

People and Things

ratio as carbon-14, proved to be a nuisance but a method has now been developed to eliminate the nitrogen effects by absorption in xenon. As a result, the group estimates that carbon-14 can be separated from nitrogen-14 down to one part in 10^{14} .

A group at Brookhaven using a Van de Graaff to separate ions developed a negative ion source which eliminates effects due to nitrogen. Using this technique, carbon-14 has been detected in a milligram sample and specimens from the US Geological Survey dating back 70 000 years have been checked. Other tests using Van de Graaff techniques have been successfully carried out at McMaster University in Canada.

These developments have already aroused the interest of archaeologists, geologists and historians. As well as enabling samples hundreds of times smaller than usual to be examined, the techniques could allow the lower concentrations of carbon-14 in older specimens to be measured. While conventional methods usually reach their limit at about 60 000 years, this direct detection could extend radiocarbon dating to 100 000 years.

Resignation of Bob Wilson

On 9 February Professor Robert R. Wilson resigned as Director of the Fermi National Accelerator Laboratory in protest against the 'inadequate' funding of the programme at Fermilab. The announcement was made by Norman Ramsey, President of the Universities Research Association, which manages the Laboratory. The URA reluctantly accepted the resignation at its Board of Trustees meeting on 16 February.

Main points from his letter of resignation are — The future viability of Fermilab is threatened because the funding has been below that necessary to operate the existing facilities responsibly... Present operation is at about half the capacity to do physics... The scheme to increase the proton energy to 1000 GeV through the application of superconductivity has been confounded by indecisive and

subminimal support, as have the modest proposals for intersecting beams... No additional money has been identified for Fiscal Year 1978, nor does the President's budget for Fiscal Year 1979 indicate more than a cost-of-living increase in operating funds. It does propose that the Tevatron project become a construction project costing \$ 39 million but the rate of funding indicated for Fiscal Year 1979 would require at least \$ 5 million more to keep the Tevatron project moving at an acceptable and economic rate.

Professor Wilson indicated that he wished to continue to work on the

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1. Professor R.R. Wilson
 2. On 13 February the British Secretary of State for Education and Science, Mrs. Shirley Williams, visited CERN. She is pictured here during a tour of the 400 GeV proton synchrotron with Michael Crowley-Milling, Leader of the SPS Division.

(Photo CERN 223.2.78)



1.



2.

Emile Sigaud, with his son Frédéric, in front of the animated model of the CERN machines which he conceived and constructed. The model (using LEDs - light emitting diodes) demonstrates the interlocking sequence of operation of the linac, booster, PS, ISR and SPS and the experimental areas which they feed. It is proving of great value in explaining these complexities to CERN visitors.

(Photo CERN 451.2.78)

Harold Cohen, a painter and artist who now uses a computer as his alter ego, showed his unique method in a lecture at Fermilab. He has taught a computer to create its own art following a set of conventions ranging from simple requirements to stay within the picture to complex balance constraints. The computer draws on a large scale using a computer controlled bug that scurries over paper laid on the floor. The demonstration employed a PDP-11-45 computer ordinarily used at Fermilab for on-line analysis.

(Photo Fermilab)

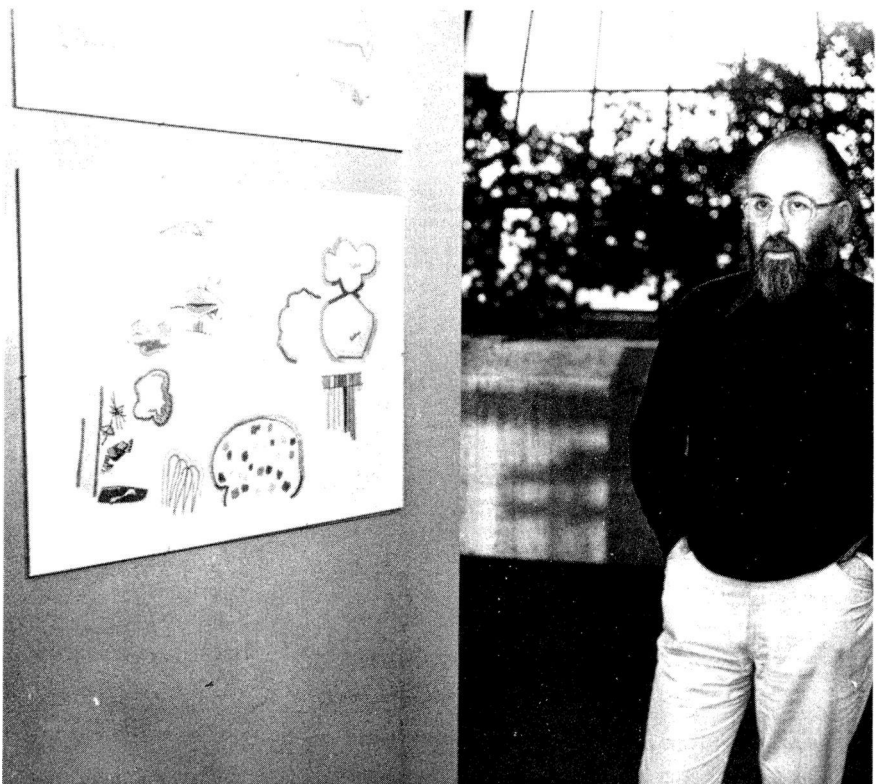
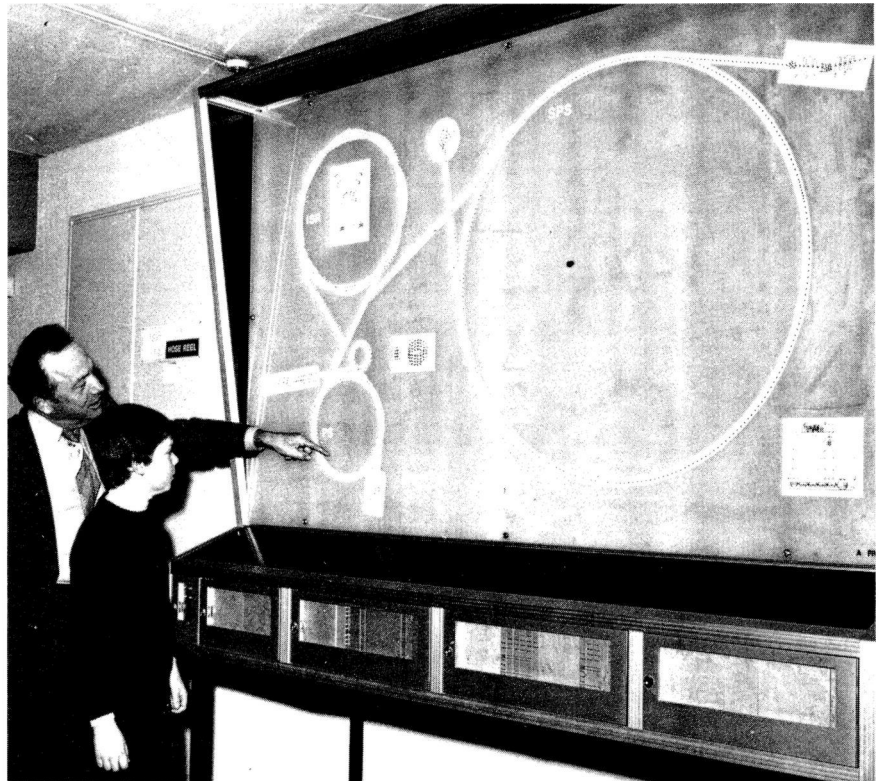
Tevatron, a project which he initiated as an improvement programme for Fermilab, and hoped that the gesture of his resignation would help increase support for the Laboratory.

It is typical of Bob Wilson that he should go out from being Director of Fermilab with a bang rather than a whimper. He has led the Laboratory in dramatic style since it came into being in June 1967. During his term of office he has added the world's highest energy, highest intensity proton synchrotron to his previous similar achievement with the electron synchrotron at Cornell. Almost all features of the Laboratory (the aesthetic, the ecological, the hierarchical, the style of experiments...) are stamped with his powerful personality and he will not be an easy man to follow. We salute his great achievements during his years as Director of Fermilab.

