	57	50	44	40	36	33	31	29	27	25	24	22	21	20	19	18	17	17	16	15	15	14	14	13	13	13	12	12	11	11	11	11	10	10	9.8
600	218	150	114	92	77	67	59	52	47	43	39	36	34	32	30	28	26	25	24	23	22	21	20	19	18	18	17	16	16	15	15	14	14	14	13	13	13	12	12	12

300	Minute Volume L/Min)																																			
Dial	0.5	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	6.5	7	7.5	8	8.5	9	9.5	10	10.5	11	11.5	12	12.5	13	13.5	14	14.5	15	15.5	16	16.5	17	17.5	18	18.5	19	19.5	20
50	27	14	9.7	7.3	5.9	4.9	4.2	3.7	3.3	3	2.7	2.5	2.3	2.1	2	1.9	1.8	1.7	1.6	1.5	1.4	1.4	1.3	1.2	1.2	1.1	1.1	1.1	1	1	1	0.9	0.9	0.9	0.8	0.8	0.8	0.8	0.8	0.7
100	50	27	19	14	12	9.7	8.3	7.3	6.5	5.9	5.4	4.9	4.5	4.2	3.9	3.7	3.5	3.3	3.1	3	2.8	2.7	2.6	2.5	2.4	2.3	2.2	2.1	2.1	2	1.9	1.9	1.8	1.8	1.7	1.7	1.6	1.6	1.5	1.5
200	86	50	35	27	22	19	16	14	13	12	11	9.7	9	8.3	7.8	7.3	6.9	6.5	6.2	5.9	5.6	5.4	5.1	4.9	4.7	4.5	4.4	4.2	4.1	3.9	3.8	3.7	3.6	3.5	3.4	3.3	3.2	3.1	3	3
300	113	69	50	39	32	27	24	21	19	17	16	14	13	12	12	11	10	9.7	9.2	8.7	8.3	8	7.6	7.3	7	6.8	6.5	6.3	6.1	5.9	5.7	5.5	5.4	5.2	5.1	4.9	4.8	4.7	4.5	4.4
400	133	86	63	50	41	35	31	27	24	22	20	19	17	16	15	14	13	13	12	12	11	11	10	9.7	9.3	9	8.6	8.3	8.1	7.8	7.5	7.3	7.1	6.9	6.7	6.5	6.3	6.2	6	5.9
500	150	100	75	60	50	43	38	33	30	27	25	23	21	20	19	18	17	16	15	14	14	13	13	12	12	11	11	10	10	9.7	9.4	9.1	8.8	8.6	8.3	8.1	7.9	7.7	7.5	7.3
600	164	113	86	69	58	50	44	39	35	32	30	27	25	24	22	21	20	19	18	17	16	16	15	14	14	13	13	12	12	12	11	11	11	10	9.9	9.7	9.4	9.2	9	8.7

250	Minute Volume (L/Min)																																			
Dial	0.5	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	6.5	7	7.5	8	8.5	9	9.5	10	10.5	11	11.5	12	12.5	13	13.5	14	14.5	15	15.5	16	16.5	17	17.5	18	18.5	19	19.5	20
50	23	12	8.1	6.1	4.9	4.1	3.5	3.1	2.7	2.5	2.3	2.1	1.9	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.2	1.1	1.1	1	1	1	0.9	0.9	0.9	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.6	0.6
100	42	23	16	12	9.6	8.1	6.9	6.1	5.4	4.9	4.5	4.1	3.8	3.5	3.3	3.1	2.9	2.7	2.6	2.5	2.4	2.3	2.2	2.1	2	1.9	1.8	1.8	1.7	1.7	1.6	1.6	1.5	1.5	1.4	1.4	1.3	1.3	1.3	1.2
200	71	42	29	23	19	16	14	12	11	9.6	8.8	8.1	7.5	6.9	6.5	6.1	5.7	5.4	5.2	4.9	4.7	4.5	4.3	4.1	3.9	3.8	3.6	3.5	3.4	3.3	3.2	3.1	3	2.9	2.8	2.7	2.7	2.6	2.5	2.5
300	94	58	42	33	27	23	20	17	16	14	13	12	11	10	9.6	9	8.5	8.1	7.7	7.3	6.9	6.6	6.4	6.1	5.9	5.6	5.4	5.2	5.1	4.9	4.7	4.6	4.5	4.3	4.2	4.1	4	3.9	3.8	3.7
400	111	71	53	42	34	29	26	23	20	19	17	16	14	14	13	12	11	11	10	9.6	9.2	8.8	8.4	8.1	7.8	7.5	7.2	6.9	6.7	6.5	6.3	6.1	5.9	5.7	5.6	5.4	5.3	5.2	5	4.9
500	125	83	63	50	42	36	31	28	25	23	21	19	18	17	16	15	14	13	13	12	11	11	10	10	9.6	9.3	8.9	8.6	8.3	8.1	7.8	7.6	7.4	7.1	6.9	6.8	6.6	6.4	6.3	6.1
600	136	94	71	58	48	42	37	33	29	27	25	23	21	20	19	17	16	16	15	14	14	13	12	12	11	11	11	10	9.9	9.6	9.3	9	8.8	8.5	8.3	8.1	7.9	7.7	7.5	7.3

