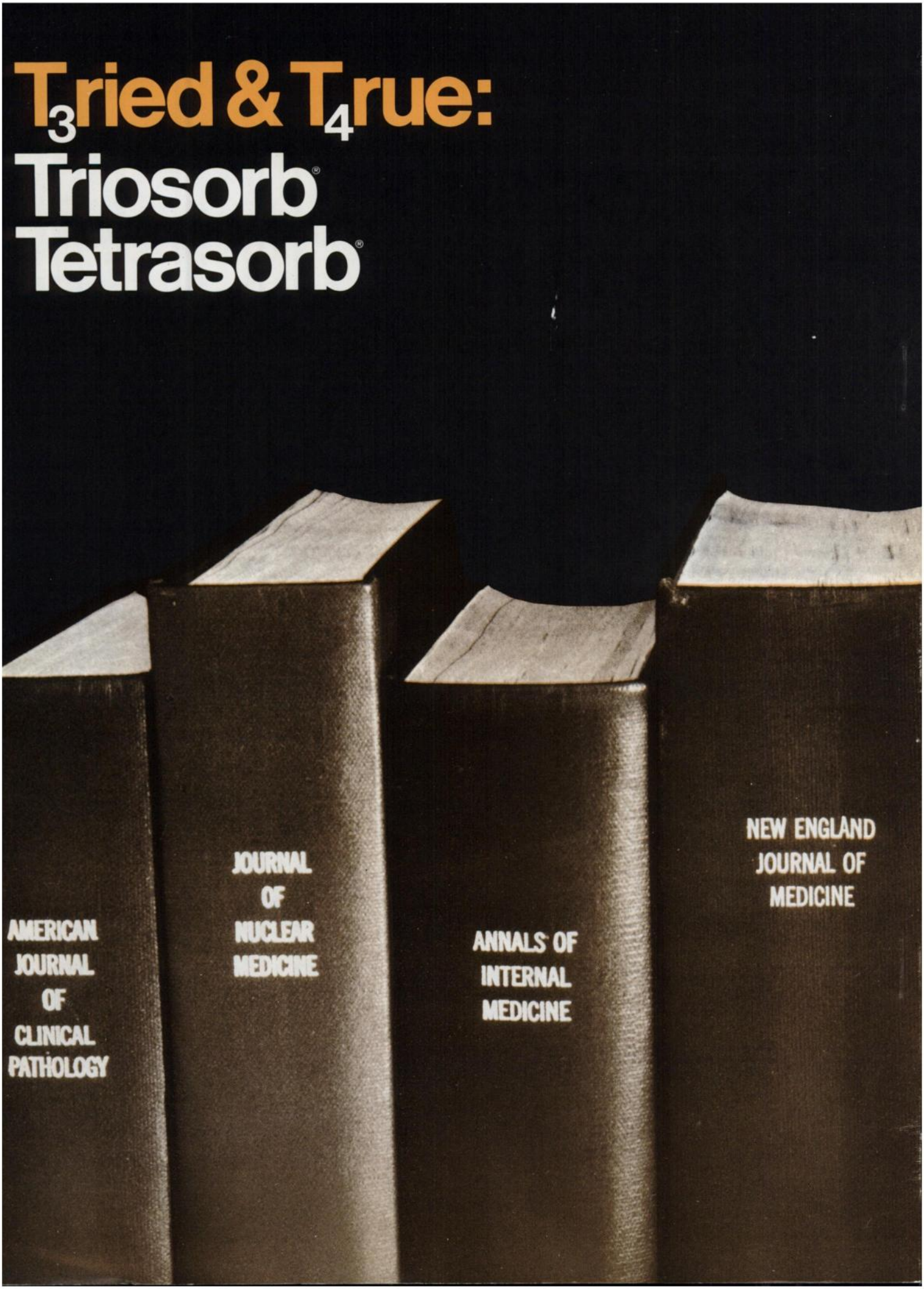
T_3ried & T_4rue:
Triosorb®
Tetrasorb®



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Triosorb and Tetrasorb have become standards for comparison—the best documented, described, contrasted and compared of any T_3 and T_4 Tests.

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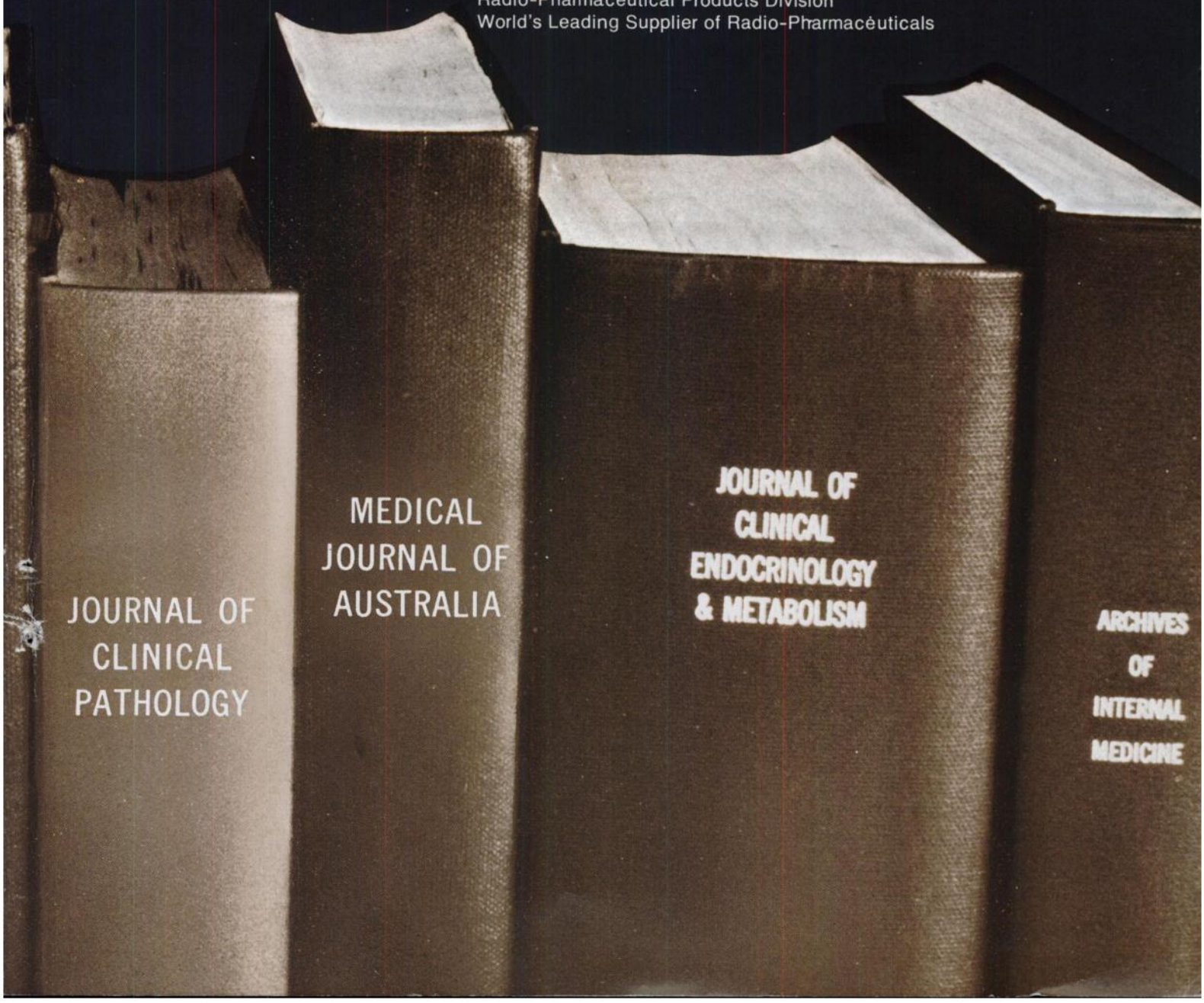

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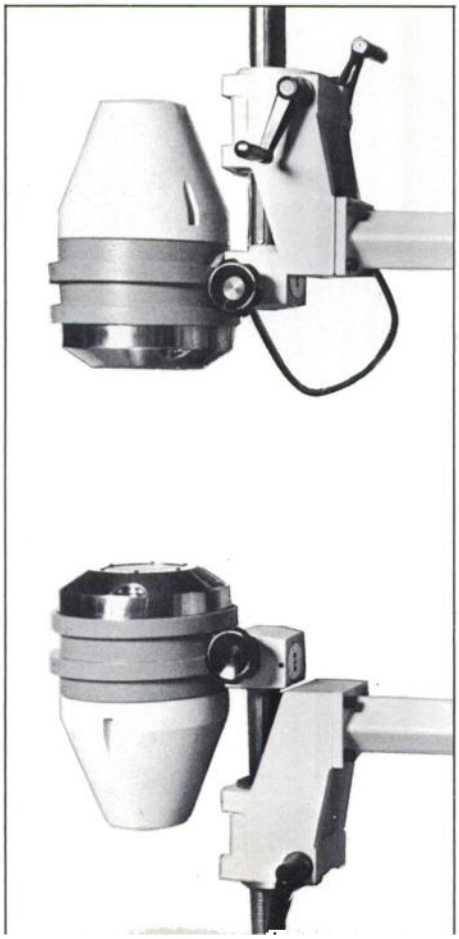

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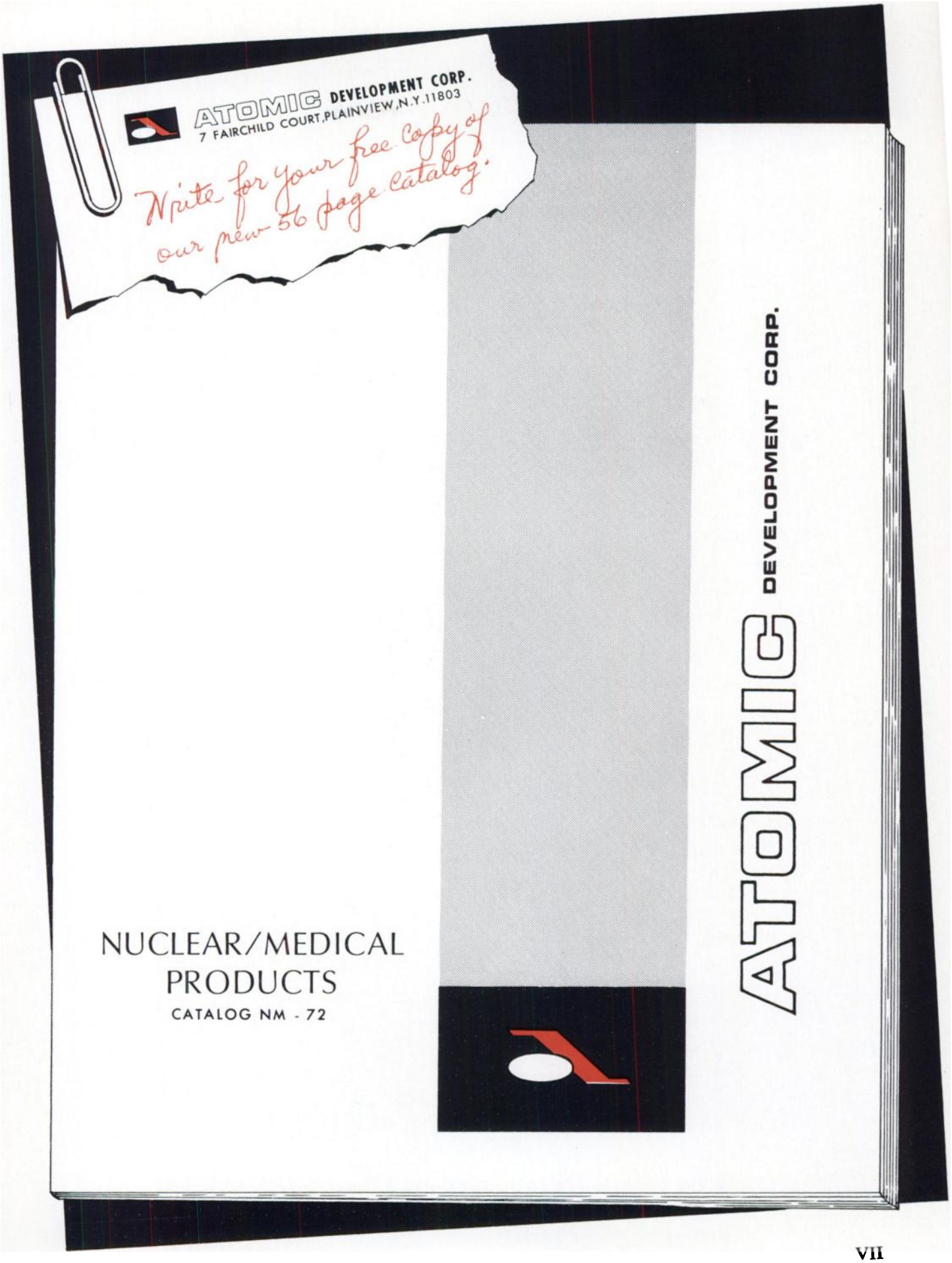
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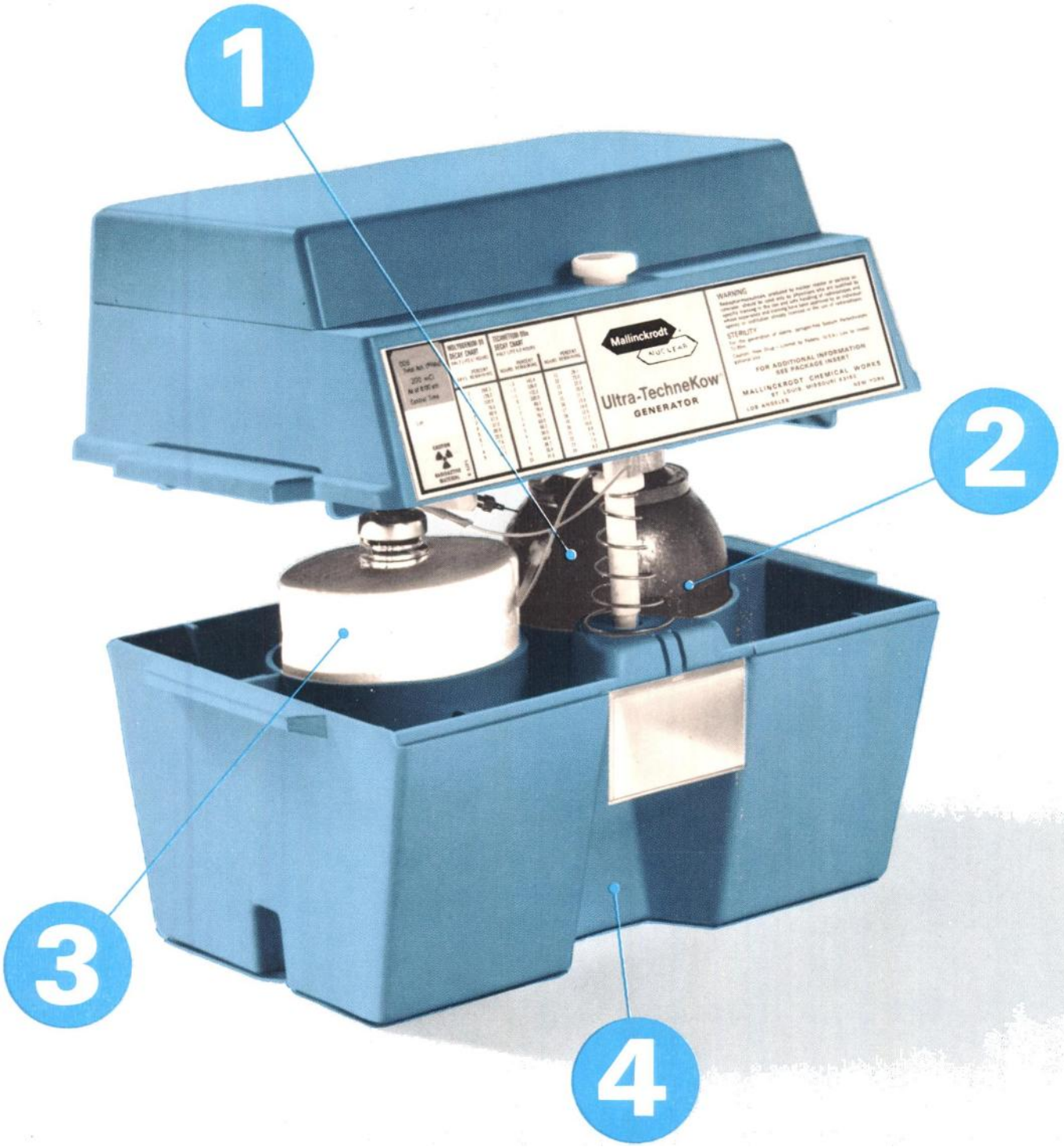
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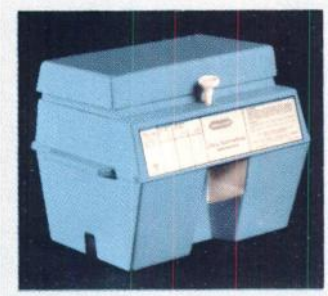
Introducing the New Ultra-TechneKow® Technetium Generator



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1. New enlarged lead shield reduces radiation exposure to the operator. With at least 1½ inches of lead all around the generator column this is one of the best shielded generators available today.