ICFA Meeting

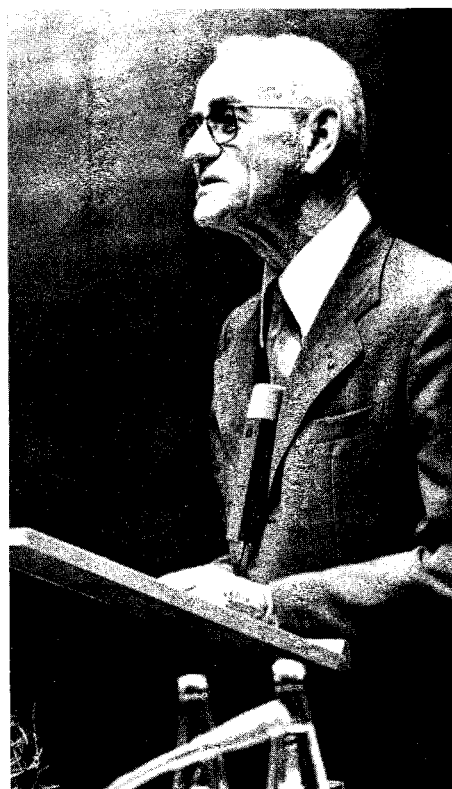
The International Committee for Future Accelerators, ICFA, met at CERN on 27 January with representatives from Japan, Soviet Union, USA and Eastern and Western Europe. The Meeting was opened by Ned Goldwasser following the death of the ICFA Chairman, Bernard Gregory, to whom tribute was paid. The major aim of ICFA is to discuss world-wide collaboration in the construction of an accelerator, often referred to as the VBA (Very Big Accelerator).

It had been intended to pursue this aim by setting up Study Groups but at the January Meeting it was decided instead to hold Workshops on particular aspects of the VBA project. The first will be held at Fermilab in October on present limitations of accelerators and detectors. A second may follow in the Spring of 1979 at Serpukhov on progress with superconducting magnets and superconducting radio-frequency cavities. A third may cover



A memorial gathering in honour of Bernard Gregory was held at CERN on 27 February. Leon Van Hove, Charles Peyrou, John Adams and Louis Leprince-Ringuet (photograph) all paid tribute to the memory of Professor Gregory.

(Photo CERN 500.2.78)



the physics aspects of the VBA.

John Adams was elected President of ICFA for this year with Owen Lock as Secretary. Two Western Europe representatives, Wolfgang Paul and Guy von Dardel have been replaced by Godfrey Stafford (Chairman of the CERN Scientific Policy Committee) and Marcel Vivargent (President of the European Committee for Future Accelerators).

On People

A.I. Alikhanian, Associate Member of the USSR Academy of Sciences and former Director of the Physics Institute at Yerevan in Soviet Armenia, died in Moscow on 25 February after a long illness. Professor Alikhanian was associated with the building of the 6 GeV electron synchrotron, ARUS, at Yerevan and with the development of the transition radiation high energy particle detection technique.

Paul Matthews of the University of Bath received the 1978 Rutherford Medal and Prize from the UK Institute of Physics for his contributions to elementary particle physics. Professor Matthews is also the author of one of the popular books on recent discoveries in fundamental physics, entitled 'The Nuclear Apple', and until recently was a member of the CERN Scientific Policy Committee.

Basil Zacharov, former Head of the Computing Systems and Electronics Division at Daresbury, took up the position of Director of the University of London Computer Centre at the beginning of March.

John Bailey, a leading physicist on the g-2 experiments at CERN who had moved to Daresbury, has joined IKO (the Netherlands Institute for Nuclear Physics Research) at Amsterdam as leader of the Pion-Muon Group. Also working with IKO is former CERN physicist Ron Fortune whose 'Scientific and Technical Services' has been commissioned for a 5 m superconducting solenoid for the muon channel.

Clarke's Law

Perhaps best known for his science fiction epic '2001: A Space Odyssey', Arthur C. Clarke has a considerable literary output behind him including many works as a 'serious' science writer. For example, his paper on extra-terrestrial relays, published in 1945, was one of the pioneer works which blazed a trail for today's satellite communications technology. He also developed Clarke's Law:

'When a distinguished but elderly scientist states that something is possible, he is almost certainly right; when he states that something is impossible, he is very probably wrong. The only way to define the limits of the possible is by going beyond them into the impossible.'

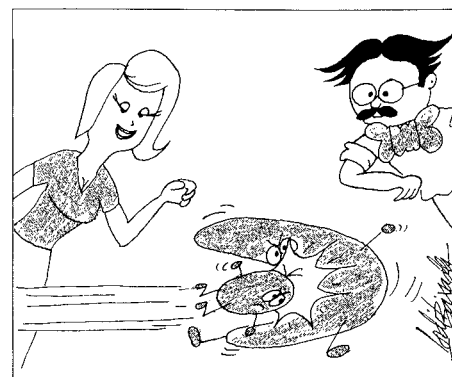
CERN in colour

On 3 March a series of comic strips on CERN started in the Geneva newspaper, Tribune de Genève. They are running daily for seven weeks presenting the research, the machines and the organizational structure of CERN in a colourful way.

This technique of communicating information is spreading rapidly and the most serious of institutions is not beyond the reach of the cartoonist's pen. The project originated from a conversation between Alfred Roulet of the Tribune and Roger Anthoine of the Press and Visits Service. Brian Southworth prepared the scenarios, Georges Boixader did the drawings, Henri-Luc Felder looked after the French version and Leon Van Hove provided encouragement and help.

The proton takes on a distinctive smiling character (not so easy when three other individuals are sitting inside you)... the neutrino appears as an elusive ghost... three invented physicists take a visitor around the CERN accelerators and detectors... national archetypes represent the Member States. It is all intended to amuse and to inform about CERN and its work.

When the series is complete in the Tribune, albums of the comic strips in both French and English editions will be produced.



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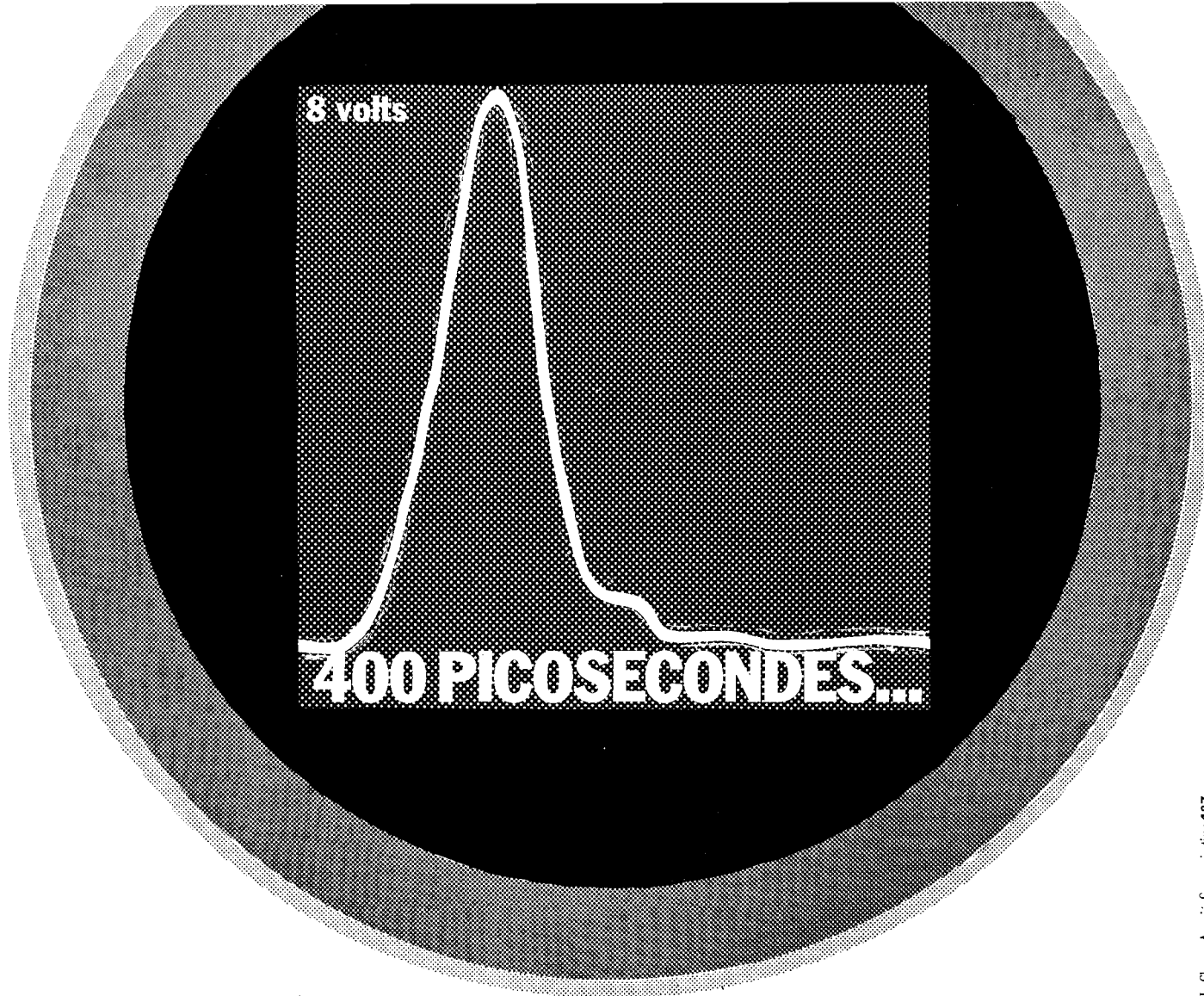
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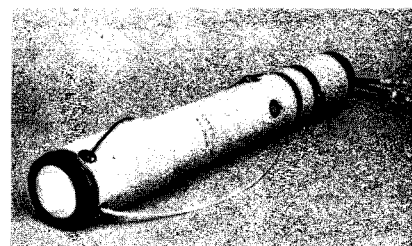
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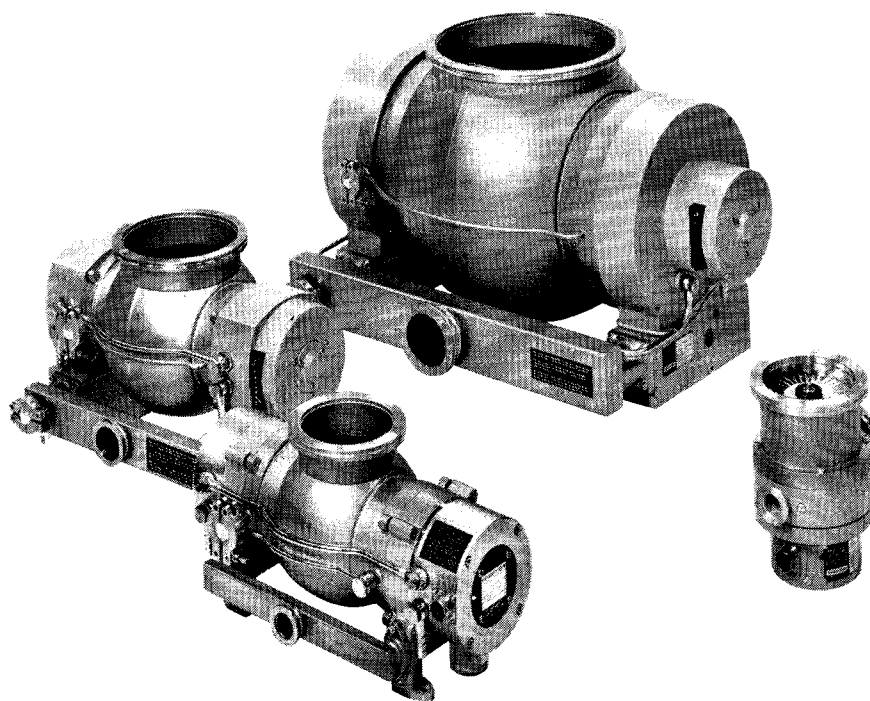


