

FIG. 2. Schematic of remote start circuit.

simple direct-coupled bistable. With switch S1 closed, momentary depression of the "stop" button removes the base drive from Q2, turning it off and allowing Q1 to turn on through R2. Q1 maintains the ground at point R when the camera is switched to "auto". Actuation of ribbon switch S2 turns on Q2, turning

off Q1 to remove the ground and permit normal operation.

Lamp L1 facilitates determination by the technologist that the circuit is active. Component values were dictated by convenience and are not critical, and the circuit draws only minimal power from the Pho/Gamma supplies.

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REFERENCE

1. PRINCE JR, DUKSTEIN WG, ARNOLD JS: Remote control of the automatic 35-mm film camera on the Nuclear-Chicago gamma camera. *Amer J Roentgen* 109: 833-834, 1970

ADAPTATION OF A WELL COUNTER FOR MEASUREMENT OF CARDIAC OUTPUT

In their paper on cardiac output determination using short-lived radionuclides (1), Myers and colleagues measured the activity passing through the arteriovenous line by winding the tubing around a scintillation crystal. The same measurement can be made using a standard well counter, fitted with an easily machined perspex former to hold the tubing in position. Details of such a former and its position when in use are shown in Figs. 1A and B.

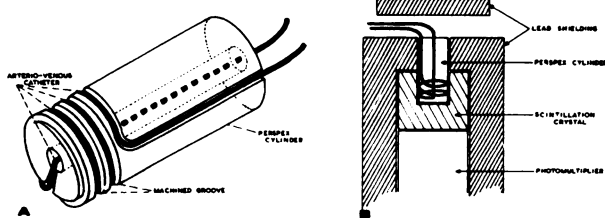


FIG. 1. (A) Enlarged view of perspex former. (B) Schematic diagram showing former in position within well counter.

This arrangement has the following advantages:

1. A purpose-built piece of apparatus is not necessary as any well counter can be adapted. It can still be used in the normal way for sample counting at other times.
2. The geometry is such that the counting efficiency is more than twice as great as when the tubing is wound round the scintillation crystal.
3. As the perspex former is removable the tubing can easily be changed. If desired, fresh sterile tubing can be inserted before each patient measurement.

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REFERENCE

1. MYERS JH, STEADHAM RE, BLACKWELL LH: Usefulness and reliability of short-lived radionuclides for cardiac output determination. *J Nucl Med* 12: 591-595, 1971

SULFUR COLLOID FLOCCULATION DUE TO ACID-LEACHED ALUMINUM

Kits for the rapid preparation of routinely formulated radiopharmaceutical products have grown in popularity over the last several years. A kit for the preparation of ^{99m}Tc -sulfur-colloid has recently been marketed which contains syringes with an aluminum disposable needle attached to the glass barrel of the syringe by means of an aluminum crimp. One of the syringes in the kit contains 2 ml of sterile 0.25 N

hydrochloric acid. In a large percentage of the kits received in this laboratory, the acid syringe leaks when pressure is applied during use of the syringe to prepare the sulfur colloid product. The leak occurs around the aluminum crimp previously mentioned and is not evident until attempted use.

Recently, a batch of ^{99m}Tc -sulfur-colloid was prepared using a leaking acid syringe and another (non-