

COMMODITY DESCRIPTION

관세분류번호 HSK NO.	품목 번호 ITEM NO.	품명 및 규격 DESCRIPTION	단 위 UNIT	수 량 Q'TY
9018.90.9019		Anesthesia Machine & Patient monitor	set	4

Anesthesia machine

A-1. Feature

1. This device is intended for use in anesthetizing adults, pediatric patients, and neonates. The device can be used for mechanical ventilation, manual ventilation, pressure-supported spontaneous breathing, and spontaneous breathing
2. The device is equipped with the following basic functions:
 - Ventilation monitoring
 - Inspiratory O2 measurement
 - Device monitoring
 - Anesthetic gas receiving system
3. Anesthesia is achieved through a mixture of pure oxygen and Air (medical compressed air) or pure oxygen and nitrous oxide, with the addition of volatile anesthetic agents.
4. The integrated breathing system can be used with partial rebreathing (low-flow or minimum-flow).
5. Supply of the anesthesia workstation with O2: If the O2 supply (central gas supply or gas cylinder) fails, an alarm is issued.
6. Supply of an adequate anesthetic gas concentration to the patient: When the anesthetic gas is measured by means of an integrated patient-gas measurement module, an alarm will be generated if the anesthetic gas concentrations are too high

B-1. Specification

1. Weight of the compact variant
 - Large variant: Approx. 160 kg (353 lbs), basic setup
2. Dimension
 - Large type: (W x H x D) 93.3 cm x 140.3 cm x 72.4 cm
3. Power consumption
 - <95 W, during mechanical ventilation, maximum 400 W
 - Mains voltage: 100 to 240 V AC at 50/60 Hz
 - Max power consumption: 4 A
 - Internal battery backup time: at least 45 min, typically 120 min(with new and fully charged battery)
 - Data interface: 2 x serial ports(RS232)(Medivus. X protocol), 1 x USB port, 1 x LAN
 - Auxiliary power socket strip(opt): 4 country- specific power sockets
4. Gas supply
 - 1) electronic measurement and monitoring of supply pressure of all connected gases
 - Central gas supply for O2, Air, N2O: 2.7 to 6.9 kPa(39 to 100 psi)
5. Fresh gas delivery
 - Gas mixer technology
 - Fresh-gas flow(Fg flow)
 - O2 concentration(FG O2)
 - O2 flush
6. Ventilator and setting parameters
 - 1) Electronically driven piston ventilator (E-Vent plus), fresh-gas decoupled, ventilation without drive gas i.e. no medical gases are consumed in operating the ventilator (regardless of gas supply). All patient-gas leading components are autoclavable
 - 2) Standard ventilation modes:
 - Manual/Spontaneous (Man/Spn)
 - Volume-controlled: time controlled (VC-CMV)
 - Pressure-controlled: time controlled (PC-CMV)
 - Volume-controlled, synchronised (VC-SIMV)
 - Pressure-controlled, synchronised (PC-SIMV)