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For brief summary, see next page.

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Nuclear medicine and Capintec dose calibrators have been partners for years. First with the CRC-2 which introduced uncompromising accuracy to assay work. Today, 8 of the world's 12 leading producers of radiopharmaceuticals rely on the CRC-2 for their calibration work. Next came the CRC-4, a compact instrument accommodating laboratory space needs. And now the CRC-2N and CRC-6, new hallmarks for calibration.

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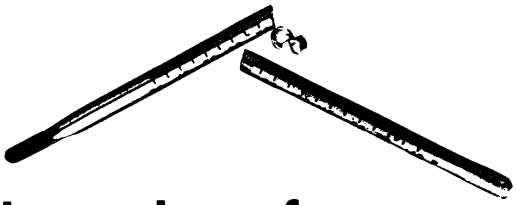
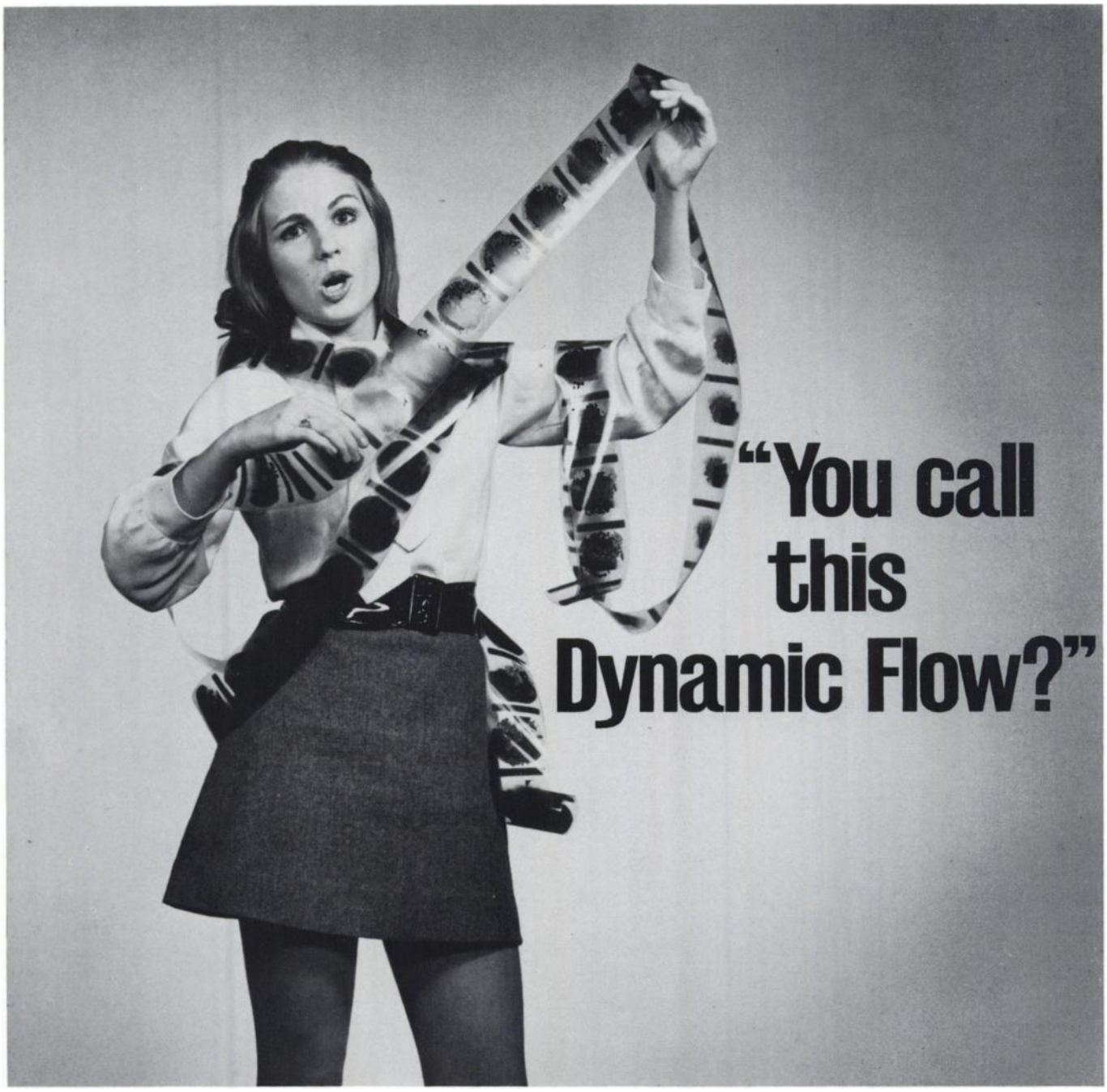


Independent of temperature

(see over)



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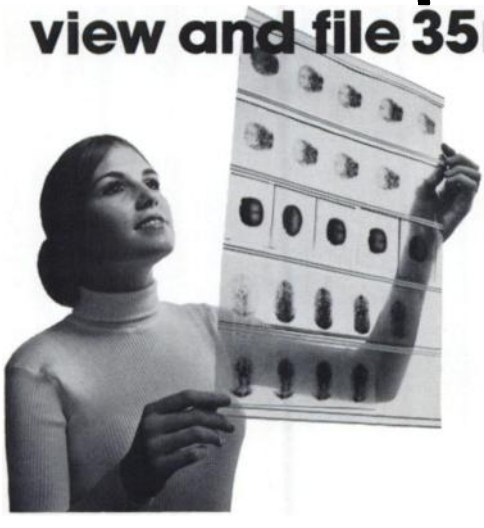

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packed with advantages-speed, accuracy, reproducibility.

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Existing thyroxine assays involve sampling a reaction before equilibrium is reached. The Thyopac–4 test reaction rapidly reaches equilibrium, allowing the withdrawal of the counting sample independent of time and temperature considerations. This results in a more accurate and reproducible determination of thyroxine concentration.

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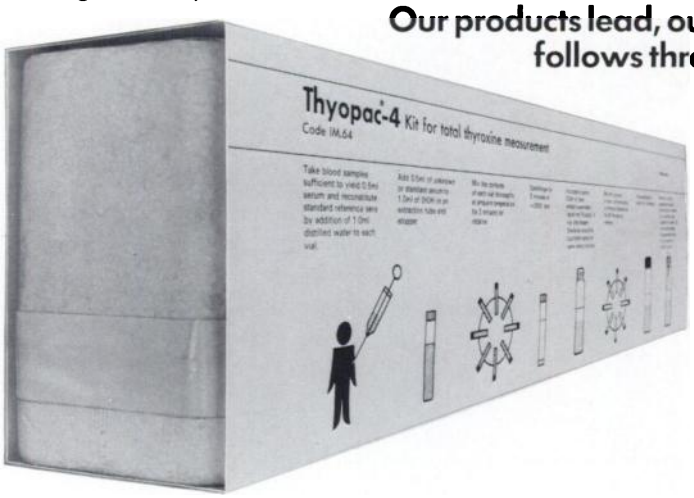

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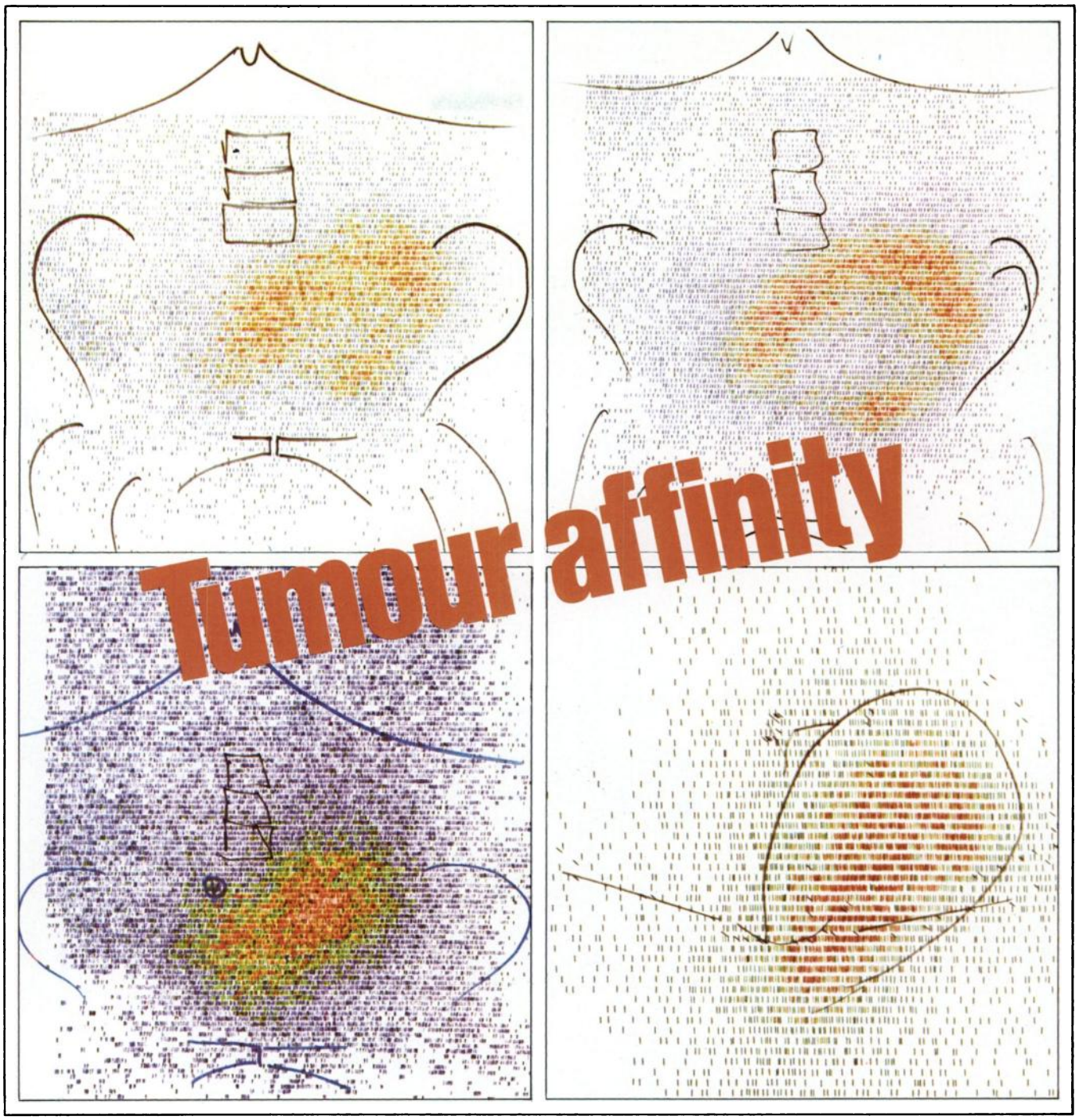

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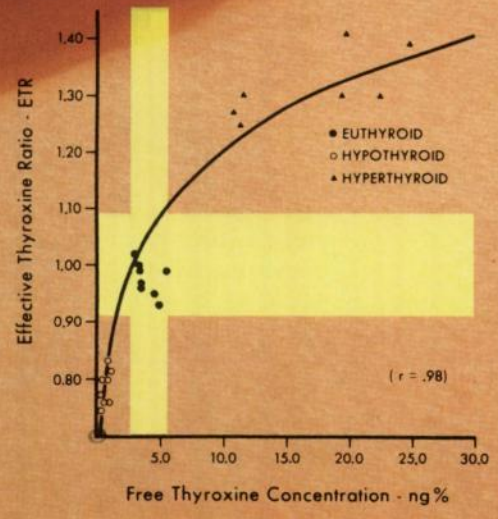

Graph showing (1) distinct separation between hypothyroid, euthyroid, and hyperthyroid states, and (2) correlation between effective thyroxine ratio and free thyroxine concentration. Shaded horizontal area shows euthyroid range for effective thyroxine ratio. Vertical shaded area shows euthyroid range for free thyroxine concentration. *S. C. Thorson, M. D., private communication.*

Mallinckrodt announces...

Res-O-Mat® ETR™ Test

indicates metabolically active thyroxine IN A SINGLE PROCEDURE*

With the **Res-O-Mat ETR** test you can now assess the level of metabolically active thyroxine in a single test. Separate determinations of serum T3 uptake and T4 are no longer necessary.

The new **Res-O-Mat ETR** test is a direct means of determining Effective Thyroxine Ratio, a reliable indication of thyroid function.[1] It effectively compensates for the effect of estrogen medication, pregnancy, and other factors affecting the level of thyroxine binding globulin.

The **Res-O-Mat ETR** test procedure is straightforward and reproducible. Pipettings are fewer. Time and temperature control are not critical. After simple processing and incubation on the rotator, the Effective Thyroxine Ratio is obtained by dividing the count rate of the standard (supplied in the kit) by the count rate of the patient serum. There is no curve to draw, no ice baths, no precount-postcount determination.

Effective Thyroxine Ratio is the first direct, single-test measurement having a clinically proven[2] correlation with the level of metabolically active ("free") thyroxine. Send in the coupon for detailed supporting information about the new test of choice for determination of thyroid function.

Availability

Res-O-Mat ETR Test Kits are available in 12- and 60-test sizes.

1 Mincey, E. K. and Brown, J. L., Thyroid Function Testing: a New Approach. *Submitted for publication.*

2 Mincey, E. K. and Thorson, S. C., et al.: A New Parameter of Thyroid Function—the Effective Thyroxine Ratio. *Submitted for publication.*

*Patent applied for.

