intuitive | effortless | precise
Introducing the A5 anesthesia system

A5 features:

- Volume Control Ventilation (VCV) and Pressure Control Ventilation (PCV) with volume guarantee
- Pressure Support (PS) ventilation
- Synchronized Intermittent Mandatory Ventilation in volume or pressure modes (SIMV-VC and SIMV-PC)
- Manual/spontaneous breathing mode with respiratory monitoring capability
- Optional integrated gas analysis provides dual agent auto identification, age-based MAC values and Capnography
- 15" touch-screen user interface
- Warmed to body temperature, Breathing System that virtually eliminates internal condensation
- Central brake and built in caster guard design clears away cables and hoses
- Single container absorber reduces compressible volume and accepts non-proprietary prepackaged and loose fill absorbent. Self sealing design accommodates canister replacement at any time
- High-pressure O₂ port supports jet ventilators
- Spirometry loops
- Integrated backup screen control touchpad
- Deck lighting with adjustable brightness
- Robust safety concept with 2 hour battery back up and the ability to deliver all fresh gas and vaporized agent to the patient, regardless of power state
- Unique Auxiliary O₂ /Air cannula allows the blending of air into the nasal cannula to potentially reduce the risk of surgical fire
- Gas monitoring available in automatic, manual and standby ventilation modes
Performance Specifications

Physical Specifications (Nominal)
Dimensions
Height/Width/Depth 140 cm/105 cm/80.5 cm
Weight (without vaporizers and gas cylinders) 160 kg

Top Shelf
Weight Limit 40 kg
Width/Depth 61.6 cm/36.2 cm

Work Surface
Width/Depth/Height 61.6 cm/38 cm/85 cm
Drawers (3 same size)
Height/Width/Depth 13.5 cm/44 cm/38.5 cm
Casters (Dual Wheel) Diameter 15 cm
Cable/Hose Guards Built-in
Central Brake Controls all 4 casters

Mounting Rails
GCG Compatible 5 rails total

Pneumatic Specifications
Pipeline Gas Supply Requirements
O₂ 280 – 600 kPa (40 psi – 87 psi)
N₂O 280 – 600 kPa (40 psi – 87 psi)
Air 280 – 600 kPa (40 psi – 87 psi)

Pipeline Gas Supply Connectors
Diameter indexed (DISS) threaded body as per CGA V-5

Cylinder Gas Supply Requirements
 Compatibility E-Cylinder (O₂, N₂O, Air)
Cylinder Gas Supply Connectors
Pin indexed (PISS) per CGA V-1

Fresh Gas Delivery System
Virtual Fresh Gas Flow Tubes
Electronic Display Range (O₂, AIR, N₂O): 0 – 15 L/min
Low Scale 0 – 1 L/min

Hypoxic Guard System and O₂ Controls
Provides a minimum of 21% concentration of oxygen in fresh gas in any O₂/N₂O mixture
Automatic N₂O cutoff when O₂ pressure falls below approximately 200 kPa (32 psi)
O₂ flush flow rate 35 – 50 L/min
Anesthetic Gas Scavenging System (AGSS)
Flow Rate 25-50 L/min
Breathing System to AGSS connector 30mm OD

Vaporizer Attachment
Connection Style Selectatec®
Number (max) 2

Auxiliary O₂/Air Mixer
Total Flow Rate (max) 30 L/min at 60% O₂
O₂ Concentration Range 21% – 100%

Breathing System
Temperature Maintained to 31 – 40°C (88°F – 104°F)
CO₂ Absorvent 1 loose fill or 1 Pre-Pak (1500mL±100mL)

Ventilator Operating Specifications
Ventilator Function
Ventilation and manual assist
Adult, Child, Small Child Patient Setting Modes VCV, SIMV-VC, PCV (+VG), SIMV-PC, PS

Automatic Compensation
Fresh Gas Compensation Automatic after start up sequence
Compliance
Automatic after start up sequence

Ventilator Display
Screen Type Color LCD with touch screen
Screen Size 15 in diagonal (4:3 ratio)
Sweep Speed 15 seconds

Graphic Waveforms
Tidal Volume, Minute Volume, Peak airway pressure, PEEP, Mean or Plateau pressure, Breath Rate, FIO₂

