



**iTERNIS**  
PATIENT ORIENTED VENTILATION

INTENSIVE CARE VENTILATORS

**HEYER** 

**MEDICAL AG**



ADV  
iTERNIS

# iTernIS ADV

INTENSIVE CARE VENTILATION FOR ALL PATIENT CATEGORIES

## Design Features

HEYER iTernIS ADV's 12-inch touch-screen display combines comprehensive, easy-to-follow user interface and patient monitoring.

User-friendly, intuitive programming promotes patient safety through redundancy:

- Touch-screen for rapid navigation
- Illuminated retro-dial for navigation and confirmation
- Rapid-access keys for access to critical functions

High visibility alarm indicator offers added patient safety.

## Precise Control and Monitoring

Proximal flow sensor (for neonatal applications) eliminates compressible volume errors.

Expanded flow trigger range and accuracy improves patient-ventilator synchrony.

Comprehensive Respiratory Mechanics monitor offers continuous display of critical ventilation parameters such as mandatory and spontaneous minute ventilation, spontaneous respiratory rate, expiratory time constant (TCEXP), auto-PEEP, static and dynamic compliance, inspiratory and expiratory resistance, maximum inspiratory pressure (PiMAX), leaks, shallow breathing index – Tobin's Index (f/VT), trapped volume, airway occlusion pressure (P0.1), slow vital capacity, P-V inflection points (P/VFLEX) and imposed work of breathing (WOBi).

Separate Respiratory Mechanics menu offers a vital information tool to improve patient treatment efficacy and safety.

## ET-TS Tube Compensation

ET-TS tube compensation function reduces imposed work of breathing (WOBi) caused by the endotracheal or tracheostomy tube.

## Volumetric Capnography

Integrated volumetric capnography module – mainstream – an essential patient monitoring and diagnostic tool for safe and efficient mechanical ventilation, offers numerical and graphical display for EtCO<sub>2</sub> and physiological dead space measurements.

## Non-invasive Ventilation

Automatic leak compensation allows accurate and efficient NIV for all patients.

Customizable alarm system allows deactivation of nuisance alarm.



Ventilator workstation on optional mobile trolley.



Ventilator workstation with optional medical air compressor.



# *iTernIS BASE*

THE ECONOMICAL SOLUTION FOR RELIABLE VENTILATION

## *Design Features*

HEYER iTernIS BASE's 12-inch touch-screen display combines comprehensive, easy-to-follow user interface and patient monitoring. User-friendly, intuitive programming promotes patient safety through redundancy:

- Touch-screen for rapid navigation
- Illuminated retro-dial for navigation and confirmation
- Rapid-access keys for access to critical functions

High visibility alarm indicator offers added patient safety.

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## *Precise Control and Monitoring*

Expanded flow trigger range and accuracy improves patient-ventilator synchrony.

Comprehensive Respiratory Mechanics monitor offers continuous display of critical ventilation parameters such as mandatory and spontaneous minute ventilation, spontaneous respiratory rate, auto-PEEP, static and dynamic compliance, inspiratory and expiratory resistance, maximum inspiratory pressure (PiMAX), leaks, trapped volume, airway occlusion pressure (P0.1), slow vital capacity and P-V inflection points (P/VFLEX).

Separate Respiratory Mechanics menu offers a vital information tool to improve patient treatment efficacy and safety.

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## *Non-invasive Ventilation*

Automatic leak compensation allows accurate and efficient NIV for all patients.

Customizable alarm system allows deactivation of nuisance alarm during NIV.

Reliable and accurate volume and leak monitoring assures patient-ventilator synchrony and overall patient comfort.

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# *iTernIS NEO*

FOCUSED ON OUR FUTURE

## *Design Features*

HEYER iTernIS NEO's 12-inch touch-screen display combines comprehensive, easy-to-follow user interface and patient monitoring. User-friendly, intuitive programming promotes patient safety through redundancy:

- Touch-screen for rapid navigation
- Illuminated retro-dial for navigation and confirmation
- Rapid-access keys for access to critical functions

High visibility alarm indicator offers added patient safety.

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## *Precise Control and Monitoring*

Proximal flow sensor (for neonatal applications) eliminates compressible volume errors. Expanded flow trigger range and accuracy improves patient-ventilator synchrony.

Comprehensive Respiratory Mechanics monitor offers continuous display of critical ventilation parameters such as mandatory and spontaneous minute ventilation, spontaneous respiratory rate, auto-PEEP, static and dynamic compliance, inspiratory and expiratory resistance, leaks and trapped volume.

Separate Respiratory Mechanics menu offers a vital information tool to improve patient treatment efficacy and safety.

