



GASTEC

Chapter 1

Gastec Standard Detector Tube System

The Gastec Standard Detector Tube System consists of the Model GV-100 Gas Sampling Pump and Gastec standard detector tubes, and can analyse a wide variety of gases and vapours accurately, quickly, and easily.

Gastec Standard Detector Tube System Basic Configuration

The Gastec Standard Detector Tube System mainly consists of the Model GV-100 Gas Sampling Pump and Gastec standard detector tubes.

Gastec standard detector tubes are provided in separate packages.

■ WARNING

1. Use only Gastec detector tubes in a Gastec Pump.
2. Do not interchange or use non-Gastec parts or components in Gastec's detector tube and pump system.
3. The use of non-Gastec parts or components in Gastec's detector tube and pump system or use of a non-Gastec detector tube with a Gastec pump or use of a Gastec detector tube with a non-Gastec pump may result in property damage, serious bodily injury, and death; voids all warranties; and voids all performance and data accuracy guarantees.

■ Model GV-100S Gas Sampling Pump Kit

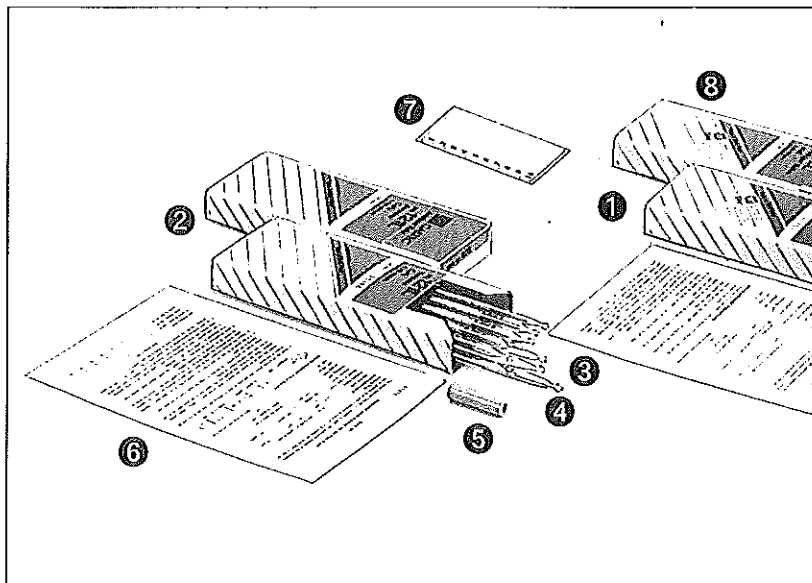
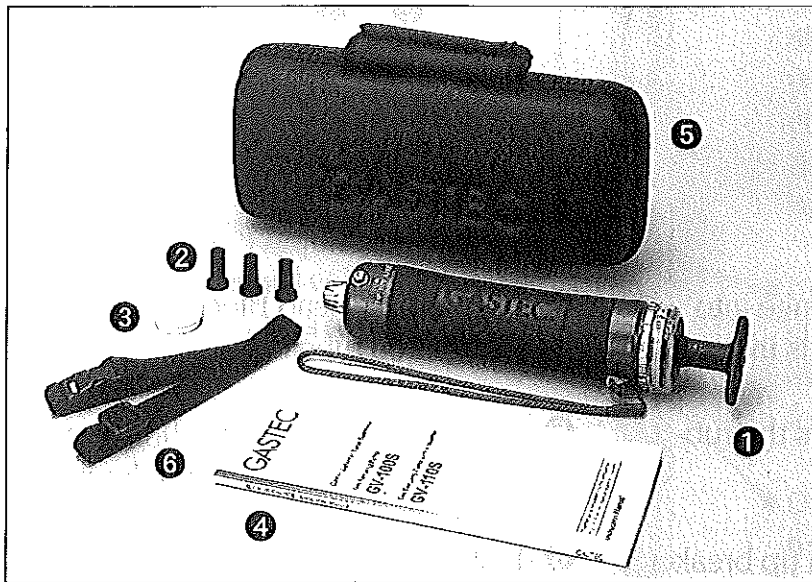
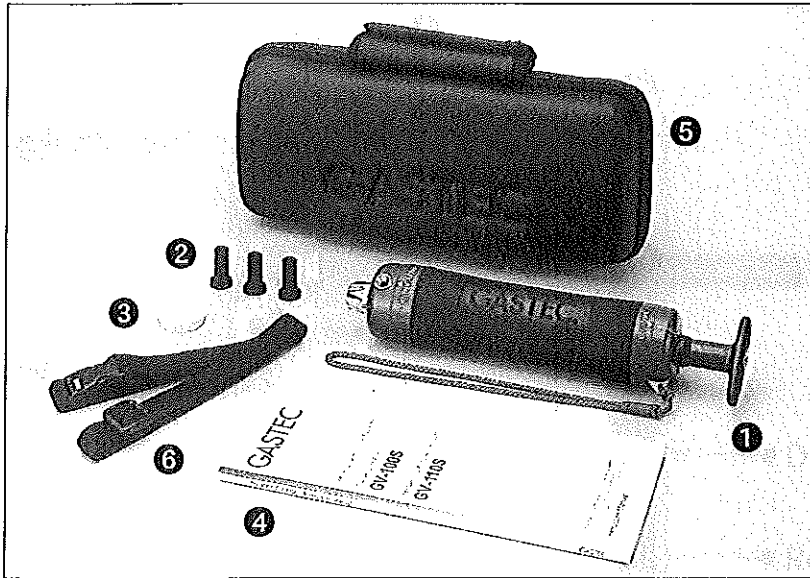
The Model GV-100 Gas Sampling Pump (Photo ①), its accessories (3 rubber inlets ② and lubricant ③), and the instruction manual (④) are provided in a small carrying case (⑤) with shoulder strap (⑥) as the Model GV-100 kit.