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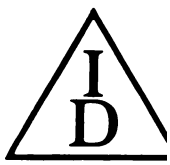

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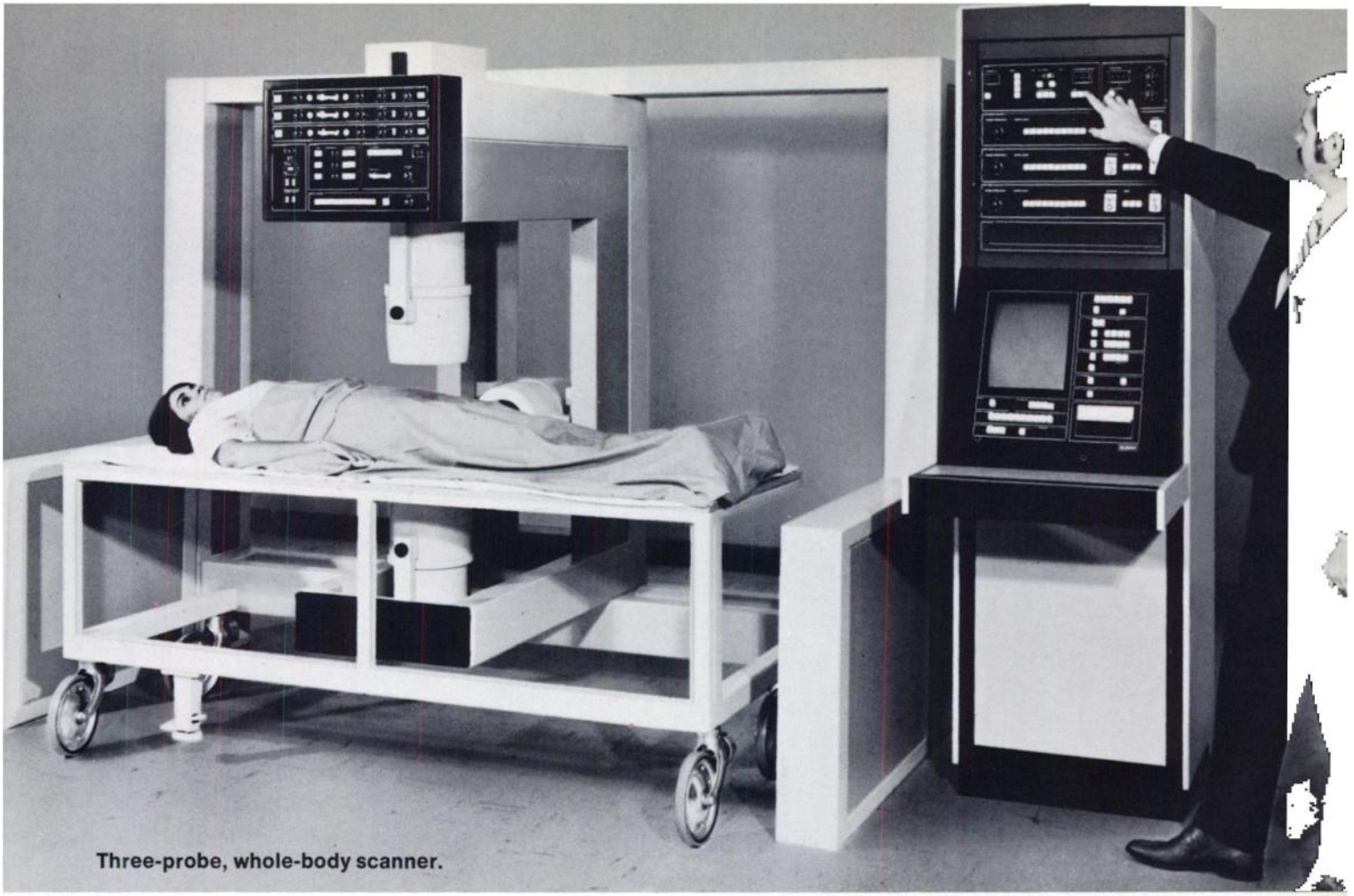


Three-probe, whole-body scanner.

Now General Electric brings the automatic touch to digital scanning

Single-probe scanner.

The touch of a button. And, turn of a dial.

That's how the General Electric digital scanner's combination of automatic features makes more diagnostic information easier to get. With less chance of technic error.

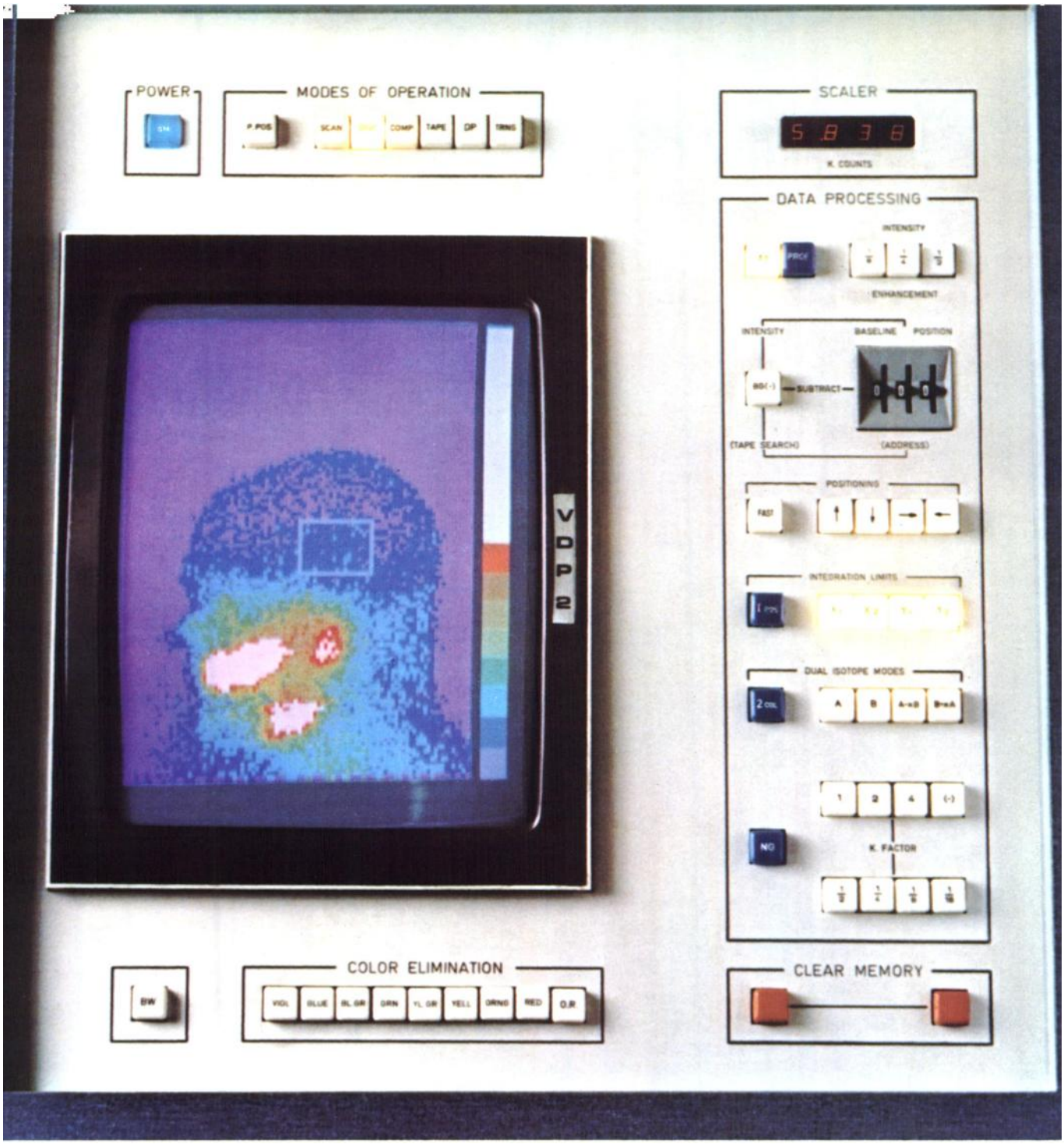
Automatic selection of scanning speed is one example. Just set the desired line spacing and information density, then find the hot spot. That's all. No calculations.

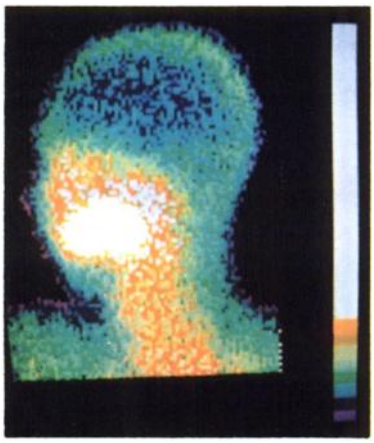
Also automatic: line spacing adjustments that prevent overlaps and gaps; scalloping corrections to align the photoscan display; and, photorecording density settings, between pre-set minimum/maximum values.

To these and other automatic touches, GE adds: whole-body scanning capability with the three-probe unit; a built-in scaler; push button probe positioning; easy-to-read, light-emitting diode displays for the scaler and probe position readouts; four collimators as standard equipment on the single-probe instrument; choice of image displays; and more.

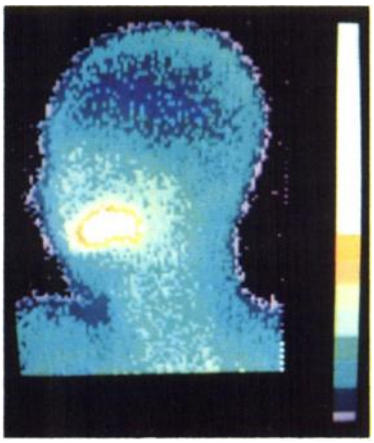
Together, they're a combination of features that brings new information capability to digital scanning.

Turn page for details about color Videodisplay of scans . . .





If tumors were suspected at the base of the brain, this setting would bring them out.



Mouth shown in detail never before seen. In some patients, saliva flow is plainly visible.

View scans in full-count, fully-functional color

Videodisplay/Processor extends the diagnostic value of any scanner

Unlimited image/information configurations with every scan. Now you can add this data versatility to any scanner with the General Electric Videodisplay and Processing Unit.

The Videodisplay's true electronic visualization lets you see—in eight vivid, fully-functional colors—the accurate patient count data recorded at every point of the scan. Each color represents a specific number of counts.

And, you can instantly manipulate scan data in the unit's memory to enhance desired details for easier, more accurate interpretation and diagnosis. Just press the push button controls. Eliminate colors to display isocount areas. Change from color to shades of gray. Determine the count at any point or within rectangular areas of interest.

Read the profile count along any X or Y line. You can also subtract the background as desired. And more. Every manipulation, except memory erase, remains fully and immediately recoverable. And, for each image or area of interest displayed, a continuous readout of counts is shown at the scaler.

For added diagnostic flexibility: scans can be minified or magnified; can be recorded on cassette tape or photographed; even transmitted over regular telephone lines to other Videodisplay units.

Let the GE Videodisplay add new information potential to your digital scanning procedures. Your Medical Systems representative has details.

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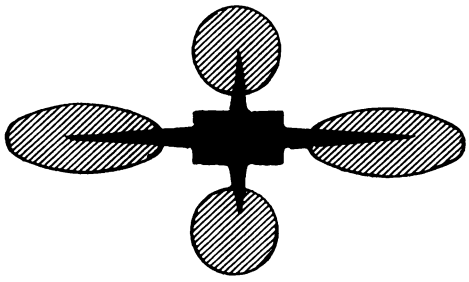
GENERAL ELECTRIC

Interface the Videodisplay with any scanner in good electrical and mechanical condition. Result: modern videoscanning capability. An easy, economical way to extend the diagnostic information available to you.

Photographically record any scan image on the monitor, using either a Polaroid or standard 35 mm camera. Applications include: for patient records, reproduction, study, scan comparisons, teaching and training.



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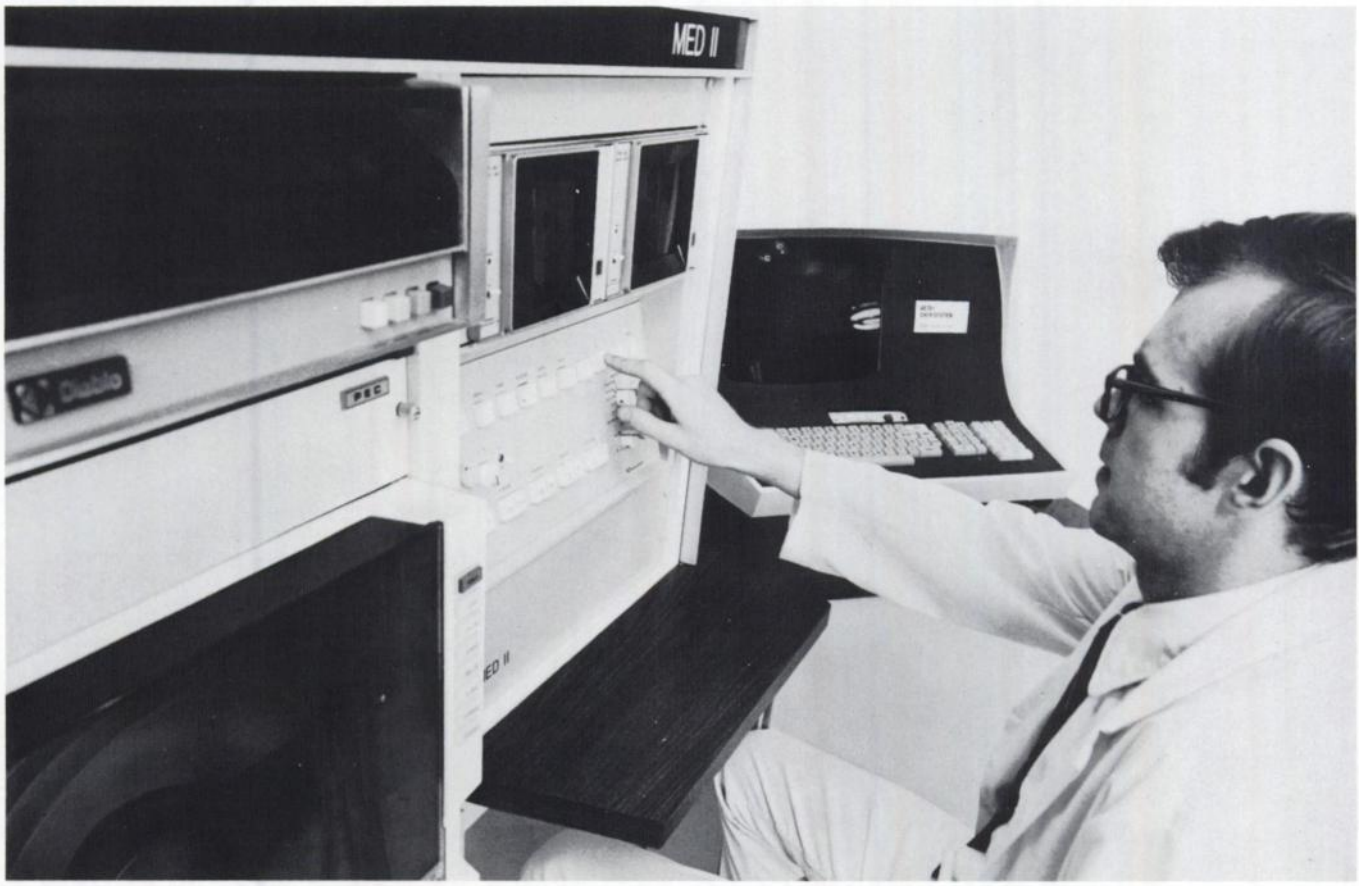
MED II has all the clinical capabilities you expect from a computerized image processing system.



