

Operation and Maintenance Manual

Model 121 "Drill Hole" Geiger Counter*

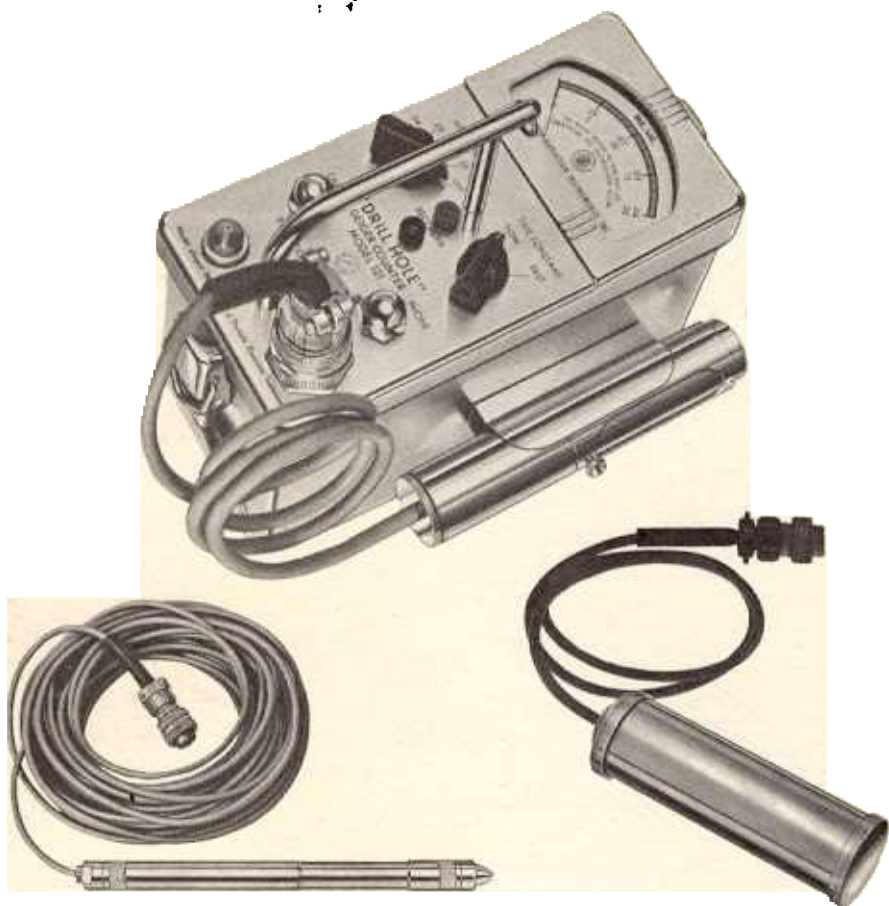
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PRECISION RADIATION INSTRUMENTS, INC.

Los Angeles 16, California

World's Largest Manufacturer of Radiation Instruments



Model 121 "Drill Hole"

Geiger Counter

Precision Radiation Instruments, Inc.
MODEL 121 INSTRUCTION MANUAL

The Model 121 is the same as the Model 107C, with the following exceptions:

DESCRIPTION

On the panel of the Model 121 is a waterproof connector into which may be plugged either of three types of probes: #65.70

Type "A" probe contains a thin mica end-window geiger tube, and is used for detection of alpha and beta particles.

Type "B" probe is used for detection of beta and gamma radiation in general prospecting, and has a sliding shield over the side window for exclusion of beta particles. #17.70

Type "D" probe is a sealed probe, with a long cable, for examination of drill-holes up to 1,000 feet in depth. This probe detects gamma rays only. #54.30

Except on special order, a type "B" probe and a 50 foot type "D" probe are provided as standard equipment with each Model 121 instrument. The type "A" probe is an accessory item and should be ordered separately as required. #149.70

CALIBRATION

To check the calibration of the type "D" Drill Hole Probe, hold the calibrated radium disk flat against the probe about

three inches from the probe tip. Move the disk back and forth slowly along the probe to find the spot which gives the maximum reading when the MR per HR switch is set to the 2.0 position. The reading obtained at this spot should be made by carefully watching the meter for several seconds. If the AVERAGE reading does not agree with that stamped on the radium disk, the cap nut should be removed from the "CALIB." control on the instrument panel, and the control turned until the average meter reading is the same as that stamped on the disk.

To check the calibration of the instrument with the type "B" probe, the procedure is the same, but in this case care must be taken to CLOSE the probe shield so the thin window is NOT exposed. The most sensitive spot on the probe will then be found within the opening in the shield sleeve through which the geiger tube would normally be seen.

TIME CONSTANT

A fast rate of meter response is useful in drill hole work where it is necessary to detect only fairly large changes in radioactivity and when it is desired to raise or lower the probe at a fairly fast rate. In this type of work, the TIME CONSTANT switch should be turned to the "FAST" position. It is important to remember that there is more fluctuation of the meter needle when the "FAST" time constant is used.

To make the most accurate readings possible, the "SLOW" time constant setting should be used. The operator should watch the meter for at least 20 seconds, after it has reached its apparent final value and should then take the average of

the readings indicated. Somewhat better averages can be taken by waiting one minute or more.

RECORDER

The Model 121 can be used with a recorder. It is necessary to have an amplifier which will increase the output of the Model 121 sufficiently to drive a recorder. Our Model 116 "Preamplifier," priced at \$99.50, is designed for this purpose. When ordering the Model 116, specify that it is to be used with the Model 121. The cable to the Model 116 can be plugged into the tip jacks marked "RECORDER" on the panel of the Model 121. We recommend the AW Portable 1 ma. D.C. type No. 2 minute-feed spring drive recorder for use with the Model 116 "Preamplifier" and the Model 121 geiger counter. This recorder is made by the Esterline-Angus Company, P.O. Box 596, Indianapolis 6, Indiana. It can be ordered from Precision Radiation Instruments, Inc. at a price of \$370.00.

