

Specification: AX 900

The logo features the word "COMEN" in large, bold, 3D-style letters. Above the letters, a stylized globe is formed by a cluster of smaller "COMEN" text elements in various orientations and colors (white and light blue). The background of the entire graphic is a gradient of blue, with a white horizon line at the bottom of the globe.

COMEN Share with the world

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Anesthesia Machine

AX 900



Technical Specification

Physical Characteristics

Size	689 mm × 800 mm × 1400 mm
Weight	128kg
Maximum Bearing	
Weight	210kg
Screen Size:	15" + 8" TFT touch screen
Resolution	800 × 600
Handrail Length	750mm
Caster wheel	4 wheels 5", central baking; brakes optional

Operation Environment

Working Temp	10~40°C
Humidity	≤93%
Power Supply	100-240V~, 50/60Hz±1Hz
Battery Type	Rechargeable Lithium-ion battery
Battery Capacity	7000 mAh, 11.1VDC
Battery Recharging	
Time	6 hours for charging;
Battery backup Trace	3 hours for continuous working
	Waveforms: Pressure-time; Flow rate-time; Capacity-time; ET
	EtCO2 concentration; EEG
	Loops: Pressure-volume; Flow-volume; Pressure- flow

Top Plate

Maximum supporting capacity	20kg
Operational dimensions	508mm×313mm
Dimensions with Additional Accessory	508mm×313mm×380mm

Workbench

Maximum supporting capacity	20kg
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Operational dimensions	472mm×248mm
Dimensions with Additional Accessory	472mm×248mm×380mm

Interface:

2 USB interfaces
RJ45 network interface
4 auxiliary power output
AC power interface
Equal-potential grounding terminal
DB9 interface
VGA interface

Drawers

Top:	Size:462mm×287mm×141mm Bearing Weight: 1Kg
Bottom:	Size: 437mm×287mm×245mm Bearing Weight: 3Kg

Gas-bag Sway Brace

Length:	425mm
Height:	240mm

Features

Anesthesia process	Open, semi closed, closed circuit
Patients	Adult, pediatric
Working Mode	Manual, Mechanical, Standby
Compliance	Compliance Correction
Configuration	Possibility of configuration observation
Heating	Available
Bypass	Available
Oxygen sensor	Available
Optional	Negative pressure drainage; Isolation transformer; AGSS; BIS;

MASIMO EtCO₂ (sidestream); MASIMO EtCO₂ (mainstream); MASIMO AG (sidestream); Respironics EtCO₂ (mainstream); Respironics EtCO₂ (Sidestream); MASIMO AG+O₂ (sidestream); Artema AG; Artema AG+O₂; Optimal flow indication; Anesthetic usage monitoring; CPB

Apnea pressure	3~60 cmH ₂ O
Freq. Min. (Min. frequency for apnea-ventilation)	2-60 bpm
Tip/Te (Inspiratory pause)	OFF, 5~16% of inspiratory time
T _{insp} (Inspiratory time)	0.2~5s
P _{insp} (Inspiratory pressure)	5~70 cmH ₂ O
PEEP	OFF, 0~30 cmH ₂ O
Trigger pressure	-20~-1 cmH ₂ O
Trigger window	5~90%
Trigger flow rate	0.2~15 L/ min
Flush oxygen (Rapid Oxygenation)	25~75 L/ min
Inspiratory stop level	5~80%
Tslope (Pressure slope)	0~2.0s

Ventilator Specification

Ventilation Modes

VCV/VC	Volume-Controlled Ventilation with tidal volume compensation
PCV/VPC	Pressure Control Ventilation
SIMV-VC, SIMV-PC	Synchronized Intermittent Mandatory Ventilation
PRVC	Pressure Regulated Volume Control
PSV/ CPAP	Pressure Support Ventilation
Others	Manual and automatic ventilation
Optional	SIMV-PRVC, PSV Pro
Ventilation principle	Chronometric, volumetric and barometric
Ventilation	Electronically controlled& pneumatically driven
Driven gas	Electronic selective air or O ₂
Breathing circuit volume	1000 ml + bag

