ELUTEK™

TECHNETIUM Tc 99m GENERATOR

A New Addition to Abbott's Radio-Pharmaceutical Products Line

Performance

Built-in 500 ml. saline supply provides 15 to 16 milkings per week.

You have clear, clean eluate from first use. Highly concentrated serial elutions can be made daily.

Low aluminum levels. A special process reduces aluminum levels to make them all but undetectable by normal lab methods. Less trace impurities permit wide diagnostic usage.

Safety

At least 1½ inches of lead lines generator column. Quick milking time lessens exposure.

See-Thru Elution Shield further reduces radiation exposure and simplifies milking. Volume can be measured without lifting vial from elution shield. (Shield is available with first generator.)

Transparent Needle Guard protects fingers.

Convenience

Compact, pre-assembled, and ready to use. Attach needle and you're ready to elute. Saline solution is an integral part of the generator.

Storage compartment on top contains six 30-ml. elution vials, needles, labels, and instructions.

Self-align milking port. Place elution shield in port, and both needle and evacuated vial are automatically aligned.

Pushbutton Elution. Press down to open valve, and a slight turn locks it for automatic elution.

Automatic Disposal Service. Used generators are no longer a problem. Abbott's Elutek service program helps you dispose of them quickly and easily.

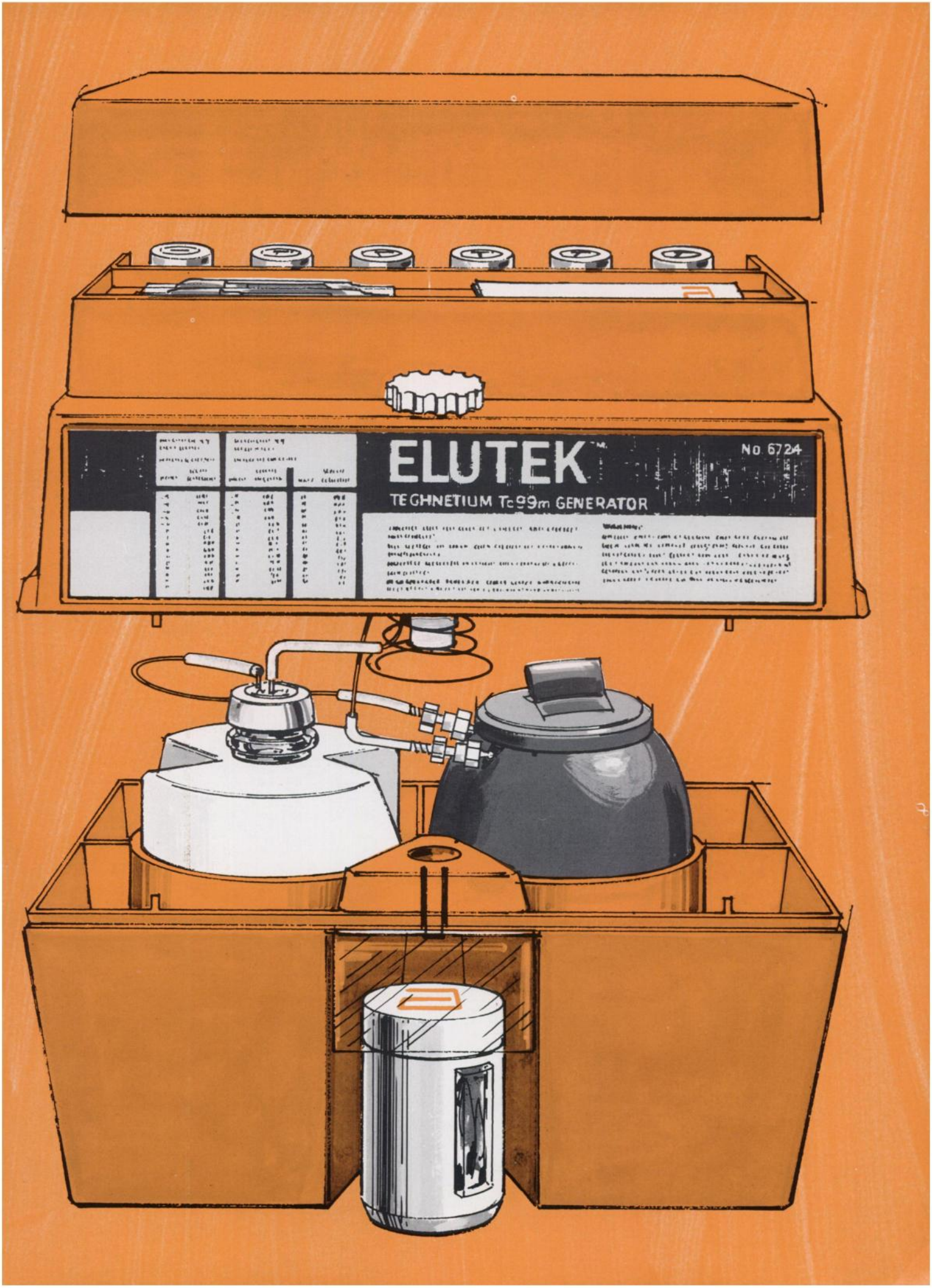
Molybdenum and Technetium-99 Decay tables are on front label—can be seen at a glance.

Carrying Handles add to convenience—help you avoid mishaps.

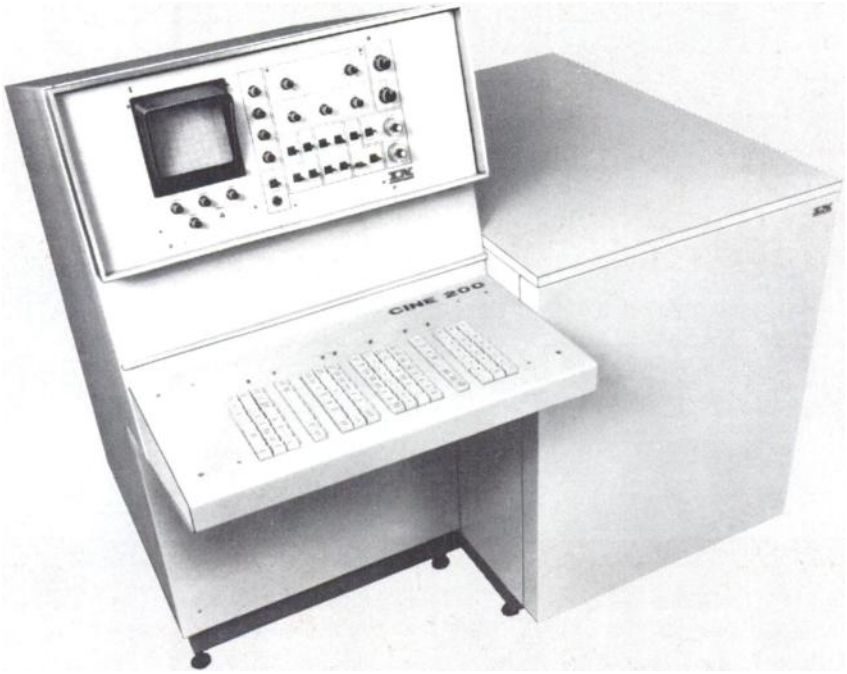
303427

TM—Trademark

Abbott Laboratories
Radio-Pharmaceutical Products Division
North Chicago, IL60064


ELUTEK
No 6724
TECHNETIUM Tc99m GENERATOR

There's a new way to say simultaneous acquisition and processing.



CINE 200.

And CINE 200 means even more. Simultaneous acquisition from two imaging devices. Clinically useful routines. Human engineering. And prices that put these capabilities within the range of your budget.

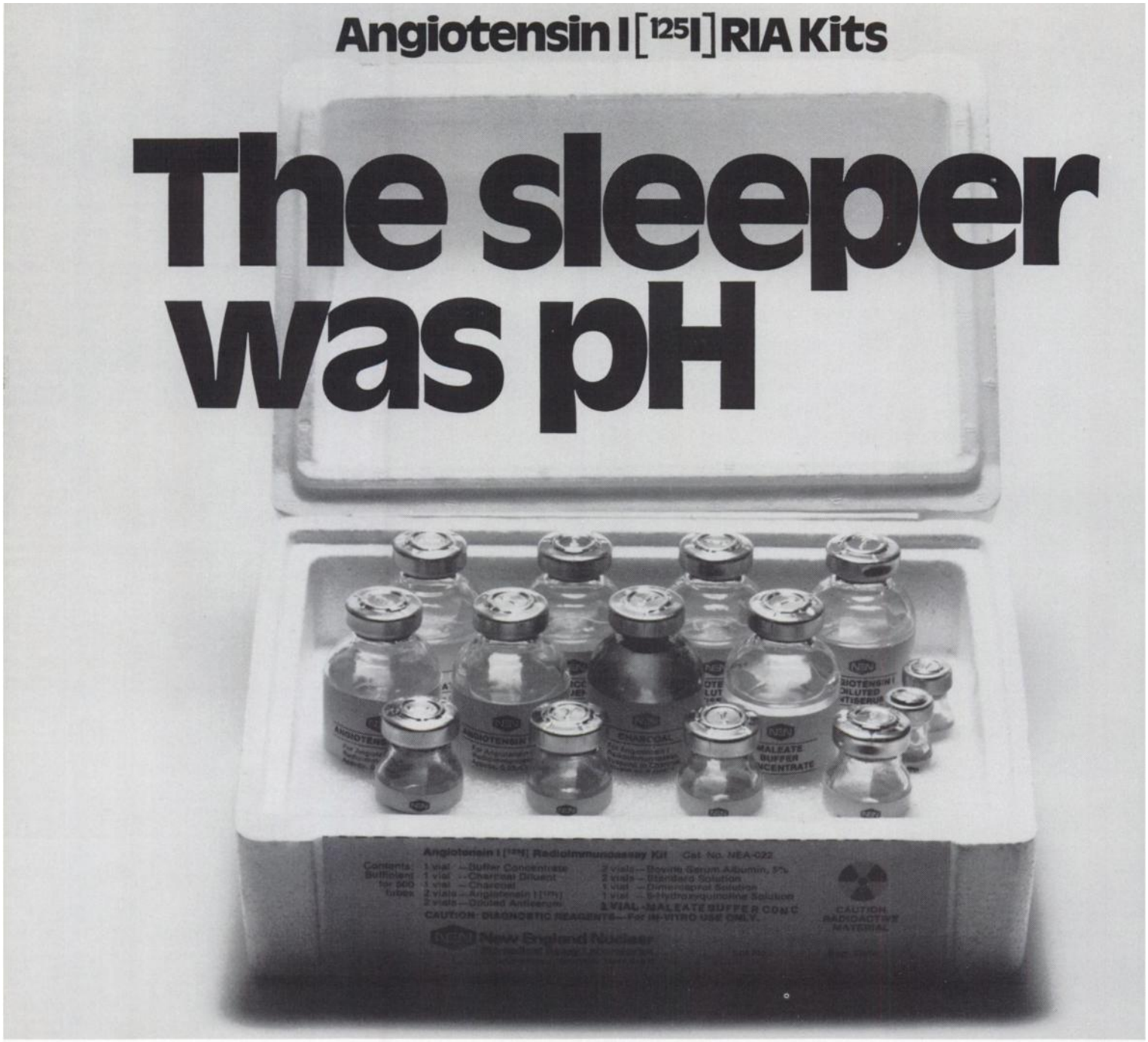
There's more to the capability story of the CINE 200. Find out all the details of why it is one of the most versatile image-data processors ever developed—for cameras and scanners. CINE 200 from Intertechnique is sold and serviced in the U.S. exclusively by Raytheon Company. For information, contact Raytheon Company, Medical Electronics, 40 Second Avenue, Waltham, Mass. 02154 (617) 890-3240.

INTERTECHNIQUE

RAYTHEON

Angiotensin I [^{125}I] RIA Kits

The sleeper was pH



A pH optimum of 5.5-6.0 is necessary for optimal generation of Angiotensin I, to achieve the ultimate sensitivity in patient screening.[1,2,3,4]

To this day, NEN's Angiotensin I [^{125}I] RIA Kit is the only commercially available kit to include optimal generation conditions, with a pH of 6.0 for one hour. Consistently high correlations with bioassay have been the result.

[1]Cf. Sealy, J.E., J. Gerten-Banes, and J.H. Laragh, Kidney International, *1*, 240-253 (1972). [2]McDonald, J.M. and G.A. Fischer, Am. J. Clin. Path., *59*, 6, 858 (1973). [3]Bagni, B., *et al*, Brit. Med. J., Sept. 9, 1972, page 676. [4]Abe, K., *et al*, Jap.Circ. J. (Eng. Summary), *36*, 697 (1972).

Gentlemen: Please send me complete technical information on your Angiotensin I[^{125}I] RIA kit.

Name and Title_____

Organization_____

Department_____

Address_____

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11 12 1 2 3 4 5 6 7 8 9

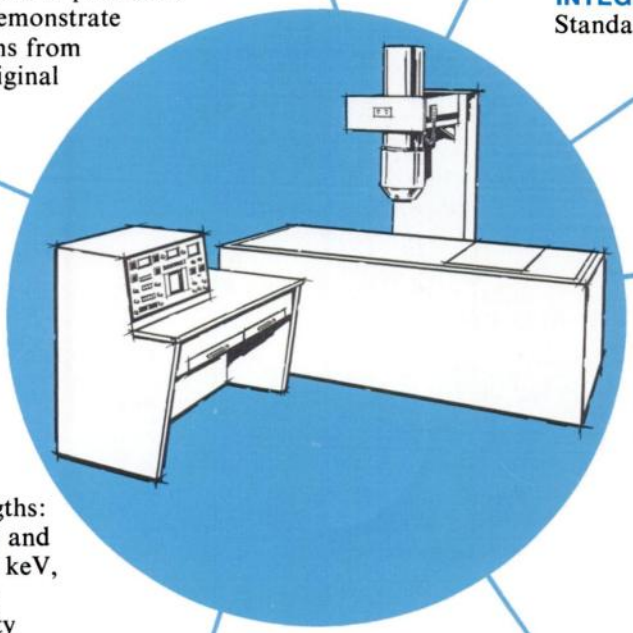
New England Nuclear
Biomedical Assay Laboratories
15 Harvard Street, Worcester, Mass. 01608
Telephone (617) 791-0911

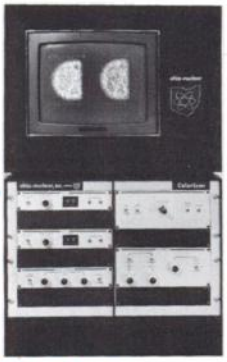
series 84—the total scanning system

8416 MEMOSCAN—Tape Replay System
Records scan data on magnetic tape which can be played back to produce additional photorecordings. During playback, changes may (or may not) be made in background erase, intensity, and contrast enhancement to provide a readout different from the original. Regenerations can be made at half-size if desired. Brain phantoms above demonstrate variations from same original scan.

8415 PROBE MOUNTED RATEMETERS
To facilitate set-up and positioning, ratemeters can be mounted on the detector.

INTEGRAL PATIENT COUCH
Standard on all Series 84 Scanners.



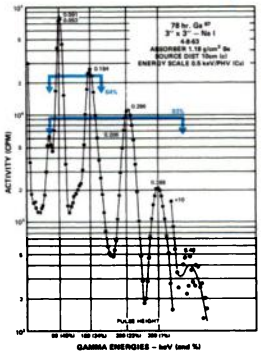


NOISELESS CRT DISPLAY
8 x 10-cm storage monitor (which can also be used in non-store mode) displays scan progress without annoying noise.

8417 COLORSCAN —Interactive Video Display
A scanner data system capable of displaying images in 8 or 16 colors or in 8 or 16 shades of gray. Image is retained in core memory and may be manipulated to provide background erase, contrast enhancement, statistical smoothing, subtraction or summation—AFTER THE SCAN.

SUPERIOR COLLIMATORS
Choose between two focal lengths: 3.5″ (8.9 cm) or 5.0″ (12.7 cm) and three energy ranges: up to 180 keV, 370 keV, and 550 keV. All are designed to maximize sensitivity without allowing excessive septal penetration for the maximum energy level in the range.

8409 SCAN MINIFICATION
Whole-body scans on one 14 x 17-inch film. Scan livers, lungs, and brains at a fraction of the time required for 1:1 scanning, using 2:1 or 5:1 reductions with no loss in quality or detail.

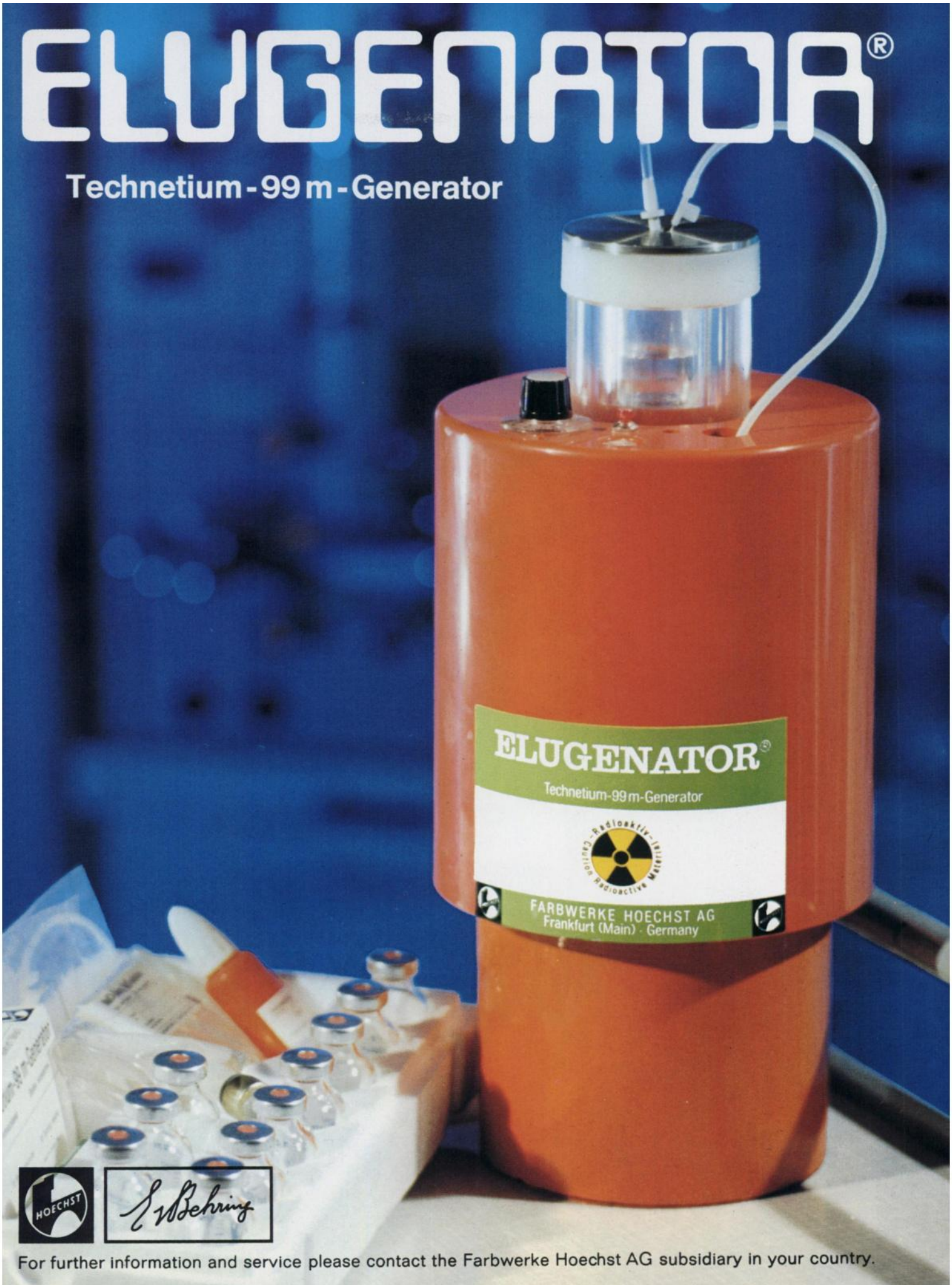


8418 100 keV-1 MeV WINDOW
Switch selectable 100 keV-1 MeV window maximum. Wider window is useful in capturing a higher percentage of the energy emissions from isotopes with multiple photopeaks, i.e. ^{67}Ga.

The standard items and optional features available with the Series 84 make it a total scanning system. All options are field installable on all Series 84's. It's company policy.

ohio-nuclear, inc.

6000 Cochran Road, Solon, Ohio 44139
Phone: (216) 248-8500
OHIO-NUCLEAR (U.K.), Radix House, Central Trading Estate, Staines, Middlesex, England. Phone: Staines 51444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Only someone who makes all these can be sure you get the right one

In technetium-99m generators, Mallinckrodt is the only someone who makes all these.

Because we have a complete line of generators, we can make sure you get the right one for your application, whether you require 50 mCi or 500 mCi. You'll not only get the right technetium generator, you'll get one you can rely on. Every Mallinckrodt Ultra-TechneKow® Generator column is sterilized by autoclaving, and each generator is eluted and tested in our laboratories before shipment.