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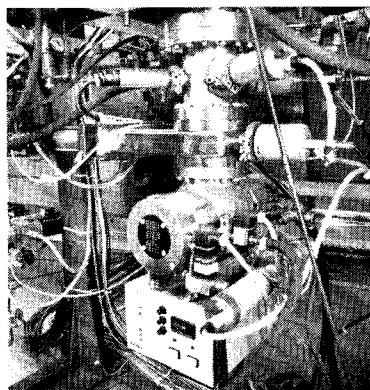


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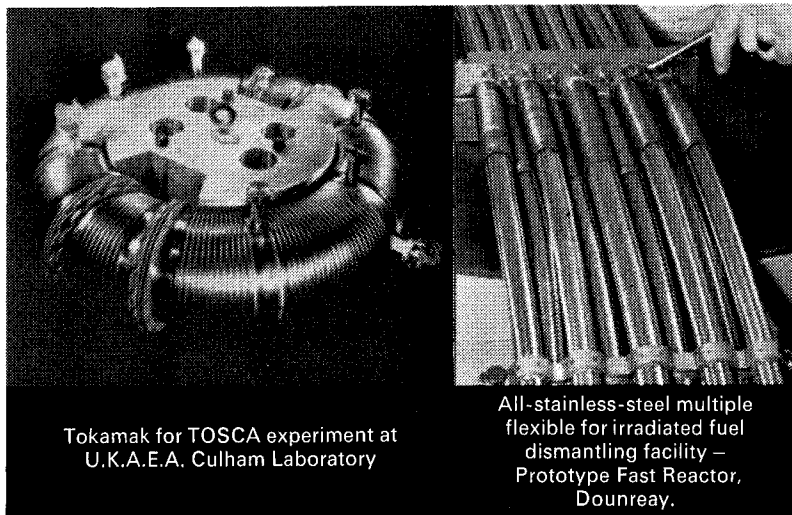
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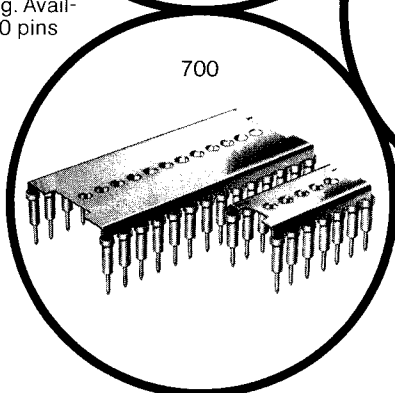
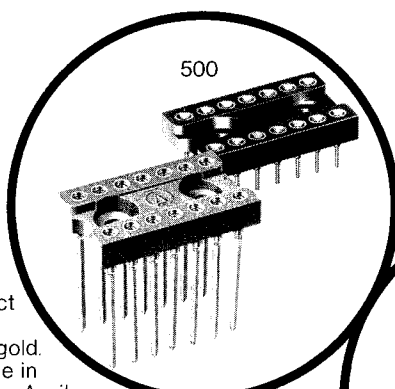
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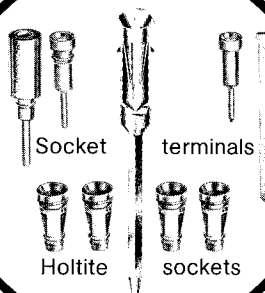
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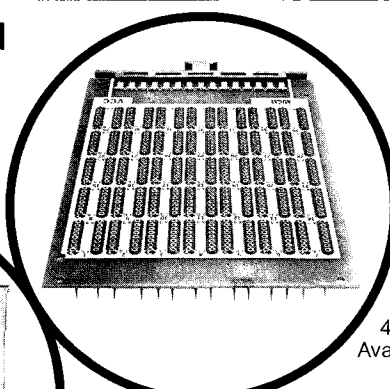
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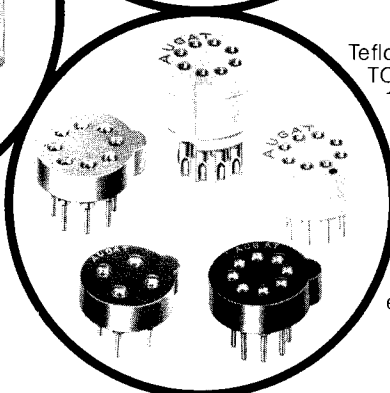
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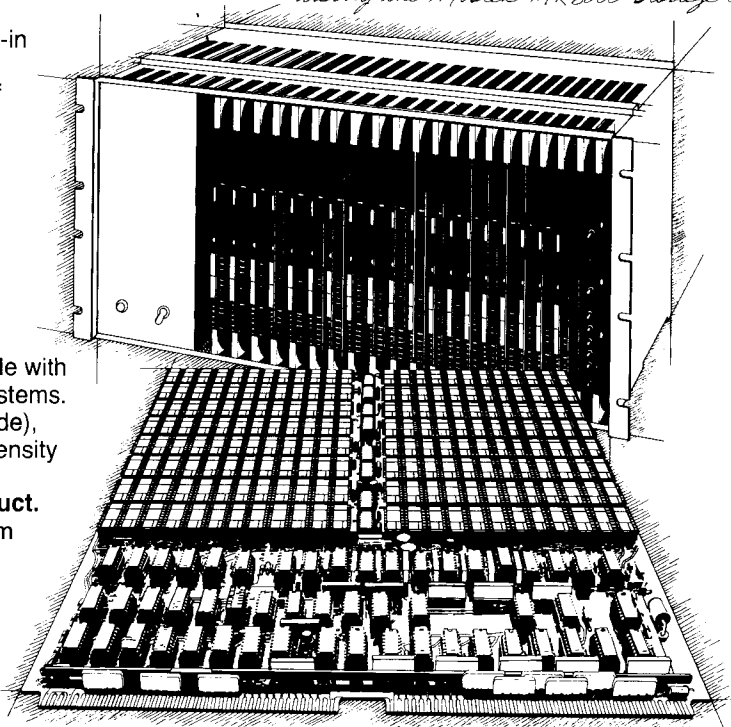
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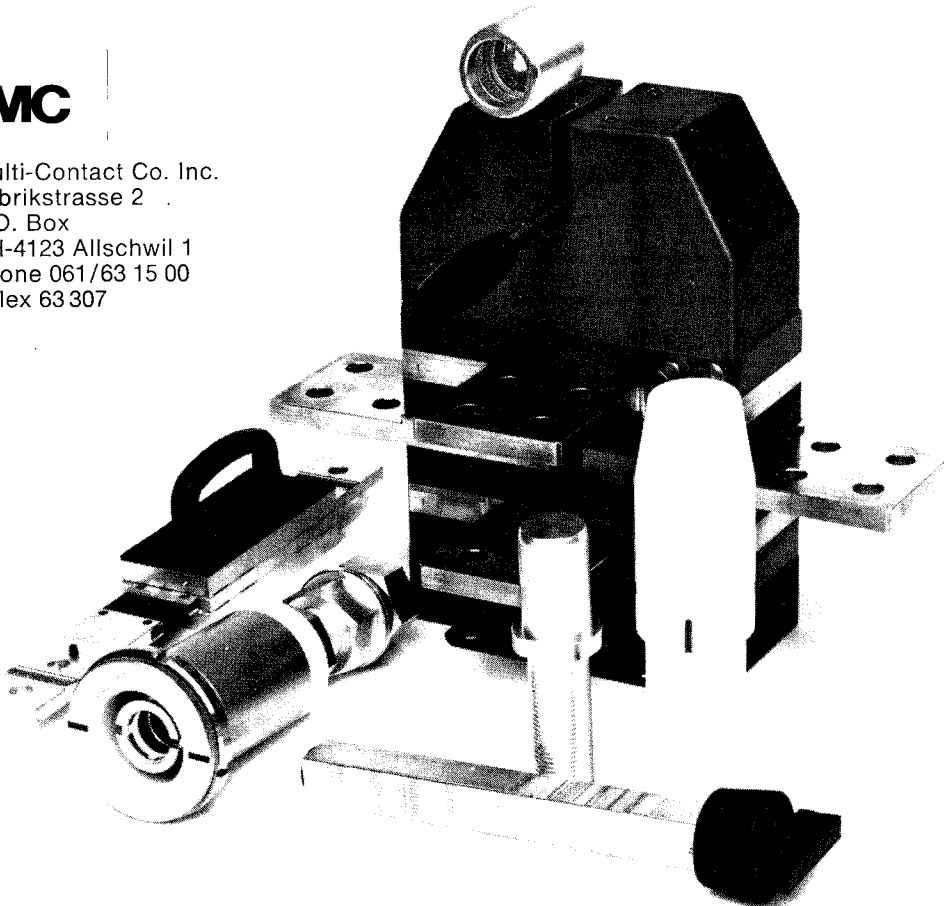