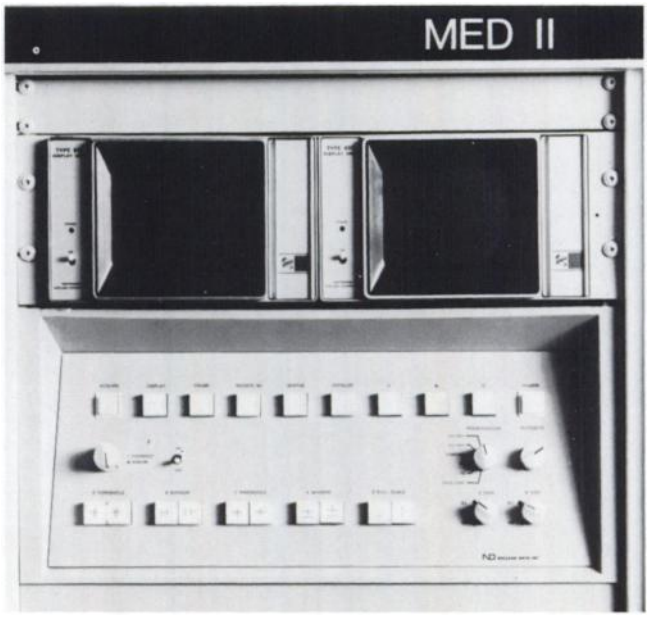
But you don't have to be a computer man to use it.

MED II: what it is
MED II is a data acquisition, storage and playback system. But it is also much more. MED II is a diagnostic image enhancer, a clinical data processor, plus a curve analyzer and a fully programmable 16k computer.

MED II and you
With the MED II, you can record dynamic and static gamma camera images. You can enhance these images in accordance with several clinically tested protocols. You can generate time/activity histograms, and derive data, which cannot otherwise be visualized, from the resultant curves. In addition, you can correct for camera response non-uniformities, add and subtract either sequential or non-sequential images from each other; and perform several additional image manipulation routines which yield improved visualization and higher confidence levels.

MED II: its different
First, the MED II is pre-programmed. To execute a complex clinical protocol, the operator has only to type in the appropriate two letter command.

Second, image enhancement has been vastly simplified. For example, contrast manipulation is now achieved with continuous action pushbuttons.



Third, the image data are now recorded on a high-speed disc. After a given frame or frame sequence is specified, it can be displayed within milliseconds. And magnetic tape continues to be available for bulk storage.

Fourth, the comprehensive image data analysis capability available in Nuclear Data's earlier systems has been extended still further with the MED II. Extraction of exponentials, normalization, curve smoothing and the many additional data analysis routines available with MED II are more refined than ever. And they are easier to execute.

MED II as a storage retrieval system
As a storage device, the MED II records complete studies on a rapid access disc. While acquiring data, frame rates of up to 8 frames-per-second may be specified. If desired, the frame rate may be more rapid during some intervals of the study than others. For example, in a renal function study, it may be desirable to have a rapid frame rate during the first few minutes, and a slower rate during the more gradually changing excretory phase. Another important feature: with the MED II, a recorded frame or frame sequence can be accessed for replay in a matter of milliseconds.

MED II as a static image processor
MED II can be considered a "perception extender." Image enhancement, for instance, allows one to elaborate subtle differences in displayed activity to the point where they can be discerned. Improved delineation of organ contours, lesion boundaries, and other abnormalities are prominant advantages to be gained with the MED II.

Initial analog scintigraph

Same data processed by MED II

MED II as a dynamic image data processor
As a dynamic processor, the MED II brings a wide range of data quantification and enhancement into the clinician's repertoire.

Renograms, cerebral blood transit, cardiac and pulmonary function studies are all included among the major dynamic study applications of the MED II. For example, separate areas-of-interest within a recorded renal execretion study may be specified by the clinician. These areas-of-interest may be assigned to correspond only to the right and left renal contours, or to regions within the kidneys. Then, after appropriate brief instructions, complete right and left renograms appear on the MED II oscilloscope. Since the renograms represent activity only within the defined areas-of-interest, distorting background data, as well as activity within the ureters and bladder, do not mask renal activity. And in pulmonary function analyses, the ability of the MED II to generate dynamic function curves for up to twelve areas-of-interest means that right versus left lung activity comparisons can be made for six different regions simultaneously. Dynamic activity curves for comparing comparable regions within the cerebral hemispheres and right versus left carotid blood transit can also be available for your evaluation within seconds.

MED II as a fully programmable 16k computer
Nuclear Data has incorporated its own fully programmable ND812 minicomputer into the MED II System. As a result, you can program the MED II to include new protocols.

To enable you to establish additional programs, to modify existing ones, and to apply the ND812 in solving other data analysis problems, Nuclear Data has developed NUTRAN (a variant of FORTRAN). NUTRAN is a powerful programming language originated exclusively for nuclear medicine image data processing. It's designed to let you, the clinician, write your own programs, in English, using a minimum number of instruction steps.

And more!
New technics for obtaining increased diagnostic clinical data through image enhancement and analysis are constantly being developed by ND Data System users. And, with their help, ND has found several ways to make the communication between diagnostician and clinical computer a productive and rewarding interaction.

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The new Picker Isotope Calibrator:

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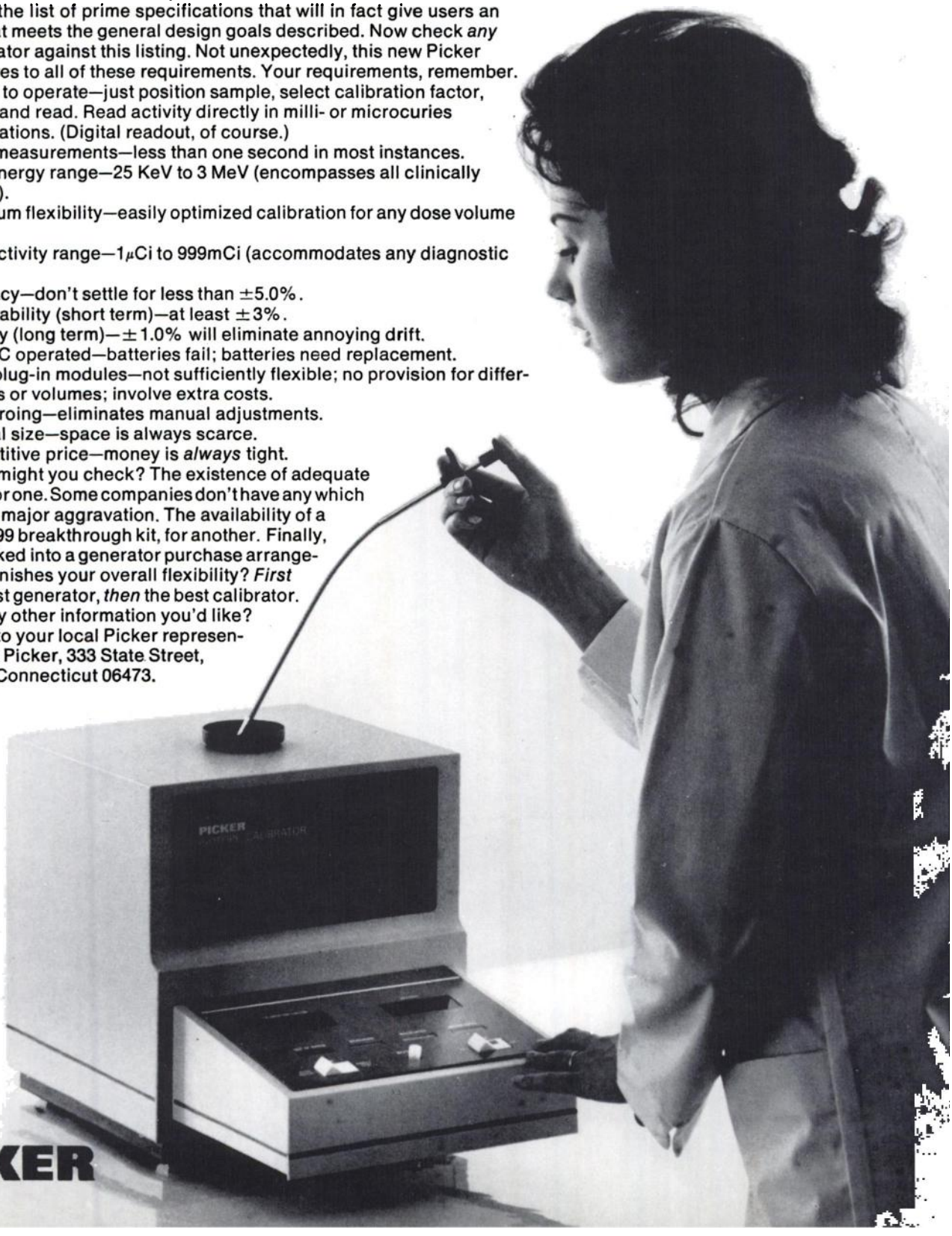
Herewith, the list of prime specifications that will in fact give users an instrument that meets the general design goals described. Now check *any* isotope calibrator against this listing. Not unexpectedly, this new Picker product adheres to all of these requirements. Your requirements, remember.

1. Simple to operate—just position sample, select calibration factor, push a button and read. Read activity directly in milli- or microcuries without calculations. (Digital readout, of course.)
2. Rapid measurements—less than one second in most instances.
3. Wide energy range—25 KeV to 3 MeV (encompasses all clinically used isotopes).
4. Maximum flexibility—easily optimized calibration for any dose volume or geometry.
5. Wide activity range—1μCi to 999mCi (accommodates any diagnostic dose).
6. Accuracy—don't settle for less than $\pm$5.0%.
7. Repeatability (short term)—at least $\pm$3%.
8. Stability (long term)—$\pm$1.0% will eliminate annoying drift.
9. 110V AC operated—batteries fail; batteries need replacement.
10. Avoid plug-in modules—not sufficiently flexible; no provision for different geometries or volumes; involve extra costs.
11. Self-zeroing—eliminates manual adjustments.
12. Minimal size—space is always scarce.
13. Competitive price—money is *always* tight.

What else might you check? The existence of adequate field service, for one. Some companies don't have any which can become a major aggravation. The availability of a molybdenum-99 breakthrough kit, for another. Finally, will you be locked into a generator purchase arrangement that diminishes your overall flexibility? *First* choose the best generator, *then* the best calibrator.

Is there any other information you'd like? Please speak to your local Picker representative, or write Picker, 333 State Street, North Haven, Connecticut 06473.



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The new DI 650 Automatic Film Processor: Clearly, an inside design job.

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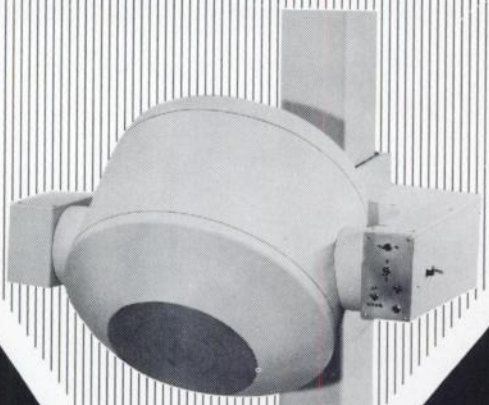

INTRODUCING

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Q: *I'll bet it has a small field of view.*

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Q: *You probably have no accessories.*

A: We have them. Do you want a tape recorder? Zones-of-Interest with adjustable size and shape for regional studies? Additional read-out scopes? The ability to do dual isotope work? Ratemeters and recorders? Diverging, converging or pinhole collimators? An automatic 35 mm camera? Yes, we have accessories.

Q: *How about service?*

A: We had a service department before we had a camera. The service manager designed major parts of the ICON II. So he knows what's in it.

Q: *And the price?*

A: Let's leave something for a surprise.

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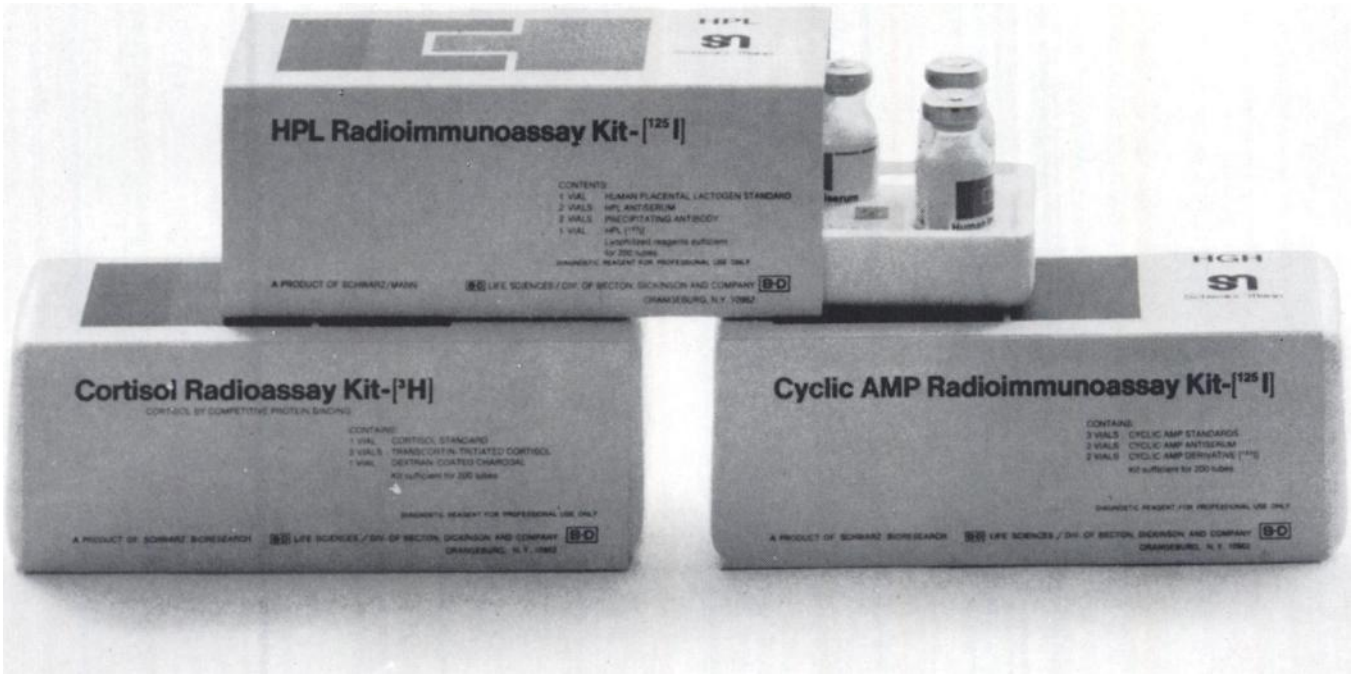
3 new radioimmunoassay kits from Schwarz/Mann.



Plasma Cortisol Kit

Forget the conventional tedious methods. Forget the annoyance, expense, and delay of "sending it out." This simple and rapid cortisol procedure (more properly described as a Competitive Protein Binding method) can be done by every laboratory without the need for exotic equipment and special skills. In addition, it provides exquisite sensitivity, high specificity, and accuracy.

