



OPERATOR'S MANUAL

AUSCULETTE II
Telemedicine Auscultation System
Catalog No. 718-0100

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AUSCULETTE II

1.0 PRODUCT DESCRIPTION

The Cardionics Ausculette II, catalog no. 718-0100, is designed as aid in the instruction of cardiac and/or pulmonary auscultation. It has been used extensively in Telemedicine. It is powered by an external power supply. There are two auxiliary 9V. internal batteries for portable use. A variable high pass cut-off filter is incorporated to allow the user to tailor the frequency response of the system to respond to many different sounds. A Cardionics stethoscope with a built-in low-frequency transducer is used to allow the system to pick up even the most subtle sounds.

Five stethophone outputs are provided on the rear panel so that up to five persons each wearing a stethophone can listen simultaneously to one patient through the use of one central stethoscope.

Volume out of the Ausculette is sufficient enough to provide even hearing impaired users a means to hear heart and lung sounds.



Ausculette Bedside Auscultation System

2.0 FRONT PANEL CONTROLS

STETH This is an input for the Cardionics stethoscope, cat. no 718-7030.

FILTER This control labeled "Filter" is a high-pass filter, that is, it will pass the sounds through to the stethophone above the value at which it is set. For example, when set at 40 Hz all sounds above 40 can be heard and sounds below 40 Hz will not be heard.

VOLUME This control turns the system ON and OFF and controls the volume going to the stethophones on the rear panel. Be sure to turn the system OFF when finished.

3.0 REAR PANEL CONTROLS

STETHOPHONE There are five stethophone outputs on the rear panel. Insert the 1/4 inch jack of the each stethophone into one of these outputs and the sound will be heard.

POWER ON/OFF This turns the system ON and OFF.

4.0 USING THE AUSCULETTE II

1. Insert stethophones into rear panel of Ausculette II main control box.
If using the Ausculette for Telemedicine, use a connecting cable from the rear panel to the audio input of the Teleconferencing system.
2. Insert Cardionics stethoscope assembly into the front panel.
3. Place the stethoscope on the patient and instruct the listeners to put on the stethophone..
4. Turn ON the system using the VOLUME control on the front panel.
5. Set the filter control on the front panel as desired. Cardionics recommends 40Hz as a starting point.
6. Listen to the patient.
7. Turn OFF the system when finished to avoid battery drain.
8. To record sounds, insert a cable connection (1/4" jack) into one of the outputs on the rear panel and connect the distal end to a PC or laptop computer.

Use the computer's media player or install the StethView Digital Recording System. This system will display a phonocardiogram on the screen and permit recording up to 2 minutes.

5.0 BATTERY REPLACEMENT

The Ausculette II is equipped with two 9V. alkaline batteries which will last for 200 hours of listening provided the system is turned OFF when not in use. To replace a battery, turn the system OFF. Invert the main control box and remove the two screws using a Phillips head screw driver. Replace both batteries using either a 9V. lithium, 9V. alkaline or regular 9V. battery.

The alkaline will allow 200 hours of continuous listening and is recommended as a replacement battery. These batteries, if not available locally, can be purchased from Cardionics Inc.

6.0 TROUBLE SHOOTING

If the audio coming out of the system is distorted or weak, the batteries inside the unit may need to be replaced. To replace batteries, see above instructions.

7.0 SPECIFICATIONS

POWER:	Two-internal 9 volt alkaline batteries and or auxiliary wall power supply.
FREQUENCY RESPONSE:	15-4000 Hz AT 200 Ohms
INPUT:	Accepts Cardionics stethoscope/low freq. trans., catalog no. 718-7030
OUTPUT:	15V p-p across 200 ohms maximum. Accepts up to five stethophones Cardionics cat. no. 718-0400
FILTER:	High cut-off type, variable between 20 and 500 Hz.

8.0 APPENDIX A- RECORDING TECHNIQUES

1. The room should be quiet. Most of the problems with recording heart sounds result from not having the room quiet.
2. Be sure the filter on the Ausculette II is set properly.
3. The patient should be relaxed as much as possible
4. Be sure the stethoscope cable is not coiled so as to act as an antenna
5. For a thorough examination, the patient should be in a sitting, lying and left lateral recumbent position. For an adequate examination, the recumbent position alone can be used, but listening to the heart with the patient only in a sitting position is absolutely inadequate. Typical diastolic murmurs of good intensity which are heard when the patient is in the recumbent position may not be heard at all when the patient is sitting.

In the recumbent position, the patient's arms must not be held over the head, since this will elevate the rib cage and decrease the intensity of the heart sound.

