Penlon Prima SP2 | Anesthesia System

The affordable, low maintenance anesthesia workstation.

The Prima SP2 Anesthesia Machine provides sophistication in a flexible, easy-to-use system, designed to meet all your anesthesia requirements.

1-800-477-2006 • www.dremed.com

The durable, easy-to-use Penlon Prima SP2 is designed for you.

The Penlon Prima SP2 has an open architecture, is perfect for ultra-low flow, and is backed by a manufacturer that has never discontinued service for its anesthesia machines or ventilators.

- Balanced ultra-low flow anesthesia that provides increased patient safety with a mechanical anti-hypoxic device

- Modular construction with high levels of workstation integration

- Open architecture gives you ample space for monitors and accessories

- Standard with three gases (O_2 • N_2O • Air)

- Available with a pull-out writing tablet

The fully integrated Penlon Prima SP2 features the AV-S touchscreen ventilator, the high performance A200SP absorber, and Sigma Delta vaporizer(s)

With the Penlon Prima SP2 you get high performance and a low cost of ownership.

Feature-packed system includes a touchscreen ventilator with three spontanous breathing modes and ultra-low flow delivery

Easy to use with intuitive features for a smooth, **pain-free transition** from your old machine

Two-year manufacturer's parts warranty protects your investment and reinforces peace of mind

LOADED WITH ESSENTIAL FEATURES that can MAXIMIZE PERFORMANCE

LOW COST OF OWNERSHIP HELPS REDUCE ANNUAL COSTS

Save on annual service with only two preventative maintenance visits per year

Integrated spirometry (not consumable) can save you as much as $720 per year

Reduced software upgrade fees help you save money throughout the life of your machine

Get the features you need every day (and with the Prima SP2, you won't have to worry about a discontinuation letter looming around the corner).

The superior Prima SP is constructed of durable components (more aluminum, less flimsy plastic) and comes with standard features (like three gases) for which competitors charge extra. See below for how the Prima SP2 stacks up against competing machines.

Feature	Penlon Prima SP2	Fabius GS	Aestiva/5
Dimensions (h x d x w)	54" x 29" x 31.5" + abs.	51" x 32" x 35" + abs.	54" x 33" x 37" + abs.
Weight (lbs)	220 w/ 2 vaps.	260 w/ 2 vaps.	387 w/ 3 vaps.
Top Shelf (w x d)	28" x 19.5"	30" x 19"	26" x 16"
Work Surface (w x d)	25.6" x 11.9"	27" x 13"	18" x 12"
Writing Tablet	Optional	Yes	Optional
Drawers (h x d x w)	Up to 3 (7.5" x 20.5" x 15.4")	3	1 (4" x 10" x 15")
Flow Meter Type	Dual cascade flow tubes	LED and combined flow	Dual flow tubes
Gases (Standard)	O_2 • N_2O • Air	O_2 • N_2O • Air	O_2 • N_2O (air is optional)
Cylinders (Standard)	Four	Optional	Optional
Electrical Outlets x 4	Standard	Optional	Optional
Anti-Hypoxic Device	Mechanical, 27 to 33%	S-ORC	Chain link – 25

The easy-to-use AV-S Ventilator is designed for all patient types.

The AV-S anesthesia ventilator features a user-friendly touchscreen and comprehensive support modes that provide optimum therapy for all patient profiles. With the clearly-labeled, simple layout of the AV-S interface, you'll be able to make quick decisions on the fly, even in the most hectic operating environment. You can also easily configure its screen to display two waveforms, including a compliance loop not available on many competing ventilators.

Feature	AV-S	E-Vent	7900	7100
Screen Type/Size	Color Touchscreen/8.4"	EL Black and Orange/6.4"	EL Black and Orange/6.4"	LCD/5.5"
Volume	Yes	Yes	Yes	Yes
Pressure	Yes	Yes	Yes	Optional
Spontaneous Monitoring	Yes	Yes	Yes	Yes
Pressure Support	Yes	No	Optional	Optional
Control	Touchscreen and Com-Wheel	Com-Wheel only	Com-Wheel only	Com-Wheel only
Dual Waveform	Yes	No	No	No
Print From Screen Ability	Yes	No	No	No
Tidal Volume (ml)	20–1600	20–1400	20–1500	45–1500
Frequency/min.	4–100	4–60	4–100	4–65
I:E Ratio	3:1 to 1:8	4:1 to 1:4	2:1 to 1:8	2:1 to 1:6
Pressure v. Limits	10–80	15–70	12–100	12–100
Electronic PEEP cmH$_2$0	4–30	0–20	4–30	4–30
Fresh Gas Compensation	Yes	Decoupling	Yes	Yes
Gas Powered	Yes	No, Electric	Yes	Yes
Battery Back-up	45 min.	45 min.	45 min.	45 min.
Oxygen Monitor	Yes	Yes	Yes	Yes

