



VIHA dv10 is a powerful, versatile high end ventilator for all patient groups. It offers a number of advanced and unique features along with wide range of modes, functions enables precise specialised treatment of critically ill patients.

VIHA dv10's compact and powerful turbine offers independence from compressed air to allow maximum mobility throughout the hospital.

- Adult, Pediatric and Neonatal Ventilation
- Invasive and Non Invasive Ventilation
- Turbine driven Ventilation
- Inspiration synchronized Ultrasonic / Vibrating mesh Nebulizer
- High Flow Oxygen therapy, Apnea backup Ventilation
- Advanced modes such as APRV, BIVENT, MMV and PRVC
- Advanced Maneuvers such as P0.1, Recruitment, O2 Flush, Inspiratory and expiratory hold, Intrinsic PEEP, Sigh
- Inbuilt ETCO₂ with Mainstream connector (Optional)
- Tested as per EN 60601-1:2006 /A1:2013, EN 60601-1-2:2015, EN 60601-1-8:2007/A11:2017, ISO 80601-2-12:2020



Ventilation Modes

Modes	 Adult	 Pediatric	 Neonatal
VC - CMV	●	●	●
VC - ACV	●	●	●
VC - SIMV	●	●	●
PC - CMV	●	●	●
PC - ACV	●	●	●
PC - SIMV	●	●	●
PC - APRV	●	●	●
PC - MMV	●	●	●
PC - BIVENT	●	●	●
CPAP	●	●	●
PRVC - CMV	●	●	●
PRVC - ACV	●	●	●
PRVC - SIMV	●	●	●
HFNC	●	●	●

Non Invasive Ventilation (NIV)

When NIV is enabled, All the modes work in Non Invasive ventilation as well with automatic leak compensation

Pressure Support (PS)

Pressure Support (PS) is an option which supports the patient when an inspiratory patient flow trigger is detected. It is activated on low pressure level (expiration) and on high level (inspiration). This is available in CPAP/PSV, PC - SIMV, PC - BIVENT, PC - APRV, PC - MMV and VC - SIMV.

Apnea Backup Ventilation

Apnea backup can be activated in CPAP / PSV Mode to PC-SIMV mode.

Unique Features



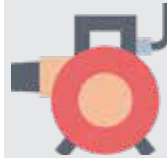
10.1" Touch Screen
User Interface



Inspiration synchronized
Ultrasonic / Vibrating mesh
Nebulizer



Universal Ventilation
Adult | Pediatric | Neonatal



Turbine driven Technology



Battery Backup upto
6 hours



Powerful Non Invasive
Ventilation



High Flow Oxygen
Therapy (HFNC)



Apnea Backup
Ventilation



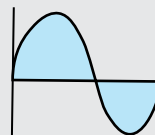
Active autoclavable
Exhalation Valve



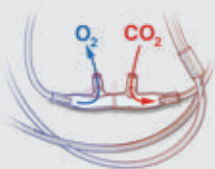
Dynamic Safety Valve



Proximal Flow Sensor
Measurement



Flow and Pressure Trigger
in all modes



ET CO2 Mainstream
Capnography



Pulse Oximetry
SpO2 and pulse

Ventilator Maneuvers

O₂
Flush

P0.1

Lung
Recruitment

Nebulizer

Intrinsic
PEEP

Inspiration
Hold

Expiration
Hold

Sigh

Tube
Compensation

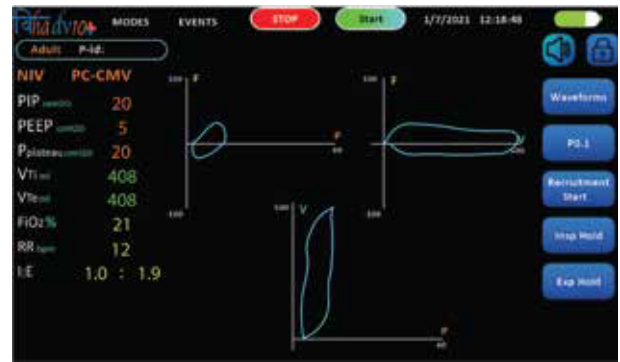
Suction
Control



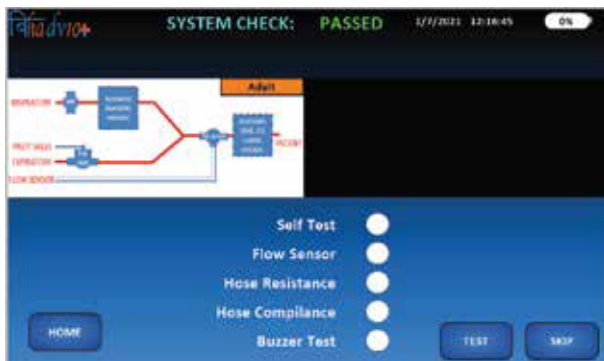
User Interface



Easy to use, touch screen interface with Real time Pressure, Volume and Flow graphs vs time. Waveform scaling gives user better visibility