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## *Patient-focused Ventilation Modes*

Volume-controlled ventilation (VCV), pressure-regulated volume-controlled ventilation (PRVC) and airway pressure release ventilation (APRV) expand treatment options and improve patient-ventilator synchrony.

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## *Non-invasive Ventilation*

Automatic leak compensation allows accurate and efficient NIV for all patients.

Reliable and accurate volume and leak monitoring assures patient-ventilator synchrony and overall patient comfort.



## SPECIFICATIONS

### PHYSICAL CHARACTERISTICS

Height	35 cm (13.8 in)
Width	36 cm (14.2 in)
Depth	32 cm (12.6 in)
Height including trolley	131 cm (51.6 in)
Weight not including trolley	9.8 kg (21.6 lb)
Weight including trolley	23.8 kg (52.5 lb)
Width of trolley	51 cm (20.1 in) – 65 cm with lateral wheels (25.6 in)
Depth of trolley	52 cm (20.5 in) – 59 cm with in-line wheels (23.2 in)

### SCREEN

Type	Resistive sensitive touch-screen / color TFT-LED
Size	12.1"
Resolution	800x600

### ENVIRONMENTAL REQUIREMENTS

	Temperature	Ambient pressure	Humidity
Operation	15°C – 35°C	560 – 1030 hPa	15 – 95% non-condensing
Storage	-5°C – 70°C	500 – 1060 hPa	< 95% non-condensing

### PNEUMATIC SPECIFICATIONS

Supply gas	Medical grade air and oxygen	
Minimum supply pressure	2.8 – 6 bar (approx. 41 – 87 psi)	
Maximum supply pressure	2.8 – 6 bar (approx. 41 – 87 psi)	
Maximum limited pressure (relief valve)	120 ± 5 cmH2O	
Inlet flow (gas source)	180 L/min (120 L/min for air compressor)	
Peak flow delivered by the ventilator	0.2 – 180 L/min	
Maximum resulting minute volume	ADL:	130 L/min
	PED:	40 L/min
	NEO-INF:	17 L/min
Internal compliance (of the ventilator)	0.16 L/cmH2O	
Ventilator connectors for gas supply	AIR: DISS 3/4" – 16 male connector	
	O2: DISS 9/16" – 18 male connector	

### ELECTRICAL SPECIFICATIONS

Main Power	100-240 V / 50-60 Hz
	Automatic voltage switching
Internal Battery	11.1 V / 7.8 Ah – automatic recharge.
	Estimated duration: approx. 2.5 h when fully charged
	Charge level indicator onscreen
Connectivity	RS-232C with DB-9 connector and VGA output



