

Emergency Medicine
High Velocity Nasal Insufflation
(Hi-VNI)[™]

VAPOTHERM POCKET GUIDE



Indications for Vapotherm High Velocity Nasal Insufflation (Hi-VNI™) administration, the patient should be:

- Spontaneously breathing
- Alert and oriented
- Has a protected airway

Patient Selection



SYMPTOMS:

Signs and Symptoms:

Patients presenting with one or more of the following may be candidates:

- General Dyspnea
- Refractory Hypoxemia
- NiPPV Intolerant
- Increased cardiac workload
- Hypercapnia
- Increased Work of Breathing

Diagnoses



CONDITIONS:

These conditions may benefit from Vapotherm:

- Acute Exacerbation of Chronic Obstructive Pulmonary Disease (COPD)
- Asthma
- Pneumonia
- Bronchitis
- Mild or Moderate Congestive Heart Failure (CHF)
- Bronchiolitis (includes RSV)
- Influenza

Cannula Selection & Application

FITTING THE CANNULA:

Cannula Sizes	Cannula Flow Range	Tip OD
● Pediatric Small	Up to 20 L/min	1.9 mm
● Pediatric/Adult Small	Up to 40 L/min	2.7 mm
● Adult Large	Up to 40 L/min	4.8 mm

Vapotherm offers 8 different size cannulae to effectively fit patients. Not shown are the intermediate infant, infant, SOLO, neonatal, and premature. These cannulae are designed for neonatal patients. Only Vapotherm cannula should be used with the Vapotherm Precision Flow.



- Cannulae should be sized not to occlude greater than 50% of the nares
- Cannula prongs should be spread enough not to pinch the nasal septum (erosion risk)

CANNULA APPLICATION:

- Select the appropriate cannula based on the above chart
- Allow the system to reach desired temperature (temperature display will stop flashing) before connecting the delivery tube to the cannula
- The Precision Flow's operational flow range is locked at 5-40 L/min for the High Flow Disposable Patient Circuit (blue packaging)

Note: There is a low flow disposable patient circuit available specifically for neonatal applications.

Clinical Use Guidelines






ASSESS THESE PARAMETERS TO DETERMINE THERAPY INITIATION:


- PaO₂ < 80 mmHg
- SaO₂ < 90%
- PaCO₂ > 45 mmHg
- Tachycardia
- Tachypnea

Start with high flow rates (35-40 L/min) and titrate down to effect

Hypoxemia

	Start		Titrate to Effect
 FLOW	40 L/min	→	Comfort/ventilatory effect
 O₂	100%	→	Desired SpO ₂
 TEMP.	37°C	→	Comfort/secretion mobilization

Hypercarbia (increased WOB)

	Start		Titrate to Effect
 FLOW	40 L/min	→	Titrate to effect comfort/ventilatory effect
 O₂	35%	→	Desired SpO ₂
 TEMP.	37°C	→	Comfort/secretion mobilization

Transferring Patients

VAPOTHERM TRANSFER UNIT (VTU)

The Vapotherm Transfer Unit fits seamlessly into the Emergency Department workflow. Patients can be transferred to procedures and out of the Emergency Department without compromising respiratory support.

Workflow Integration – “3-Step Hot Swap” Disposable

Once patient is stabilized and ready for transfer:

1. Put stationary Precision Flow unit in Standby, and remove Disposable Patient Circuit (DPC) and water bag from stationary unit. Keep the DPC in an upright configuration until it is placed in the VTU.
2. Place DPC into the VTU Precision Flow docking station.
3. Enter desired settings on the VTU Precision Flow and press the Run/ Standby button to initiate therapy. Patient is now ready to be transferred.

Set temperature will be reached within minutes because of hot swap.