■ Model GV-110S Gas Sampling Pump Kit with stroke counter

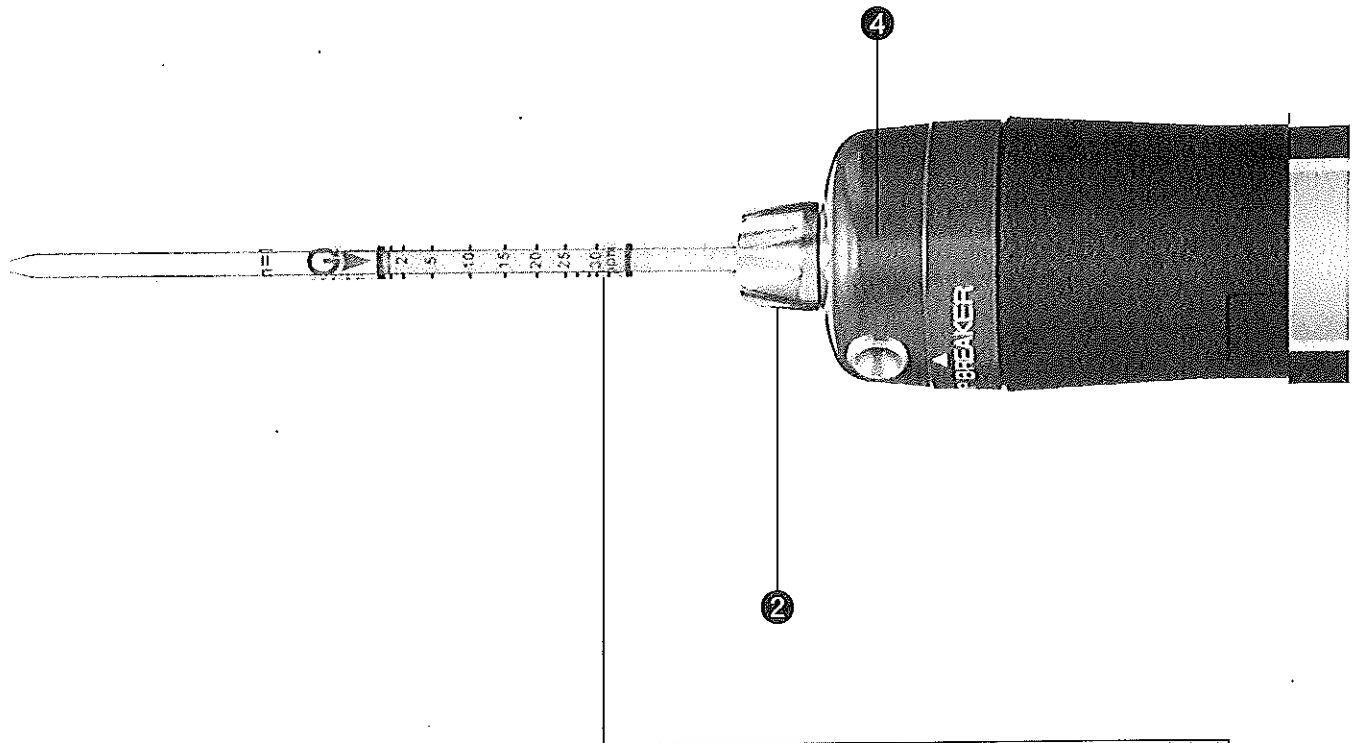
The Model GV-110 Gas Sampling Pump (Photo ①), its accessories (3 rubber inlets ② and lubricant ③), and the instruction manual (④) are provided in a small carrying case (⑤) with shoulder strap (⑥) as the Model GV-110 kit.