# The AV-S features three advanced spontaneous breathing modes.

The AV-S ventilator provides three support modes that can be utilized as the patient attempts to breathe spontaneously. Patient recovery is accelerated by increased tidal volume and SpO_2, and reduced $EtCO_2$.

SIMV (Synchronized Intermittent Mandatory Ventilation) Provides a minimum level of volume, and allows spontaneous breaths and set mandatory breaths.
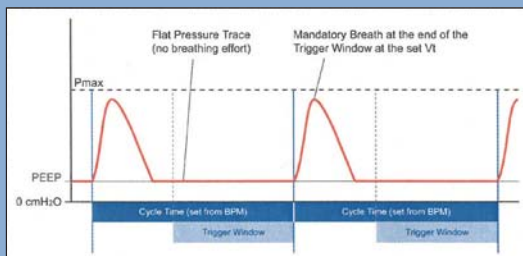
SIMV — Spontaneously Breathing Patient
Negative pressure[†] in the Trigger Window* (generated by the patient's spontaneous breath) results in a synchronized mandatory breath at a preset volume and rate.
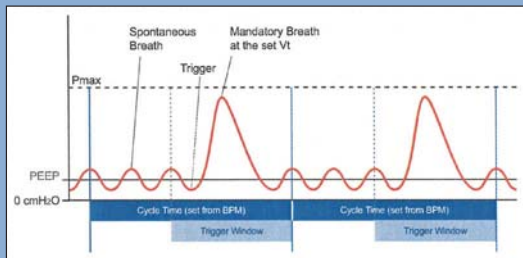
SIMV — Non-breathing Patient
If the patient makes no effort to breathe during a cycle, a mandatory breath, at the end of the Trigger Window,* will still be delivered at the preset volume and rate.

SMMV (Synchronized Mandatory Minute Ventilation) Provides a set level of minute volume ventilation and allows spontaneous breaths, combined with a synchronized mandatory breath, to achieve the set minute volume.

SMMV — Spontaneously Breathing Patient
Negative pressure[†] in the Trigger Window* (generated by the patient's spontaneous breath) results in a synchronized mandatory breath, ensuring that the set minute volume is achieved.

SMMV — Non-breathing Patient
If the patient makes no effort to breathe during a cycle, a mandatory breath, at the end of the Trigger Window,* will still be delivered at the preset volume and rate.
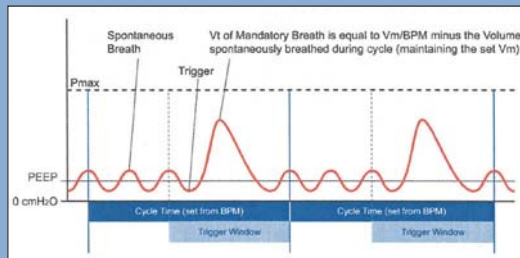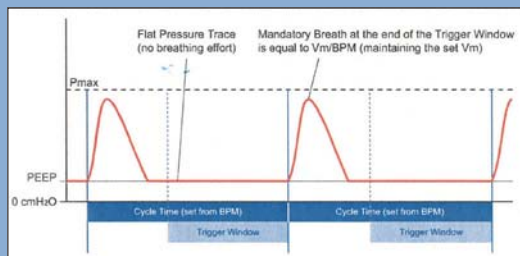

PSV (Pressure Supported Ventilation) PSV assists each spontaneous breath with a preset pressure, reducing the effort required to breathe. Negative pressure[†] (generated by the patient's spontaneous breath) results in synchronized pressure support.

PSV is used to support spontaneously breathing patients only.
If the patient makes no attempt to breathe, the ventilator will not provide support and apnea alarm will be activated.
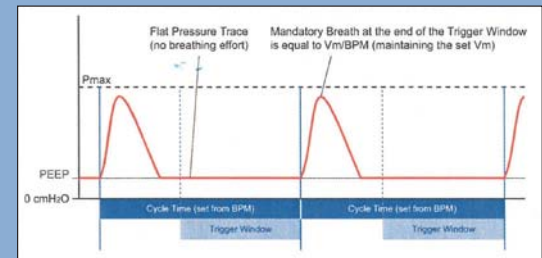
[†]Negative relative to PEEP   *Trigger Window = 60% of Cycle Time

The A200SP Absorber combines ease of use with advanced system integration.

