

Prima SP2 Anesthesia Systems



The Penlon Anesthesia System Range provides the user with their choice of advanced, easy to use anesthesia systems

- ◆ Advanced easy to use features
- ◆ Comprehensive specification
- ◆ Ultra low flow anesthesia
- ◆ Up to six ventilation modes
- ◆ Absorber/ventilator interface
- ◆ Low cost of ownership
- ◆ Heated breathing system
- ◆ Optional electronic flow display
- ◆ 'Life-Care' or optional 'Life-Care Plus' Warranty and Customer Care scheme

Partnership for Life



Prima SP2 Anesthesia System

**Advanced technology, flexible specification,
open architecture and easy to use**

With its integrated design and superior build quality, each anesthesia system is custom built to meet your requirements

- ◆ Seamless workstation integration
- ◆ Modular construction and GCX™ channel mounting provides open architecture for monitors and accessories
- ◆ Up to four gases
- ◆ Two station Selectatec backbar
- ◆ Lockable drawer and pull out writing tablet
- ◆ Low cost of ownership - two preventive maintenance services per year

Optional Features

- ◆ Dual oxygen, nitrous oxide, and air flowmeters
- ◆ Electrical outlets plus flowmeter and work surface lighting
- ◆ Oxygen auxiliary flowmeter
- ◆ Electronic flow display

Balanced ultra low flow anesthesia,
plus patient safety with proven
Mechanical AHD system

- ◆ 50 – 75 ml/min minimum oxygen flow
- ◆ 25 – 33% minimum Oxygen / Nitrous Oxide flow



Prima SP2 Anesthesia System with two station Selectatec backbar

Prima SP MRI Anesthesia System

Designed specifically for use in a MRI Facility

Tested for attraction, stability of performance, and effect on image in close proximity to a Magnetic Resonance Imaging System*

- ◆ Cascade Oxygen, Nitrous Oxide and Air Flowmeters
- ◆ Mechanical AHD
- ◆ Two station Selectatec back bar
- ◆ Color coded panels, and MRI status label
- ◆ The Nuffield 200 Ventilator is a pneumatically driven time-cycled ventilator with pre-set volume and flow rate for adult or pediatric patients
- ◆ The IDP Alarm is a self-contained battery powered alarm, providing audible and visual warning of ventilation failure, circuit disconnection during intermittent positive pressure ventilation, and an over-pressure alarm



IMPORTANT INFORMATION

*Prima SP MRI Systems (equipped only with any of the devices listed below), are validated for use in proximity to the 100 millitesla (1000 Gauss) line generated by actively shielded 1.5T and 3T magnets, if used in compliance with user instructions.

Validation for use in proximity to a Magnetic Resonance Imaging System does not infer zero magnetism, but a level of magnetism within a specified magnetic field.

Please contact your Penlon representative for further information.

Users must, as a precautionary measure, make an individual check of MRI suitability of any device with their particular MRI facility before use.

Devices tested for use with Prima SP MRI System

- A200SP Absorber
- Sigma Delta Vaporizer
- Nuffield 200 Ventilator
- IDP Alarm
- AGSS Receiver
- SC760 Suction Controller (high suction)
- East Suction Controller (high suction)



Nuffield 200 Ventilator

A pneumatically driven time-cycled ventilator with pre-set volume and flow rate for adult or pediatric patients



Non-ferrous Drawers

Robust drawers providing significantly less projectile threat than standard drawer units

Patient Monitor Integration

The perfect platform for patient monitoring,
whichever system you use*

The modular design provides an open system
for flexible monitor mounting

- ◆ GCX™ arm for monitor mount or monitor plus ventilator display mount
- ◆ Large screen monitor top shelf
- ◆ Flat screen mounting
- ◆ Four electrical power outlets (optional)
- ◆ Patient cable management system available

*Please contact the Penlon Sales Office or your local distributor for details of Penlon's comprehensive range of patient monitors