Patient transferred to temporary location (i.e. procedures):

- Simply plug power and gas cables/hoses into wall outlets (close e-cylinders)
- When patient is ready to be transferred again:
 - Unplug the VTU
 - Open e-cylinders
 - Disconnect wall hoses



Patient transferred to ICU/Step Down Unit/ General Care Floor:

- Use above 3-Step Hot Swap instructions to transfer patient to new, stationary Precision Flow unit.
- Close the VTU e-cylinders and return the VTU to its designated storage location

WARNING: Do not attempt to transfer a patient with ≤ 250 PSI in either tank.

VTU should remain plugged in when not in use, and whenever possible during transfer. The VTU takes 2 hours to fully charge, and has a two hour run time (depending on O₂)

Vapotherm Transfer Unit Runtime Chart

Duration of use blending from E-size oxygen and E-size air cylinders;
times shown in minutes

**TOTAL
FLOW % OXYGEN**

L/min	21%	30%	35%	50%	60%	70%	80%	90%	100%
5	112	126	136	136	221	181	150	18	112
6	93	105	113	113	184	150	125	107	93
7	80	90	97	97	158	129	107	92	80
8	70	79	85	85	138	113	94	80	70
9	62	70	76	76	123	100	83	71	62
10	56	63	68	68	111	90	75	64	56
15	37	42	45	45	74	60	50	43	37
20	28	32	43	43	55	45	37	32	28
25	22	25	27	27	44	36	30	26	22
30	19	21	23	23	37	30	25	21	19
40	14	16	17	17	28	23	19	16	14

Above chart applicable for High Flow Disposable only. For complete runtimes, set up and operation of the VTU, please refer to the VTU Quick Reference Guide.

USE WITH AEROGEN®

- An adapter is available for the Precision Flow to enable nebulizer treatments. The inline adapter is designed to be used specifically with the Aergen® Aeroneb® solo (AAA-1)
- The adapter is not for continuous use and should be removed after each treatment.
- It is important to maintain proper upright orientation of the inline adapter during the drug administration process. VapoTherm recommends the AAA-1 be at an upright 45° angle to minimize condensation.

USE WITH NITRIC OXIDE

- VapoTherm technology is verified for use with INOmax® DS and DSIR (PF-NODPC-LOW 1-8 L/min, PF-NODPC-HIGH 5-40 L/min)
- Note: See Ikaria® for instructions for use.

USE WITH PRECISION FLOW HELIOX®

- VapoTherm offers an ideal solution for convenient delivery of conditioned helium-oxygen gas mixtures (Heliox)
- Heliox has a significantly lower density than typical air/oxygen mixtures.
- The lower gas density reduces the work of breathing by reducing the force needed to move gas through the airways.
- Heliox is commonly used on patients with diseases of increased airway resistance, such as bronchiolitis, asthma, post-extubation stridor, airway compression, intra and extrathoracic airway obstruction.
- Precision Flow Heliox strategies follow the same general clinical guidelines for air-oxygen mixtures, except O₂ should be titrated between 0.21 and 0.4 since higher oxygen concentrations (and lower helium concentrations) would result in a less significant clinical effect.
- VapoTherm Heliox Disposable Patient Circuits (DPC)
PFH-DPC-LOW 1-8 L/min
PFH-DPC-HIGH 5-40 L/min
- Note: See Praxair for instructions for use.



Autorizované zastoupení pro ČR:

DARTiN

DARTiN, spol. s r.o.
Suchbolská 688, 252 62 Horoměřice
Tel./fax: 241 470 361, 261 216 076
www.dartin.cz
e-mail: info@dartin.cz

Autorizované zastúpenie pre SR:

DARTiN

DARTiN Slovensko, s.r.o.
L. Podjavorinskej 25, 080 05 Prešov
Tel./fax: 051/7734403, 7723634
www.dartin.sk
e-mail: info@dartin.sk

Vapotherm, Inc. • 22 Industrial Drive • Exeter, NH 03833 • 603.658.0011 • www.vapotherm.com

MKT-0045 Rev. D 8/16