All dose information shown in these tables is for guidance only. The patient monitored gas levels should be used for actualy dose delivery information. All nitric oxide (NO) doses shown in parts per million (ppm) when introduced to continuous flow rates indicated. Doses of NO above 40 ppm are not recommended. Doses above 20ppm are considered clinically high.

Dose look-up table
225ppm, 200ppm, 100ppm

Clinder Concentration (ppm) | Flow valve setting | Minute flow volume

WARNING: Dose >40 ppm | Dose over 20ppm

225	Minute Volume (L/Min)																																						
Dial	0.5	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	6.5	7	7.5	8	8.5	9	9.5	10	10.5	11	11.5	12	12.5	13	13.5	14	14.5	15	15.5	16	16.5	17	17.5	18	18.5	19	19.5	20
50	20	11	7.3	5.5	4.4	3.7	3.2	2.8	2.5	2.2	2	1.9	1.7	1.6	1.5	1.4	1.3	1.2	1.2	1.1	1.1	1	1	0.9	0.9	0.9	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.6	0.6	0.6	0.6	0.6	0.6
100	38	20	14	11	8.7	7.3	6.3	5.5	4.9	4.4	4	3.7	3.4	3.2	3	2.8	2.6	2.5	2.3	2.2	2.1	2	1.9	1.9	1.8	1.7	1.7	1.6	1.5	1.5	1.4	1.4	1.4	1.3	1.3	1.2	1.2	1.2	1.1	1.1
200	64	38	26	20	17	14	12	11	9.6	8.7	7.9	7.3	6.7	6.3	5.8	5.5	5.2	4.9	4.6	4.4	4.2	4	3.8	3.7	3.5	3.4	3.3	3.2	3.1	3	2.9	2.8	2.7	2.6	2.5	2.5	2.4	2.3	2.3	2.2
300	84	52	38	29	24	20	18	16	14	13	12	11	9.9	9.2	8.7	8.1	7.7	7.3	6.9	6.6	6.3	6	5.7	5.5	5.3	5.1	4.9	4.7	4.6	4.4	4.3	4.1	4	3.9	3.8	3.7	3.6	3.5	3.4	3.3
400	100	64	47	38	31	26	23	20	18	17	15	14	13	12	11	11	10	9.6	9.1	8.7	8.3	7.9	7.6	7.3	7	6.7	6.5	6.3	6	5.8	5.7	5.5	5.3	5.2	5	4.9	4.8	4.6	4.5	4.4
500	113	75	56	45	38	32	28	25	23	20	19	17	16	15	14	13	13	12	11	11	10	9.8	9.4	9	8.7	8.3	8	7.8	7.5	7.3	7	6.8	6.6	6.4	6.3	6.1	5.9	5.8	5.6	5.5
600	123	84	64	52	44	38	33	29	26	24	22	20	19	18	17	16	15	14	13	13	12	12	11	11	10	9.9	9.6	9.2	8.9	8.7	8.4	8.1	7.9	7.7	7.5	7.3	7.1	6.9	6.7	6.6