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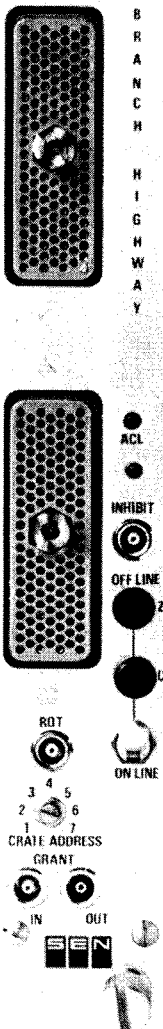
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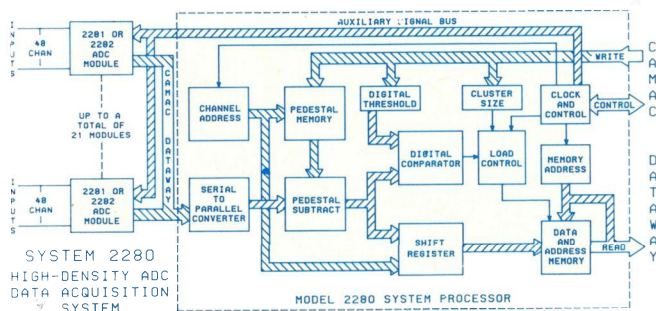
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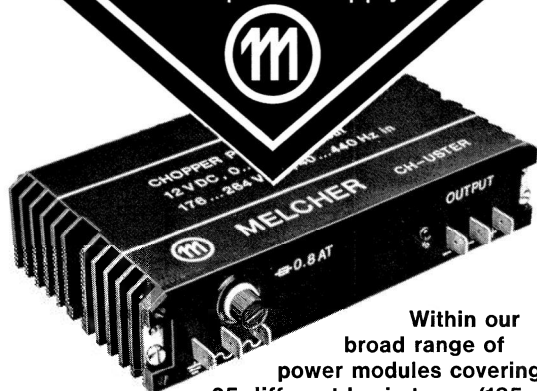


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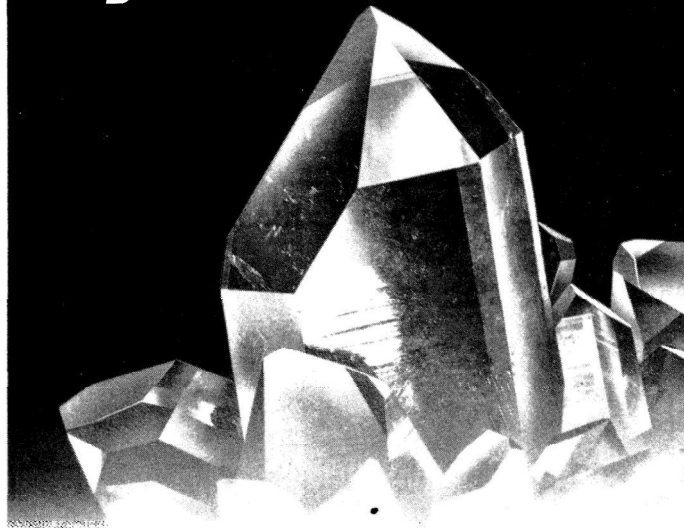
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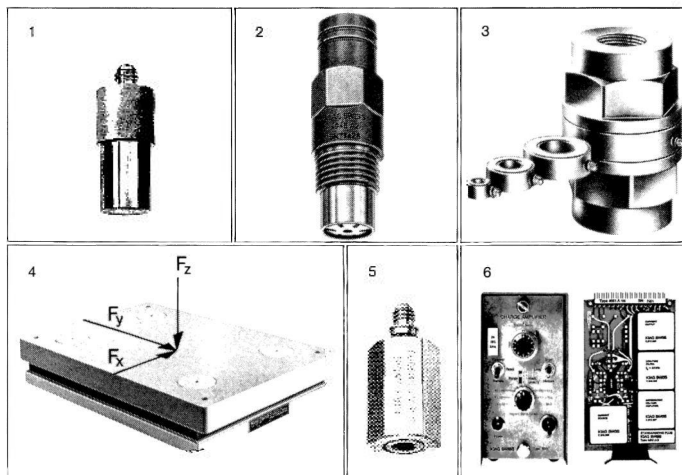
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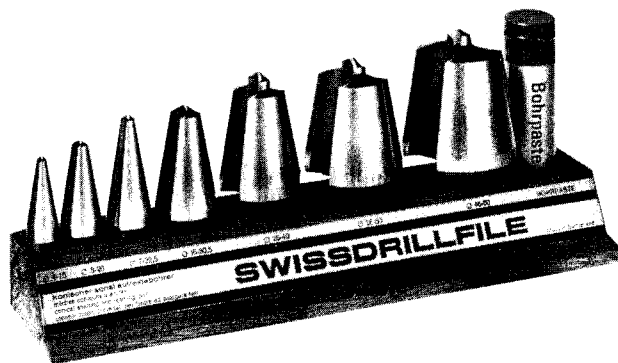
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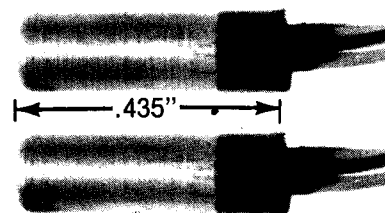
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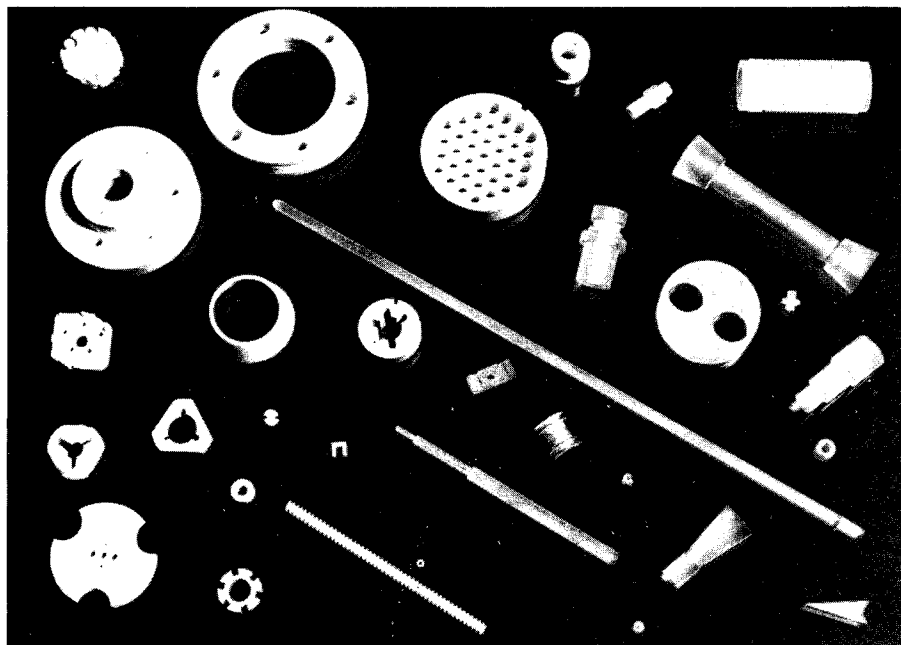
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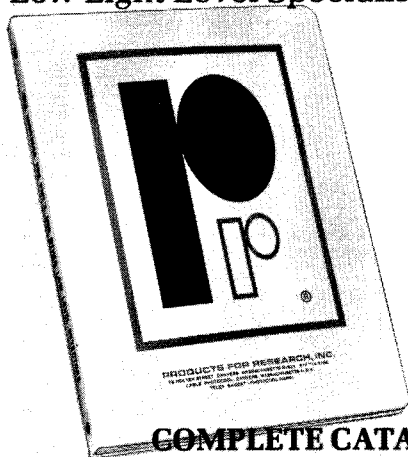
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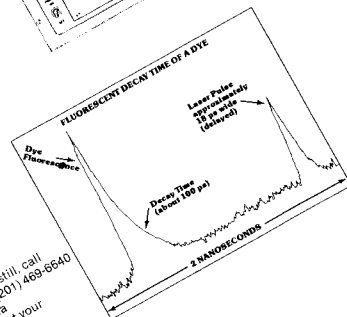
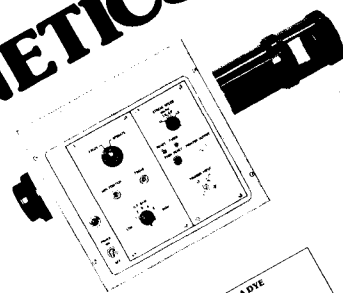
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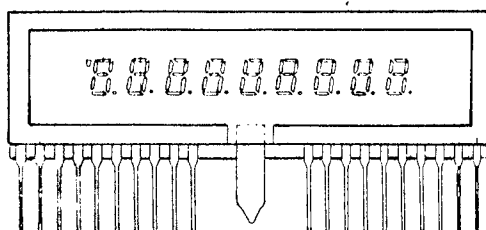
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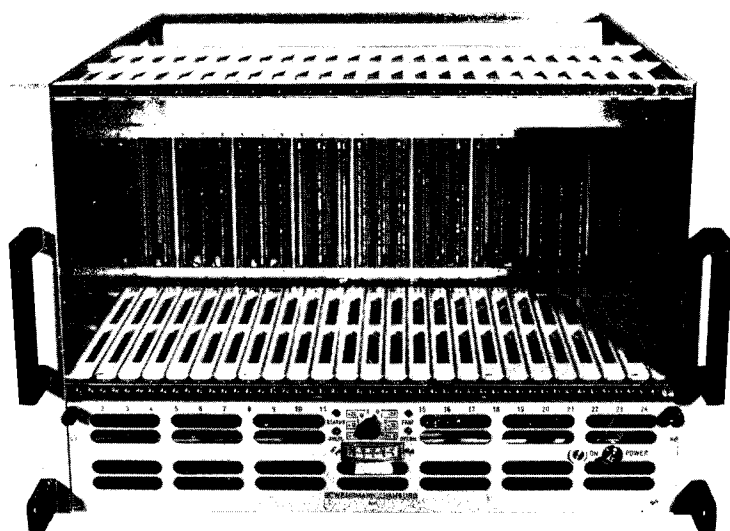