The Ultra-TechneKow® Generator provides every feature you need. Uniformly high yields help you maintain scanning schedules. The "Ion Control" process keeps aluminum levels at almost undetectable levels. A minimum of 1½" of lead shielding and short elution time safeguard the technician, by providing minimum radiation exposure. A 500 ml saline supply permits an uninterrupted milking schedule.

If you use technetium-99m generators in your laboratory, deal with the manufacturer who sells you what you need. Not just what he has.

Write for full information, or call (314) 731-4141 (Extension 339) collect.

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50 mCi	Cat. No. 006	50 mCi	Cat. No. 100
100 mCi	Cat. No. 007	100 mCi	Cat. No. 101
150 mCi	Cat. No. 012	200 mCi	Cat. No. 102
200 mCi	Cat. No. 008	300 mCi	Cat. No. 103
300 mCi	Cat. No. 009	400 mCi	Cat. No. 104
400 mCi	Cat. No. 010		
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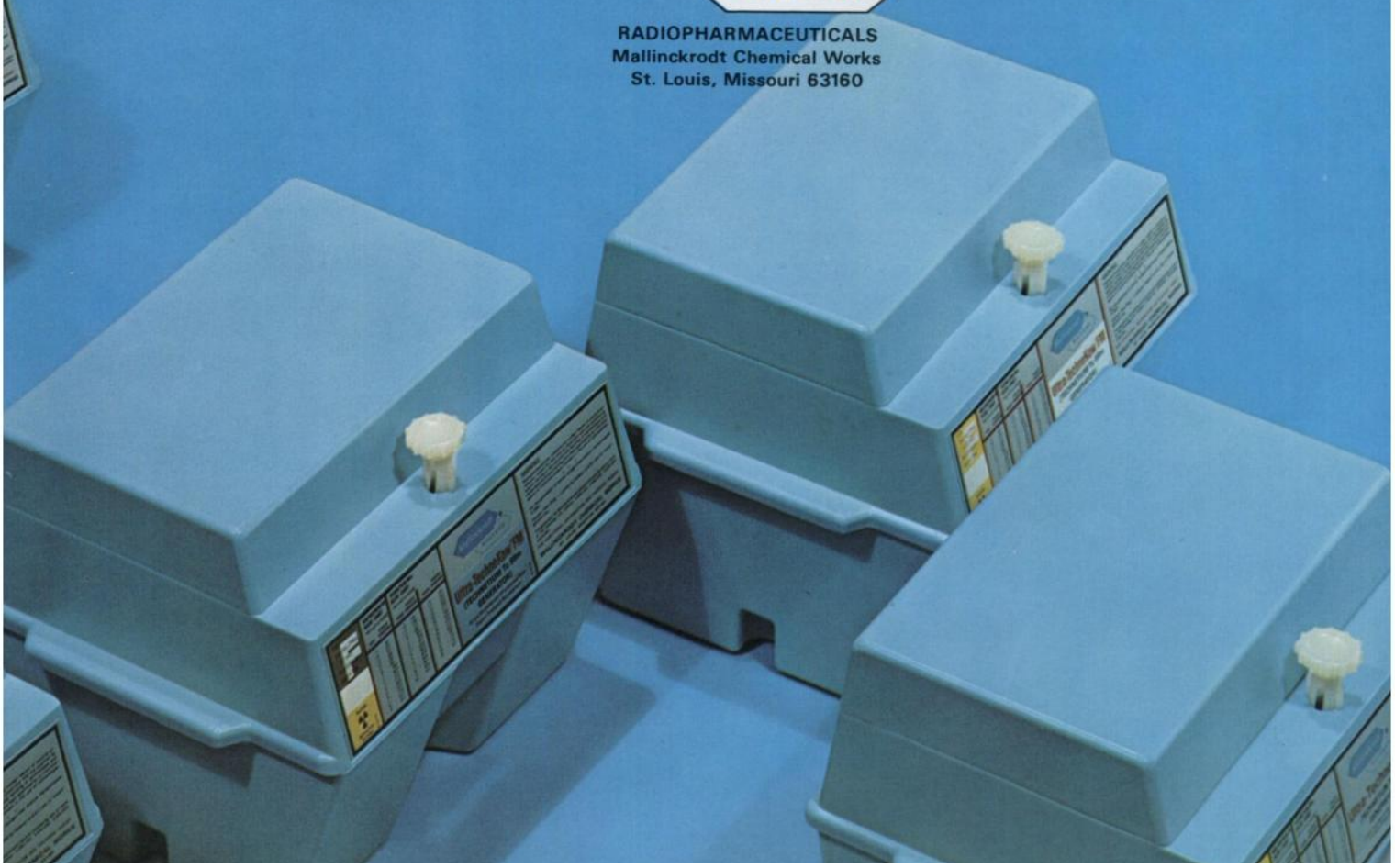

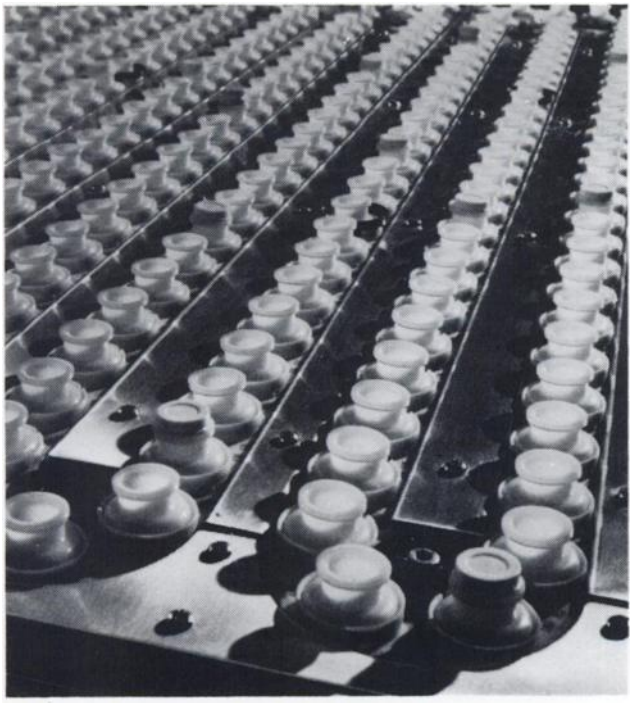

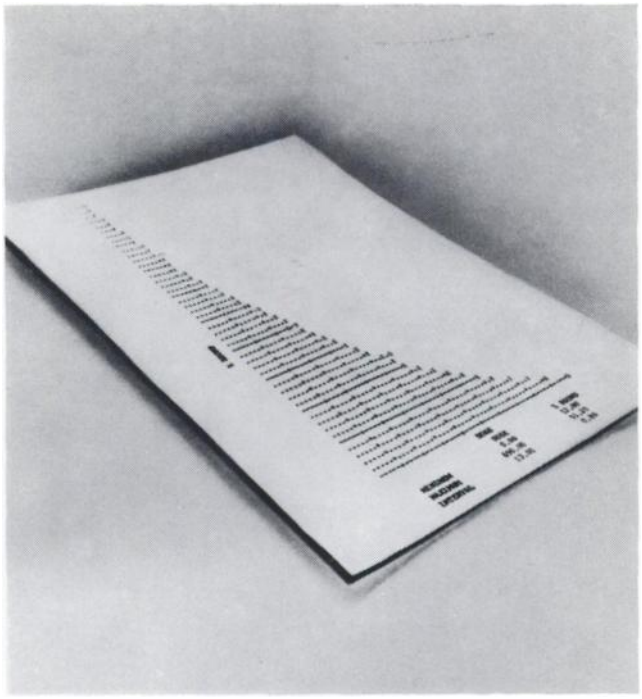

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The complete radioassay systems.

Searle Analytic (formerly Nuclear-Chicago) offers you the only complete on-line radioimmunoassay/competitive protein binding (RIA/CPB) systems.

Systems that automate the entire radioassay procedure—from analyzing RIA/CPB samples to printing out immediate, meaningful results. You only load standards and samples, establish assay protocol, start the system, and retrieve final, hard copy answers. Our systems do all the rest!

Assay preparation isn't changed at all. Yet answers are transformed directly to averaged count rate, normalized percent bound, standard deviation, dose, corrected dose, and confidence range for each sample group. It's all performed by our RIA/CPB Data Processor, which can be linked to either our beta or gamma spectrometer systems. The combination provides unprecedented speed and convenience in data-reduction.

But we didn't stop with immediate answers in RIA. For the wide variety of kits now in commercial use, our spectrometer systems let you program and count many combinations of tests in the same run. Or, with our exclusive **SRA 2™ System,** simultaneously operate both beta and gamma systems from a single RIA/CPB Data Processor.

Whatever the demand—raw RIA/CPB data, spectrometer systems for any use, or the right systems for your particular lab—we provide complete answers. You'll find your questions answered in our free brochure, RIA/CPB Data Systems. Write to us today.

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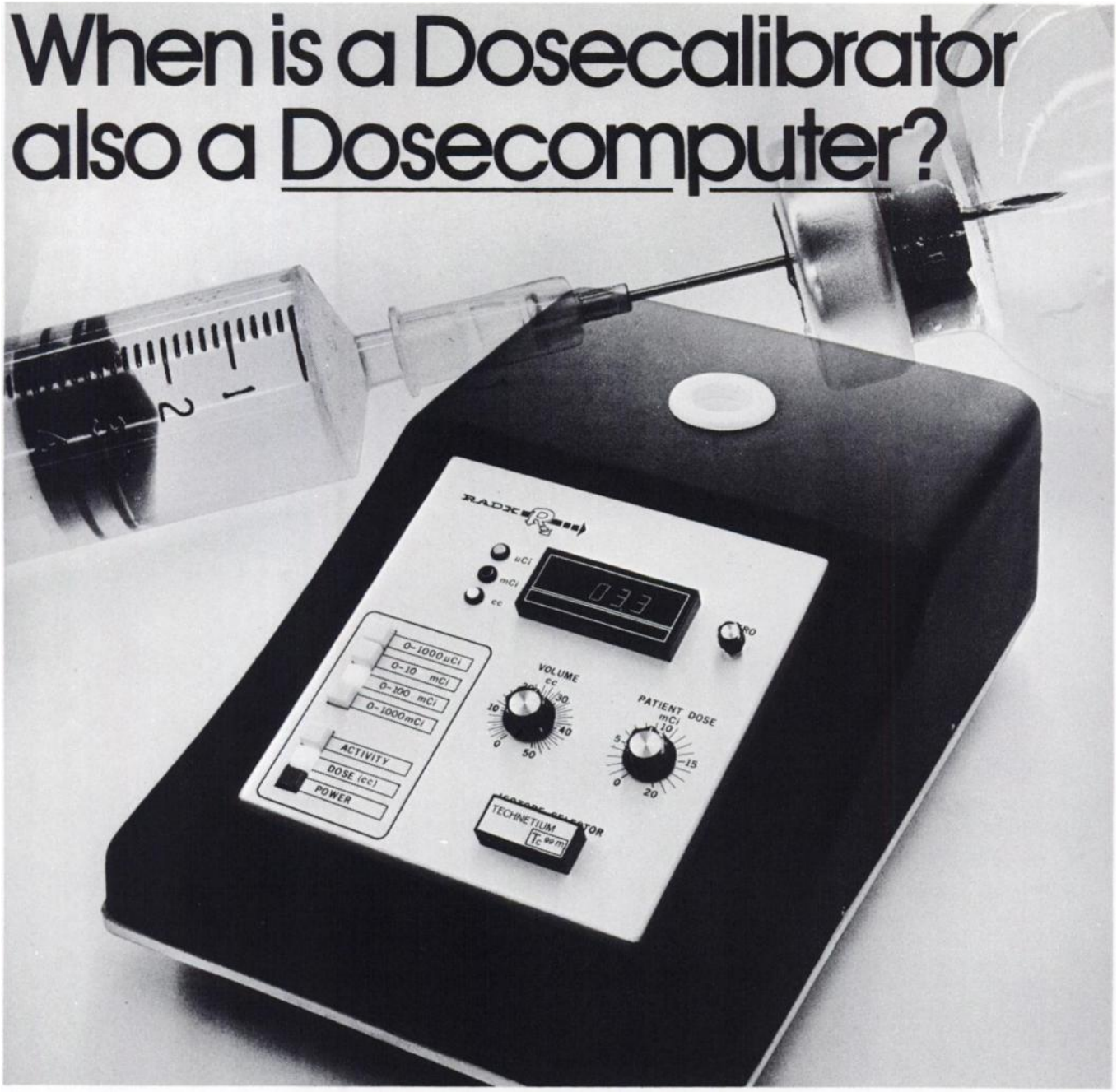
ALS-403

When is a Dosecalibrator also a Dosecomputer?



When it's a RADX Mark V.

The RADX Mark V was designed specifically for Nuclear Medicine departments, with digital read-out and an oversize well-type ionization chamber for high statistical accuracy. No geometric errors. Impervious to barometric pressure changes.

Only the RADX Mark V dosecalibrator measures the activity of radionuclides from 1 μCi to 1000 mCi, then computes the exact volume needed for patient injection.

Programming the Mark V for various isotopes is error-free. You simply plug in a module for the isotope you are assaying. The Mark V may be customized to your specific needs by acquiring only the modules corresponding to the isotopes you are currently using. However additional modules may be added at any time. Updating is simple and economical.

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Then consider that the Mark V costs much less than other dosecalibrators that do not provide all of these features. Now call RADX.

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Rx-642

The DI 800 Triaxial Table: The total performance imaging table

Ultimately, it had to happen . . . a table that matches the high diagnostic aims of Nuclear Medicine. When you consider the high cost and sophistication of imaging equipment, partially adequate tables seem slightly incongruous. Long needed was a stable platform with movement capabilities that maximized patient comfort, facilitated patient handling and access, and was easy to operate. Above all, the table would have to allow a precise control of the patient's position so that the entire organ of interest could be encompassed within the limited field of view of the detector. Result: The DI 800 Triaxial Table.

The DI 800 offers continuous height adjustment. Hence, easy patient transfer (whatever the height of the conveyance vehicle) onto either side of our table because of its flush edges. All four wheels lock from two controls.

For final precise positioning the DI 800 has long axis adjustment of 18 inches in the horizontal plane. Most important, the top is tiltable, head up or head down. This means greater patient comfort. More, it will permit oblique imaging. Example: tilting will permit cephalad displacement of the liver for improved pancreas imaging. With its open under carriage, overhanging adjustable head rest and ¼ inch lucite top, the DI 800 offers an unobstructed view of the patient—above, below, either side and vertex. That's total performance.

Dunn Instruments

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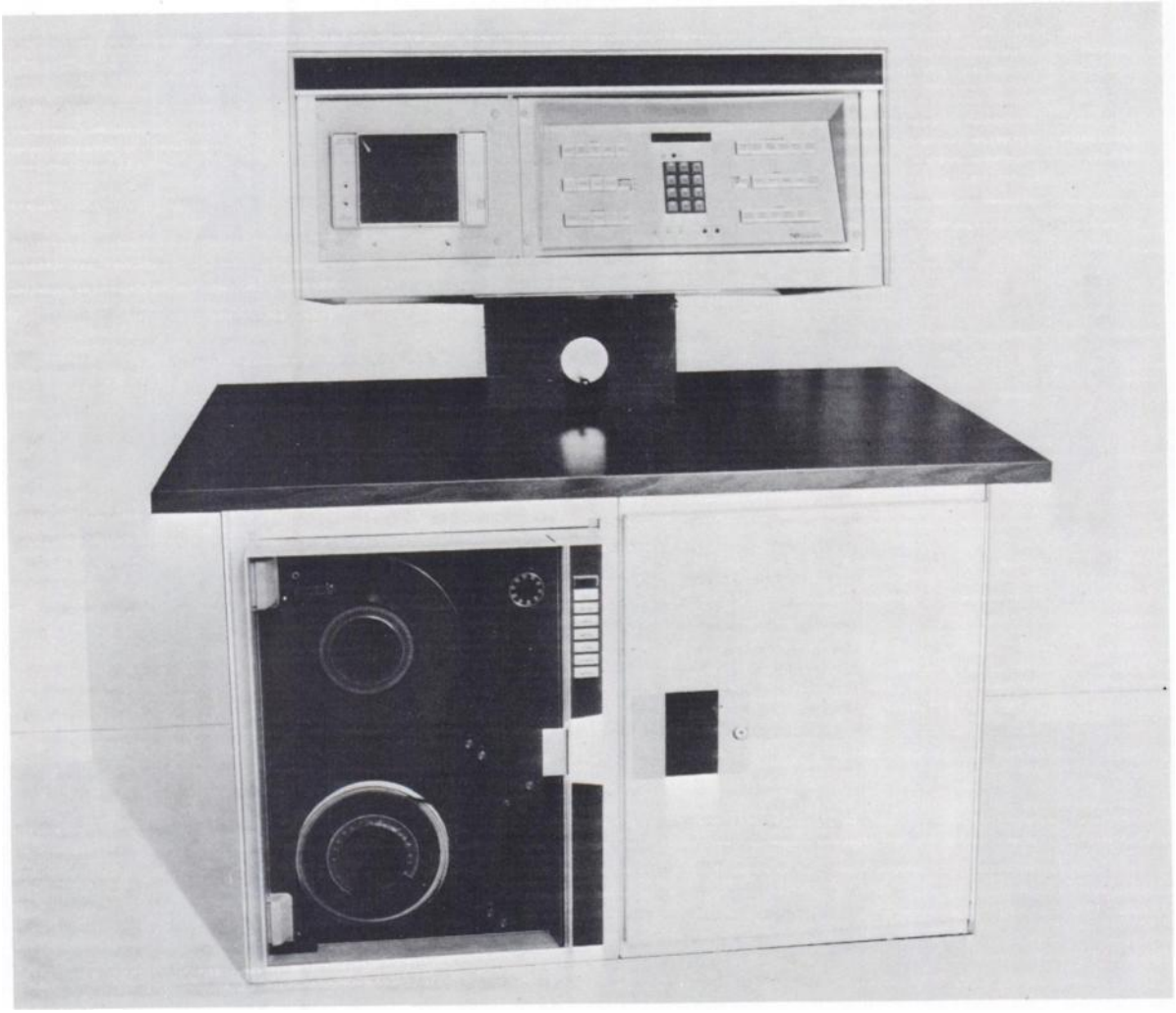
Price increase of $200 effective November 15, 1973.

This is the simplest way to computerize your scintillation camera



Nuclear Data's Med Stor™

Nuclear Data's new MED STOR™ is a moderately priced computerized image storage and processing system that can be used with *any* scintillation camera. MED STOR provides computer controlled acquisition of static and dynamic function data, selection of up to four regions of interest, and simultaneous generation of up to four time/activity histograms. It also provides variable image framing rates, high speed list mode acquisition, file and display of patient and study data, static image display selections of 64x64, 128x128, or even 256x256 data points, and almost instant data storage and retrieval by high density magnetic computer tape. This latter capability permits playback of an image in seconds regardless of the real time required for the camera to produce the image.

Though MED STOR is a real computerized system, you don't have to be a programmer or computer expert to use it fully. MED STOR has complete built-in software and operates totally by simple understandable push-buttons. And, because MED STOR is a true computerized system, it represents only the beginning of your department's image processing and storage capability. MED STOR readily upgrades at any time to the advanced and programmable MED II image storage and processing system.

Important questions to consider before you computerize your scintillation camera.

(1) Which is the only company that actually makes its own scintillation cameras and medical computers? **(Nuclear Data)**

(2) Who is the most experienced producer of computerized image storage and processing systems in the world? **(Nuclear Data)**

(3) Which company has the most such systems in routine clinical use? **(Nuclear Data)**

(4) What one computerized image storage and processing system has done away with the typewriter keyboard and is operated totally by simple pushbuttons? **(Med Stor)**

(5) What company has the most experience in interfacing computers with cameras? **(Nuclear Data)**

(6) Which modestly-priced image storage and processing system is a real computer and not just a hard-wired multichannel analyzer? **(Med Stor)**

(7) Which company can be described in these words: "...The most sophisticated developer of software in this field and who has been doing it for a longer time than anyone else and who has more clinical software than anyone else in this field ...."? **(Nuclear Data)**

(8) Which computerized image storage and processing system can actually be mastered in about two hours? **(Med Stor)**

(9) Which computerized image storage and processing system can be readily and most inexpensively upgraded to Nuclear Data's advanced MED II? **(Med Stor)**

(10) Who has an active user's group that exchanges and develops clinical software? **(Nuclear Data)**

(11) Which computerized image storage and processing system has been successfully interfaced with every major scintillation camera? **(Med Stor)**

(12) Which computerized image storage and processing system is accompanied by a Nuclear medical computer application specialist? **(Med Stor)**

These are some important reasons for computerizing your scintillation camera with MED STOR. There are more in store. To learn about them, write to the Nuclear Data office nearest you.