Loops help understand Respiratory Mechanics and are plotted as Pressure - Volume, Volume - Flow and Pressure - Flow scales.



SYSTEM CHECK before each new patient or change of circuit with Self Test, Flow Sensor, Hose Resistance, Hose Compliance and Buzzer Test



Display of all monitored parameters for detailed understanding of patient dynamics



DIAGNOSTICS screen displays all the important parameters important for ventilator health such as pressure, temperature, flow, motor voltage, blower speed etc.



PATIENT LOG displays all the patient data of last 48 hours for upto 100 patients

Technical Specifications

Inspiratory pressure	0 - 90 cmH ₂ O
Pressure Support	0 - 90 cmH ₂ O
Maximum limited pressure	100 cmH ₂ O (70 cmH ₂ O at ambient pressure < 950 mbar)
PEEP	0 - 40 cmH ₂ O
Respiratory Rate (RR)	3 - 200 bpm
I:E Ratio	1:9.9 to 9.9:1
Tidal Volume (VT)	2 - 2000 ml
Pressure Trigger	0 to -10 cmH ₂ O
Flow Trigger	0 to 20 lpm
Maximum Flow	> 180 lpm
Volume Accuracy	+/- 5%
O ₂ concentration (FiO ₂)	21 - 100%
Leak Detection and Compensation	> 50 lpm
O ₂ Therapy	0 to 65 lpm
Oxygen Input	3 - 6 bar, Medical Grade
Display	10.1 inch colour touch screen TFT
Dimensions	300 mm x 300 mm x 330 mm
Weight	11.62 Kg ; 25 Kg with Trolley
Battery	Lithium Phospourous, 25.6V 6Ah
Battery Back-up Time Mains Input	360 minutes
Voltage	190 to 240 VAC, 50Hz
Power Consumption	150W
Standards and Approvals	Tested as per EN 60601-1:2006 /A1:2013, EN 60601-1-2:2015, EN 60601-1-8:2007/A11:2017, ISO 80601-2-12:2020
Maneuvers	O ₂ Flush, Sigh, P0.1, Lung Recruitment, Inspiration Hold, Expiration Hold, Nebulizer, Tube Compensation, Intrinsic PEEP
Flow Sensor	Sensatronic DP Flow Sensor - Adult, Pediatric & Neonatal
Oxygen Sensor	Envitec, OOM202
Breathing Circuit	Resistance ≤ 0.3mbar/Ls-1
Nebulizer	Ultrasonic Nebulizer - Compatible with Aerogen Solo Time - 0 to 30 mins, Inspiration Synchronized

Alarms

Limit Based

Mve (High / Low)
PEEP (High / Low)
Vtinsp (High / Low)
RR (High / Low)
Paw (High / Low)
FiO2 (High / Low)

Safety Based

Patient disconnect
Apnea detected
Obstruction detected
Max pressure reached
Relief to peep
Relief to ambient pressure

Emergency pressure release
Air input flow low
Supply voltage Critically low
Battery Critically Low
Oxygen supply pressure too low
Patient flow sensor fail

Hardware Malfunction

Blower Fail
Pilot valve fail
Oxygen sensor Fail
Safety valve Fail
Oxygen valve fail
Output pressure sensor fail
Patient airway pressure sensor fail
Output flow sensor fail
Air flow sensor failed
Oxygen flow sensor failed

Internal flow measurement fail
No pressure sensor available
Input gas temperature sensor fail
Output gas temperature sensor fail
Motor temperature sensor fail
Oxygen supply pressure sensor fail
System Communication fail
Motor temperature out of range
Motor temperature high