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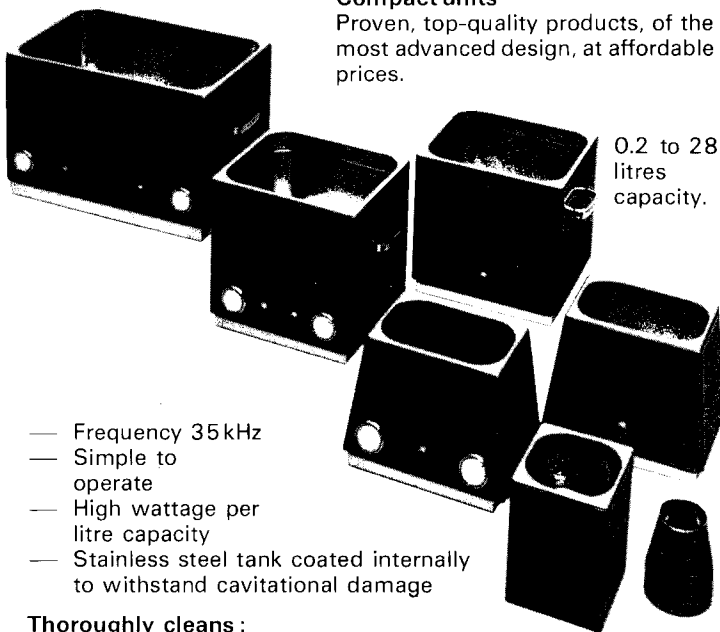
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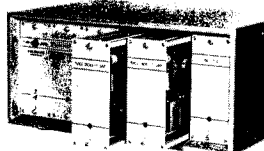
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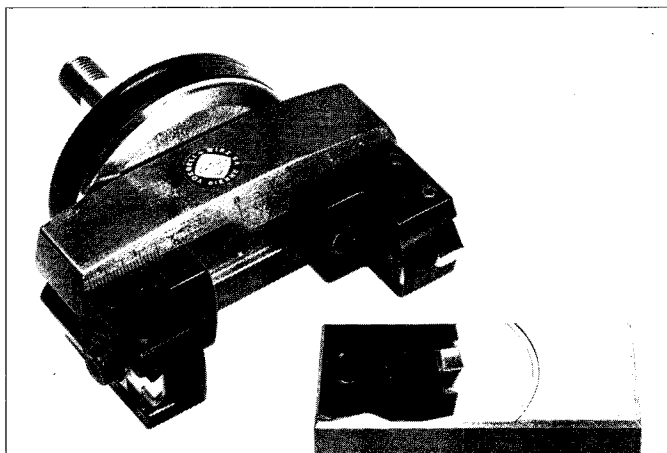
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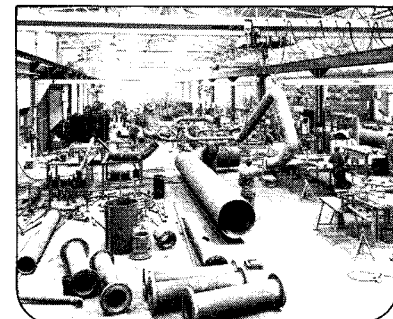
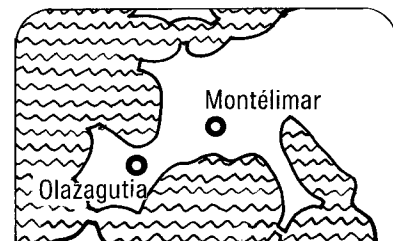
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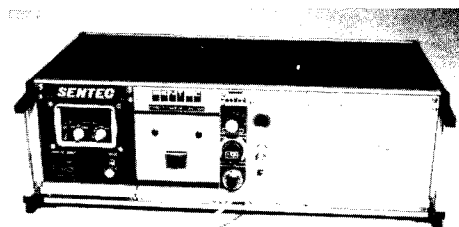
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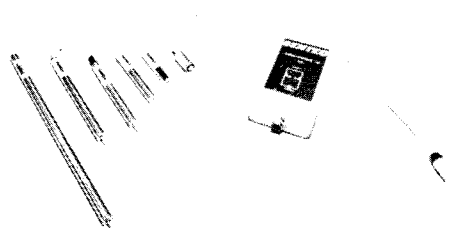