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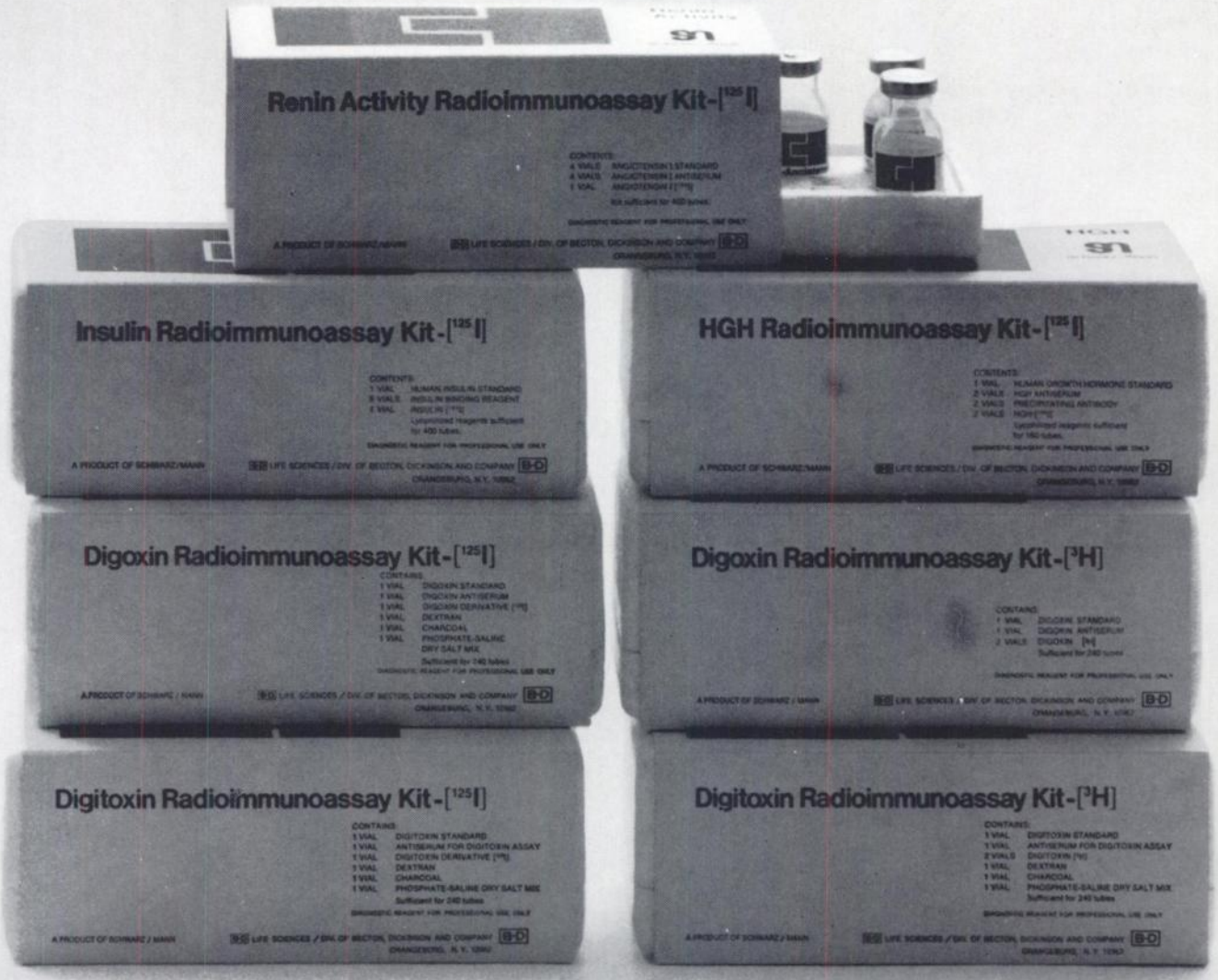
Cyclic AMP Kit

Cyclic AMP is, of course, of great interest as an intermediary in many hormone systems. And Schwarz/Mann's new cyclic AMP radioimmunoassay kit now brings the unique advantages of these techniques—exceptional sensitivity, specificity, precision and speed—to the *in vitro* analysis of this compound. This procedure permits measurement of as little as a billionth of a mole or less in tissues or body fluids—even in the presence of normally interfering materials.

Radioimmunoassay: General Comment

Schwarz/Mann—the major factor in radioim-

And then there were 10!



munoassay—now offers 10 such kits as practical, convenient tools suitable for routine research and clinical use. These simple-to-use kits include all necessary, reagents and typically offer exceptional sensitivity, specificity, rapidity, precision, and low cost.

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Schwarz/Mann, Orangeburg, New York 10962

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- ☐ Cyclic AMP Kits
- ☐ Digoxin Kits [3H] or [125I]
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- ☐ Aldosterone Kits
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- **Foot controls for both solenoid** operated valve and **kymograph operation.**
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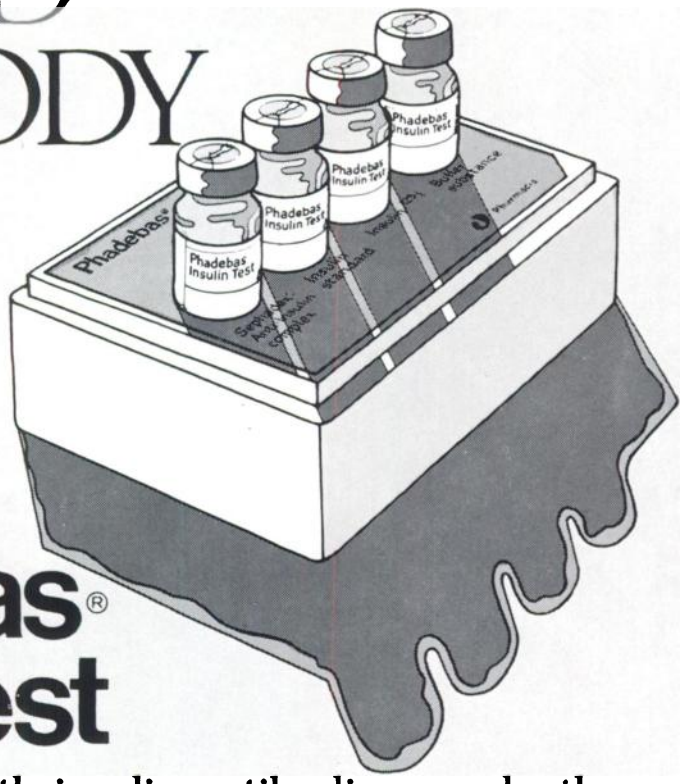

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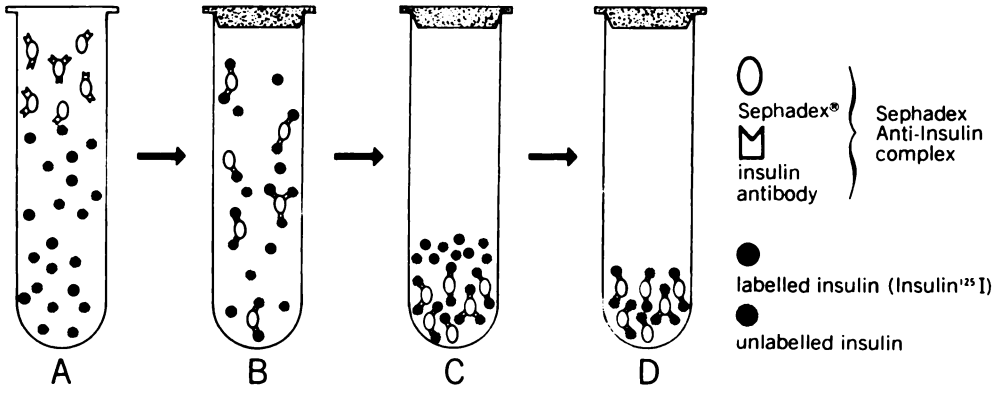

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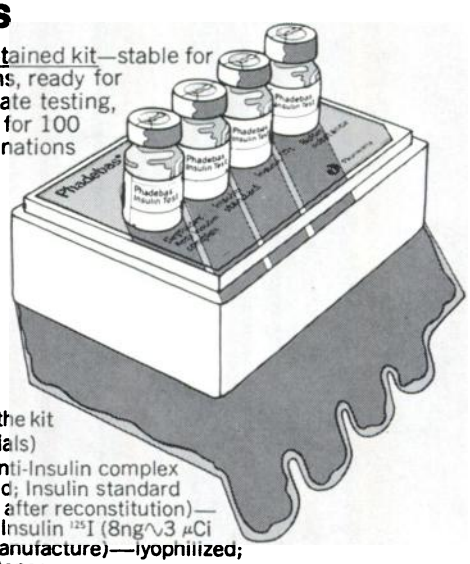

Contents of the kit
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Pharmacia

Introducing the new DI 800 Triaxial Table: Every little movement has an improvement all its own.

As long as the scintillation camera remains an immovable object, there will be the problem of positioning the patient from a single, stable platform. Other imaging tables exist but none can match the new DI 800 Triaxial Table. Simply because the DI 800 has four degrees of freedom going for it.
One: A continuous vertical height adjustment which greatly facilitates patient transfer from conveyance vehicle to imaging table. It also optimizes the plane of patient imaging between vertically opposed dual-headed scanners.
Two: Long axis adjustment in the horizontal plane; and Three: Short axis adjustment in the horizontal plane. These actions allow a precise control over the patient's position so that the entire organ of interest can be encompassed within the limited field of view of the detector.
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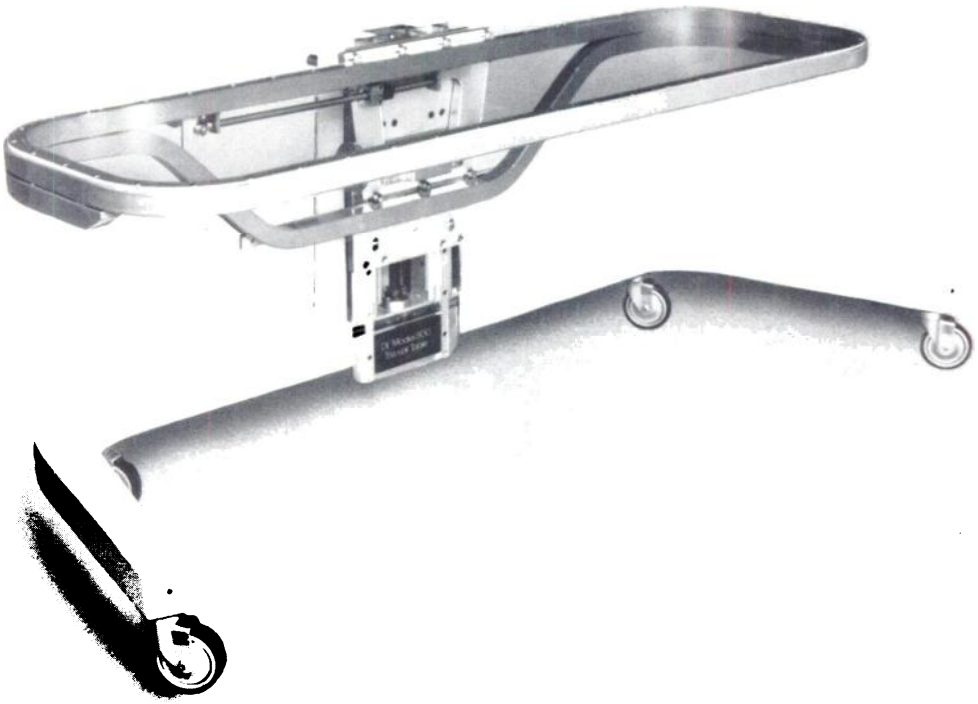
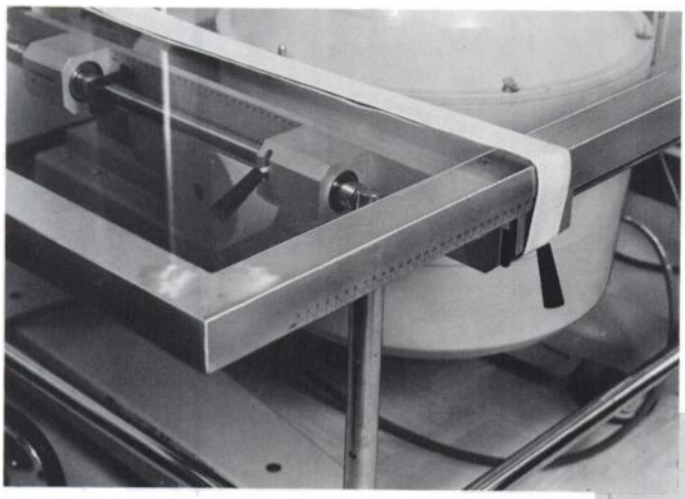
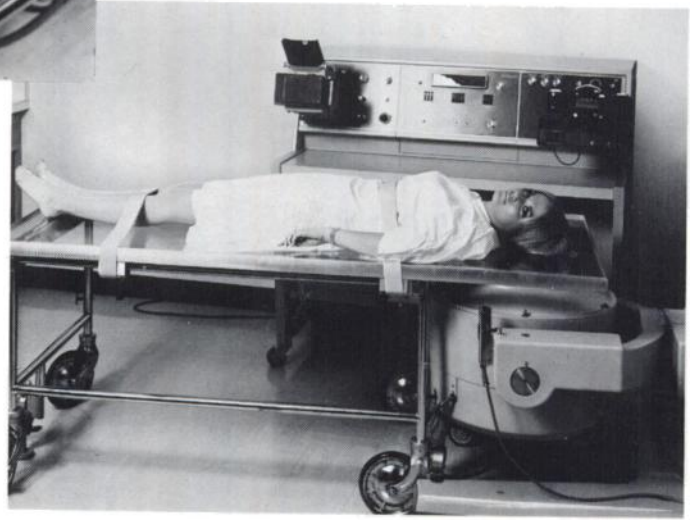


Finally.. THE PGL MODEL 500 A Table for Imaging With a Movable Top



Graduated calibration scale and positive cam locks assures reproducible positioning.

The "floating" top overhangs to allow supine posterior brain views. Ten inches of travel in both longitudinal and lateral planes.



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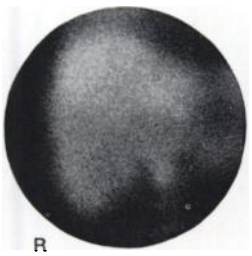
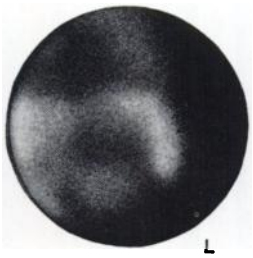
CASE STUDY NO. 1. CIRRHOSIS WITH FOCAL NECROSIS.

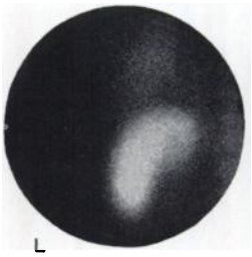
STATIC SCINTIPHOTOS.

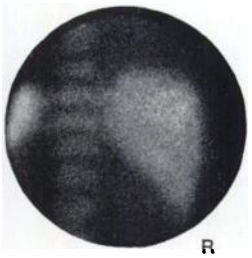
ANTERIOR VIEW.



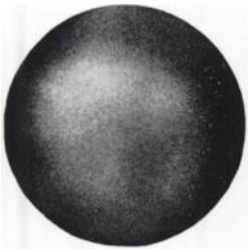


POSTERIOR VIEW.





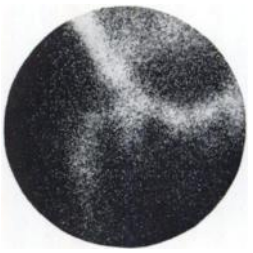
LATERAL VIEWS.



RIGHT

LEFT

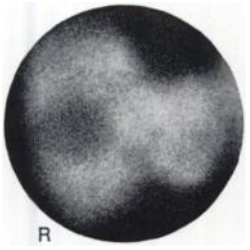
RIGHT PELVIS.



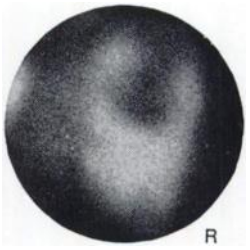
CASE STUDY NO. 2. LEIOMYOSARCOMA METASTATIC TO LIVER.

STATIC SCINTIPHOTOS.

ANTERIOR VIEW.

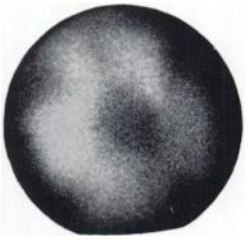


POSTERIOR VIEW.