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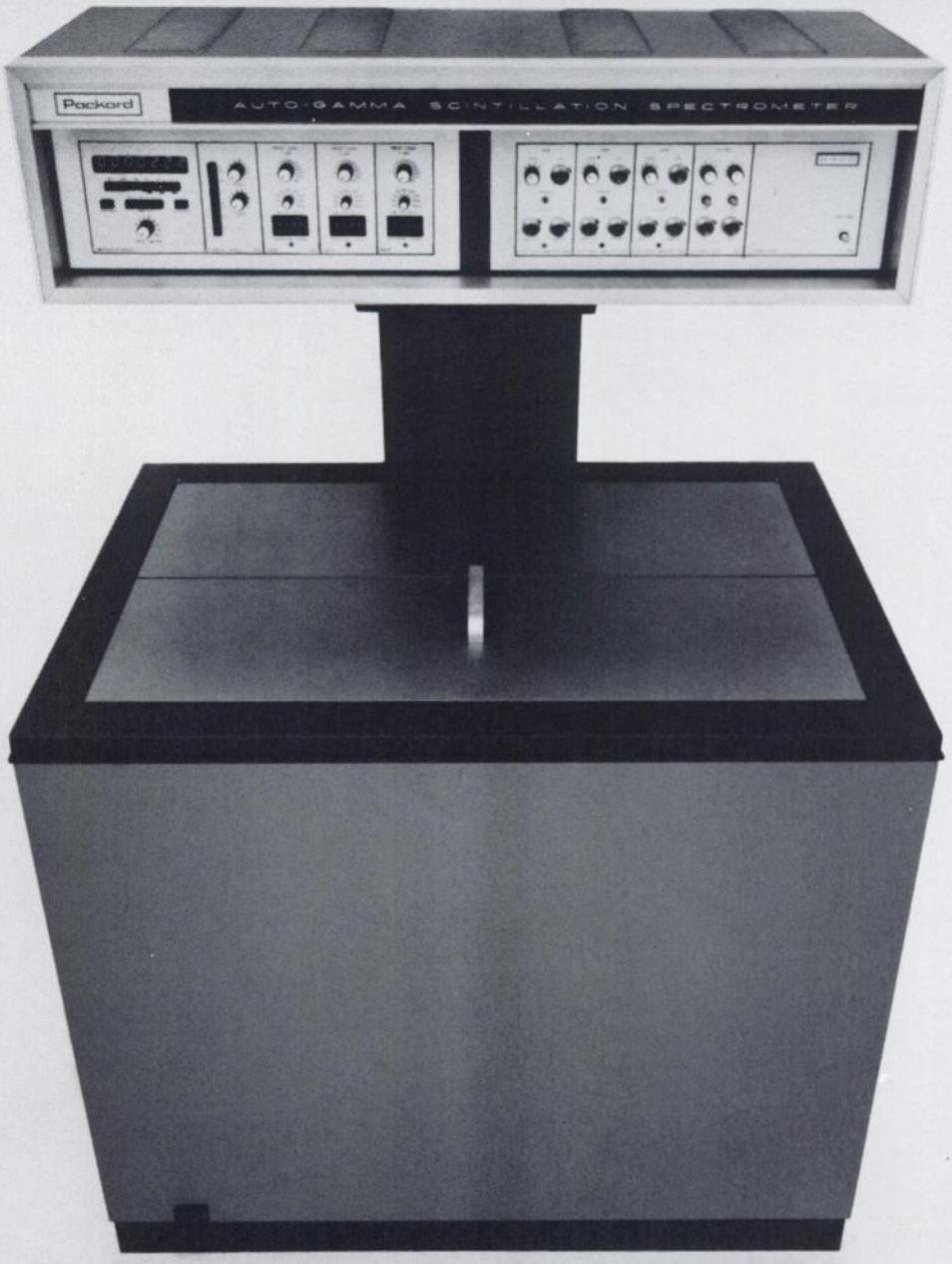

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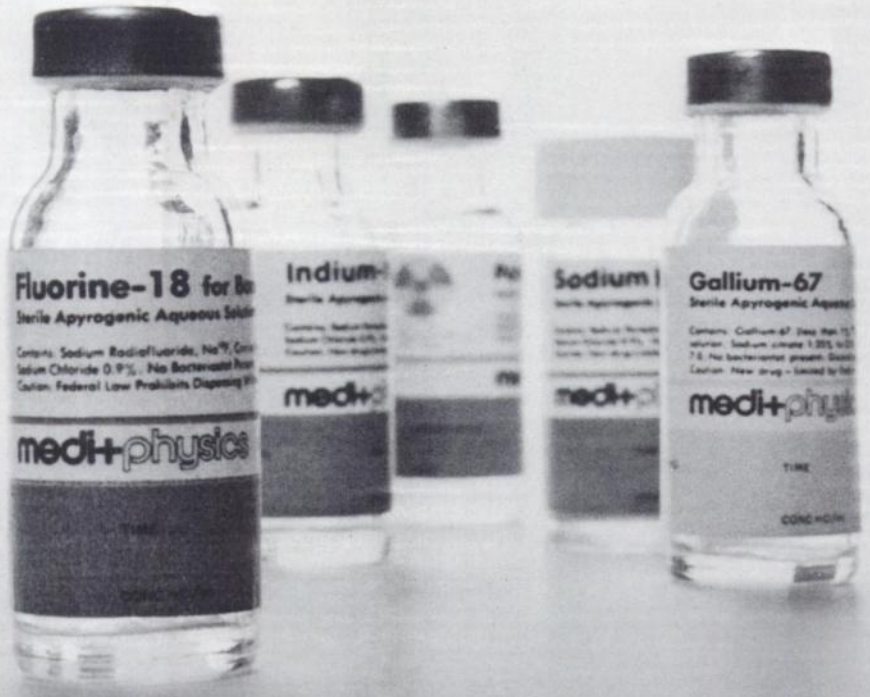

These cyclotron produced products are now available daily, Monday thru Friday from Medi+Physics. For further information, please contact the Medi+Physics Laboratory nearest you. In San Francisco our main office is at 5855 Christie Ave., Emeryville, California (415) 658-2184. In Los Angeles phone (213) 245-5751, in Chicago (312) 671-5444, or in New York/New Jersey (201) 757-0500.

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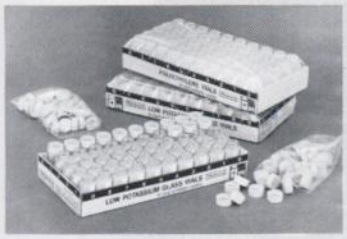
FOR RIA PROCEDURES



Multi-Assay, Multi-User Versatility Packard's 2400 Series Tri-Carb® Spectrometers are truly the ultimate for counting all beta and gamma RIA tests, such as Digoxin, Renin, B_{12}/Folate, Estrogen, Corticoids, Insulin. They feature the exclusive new SERVO-TRAY® System, which holds up to 450 samples, using 50-vial trays. Each disposable tray can be loaded and programmed for a separate radioimmunoassay by an individual user. *All Packard instruments are available on a rental or leasing plan. Write for complete information—request Bulletin 1177.*

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A lot of nuclear medicine computers can give you the standard operations. Thresholding. Image smoothing. Crystal non-uniformity correction. Profile slices. Dynamic function curves. But that's just routine with Gamma-11.

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With Gamma-11, you just use FOCAL-PLUS and do a bit of programming.

That's what FOCAL-PLUS was designed to do. Give you the language to develop your own studies, whatever they may be.

FOCAL is not one of those mind-bending languages. It's commonly used as a "beginners" language. But now it's been tailored especially for nuclear medicine. It's highly interactive. You can step up to the scope and mark off the areas you want to work on. It can handle large matrices (128 x 128). Yet it lets you work on individual elements so that you can do things like functional imaging.

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And, of course, you get Digital Equipment Corporation. And Digital's huge service organization.

More people have opted for Digital than for any other nuclear medicine computer supplier... and Digital has produced more than half the minicomputers across the *world*.

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digital

Our Digoxin kit gives accurate and reproducible results. It's the price and service that are hard to believe.

The Schwarz/Mann Digoxin ^{125}I RIA kit costs about $112.00, is sufficient for 240 tubes, and ends up costing you about 46 cents a tube. (Less if you buy in greater quantity).

This compares quite favorably with our major competitor ($1.60 per tube), and makes Digoxin testing economically feasible.

Beyond cost, our Digoxin kits are accurate and reproducible, have been proved in over two years of clinical lab use, and are easy-to-use, keeping both pipetting and centrifugation within manageable technical bounds.

Equally important, they let you determine clinically significant Digoxin levels over the range of 0.4-10 ng/ml without sample dilution. This sensitivity is rare in Digoxin kits as a whole. Without Schwarz/Mann, it would probably be non-existent.

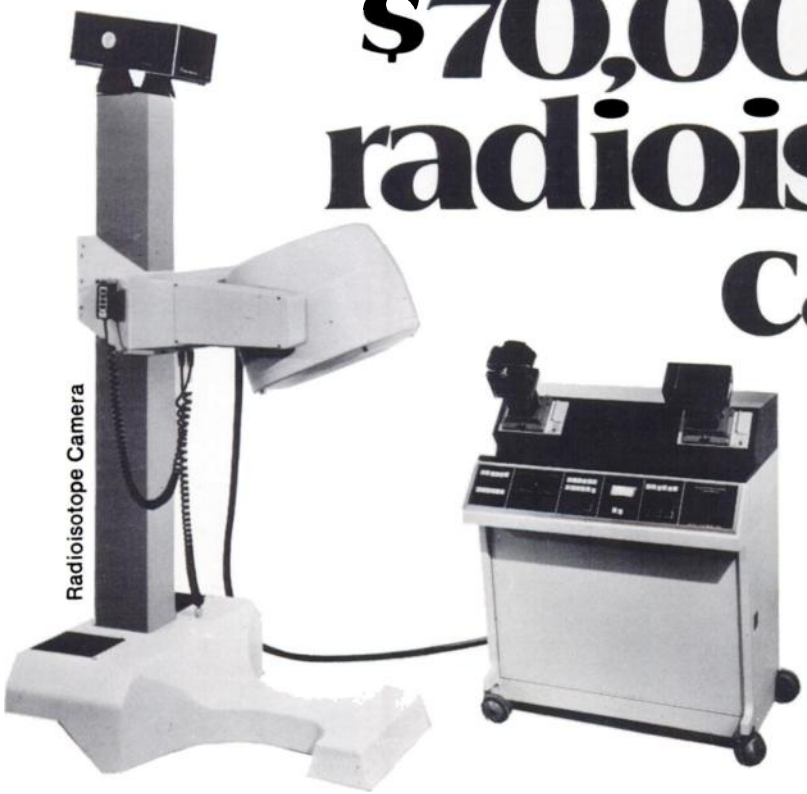
Backing up these product advantages are the resources of Schwarz/Mann. Our training center. Our RIA methods manual. Our reference laboratory. And, lastly, our "Hot Line", which is standing by during working hours (8:30-5:00 EST) to answer your technical questions, solve problems, and generally give access to our long experience and expertise in RIA. (Call collect: 914-358-4555).

And that's the Schwarz/Mann Digoxin story. You can believe it!

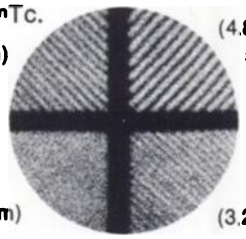
Schwarz/Mann, Orangeburg, New York 10962. Division of Becton, Dickinson and Company B·D

Schwarz/Mann

When you spend $70,000 for a radioisotope camera,



Resolution. Ohio-Nuclear's Series 100 has an intrinsic resolution of better than 1/8" (3.2mm) with ^{99m}Tc.



Scintiphoto (above) taken using 1/8" (3.2mm) thick bar phantom. No collimator. 500,000 counts ^{99m}Tc.

Uniformity. Typical Series 100 flood field made with ^{99m}Tc — 500,000 counts.

Speed. Maximum output count rate of 100K counts/sec. Performs standard studies more rapidly. Helps make fast dynamic studies a standard practice.

Ease of operation. Fast setup with two speed—conventional and express—detector motion. Manual or pushbutton isotope selection. Entire study conducted from hand control without leaving patient's side.

Uniformity. Typical Series 100 flood field made with ^{99m}Tc — 500,000 counts.

Economy. Reduced setup time. Reduced study time. Photomultiplier tube gains balanced by your technologist, eliminating need for serviceman.

Want proof? Send for our Series 100 Radioisotope Camera brochure, and our Systems Resolution product bulletin. Visit an installation . . . we'll arrange it. And talk to us. We have something better. The Superior Radioisotope Camera. From Ohio Nuclear.

and a DataSystem, what should you be getting?

Resolution. All three modes are built in and operator selected.

128 x 120 (16K) matrix (8 bits deep), or
64 x 60 (4K) matrix fields (12 bits deep), or
32 x 30 (1K) matrix fields (12 bits deep).

Fast Framing. Dynamic studies are recorded as follows:

Speed	Resolution
16 frames/sec	32 x 30 (1K)
5 frames/sec	64 x 60 (4K)
1 frame/sec	128 x 120 (16K)

Available options provide:

39 frames/sec	32 x 30 (1K)
13 frames/sec	64 x 60 (4K)
3 frames/sec	128 x 120 (16K)

Digital Computer Compatibility. Nine track 800 bpi magnetic tape.

Isometric Displays. View isometrics, profile histograms, and isotope uptake at camera console.

Contrast Enhancement/Background Erase

Regions of Interest. Two—rectangular. Operator selects size and position. Counts read out on display, along with area.

Display. Non-flickering interactive display continually refreshed from core memory.

Alphanumeric Display. Patient study number always displayed on left of image. Six digit time of storage (in hundredths of a second) and dynamic study frame number displayed on right; or six digit count and four digit area within an area of interest (or the total count of the area) can be displayed on the right.

Slices. Two slices along either the X or Y axis can be defined independently, & observed on the isometric view.

Options Available. Black and White video displays, 9″ and 14″ diagonal, with 64 shades of gray, flicker free; Isometric display, 14″ and 5″ diagonal, sixteen shades of green; Color display, 12″ diagonal, 16 or 8 colors, switch selectable; Color and B&W simultaneous display; Field uniformity correction; Statistical Smoothing; Chart Recorder for plot of profiles set by slices, or plot of dynamic study count versus time; Fast Framing Tape; Added Memory; 16 Extended Rectangular Areas; Irregular Areas; Interfaces; B&W or Color Polaroid Capability.

Want More Information? Write for our DataSystem brochure and our Product Bulletin — Series 150 DataSystem Description. Visit an installation . . . we'll arrange it. And talk to us. We have something better. The complete DataSystem. From Ohio-Nuclear.

ohio-nuclear, inc.

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PHONE (216) 248-8500 • TWX NO. 810-427-2696

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Our first thought was to produce an exceptionally high purity eluate from a simple, safe generator system.
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You can now insert the input and output assemblies without removing the lead end plugs or dismantling the lead shielding. Like this:
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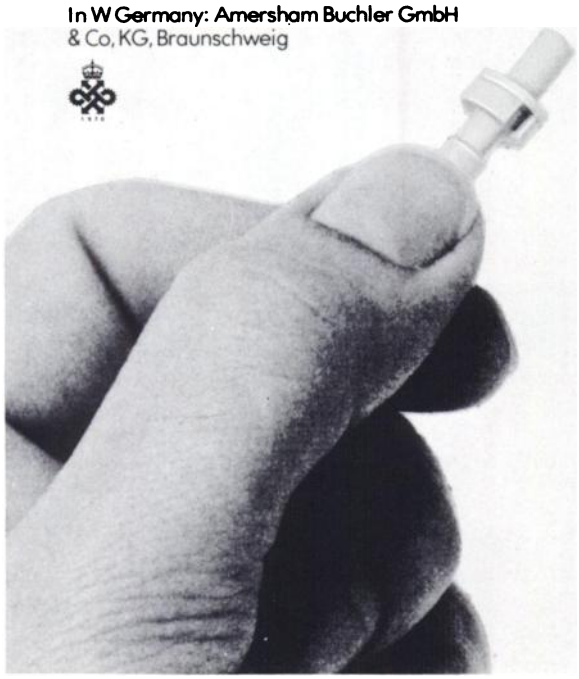
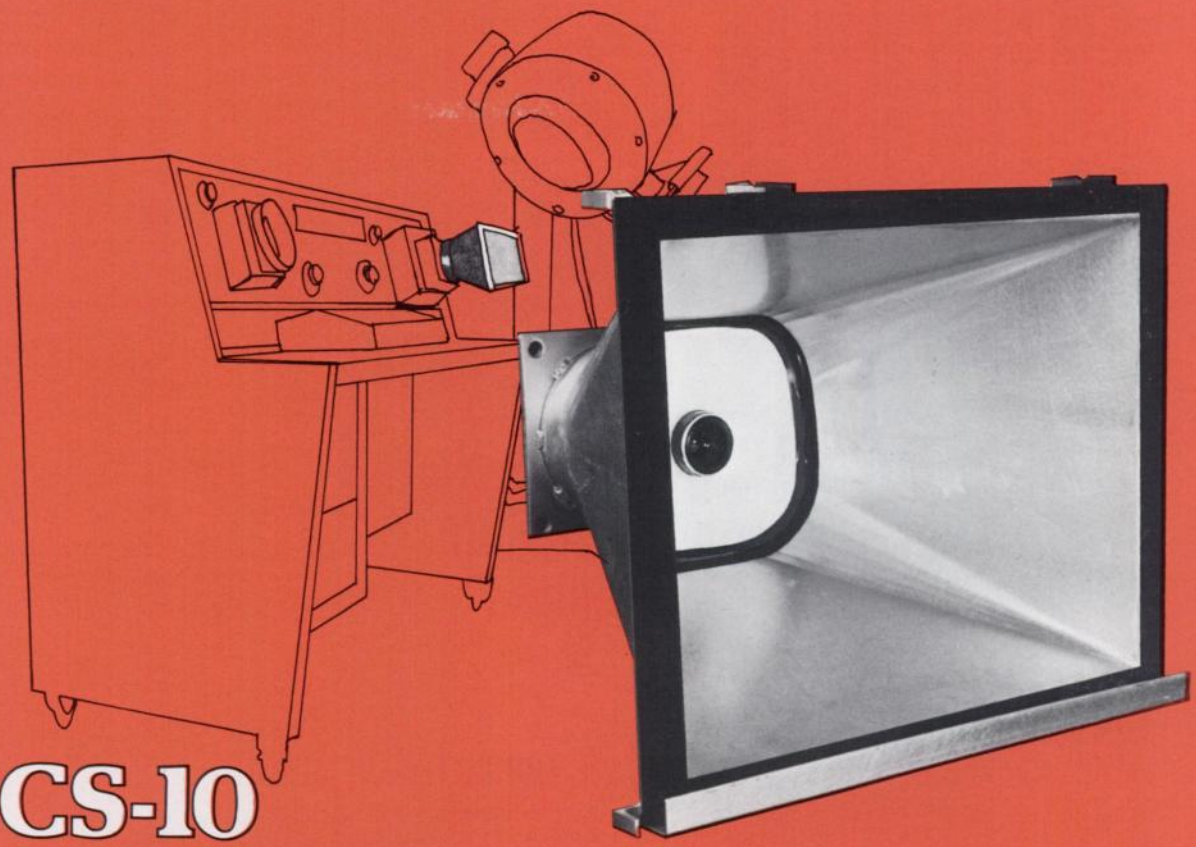




CS-10 CAMERA-SCOPE

Just attach it and forget it . . . for always in-focus, fully illuminated, distortion-free, adjustment-free gamma photos

Potomac Nuclear's new CS-10 Camera-Scope provides adjustment-free, error-free photography . . . with crystal clear resolution. Just install it and use it! The CS-10's new computer-designed, straight-through optical system doesn't use mirrors . . . and its unique mounting arrangement assures a constant focal distance between the film plane and the CRT face so it's always in focus.

Exceptionally easy-to-use, the CS-10 has a fully color-corrected, high speed lens that provides *maximum, equal illumination across the entire 10-inch square film plane* . . . completely eliminating vignetting and edge distortion!

The CS-10 weighs only three pounds and readily mounts onto your gamma camera. A large ground glass permits full image viewing. The unit's new "quick latch" feature lets you quickly and easily snap-in and snap-out x-ray sized film cassettes, from the top, when you're ready to photograph. And, the CS-10's full frame image lets you select either one 10" picture . . . four 5" pictures . . . sixteen 2½" pictures, or thirty-six 1⅝" diameter pictures—with no peripheral loss of image.