- Volume-controlled, synchronised (VC-SIMV/PS)
 - Pressure-controlled, synchronised (PC-SIMV/PS)
- 3) Special mode (option)
- CPAP / PSV
 - AutoFlow function
 - VC-CMV/AF, VC-SIMV/AF, VC-SIMV/PS/AF
- 4) Respiratory rate (RR) : 3 to 100/min
- 5) Inspiratory time(Ti) : 0.2 to 10 S
- 6) I:E : 1: 50 to 50:1
- 7) Tidal volume (VT) : 10 to 1,500 mL, 5 to 1500mL with option for " advance neonatal support"
- 8) Trigger threshold : 0.3 to 15 L/min
- 9) Inspiratory flow : Minimum 0.1 L/min, maximum ≥ 160 L/min
- 10) Inspiratory pressure : PEEP +5 to 80 hPa(cmH2O)
- 11) Pressure limitation : PEEP +10 to 80 hPa(cmH2O)
- 12) Δ psupp : Off, 3 to (80 - PEEP) hPa (cmH2O)
- 13) Insp termination : 5 to 80%
7. Breathing system
- 1) Heated breathing system for low-flow and minimum-flow applications, disassembly without tools, design optimised for easy and effective hygienic reprocessing.
- Total volume : Approx. 3.65 L
(incl. CO2 absorber when applying a maximum tidal volume of 1,500 mL)
 - Absorber volume : Approx. 1.2 to 1.5 L
 - Reprocessing : Cleaning, disinfection, replaceable without tools, less than 11 individual components
8. Connections for Vaporizers
- For connection of at least two removable vaporizer modules for anesthetic agent delivery integrated in the basic unit
 - Vaporizer mount type: Autoexclusion
 - Agent capacity: 360mL(ENF,ISO,SEV) & 240mL(DES)
9. User Interface
- 1) Screen : 15.3" (38.9 cm) touchscreen, configurable screen contents, smart alarm management with extensive support system
- 2) Screen configuration :
- Depending on the machine configuration simultaneous display of 2, 3 real-time curves for : concentration of CO2, O2, and anaesthetic agents, airway pressure, inspiratory and expiratory flow ; display of virtual flow tubes for O2, AIR, N2O, of tabular trends, quick access to 3 screen layouts.
- 3) Device status display
- Front Panel with LC display of airway pressure, supply status of battery and gases (CGS + cylinders)
- 4) Ventilation monitoring
- Minute volume (MV) : 0 to 40 L/min
 - Tidal volume (VT and Δ VT) : 0 to 2500mL
 - respiratory rate (frequency) : 0 to 100/min
 - Peak inspiratory pressure (PIP) : -20 to +99 hPa (cmH2O)
 - Plateau pressure (Pplat) : -20 to +99 hPa (cmH2O)
 - Mean airway pressure (Pmean) : -20 to +99 hPa (cmH2O)
 - PEEP : -20 to +99 hPa (cmH2O)
 - Dynamic compliance (Cdyn) : 0 to 200 mL/hPa (mL/cmH2O)
 - Resistance $\textcircled{R}$: 0 to 100 hPa/L/s (cmH2O/L/s)
 - Elastance : 0.005 to 10 hPa/mL (cmH2O/mL)
 - External pressure gauge for indicating the pressure in the internal breathing system
- 5) Advanced ventilation monitoring
- Bar diagram display of volume and tidal volume, simultaneous display of 2 loops:
Volume-pressure and flow-volume, reference loop
- 6) Advanced trend display
- Display of graphical trends or mini-trends simultaneously with real-time curves and volume-pressure loop; additional data export functions via USB storage device
10. Gas monitoring
- 1) The device can monitor inspiratory O2 concentration or use the integrated patient-gas measurement

- module for O₂, N₂O and anaesthetic agent
- 2) Integrated patient-gas measurement module
 - Inspiratory and expiratory gas concentration of O₂, N₂O, CO₂ and anaesthetic agents, automatic identification of isoflurane, sevoflurane, desflurane, halothane, enflurane, detection of anaesthetic gas mixtures, age-corrected xMAC display; sample gas returned to the breathing circuit
- 3) Advanced gas monitoring (Option by PGM module)
 - Econometer for displaying fresh-gas efficiency (optionally including trend and/or in the form of low-flow wizard) determination of consumption and uptake (determination of uptake only for anaesthetics), fresh-gas and anaesthetics per case and since last zeroing
- 4) Gas measurement
 - Sample gas flow Range : 200 mL/min $\pm$ 10 %
 - O₂ range : 0 to 100 Vol%
 - CO₂ range : 0 to 13.6 Vol%
 - N₂O range : 0 to 100 Vol%
 - Anesthetic gases range
 - Isoflurane : 0 to 8.5 Vol% (kPa)
 - Sevoflurane : 0 to 10 Vol% (kPa)
 - Desflurane : 0 to 20 Vol% (kPa)
- 11. Safety function
 - The integrated device checklist and illustrated step-by-step instructions for daily machine preparation help to comply with national guidelines, such as DGAI (Deutschland), ASA/APSF (USA), AAGBI (UK)
 - Man/Spon ventilation with dosing of O₂ and anaesthetic agents possible even when switched off (emergency start-up)
 - Backup manual mode allows the direct change to manual ventilation while maintaining gas and ventilation monitoring ; O₂ and anaesthetic agents from the vaporisers can be continuously delivered
 - Mechanical ventilation with ambient air in case of complete failure of the gas supply, the change to intravenous anaesthetic agents is required
 - Real-gas O₂ test integrated in automatic machine self-test with patient-gas measurement module