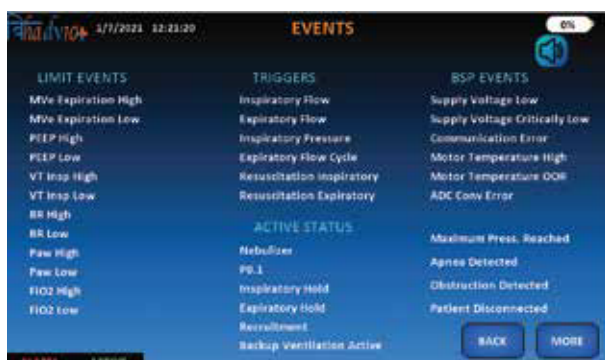
DATE/TIME	ALARMS	PRIORITY
1/7/2021 1:35:4	Patient Disconnect	High
1/7/2021 1:35:1	Patient Airway Press. Sensor Fail	High
1/7/2021 1:34:59	RR High	High
1/7/2021 1:6:47	RR High	High
1/7/2021 1:6:45	Mve Expiration Low	High
1/7/2021 1:6:41	Patient Airway Press. Low	High
1/7/2021 1:6:39	RR High	High
1/7/2021 1:6:35	RR High	High
1/7/2021 1:6:33	RR High	High
1/7/2021 1:6:29	RR High	High
1/7/2021 1:6:27	RR High	High
1/7/2021 1:6:23	RR High	High
1/7/2021 1:6:21	RR High	High
1/7/2021 1:6:18	RR High	High
1/7/2021 1:6:15	PEEP High	High

Complete Alarm History of last 24 hours tabulated with time stamp



	LOWER	UPPER		
Patient Airway Pressure (Paw)	10	80	SET ALARM	
PEEP cmH2O	0	20		Apnea Time
Tidal Volume Insp ml	0	1000		10
Mve Expiration L/min	0.0	20.0		Auto Set
Respiratory Rate Spm	0	40		
FiO2 %	18	100		BACK ACCEPT

ALARM SETTING for monitored parameters with Auto-Set function



LIMIT EVENTS	TRIGGERS	BSP EVENTS
Mve Expiration High	Inspiratory Flow	Supply Voltage Low
Mve Expiration Low	Expiratory Flow	Supply Voltage Critically Low
PEEP High	Inspiratory Pressure	Communication Error
PEEP Low	Expiratory Flow Cycle	Motor Temperature High
VT Insp High	Resuscitation Inspiratory	Motor Temperature OK
VT Insp Low	Resuscitation Expiratory	ADC Conv Error
RR High		
RR Low		
Paw High		
Paw Low		
FiO2 High		
FiO2 Low		

ACTIVE STATUS
Rebubler
PG.I
Inspiratory Hold
Expiratory Hold
Recruitment
Backup Ventilation Active



VENTILATION STATUS	SENSOR/ACTUATORS	
User Setting Error	Oxygen Valve Fail	Input Gas Temperature Sensor Fail
Relief To PEEP	Blower Fail	Output Gas Temperature Sensor Fail
Relief To Ambient	Pilot Valve Fail	Motor Temperature Sensor Fail
Emergency Press. Released	Output Flow Sensor Fail	Oxygen Supply Press. Sensor Fail
Backup Gas Source Active	Air Flow Sensor Fail	Ambient Press. Sensor 1 Fail
Oxygen Supply Press. Too Low	Oxygen Flow Sensor Fail	Ambient Press. Sensor 2 Fail
LPO Error	Internal Flow Sensor Fail	Ambient Press. Fail
Air Input Flow Low	Patient Flow Sensor Fail	Oxygen Concentration Sensor Fail
Input Gas Temperature High	Invalid Patient Flow	Safety Valve Fail
Output Gas Temperature High	Output Press. Sensor Fail	Patient Sensor Readout
PCVR Minimum Reached	Patient Airway Press. Sensor Fail	
PCVR Maximum Reached	No Press. Sensor Available	

Display of all alarms, events, triggers with their respective status in Real Time. This gives the user complete understanding of all critical events and a protection against each safety event / malfunction.

Accessories



Servo Humidifier
Heated Wire based



Exhalation Valve
Reusable & Autoclavable



Aerogen Solo
Vibrating Mesh based
Nebuliser



Neonatal Ventilator Circuits
Heated Wire based



Adult Ventilator Circuit
with Nebulizer Port



NebHme Filter with
Nebulizer Valve



ETCO2 Mainstream Module
Respiration rate range: 2~150 breath/minute



SpO2 Module - NONIN



Full Face Mask for NIV
Size - Adult / Pediatric



High Flow Nasal Cannula
(Adult)

[illegible]