Ventilator Setting ranges

Monitoring parameter	Tidal volume, Inspiratory, expiratory flow, minute volume, frequency, pressure (P _{mean} , P _{plat} , P _{peak} , PEEP), Oxygen, CO ₂ , N ₂ O and halogenated expiratory concentration, Pressure, oxygen, CO ₂ , N ₂ O and Halogen numerical values, compliance and patient resistance
Tidal volume range	15 ~1500 mL
MV (Per-minute ventilation amount)	0~100 L/min
P _{limit} (pressure)	0~100 cmH ₂ O
PPS (pressure support level)	3~60 cmH ₂ O
f (Respiratory Rate)	4~100 bpm
I.E. (Inspiratory Expiratory ratio)	4:1~1:10
Apnea I.E.	4:1~1:8
Apnea time	10~30s

Ventilator Monitoring Ranges

TV (Inspiratory tidal volume)	0~3000 mL
TV (expiratory tidal volume)	0~3000 mL
MV (Per-minute ventilation amount)	0~100 L/min
FiO ₂ (Oxygen concentration)	18~100%
Paw (Airway pressure)	-20~120 cmH ₂ O
PEEP	0~70 cmH ₂ O
P _{peak} (Airway pressure)	-20~120 cmH ₂ O
P _{mean} (Mean pressure)	-20~120 cmH ₂ O
P _{plat} (Platform pressure)	0~120 cmH ₂ O
I.E. (Inspiratory-expiratory ratio)	4:1~1:12
Rate (Respiratory rate)	0~120 bpm
Compliance	0~300 mL/cmH ₂ O
Resistance	0~600 cmH ₂ O/(s/L)
EtCO₂	
MASIMO EtCO ₂ (sidestream);	0~190mmHg, 0~25% (at 760mmHg) Accuracy: ± (0.3%+4% of reading).

MASIMO EtCO ₂ (mainstream)	0~190mmHg, 0~25% (at 760mmHg) Accuracy: \pm (0.3%+4% of reading).	Flow valve range	1~100 L/min
Respironics EtCO ₂ (sidestream);	0~150mmHg, 0~19.7% (at 760mmHg) Accuracy: 0~5.3%: \pm 0.3%; 5.4~9.2%: \pm 5% of reading; 9.3~13.2%: \pm 8% of reading; 13.3~19.7%: \pm 10% of reading;	Flow compensation rage	200 mL/min to 15 L/min
Respironics EtCO ₂ (mainstream)	0~150mmHg, 0~19.7% (at 760mmHg) Accuracy: 0~5.3%: \pm 0.3%; 5.4~9.2%: \pm 5% of reading; 9.3~13.2%: \pm 8% of reading; 13.3~19.7%: \pm 10% of reading;	Inspiratory flow	Maximum inspiratory flow shall not be smaller than 100L/min when gas supply pressure is 280KPa.
AG		Pressure limitation	Controlled by the electronic relief valve fitted inside the ventilator;
MASIMO AG	SEV: 0~25% DES: 0~25% HAL/ ISO/ ENF: 0~25% N ₂ O: 0~100% O ₂ : 0~100% CO ₂ : 0~25% (0~190mmHg) Accuracy: SEV: 0~1%: \pm 0.15%; 1~5%: \pm 0.2%; 5~8%: \pm 0.4%; DES: 0~1%: \pm 0.15%; 1~5%: \pm 0.2%; 5~10%: \pm 0.4%;10~15%: \pm 0.6%; 15~18%: \pm 1%; ISO, ENF, HAL: 0~1%: \pm 0.15%; 1~5vol %: \pm 0.2%; N ₂ O: \pm (2% + 2% of the reading) O ₂ : 0~25%: \pm 1%; 25~80%: \pm 2%; 80~100%: \pm 3%; CO ₂ : 0~15%: \pm (0.2% + 2% of the reading); 15~25%: unspecified	Controlling means for ventilator	Controlled by the mechanical relief valve fitted inside the ventilator.
		Ventilator accuracy	
		Control accuracy	
		TV	15~60 ml: \pm 10ml; 60~210 ml: \pm 15ml; 210~1500 ml: \pm 7% of set value.
		PCV	Inspiratory pressure: \pm 2.5cmH ₂ O or \pm 7% of set value, whichever is greater. Limiting pressure: \pm 2.5cmH ₂ O or \pm 7% of set value, whichever is greater. PEEP: OFF: undefined; 3~30cmH ₂ O: \pm 2.0cmH ₂ O, or \pm 8% of set value, whichever is the greater. Supporting pressure: \pm 2.5cmH ₂ O or \pm 7% of set value, whichever is greater. Apnea pressure: \pm 2.5cmH ₂ O or \pm 7% of set value, whichever is greater. Trigger pressure: \pm 2.0cmH ₂ O.
		Rate	\pm 1 bpm or \pm 5% of set value, whichever is the greater.
		I.E.	2: 1~1: 4: \pm 10% of reading value; Other ranges: \pm 25% of reading value.
Artema AG	SEV: 0~8% DES: 0~18% HAL/ ISO/ ENF: 0~5% N ₂ O: 0~100% O ₂ : 0~100% CO ₂ : 0~10%	Apnea I.E.	2: 1~1: 4: \pm 10% of set value; Other ranges: \pm 25% of set value.
Anesthesia depth		Tip/Te	20%~60%: \pm 15% of set value; Other ranges: undefined.
BIS	0.0~100.0	Inspiratory time	\pm 0.2s
SQI	0.0~100.0%	Inspiratory pause	\pm 15% of set value;
EMG	0~100dB	Trigger window	\pm 10%
ESR	0.0~100.0%	Trigger flow rate	\pm 1 L/ min
Ventilator Performance		Inspiratory stop level	\pm 10%
Inlet Pressure range	0.28~0.6 MPa	O ₂ / N ₂ O/ Air flow control	10~100% of the full scale: \pm 10% of the reading value.
Peak gas flow	100 L/min plus fresh gas	Total flow control	Air balance gas: \leq \pm 3% N ₂ O balance gas: \leq \pm 3%