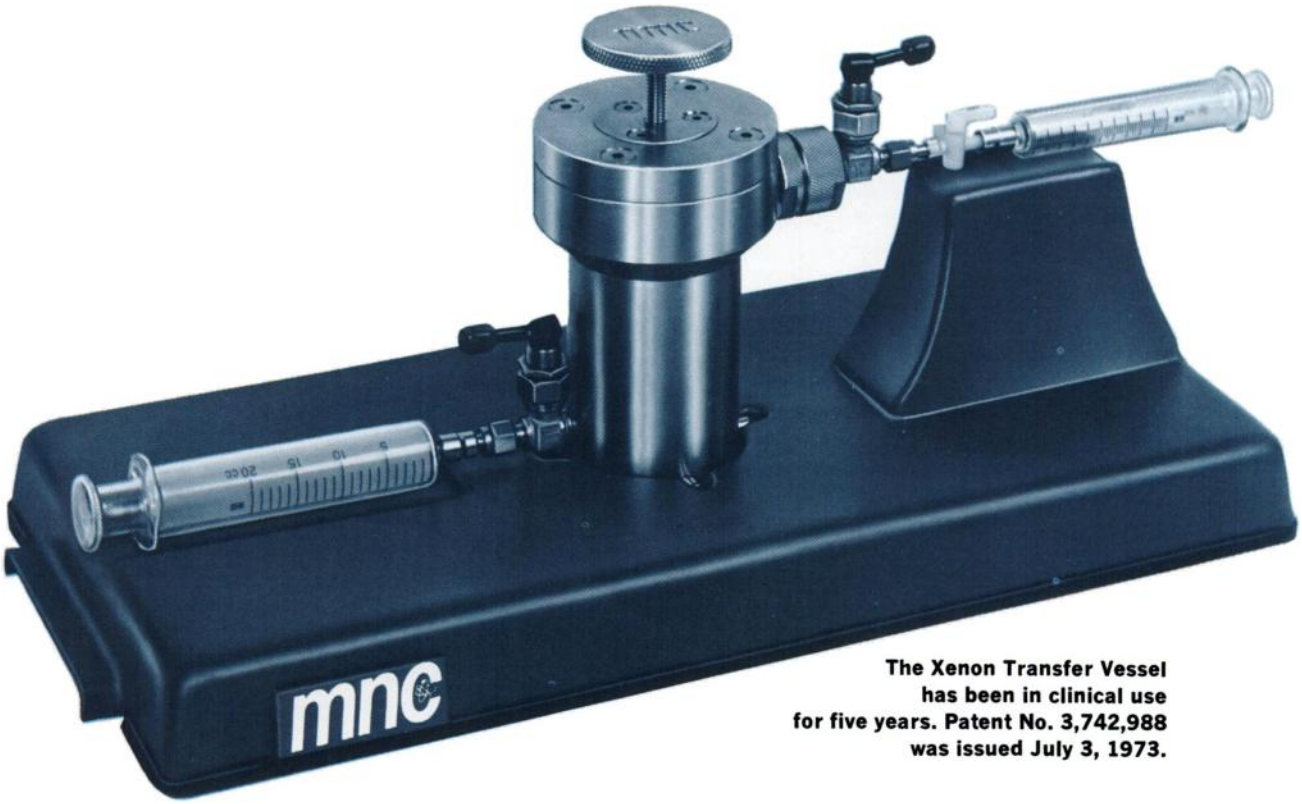
To learn more about our new CS-10 Camera-Scope, or to arrange a demonstration, please write or call:

POTOMAC NUCLEAR ELECTRONICS
Incorporated

2600 Commonwealth Avenue
Alexandria, Virginia 22305
(703) 836-0996
In New Jersey: (609) 443-4144

The XENON Transfer Vessel

keeps radioisotope XENON-133 dissolved in saline safely and economically for convenient in-lab use.



The Xenon Transfer Vessel has been in clinical use for five years. Patent No. 3,742,988 was issued July 3, 1973.

SAFETY A Curie of Xenon-133 in the Xenon Transfer Vessel assures negligible radiation hazard to personnel and provides a safe, convenient means for storage. Less than 2 mR/hr exposure at six inches from the vessel. Personnel involved in transfer and administration of Xenon receive low exposure, less than 0.1 of maximum permissible dose.*

CONVENIENCE Laboratory conversion of Xenon-133 into saline is accomplished in a few simple operational steps, releasing a Curie (or more) of Xenon-133 from a specially-designed-and-sealed glass ampule into saline solution. Dosages are easily drawn off through a 0.45 μ Millipore filter. Xenon-133 is also easily converted from saline to syringe air. Problems of patient scheduling to coincide with unit dose deliveries are eliminated.

ECONOMY The transfer vessel method results in a substantially reduced isotope cost. There is no lease obligation, no capital investment, no minimum annual usage required, no maintenance concern. The vessel is replaced every ten months (sooner if needed) at no expense to the user. Vessel fee is charged only in months when Xenon is ordered.

CONCENTRATION Initially, approx. 20 miC of Xenon-133 per cc of saline. Greater concentrations possible using a multiple Curie ampule. Concentration in the 50 cc chamber decreases with use and decay.

Send coupon on facing page for more information and literature on the Xenon Transfer Vessel.

*"HANDLING, USES, AND RADIATION DOSIMETRY OF XENON-133" by Merle K. Loken, M.D., Ph.D., and George S. Kush, M.S. Reprint from Atomic Energy Commission Symposium Series #20 on Medical Radionuclides: Radiation Dose and Effects. For free copy, send coupon on facing page.

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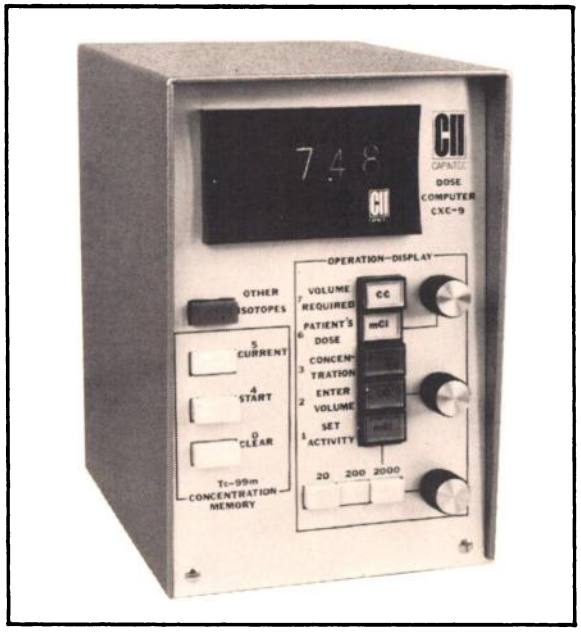
From the number one calibrator manufacturer.. Capintec.

Radio-Pharmaceutical CXC·9 Dose Computer incorporating "Built·In Tc99m Memory"

(When used with any Dose Calibrator)



UPGRADE YOUR PRESENT CALIBRATOR

The stand-alone CXC-9 Dose Computer provides the complete analytical work-up for Radio-Pharmaceutical dose management required by the exacting standards of Nuclear Medicine.

SIMPLE TO OPERATE...JUST DIAL IN THREE NUMBERS:

Total dose from your present Calibrator (or recall Tc-99m value from memory); stock volume, and the required dose..... The CXC-9 Dose Computer instantly displays the exact volume of dose for patient administration.

SAVE TIME AND ELIMINATE COMPUTATIONAL ERRORS

The CXC-9 Computer is programmed to provide the information that you need...rapidly and quietly. Its control panel is designed for operator use.... to human engineering standards. A " BY-THE-NUMBERS " step by step computational procedure is so straightforward that operator or slide rule errors are virtually elimimated.

REDUCE OPERATOR EXPOSURE.

The CXC-9 computes patient dose correctly the first time and every time that it is used. Consequently, the handling of radioactive material, either in stock bottle or syringe, is kept to a minimum with a corresponding reduction in exposure.

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FOR ROUTINE USE, NO LONGER INVESTIGATIONAL.
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• **Uniform Shape and Size**
Perfectly spherical, the 3M Albumin Microspheres are uniformly sized to 15-30 microns in diameter. This uniformity, coupled with an extremely low tendency to agglomerate, results in truer images of lung perfusion. The result — no hot spots or extra-lung activity.

• **Integral, yet Biodegradable**
Each Albumin Microsphere is a single homogeneous sphere of albumin — they won't disintegrate in the vial or syringe. Yet, microspheres readily clear from the lung. Pulmonary clearance half-times are long enough for multiple view imaging but are still short enough to allow daily imaging, if required. Microscopic analysis of lung tissue in the mouse showed 99 percent of the administered microspheres were gone after 29 hours.[1]

1. Data on file at the 3M Company and the Bureau of Biologics.

• **Eliminate Interference from "Free" Technetium**

"Free" isotope need no longer interfere with the scan. The unique filter construction of the Microsphere Labeling Vial allows the free isotope to be removed, leaving just labeled microspheres for suspension.

• **Stable Kit**
Currently the expiration date of each kit is *6 months* after the date of manufacture. You can stock the kit and have it available for immediate use. Even a department doing a moderate amount of lung imaging can take advantage of quantity discounts.

• **Each Lot FDA Approved**
Thoroughly tested by 3M, each lot is checked by the Bureau of Biologics, FDA, and approved for shipment. This provides a double-check of sterility, lack of pyrogens, and all the important performance parameters of the kit.

INDICATIONS Scintillation imaging of the lungs with ^{99m}Tc-Labeled Albumin Microspheres is indicated as an adjunct to other diagnostic procedures whenever information about pulmonary circulation is desired.

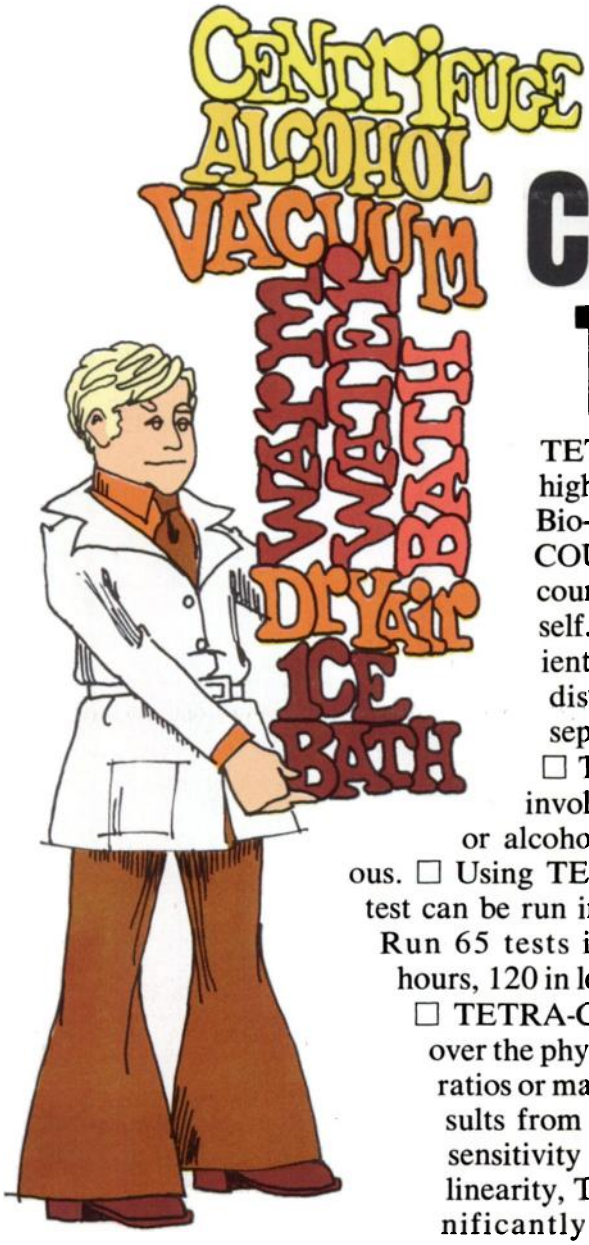
CONTRAINDICATIONS The safety of Albumin Microspheres in patients with a known right-to-left cardiac shunt has not been established and its use in such patients is contraindicated.

SIDE EFFECTS Although no anaphylactoid reactions have been reported in patients following the administration of Albumin Microspheres, the possibility should be considered that hypersensitivity reactions may occur rarely in patients who receive additional doses of the Microspheres.

HOW SUPPLIED Each kit contains five labeling units. Each labeling unit contains one day's supply of Albumin Microspheres (5mg — enough for 5 to 7 patients) plus all the reagents necessary to attach technetium to the microspheres.

For detailed information about Microspheres and the 3M Brand Albumin Microsphere ^{99m}Tc-Labeling Kit, write: **Nuclear Products for Medicine,** 3M Company, 3M Center, St. Paul, Minnesota 55101, or phone TOLL FREE (800) 328-1671.

3M COMPANY



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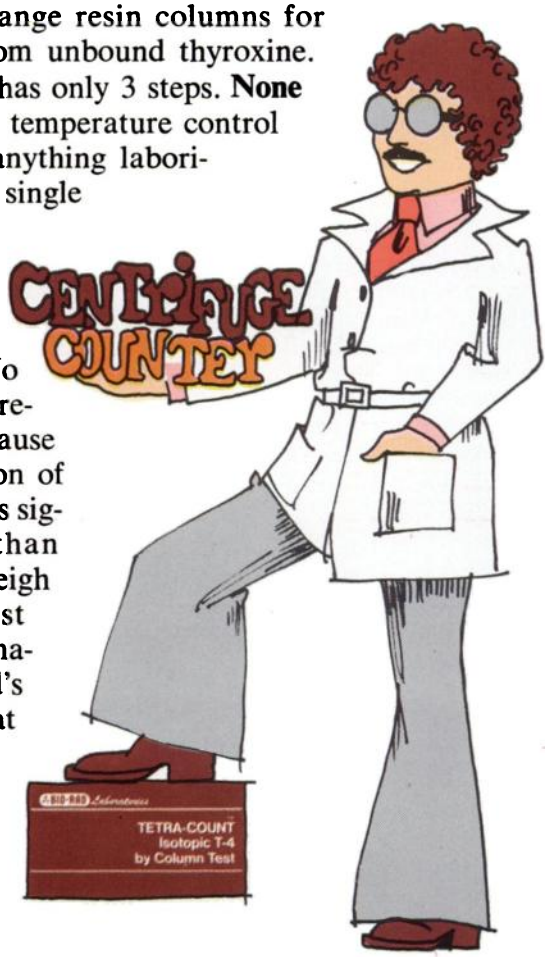
TETRA-COUNT is an uncomplicated, rapid and highly sensitive T-4 by CPB test. Developed by Bio-Rad, an early bird in T-4 testing. ☐ TETRA-COUNT requires only 3 items. A centrifuge, a counter and the TETRA-COUNT package itself. Includes a thyroxine adsorbent in convenient tablet form, all necessary reagents, and disposable ion exchange resin columns for separating bound from unbound thyroxine. ☐ TETRA-COUNT has only 3 steps. **None** involve critical timing, temperature control or alcohol extraction. Or anything laborious. ☐ Using TETRA-COUNT, a single test can be run in just 20 minutes. Run 65 tests in less than 3 hours, 120 in less than 5 hours. ☐ TETRA-COUNT is **linear** over the physiological range. No ratios or math involved. Read results from straight line. Because sensitivity is a direct function of linearity, TETRA-COUNT is significantly more sensitive than other isotopic T-4 tests. ☐ Weigh your present T-4 test against TETRA-COUNT. More information? Howard Willner, Bio-Rad's T-4 specialist, welcomes your call at (415) 234-4130.



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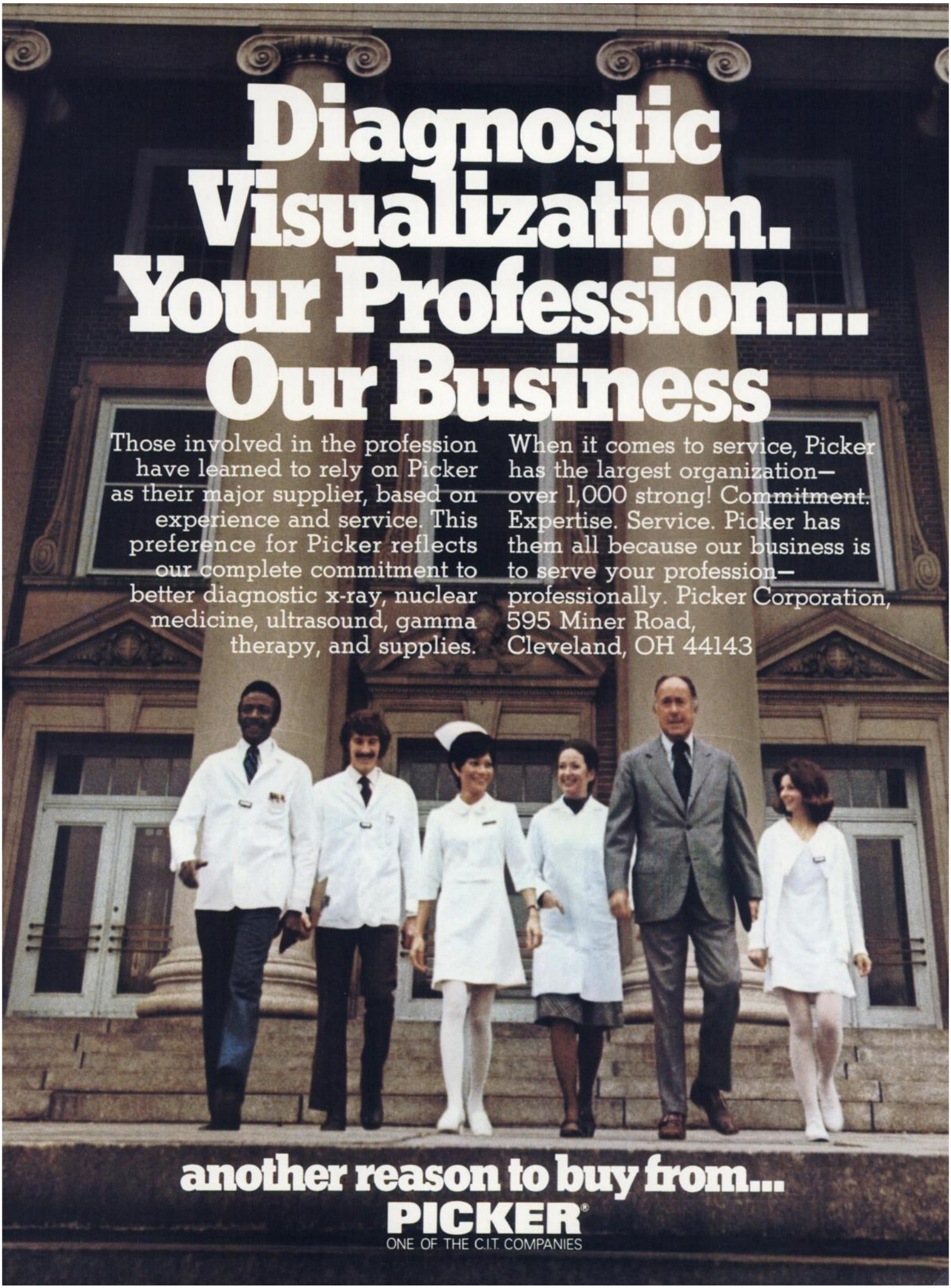
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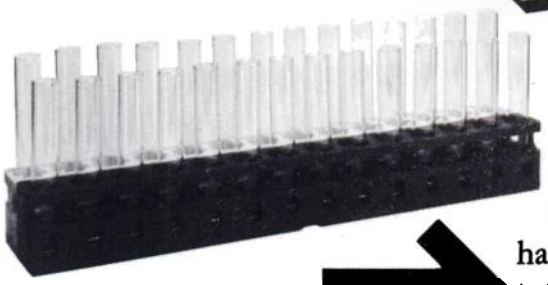

The RIA rack... heart of hands off, precise-reaction, total system RIA offered only by Micromedic Systems... samples prepared, incubated, centrifuged and counted, all in the same rack, all without handling or misnumbering.

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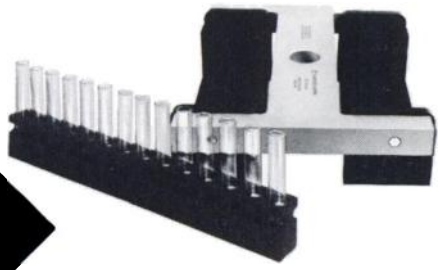
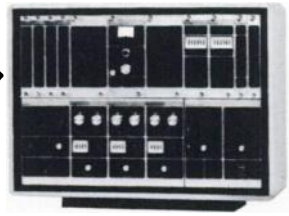


Incubation and separation. Incubation in air or water is achieved, again without tube-handling: samples remain securely in place in RIA rack. **Centrifugation** is speeded as well: rack fits popular refrigerated centrifuge heads. Centrifuged samples decanted directly from the rack with exclusive decanting clamp.



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uses standard RIA racks, completes error-free sequence of hands off RIA. The equivalent of three separate counting systems: each of 3 assay lots can be independently programmed, even for isotope selection. This economical time-sharing means multi-user access, permits sharing of capital cost.