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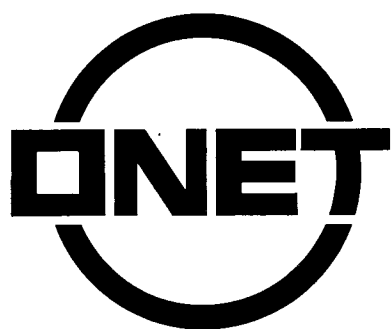
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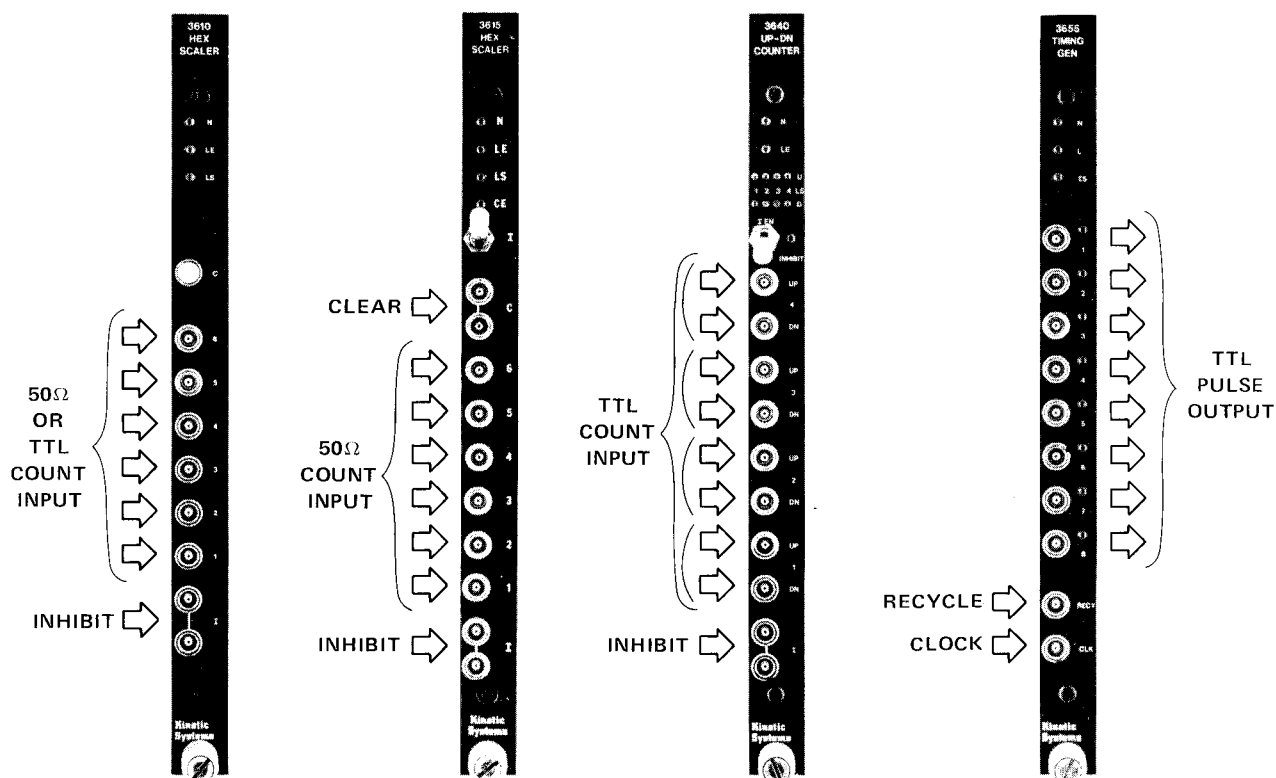
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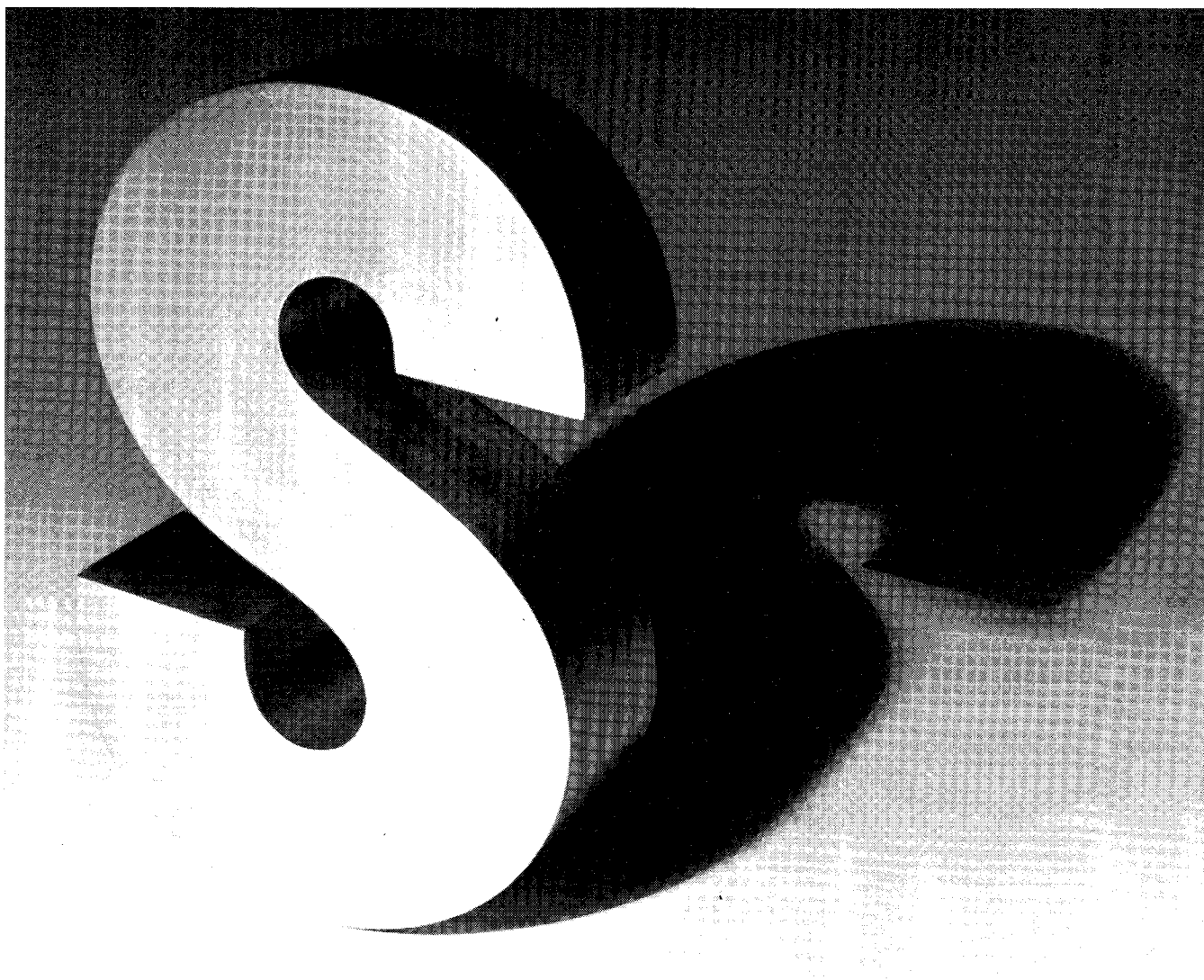
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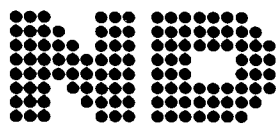
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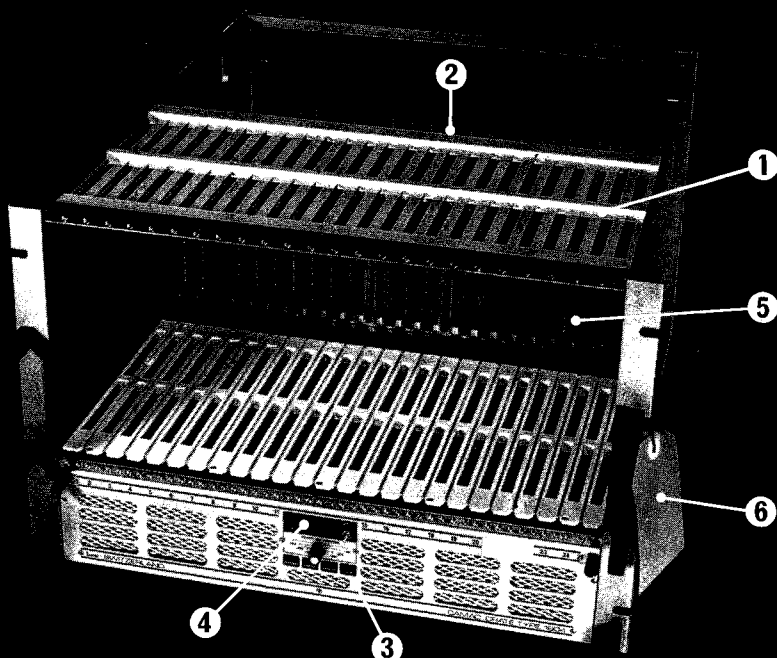
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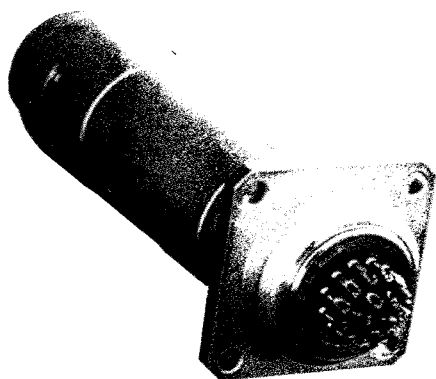
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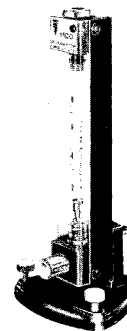
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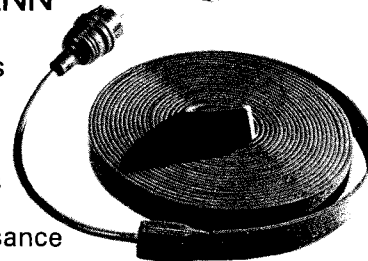
Demandez la documentation auprès de