Prima SP2 Monitor Mounting Options

System Modules

Advanced technology, providing seamless integrated operation

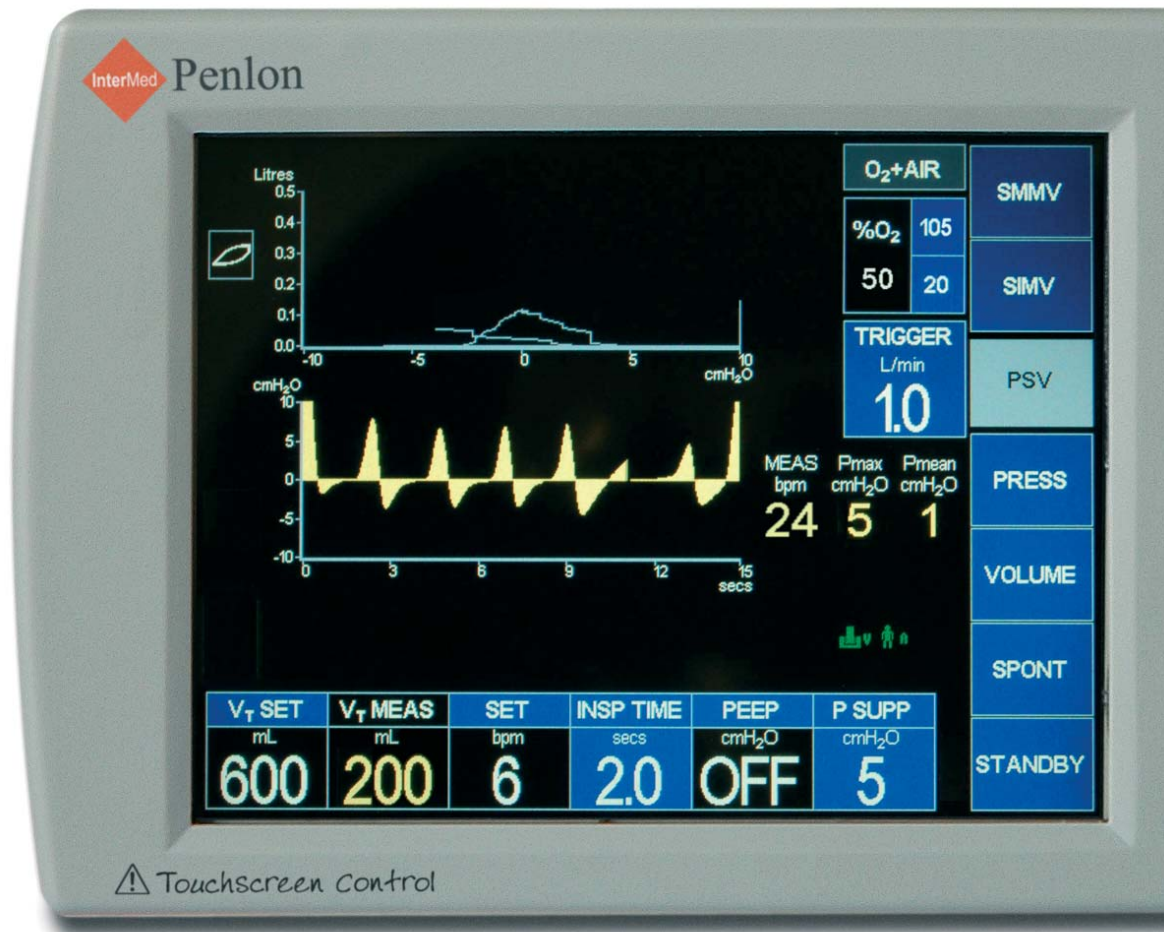
Each device delivers reliable, proven performance within your anesthesia system

AV-S Ventilator

An easy to use, multifunction anesthesia ventilator, designed for all patient profiles

- ◆ Volume, PCV, PSV, SIMV and SMMV modes
- ◆ Comprehensive printer/data outputs for networking and interfacing to patient monitors
- ◆ Integrated Oxygen Monitor and Spirometry
- ◆ Inverse I:E Ratio capability
- ◆ Electronic PEEP
- ◆ Autoclavable Latex Free Bellows
- ◆ Oxygen or Air drive gas
- ◆ 30 minutes battery backup
- ◆ Selectable Dual Waveform Display:
 - Pressure v. Time
 - Volume v. Time
 - Pressure v. Volume (for ventilation analysis) plus waveform freeze facility
- ◆ Save and recall function for user specific settings
- ◆ Flexible specification
 - Stand-alone operation or seamless integration with Prima SP2
 - Display mounting option
 - Multilingual display
- ◆ Site default function

