

Inhalation anesthesia machine «POLINARKON-12» with artificial lung ventilator «EMO 200»

The machine enables inhalation anesthesia on partially reversible and non-reversible breathing circuit. There are the options of spontaneous breathing and manual artificial ventilation of the patient's lungs by means of a bag valve or bellows.

«POLINARKON-12» provides a high level of inhalation anesthesia due to:

- economical, compact and adjustable breathing circuit;
- a safety valve included in the exhalation line;
- anesthetic absorber filters installed at the outlets of the non-reversible outlet valve and safety valve;
- bacterial filters installed at the inlet and outlet of the respiratory unit;
- transparent two-chamber adsorber of carbon dioxide;
- separate fluoroethane and isoflurane evaporators.

Patient safety is ensured through the following means:

- protection of patient's lungs by depressurizing of breathing circuit and venting of the excess gas by safety valve;
- producing of breathing circuit from antistatic and electrically conductive materials and the presence of a clamp and an external ground wire electrically connected to breathing circuit;
- bacterial purification of inhaled and exhaled gases;
- cessation of nitrous oxide supply in case of pressure drop and oxygen supply cut-off;
- artificial lung ventilation with air in the event of an emergency drop in oxygen pressure;
- installation of a replaceable evaporator of fluoroethane or isoflurane.

The inhalation anesthesia machine ensures the safety of the medical staff by protecting the operating room from the removed anesthetics and bacteria through filtration.

«POLINARKON-12» is easy to operate by virtue of the breathing circuit implemented as a separate compact breathing unit providing:

- placement of the breathing unit at the choice of the anesthesiologist on the left or right side of the machine;
 - release of the convenient working area from the connecting hoses;
 - easy switching of breathing circuits by means of a quick-detachable controlled irreversible exhalation valve;
 - reliable fixation of anesthetic absorber filters;
 - transparency and easy disassembly of the two-chamber carbon dioxide adsorber;
 - easy and without tools disassembly of the entire breathing unit for disinfection and sterilization purposes.
-
- Ventilation with pneumatic drive and electronic control
 - Possibility to enable 2 control gases (oxygen or air)
 - Digital indication of set parameters
 - Isolation of the patient circuit from the control gas circuit
 - High pressure safety valve in patient circuit
 - Built-in battery
 - Operation in high-flow and low-flow modes
 - Rotametric unit for supplying compressed gases for oxygen-air and oxygen air mixture inhalation
 - Emergency oxygen supply by manual pressing a button
 - Fully sealed breathing system (no air leaks)
 - Anesthetic fluoroethane (optional isoflurane) evaporator
 - Evaporator weight is no more than 7.5 kg
 - Construction material – brass
 - Possibility to switch off the evaporator, not taking it off
 - Cutting off the supply of nitrous oxide when decrease in oxygen pressure
 - Proportional reduction of nitrous oxide supply with decreasing oxygen flow
 - System operation on non-reversible and partially reversible breathing circuit



Inhalation anesthesia machine «AIN-1 «POLINARKON-12» type 1 with artificial lung ventilator «EMO 200»-1

№	Equipment and characteristics	Description
1.1	The manufacturer must have a service system on the territory of the Russian Federation	✓
1.2	Detailed technical specification in Russian* *To date. Translation will be provided in case of interested parties appear.	✓
2 Anesthesia machine		
2.1	Rotameter range for oxygen supply	0.1-15 l/min
2.2	Rotameter range for nitrous oxide supply	0.1-12 l/min
2.3	Rotameter range for air supply	1-15 l/min
2.4	Scale divisions of oxygen rotameters	0.1 l
2.5	Nitrous oxide rotameter scale divisions	0.1 l
2.6	Scale division of the air rotameter	0.5 l
2.7 Anesthesia evaporator		
2.7.1	Anesthetics	Fluoroethane (optional enflurane, isoflurane)
2.7.2	Evaporator weight	No more than 7.5 kg
2.7.3	Material of construction	Brass
2.8	Mixer	Flowmeter block: O₂ – 2 rotameters, N₂O – 2 rotameters, air – 1 rotameter
2.9	Cutting off nitrous oxide on shutdown oxygen pressure	✓
2.10	Proportional reduction of nitrous oxide supply when decrease in oxygen pressure	✓
2.11	System operation on non-reversible and partially reversible breathing circuit	✓
2.12	Emergency oxygen supply by manual pressing a button	✓
2.13	Providing inhalation of oxygen-acidic and oxygen-air mixture	✓
2.14	Manometers: - oxygen	Pressure measurement range: from 0 up to 1 MPa, graduation rate – 10 kPa

	- nitrous oxide - air	
2.15	Possibility to turn off the evaporator without taking it off	✓
2.16	Alarm: low oxygen pressure	Sound signal
3 Artificial lung ventilator (attachment)		
3.1	Ventilation type	VC
3.2	Pneumatic drive and electronic control	✓
3.3	Range of supplied volumes	50 – 300 ml (children bellows), 200 – 1500 ml (adult bellows)
3.4	Control gas oxygen or air	✓
3.5	No air leaks (full sealed system)	✓
3.6	Ventilation frequency range	4 – 60 l/min
3.7	Minute volume	2 – 30 l
3.8	Ratio inhalation:exhalation / smooth adjustment	25 – 50% (from 1:1 up to 1:3)
3.9	Battery	Operating time – up to 6 hours
3.10	Inspiratory pause	From 0 up to 30%
3.11	Limiting the maximum pressure in the breathing circuit	15 – 65 mm Hg
3.12	Alarm: power failure	✓
3.13	Alarm: low drive gas pressure	✓
3.14	Alarm: circuit depressurization	✓
3.15	Anxiety: high airway pressure	✓
3.16	Alarm: constant positive pressure	✓
4 Additional parameters		
4.1	Two drawers trolley with anti-static wheels for installing the machine	✓
4.2	Monitor shelf and cylinder holders	✓
4.3	Appliance weight	No more than 70 kg
4.4	Dimensions in operating position	800*600*1400 mm
4.5	Patient circuit kit. Reusable autoclavable circuit for an adult patient with adapters, connectors and bag for manual ventilation.	✓

Machine alarms:

- Light and sound signals
- Set volume is not supplied
- High pressure in the patient circuit
- Low oxygen or air pressure
- Depressurization of the circuit
- Lack of external power supply
- Built-in battery is discharged
- Alarms comply with State standard GOST R IEC 60601-2-13

The set of the inhalation anesthesia machine also includes:

- Trolley with antistatic wheels and two drawers
- Shelf for monitor and N₂O cylinder holders installation
- Detailed technical description and operating instructions in Russian

Anesthesia system «AIN – 1 «Polinarcon-12» (type 1) is supplied complete with reusable autoclavable silicone breathing system manufactured by the company «Medsilikon» Ltd.