Datex-Ohmeda S/5 ADU (also known as S/5 or AS/3 ADU)

- **Monitoring** included:
  - Volume, Pressure, inspired Oxygen (VPO)
    - Paramagnetic oxygen analysis (much longer sensor life).
  - Gas monitoring (agent and carbon dioxide)
  - Physiologic monitoring (EKG, NIBP, Pulse oximetry, Invasive pressures output & Temp)
  - Spirometry (flow-volume and pressure-volume respiratory loops)
- **Ventilator**: Ascending ("standing") bellows, dual circuit, pneumatically-driven ventilator with tidal volume corrected for leaks, compliance, and fresh gas flow (by D-Lite sensor at Y-piece). Modes VCV, PCV, SIMV, Manual/Spontaneous. Accurate to very low tidal volumes (20-1400 mL). The "bag/vent" switch activates the mechanical ventilator in one step.
- **Machine checklist**: An almost-completely automated checklist routine which conforms to FDA recommendations. Since the D-Lite sensor is removed from the breathing circuit during checkout, one must perform a high-pressure check of the breathing circuit after reassembly. Users must review operator’s manual to check the machine correctly.
- **Flowmeters**: Traditional mechanical needle valves, no glass flowtubes. Flow is displayed as a bar graph on computer display screen. Backup common gas outlet flowmeter recommended (but optional). Electronic capture of fresh gas flows. No minimum oxygen flow. No valve stops (can damage needle valves if they are closed too tightly).
- **Vaporizers**: Variable-bypass vaporizers are used, and these may be removed without tools. Aladin vaporizer cassettes are tippable, since they do not contain the electronic controls (these are within the gas machine). Desflurane cassette does not need supplied heat. Vaporizers are not interchangeable with any other model.
- **Breathing circuit**: The breathing circuit is lower volume (only 750 mL absorbent volume). Only the manufacturer’s carbon dioxide absorbent canisters may be used, which are single-use, or refillable with loose granules. The machine is technically compatible with non-rebreathing circuits, but the need for them is questionable since the ventilator can handle patients who weigh as little as 3 kg.
- **Scavenger**: Open scavenger interface. Scavenger suction adequacy indicated on optional glass flowmeter.
- **Electrical power failure**: 30 minute battery reserve with fresh gas, vaporizers, and ventilator operational. Patient monitoring (right screen) is lost unless main electrical power (or generator backup) is available- like most gas machines.

- **Weight**: 110 to 130 kg
- **Comments/Where this machine fits**: Modern, top of the line machine with an excellent ventilator. All monitoring is integrated. Because the physiologic monitoring is built-in, previously-used monitors cannot be "set on top" and used.
Clinical advantages of the Datex-Ohmeda S/5 ADU

Ergonomic Design

- Centralized controls and settings for all:
  - Clinical Information
  - User Settings
  - Alarms
- Extremely Light and Compact System
- Fresh Gas Technology
  - Digital Value Of Delivered Fresh Gas
  - O2 Delivery With Power Switch Off
  - Higher O2 Flowmeter Accuracy
  - Hypoxic Guard Includes High Agents

Vaporizer Technology

- Safety
  - Tilt-Able (Any Angle)
  - Auto Compensation For Fresh Gas Mix
  - Electronic Self Check And Diagnosis
  - Low Agent Alarm For Desflurane
  - Only key filler style for less chance of mis-filling
- Convenience
  - Desflurane Works Without Heat
  - Maintenance Free Technology
  - One Handed Vaporizer Removal
  - Extremely Light Vaporizers

Breathing System

- Breathing system
  - Vertical Check Valves (less resistance)
  - Flexible Manual Bag Position
  - Checked for leaks and compliance as part of electronic checklist
  - Fresh gas does not pass through a check valve on the way to the patient
- C02 Absorber
  - Quick Release
  - Flexible Absorber Positions
  - Absorber Change During Ventilation
  - Smaller canister avoids dry granules
Ventilator Technology

- **Ease/Safety**
  - One Step To Go From Bag To Vent
  - Entering Patient Weight Sets Up Vent
  - Two pressure sensors are used to check patient pressure and each other for proper operation
  - Two sets of valves to release drive gas in case one set fails
  - A back up computer circuit to release drive gas at a preset pressure in case the main circuit fails

- **Modes**
  - Volume Control Mode
  - SIMV (Red Spike With Triggered Breaths)
  - Pressure Control Mode
  - Electronic Peep Delivery

- **Spirometry Loops**

Gas Monitor Technology

- **Oxygen**
  - Sensor Lasts 7 - 10 Years (paramagnetic)
  - Calibration Interval Is Every 6 Months

- **Agents**
  - Automatic Agent Identification
  - Accurate Agent ID With Agent Mixture

- **Modular Design**

Improved Data Capture

- **Advanced Electronic Platform**
  - Integrated Relaxant Monitoring
  - Integrated Spirometry Monitoring

- **Data Recording**
  - All User Settings Are Electronically Captured (including fresh gas flows)
  - All Usage Data Is Electronically Captured

Future Upgrade Path

- **Modular:**
  - Gas Monitor
  - Absorber Block
  - Bellows Block
  - Quick Release Vaporizers

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Service

- Service/Safety
  - Totally Modular Anesthesia Workstation
  - Only 1 PM Interval Per Year
  - No Maintenance Required For Vaporizers
  - Electronic Diagnostics Of Entire System
  - Quick Access CPU Boards
  - Quick Access Software Upgrades

- Checklist
  - Self Test Includes FDA Checklist (and more)

General picture