	HEYER iTernIS ADV	HEYER iTernIS BASE	HEYER iTernIS NEO
Adult	●	●	○
Pediatric	●	●	○
Neonatal	●	Optional	●
Display	Color 12" – touch-screen	Color 12" – touch-screen	Color 12" – touch-screen
<b>Ventilation modes</b>			
VCV	●	●	●
PCV	●	●	●
PSV/CPAP	●	●	●
SIMV(VCV) + PSV	●	●	●
SIMV(PCV) + PSV	●	●	●
MMV + PSV	● (Adult/Ped)	● (Adult/Ped)	○
PSV + VT assured	● (Adult/Ped)	● (Adult/Ped)	○
APRV	●	●	●
NIV	● (Adult/Ped)	● (Adult/Ped)	○
PRVC	●	○	●
TCPL	● (Neo)	Optional with Neo	●
TCPL + SIMV	● (Neo)	Optional with Neo	●
Nasal CPAP	● (Neo)	Optional with Neo	●
<b>Ventilation Settings</b>			
Tidal Volume	2 – 2500 ml	20 – 2500 ml (from 5 with Neo)	2 – 350 ml
Minute Volume	1 – 45 L/min	1 – 45 L/min	22.5 L/min
Controlled Pressure	2 – 100 cmH2O	2 – 100 cmH2O	2 – 100 cmH2O
Support Pressure	0 – 100 cmH2O	0 – 100 cmH2O	0 – 100 cmH2O
Peak Flow	180 L/min	180 L/min	40 L/min
PEEP/CPAP	0 – 50 cmH2O	0 – 50 cmH2O	0 – 50 cmH2O
Breath Rate	1 – 150 BPM	1 – 150 BPM	1 – 150 BPM
Inspiratory Time	0,1 – 10 s (30s APRV)	0,1 – 10 s (30s APRV)	0,1 – 10 s (30s APRV)
I:E Ratio	5.9:1 to 1:5.99	5.9:1 to 1:5.99	5.9:1 to 1:5.99
Triggering	Flow / Pressure	Flow / Pressure	Flow / Pressure
Flow	0,2 – 15 L/min	0,2 – 15 L/min	0,2 – 15 L/min
Pressure	0,5 – 20 cmH2O	0,5 – 20 cmH2O	0,5 – 20 cmH2O
Adjustable end inspiration criteria PSV	5 – 80%	5 – 80%	5 – 80%
Inspiratory Flow	0,1 – 180 L/min	0,1 – 180 L/min	0,1 – 40 L/min
Continued Flow	2 – 40 L/min	2 – 40 L/min (optional with Neo)	2 – 40 L/min
TCPL	2 – 50 cmH2O	2 – 50 cmH2O (optional with Neo)	2 – 50 cmH2O
FiO2	21 – 100%	21 – 100%	21 – 100%
Inspiratory Pause	up to 2 s	up to 2 s	up to 2 s
Flow waves	2	2	2
<b>Other Features</b>			
Capnography	●	○	○
Trends	72hs	72hs	72hs
Autoscale	●	●	●
Pneumatic Nebulizer connector	●	●	●
Manual Trigger	●	●	●
Inspiratory/Expiratory Pause	●	●	●
Oxygen sensor	Integrated	Integrated	Integrated
Activated Alarms log	●	●	●
Tube compensation	●	○	○
Leak compensation	●	●	●
VT according Ideal body weight (IBW)	●	●	●
<b>Volume compensation by:</b>			
Altitude	●	●	●
Circuit compliance	●	●	●
BTPS	●	●	●
<b>Accessories</b>			
CO2 sensor	Optional	○	○
Reusable CO2 Adaptor	Optional	○	○
Proximal Flow sensor	●	○	●
Patient circuit (to be specified)	Adult/Ped/Neo Hytrel or Silicone	Adult/Ped/Neo Hytrel or Silicone	Neo Hytrel or Silicone
Nebulizer	●	●	●
AeroNeb Pro	Optional	Optional	Optional
Humidifier	Optional	Optional	Optional
Humidifier Chamber	Adult/Neo optional	Adult/Neo optional	Neo optional
Test Lung	Silicone	Silicone	Silicone
Trolley w/ flex arms	Optional	Optional	Optional
High pressure tubes	Optional	Optional	Optional
Compressor	Optional	Optional	Optional
Air Filter	●	●	●
Power cord	●	●	●

	HEYER iTernIS ADV	HEYER iTernIS BASE	HEYER iTernIS NEO
<b>Monitoring</b>			
Peak pressure	●	●	●
Plateau	●	●	●
Mean Pressure	●	●	●
PEEP	●	●	●
Peak Flow	●	●	●
Inspiratory time	●	●	●
Expiratory time	●	●	●
I:E Ratio	●	●	●
Total Rate	●	●	●
Spontaneous Rate	●	●	●
Expired Tidal Volume	●	●	●
Total Expired Minute Volume	●	●	●
Mandatory Expired Minute Volume	●	●	●
Spontaneous Expired Minute Volume	●	●	●
F/VT	●	●	●
Work of Breathing	●	●	●
Leak	●	●	●
% Leakage	●	●	●
Endotracheal pressure	●	○	○
ETCO2	●	○	○
VD/VT	●	○	○
Anatomic Dead space	●	○	○
Va	●	○	○
Va min	●	○	○
VtCO2	●	○	○
VCO2 (STPD)	●	○	○
PeCO2	●	○	○
<b>Graphics</b>			
Pressure vs Time	●	●	●
Volume vs Time	●	●	●
Flow vs Time	●	●	●
Volume vs Pressure	●	●	●
Flow vs Volume	●	●	●
Flow vs Pressure	●	●	●
PeCO2 vs Time	●	○	○
PeCO2 vs Volume	●	○	○
<b>Respiratory Mechanics</b>			
AutoPEEP	●	●	●
Static and Dynamic Compliance	●	●	●
Inspiratory and Expiratory Resistance	●	●	●
Trapped Volume	●	●	●
Slow Vital Capacity	●	●	○
P 0.1	●	●	○
Inflexion Points of the P/V curve	●	●	○
Plmax	●	●	○
Physiological VD/VT	●	○	○
<b>Alarms</b>			
High/Low Inspiratory Pressure	●	●	●
Low inlet Pressure	●	●	●
Power Loss	●	●	●
Depleted Battery	●	●	●
Continuous Pressure	●	●	●
Inoperative Ventilator	●	●	●
Disconnection	●	●	●
High/Low Tidal Volume	●	●	●
O2 Concentration High /Low	●	●	●
Apnea	●	●	●
NIV Leak	●	●	●
Fan Failure	●	●	●
High Breath Rate	●	●	●
Low PEEP	●	●	●
High/Low Exhaled Minute Volume	●	●	●
High/Low ETCO2	●	○	○

- available
- not available



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