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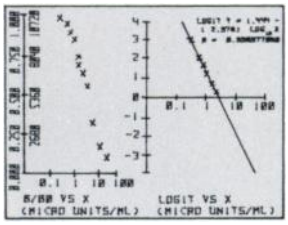

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The XYZ-101 Imaging Table

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The XYZ-101 Imaging table combines vertical motion with X & Y movement of the table top for maximum versatility with all cameras and scanners. And since it is entirely manually operated, it requires no heavy, complicated hydraulic systems, motors, or electrical connections.
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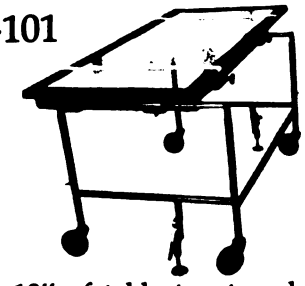

Permits 10" of table top travel in both X and Y directions with graduated calibration scales for accurate re-positioning.

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Can be raised or lowered to exact height desired for patient transfer and gamma imaging.

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If you're performing or should be performing four or more ventilation studies per week— consult with Cambridge Nuclear.

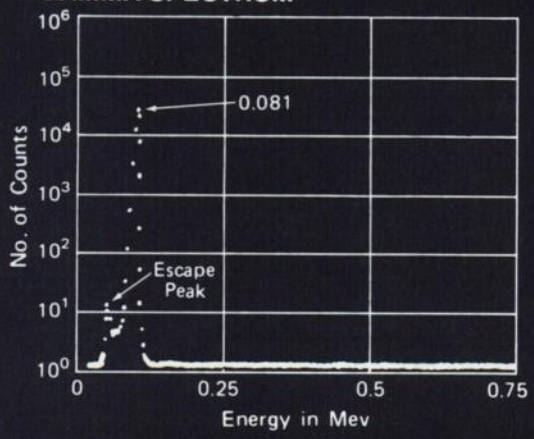
If you want the simplest and most economical Xenon-133 system available— order from Cambridge Nuclear.

GENERAL PROPERTIES AND CHARACTERISTICS RADIATION EMITTED

DECAY ($\beta-$)		GAMMA (γ)		INTERNAL CONVERSION
ENERGY (Mev)	%	ENERGY (Mev)	%	%
0.35	100	0.081	100	—

$\Gamma\left(\frac{r/hr}{mCi/cm^2}\right)$	$K\beta\left(\frac{gm\text{-}rad}{\mu Ci}\right)$
0.3	0.0041

GAMMA SPECTRUM



The Cambridge Nuclear Xenon-133 System can be an enormous help in measuring regional ventilation. And when combined with conventional lung scanning, it aids in the differential diagnosis of pulmonary embolism and obstructive pulmonary disease.

There are many advantages in using this system. Xenon-133 is not used or produced by the body. It diffuses easily through cell membranes and freely exchanges through blood and tissue. And it's physiologically inactive when inhaled in small doses and also is readily excreted by the lungs.

Because the Cambridge Nuclear Xenon-133 System is so simple, it's easily installed and is easy... and safe... to use. The gas, with a half-life of 5.27 days, is available daily from stock, with radioactivity ranging from 100 to 1,000 mCi per cylinder in breathing air.

Contact us today. We'll be pleased to send you further information and work with you in designing and installing this efficient and economical system.

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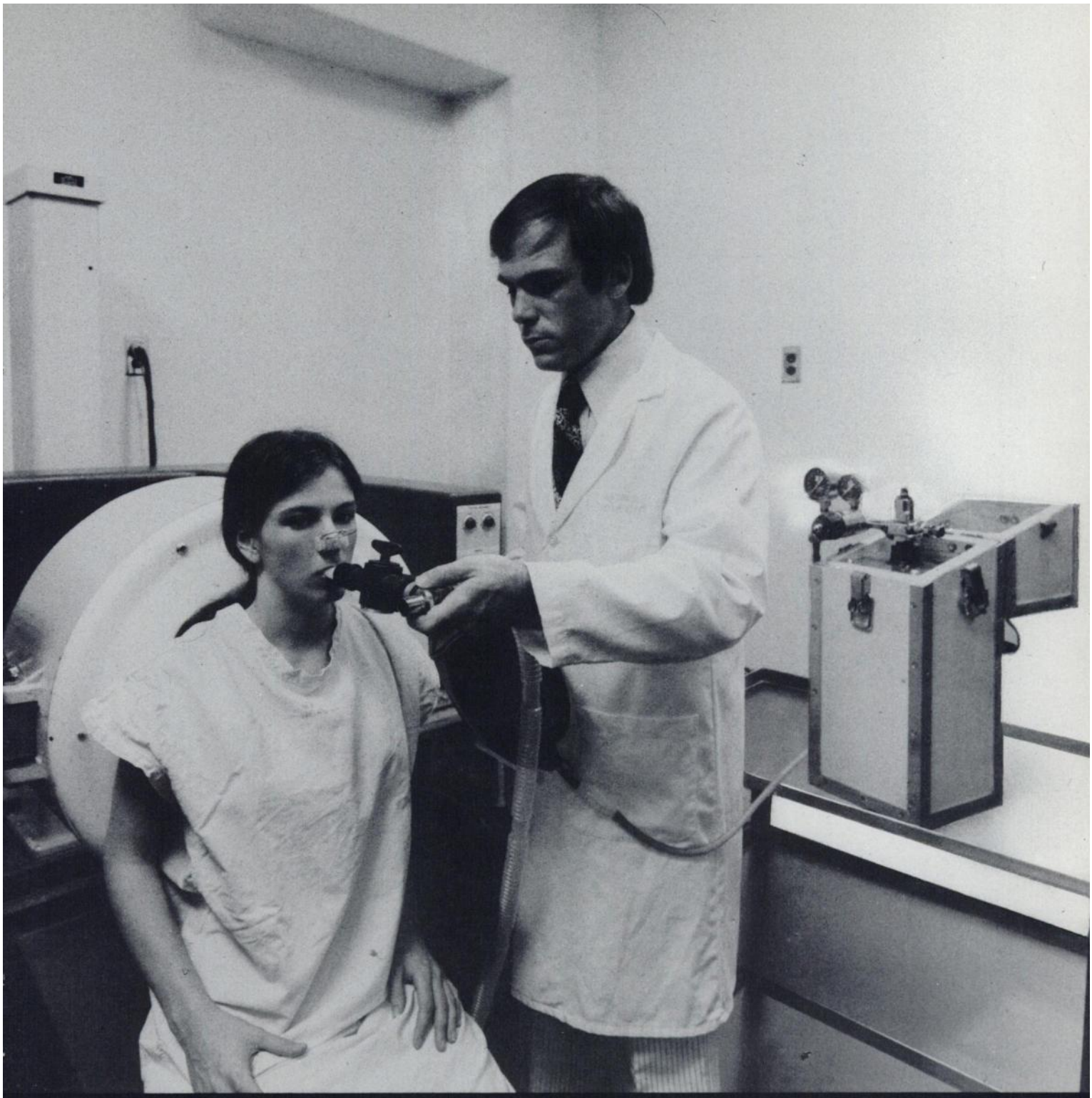

THE CAMBRIDGE NUCLEAR XENON-133 SYSTEM

Xenon-133 gas tank and regulator.

9-liter anesthesia bag containing patient dose at prescribed radioactivity.

3-way Rudolph or Sierra "Y" valve.

Disposable plastic mouthpiece and nose clamp to assure optimum inhalation.

Spent gas vented to outside atmosphere via wall exhaust port.

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let you store, view and dispense radioactive materials with complete safety

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for Technetium-99m

or any gamma emitter <140 keV

- 30% lighter than regular syringe shields. More comfortable and easier to use.
- Reduces ^{99m}Tc exposure by a factor of 200.
- Accepts standard disposable syringes in 2½ to 3cc and 5 to 6cc sizes.

*U.S. Patent 3,596,659

VIAL SHIELD**

For ^{99m}Tc-Sulphur Colloid Preparation

- Permits heating and drawing of ^{99m}Tc-S colloid preparations (and similar solutions) without radiation exposure to technicians.
- Radioactive contents of vials and containers can be viewed, processed and dispensed without being removed from vial shield.
- Reduces radiation level of 25 mCi of ^{99m}Tc to background.

**U.S. Patent 3,673,411

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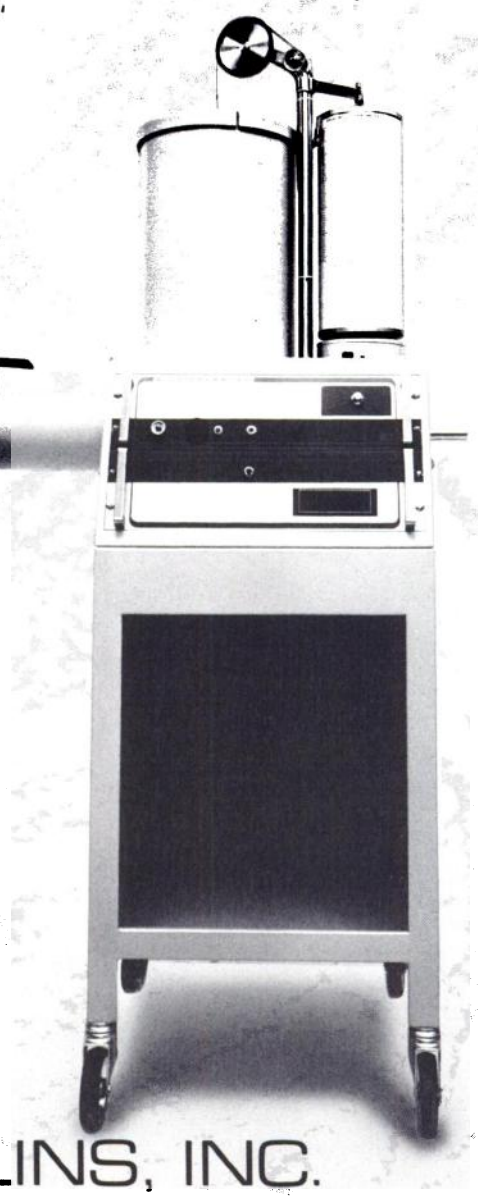
Collins X-133 Spirometer offers safe, efficient pulmonary testing with radioactive gases.

Xenon pulmonary studies **have** presented some problems in the past, notably, recording of extraneous radiation, operator safety and the introduction and collection **of** the radioactive **gas.**

By incorporating **a unique** combination **of safety and** operational features **into the** X-133 Xenon Spirometer, Collins has **achieved maximum operating efficiency with the highest degree of safety for technician and patient.**

Single breath ventilation, perfusion and steady state ventilation are among the studies routinely effected with the X-133 Spirometer.

Some of the safety and operational features include lead shielding to UL subject 544 requirements; less than .2 MLR/Hr at a distance of 5 cm. with a 2.0 mCi/Liter concentration; safety alarm signals for upper limit of spirometer bell; easily cleaned and sterilized; motor blower for complete mixing and petcock for admitting radioactive gas by syringe.



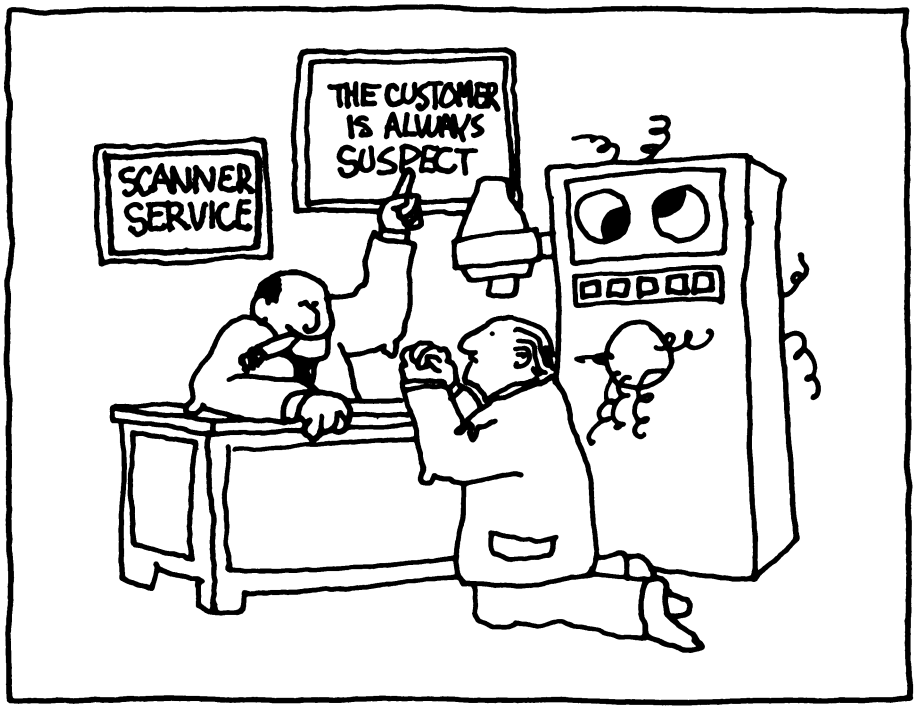
Further information and specifications on the X-133 Spirometer available

wec inc.

WARREN E. COLLINS, INC.

DEPT. 11L, 220 WOOD ROAD, BRAINTREE, MASS. 02184

When were you last on your knees?



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The Graphic scanner team is not one man who sells you an instrument and then forgets you. We provide the assistance of a radio-pharmaceutical representative, nuclear instrument consultant and field service engineer. They are ready to help even when everything is running smoothly. Our team is capable and willing to help you set-up a new department. They can assist in licensing procedures, thorough training of technicians, including new diagnostic procedures and techniques.

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Multi-imager system for

The complete sequence imaging system with built in physiological trigger functions.

study: Tc 99m pertechnetate renal flow
exposure: 0.8 seconds frame
mode: 16 frame dynamic recorded on sheet of 11" x 14" X-ray film

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scintillation cameras.

- **Up to 36 frames of dynamic flow study recorded on 11" x 14" X-ray film**
- **Physiological trigger options permitting imaging of predetermined multiple phases of the respiratory or cardiac cycles in separate frames.**
- **Electronic frame advance without any moving mechanical components.**
- **Electronic frame advance dead time of less than 1/1,000th of a second.**
- **Variable automatic exposure time per frame of 0.1 second to 10 minutes.**
- **Compatible with all scintillation cameras.**

Introduction

The Multi-Imager System is designed for use with scintillation cameras to provide dynamic flow, static, and physiological function synchronized studies. The system operates by altering the CRT deflection signals, changing the size, location, and duration of the image on the display scope. Frame advance is achieved electronically, yielding sequential exposures with essentially no data loss.

Dynamic flow study applications

The Multi-Imager System allows selection of 4, 16, or 36 frame format dynamic flow studies. The three formats vary in the size of the image being recorded and the maximum number of available frames:

frame format	maximum number of frames	frame size 11" x 14" X-ray film
4	4	3.5" diameter
16	16	2.0" diameter
36	36	1.3" diameter

The exposure time per frame is adjustable from 0.1 second to 10 minutes. The frame advance dead time of the system is less than 1/1,000th of a second.
A remote foot operated start switch is also available.

Static study applications

A one frame format allows recording of a life size 10" diameter image on 11" x 14" X-ray film. In addition, the dynamic flow study frame formats can be operated manually, advancing the frame after each view is recorded.
In the 4 frame format four static views can be recorded on a single sheet of 11" x 14" X-ray film, each view image having a diameter of 3.5". In the 16 frame format a sixteen view bone study can be recorded on a single sheet of 11" x 14" X-ray film, each view image in the correct anatomical orientation, with a diameter of 2.0".

Physiological trigger accessories

Unlike a motorized camera, the Multi-Imager System can not only advance frames, but also return to re-expose frames. Physiological trigger accessories are available that allow synchronization of recorded data with the patient's cardiac or respiratory cycle.
The cardiac function system records the systolic image data in one frame and the diastolic image data in a second frame, alternating exposures between the two frames synchronous with the patient's cardiac cycle.
The respiratory function system is useful to minimize respiration motion artifacts in liver and lung studies. Through use of a chest expansion transducer, one frame records the inspiration plateau image data, the second frame records the expiration plateau image data, and the third frame records the image data between the two plateaus. The exposures are cycled through the three frames synchronous with the patient's respiratory cycle.
With both physiological trigger accessories, all the available image data is recorded, separated into frames corresponding to phases of the cardiac or respiratory cycle.

Photographic recording options

An 11" x 14" format X-ray film camera and a 4" x 5" format scope camera are available for use with the Multi-Imager System.

TRY IT FOR TWO WEEKS WITHOUT ANY OBLIGATION

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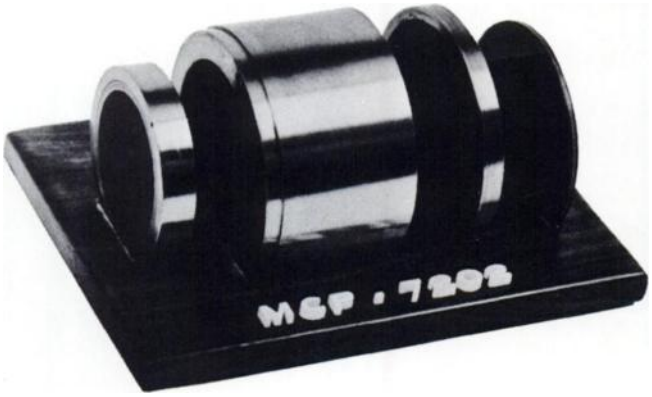
Multi-Purpose Adjustable Collimators



Model:	7202 (5"-169 holes)*
Energy:	up to 180 KeV
Resolution FWHM:	5/16" (7.937 mm)
	3/8" (9.525 mm)
	7/16" (11.11 mm)
	1/2" (12.70 mm)
	9/16" (14.29 mm)
	5/8" (15.88 mm)

* 5" Focal Length
169 Hexagonal Holes

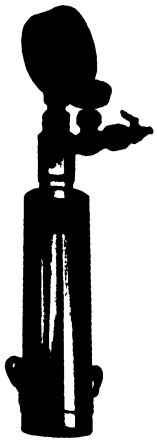
Catalog Numbers for Standard Five Inch Rectilinear Scanners

MCA-7202 ..... Abbott
MCB-7202 ..... Baird-Atomic
MCG-7202 ..... General Electric
MCO-7202 ..... Ohio Nuclear
MCP-7202 ..... Picker
MCR-7202 ..... Raytheon
MCN-7202 ..... SEARLE
MCS-7202 ..... Siemens

SPECIAL FEATURES OF PRACTICAL IMPORTANCE:

- Does the job of 9 conventional collimators ranging from 5/32" (4 mm) up to 5/8" (16 mm) FWHM.
- Has an extended depth of focus unmatched by other collimators.
- Most sensitivity/resoluiton adjustments are made without removing the heaviest part of the collimator from the detector.
- Storage is no problem (Dual scanner owner's dream).
- Cost is less than for a whole set of conventional collimators.
- Available for all commercial 5" scanners on the market today.

NOTE: Ultra-Fine Resolution Section (5/32") for 123-Iodine thyroid scans is optional (please specify).