Patient monitor

A-2. Feature

1. Lets you monitor vital signs and therapy, view and control alarms, review Web-based diagnostic images, access patient records, and scale up functionality based on patient acuity level - all at one place
2. Integrates real - time data, clinical applications, the hospital network and the Internet at the point of care
3. Continuously displays vital signs on at least half of the Medical Cockpit screen while allowing access to other relevant medical information on the split screen
4. Scale up or down your solution depending on your patient's acuity by adding parameters, device connectivity and an optional secondary display
5. patient monitor can be used as a stand alone monitor or as the transport component of the Infinity Acute Care System (IACS)
6. patient monitor continuously captures and displays hemodynamic monitoring data at the bedside and on transport in the hospital
7. patient monitor automatically backfills vital signs data collected on transport into the Medical Cockpit upon docking
8. Trends
 - 1) Provides up to 96 hours of trends on the system, 72hours on the patient monitor transport component
 - 2) Trends and events gathered on transport are automatically available at the Cockpit upon arrival
 - 3) Data resolutions 30-second sampling
 - 4) Trend table 1minute, 5minute, 10minute, 15minute(default), 30minute, 1hour display formats
 - 5) Trend graphs 1hour(default), 2hour, 4hour, 8hour, 12hour, 1day, 2day, 3day, 4day display formats
9. Alarm History and Events
 - 1) Alarm history review allows a retrospective view of significant events in the patient's history
 - 2) Event storage provides up to 150 events, 20-second strips, all monitored waveforms
10. Views and Profiles
 - 1) The user may choose up to 8 pre-configured view, and 8 custom views (with View Editor option) including split-screen views, where at least half of the available screen real estate is dedicated to real-time patient information
 - 2) Views are configured depending on the care area needs and optionally support user-customizable views
 - 3) User can configure up to 4 profiles per patient category, thus adapting alarm limits and parameter settings depending on the patient, the acuity, and the environment. A fifth Draeger profile is available.
11. Lung Recruitment Application

1) Displaying direct relation between hemodynamic and ventilation data allows clinicians to assess the effect of therapeutic procedures

2) A comprehensive trend page for visualizing information necessary to perform a recruitment maneuver.

The page shows the effects on lung mechanics and hemodynamic parameters on a single, integrated display.

The Recruitment page displays twelve minutes of data for a maximum of 9 parameters, which are configurable.

12. Calculations

1) Drug dosage calculations

Customizes a drug list of up to 40 drugs

B-2. Specification

1. User interface

- 17" TFT widescreen LCD Touch screen, rotary knob and/or via keyboard and mouse

2. ECG

1) Acquires up to 12 leads

- 3-lead wire set : I, II, III (user-selectable)

- 5-lead wire set : I, II, III, aVR, aVL, aVF, V

- 6-lead wire set : I, II, III, aVR, aVL, aVF, V, V+

- 10-lead wire set : I, II, III, aVR, aVL, aVF, V1-V6

- Trust derived 12-lead on : I, II, III, aVR, aVL, aVF, dV1, V2, dV3, dV4, V5, dV6

2) Measurement

- 15 to 300 beats per minute (bpm)

