

INOvent[®] delivery system

FOR NITRIC OXIDE THERAPY



Features

- Integrated, single unit designed for the delivery and monitoring of inhaled Nitric Oxide (NO)
- Designed for use with most makes and types of mechanical ventilators
- Delivers a user-selectable, constant concentration of NO, even with varying ventilator settings and modes
- The integrated monitoring system provides continuous readings of delivered O₂, NO and NO₂
- Optional transport cart available for ease of moving within a facility

Integrated safety features

- Integrated manual delivery system for the independent delivery of inhaled NO with supplemental O₂ through a resuscitator bag
- Equipped with both a visual and audio alarm system
- Battery system provides up to 30 minutes of delivery in the absence of an external power source

Physical specifications

Dimensions - system	
Height:	215 mm
Width x depth:	350 mm x 400 mm
Weight:	21 kg

Dimensions - system on optional cart (excludes cylinders)	
Height:	1410 mm
Maximum width x depth:	510 mm x 600 mm
Weight:	55 kg
Cylinder size:	5/10/15 L

Product specifications

Compatible ventilators	Neonatal	Adult
Inspiratory flow rate:	4 - 55 L/min	4 - 120 L/min
Maximum O ₂ dilution:	10 % v/v	5 % v/v
Respiratory rate:	6 - 60 bpm	6 - 60 bpm
Peak airway pressure:	0 - 70 cm H ₂ O	0 - 70 cm H ₂ O
PEEP:	0 - 20 cm H ₂ O	0 - 20 cm H ₂ O

Maximum NO delivery						
Ventilator flow	NO cylinder concentration in ppm:					
	1000	900	800	450/400	300	100
@ 4-55 L/min:	80	80	80	40	20	10
@ 4-120 L/min:	50	45	40	20	15	5

NO/N₂ cylinder concentration accuracy: ±5 %.

NO delivery	
NO setting:	Direct setting of NO (in ppm)
System warm-up:	1 minute to operation; 5 minutes to stability
NO delivery:	NO is delivered only when there is gas flow in the breathing circuit
NO injection:	Into the inspiratory limb of the breathing circuit
NO concentration:	Delivered independent of ventilation changes
NO delivery pause:	120 seconds
Set NO range:	0 - 80 ppm
Set NO resolution:	0.1 to 1 ppm depending on the NO range
Accuracy:	±10% of full scale at 20° C
NO inlet pressure:	276 - 621 kPa/40 - 90 psig
Circuit gas composition:	Air / O ₂ mixtures

Gas monitoring		
Gas	Range	Resolution
NO:	0 - 10 ppm	0.1
	10 - 100 ppm	1
NO ₂ :	0 - 15 ppm	0.1
O ₂ :	18 - 100% v/v	1
Accuracy:	±3% full scale at 20° C	
Calibration:	Daily zero; monthly span	
Rise time:	30 seconds (10-90%)	
Sample flow:	230 mL/min	
Gas sensor:	Electrochemical cell	

Injector module	
Conical connectors:	Inlet - 22 mm female Outlet - 22 mm male, 15 mm female
Autoclavability:	Autoclavable at 134° C for up to three minutes at 186 kPa
Maximum pressure drop:	1.5 cm H ₂ O at 60 L/min

NO delivery shutoff	
NO shutoff	NO delivery is greater than 100 ppm
Conditions:	Oxygen dilution is greater than 20% v/v NO delivered is greater than two times the maximum setting

Manual NO delivery system	
Compatible with pressure-compensated flowmeters capable of adjustment to 15 L/min flow.	
NO Cylinder concentration ppm:	1000 900 800 450/400 300 100
Manual NO delivery ppm:	25 22.5 20 10 7.5 2.5
Tolerance ppm:	±10 ±9 ±8 ±5 ±3 ±1

Calibration gas cylinders		
Calibration gas	Cal gas range	Accuracy
NO:	40 - 80 ppm	±4%
NO ₂ :	10 - 15 ppm	±10%

Calibration gas regulator	
Flow rate to sample tee:	400 - 700 mL/min
Pressure at sample tee:	<70 cm H ₂ O above ambient

Electrical specifications

Input voltage:	100 - 120/220 - 240 VAC at 50/60 Hz
Input power:	109 VA
Input fuse:	5 mm x 20 mm, T2.0A/L250V
RS 232 port:	9 pin DSUB connector
Nurse call:	High priority alarm by a switch closure. Refer to the nurse call system operation manual for the proper connection procedure.
Classification:	Class I, Type B
Battery backup:	Provides up to 30 minutes of backup power when fully charged
Optional extended Battery backup:	Provides up to 3 hours of battery power when fully charged
Standards:	EN 60601-1 IEC 601-1-2 EN 475