Ventilator



System Modules

Advanced technology, providing seamless integrated operation

Each device delivers reliable, proven performance within your anesthesia system



Sigma Delta Vaporizer

The award winning Sigma Delta has evolved from a distinguished line of vaporizers of the highest quality and reliability into the world market leader

- ◆ Service Free[#]
- ◆ Selectatec[®], Drager Plug-In[®], Cagemount, North American Drager
- ◆ Superb performance, particularly at low flows
- ◆ Halothane, Enflurane, Isoflurane, Sevoflurane
- ◆ Keyed Filler, Quik Fil[®], or Pour Fill
- ◆ Low Body Weight

[#] Presumes ten year product life requiring no preventive maintenance service. It is recommended that a service is carried out at ten years.



Vaporizer Absorb A200SP Absorber

Combining advanced system integration, ease of use and high performance

- ◆ Absorber/Ventilator interface provides seamless ventilation mode switching
- ◆ Excellent ergonomics with multi-position mounting and adjustable breathing bag arm
- ◆ Optional heated circuit
- ◆ Protected, integrated spirometry sensors
- ◆ Quick release canister for loose or pre-packed absorbent
- ◆ Built-in oxygen monitor sensors
- ◆ Autoclavable[†]

[†] Covers, manometer and oxygen sensor are not autoclavable

Accessories

Expanding the capabilities of your system through a range of high quality accessories including suction controller range, sharps bin mounts, drip stands, AGSS receiver, patient cable management arm and more.

Technical Specification

Anesthesia Systems

Physical		
Model :	Prima SP2	Prima SP MRI
Size (H x W x D)	53.7 x 28.3 x 31.5 inch	54.3 x 28.0 x 26.8 inch
Weight	165.3 lbs	165.3 lbs
Top Shelf	25.2 x 19.5 inch	28 x 13.6 inch
Work Surface	25.2 x 11.4 inch	22.8 x 11.8 inch
Drawers (Maximum of three)	5.9 x 20.5 x 15.7 inch	5.5 x 13.4 x 13.0 inch and 5.5 x 20.0 x 13.0 inch
Power Outlets (Optional)	4 x 5 Amp FDA/CSA	4 x 5 Amp FDA/CSA
Power Required	110/120 or 220/240 VAC	110/120 or 220/240 VAC
Features		
Vaporizers (Max.)	Three	Two
Gases	Oxygen, Nitrous Oxide, Air	Oxygen, Nitrous Oxide, Air
Cylinder Yokes	Four	Four
Oxygen Fail Safe	Yes	Yes
Anti-Hypoxic Device	Mechanical	Mechanical
Integrated Absorber	A200SP (Optional)	A200SP
Integrated Ventilator	AV-S (Optional)	Nuffield 200
Standards	Relevant to markets, including ASTM & CE	Relevant to markets, including ASTM & CE

A200SP Absorber

Physical	
Size (H x W x D)	16.5 x 9.0 x 16.9 inch
Weight (empty)	33 lbs
Absorbent Capacity	2.86 lbs

Sigma Delta Vaporizer

Size	
Selectatec Compatible with Interlock (H x W x D)	9.5 x 4.7 x 7.5 inch
Drager Plug-In Compatible with Interlock (H x W x D)	9.5 x 3.9 x 7.5 inch
Cagemount (H x W x D)	8.6 x 5.2 x 6.2 inch
Physical	
Weight	11 lbs
Capacity	Volume at MAX mark: 250 ml nominal Volume at MIN mark: 35 ±10 ml
Note	After draining, approximately 60 ±10 ml of liquid is retained by the wick
Flow Range	0.2 to 15 L/min
Temperature Range	Operating: 15 to 35°C (58 to 95°F)