- ± 2 bpm or $\pm 1\%$ (whichever is greater)

3) Resolution

- 1 bpm

3. Arrhythmia

1) Basic arrhythmia

- Asystole, Ventricular Fibrillation, Ventricular Tachycardia, Artifact

2) Full arrhythmia

- Basic plus Ventricular Run, Accelerated Idioventricular Rhythm, Supra-Ventricular Tachycardia, Couplet, Bigeminy, Tachycardia, Bradycardia, Pause, PCV/min

4. Respiration rate

1) Sensing leads

- I, II (user-selectable)

2) Measuring method

- Impedance pneumography

3) Measuring range

- 0 to 155 breaths per minute

4) Apnea detection interval times

- Off, 10,15,20,25 and 30s

5. Pulse Oximetry (SpO₂)

1) Displayed parameters

- Saturation (fraction of oxyhemoglobin to functional hemoglobin) and pulse (rate and curve), perfusion index (Masimo SET[®] only);

SpHb, SpOC, SpMet, SpCO, PVI (with Masimo rainbow SET[®])

2) Measuring range

- SpO₂ : 1 to 100%

- Pulse rate : 26 to 239 bpm

6. Non-Invasive Blood Pressure (NIBP)

1) Parameter display : Systolic, Diastolic, Mean

2) Measuring method : Oscillometric via step deflation

3) Modes of operation : Manual (single measurement), Interval, Continuous, or Venous Stasis

4) Interval times : Off, 1,2,2.5,3,5,10,15,20,25,30,45,60,120 and 240min

5) Static cuff accuracy : ± 3 mmHg (± 0.4 kPa)

6) Resolution : 1mmHg (0.1kPa)

7. Measuring range (default)

1) Heart rate : 30 to 240 bpm

8. Adult

1) Systolic : 30 to 250mmHg (4 to 33.3 kPa)

- 2) Mean : 30 to 230mmHg (4 to 30.6 kPa)
 - 3) Diastolic : 10 to 210mmHg (1.3 to 28 kPa)
9. Pediatric
- 1) Systolic : 30 to 170mmHg (4 to 22.6 kPa)
 - 2) Mean : 30 to 150mmHg (4 to 20 kPa)
 - 3) Diastolic : 10 to 130mmHg (1.3 to 17.3 kPa)
10. Neonatal
- 1) Systolic : 30 to 130mmHg (4 to 17.3 kPa)
 - 2) Mean : 30 to 110mmHg (4 to 14.7 kPa)
 - 3) Diastolic : 10 to 100mmHg (1.3 to 13.3 kPa)
11. Cuff Pressure
- 1) Default inflation pressure
 - Adult : 160 ±5mmHg (21.3 ±0.66 kPa)
 - Pediatric : 130 ±5mmHg (17.3 ±0.66 kPa)
 - Neonatal : 110 ±5mmHg (14.7 ±0.66 kPa)
 - 2) Maximum inflation pressure
 - Adult : 265 ±5mmHg (35.3 ±0.66 kPa)
 - Pediatric : 180 ±5mmHg (24 ±0.66 kPa)
 - Neonatal : 140 ±5mmHg (18.6 ±0.66 kPa)
 - 3) Minimum inflation pressure
 - Adult : 110 ±5mmHg (14.7 ±0.66 kPa)
 - Pediatric : 90 ±5mmHg (12 ±0.66 kPa)
 - Neonatal : 80 ±5mmHg (10.6 ±0.66 kPa)
12. Invasive Blood Pressure
- 1) Measuring method
 - Resistive strain gauge transducer
 - 2) Measuring range
 - -50 to 400mmHg (-6.6 to 53.3 kPa)
 - 3) Response time (at 90% of pressure change)
 - 14 beats +2s (ART, LV, GP1, GP2, GP3, GP4)
 - 8 beats +2s (PA, RV)
 - 16s (CVP, RA, LA, ICP)
13. Carbon dioxide
- 1) Displayed parameters
 - End-tidal CO₂ (etCO₂), inspired CO₂ (inCO₂), respiration rate (RRc)
14. Measurement range
- 1) CO₂
 - 0 - 100mmHg (0 to 13.3 kPa or 0 to 13.2 vol% at sea level)
 - CO₂ partial pressure
 - 2) RRc
 - 0 to 150 bpm
15. Temperature
- 1) Parameter display
 - Temperatures ; Ta, Tb, ΔT, T1a, T1B, ΔT1
 - 2) Measurement range
 - Ta, Tb, T1a, T1b : 0°C to 50°C (32°F to 122°F)
 - ΔT, ΔT1 : 0°C to 39°C (0°F to 102.2°F)
16. Information Management Capabilities
- 1) Trend storage
 - Up to 96 hours of parameter information
17. Infinity M540 Monitor
- 1) Battery operating time
 - Normal operation : approximately 3 hours
 - Power save mode : approximately 4 hours
 - 2) Battery Recharging Time
 - 100% capacity : approximately 6.5 hours for completely discharged battery
 - 70% capacity : approximately 4 hours for completely discharged battery