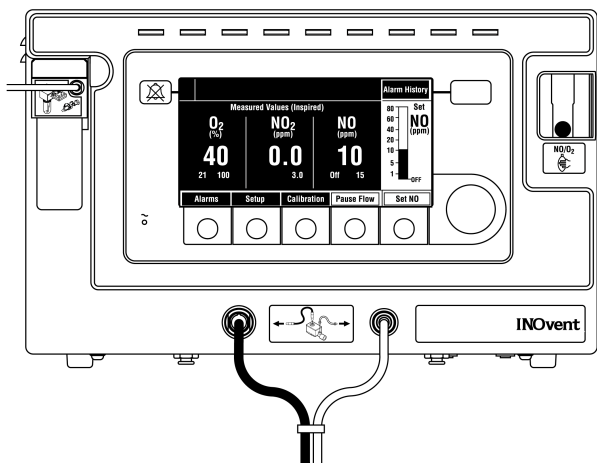
Environmental specifications

Operation

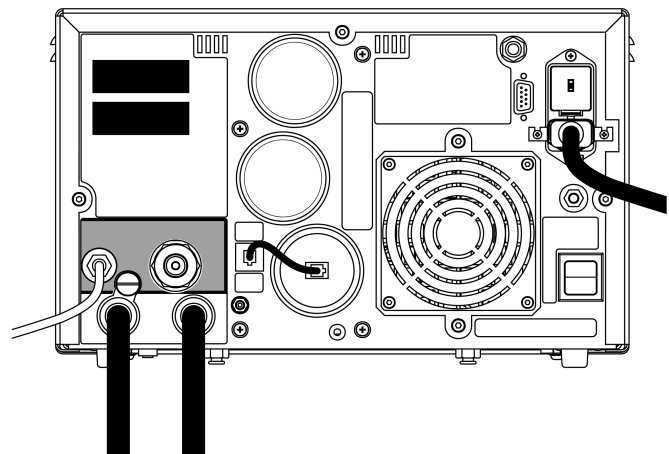
Temperature:	10 to 40° C
Humidity:	20 to 95% RH non-condensing
Ambient pressure:	600 to 800 mm Hg

Storage

Temperature:	-15 to 50° C
Humidity:	10 to 95% RH non-condensing
Ambient pressure:	87 to 800 mm Hg



INOvent delivery system
(front view)

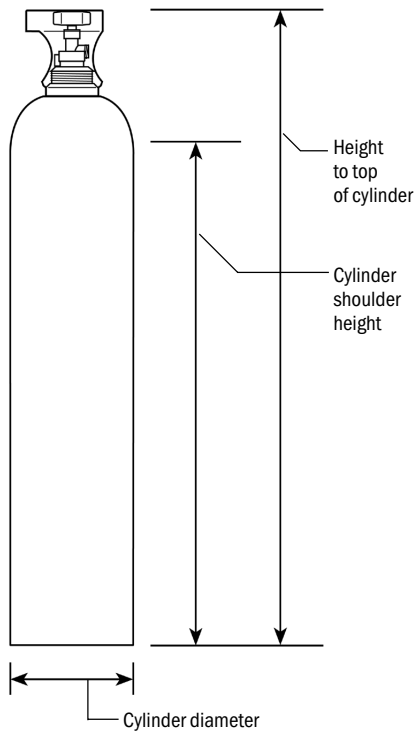


INOvent delivery system
(rear view)

Cylinder specifications

Dimensions to fit on the cart

Maximum height to top of cylinder (including handle):	980 mm
Minimum cylinder shoulder height:	350 mm
Maximum cylinder diameter:	190 mm
Minimum cylinder diameter:	150 mm



* INOvent is a trademark of Datex-Ohmeda
US Patent No. 5,558,083 and 5,732,693.

Therapy gas regulator specifications

When obtaining therapy cylinder nitric oxide regulators from sources in territories where Datex-Ohmeda does not provide a compatible regulator connector, the following specifications are required:

Inlet pressure:	Market specific
Inlet connector:	Market specific
Outlet pressure:	2.8 - 6.2 kPa x 100 (bar)/40 - 90 psi
Outlet flow range:	0 - 6.5 L/min
Maximum pressure relief valve:	8.6 kPa x 100 (bar)/125 psi
Maximum leak rate of assembly:	10 mL/min
Cylinder pressure gauge increments:	10 kPa x 100 (bar)/100 psi
Cylinder pressure gauge accuracy:	Lowest 1/4 of gauge: ±1% of full scale

Note: If ±2.5% of full scale in lowest 1/4 scale is used, cylinder should be changed at 20 kPa x 100 (bar)

Outlet connector: Parker Hannifin Corp.
(coupler) ___-Q4CY-SSP-729* or Swagelock, female quick connector SS-QC4-B-___HV*

* Vendor code for OHMEDA recommended lubricant

Materials:	Compatible with pharmaceutical grade NO
Regulator type:	Non-relieving
Filters:	Recommended on all ports
Cleaning:	Clean for high pressure medical use



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