Backup flow control Pure Oxygen flow rate is 0~10 L/min: $\leq \pm 10\%$; Others: undefined.

Auxiliary flow control 10~100% of the full scale: $\pm 10\%$ of the reading value. Other ranges: undefined.

Monitoring accuracy

TV (expiratory) 0~60ml: ± 10 ml; 60ml ~ 3000ml: ± 20 ml or $\pm 7\%$ of reading value, whichever is greater; Others: undefined.

TV (Inspiratory) 60ml ~ 3000ml: ± 20 ml or $\pm 7\%$ of reading value, whichever is greater; Others: undefined.

Paw -20 cmH₂O~120 cmH₂O: ± 2.0 cmH₂O or $\pm 4\%$ of set value, whichever is greater; Others: undefined.

PEEP 0 cmH₂O~70 cmH₂O: ± 2.0 cmH₂O or $\pm 4\%$ of set value, whichever is greater; Others: undefined.

Pmean -20 cmH₂O~120 cmH₂O: ± 2.0 cmH₂O or $\pm 4\%$ of setting value, whichever is greater; Others: undefined.

Pplat 0 cmH₂O~120 cmH₂O: ± 2.0 cmH₂O or $\pm 4\%$ of set value, whichever is greater; Others: undefined.

Rate ± 1 bpm or $\pm 5\%$ of set value, whichever is greater.

I.E. 2: 1~1: 4: $\pm 10\%$ of reading value; 4: 1~2: 1 and 1: 4~1: 12: $\pm 25\%$ of setting value; Others: undefined.

MV 0 L/min~30 L/min: ± 1 L/min or $\pm 15\%$ of set value, whichever is greater; >30 L/min: undefined.

Compliance 0 ml/cmH₂O~250 ml/cmH₂O: ± 0.5 ml/cmH₂O or $\pm 15\%$ of reading value, whichever is greater; Other ranges: undefined.

Resistance 0 cmH₂O/(L/s) ~20 cmH₂O/(L/s): ± 10 cmH₂O/(L/s); 20 cmH₂O/(L/s)~500 cmH₂O/(L/s): $\pm 50\%$ of reading value; Other ranges: undefined.

Oxygen sensor $\pm 3\%$

O₂/ N₂O/ Air flow control 10~100% of the full scale: $\pm 10\%$ of the reading value. Other ranges: undefined.

Total flow control Air balance gas: $\leq \pm 3\%$
N₂O balance gas: $\leq \pm 3\%$

Backup flow control Pure Oxygen flow rate is 0~10 L/min: $\leq \pm 3\%$; Others: undefined.

Auxiliary flow control 10~100% of the full scale: $\pm 10\%$ of the reading value. Other ranges: undefined.