AV-S Ventilator

Physical		SIMV, SMMV, PSV		Default Settings		Adult	Pediatric
Size - Control Unit Only	7.2 x 11.4 x 11.8 inch (H x W x D)	Trigger	0.7 to 4 L/min (PEEP Referenced)	VOLUME			
- with Adult Bellows	15.1 x 11.4 x 11.8 inch (H x W x D)	Trigger Window	60% of Expiratory Time	• Tidal Volume (Vt)	600 ml	150 ml	
Screen	210 mm (8.4 inch) TFT	Tidal Volume (Vt)	As Volume Mode	• Rate (BPM)	10	15	
Weight - Control Unit Only	16.75 lbs	Minute Volume (Vm)	As Volume Mode	• I:E Ratio	1:2	1:2	
- with Adult Bellows	19.8 lbs	Inspiratory Time (Ti)	0.3 to 5 Seconds	• Pmax	38 cmH ₂ O	38 cmH ₂ O	
Bellows (Latex Free)	20 to 1600 ml, Pediatric option 20 to 350 ml	Support Pressure (PSV only)	4 to 70 cmH ₂ O	PRESSURE			
Power	90 to 264 VAC, 47 to 63 Hz	Alarms - Automatic		• Tidal Volume (Vt)	600 ml	150 ml	
Drive Gas	Oxygen or Air	Alarm Mute	30 or 120 Seconds	• Rate (BPM)	10	15	
Functional		Low Drive Gas Pressure	Less than 235 kPa (34 psi)	• I:E Ratio	1:2	1:2	
Tidal Volume (Vt)	20 to 1600 ml	High Continuous Airway Pressure	PEEP +10 cmH ₂ O for one cycle, or PEEP +5 cmH ₂ O for three cycles. Standby Mode: the alarm triggers after 15 Seconds	• P-Target	10 cmH ₂ O	10 cmH ₂ O	
Rate (BPM)	4 to 100 bpm	Low Pressure	4 to 14 cmH ₂ O PEEP Referenced	SIMV			
I:E Ratio	1:0.2 to 1:8	Low Tidal Volume	50% of Volume Set (Spirometry)	• Tidal Volume (Vt)	600 ml	150 ml	
Pressure Limit (Volume Control Mode)	10 to 80 cmH ₂ O	Incorrect Rate or Ratio		• Rate (BPM)	6	15	
Fresh Gas Compensation	Automatic Tidal Volume Adjustment	Mains Failure	30 Minutes Battery Backup	• Inspiratory Time	2 Seconds	1.3 Seconds	
Ventilation Modes	Off, Standby, Volume, Pressure Controlled, Spontaneous, SIMV, SMMV, and PSV (for use in anesthesia procedures only)	Low Battery	5 Minutes Use	• Trigger	1 L/min	1 L/min	
Sigh Function (Volume Mode)	Set tidal volume (Vt) x 1.5 is delivered at every 10 to 100 breaths (frequency is user Selectable)	Vent Inop	Internal Failure	SMMV			
Pressure Range (Pressure Control Mode)	5 to 70 cmH ₂ O	Apnoea	Flow Referenced	• Minute Volume (Vm)	3.6 L	2.2 L	
Spontaneous Mode	Active Volume and Pressure Alarms	Alarms - Optional User Set		• Rate (BPM)	6	15	
Electronic PEEP	4 to 20 cmH ₂ O (or 4 to 30 cmH ₂ O optional)	Tidal Volume - Minimum	10 to 1600 ml	• Inspiratory Time	2 Seconds	1.3 Seconds	
Oxygen Monitor	Fuel Cell type	- Maximum	20 to 2400 ml	• Trigger	1 L/min	1 L/min	
		Minute Volume - Minimum	0 to 50 L	PSV			
		- Maximum	1 to 75 L	• Support Pressure	10 cmH ₂ O	10 cmH ₂ O	
		Low & High O ₂ Concentration	18% to 105%	• Inspiratory Time	2 Seconds	1.3 Seconds	
		High Airway Pressure	10 to 80 cmH ₂ O Adjustable	• Trigger	1 L/min	1 L/min	

Partnership for Life

Penlon's philosophy embraces commitment to a successful, long term relationship with all our customers.

Life-Care

Life-Care is designed to give our customers after-sales peace of mind. 'Life-Care' consists of our comprehensive standard warranty and after-sales support package.

'Life-Care *Plus*' allows customers to purchase additional services and warranties to meet their particular needs.

For further details, please contact your Penlon Sales or Service Representative.



Penlon has a policy of continuous improvement and reserves the right to make any changes without prior notice.
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