EKG

ELECTROCARDIOGRAM

An electrocardiogram will be performed on all employees age 40 and over, or any other exhibiting and suggestive history or physical findings of cardiovascular disease.

The Burdick Electrocardiograph, Model EK-5A, is the model used. Refer to the Instruction Manual for operations and further detail of its use.

TECHNIQUE FOR RECORDING THE ELECTROCARDIOGRAM WITH THE BURDICK EK-5A ELECTROCARDIOGRAPH

I. Be sure the EKG paper is properly loaded.

II. Set the LEAD SELECTOR SWITCH to ST'D.

III. Set the RECORD SWITCH to AMP OFF.

IV. Set the SENSITIVITY SWITCH to 1.

V. Connect the power cable to the EK-5A and the wall outlet.

VI. Turn the MAIN SWITCH on - the pilot lamp will light indicating the power is on.

VII. Rotate the STYLUS POSITION control. The stylus should move smoothly from top to bottom of the paper. Rotate the stylus position to center of the stylus and leave it there.

VIII. Standardization - Momentarily depress the ST'D button while the record switch is on the run 25 position. Proper standardization is indicated by a stylus deflection of one centimeter (two large square boxes or ten small squares) and the standardization pulse should have corners which are sharp and distinct, not spiked or rounded.

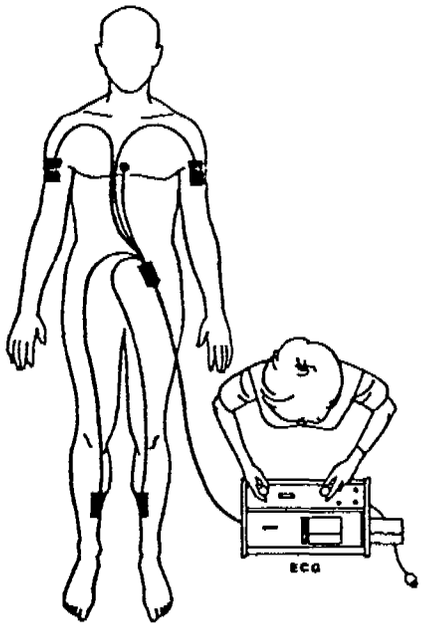
IX. Set the RECORD SWITCH to RUN 25. Then use the selector switch to record each lead. A lead identification code will be placed in the upper margin of the paper automatically with each SELECTOR SWITCH change.

X. Run approximately eight to ten inches of record for leads 1, 2, and 3. Five inches for each of the remaining leads should usually be sufficient. All leads, including a VR, a VL, a VF and the first chest lead (V_1), can be run without turning the RECORD SWITCH off. Whenever the position of any electrode is changed or adjusted, the RECORD SWITCH must be set to AMP OFF to prevent stylus thrashing.

XI. Recording leads V_2-V_6 - Turn the RECORD SWITCH to AMP OFF before moving the chest electrode to prevent stylus damage.

To record V_2 move the chest electrode to the correct anatomical position, turn the SELECTOR SWITCH to V_2 and record the lead. Follow this procedure .... always moving the chest electrode to the correct anatomical position and selecting that position on the LEAD SELECTOR SWITCH for the remaining chest leads.

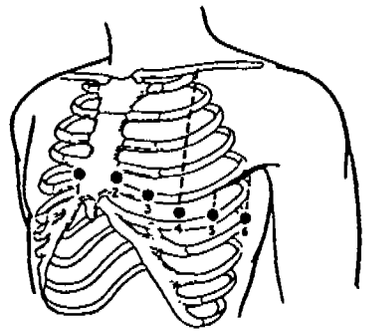
XII. After all leads have been recorded, set the RECORD SWITCH to AMP OFF, the LEAD SELECTOR SWITCH ST'D, and the MAIN SWITCH off.



ELECTRODE LOCATION	ALPHABETICAL CODE	COLOR CODE
RIGHT ARM	RA	WHITE
LEFT ARM	LA	BLACK
RIGHT LEG	RL	GREEN
LEFT LEG	LL	RED
CHEST	C	

LEADS OF THE ROUTINE ELECTROCARDIOGRAM

STANDARD OR BIPOLAR LIMB LEADS	ELECTRODES CONNECTED	MARKING CODE
LEAD 1	LA & RA	·
LEAD 2	LL & RA	··
LEAD 3	LL & LA	···
AUGMENTED UNIPOLAR LIMB LEADS		
aVR	RA & (LA-LL)	—
aVL	LA & (RA-LL)	——
aVF	LL (RA-LA)	———
CHEST OR PRECORDIAL LEADS		
V	C & (LA-RA-LL)	(See data on right)