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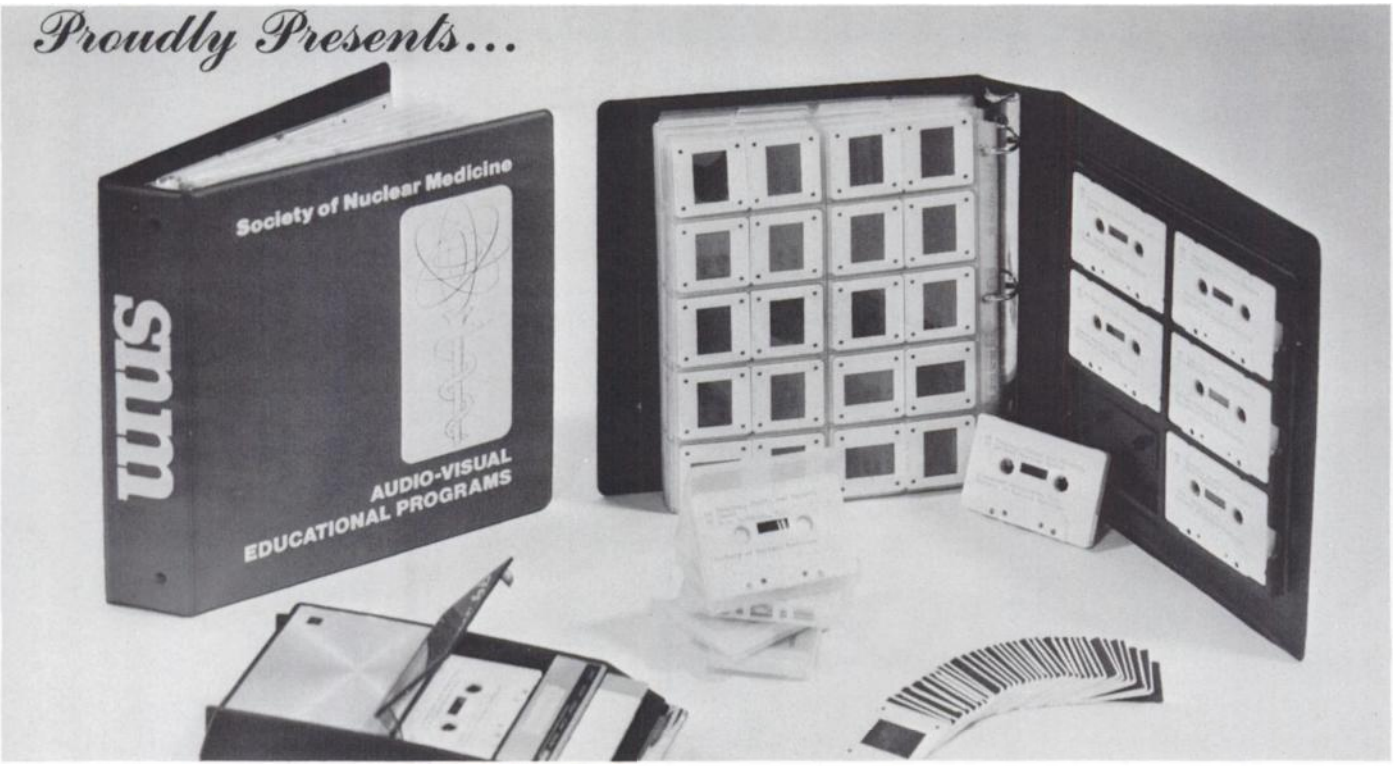

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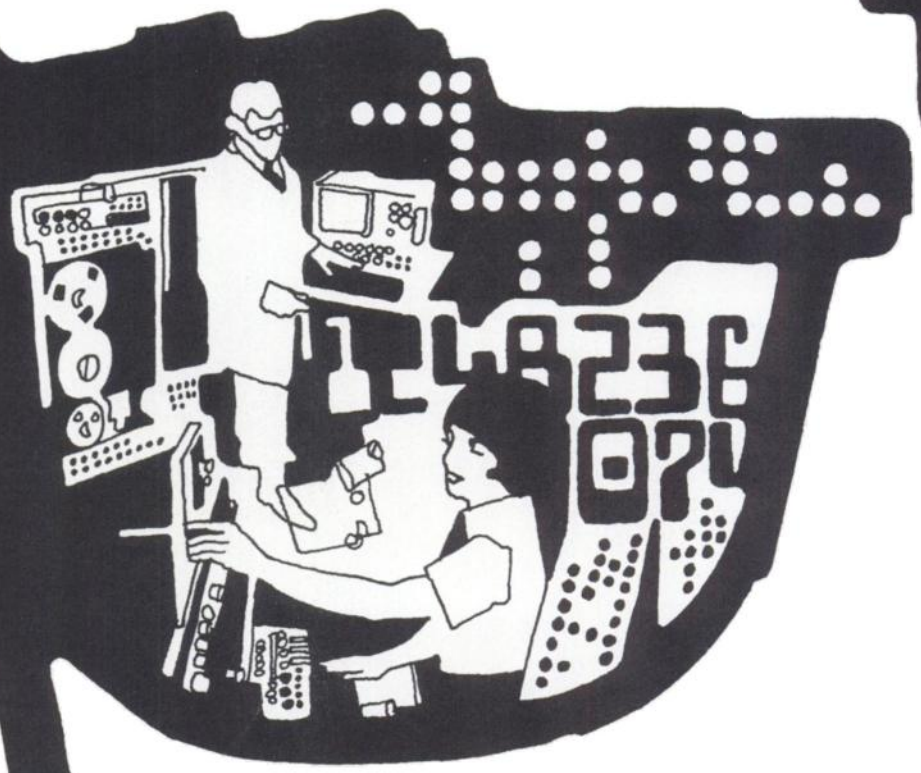

look at a practical alternative

THE RAMTEK SCINTIGRAPHIC DISPLAY SYSTEM

For about one third the cost of dedicating a computer to your scintillation camera or scanner, Ramtek gives you all the picture quality and diagnostic flexibility you want. And, you don't have to add a programming staff, or go through the headaches of elaborate budget justification.

The Scintigraphic System converts data from your scintillation camera or scanner—any make or model—into digital information, and displays it, in microseconds. Your data is presented in up to 64 shades of gray or in 8 distinct colors, each representing specific counts of the organ being studied. That's a major improvement over systems that rely on photography of a cathode ray tube.

In addition, you can rotate the image to four different positions, and adjust the orientation to suit yourself. And, you can select any one of 10 persistence rates and use the display as a persistence device for positioning information. There's also a switch that lets you digitally enhance image contrast.

A full range of Scintigraphic systems to choose from further increases convenience and diagnostic flexibility. One model, for example, has two regions of interest for obtaining precise, accurate patient histograms and computer compatible tape for storage and playback of patient data. Still another model has tape cartridge capability. This gives you a convenient way to retain information in a patient's file.

Among other things, these features allow you to use the Scintigraphic display remotely, without interrupting camera operation. You can then review the data and make diagnoses at your convenience, in the lab or in your office.

So, if you've been dazzled by computer glitter, but floored by the staff and budget problems that go along with it, look at the Ramtek Scintigraphic Display System. It's a practical alternative that gives you better pictures. Systems start at $6,500.

For some eye opening facts and/or a demonstration, call or write.

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THE DISPLAY COMPANY

Medical Systems Division
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Sunnyvale, CA 94086
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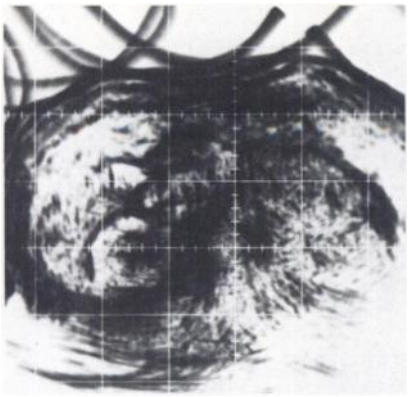
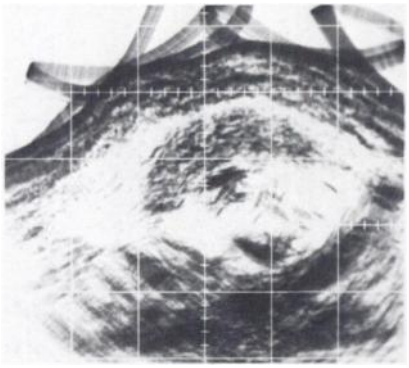
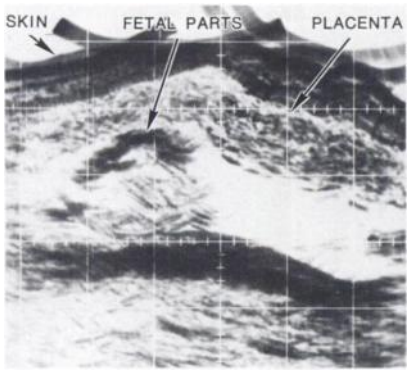


A. High sensitivity transverse scan showing liver, gallbladder, right kidney, left kidney and stomach.



C. Transverse scan of pregnant uterus at level of umbilicus showing anterior placenta and fetal parts.



E. Longitudinal scan 2 cm. to right of midventral line showing anterior placenta and fetal parts.

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Greatone B-Scan display gives maximum information levels of soft tissue and organs. Compare the information level in these Greatone studies against standard studies and see the difference.

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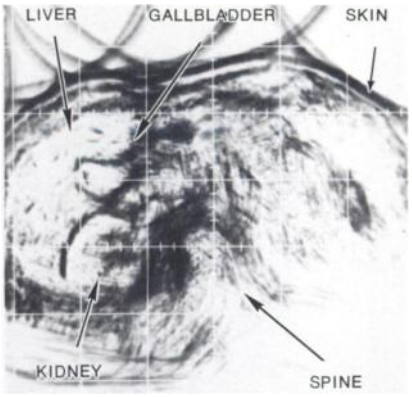
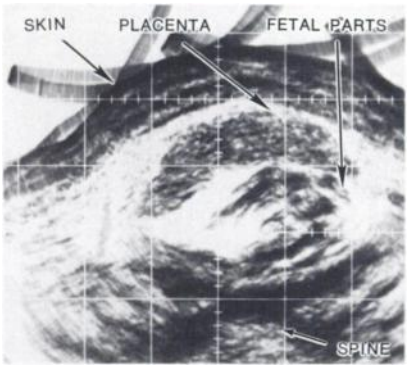
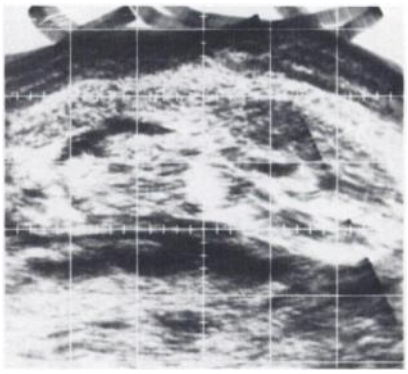


B. Low sensitivity transverse scan (same level as "A") showing less internal organ structure.



D. Transverse scan of pregnant uterus 2 cm. above umbilicus from that in "C" showing anterior placenta and fetal parts.



F. Longitudinal scan at midventral line (same as in "E") showing anterior placenta and fetal body.

I would like additional information on UNIRAD'S GREATONE B-SCAN SYSTEM

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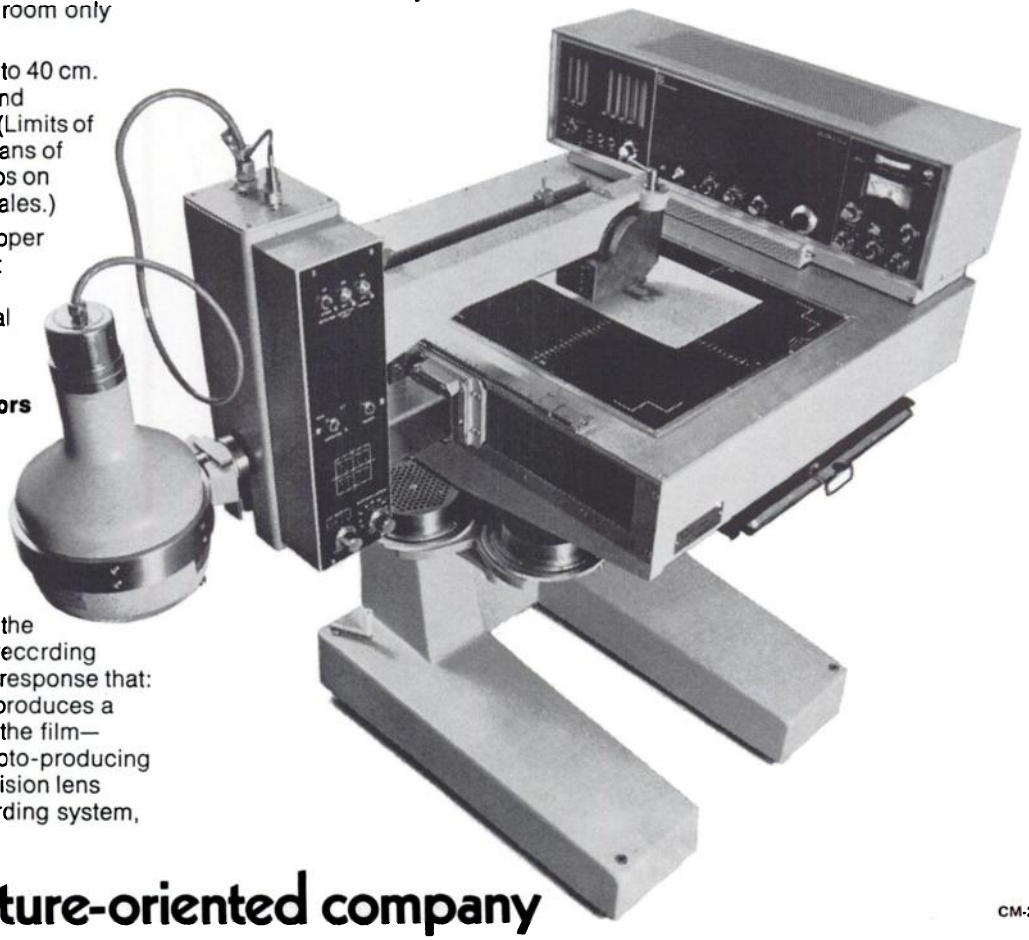

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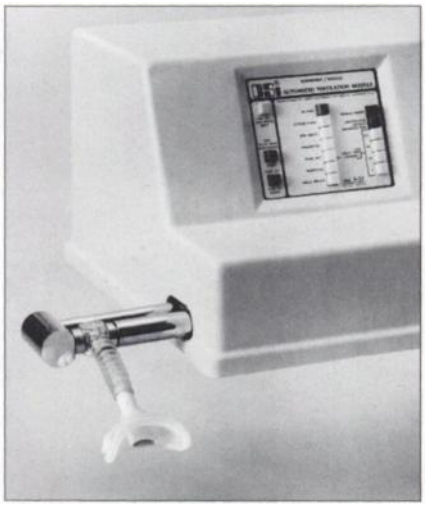

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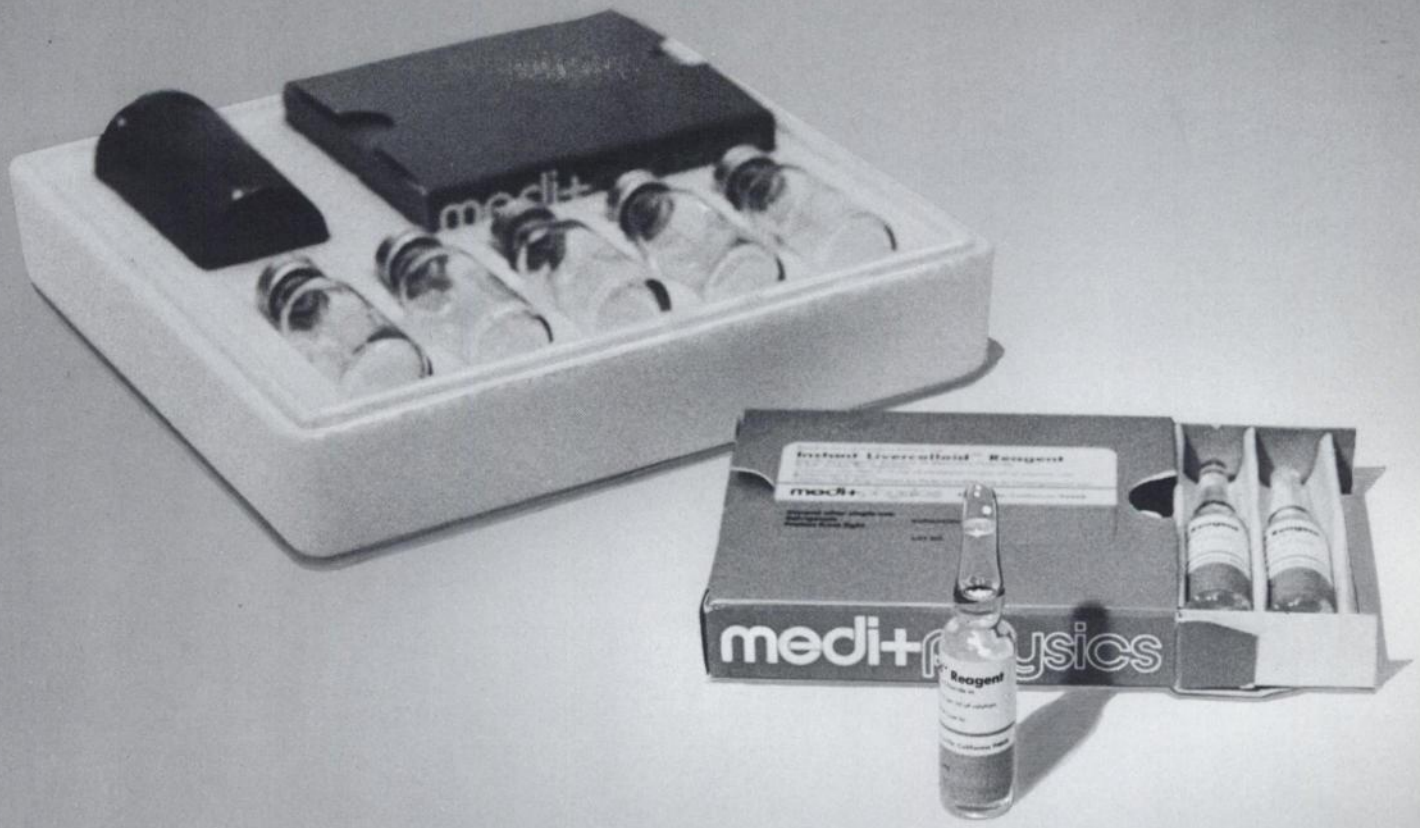

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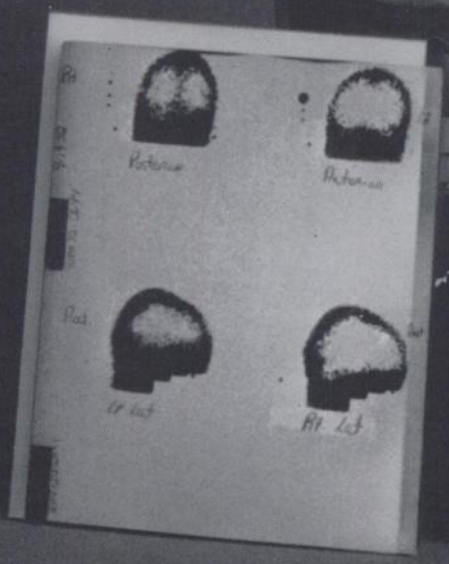
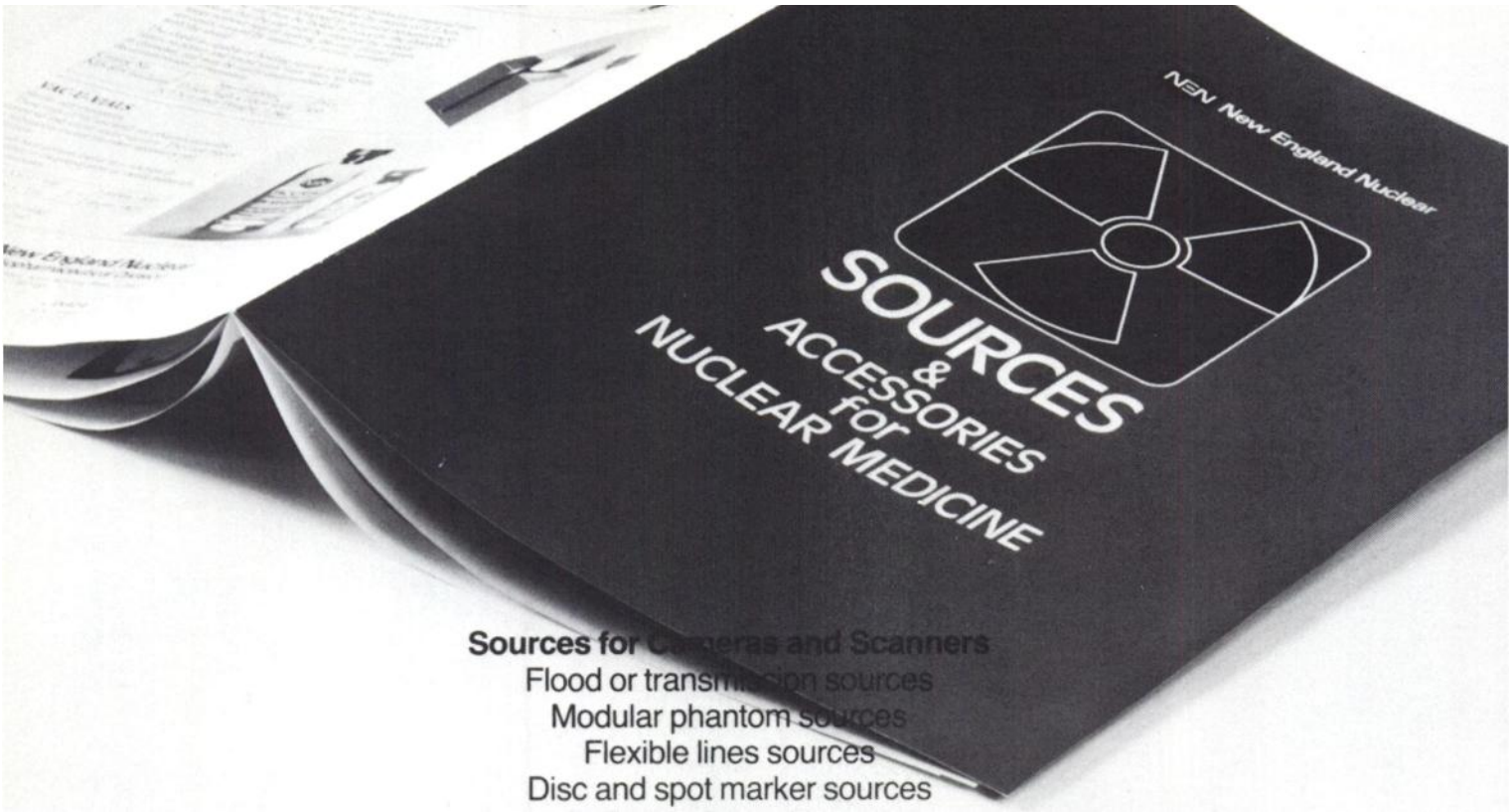
Your Raytheon sales representative will continue to call regularly. So, you haven't lost a representative — just gained a consultant. This whole program is our way of thanking you for purchasing Raytheon equipment, and saying that we won't forget you after the sale.