The high performance A200SP absorber provides you with an efficient CO_2 absorption module and integrated, permanent spirometry sensors that don't have to be replaced year after year. It's autoclavable[†] and it can easily be configured for right-handed and left-handed operators. You can also utilize its quick-release canister to change absorbent while ventilating your patient.

Feature	A200SP	Cosy	Absorber	ABS
Heated Circuit	Optional	Optional	No	No
Large, Easy-to-Reach Controls	Yes	No	No	No
Integrated Ascending Bellows	Yes	No Bellows	Yes	Yes
Vent Bag/Vent Auto Switching	Yes	No	Yes	Yes
Integrated O_2 Sensor	Yes	Yes	Yes	Yes
Single Canister, Low Compliance	Yes	Yes	No	Yes
Quick Canister Release w/ Auto Seal	Yes	Yes	No	Yes
Loose Absorbent or Standard Pre-Pack	Yes	No	Yes	No
Autoclavable[†]	Yes	Yes	Yes	Yes
Robust Arm Bag	Standard	Optional	Optional	Optional
Pressure Gauge	Standard	Optional	Optional	Optional

[†]Excludes covers, manometer and oxygen sensor.

The lightweight Sigma Delta Vaporizer delivers accurate concentrations at ultra-low flows.

Count on the Sigma Delta vaporizer to deliver accurate concentrations at varying temperatures and vapor concentrations, particularly at low flows. It is service-free for as many as 10 years, and at only 11 pounds, the lightweight Sigma Delta is much easier to handle than rival vaporizers.

Feature	Sigma Delta	Vapor 2000	Tec 5	Tec 7
Weight (lbs)	11	16	15	15
Back Bars	Selectatec, North American Drager, Cage	Selectatec, Cage	Selectatec	Selectatec
Major Service Intervals	10 Years	10 Years	3 Years	10 Years
In-House Service by User	Optional	No	No	No
3-Year Warranty	Yes	Yes	Yes	Yes
Ergonomic Push/Turn Control Dial	Yes	No	No	No

Technical Specifications

Prima SP2 Anesthesia System

Physical

Size (H x W x D)	54" x 28.4" x 31.5"
	(1370 x 720 x 800 mm)
Weight	165.4 lb (75 kg)
Top Shelf	28.4" x 18.9"
	(720 x 480 mm)
Work Surface	25.6" x 11.8"
	(650 x 300 mm)
Drawers (up to three)	7.5" x 20.5" x 15.4"
	(190 x 520 x 390 mm)

Features

Number of Vaporizers	2
Gases	Oxygen, Nitrous Oxide, Air
Cylinder Yokes	Four
Oxygen Fail Safe	Yes
Anti-Hypoxic Device	Mechanical, 27 to 33%
Standards	All relevant

AV-S Multi-Mode Ventilator

Physical

Size, Control Unit Only (H x W x D)	7.3" x 11.4" x 11.8"
	(185 x 290 x 300 mm)
Size with Adult Bellows (H x W x D)	15.2" x 11.4" x 11.8"
	(385 x 290 x 300 mm)
Weight (Control Unit)	16.8 lb (7.6 kg)
Weight (w/Adult Bellows)	19.8 lb (9.0 kg)
Screen (TFT)	8.4 inches (210 mm)
Bellows (Latex-Free)	20 to 1600 ml
Bellows (pediatric option)	20 to 350 ml
Power	90 to 264 VAC, 47 to 63 Hz
Drive Gas	Oxygen or Air

Functions

Tidal Volume (Vt)	20 to 1600 ml
Rate (BPM)	4 to 100 bpm
Sigh Mode	Tidal Volume (Vt) x 1.5, every 50 breaths
I:E Ratio	1:0.3 to 1:8
Pressure Limit	10 to 80 cmH_2O
Fresh Gas Compensation	Automatic Tidal Volume Adjustment
Ventilation Modes	Off, Standby, Volume, Pressure Controlled, Spontaneous, SIMV, SMMV, PSV (for use in anesthesia procedures only)
Pressure Control	10 to 70 cmH_2O
Spontaneous Mode	Active Volume and Pressure Alarms, Patient Support Function—Automatic switch to Volume Cycle Mode if apnea alarm is triggered
Electronic PEEP	4 to 30 cmH_2O
Oxygen Monitor	Fuel Cell type