Numeric Data
Pressure vs Volume, Flow vs Volume

Tidal Volume
Deliverable Range 20 – 1500 mL (VCV)
Accuracy ±60mL ±10mL
Max. of ±2.5 cmH₂O or ±7% of the set Value

Incremental Setting
Measurable Range 0 – 3000 mL
Resolution 1 mL

Pressure Range
Manual Mode 0 – 75 cmH₂O
Pressure Control 5 – 70 cmH₂O
Ventilation 5 – 70 cmH₂O

Pressure Accuracy
(VCV, PS, SIMV-PC) Max. of ±2.5 cmH₂O or ±7% of setting

Minute Volume
Display Range 0 – 100 L

Breath Rate Range (per minute)
Deliverable Range 4 – 100 bpm
Display Range 0 – 120 bpm

ET Ratio 4:1 – 1:8

End Inspiratory Plateau Range
OFF, 5 – 60% (of inspiratory time)

Positive End Expiratory Pressure (PEEP)
Type Electronically controlled
Range 3 – 30 cmH₂O
Accuracy ±2 cmH₂O or ±10% FIO₂

Sensor Type Galvanic Fuel Cell
Display Range 18 – 100% Resolution 1 vol/vol%

Alarms
Minute Volume
Low Limit Range 0 – 20 L/min
High Limit Range 0.2 – 25 L/min

Airway Pressure
Low Limit Range 0 – 70 cmH₂O
High Limit Range 10 – 100 cmH₂O
FIO₂
Low Limit Range 18 – 98 vol/vol%
High Limit Range 21 – 100 vol/vol%, Off

Breath Rate
Apnea – Manual Mode > 120 seconds
Apnea – Automatic Mode, when Paw < (PEEP + 3 cmH₂O) and V, < 10 mL for more than 30 seconds
Alarm Silence 120 seconds

Electrical Specifications
Power and Battery Back-up
Mains Power Supply 100 – 120 VAC 50/60 Hz
Current Input 12A total max
Power Consumption Approx. 200 VA
Power Cord Line cord
Backup Battery Run Time Approx. 150 minutes
Backup Battery Charge Time 8 hours max

Auxiliary Outlets
Number and Type of Outlets Four circuit breaker (3A each)

Environmental Specifications
Operating Temperature +10 – +40°C (50 – 140°F)
Storage Temperature -20 – +60°C (-4 – 140°F)
Humidity 15 – 90% RH, non-condensing (operating and storage)

Materials
All materials in contact with patient gas are free of natural latex rubber

Specifications
Conditions defined at Ambient Temperature Pressure Dry

Anesthesia Gases
Sampling Rate
High volume AG watertrap 120, 150, 200ml/min (user-selectable) (default: 120ml/min)
Low volume AG watertrap 70, 90, 120ml/min (user-selectable) (default: 70ml/min)

Sampling Delay Time <4sec
Refresh Rate 1sec
Warm-up Time 45sec to warm-up status
10min to ready-to-measure status

Normal Operating Conditions After Warm-up
Ambient Temperature 10 to 55°C (50 to 131°F)
Ambient Pressure 700–1200 Pa
Ambient Humidity 10–95% RH, non-condensing

Measurement Range
CO₂ Des/Sev/Enf/Iso/Hal O₂ 0-30%
O₂/N₂O 0-100%
AwRR 2-100bpm

Resolution
CO₂ 1mmHg

Measurement Rise Time
Sampling flow 120ml/min, using the DRYLINE™ water trap and neonatal DRYLINE™ 2.5mm sampling line
CO₂/N₂O ≤250ms
O₂ ≤600ms
Hal/Iso/Sev/Des ≤300ms
Enf ≤350ms

Sampling flow 200ml/min, using the DRYLINE™ water trap and adult DRYLINE™ 2.5mm sampling line
CO₂/N₂O ≤250ms
O₂/N₂O ≤500ms
Hal/Iso/Sev/Des ≤300ms
Enf ≤350ms

Mindray DS USA, Inc.
800 MacArthur Blvd., Mahwah, NJ USA 07430
Tel: 1.800.288.2121 or 201.995.8000 Fax: 1.800.926.4275 www.mna.mindray.com

©2014 Mindray DS USA, Inc. Subject to change. Mindray™ is a trademark of Shenzhen Mindray Bio-Medical Electronics Co. Ltd.

P/N: 6002-08-1449 Rev A