■ Gastec detector tube packages

All Gastec detector tubes are provided in packages. Each package contains 10 detector tubes of the same kind (Photo ①) which normally provide ten tests. A package of twin tubes (②) contains 5 detector tubes (③), 5 pretreatment tubes (④), and a rubber connector (⑤) and provides five tests. Each package also contains the instruction sheet (⑥) for the detector tube and ten numbered adhesive labels (⑦). Each of adhesive labels may be separated and put on the detector tube for taking notes of measurement. Major information about the detector tube is printed on the label on the package (⑧).



Gastec Standard Detector Tube System Structure



Gastec standard detector tubes

Gastec standard detector tubes are thin glass tubes with calibration scales printed by which you can directly read concentrations of the substances (gases and vapours) to be measured.

Each tube contains detecting reagent (s) that are especially sensitive to the target substance and quickly produces a distinct layer of colour change.

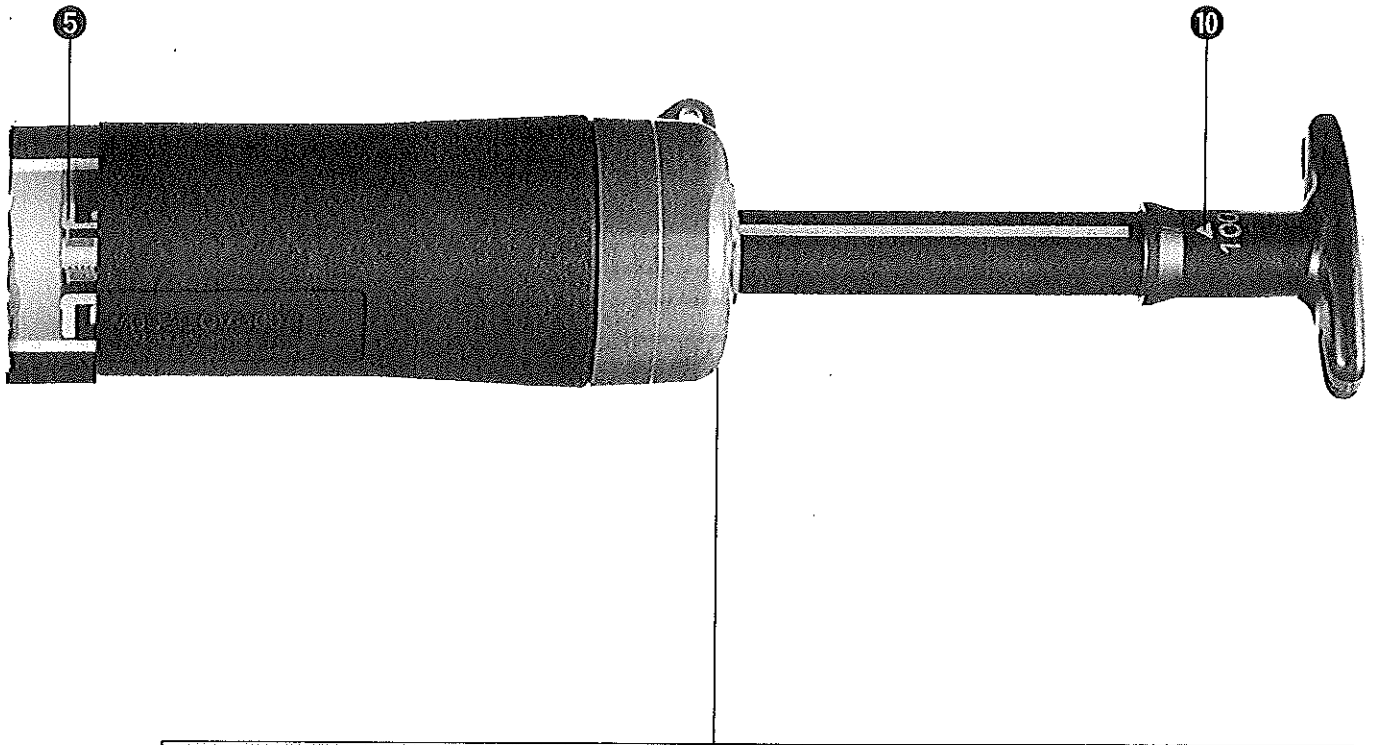
The tubes are hermetically sealed.

To use, break off both ends and connect the tube to the Model GV-100 Gas Sampling Pump with the directional arrow (►) pointing toward the pump. Some detector tubes are used as twin tubes by being connected with their pre-treatment tubes that make samples

more sensitive to the detecting reagents in the detector tube.

To assure a high precision indication, Gastec detector tube's inner diameters are tightly controlled and detecting reagents with long term stability (many have 3-year shelf life) are strictly selected.

All detector tubes undergo stringent quality control. Individual production lots are tested and calibrated independently of each other to ensure the highest calibration accuracy for each lot. Each detector tube has its quality control number printed on it.



Model GV-100 Gas Sampling Pump

The Model GV-100 Gas Sampling Pump can precisely collect a sample volume for a detector tube. The full-stroke (100ml) and the half stroke (50ml) positions are marked exactly by the red line on the pump shaft, and the handle is precisely locked at those positions. If you pump fully n times by allowing for sampling time intervals, a volume of 100ml × n can be sampled. Each detector tubes are calibrated

based upon a prescribed (standard) volume of sample. Also the pump piston has been designed with a smaller diameter so that the handle can be pulled out with even less effort. Gastec piston sampling pump design proves you with advanced non sparking design and superior features. It is a convenient handy size easily carried, it weighs only 230g.