RIGHT ANTERIOR VIEW
(WITH MARKER).

RIGHT LATERAL VIEW.



The Liver Study

Evaluation of Reticuloendothelial System Labelling in the Liver with the Nuclear-Chicago Pho/Gamma® Scintillation Camera

Liver scintiphotography employing ^{99m}technetium sulfur colloid and the Pho/Gamma Scintillation Camera offers extremely high resolution images of reticuloendothelial-system distribution in the liver, spleen and bone marrow.

PRELIMINARY DISCUSSION. In the normal liver, the reticuloendothelial system is uniformly distributed, with areas of decreased labelling showing only in the region of the porta hepatis, gall bladder fossa, and in intersegmental fissures.

Abnormal regional decreases of liver labelling may be recognized as either (1) *irregular decrease of labelling* in the whole liver or an area of it or (2) *focal decreases of labelling* with discrete margins and clear definition in comparable scintiphoto views.

SETTING-UP. Liver scintiphotography is usually best performed with the high-resolution, low-energy Pho/Gamma collimator appropriate for ^{99m}Tc. The patient is positioned touching the collimator, and is examined in the recumbent position to reduce respiratory and other motions. In circumstances where the entire liver and spleen area are to be visualized in one view, the diverging collimator may be used.

ISOTOPE AND DOSE. An intravenous injection of 3 or 4 mCi of ^{99m}Tc sulfur colloid is administered.

DATA ACCUMULATION. Twenty minutes after injection, a series of static scintiphotos of the liver, spleen and bone marrow is obtained. A non-enlarged spleen is best imaged in left posterior and oblique views. Useful marrow views include upper sternal area, and left pelvis, hip and femur.

Data densities of 500,000 counts for an anterior view of the liver are desirable. Preset exposure time is kept constant throughout examination of the liver and spleen so that exposure intensity will be comparable in all the scintiphotos of these organs. For marrow scintiphotos, increased dot density and 2-minute exposures are normally used.

CASE HISTORIES. Case Study No. 1: Male, 60 years old. Known cirrohosis probably due to chronic alcoholism. Admitted for evaluation of low-grade fever.

Case Study No. 2: Female, 62 years old. Admitted for evaluation of abdominal cramping and liver enlargement. Seven years earlier, partial gastrectomy yielded the diagnosis of "leiomyoma, ulcerated stomach." Two years prior to this admission, laparotomy had revealed leiomyosarcoma in the left lobe of the liver.

EVALUATION. The purpose of these Pho/Gamma liver studies is to evaluate (1) shape, position, and general outline of the liver as imaged on the scintiphotos and (2) the nature of any labelling decrease, whether uniform, irregular or focal. Labelling in the spleen and marrow is compared with liver labelling to assess the possibility of portal-systemic shunting (indicated by greater spleen and marrow labelling, relative to the liver) or hypertrophy of the bone marrow.

In the clinical scintiphotos shown at left, examples of uniform decreased labelling, irregular labelling, and focal defects of labelling are evident.

The patient with cirrhosis (Case Study No. 1) has generalized decrease and irregularity of labelling consistent with that disease. Furthermore, a focal defect of labelling exists in the left lobe of the liver and is best seen in the left lateral view. (This defect was subsequently found by local surgical biopsy to be the site of focal necrosis which had been responsible for the patient's low-grade fever of unknown origin.) Also typical of a cirrhotic are the bright labelling of the slightly enlarged spleen and bone marrow (with marrow extension into the right femur).

The patient with leiomyosarcoma (Case Study No. 2) is an excellent example of focal metastatic lesions causing some decrease of liver labelling, as well as enlargement of the liver that is so common with metastatic disease of the liver. Giant splenomegaly also exists on a congestive basis.

CONCLUSIONS. Liver scintiphotography with the Pho/Gamma Scintillation Camera and ^{99m}Tc sulfur colloid appears to be a markedly improved liver-imaging technique and sensitive diagnostic test for liver disease.

This form of scintiphotography provides a large amount of specific information about liver structure and hemodynamics and is an accurate guide for the selection of biopsy sites. When combined with other special procedures, such as liver scintiphotography during rose-bengal excretion or liver-blood-flow evaluation, the Pho/Gamma liver study with ^{99m}Tc sulfur colloid offers many other diagnostic possibilities.

0-232

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Lung, Liver Study.

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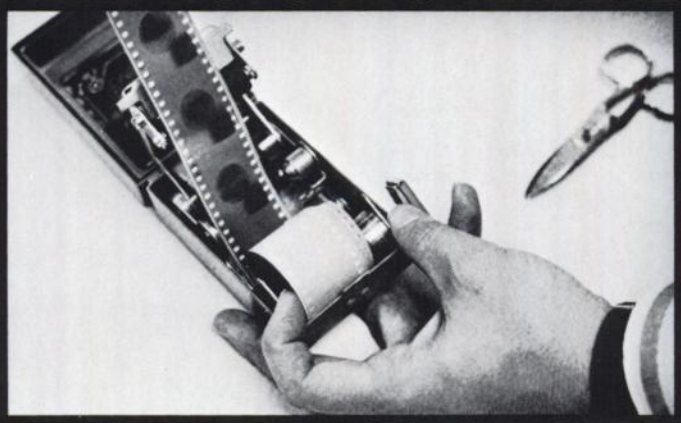

This film is Kodak RAR 2495. Other films that can be used in Poro-Pak: Kodak Panatomic X, Plus X, Tri-X, RAR 2490, 2491, 2495, 2496, Kodak High Contrast Copy, Linagraph Shellburst 2476, DuPont SR 114, GAF 125, and others.

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Gentlemen: Please send my order. I have the following camera system:

PoroPak Machine: ☐ 35mm 36 exp., $210. PoroMat 12 rolls $27. | ☐ 35mm 250 exp./70mm, $310. PoroMat 5 rolls 100 exp. ea. $60.

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. . . for shrewd, economy minded buyers:

ATOMIC's patient transfer and imaging tables!

Whatever your gamma imaging application, there is a low cost ATOMIC imaging table available.

In addition to their individual highlights, our tables feature:

- Unobstructed frames to insure exact positioning of table.
- ¼" thick transparent lucite tops to permit placement of detectors below the patient.
- Large casters with wheel locks to provide maximum mobility and safety.

To find out more about these inexpensive tables . . . WRITE TO

ATOMIC DEVELOPMENT CORP.
7 Fairchild Ct., Plainview, N.Y. 11803

MODEL SC-101
Provides general purpose utilization.

MODEL EZ-101
Can be raised or lowered to exact height desired for patient transfer and gamma imaging.

MODEL XY-101
Permits 10" of table top travel in both X and Y directions with graduated calibration scales for accurate re-positioning.

Why stop with a scintigram when there's more information down the road?

The typical scintillation camera gives you a scintigram that helps indicate the presence of a lesion. And only that. But one camera (and only one) has a built-in system to help *characterize* the lesion.

By offering this built-in "lesion characterization capability," Dynacamera™ 2 yields more diagnostic information than any other camera.

And lesion characterization can be achieved at the same time the static study is being done.

This capability permits functional comparisons of one region *vs.* another. And the comparisons are quantitative. (Output includes histogram plots of both regions.)

The Dynacamera 2 also permits imaging of two different radiosotopes simultaneously. Plus quantitative data in the form of histograms.

What we're saying is: why stop short of lesion characterization when the name of the game is *information?* Why, indeed?

For maximum diagnostic information, for maximum diagnostic confidence, nothing touches the Dynacamera 2.

For further information and a series of Dynacamera 2 "application data sheets," speak to your Picker man or write Picker Corporation, Dept. D12, 333 State Street, North Haven, Connecticut 06473.

PICKER

You defined it, we designed it:

the tapered body of our new sterile Tc 99m generator.

At The Radiochemical Centre we believe in meeting the customer's needs exactly. So, before designing our new sterile technetium-99m generator, we asked users of sterile generators to define precisely the improvements they would like to see.
First on the list of improvements was a smaller elution volume with a higher radioactive concentration, making bolus injection a feasible operation if required.
To meet this requirement we designed an entirely new kind of body, tapered to give maximum length with minimum volume. The length of the bed is sufficient to eliminate molybdenum-99 breakthrough, whilst the volume substantially reduces the amount of eluate required.
Within the body, the stability of the elution bed is maintained by a spring-loaded frit so that there is no disturbance by sterilization or transport and minimum risk of channelling. This ensures consistently good yields, from generator to generator and from day to day.
Also included in the body is an improved filter system, using nylon mesh instead of sintered glass—making for more reliable elution with fast reproducible flow, and no blockage by particles.
Finally, we chose plastic as the material for the body, because it is tougher than glass and eliminates the risk of radioactive contamination due to breakage during transport and handling.
In keeping with the simplicity and efficiency of the body, you will find that the total operation of The Radiochemical Centre generator is remarkably fuss-free.
The positive pressure flow system allows maximum control of operation with easy possibility of fractional elution (and no evacuated vials to go wrong), which means that the volume of any fraction can be as small as the user demands.
Slotted lead end plugs are used (so there is as much shielding above and below the generator as there is around it) with special right angle needles in the eluent flow line: this eliminates the need for holes above and below the generator and minimises the radiation dose to the operator.
The generator is free-standing, takes up the minimum amount of space on the laboratory bench, and requires no elaborate extras.
It allows you, the user, full control over a safe and reliable system which can be used to deliver the daughter isotope in discrete fractions of maximum radioactive concentration.

Further information on the new sterile technetium-99m generator is available on request.

The Radiochemical Centre Amersham England

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POSITIONS OPEN

NUCLEAR MEDICINE RESEARCH & Education trainees: Two positions available July 1, 1972 for Research and Education trainees in Nuclear Medicine. Excellent opportunity for research and advanced clinical training in either a one-year or two-year program. Affiliated with Stanford University. Must have completed two years of residency. Requires current license any state and U.S. Citizenship or Immigrant Visa and three years in the U.S. Salary $10,301 to $11,361 based on number of years of residency completed. Contact David A. Goodwin, M.D., Chief, Nuclear Medicine Service, VA Hospital, 3801 Miranda Ave., Palo Alto, Calif. 94304. Tel: 415-326-5520.

NUCLEAR MEDICINE TECHNOLOGIST with experience. New department. Salary commensurate with experience and qualifications. Excellent employee benefit program. Contact: M. Yankosky, M.D., Radiologist, Lebanon Valley General Hospital, 4th & Willow Streets, Lebanon, Penna. 17042.

NUCLEAR MEDICINE TECHNOLOGIST, registered or registry eligible (ARRT or ASCP). Active Nuclear Medicine Dept. with two Nuclear Chicago scintillation cameras, thyroid probe and well, and full time director. Hospital expanding to 600 beds by summer. Salary commensurable with experience. Equal Opportunity Employer. Contact Holy Cross Hospital, 4725 N. Federal Hwy., Ft. Lauderdale, Fla. 33307—Personnel Dept.

RADIO-ISOTOPE TECHNICIAN. FULL time position available 8:00 A.M. to 4:30 P.M. for an experienced Radio-Isotope Technician. A.R.R.T. registration in Nuclear Medicine preferred. Good salary & benefits including 4 weeks vacation the first year. Call or write Personnel Department. St. Peter's General Hospital, 254 Easton Ave., New Brunswick, New Jersey 08903 (201) 545-8000.

NUCLEAR MEDICINE SCIENTIST POsition in teaching and research, with responsibility in support of clinical nuclear medicine service. Advanced degree and appropriate background, i.e., nuclear physics, nuclear chemistry, or engineering. Primary responsibilities and office in university-affiliated Veterans Administration hospital. Salary negotiable. Civil Service rating not required. Contact Jack K. Goodrich, M.D., Director, Division of Nuclear Medicine, Duke University Medical Center, Durham, North Carolina 27710.

POSITIONS WANTED

PHYSICIST, GRADUATE DEGREES, EXperienced in gamma camera, whole body counting, tracer kinetics, cryogenics, radiation damage studies, EPR. Desires working or teaching in any area of nuclear medicine, medical physics. Box 401, Society of Nuclear Medicine, 211 E. 43rd St., N.Y. 10017.

SPRING SYMPOSIUM IN NUCLEAR MEDICAL TECHNOLOGY

The Spring Symposium in Nuclear Medical Technology will be held at the Marriott Motor Inn in Saddle Brook, New Jersey, on Saturday, April 29, 1972. A program of lectures and panel discussions will be presented, covering a wide range of subjects relevant to the current practice of nuclear medical technology.

For further information and registration contact:

P.O. Box 1654
Bloomfield, N.J. 07003

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Board Certified—U.S. Citizen. Available July 1—Brooklyn Veterans Administration Hospital—1000 Beds GM&S. Newly constructed facility, latest design, well staffed. Salary range: $21,960–$33,260, depending upon qualifications.

Write or call, Chief of Staff
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NUCLEAR MEDICINE TRAINING

Residency and fellowship positions available at Yale-New Haven Medical Center. Research oriented active clinical service, with access to radioisotope production and data processing equipment. Prerequisites: Internship and 1 Year of residency. Possible fellowship opening for American citizen in July 1972. Beginning in July 1973, residency and fellowship positions available.

Contact: Dr. Richard Spencer
789 Howard Ave.
New Haven, Conn. 06504 (203) 436-8077

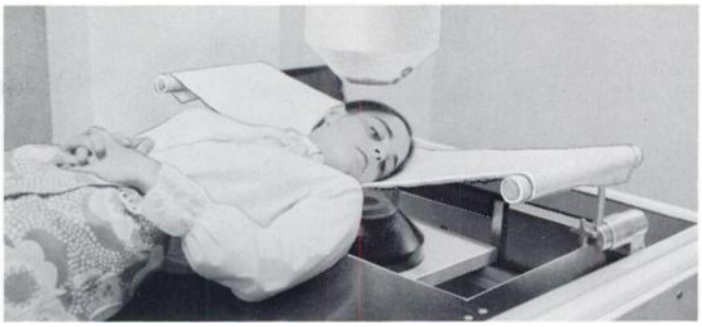
NUCLEAR MEDICINE RESIDENCY

The Division of Nuclear Medicine and Radiation Biology of the University of Arkansas Medical Center announces the availability of resident positions beginning 1 July 1972. The training program is an integrated program which includes Nuclear Medicine Services of the University Hospital, the Little Rock Veterans Administration Hospital, and the Baptist Medical Center. The teaching staff includes three MD's (one internist, two radiologists), four Ph.D's (Radiologic Physics, Radiation Biology, and Biophysics), a Health Physicist, an Electronics specialist, and a large number of experienced technologists. Items of capital equipment include four scintillation cameras (two with magnetic tape units), a whole body counter, a Van de Graaff accelerator, plus completely equipped Nuclear Medicine—Radiation Biology Research Laboratories. For qualified (and interested) individuals, graduate training leading to the M.S. and Ph.D. degree is available.

For further information contact:

Glenn V. Dalrymple, M.D
Head, Division of Nuclear Medicine
Professor of Radiology (Nuclear Medicine),
Biometry, Physiology-Biophysics
University of Arkansas Medical Center
Little Rock, Arkansas 72201

New Head Rest attachment simplifies brain-scan positioning on Ohio-Nuclear Dual-Probe systems



Provides maximum comfort during lateral, anterior and Townes-view scans

The positioning of brain-scan patients on the Ohio-Nuclear Dual-Probe system can now be simplified significantly by adding the *Adjust-O-Scan*™ Head Rest.* This easy-to-install device adjusts to varying angles and distances from the table top. It can position the patient comfortably during anterior and lateral scans (and a Townes view) without any other supports or props. Allows complete freedom of movement.

With this unique head rest, the plastic riser on the Ohio-Nuclear table can be removed, allowing the lower probe to extend through the table and come very close to the patient's head. This eliminates table-top attenuation and assures correct dual-probe/collimator geometry correlation.

