NEW APPARATUS NOW IN PRODUCTION

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The "Trilan" Apparatus for Trilene-Air Analgesia (Fig. 1). This apparatus is intended for analgesia with a mixture of medicinal trichloroethylene vapor and air. By means of this apparatus the patient himself, under the anesthesiologist's supervision, can relieve pain by the method of autoanalgesia (self-induced anesthesia). It is used during labor, in minor gynecologic and surgical operations, during dressings, and other painful procedures. The anesthesiologist, having once chosen the desired concentration of anesthetic mixture to be administered, can fix the handle of the tap on the vaporizer scale securely. This prevents any accidental increase in concentration or any increase by the patient himself without permission of the anesthesiologist.

The design of the "Trilan" apparatus prevents spilling of the liquid anesthetic, however much it is tilted. By means of a hose, the apparatus can be connected with a mask at a distance in cases when it is more convenient for the patient to hold, instead of the whole apparatus, merely the mask connected to the valve chamber and, through the corrugated hose, to the vaporizer.

The design of the apparatus and the materials used in its manufacture make it easy to clean and sterilize, and also for the gauze to be dried.

The apparatus is portable, reliable, conveniently handled, and safe for the patient to use.

The vaporizer of the apparatus may also be used separately as a trilene dosimeter, for induction of anesthesia by means of a universal apparatus, when the vaporizer is not included in the circulation system, and when working with a semiopen system.

Technical Specifications

- Volume of liquid anesthetic required for filling (in ml) 25–35
- Graduations of vaporizer scale (in vols. %) 0.5, 0.7, 1.0, 1.5
- Vaporizer scale is effective:
  - At a room temperature of between 18 and 28° (warmth from the hand holding the vaporizer jar during autoanalgesia does not affect accuracy of the readings);
  - In a range of ventilation from 6 to 12 liters/min when the apparatus is used for autoanalgesia;
  - In a range of ventilation from 6 to 12 liters/min when used for induction of anesthesia by means of universal anesthetic machines

Permitted deviations from nominal scale values:

- for divisions of 0.5 or 0.7 vols. % ± 0.15 vol. %
- for division of 1.0 vol. % ± 0.2 vol. %
- for division of 1.5 vol. % ± 0.35 vol. %

- Dimensions:
  - Diameter (in mm) 50
  - Height (in mm) 168
  - Weight (with mask) (in kg) 0.55

The apparatus was designed by the All-Union Research Institute of Medical Instrument Design. It is in mass production at the Leningrad "Krasnogvardeets" Combine.

The "Elektrozol'-I" Manual Electroaerosol Generator. The generator (Fig. 2) is intended for electrifying atomized aqueous solutions of drugs, for their administration into the respiratory organs.

As a result of electrification of aerosols, the concentration of drugs in pathological foci and the time during which they remain in the tissues and fluids are increased (by comparison with aerosol, intratracheal, and intramuscular methods of administration). This reduces wastage of drugs and shortens the procedures.

The charge on the electroaerosols has a favorable effect on the function of the organs and systems of the body. For example, a negative charge stimulates ciliary epithelial function and external respiration, and has a desensitizing and normalizing action.

A voltage converter, mounted in the handle of the generator, is used for electrification of aerosols. By means of this generator positively or negatively charged electroaerosols, and also uncharged aerosols may be obtained at will.

The electroaerosols are administered to the patient through a mask or nozzle.

The "Élektrozol'-I" apparatus is intended for work in conjunction with the AI-1 inhaler; it can be used, instead of the antibiotic atomizer, in PAI-1 and PAI-2 portable aerosol inhalers, in the hospital pattern of inhaler, and also in other apparatuses designed for inhalation of aerosols.

The generator is made of polyethylene. It is portable and easily washed and sterilized.

### Technical Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
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<tbody>
<tr>
<td>consumption of liquid (in ml/min)</td>
<td>0.4</td>
</tr>
<tr>
<td>consumption of air (in liters/min)</td>
<td>10-15</td>
</tr>
<tr>
<td>mean particle diameter (in µ)</td>
<td>3-5</td>
</tr>
<tr>
<td>bulk density of charge (in pC/ml)</td>
<td>$16 \times 10^3 \text{ [elem. ch.]} / \text{ml}$</td>
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<tr>
<td>air pressure (in atm)</td>
<td>not less than 0.3</td>
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