Model GV-110 Gas Sampling Pump with stroke counter

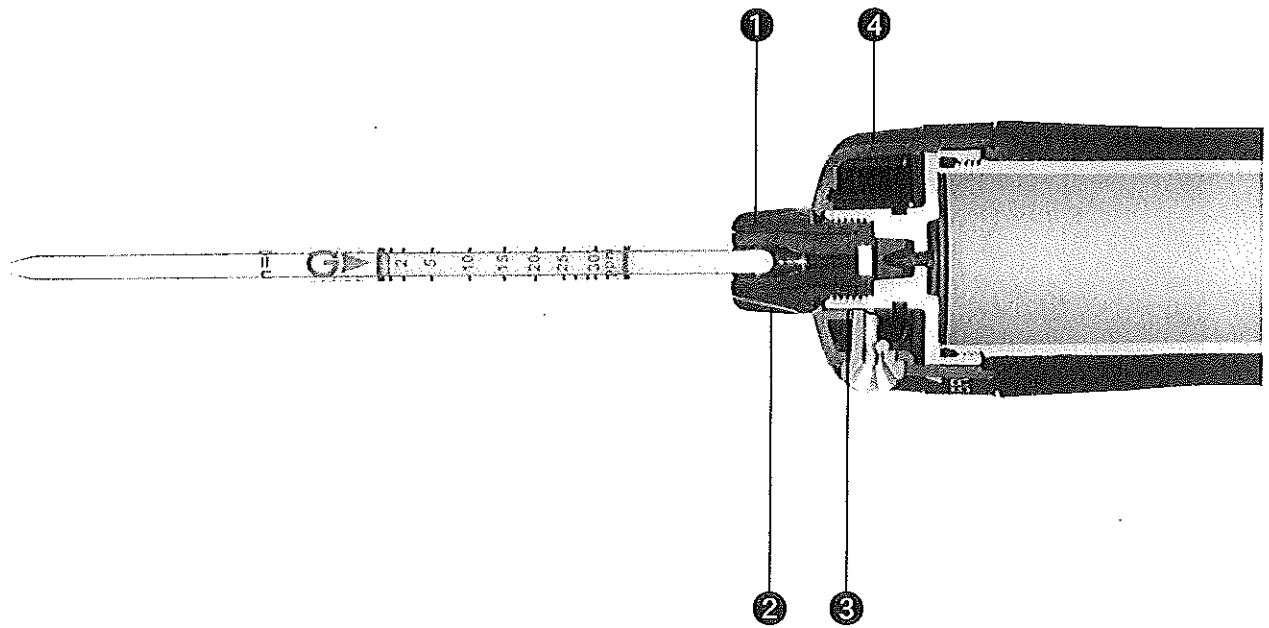


The automatic sampling counter tells you how many pump strokes you already completed. So there is no chance of miscounting

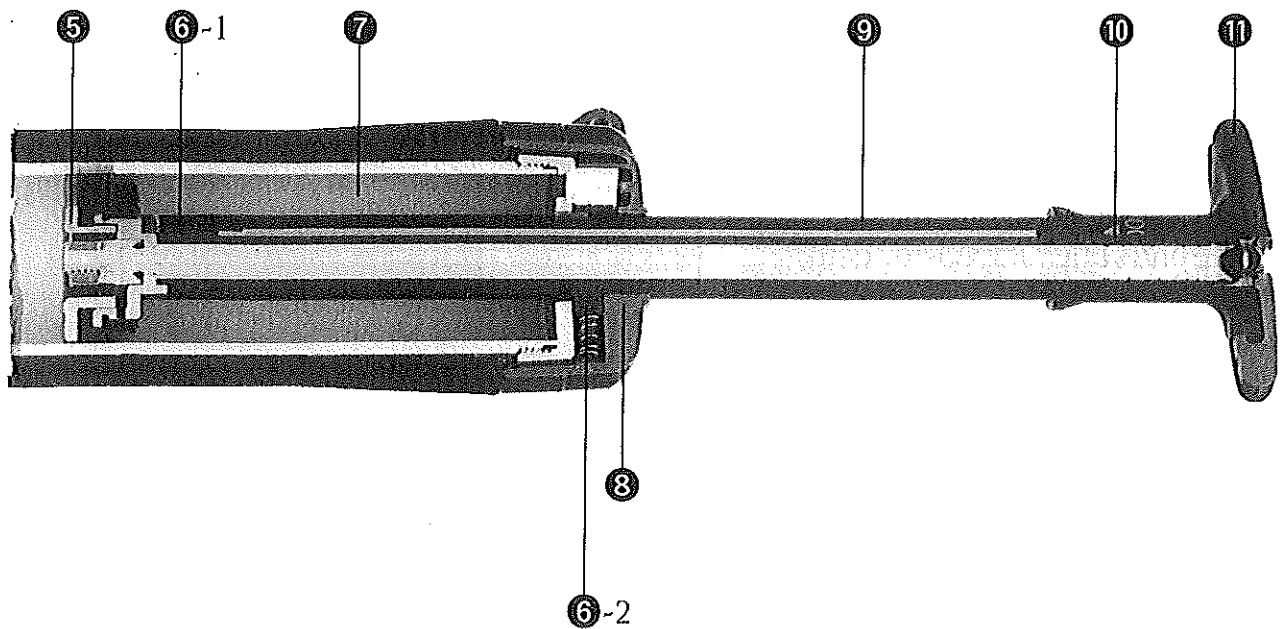
- High quality glass tube
- Calibration scale (in ppm, mg/m³, mg/l or % depending on the substance and its concentration to be measured). Printed in an ink that permits high legibility against the colour change layer. The scale is determined for each production lot that has passed Gastec's severe qualification tests.
- Standard number of pump strokes (n). The number of pump strokes required to collect the standard volume of sample air for this tube.
- Quality control number (QC No.). Gastec's quality assurance number is printed on every Gastec detector tube. Detector tubes of the same production lot have the same QC No. When a QC No. is registered, sample tubes with that QC No. will be kept and monitored periodically to verify the quality.