Made of sturdy aluminum with a Velcro sling. Do-it-yourself installation takes about 20 minutes. The only tool required is a drill. Kit includes mounting brackets and full instructions.

17-240 *Adjust-O-Scan* Head Rest Kit.....**$275.00**

IMMEDIATE DELIVERY

TM Nuclear Associates Inc. *Patent Pending

NUCLEAR ASSOCIATES, INC.
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For details on other patient-positioning devices, scanning and imaging tables, ask for Bulletin 931-B

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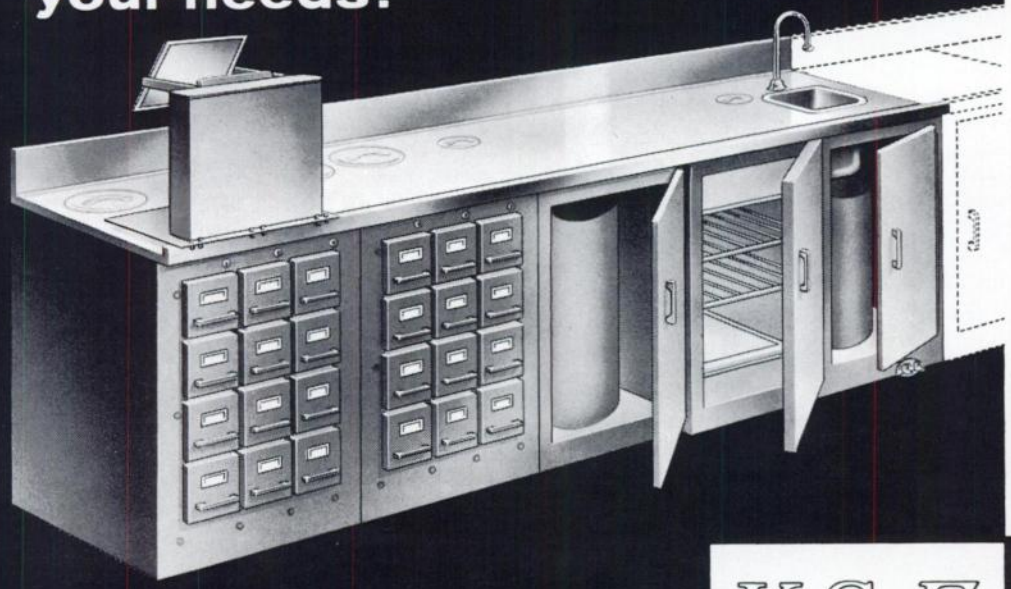
radioisotope work station modules to fit your needs!



K·S·E / *RI*'s work stations are facilities for safe, convenient storage and handling of radioisotopes. Modular design permits you to select only the modules you require for your application.

The shadow shield, shown at the left end, can be conveniently positioned at any point on the work station. It places 2 inches of lead shielding between the technician and the isotope.

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Meet the new fast scanners from Picker.

Why new scanners?
We asked hundreds of people what they liked about scanners. "Resolution," they said. And what didn't they like? "Too slow." Okay, here are two new *fast* scanners from Picker: the *fast* Magnascanner® and the *fast* Dual Magnascanner®. They're improved in other ways, too, as you'll soon see.

What's been changed?
These new Magnascanners are fast instruments because they're computerized. The implication of this is that the entire setting-up procedure has been radically simplified and speeded. These machines respond to your commands by making many of the decisions (consistent with the desired output, of course) automatically. Since most of the calculations and adjustments are eliminated, the calibration is virtually instantaneous: these Magnascanners can actually be set up for use in a matter of seconds.

Does the computer limit the user's options?
Suppose that you wish to set the scan parameters individually for a specific application. Simple. An alternative manual control overrides the computer and provides maximum flexibility.

What else?
Here are some of the other major user benefits inherent in these new digital Magnascanners.
Consistent scans: with the scan parameters automatically optimized, overall scan quality and consistency are superior and interpretation is improved.
Repeats minimized: automatic calibration provides more consistently usable scans and, hence, minimizes the

annoyance, time, and cost of retakes for you and your patients.

Productivity improved: rapidity of set-up, coupled with the reduction in the need for retakes, significantly reduces total study time.

Training simplified: another obvious advantage of automatic calibration.

Color printer improved: the new color dot scans are simply the highest quality color scans obtainable at any scanning speed. And color ranges are set up automatically.

How about the new, *fast* Dual Magnascanner?

All of the improvements described above are shared by both the new Magnascanner and the new Dual Magnascanner. In addition to these, the Dual Magnascanner also features: dual isotope and subtraction, improved uniformity, and matching of scans between the lower and upper probes.

How do I learn more?

Call your local Picker representative, or write Picker, 333 State Street, North Haven, Connecticut 06473, or complete the coupon. Thank you.

Picker Corporation
333 State Street, North Haven, Conn. 06473
Please forward information on Picker's new:

( ) Magnascanner 500/D
( ) Dual Magnascanner 500/D
( ) Please ask the local Picker man to call me for an appointment.

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Title_____

Department_____

Institution_____

Address_____

_____ Zip

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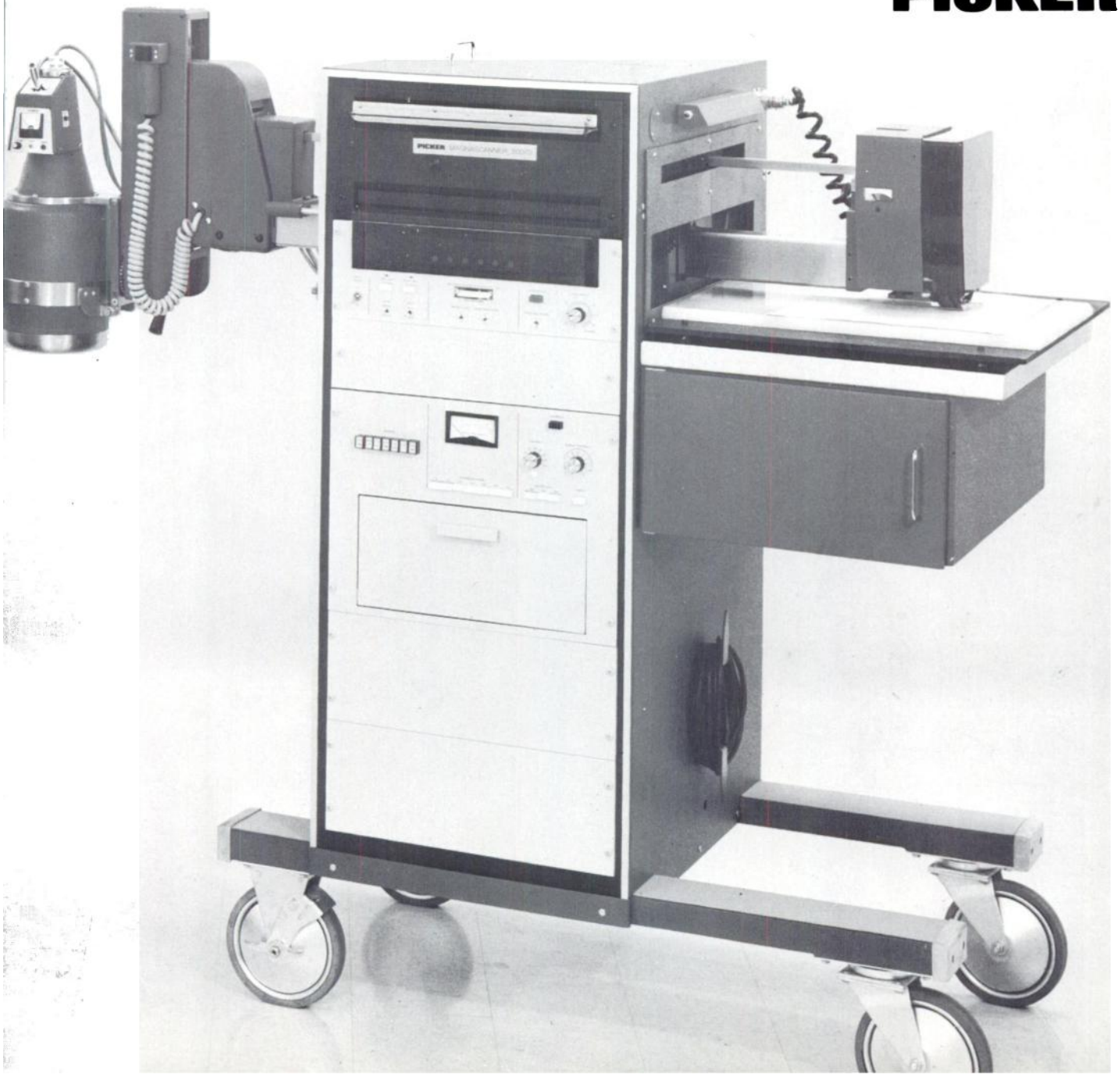
Area Code Number

PICKER

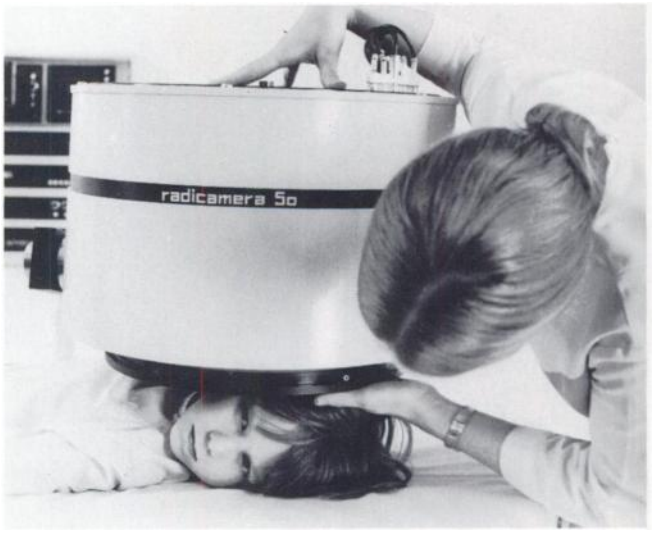



adicamera 5o

Simplicity... is the natural result of profound thought. —Hazlitt

So we started thinking.

First, we thought about positioning. How could we simplify it: The solution, we decided, was to design a counterbalanced detector assembly. One which a 90 pound female technologist can push around with her finger. And one which doesn't make you wait for motors and gears to bring the detector into place. You merely position it where you want it, when you want it there.



We also thought about the patient. Which is another reason the counterbalanced detector head came into existence. It's quiet. With the Radicamera, your patients remain unperturbed and relaxed during study set-up.

And we designed the detector housing with more in mind than just housing the detector. We wanted to be certain that it wouldn't interfere with the patient's shoulder during lateral brain studies. So we made it more compact. But we still left room for a larger-than-usual 13-inch crystal. (After all, increased field-of-view and uniformity are important too.)

Then we constructed the detector stand so that plenty of room existed under and around it. That simplified patient table positioning.

We were also able to think about controls and circuitry. During the design phase, the Radicamera was free from the inertia of precedent. Consequently, we took full advantage of the technological developments and expertise of the Seventies. The results include easy, error free operation, reliable electronics, and a small space conserving console.

The Radicamera has eliminated many of the complexities of its generic predecessors. At the same time, significant advances have been made in all important clinical performance parameters.

Discover the refreshing simplicity of the Radicamera 50 for yourself.

Write, or call:

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Palatine, Illinois 60067
Tel: 312/529-4600

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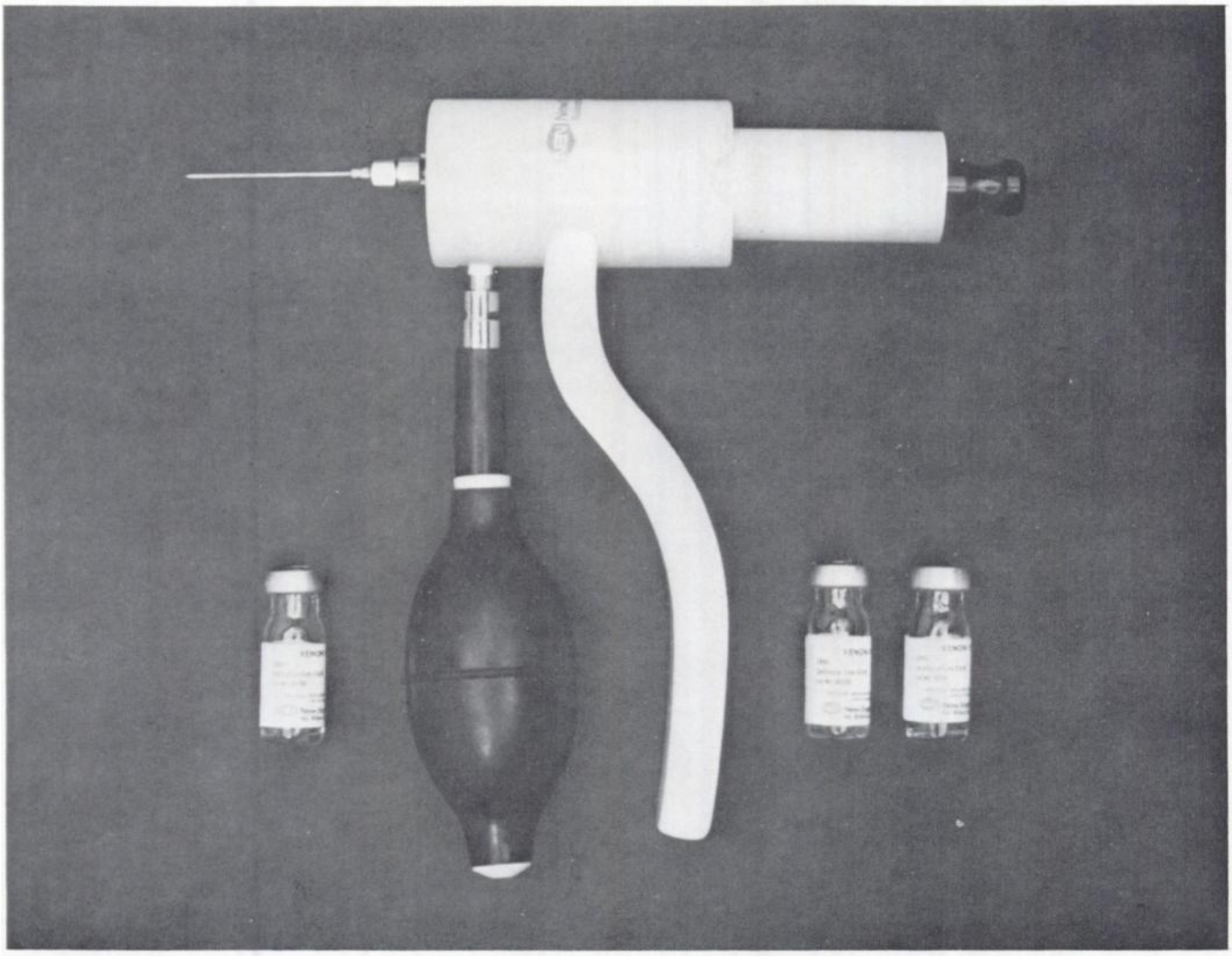
New convenience in Xenon-133 dispensing.



Just slide a pre-calibrated vial of Xenon-133 gas from the lead storage tube into the shielded gun, push the plunger to break the seal, and squeeze.

Fast, trouble-free handling. Precise dose, pre-calibrated at rated strength (10-100mCi) as of Wednesday noon in your facility. And we let you have the dispenser free for as long as you use our new Xenon-133 system. Call us.

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Telephone (617) 667-9531

GAMMA AND X-RAYS.