Take advantage of us. Your personal consultant can be reached by just calling the local Raytheon sales office or Mike Bono at our Waltham headquarters.

Raytheon Company, Medical Electronics, 190 Willow St., Waltham, Mass. 02154. Tel. 617-899-5949.

RAYTHEON





Sources for Cameras and Scanners
Flood or transmission sources
Modular phantom sources
Flexible lines sources
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Hines reference phantom
Bar phantom

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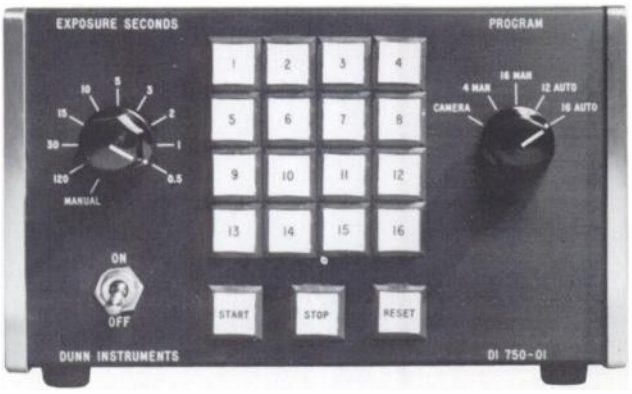
the means

THIS REALLY DOESN'T LOOK LIKE AN OSCILLOSCOPE CAMERA!



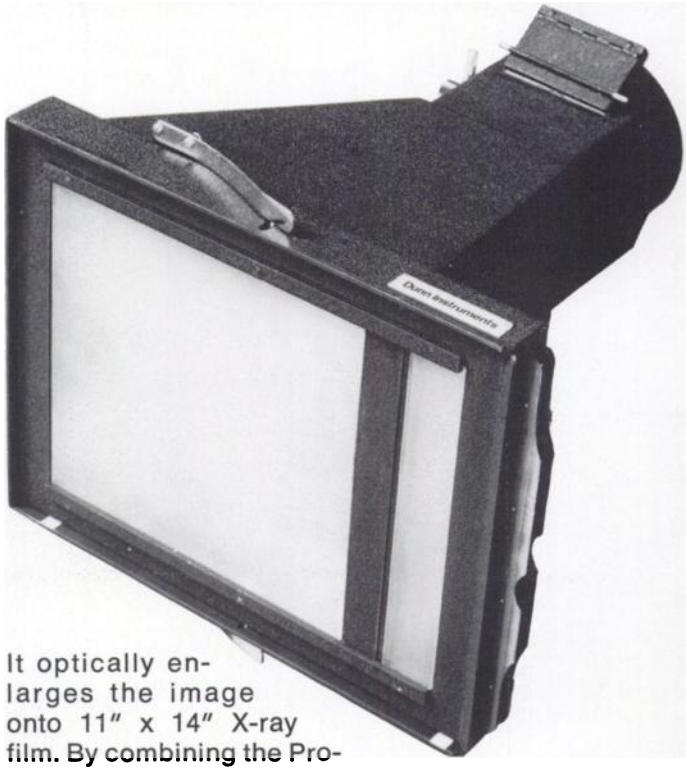
IT ISN'T!

It's the 750-01 Electronic Programmer, one-half of the radically new 750 Multi-Format Camera System. The half that makes our system the only oscilloscope camera appropriate for all your needs. Our Programmer electronically minifies the image displayed on the CRT. It manipulates the image in size, location, duration and number. Select 1 through 16 frames per film, manually or electronically advanced on the CRT. The size can range from full display, (full use of the CRT diameter), to 1/16th. Because our system moves the image on the CRT and not the film, there are no moving parts. Hence, the 750 is highly reliable and easy to operate.

Dunn Instruments

1280 Columbus
San Francisco, Ca. 94133
(415) 776-7033

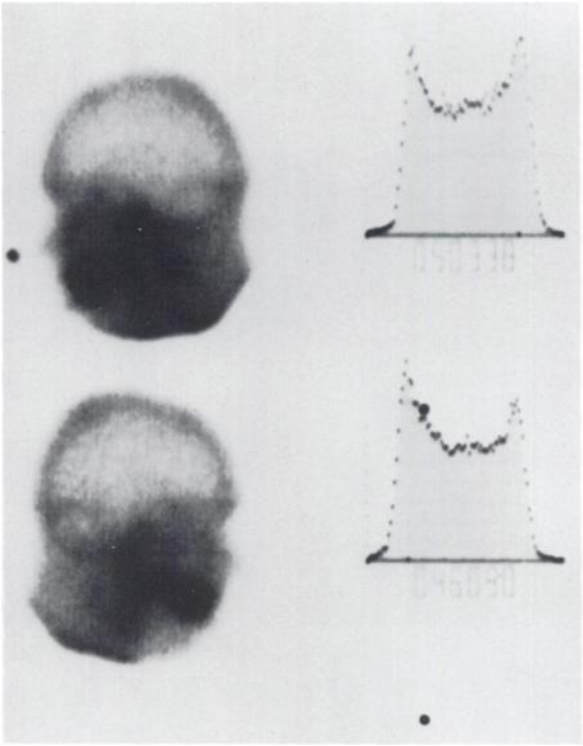
THIS IS THE OTHER HALF OF THE 750 MULTI-FORMAT SYSTEM. THE 750-02 X-RAY FILM CAMERA.

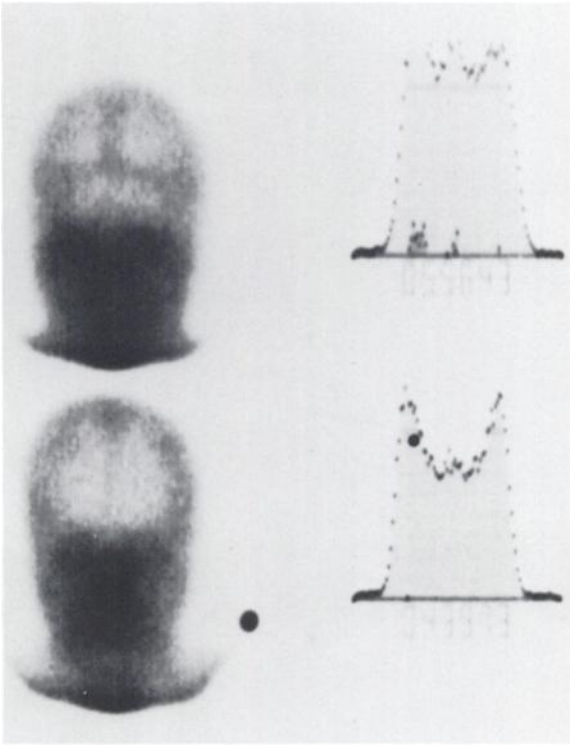


It optically enlarges the image onto 11" x 14" X-ray film. By combining the Programmer and the X-ray Camera, the 750 allows you multiple choice: the choice of image size and the choice of X-ray film. X-ray film has a proven acceptance for organ imaging. It's available in a wide range of contrasts and grey scale latitudes. The large film is easy to view, especially by large groups, and is inexpensive and easy to store. If you already have an X-ray film camera, such as the Nuclear Chicago Photoscope, all you need now is the Electronic Programmer. The two part 750 System will cost you less than $3,000. And it will pay for itself in six months in film cost savings. Write or call collect for "Economic Justification" and complete details.

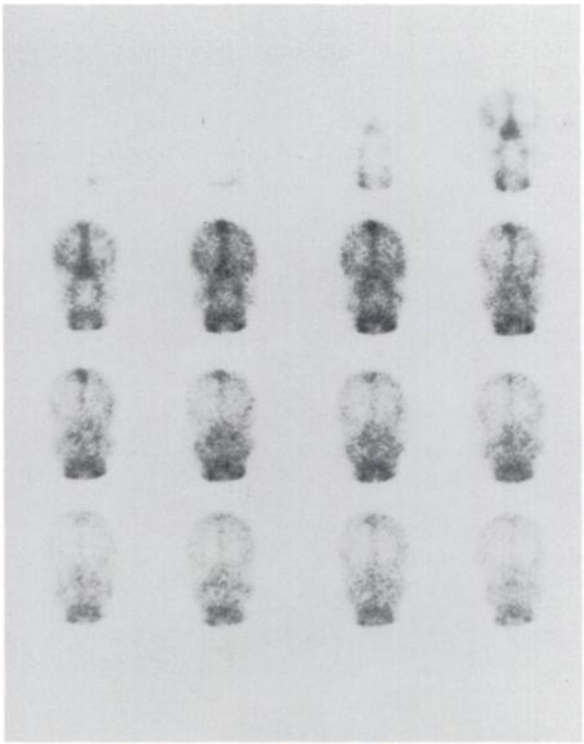
the end

HERE IS WHAT THE 750 MULTI-FORMAT CAMERA SYSTEM WILL GIVE YOU.

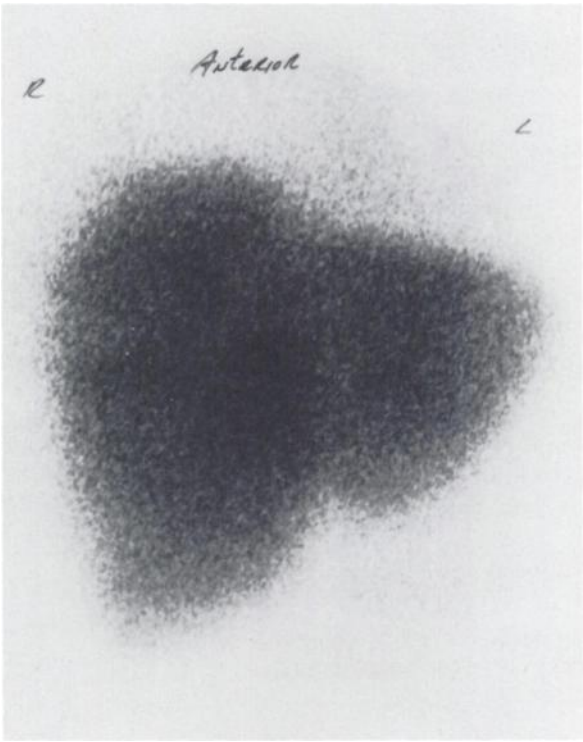




Static Brain Views—
750-01 Program: 4 manual. Dynacamera 2C, Digital Mode, with profiles.



Cerebral Flow—
750-01 Program: 16 auto.—2 secs. per view. Pho/Gamma H.P.

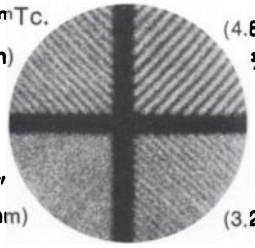


Liver, Anterior View
750-01 Program: Camera ("full size")—Pho/Gamma H.P.

When you spend $50,000 for a radioisotope camera,

what should you be getting?

Resolution. Ohio-Nuclear's Series 100 has an intrinsic resolution of better than 1/8" (3.2mm) with ^{99m}Tc.



Scintiphoto (above) taken using 1/8" (3.2mm) thick bar phantom. No collimator. 500,000 counts ^{99m}Tc.

Uniformity. Typical Series 100 flood field made with ^{99m}Tc — 500,000 counts.

Speed. Maximum output count rate of 100K counts/sec. Performs standard studies more rapidly. Helps make fast dynamic studies a standard practice.

Ease of operation. Fast setup with two speed—conventional and express—detector motion. Manual or pushbutton isotope selection. Entire study conducted from hand control without leaving patient's side.

Economy. Reduced set up time. Reduced study time. Photomultiplier tube gains balanced by your technologist, eliminating need for serviceman.

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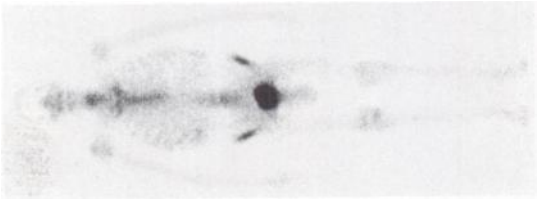
Maxiscan asks: what scan information do you need?

Then delivers it.



Whole body scans? Single organ studies? Scan minification? Multiple scans on one film? Vertex views? A choice of image display; including video, for viewing scans in black and white or color?

General Electric's Maxiscan™ two-probe whole body scanner is answering these diagnostic demands, and more, with in-hospital performance. Performance that combines more usable information with reduced procedural set-up time and less chance of technic error.

Maxiscan permits skeletal surveys within a range of 2 feet wide and 6 feet 8 inches long. The image, minified to fit 14 x 17 inch film, permits location and diagnosis of bone metastases, without a series of small area scans.

For any single organ, select full size view or minifications of 2:1, 3:1, 4:1, or 5:1. Up to four scans may be displayed on one film, with precise quadrant placement and no image overlap.

During any scanning procedure, Maxiscan minimizes patient movement. Two probes, top and bottom, cover the required isoresponse of the body without turning the patient. The patient table smoothly rolls out to permit changing of the lower probe collimator. The upper probe angulates through 270°, locks in place for safe, convenient collimator interchange. Upper or lower collimators take only seconds to change. The unit's optional vertical plane scanning permits studies with patients seated upright, as well as vertex views of the brain with patients reclining normally.

All scans may be viewed with a choice of image display: standard film photorecording or GE's optional Videodisplay unit.

Videodisplay Processor
To view and quantify patient count information in black and white or fully functional color, Maxiscan can be combined with GE's Videodisplay and Processing Unit. Images are displayed on a video monitor; count data is stored in the unit's electronic memory, and can be manipulated to enhance desired details and to aid interpretation and diagnosis. Enhanced VDP data may be played back to Maxiscan and recorded on 14 x 17 inch film. Scans can also be recorded on cassette tape for off-line playback and teaching purposes. Count information, obtained from any scanner or camera, can be transmitted from one VDP to another over regular telephone lines.

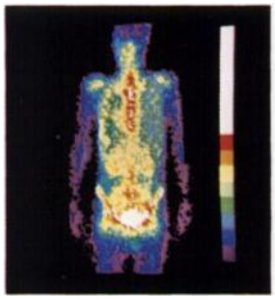
GENERAL ELECTRIC

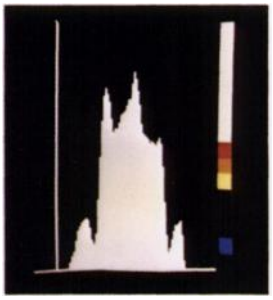
Here's the information hospitals are getting with Maxiscan...

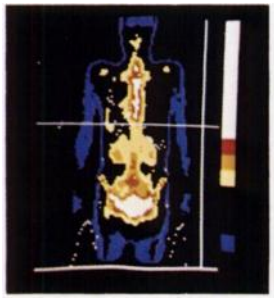
Hospitals report scanning performance like this from the Maxiscan system:

These reproductions of scans, from clinical examinations, illustrate the range of diagnostic information possible with Maxiscan and the Videodisplay Processor.

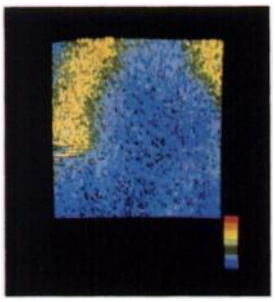
A GE motion picture demonstrates the full capability of both units. Ask your GE representative to schedule a desk top showing, at your convenience.

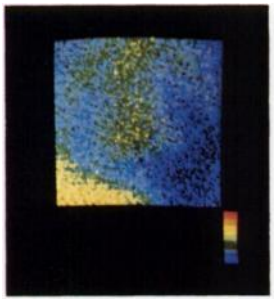






These three images, from a single whole body scan, demonstrate how manipulation of data stored in the VDP electronic memory can enhance desired details and aid diagnosis. The isotope used was ^{99m}Tc Polyphosphate. At left, an anterior view displays raw, unmanipulated data from the memory. At right, smoothed data is shown with a Y axis electronic slice through the area of suspicion. The count profile superimposed over this image and shown separately, center, confirms greater uptake on the right side. The photorecorded image showed only a suspicion of greater isotope uptake.





In a case of suspected pericardial effusion, a transmission scan (left) of the chest was obtained using an Iodine 131 source. An emission scan (center) of the same region was simultaneously obtained with the same probe, 15 minutes after an intravenous injection of ^{99m}Tc labeled albumin. The heart and liver are outlined. Note how the intracardiac activity (central area of center scan) fails to fill the large mediastinal shadow (central blue area of left scan). This discrepancy, between heart size and that of the mediastinum, is more easily seen when these two scans are superimposed (right); a technic easily accomplished on the VDP. The resulting diagnosis, a large pericardial effusion which appears to be predominantly left-sided, was confirmed by the aspiration of 1800 ml. of fluid from an encysted pericardial effusion.

Scans courtesy of Dr. M. J. Chamberlain, University Hospital, London, Ontario.

General Electric Medical Systems, Milwaukee and Toronto.
In Europe, Elscint GmbH, Wiesbaden; Elscint France SARL, Buc.

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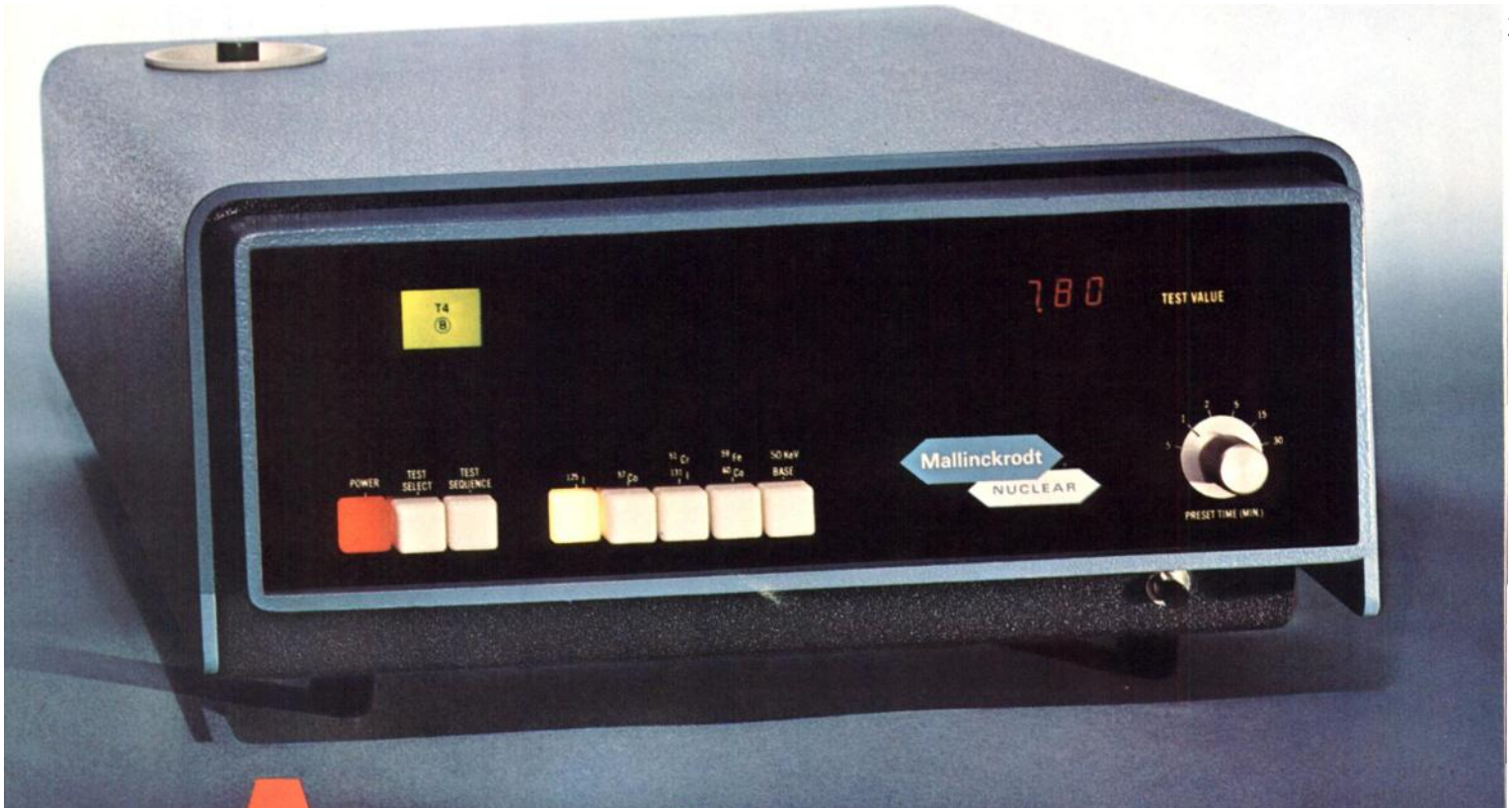

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When you spend $20,000 for a DataSystem, what should you be getting?