AV-S Multi-Mode Ventilator continued

SIMV, SMMV, PSV

Trigger	0.2 to 0.4 L/min
Trigger Window	60% of Expiratory Time
Tidal Volume	As Volume Mode
Minute Volume	As Volume Mode
Inspiratory Time	0.5 to 5 secs
Support Pressure	3 to 20 cmH_2O (PEEP referenced)

Alarms—optional, user set

Tidal Volume–Minimum	0 to 1600 ml
Tidal Volume–Maximum	20 to 1600 ml
Minute Volume–Minimum	0 to 10 L
Minute Volume–Maximum	0 to 30 L
Apnea	Adjustable Reset Pressure (PEEP Ref) 3 to 35 cmH_2O
Low and High O_2 Concentration	18% to 105%
High Airway Pressure	10 to 80 cmH_2O adjustable

Default Settings	Adult	Pediatric
Volume, Tidal Volume (Vt):	600 ml	150 ml
Volume, Rate (BPM):	10	15
Volume, I:E Ratio:	1:2	1:2
Volume, Pmax:	38 cmH_2O	38 cmH_2O
Pressure, Tidal Volume (Vt):	600 ml	150 ml
Pressure, Rate (BPM):	10	15
Pressure, I:E Ratio:	1:2	1:2
Pressure, P-Target:	10 cmH_2O	10 cmH_2O
SIMV, Tidal Volume (Vt):	600 ml	200 ml
SIMV, Rate (BPM):	6	10
SIMV, Inspiratory Time:	2 sec	1 sec
SIMV, Trigger:	0.4 L/min	0.4 L/min
SMMV, Minute Volume (Vt):	3.6 L	2 L
SMMV, Rate (BPM):	6	10
SMMV, Inspiratory Time:	2 sec	1 sec
SMMV, Trigger:	0.4 L/min	0.4 L/min
PSV, Support Pressure:	10 cmH_2O	10 cmH_2O
PSV, Inspiratory Time:	2 sec	1 sec

Alarms—Automatic

Alarm Mute	30 seconds
Low Drive Gas Pressure	Less than 235 kPa (34 psi)
High Cont. Airway Press	Above 30 cmH_2O at start of cycle
Low Pressure	4 to 14 cmH_2O (PEEP referenced)
Low Tidal Volume	50% of Volume set (spirometry)
Incorrect Rate or Ratio, Mains Failure	30 minutes battery backup
Low Battery	5 minutes use
Vent Inop	Internal or Battery Failure

A200SP Absorber

Physical

Size (H x W x D)	16.6" x 9.0" x 16.9"
	(420 x 230 x 430 mm)
Weight (empty)	33 lb (15 kg)
Absorbent Capacity	2.9 lb (1.3 kg)

Sigma Delta Vaporizer

Physical

Weight	Approx. 5 kg
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

Operating Flow Range	0.2 to 15 liters / min
Operating Temperature Range	15 to 35℃
	(58 to 95°F)

Size (H x W x D)

Cagemount Dimensions	8.6" x 5.2" x 6.2"
	(219 x 133 x 158 mm)
Selectatec® Compatible w/ Interlock Dimensions	9.5" x 4.7" x 7.5"
	(242 x 120 x 190 mm)
Dräger Plug-In® Compatible Dim.	9.5" x 3.9" x 7.5"
	(242 x 100 x 190 mm)

Sigma Alpha Vaporizer

Physical

Weight	Approx. 6 kg
Capacity	Volume at MAX mark: 330 ml working volume
	Volume at MIN mark: 70 ml refill indicator

Note: After draining, approximately 60 ±10 ml of liquid is retained by the wick

Operating Flow Range	0.5 to 10 liters / min
Operating Temperature Range	18 to 30℃
	(64 to 86°F)

Size (H x W x D)

Cagemount Dimensions	8.6" x 5.2" x 6.2"
	(219 x 133 x 158 mm)
Selectatec® Compatible w/ Interlock Dimensions	9.5" x 4.7" x 7.5"
	(242 x 120 x 190 mm)
Dräger Plug-In® Compatible Dim.	9.5" x 3.9" x 7.5"
	(242 x 100 x 190 mm)