NOW, CAPINTEC ACCURACY IN A SIMPLIFIED DIRECT DIGITAL READOUT SYSTEM.

Simplify!

That's precisely what Capintec has done to gamma and X-ray measurement. The solution lies in our 191 Electrometer System with direct digital readout in roentgens and roentgens per minute. It spells an end to mistakes in slide rule calculations; it obsoletes those "component systems" that are long on promises, but short on accuracy. No more compromises. Ever.

Simplify measurement the way you would if you were designing the system. Start with the 191 Electrometer because it has no equal, anywhere. Then take your ionization chamber or any other detector, with or without a build-up cap or protective cover. Simply connect the probe cable to the 191 and you have no-nonsense, uncompromising direct digital readout of all gamma and X-rays. Total dose in roentgens from 2R to 20,000R. Dose rate roentgens per minute from 20R/MIN. to 200,000R/MIN.. Dependable measurement, something you've not had in the past.

But Capintec has done more than just simplify gamma and X-ray measurement!

We created a complete system, everything you will ever need . . . from Capintec probes and Capintec shielded cables to the Capintec 191 Electrometer. Everything's designed to operate together, flawlessly. Then, we designed five decade ranges for measuring total dose, five for the dose rate. Backstopping this performance is a unique guarded bias supply with a noise level so low it sets a new standard in circuitry. And the 191 is so safe you never need worry about getting the shock treatment when it's hand-held.

For a no-questions-asked demonstration, or just the specifications and detailed answers to your most technical questions, call or write Capintec.

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63 East Sandford Boulevard,
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Telephone: (914) 664-6600

Medical Products for
Safety, Security, Quality Control

Here are four ways to handle your in-vitro and in-vivo testing requirements.

IN-VITRO

LOGIC™ scintillation well counter

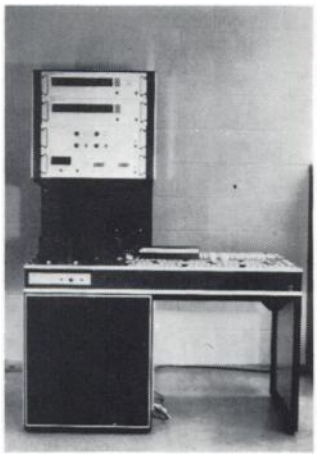
LOGIC™ is a simplified integrated spectrometer and well counter that's easy to operate. Most important is the LOGIC™ unique service commitment. When problems arise, a unique service program goes into action and your unit is back in operation fast. Every LOGIC is built with solid state and integrated circuitry to give greater reliability and less downtime.

The LOGIC™ symptom describing manual allows you to pinpoint most service problems in minutes. A call to our technical representative confirms or corrects your diagnosis immediately. The correct plug-in circuit board or a replacement LOGIC™ is air shipped to you the same day. You're back in operation within 24 hours. In short, if you have trouble with a LOGIC™, we'll repair or replace it with a service loaner in 24 hours or less.

Wallac automatic gamma sample changer

The Wallac LKB 80000 automatic sample changer handles a large capacity of samples to free your skilled staff for other duties. It allows long uninterrupted automatic runs with either uniform or intermixed samples.

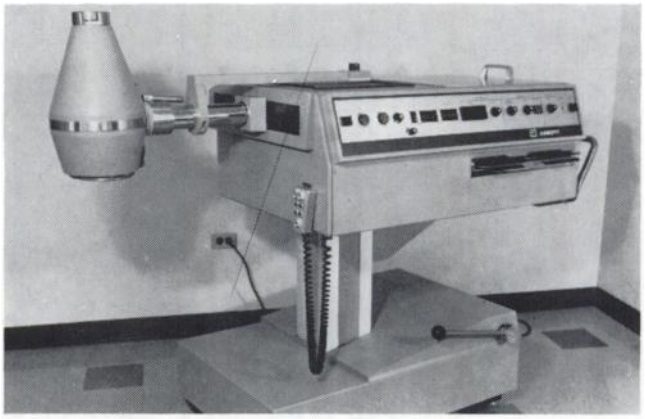
The sample conveyer operates as an endless belt giving you fast, safe and secure pneumatic handling of samples. There are two methods for positive sample identification before measurement, its position on the conveyer belt, and a binary coded cap. And, samples are changed in only 10 short seconds. Data readout is supplied in printed form or on punched tape. The Wallac automatic sample changers simple foolproof controls allow you to handle your needs efficiently and accurately.



IN-VIVO

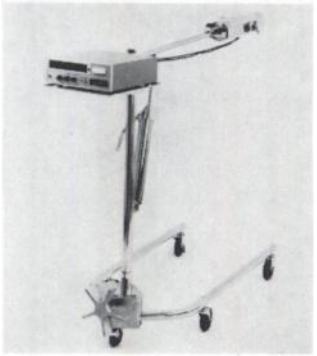
GRAPHIC™ Rectilinear scanner

GRAPHIC™ operation is simple. The control panel is designed for a logical left to right set-up procedure. Start at the left with Power On and work your way in a logical sequence to the right of the panel to Scan On. GRAPHIC™ two-position film cassette allows you to scan 14" x 17" in either direction, across the chest or lengthwise along the body. GRAPHIC™ will accomodate a variety of large scan field requirements with uniform ease. And, GRAPHIC™ is built to last requiring a minimum of service attention. It's so rugged that we warranty it for mobile operation. You have to be tough to work under these conditions.



LOGIC™ with uptake module

By simply adding a medical stand and probe with collimator to either of two LOGIC™ models, the 111 or 121, you're ready for thyroid uptake studies. The LOGIC™ modular concept provides add-on capabilities for you. Buy what you need when you need it. And, you still get the unique service commitment provided only by LOGIC™ . . . when problems arise, we'll repair or replace your instrument with a service loaner in 24 hours or less.



And, these instruments come from a full-line supplier who assures you of a continuing service commitment to train and assist your personnel in all their needs. It's our privilege to keep your Abbott instruments operational.

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Dunn Instruments is shipping Dunn Instruments

Shipments have started. We're moving out our new DI 650 Automatic Film Processors and DI 800 Triaxial Tables. Reception by the profession to these two products has been enthusiastic; their technical excellence is immediately apparent. Now, what do we do for an encore?
We will soon introduce our new DI 900 Modular Xenon Gas Delivery System. The DI 900 is modular because of the varying needs of each clinician. It will be expandable from a single breath system up to a sophisticated re-breathing device with dual spirometers, automatic oxygen replenishment, carbon dioxide removal, xenon exhaust trapping and many more advanced features. Will the DI 900 solve your needs? We think so because, like the DI 650 and 800, its design was an "inside" job. This system is yet another example of how Dunn Instruments is applying technology of the seventies to meet the growing demands of today's NM clinician.

Dunn Instruments

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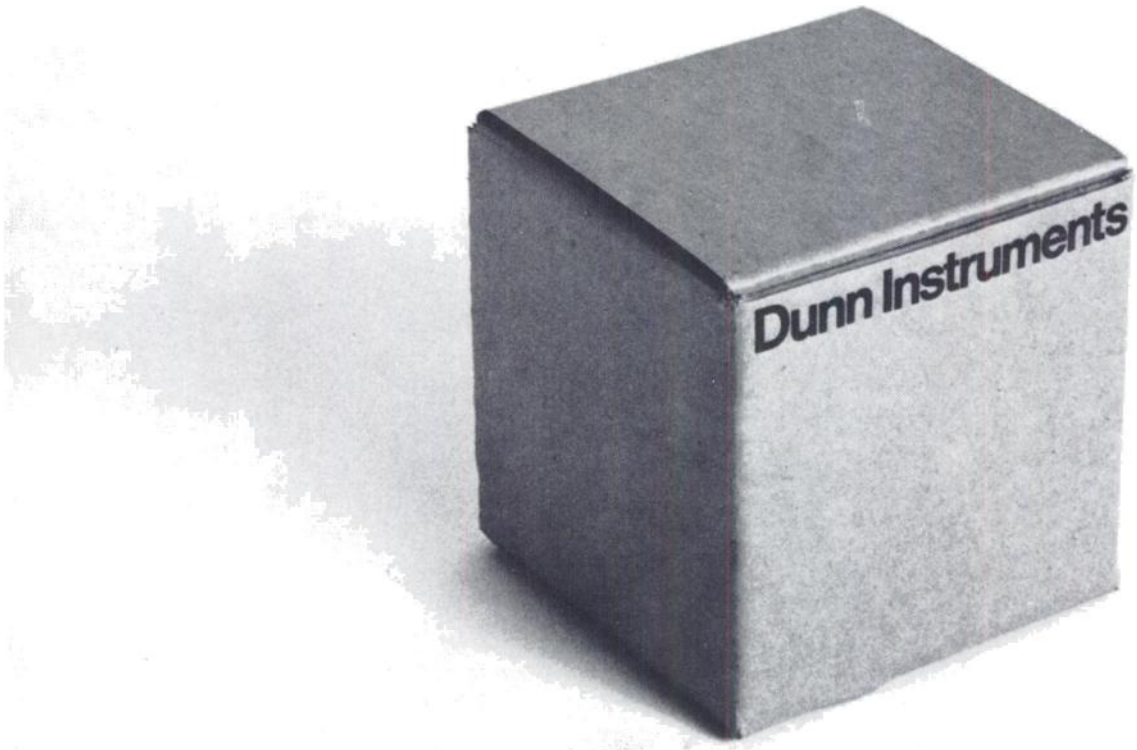


MDS
MDS

MDS puts together the comprehensive system with the exclusive dual camera interface...

the next step in gamma-imaging

Now you can capture, analyze and re-examine well-defined images from any camera . . . or any that's being developed. MDS has created a precise hardware-software tool from its surveys of every computer manufacturer's equipment. We've carefully chosen the most advanced hardware and combined it with a comprehensive library of display and analysis programming. The unparalleled result: no other system can outperform the MDS Nuclear Medicine System.

Its remarkable achievements are already setting industry standards. Programs for field-uniformity, data-smoothing, enhancement, and background subtraction instantly refine your studies. You can choose any time-sampling interval and store all data on disk. Retrieve the image later in milliseconds, in order to film the most clearly resolved image.

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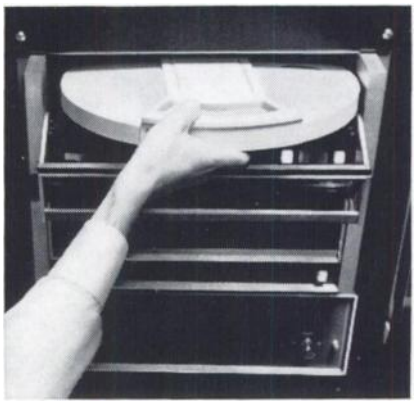

The disk retrieves stored information in milliseconds. To get any result from the disk quickly, simply tap two letters on the teletype keyboard.

Perhaps most important, the computer will simultaneously show four separate views of an organ. From this display, you can frequently make a diagnosis from the scope alone. You can also isolate areas of interest with the optional light pen, intensify them, and strip them out to be viewed by themselves.

Each component of the MDS system provides maximum versatility. You can expand it at any time to perform treatment-planning, research studies, patient scheduling, and accounting operations. And the Nuclear Medicine Module is fitted to your clinic by a medical-science team that specializes in nuclear medicine.

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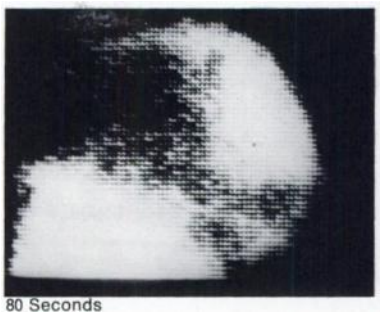
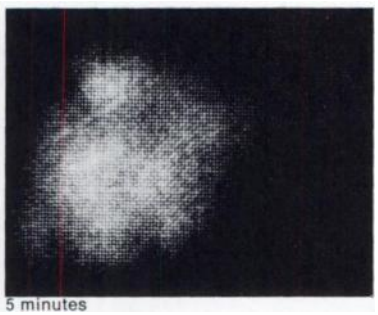
The classified placement service section in the Journal of Nuclear Medicine contains "Positions Open" and "Positions Wanted." Nondisplay insertions by members of the Society are charged at 30¢/word for each insertion with no minimum rate. Nondisplay insertions by employers or nonmembers are charged at 65¢/word with a minimum of $15. Display advertisements are accepted at $40 for ⅛ page, $75 for ¼ page, $135 for ½ page and $245 for a full page. The closing date for each issue is the 15th of the second month preceding publication month. Agency commissions and cash discounts are allowed on display ads only. Box numbers are available for those who wish them.



80 Seconds

Typical Brain Scan
This is a six-year-old white male with a recurrent astrocytoma on the left side. Left lateral delineating the major portion of the recurrent tumor – ^{99m}Tc pertechnetate-5.0mCi. (The comparable scan took 5 minutes.)



5 minutes

Typical Liver Scan
This shows polycystic disease of the liver in a 45-year-old male. Note that the individual cysts are well-defined on the autofluorogram. Anterior view of liver with comparison studies – ^{99m}Tc sulfur colloid-1.0mCi. (The comparable scan took 25 minutes.)

If you had 4704 eyes, you'd see a lot better too.

The Baird-Atomic IMAGER 5700, with 4704 "eyes", delivers an image resolution better than any other.

What's the secret? Our detector!

Housed just above the multi-holed collimator on the Imager, the detector is a unique matrix of 294 NaI (Tl) crystals. Each crystal is a sensor, sending each detected event, on its own, to the magnetic core memory. Combine this imaging with the computerized bed that's programmed to index 16 times – 2.78mm per move – and you have our secret . . . a matrix of 4704 individual detectors or "eyes".

As a result, you see better . . . with an image of superior integrity. With no interference from events in adjacent crystals. No "ghosts" to tune out. And no mispositioning at high count rates.

With Baird-Atomic's IMAGER 5700 you get a scintillation camera that can be used as a scanner and still be capable of rapid imaging as well. Many of our customers perform both Statics and Dynamics, with one patient set-up.

The IMAGER 5700 performs at 3 to 4 mm resolution . . . routinely. And you know what this can mean.

In addition, its fast Dynamics allow the physician to interpret rather than interpolate. And you know what that means, too.

Baird-Atomic has worked with physicians and pharmaceutical manufacturers as a team to do a better job of taking care of people . . . for faster diagnosis and quicker treatment. That's why we've been a leader in nuclear medical research and other analytical instrumentation for 35 years.

For further information, call or write today. Let us show you the way to see 4704 times better with the IMAGER 5700 . . . and its unique detector.

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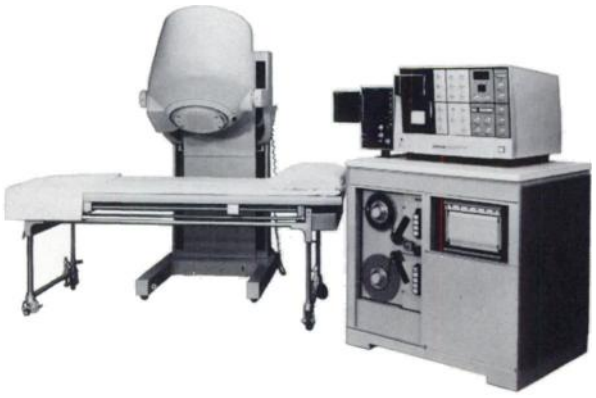

Send for our new descriptive brochure on the IMAGER 5700 system. It's mailed without obligation.

Pho/Gamma is now better than ever.

Ask your Nuclear-Chicago sales engineer about the new Pho/Gamma® HP Scintillation Camera . . . about its higher resolution for crisper static studies . . . about its better sensitivity for dynamic function studies.

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