WISAG
vorm. WISMER AG

Oerlikonerstrasse 88
tél. 01/46 40 40
8057 Zurich

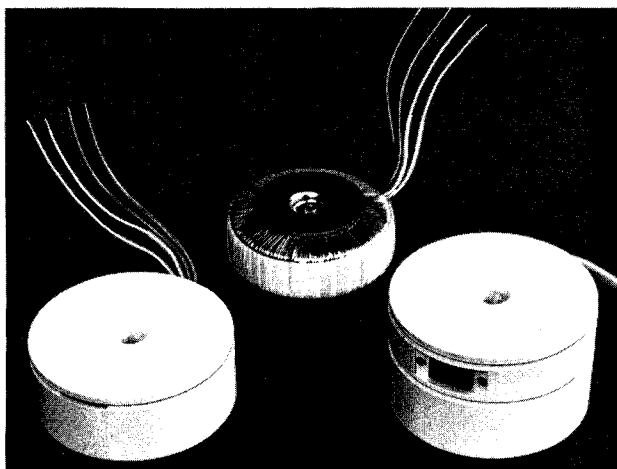


type 1100



Leitgeb importe aussi les meilleurs produits suédois!

Sélectionner dans le monde entier pour nos clients les meilleurs moyens de résoudre les problèmes techniques qui se posent à eux, c'est déjà devenu presque un hobby pour les ingénieurs de Leitgeb! Voici, par exemple, un des principaux produits de la société Transduktor Winding AB:



Le transformateur à tore

Epruvé SEV Le transformateur à tore

Avec tensions standards: 15-1000 voltampères. Sur demande, également livrable jusqu'à 10000 volt-ampères. Pourquoi connaît-il un succès croissant?

- poids minime
- volume restreint
- bruit de fond presque inexistant
- champ de dispersion réduit
- peu de pertes dues à la marche à vide
- montage simple

Et, avec tous ces avantages, il est à peine plus cher qu'un transformateur traditionnel. Faites un essai!



D. Leitgeb SA
8600 Dubendorf, Ueberlandstr. 199
Tél. 01/820 15 45, Téléx 55 547

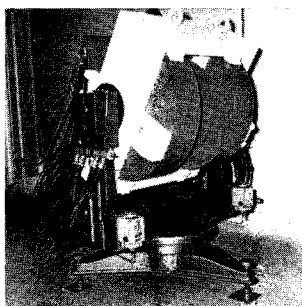
Ing. D. Leitgeb
A-9800 Spittal/Drau, Lagerstr. 51
Tél. 04762/4022, Téléx 48 191

Specialized for 35 years in the field of electromagnetic coils and castings, the firm of S.E.G.C.E.M. has carried out a great deal of work characterized chiefly by the originality of the methods applied and the electrical and magnetic performance levels which resulted.

In areas where such parameters as volume, power, or temperature must be at a minimum, S.E.G.C.E.M. is in a position to recommend effective and reliable approaches to applications of very high current density, suitable forms of coil windings, and cooling systems employing water or natural or forced ventilation.

By contrast, some coil windings have been designed for operation at high temperatures ranging up to 450°C.

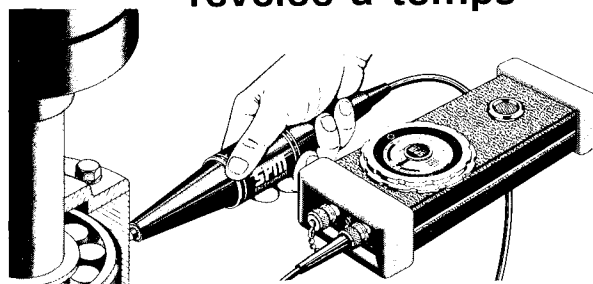
A supplier to the nuclear energy industry, S.E.G.C.E.M. has designed and built equipment components resistant to radiation environments. The line of products which can be offered ranges from small windings weighing but a few grams up to massive items of equipment weighing several tons.



SEGCEM | 
PROCÉDÉS L. POULAIN

Société Anonyme
au Capital de 300.000 Francs
1, rue d'Anjou
Z.I. DES BÉTHUNES
TÉLÉPHONE 037 39-80 +
ST-OUEN L'AUMONE
(Val d'Oise)
Adresse postale:
B.P. 402 95005 CERGY

La détérioration des roulements sera révélée à temps



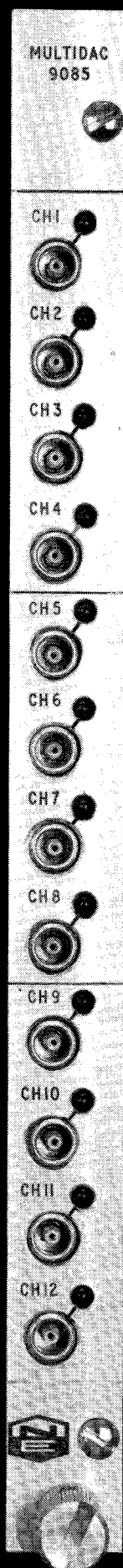
**Le contrôle des roulements
avec la méthode SPM est simple, fiable
et a fait ses preuves mondialement**

Des renseignements complémentaires
peuvent être obtenus auprès de:

Roth & Co. S.A., Niederuzwil
Tél. (073) 51 68 68

Producteur:

SPM Instrument AB
Strängnäs, Schweden



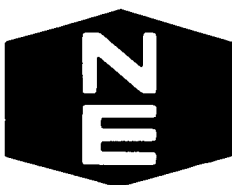
CAMAC

Multidac 9085

- 12 programmed outputs
- Preselectable: 0 to +10V, -5V to +5V, or 0 to -10V.
- 12 bit resolution
- Simple to program—overwrite and read via 12 sub-addresses.
- Each output initialised until data register overwritten.
- Individual output state indication (L.E.D. illuminates for valid data)
- Rapid output update
- 10 milliamps output current capability

The 9085 provides the equivalent of twelve off, twelve bit digital to analogue converters within one single width module. It is so organised as to provide a cost effective multiple D.A.C. facility. Modules can be supplied to different drift specifications according to system requirements.

Full details on request.



NUCLEAR ENTERPRISES S.A.

25 Chemin François-Lehmann, 1218 Grand Saconnex, Genève. Tel (022) 98 16 61 62
Telex 289066.

Nuclear Enterprises Limited
Bath Road, Beenham, Reading RG7 5PR, England.
Tel: 07-3521 2121. Cables: Devisotope,
Woolhampton. Telex: 848475.

Nuclear Enterprises GmbH,
Schwanthalerstrasse 74, 8 München 2, Germany.
Tel: 53-62-28 Telex: 529938.

Nuclear Enterprises Inc, 931 Terminal Way,
San Carlos, California 94070. Tel: 415-592 8663
Telex: 348371.

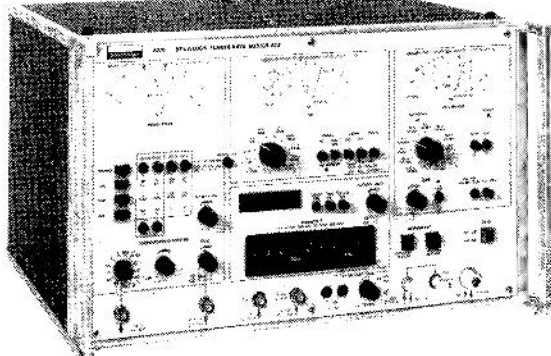
Nouveautés Schlumberger

Progrès- grâce à des recherches et développements intensifs

Place de mesure Stabilock 4010/4011 pour le test de radio-téléphones

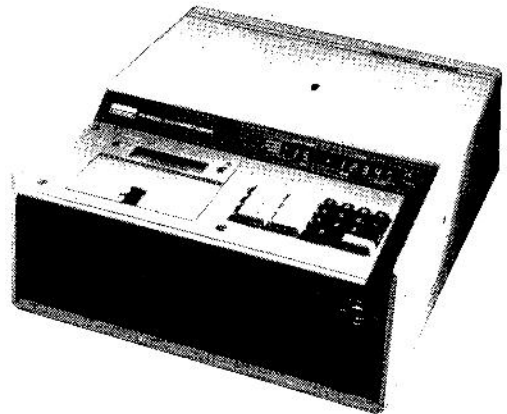
Ensemble de test complet et compact, destiné au contrôle de qualité et de performances de chaque émetteur-récepteur.