- Distinct layer of colour change
- Reliable detecting reagents that comply with the Gastec's stringent quality standards (regulating the length of colour change layer, the clearness of demarcation, and the tone and brightness of colour change).
- Chemical formula of the substance to be measured. An abbreviation is used for a long formula.
- Detector tube number. The numeral represents the kind of substance the tube can measure, and the letter(s) specify the level of concentrations the tube can determine. For example, H, M and L respectively indicate high, middle, and low level concentrations.

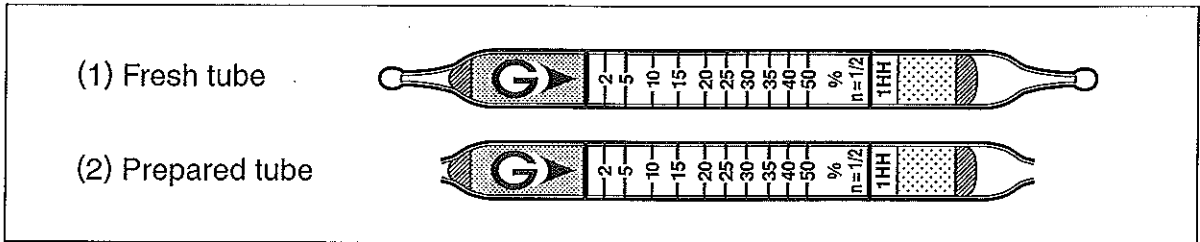


- ① Rubber inlet, A rubber flange into which the detector tubes is inserted.
- ② Inlet Clamping Nut, Holds the rubber inlet in place.
- ③ Tube Tip Breaker, Built-in tip breaker makes the tip breaking much easier, safer and convenient.
- ④ Head Block, Head Block stores tips of about 60 tubes.
- ⑤ Pump Piston, Gastec sealing assures excellent air tightness and durability.
- ⑥-1, 2 Pump Stop, Locks the shaft into the position of full stroke (⑥-1) or half stroke (⑥-2).