RECOMMENDED POSITIONS FOR MULTIPLE CHEST LEADS
(Line art illustration of chest positions)

- V_1 Fourth intercostal space at right margin of sternum — ·
- V_2 Fourth intercostal space at left margin of sternum — ··
- V_3 Midway between position 2 and position 4 — ···
- V_4 Fifth intercostal space at junction of left midclavicular line — ··· ·
- V_5 At horizontal level of position 4 at left anterior axillary line — ··· ··
- V_6 At horizontal level of position 4 at left midaxillary line — ··· ···

PREPARATION OF THE PATIENT

AND

APPLICATION OF ELECTRODES

A. PREPARATION OF THE PATIENT

1. Patient should be relaxed, comfortably warm, quiet, and undisturbed during recording of the electrocardiogram.

2. Normally, only the patient and the operator should be in the room during the test.

3. Patient should be reclining on a comfortable cot.

4. No part of the patient's body should be allowed to touch any metal part of the bed, cot, table, wall, etc.

B. APPLICATION OF THE ELECTRODES

1. LIMB ELECTRODES

(a) LOCATION - Inside fleshy portion of bottom forearms and bottom calves.

(b) GOOD CONTACT IS ESSENTIAL

(1) Skin must be clean at site of electrode application. (Avoid microscopic particles of metal, dust, dirty electrodes, scratched electrodes, old contact agent, perspiration, etc.)

(2) Electrodes must be clean. (Wash straps and electrodes with warm water and soap only - never steel wool, etc.)

(3) Expose forearms, calves of each leg and chest area for electrode application.

(4) Squeeze about 1/2" of Liqui-Cor, Electro Pads, or EKG Sol on to the inside fleshy portion of the forearms or calves.

(5) Rub the jelly or sol into the skin vigorously until a slight definite reddening develops by using a piece of gauze or a tongue depressor and leave a slight residue in the area of electrode location.

(6) Attach electrode on one end of rubber strap, squeeze about 1/2" of jelly or sol into the center of the rectangular electrode, place it directly over the reddened skin area, and press in place with slight circular motion (to eliminate any small pockets).

(7) Fasten electrode in place by drawing the strap around the arm or leg and slipping the proper hole over the contact post so that a firm contact is made. (Avoid too tight or too loose an application.)

2. CHEST ELECTRODES

(a) LOCATION

Accurate placement of these electrodes is extremely important in the following positions for precordial (chest or V) leads:

Lead V1 - The chest electrode is placed in the 4th intercostal space just to the right of the sternum.
Lead V2 - 4th intercostal space just to the left of the sternum.
Lead V3 - midway between the positions of Lead V2 and V4.
Lead V4 - 5th left intercostal space at the mid-clavicular line.
Lead V5 - level of V4 on the left anterior axillary line.
Lead V6 - level of V4 on the left mid axillary line.

(b) CONTACT

(1) The chest electrode -- apply Liqui-Cor Jelly to chest electrode or Electro Pad over the metal face of the electrode and secure it with the rubber ring.

(2) Slip the plastic anchor plate under the patient directly below electrode position. The free end of the strap should be next to the patient and the concave side of the weight should face toward the patient so it will fit the contour of the body.

(3) Place the electrode in the position for the precordial leads and give it a press and a twist to release electrolyte gel to the area. Lay the strap over the electrode to hold it in place. To place the electrode for other precordial leads, simply lift the weight, move the electrode to the next position, replace the strap, press and twist the electrode each time it is repositioned.

3. CONNECTING PATIENT TO INSTRUMENT

(a) LOCATION

Connect the ends of the patient cable leads to their corresponding electrode according to the labels and color coding of the wires and lead terminals.

RA Lead (White) -- to right arm electrode
LA Lead (Black) -- to left arm electrode
RL Lead (Green) -- to right leg electrode
LL Lead (Red) -- to left leg electrode
CH Lead (Brown) -- to chest electrode

(b) CONTACT

(1) Avoid tension on patient cable.

(2) Avoid tangling the patient lead wires.

(3) After the patient has been connected, re-check the individual electrode screws to insure that they have been tightened on the lead cable tips and will not slip out of the electrodes.

(4) Also, double check the placement of the patient cable leads on the correct extremity.

(5) Insert the patient cable plug into the patient input socket with the slot up and be sure it is fully inserted into its socket.