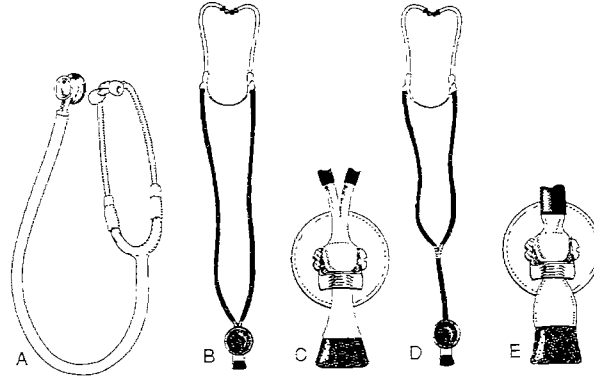


Stethoscopes

Stethoscopes require little maintenance apart from replacement of lost, cracked, or broken parts, such as ear-pieces and diaphragms (Fig. 3.3). On the older types, the tubing may perish and need replacing. While it is possible to buy proper, but expensive, stethoscope tubing, ordinary tubing of a suitable size may be fitted. Most newer stethoscopes have tubing that does not perish, though it can become sticky if certain chemicals come into contact with it.

Fig. 3.3. Three types of stethoscope with details of chest-pieces.



If nothing can be heard through a stethoscope, check whether:

- The earpieces are blocked; if they are, unscrew them, push the blockage out and clean with a little spirit.
- The diaphragm is missing or split; replacements can be purchased or can be made out of a piece of radiographic film or similar plastic sheet.
- The tube is split.

Fetal stethoscopes require no maintenance. The servicing of electronic stethoscopes is outside the scope of this manual.

Electrocardiograph machines and cardiac monitors

Electrocardiograph (ECG) machines are used to monitor the electrical activity of the heart and display it on a small screen or record it on a piece of paper. The electrical activity is picked up by means of electrodes placed on the skin. The signal is amplified, processed if necessary, and then displayed.

There are many types of ECG machine and cardiac monitor, ranging from the very basic, which will just show or write the ECG trace, to complex machines that will give much more information about the status of the heart, and may combine a screen and a paper-writer. These machines run off the mains electricity supply and, in addition, often have internal rechargeable batteries.

Maintenance and safety checking

The following items of test equipment are required:

- a digital multimeter or a good analogue meter;
- a “Megger” (for high-voltage insulation testing);
- a safety checker;
- an ECG simulator (this is an instrument that produces a signal similar to that of the heart and makes workshop testing much easier).