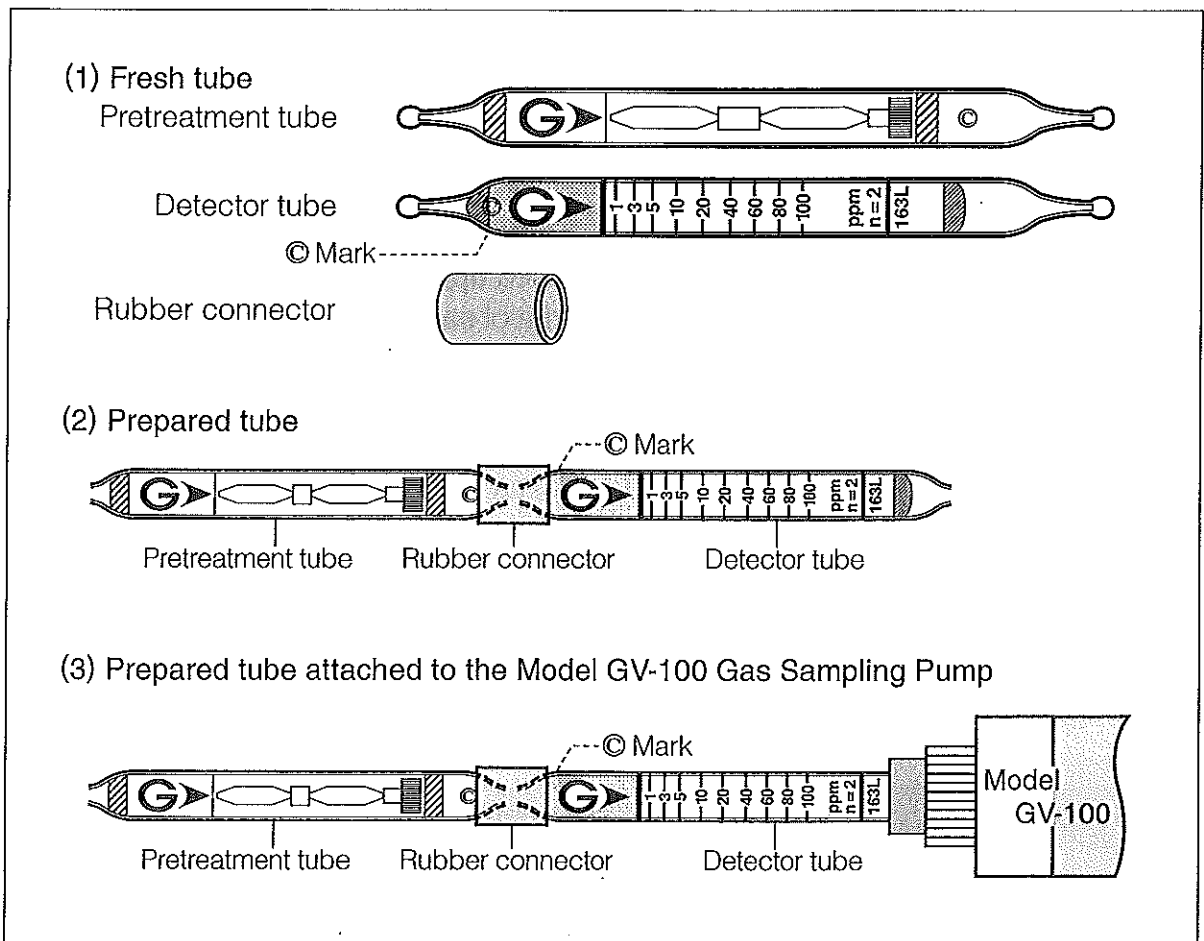


- ⑦ Pump Cylinder, The pump body is covered with a soft elastomer, with the middle portion narrower than the ends of ensure a firm grip on the pump cylinder.
- ⑧ Back Plate, Remove the back plate for simple maintenance.
- ⑨ Pump Shaft
- ⑩ Guide Marks, A red triangle mark is aligned with the red guide line on the pump to place the handle at the initial position.
- ⑪ Handle, The completion of the sampling of 100 ml or 50 ml can be confirmed by the flow finish indicator on the handle.

■ **Single tube** (Example: No. 1 HH Carbon Monoxide)



■ **Twin tube** (Example: No. 163L Ethylene Oxide)



Note: With some twin tubes, the detector tube is to be connected to the scrubber tube or the second detector tube.