C. Consist of :**Anesthesia machine**

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|--|-------|
| 1. Anesthesia Machine Basic unit | 4 set |
| <ul style="list-style-type: none"> - 15.3 inch touchscreen - High performance E-Vent plus Piston ventilator - Tidal volume(Vt) : 10 ~ 1,500 mL - Ventilation mode : Man/Spont, VC-CMV, PC-CMV
VC-SIMV, PC-SIMV, VC-SIMV/PS, PC-SIMV/PS - Real-gas O2 test integrated in automatic machine self-test - Integrated Heated breathing system on/off - Auxiliary O2 flowmeter - Analog pressure gauge - Electronically controlled gas mixer with manual emergency O2delivery | |
| 2. Pressure Support mode | 4 ea |
| 3. AutoFlow function | 4 ea |
| <ul style="list-style-type: none"> - VC-CMV/AF, VC-SIMV/AF, VC-SIMV/PS/AF | |
| 4. Advanced gas monitoring | 4 ea |
| <ul style="list-style-type: none"> - Econometer and trend display for efficiency of fresh-gas setting - display of medical gas consumption - display of anesthetic agent consumption and uptake - display of MV×CO2 (trend) - display of O2 uptake (trend) | |
| 5. AGS system | 4 set |
| 6. Flexible breathing bag arm | 4 ea |
| 7. Accessories | 4 set |
| <ul style="list-style-type: none"> - Waterlock (12ea) - Flowsensor (5ea) - CLIC Adapter - Operating & Service manual | |

Patient monitor

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|--------------------------------------|--------|
| 1. Monitoring | 4 set |
| 2. INFINITY Monitor | 4 set |
| 3. Cable Hook | 4 ea |
| 4. ECG 3-Lead single-pin Euro/AHA 1m | 4 ea |
| 5. ECG Extension single-pin, 2m | 4 ea |
| 6. INFINITY Mcable-Nellcor Oximax | 4 ea |
| 7. SpO2 Nellcor Cable 1.2m | 4 ea |
| 8. SpO2 Nellcor Sensor DS100A | 4 ea |
| 9. NBP Extension hose, adult, 3.7m | 4 ea |
| 10. NBP Cuff M, 23-33cm | 4 ea |
| 11. NBP Cuff S, 17-25/29cm | 4 ea |
| 12. NBP Cuff L, 31-40cm | 4 ea |
| 13. INFINITY Mcable-Dual HEMO | 4 ea |
| 14. IBP Transducer Cable | 8 ea |
| 15. Operstor's and service manual | each 4 |
| 16. Mounting KITs | 4 set |

D. Remarks :

1. Warranty : Three year warranty must be provided after the performance tests
2. Installation & operation will be provided by the factory trained engineer free of charge