AUDIO MONITOR

The Model 123 "Squealer" Audio Monitor may be connected directly to the recorder output jacks of the Model 121. The "Squealer" produces a tone, in its loudspeaker or earphone, which varies in pitch according to the meter readings on the Model 121. It is a valuable "partner" for the prospector working alone, since he can always be aware of changes in radiation intensity without having to watch the meter. The Model 123 "Squealer" is available from any Precision Radiation Instruments dealer, or write direct to the factory for further information.

GUARANTEE AND AUTHORIZED SERVICE

All parts except the batteries are guaranteed for a period of ninety days from date of purchase against defects in workmanship and material. The batteries cannot be guaranteed as they can be easily damaged by misuse. Always check the batteries before returning the instrument for service. The instrument should be returned in the original packing material or be covered on all sides with a thick layer of soft packing material. Enclose a note stating exactly in what way the instrument has not been performing properly, from whom it was purchased, and the date of purchase. To obtain service, pack the instrument carefully as described above, and return it insured and prepaid to your nearest Authorized Service Station.

The technicians at all Precision Authorized Service Stations are completely competent to handle any service problem which may arise. They are trained at the Precision Radiation Instruments Factory Service School and have met the requirements established by the school. Prompt service can be obtained because every Authorized Service Station normally carries a complete stock of genuine Precision repair parts.

NOTE: Because it is possible for untrained persons to damage the instrument by attempting repairs, the factory guarantee is voided if an instrument has been worked on by anyone other than our Authorized Service Stations.

P. R. I. Authorized Service Stations

ALASKA

ANCHORAGE RADIO &
TELEVISION, INC.
443 Fourth Avenue
Anchorage, Alaska

ARIZONA (cont.)

VINSON-CARTER
ELECTRIC CO
325 North Fourth Street
Phoenix, Arizona

ARIZONA

COMMERCIAL RADIO CORP.
747 North Stone
Tucson, Arizona

CALIFORNIA

ALAMEDA RADIO &
TV CO.
612 South Victory Boulevard
Burbank, California

P. R. I. Authorized Service Stations (cont.)

CALIFORNIA (cont.)

BLACKSTONE ELECTRO-
SPECIALTIES CO.

6129 N. Blackstone
Fresno 3, California

ENGINEERS SYNDICATE, Ltd.

5011 Hollywood Boulevard
Los Angeles, California

INDUSTRIAL INSTRUMENT
SERVICE CO.

606 North Ventura Avenue
Ventura, California

LEONARD'S

381 South First Street
San Jose, California

MICROMATIC ASSOCIATES

2322 West Whittier Boulevard
Montebello, California

ROBERTS ELECTRIC

821 Palm Avenue
Imperial Beach, California

SHELBY INSTRUMENT CO.

1701 Magnolia Avenue
Long Beach 13, California

TELEVISION SERVICE CO.

900 Colton
Colton, California

THE ROBERT DOLLAR CO.

Marine Division
50 Drumm Street
San Francisco, California

WILLIAMS APPLIANCE & TV

2140 Myers Street
Oroville, California

CANADA

SEISMIC SERVICE
SUPPLY, LTD.

1318 9th Avenue East
Calgary, Alberta, Canada

COLORADO

G & H URANIUM

629 Main Avenue
Durango, Colorado

GEIGER CENTER

1201 Broadway
Denver, Colorado

MINERALS ENGINEERING CO.

801 Fourth Avenue
Grand Junction, Colorado

ILLINOIS

ELECTRONIC AIDES

23 West Hubbard Street
Chicago 10, Illinois

MISSOURI

WILSON-WILEY CO.

328 Richards Road
Kansas City, Missouri

NEVADA

LASSEN HOME SUPPLY

734 South Virginia Street
Reno, Nevada

NEW MEXICO

SAM'S RADIO SERVICE

218 Vassar, S. E.
Albuquerque, New Mexico

P. R. I. Authorized Service Stations (cont.)

NEW YORK

AUTHORIZED MFR.
SERVICE CO.
919 Wycoff Avenue
Brooklyn 27, New York

NORTH DAKOTA

PAT'S RADIO &
ELECTRONIC SERVICE
Bowman
North Dakota

OREGON

HAWTHORNE ELECTRONICS
200 S. E. Hawthorne
Portland, Oregon

V. E. WILLEY
c/o Zimmerman Hardware
425 South Main
Pendleton, Oregon

SOUTH DAKOTA

RADIO CENTER
723 Main Street
Rapid City, South Dakota

TENNESSEE

ELECTRA
DISTRIBUTING CO
1914 West End Avenue
Nashville, Tennessee

TEXAS

FONVILLE ELECTRONIC
SERVICE
120 South Oak
Pecos, Texas

TEXAS (cont.)

MUNDINE RADIO &
TELEVISION
217 East White Avenue
San Antonio, Texas

SWIECO, INC.
1512 E. Lancaster
Fort Worth 3, Texas

UTAH

ENGINEERS SYNDICATE, Ltd.
337 North Main
Moab, Utah

RADIO SERVICE CO.
40 South Main
Richfield, Utah

WARREN TELEVISION &
RADIO CO.
28 South Main Street
Salt Lake City 1, Utah

WASHINGTON

NORTHWEST
ELECTRONICS, INC.
North 102 Monroe
Spokane, Washington

INSTRUMENT
LABORATORY, INC.
934 Elliott Avenue West
Seattle 99, Washington

FOREIGN: Write to

TERMINAL RADIO
INTERNATIONAL, LTD
85 Courtlandt Street
New York 7, New York
For shipping instructions