Occasionally, it is of advantage to listen with the patient in the prone position; this may be true in patients with deep chests or those who may have a friction rub. This position may be awkward when the patient is in bed or on the examining table and supporting himself/herself on the elbows. It is much more satisfactory to have the patient stand up and lean over with his/her elbows on an examining table. Muscle noise is at a minimum in this position and the patient and examiner are much more comfortable. An important additional advantage of this position is that the patient can be made to exercise by touching his toes several times before he assumes the position.

6. When the bell of the stethoscope is applied to the skin, the enclosed skin forms a diaphragm. With increased pressure, the skin diaphragm is made more taut and its natural period of oscillation increases. This improves the response to higher skin diaphragm. As a result, the lower-frequency components of the heart sounds are attenuated, whereas the higher frequencies are still well heard.

This important maneuver of being able to diminish the intensity of low-pitched sounds, by pressure on the bell has several implications and applications:

1. To hear faint, low-pitched sounds, the examiner must apply the bell lightly to the chest wall.
2. By noting what happens to a sound or murmur when the bell is first applied lightly, and then with pressure, the examiner can judge, to a certain degree, the pitch of a sound or murmur.
3. The high-pitched systolic murmur of mitral regurgitation is less likely to be affected by pressure than medium-pitched, innocent systolic murmurs.
4. With pressure, the faint, high-pitched, systolic murmur of mitral regurgitation is less affected than the first heart sound, and the masking effect of the first heart sound is thus diminished. The same is true of the high-pitched, early diastolic murmur of aortic regurgitation and accentuated second heart sound.
5. In some very noisy hearts with both systolic and diastolic murmurs because of the amount of sound in systole, it is difficult to be sure if there is a low-pitched diastolic murmur. With pressure, the total sound is diminished and the low-pitched murmur in diastole may disappear. By holding the bell alternately lightly and heavily and by concentrating on diastole, the examiner can detect the diastolic rumble

9.0 Limited Warranty

What this warranty covers:

1. Cardionics, Inc. warrants this product to be free of manufacturing defects in material and workmanship for a period of one (1) year from the date of original consumer purchase from Cardionics or an authorized dealer.
2. This written warranty is limited to the original consumer purchaser, transferable only by written authorization of Cardionics, Inc.
3. All warranties, expressed or implied, made by Cardionics, including warranties of merchantability and fitness are limited to the one (1) year period of this warranty. Some states do not allow limitations on how long an implied warranty lasts, so the above limitations may not apply to you.
4. This warranty is limited to repair of the product or replacement thereof, at the discretion of Cardionics, Inc. Calibrations are considered normal maintenance and are not included in the one year warranty.

What this warranty does not cover:

1. This warranty does not cover defects or damage resulting from use of the product other than its normal, intended and customary use. This warranty does not cover defects or damages from abnormal use, abnormal conditions, improper storage, exposure to moisture or liquid, unauthorized modifications, repairs made by unauthorized personnel, unauthorized connections (those not described in this manual), misuse, neglect, abuse, accident, alternation, improper installation or other acts which are not the fault of Cardionics, including damage caused by shipping.
2. Ausculettes which have had the serial number removed or made illegible.
3. Damage resulting from use of non-Cardionics approved accessories.

Policies concerning service.

Shipping charges. The customer shall bear the cost of shipping the product to Cardionics. Cardionics will pay the return freight within the United States. Customers outside the US will be asked to pay for shipping in both directions. This includes both warranty and out-of-warranty service. We suggest that you insure the package

Authorization for return. Before sending equipment for repair, please call Cardionics, at 281-488-5901 or in the U.S. or Canada 1-800-364-5901 for a return authorization number. This will help us track your repair.

Reason for return. Please include a note with your name, address, telephone and email address and what you believe the problem to be.

Packing for return. Equipment requiring repair should be suitably packaged for shipping.

Where to obtain service. Ship package prepaid to Cardionics, Inc., 910 Bay Star Blvd, Webster, Texas 77598 USA. We will endeavor to complete repairs within fifteen (15) working days from date of receipt of product by Cardionics.

Out-of-warranty service. . When a product is returned for service that is out-of-warranty, Cardionics will call you to obtain your authorization prior to making the repair. We will ask for a credit card payment at the time of the call. If the repair is from an authorized Cardionics dealer or institution, Cardionics will ask for a purchase order number.

Consequential Damages

CARDIONICS, INC. SHALL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING FROM THE USE OR FAILURE OF THIS PRODUCT, INCLUDING INJURY TO PERSONS OR PROPERTY. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state

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