Alarm Settings

Tidal volume High: 5~1600 ml
Low: 0 ~1595 ml

MV High: 2~100L/ml
Low: 0 ~98L/ml

FiO₂ High: 20~105%
Low: 18 ~ 103%

Ppeak High: 2 ~100cmH₂O
Low: 0 ~98cmH₂O

Apnea alarm 20s; with error of $\pm 3\%$

Alarm Audible and visual alarm;

Alarm access Easy access by shortcut

Flow meters

Type Electronic flow meter

N₂O range 0 ~15 L/min

Air range 0 ~15 L/min

O₂ range 0 ~15 L/min

Total flow control Air balance gas: 21~100%
N₂O balance gas: 25~100%

Total flow range 0.2 ~18 L/min

Standby flow control 0 ~15 L/min

Proportional device Equipped with a safety system to ensure an O₂ concentration of at least 25%

Gas Supply

Pipeline gasses O₂, N₂O, Air

Standby gas-cylinder gasses O₂, N₂O, Air

Pipeline gas connection NIST

Standby cylinder connection PISS

Inlet pressure range 280~600 kPa

Filter 60-80 μ m

Features Switch easily to the other gas without interrupting the ventilation

Auxiliary gas supply O₂& O₂, Air mixture gas

Breathing System Specification

System Pressure Gauge

Range -20~100 cmH₂O

Accuracy	± (4% of full scales reading + 4% of actual reading)
Adjustable Pressure Limiting (APL) valve	
Range	1~75 cmH ₂ O
Tactile knob indication at	>30 cmH ₂ O
Accuracy:	±1.0 cmH ₂ O
Minimum opening pressure	0.3 cmH ₂ O (dry), 0.5 cmH ₂ O (humid)

Breathing Circuit Parameters

Compliance	≤4mL/100Pa Automatically compensates for compression loss with in the breathing circuit in mechanical mode
Volume of CO ₂ canister	The leakage shall not be greater than 50 ml/min at 3 kPa
Water Trap	7mL, easy to be disassembled
Feature	Heated at 134 degree, removable, easy to dismantle and sterilize

Gas Monitoring

Carbon Dioxide (CO₂) Modules

Type	Mainstream ETCO ₂ , Sidestream ETCO ₂
Method	Infrared absorption
Display	Numeric and curve displayed in screen
Alarm delay	1~10s (step size: 1s)
Sweep	6.25 mm/s, 12.5 mm/s

Anesthetic Agent (AG) Module

Maximum sound pressure for low alarm	79dB
Measurement type	Side stream
Module type	Phasin ISA AG module
Accuracy	±10ml/min or ±10%, whichever is greater
Monitored parameters	CO ₂ , N ₂ O, AA, MAC, Paramagnetic O ₂ and BIS

Active AGSS

Feature	High flow, low vacuum
Size	535 mm×120 mm×155 mm
Weight	2.2 kg
Applies	ISO 80601-2-13 and YY 0635-2

Pressure relief device	Atmospheric pressure compensation port
Connector	ISO9170-2 or BS6834 standard connector
Flow of suction	50-80L/min
Resistance	0.75KPa, 75L/min
Filter	Stainless steel mesh, with pore size of 60~100μm

ACGO

Connector	Taper coaxial fitting of 22mm (outside) and 15 (inside)
Back pressure generated at the rear end of anesthesia vaporizer and the front-end of ACGO during quick oxygen charging	≤2kPa

Flush O₂

100% fast oxygen

Vaporizer

Brand	Drager and Penlon available
Locking	Two vaporizers with interlocking system
Automatic recognition	Anesthesia machine able to automatic recognize halogenated gases

Power (No isolation transformer)

External AC power supply

Input voltage	100~240 V~/ 100~120V~
Input current	3.5~8.5 A/8.5 A
Input frequency	50/60 Hz
Leakage current	< 500μA

Auxiliary output supply

Output voltage	100~240 V~/ 100~120V~
Output frequency	50/60 Hz

Power (With isolation transformer)

External AC power supply

Input voltage	100~120 V~/ 220~240V~
Input current	3.5 A/8.5 A
Input frequency	50/60 Hz
Leakage current	< 500μA

Auxiliary output supply

Output voltage	100~120 V~/ 220~240V~
Output frequency	50/60 Hz

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