200	Minute Volume (L/Min)																																						
Dial	0.5	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	6.5	7	7.5	8	8.5	9	9.5	10	10.5	11	11.5	12	12.5	13	13.5	14	14.5	15	15.5	16	16.5	17	17.5	18	18.5	19	19.5	20
50	18	9.5	6.5	4.9	3.9	3.3	2.8	2.5	2.2	2	1.8	1.7	1.5	1.4	1.3	1.2	1.2	1.1	1	1	0.9	0.9	0.9	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.6	0.6	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.5
100	33	18	13	9.5	7.7	6.5	5.6	4.9	4.3	3.9	3.6	3.3	3	2.8	2.6	2.5	2.3	2.2	2.1	2	1.9	1.8	1.7	1.7	1.6	1.5	1.5	1.4	1.4	1.3	1.3	1.2	1.2	1.2	1.1	1.1	1.1	1	1	1
200	57	33	24	18	15	13	11	9.5	8.5	7.7	7	6.5	6	5.6	5.2	4.9	4.6	4.3	4.1	3.9	3.7	3.6	3.4	3.3	3.1	3	2.9	2.8	2.7	2.6	2.5	2.5	2.4	2.3	2.3	2.2	2.1	2.1	2	2
300	75	46	33	26	21	18	16	14	13	11	10	9.5	8.8	8.2	7.7	7.2	6.8	6.5	6.1	5.8	5.6	5.3	5.1	4.9	4.7	4.5	4.3	4.2	4.1	3.9	3.8	3.7	3.6	3.5	3.4	3.3	3.2	3.1	3	3
400	89	57	42	33	28	24	21	18	16	15	14	13	12	11	10	9.5	9	8.5	8.1	7.7	7.3	7	6.7	6.5	6.2	6	5.8	5.6	5.4	5.2	5	4.9	4.7	4.6	4.5	4.3	4.2	4.1	4	3.9
500	100	67	50	40	33	29	25	22	20	18	17	15	14	13	13	12	11	11	10	9.5	9.1	8.7	8.3	8	7.7	7.4	7.1	6.9	6.7	6.5	6.3	6.1	5.9	5.7	5.6	5.4	5.3	5.1	5	4.9
600	109	75	57	46	39	33	29	26	24	21	20	18	17	16	15	14	13	13	12	11	11	10	9.9	9.5	9.2	8.8	8.5	8.2	7.9	7.7	7.5	7.2	7	6.8	6.6	6.5	6.3	6.1	6	5.8

100	Minute Volume (L/Min)																																						
Dial	0.5	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	6.5	7	7.5	8	8.5	9	9.5	10	10.5	11	11.5	12	12.5	13	13.5	14	14.5	15	15.5	16	16.5	17	17.5	18	18.5	19	19.5	20
50	9.1	4.8	3.2	2.4	2	1.6	1.4	1.2	1.1	1	0.9	0.8	0.8	0.7	0.7	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2
100	17	9.1	6.3	4.8	3.8	3.2	2.8	2.4	2.2	2	1.8	1.6	1.5	1.4	1.3	1.2	1.2	1.1	1	1	0.9	0.9	0.9	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.6	0.6	0.6	0.6	0.6	0.6	0.3	0.3	0.3	0.3
200	29	17	12	9.1	7.4	6.3	5.4	4.8	4.3	3.8	3.5	3.2	3	2.8	2.6	2.4	2.3	2.2	2.1	2	1.9	1.8	1.7	1.6	1.6	1.5	1.5	1.4	1.4	1.3	1.3	1.2	1.2	1.2	1.1	1.1	1.1	1	1	1
300	38	23	17	13	11	9.1	7.9	7	6.3	5.7	5.2	4.8	4.4	4.1	3.8	3.6	3.4	3.2	3.1	2.9	2.8	2.7	2.5	2.4	2.3	2.3	2.2	2.1	2	2	1.9	1.8	1.8	1.7	1.7	1.6	1.6	1.6	1.5	1.5
400	44	29	21	17	14	12	10	9.1	8.2	7.4	6.8	6.3	5.8	5.4	5.1	4.8	4.5	4.3	4	3.8	3.7	3.5	3.4	3.2	3.1	3	2.9	2.8	2.7	2.6	2.5	2.4	2.4	2.3	2.2	2.2	2.1	2.1	2	2
500	50	33	25	20	17	14	13	11	10	9.1	8.3	7.7	7.1	6.7	6.3	5.9	5.6	5.3	5	4.8	4.5	4.3	4.2	4	3.8	3.7	3.6	3.4	3.3	3.2	3.1	3	2.9	2.9	2.8	2.7	2.6	2.6	2.5	2.4
600	55	38	29	23	19	17	15	13	12	11	9.8	9.1	8.5	7.9	7.4	7	6.6	6.3	5.9	5.7	5.4	5.2	5	4.8	4.6	4.4	4.3	4.1	4	3.8	3.7	3.6	3.5	3.4	3.3	3.2	3.1	3.1	2	2.9

All dose information shown in these tables is for guidance only. The patient monitored gas levels should be used for actualy dose delivery information. All nitric oxide (NO) doses shown in parts per million (ppm) when introduced to continuous flow rates indicated. Doses of NO above 40 ppm are not recommended. Doses above 20ppm are considered clinically high.