- Générateur-Synthétiseur 10 Hz...480 MHz
- Modulation AM, FM et de phase
- Compteur jusqu'à 500 MHz
- Mesure de puissance 25 W (100 W)
- Millivoltmètre BF
- Distorsimètre
- Générateur de modulation 30 Hz...10 kHz



Système d'acquisition de données 3430 alimenté par réseau ou batterie

Compact et facilement portable ● 30 entrées analogiques / 20 entrées digitales ● linéarisation pour 7 types de thermocouples ● détection de limites et enregistrement des canaux en alarme ● périphérique incorporé ou extérieur ● prix imbattable

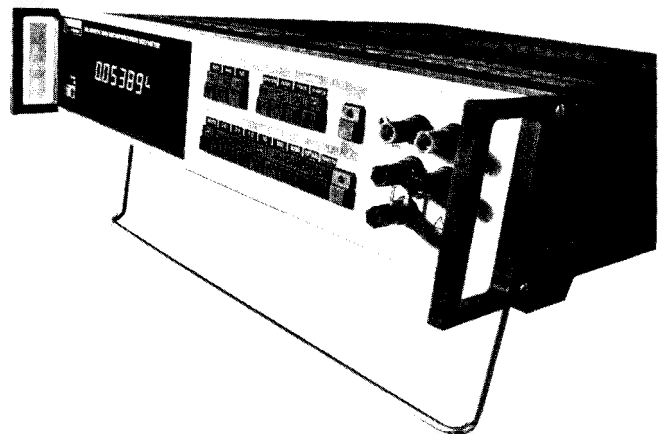


Deux voltmètres inhabituels avec traite- ment «on line» des valeurs mesurées

De nouveaux horizons s'ouvrent grâce aux nouveaux voltmètres à microprocesseur modèles 7055 et 7065. Outre les fonctions voltmètres-ohmmètres, précises et rapides, ces appareils permettent le traitement «on line» de 8 programmes et 16 présentations des résultats

- 3 fonctions de mesure DC, AC, Ohm
- longueur d'échelle à choix (3 x 9 à 6 x 9)
- haute précision et linéarité
- 43 mesures/sec avec affichage 5 x 9
- 4 interfaces: binaire, BCD, RS 232, IEC
- et en plus, un choix incomparable de traitements de l'information tels que:
 - multiplication/division
 - % de déviation
 - offset
 - quotient
 - maxima/minima
 - limites
 - statistiques
 - températures
 - horloge numérique, etc.

Pour en connaître davantage sur ces appareils européens, demandez-nous une démonstration ou l'envoi d'une documentation détaillée.



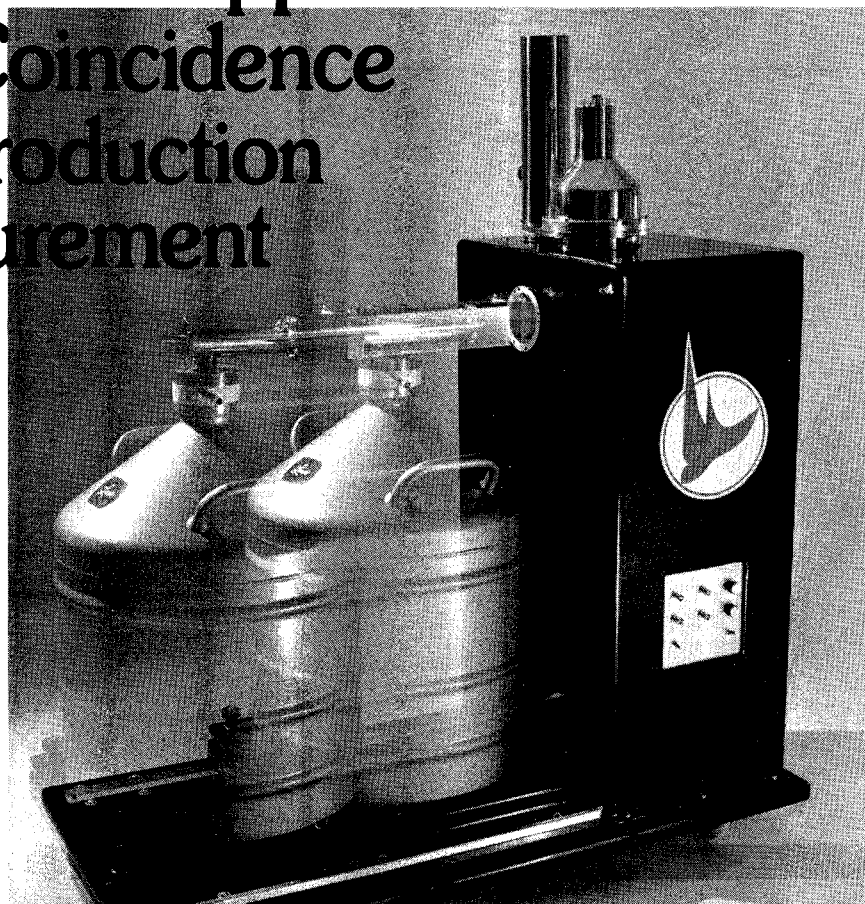
Schlumberger

Schlumberger Messgeräte AG

8040 Zürich, Badenerstrasse 333, Telefon 01/52 88 80 1007 Lausanne, 16 chemin du Reposoir, téléphone 021/27 77 18

Bicron spans the equipment spectrum

- Compton Suppression
- Anti-Coincidence
- Pair Production Measurement



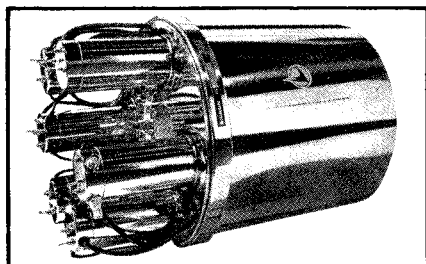
Bicron Model CS-1 Compton Suppressor.

Bicron has addressed itself to the problem of enhancing the sensitivity of Ge(Li) spectrometers by developing NaI(Tl) crystal guard detectors to block Compton scattered events out of the spectrum. This equipment is now available in commercial form ready-to-use, or in major component form for those who wish to "customize" their own systems.

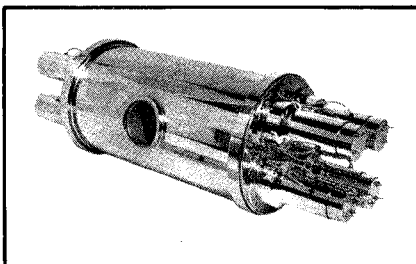
Enclosing of the spectrometer detector within the Bicron NaI(Tl) guard shield, discriminates Compton-related events at various energy levels, and subtracts these spurious events from spectra presented on the pulse height analyzer. Computer calculated efficiencies show that over 94% of all scat-

tered gamma rays escaping the Ge(Li) detector are captured by guard crystals for sample emitted gamma rays up to 2 Mev. Efficiency is even higher at lower energy levels.

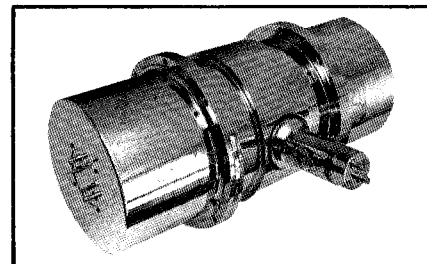
Peak-to-Compton ratio, and final sensitivity of the Ge(Li) spectrometer, is largely dependent on the characteristics and mounting of the detector. In a "worst case" configuration with a heavy 1.5mm thick dead layer, the ratio was approximately 150:1. With a properly specified detector, peak-to-Compton ratios of several hundred-to-one should be attainable. Check your local Bicron representative for full details, or write to Bicron direct.



Bicron Model 10HW10 (10" dia by 10" long NaI(Tl) crystal) with 3" dia center well. PHA resolution 10.2% for Cs¹³⁷.



Bicron Model 9HW5 (two 9" dia by 5" thick NaI(Tl) crystals coupled to two optically separated 9" dia by 4" thick pure NaI crystals). Composite resolution, summing all 8 PM tubes, 7.9% for Cs¹³⁷.



Bicron Model 9HSW9-X. 9" dia by 9" long NaI(Tl) crystals with 3" ID through center well. Crystal is split in center to form two 9" dia by 4 1/2" long optically isolated detectors. Assembly pulse height resolution 7.4% for Cs¹³⁷.



BICRON CORPORATION 12345 Kinsman Rd., Newbury, OH 44065, (216) 564-2251