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Resolution. All three modes are built in and operator selected.

128 x 120 (16K) matrix (8 bits deep), or
64 x 60 (4K) matrix fields (12 bits deep), or
32 x 30 (1K) matrix fields (12 bits deep).

Fast Framing. Dynamic studies are recorded as follows:

Speed	Resolution
16 frames/sec	32 x 30 (1K)
5 frames/sec	64 x 60 (4K)
1 frame/sec	128 x 120 (16K)

Available options provide:

39 frames/sec	32 x 30 (1K)
13 frames/sec	64 x 60 (4K)
3 frames/sec	128 x 120 (16K)

Digital Computer Compatibility. Nine track 800 bpi magnetic tape.

Isometric Displays. View isometrics, profile histograms, and isotope uptake at camera console.

Contrast Enhancement/Background Erase

Regions of Interest. Two—rectangular. Operator selects size and position. Counts read out on display, along with area.

Display. Non-flickering interactive display continually refreshed from core memory.

Alphanumeric Display. Patient study number always displayed on left of image. Six digit time of storage (in hundredths of a second) and dynamic study frame number displayed on right; or six digit count and four digit area within an area of interest (or the total count of the area) can be displayed on the right.

Slices. Two slices along either the X or Y axis can be defined independently, & observed on the isometric view.

Options Available. Black and White video displays, 9″ and 14″ diagonal, with 64 shades of gray, flicker free; Isometric display, 14″ and 5″ diagonal, sixteen shades of green; Color display, 12″ diagonal, 16 or 8 colors, switch selectable; Color and B&W simultaneous display; Field uniformity correction; Statistical Smoothing; Chart Recorder for plot of profiles set by slices, or plot of dynamic study count versus time; Fast Framing Tape; Added Memory; 16 Extended Rectangular Areas; Irregular Areas; Interfaces; B&W or Color Polaroid Capability.

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Clincom.™
The only data processor that measures up to Pho/Gamma's image.

Only Clincom is specifically designed to improve on the image of the world's most experienced scintillation camera. Clincom is fully compatible with Pho/Gamma—forming an integrated unit of unprecedented versatility in data storage, playback, and manipulation at the push of a button. It includes many "firsts"—in both today's and tomorrow's nuclear medicine procedures—to aid the physician in his particular diagnosis. To name a few Clincom enhancements of Pho/Gamma . . .

Simplified Acquisition—Mounted on top of Pho/Gamma's console, the Acquisition Panel easily facilitates camera/Clincom control by the technician. All operating parameters including date, patient identification number, collimator used, framing rates, and patient orientation are pushbutton selected. Furthermore, the acquisition of data begins when the Pho/Gamma's "Start" button is activated.

Image Processing—All processing controls are located on the Physician's Viewing Console. The Analysis Scope displays either current data being received from Pho/Gamma, or stored images developed from Clincom's wide-ranging diagnostic procedures. The Text Scope continuously logs (in everyday clinical language) all information on the desired study. Both the processed image and the text may be photographed with a synchronized camera for storage in patient records.

Permanent Storage—Data is stored on the master tape and later may be transferred to cartridge tape for inexpensive, long-term storage. Self-checking features are incorporated to prevent unintentional data erasure.

"Powerful" Software—Clincom will remember, with the help of the "Capture Procedure" pushbutton, an entire sequence of data operations. A program thus generated is simply recalled with fingertip control. In addition, Clincom offers a wide range of on-line and off-line programs for future research and clinical needs.

Remote Viewing—Clincom can be placed up to 200 feet from the Pho/Gamma Console. This allows the physician to process studies in any area removed from the patient's presence.

Clincom . . . the image processing system for Pho/Gamma. Find out how Clincom can specifically meet your clinical and diagnostic needs. Contact your Searle Radiographics (formerly Nuclear-Chicago) sales engineer, or write to us for your free brochure.

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The future-oriented company

CM-304

This, one of the three top scintillation cameras, weighs 1300 lbs. less than the other two.

(And if you think that's trivial, you have a surprise coming.)

Now why in the world would anyone ask you to focus your attention on gross weight (of all things!) when considering a piece of sophisticated instrumentation like a scintillation camera?

Because, as we hope you'll soon come to agree, low weight tells you something. As a matter of fact, it really tells you a great deal because technologic progress almost always leads to a dimunition of both size and weight (e.g., from vacuum tubes to transistors to integrated circuits). Thus, the functionally equivalent instrument that weighs substantially less than others, bespeaks a newer design. And so it is with the Nuclear Data Radicamera.™ This quite remarkable camera weighs about 1300 lbs. less than the other two fine competitive instruments. (Mind you, only 1300 lbs. as compared to 2600 lbs.—a 50% weight reduction!)

Ah, but what did we leave out? Functionally, nothing. We simply designed out the older technology, both electronic and mechanical, that tends to weigh more and bulk larger. And the newer technology, with its lesser weight and size, is often more reliable. And *that's* a nice bonus.

What else does Radicamera offer? A full capability camera with resolution as good as the best (really), and operating ease that defies comparison. You can actually position it with one finger and, with the appropriate accessory, move it easily to the patient that can't be moved easily. The innovative design yields a more compact unit that occupies less of your ever-evaporating space. In toto, a superbly designed instrument that is easy to live with and yields diagnostic data second to none.

Finally, we should also mention the following: newer technology not only tends to diminish size and weight. It shrinks cost (and hence, price) too. Check it out.

So, if you're looking at cameras, consider this: we want you to speak to Radicamera users because you really ought to hear our story from someone else, too. Contact us for names and for Radicamera literature.

A word about Med II ™

Very revealing fact: Med II is the world's best selling image processing system. And although we're happiest when its coupled to our Radicamera, candor forces us to reveal that it also functions beautifully with those other cameras. This very flexible system does everything a computerized image processing system should do. Things like correcting for non-uniformities, curve smoothing and fitting for cardiac output studies, ejection fraction and xenon ventilation/perfusion computations, acquiring and storing dynamic data from 12 regions of interest to produce 12 curves simultaneously, and much more. And its ready-to-use, conversational and upgradeable software makes it ideal for both routine and investigative dynamic function work. Once again, we invite discussion with current Med II users.

Radicamera: the lightweight that really isn't.

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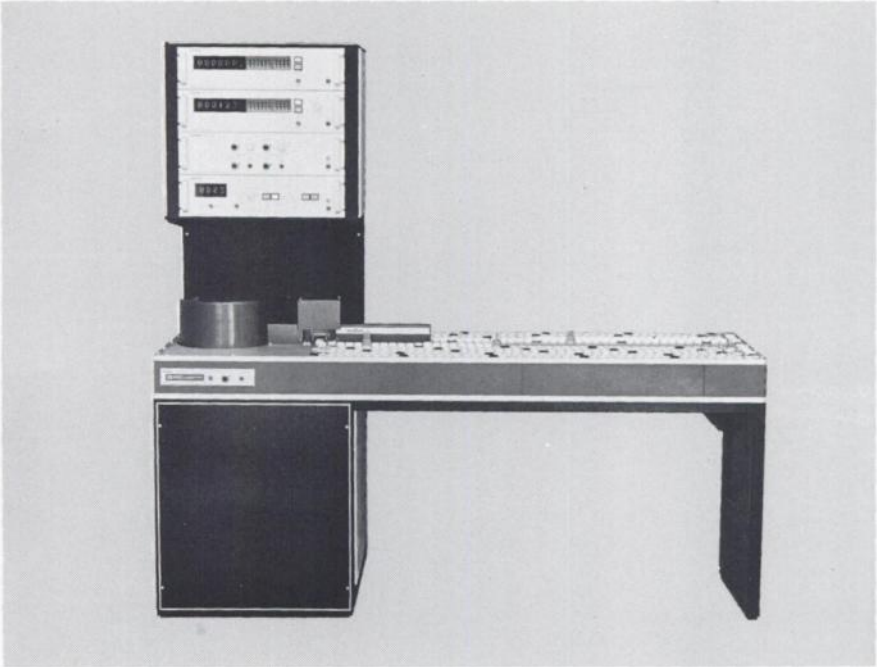
Abbott gamma counters work hard for you because of these unique features.



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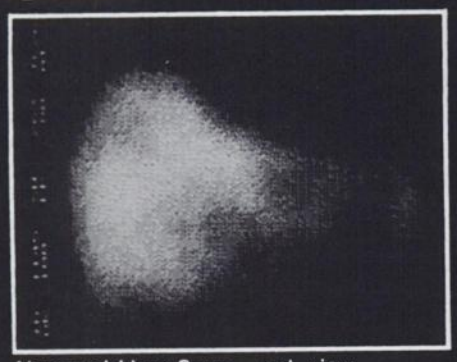
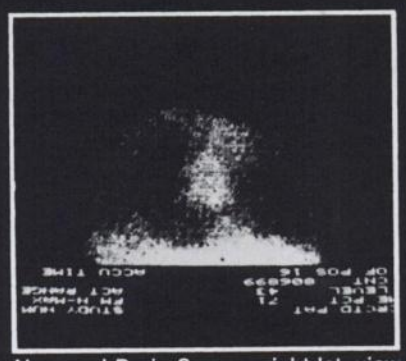
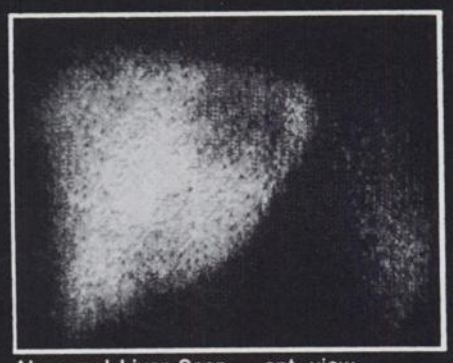


Abnormal Liver Scan — ant. view
(Metastatic Disease)
Study Time — 224 sec.
Isotope — 4mCi ^{99m}Tc Sulfur Colloid
Total Counts — 2,676,795



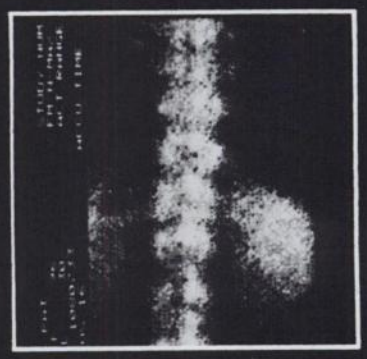
Abnormal Brain Scan — right lat. view
(CVA)
Study Time — 80 sec.
Isotope — 12mCi ^{99m}Tc
Total Counts — 806,899



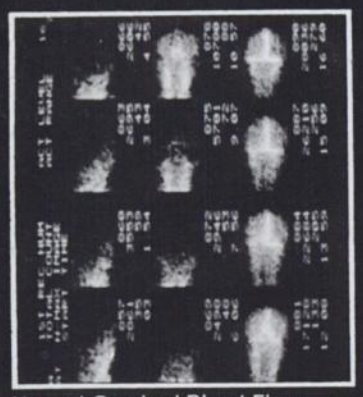
Abnormal Liver Scan — ant. view
Study Time — 320 sec.
Isotope — 2mCi ^{99m}Tc
Total Counts — 445,502

Brain-Bone Scan — left lat. view
(abnormal foci in the convexity and orbit)
Study Time — 240 sec.
Isotope — 6mCiTc Polyphosphate
Total Counts — 222,926

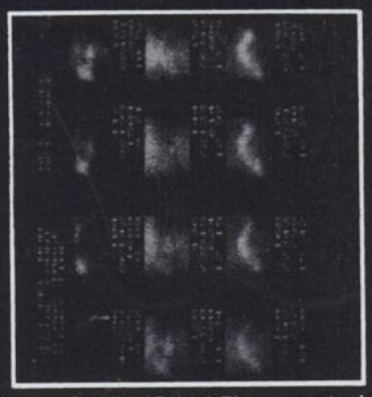
Normal Thoracic and Lumbar Spine Scan
— post. view
Study Time — 480 sec.
Isotope — 6mCiTc Polyphosphate
Total Counts — 1,000,733



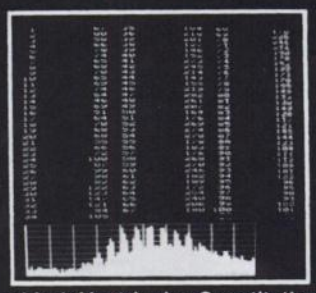
Dynamics



Normal Cerebral Blood Flow —
post. view
Accumulation Interval — 0.5 sec.
Display Interval — 1.5 sec.
Peak Counts per sec. — 26,210
Isotope — 15mCi $^{99m}TcO_4^-$

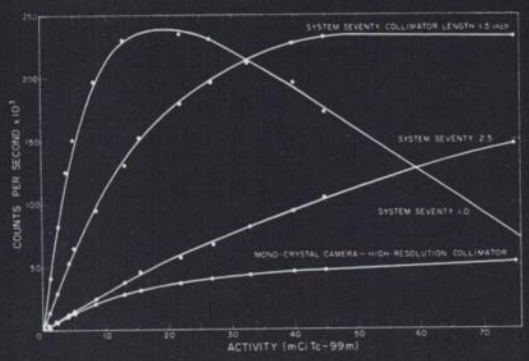


Normal Cardiac Blood Flow — ant. view
Accumulation Interval — 0.1 sec.
Display Interval — 1.0 sec.
Peak Counts per sec. — 78,147
Isotope — 15mCi $^{99m}TcO_4^-$



Normal Left Ventricular Quantitative
Histogram
Each double vertical line represents a
1.0 sec. time interval.
The entire histogram is 10.0 sec. long
and consists of 100, 0.1 sec. count
accumulations. This area-of-interest
histogram took less than 1.0 min. to
produce from end-of-study.
Note — definition of sinus rhythm of left
heart.

Performance



These curves provide a useful calibration of System Seventy. The observed count rate for 15 mCi of ^{99m}Tc for the 1.0, 1.5, and 2.5-inch thick collimators is 230,000, 150,000, and 45,000 cps respectively.

The count-rate curve obtained from a mono-crystal camera using the high-resolution collimator shows an efficiency about equal to that of the 2.5-inch thick collimator at low count rates and exhibited a saturation rate of about 40,000 cps. The same saturation rate has also been observed with the other collimators available for this type of system.

The efficiencies of the parallel-hole collimators are such that the saturation rate of 230,000 cps is observed with 15, 45, and 180 mCi of ^{99m}Tc with the 1.0, 1.5, and 2.5-inch thick collimators respectively.

System Seventy or...

(how the unique combination of a programmed computer and a matrix detector allow you to practice the NOW and FUTURE art of nuclear medicine consistently, simply and reproducibly.)

Diagnostic Superiority

That's what you're really looking for. We routinely obtain 3-4mm. static resolution scans — regardless of energy. Dynamic studies can now be accomplished at high frame rates with count/unit time accumulations (at low dose rates) that are not achievable on any other gamma camera, and the results can be displayed or printed-out in histogram or numerical form within seconds of the end-of-study. That's diagnostic superiority!

Operation Simplicity

Our unique "back-lit" front panel reduces each operation to a logical-computer assisted-series of steps. Select the mode; i.e. Static/Dynamic, and only those buttons or controls necessary to complete the study will be illuminated. That's operation simplicity!

New Standard!

The New Standard in diagnostic nuclear medicine. The only words that can describe a camera that is easy to use, delivers the greatest patient throughput, and provides the most technically superior diagnostic data while doing it.

No ONE of these terms really describes SYSTEM SEVENTY.

SYSTEM SEVENTY offers the highest spatial resolution, and that's why our static images are the best. This means that you can choose to increase patient throughput by selecting the best clinical measurement which optimizes spatial resolution and efficiency.

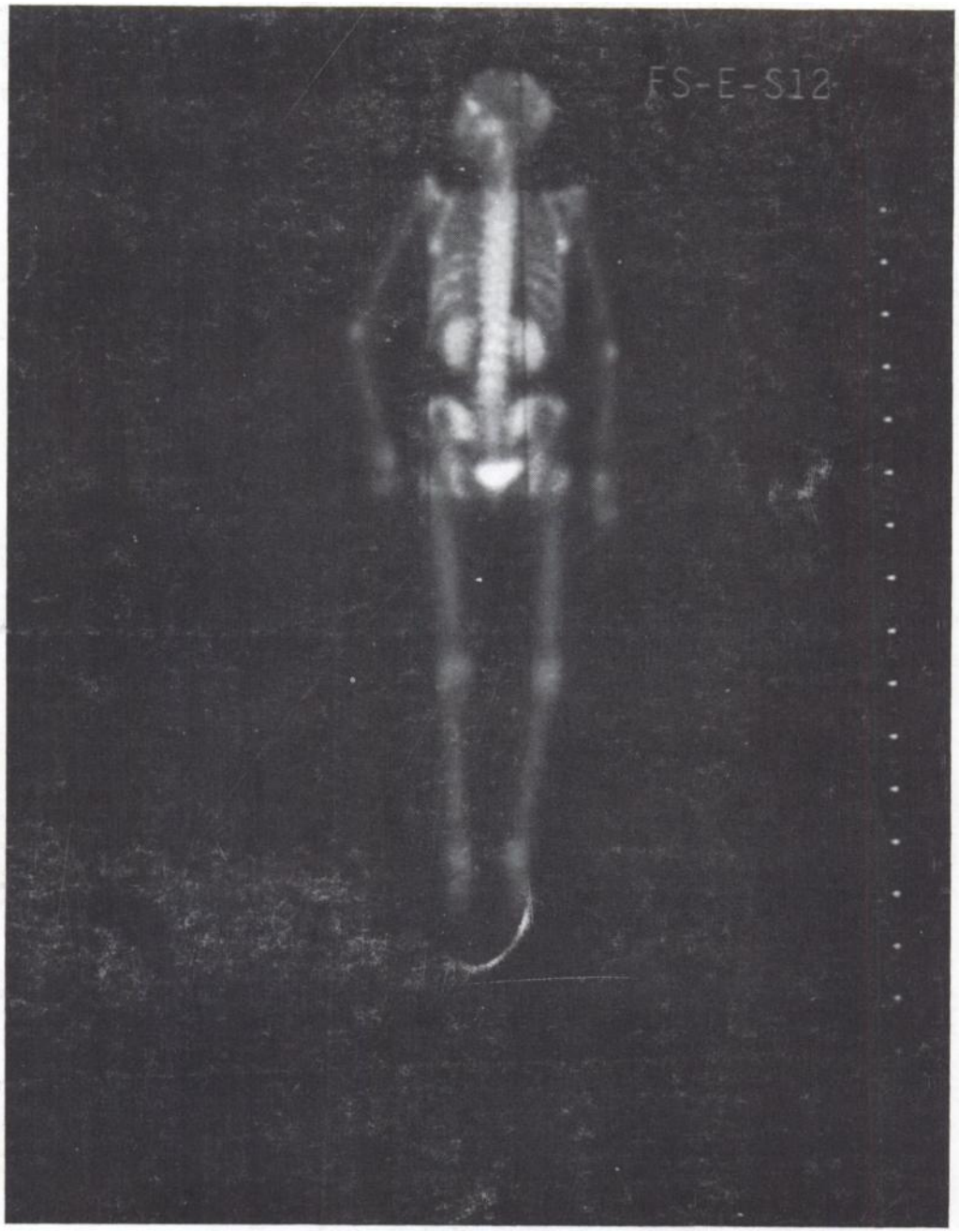
The system's high count rate capability (>200,000 cps) enhances the time resolution of dynamic studies which is a scientific necessity to achieve diagnostically meaningful evaluations of physiological time parameters. Stop thinking about the eventual possibility of more meaningful dynamic procedures and do them *now*, with SYSTEM SEVENTY.

And, the operational functions we've wired into the system and the software support we provide leave very little for you or your technician/operators to learn in putting SYSTEM SEVENTY to work and realizing the technically superior results.

So, looking back on them, certainly ALL of those terms apply, though no one of them really does SYSTEM SEVENTY justice.

BAIRD-ATOMIC

Nuclear Division, 125 Middlesex Turnpike, Bedford, Ma. 01730, 617/276-6000, Telex: 923491, Cable BAIRDCOBFRD



Searle Radiographics. We do more gamma imaging than anyone in the world.

We changed our name from Nuclear-Chicago to Searle Radiographics. We have also strengthened our organization so that we can offer more comprehensive service devoted to the field of diagnostic imaging. Our primary concern, however, remains unchanged. We want you to have the best possible equipment for this very vital procedure, because the patient is our ultimate concern as well as yours.

Saying that we do more gamma imaging than anyone in the world may sound boastful, but it happens to be true. Pho/Gamma is the instrument of choice in well over 70% of the hospitals and laboratories utilizing this type of diagnostic tool . . . and for very good reason: The importance of the procedure is only surpassed by the quality of the system. And the quality of our system is quite simply unsurpassed. Pho/Gamma and Searle Radiographics means gamma imaging. Need we say more?

SEARLE

Searle Radiographics Inc.

(Formerly Nuclear-Chicago)
Subsidiary of G. D. Searle & Co.
2000 Nuclear Drive
Des Plaines, Illinois 60018

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