slope of the curves is very different for thin sections, lead requiring much greater increase in exposure between $\frac{1}{8}$ and $\frac{1}{4}$ inch than steel. Over this range radiographs of far greater contrast can be obtained with lead and other metals of high density and atomic number such as platinum and its alloys. The reason for this is probably that the gamma-rays from iridium cover a range of energies from 0.30 to 0.61 meV and as lead has a much higher absorption coefficient than steel the lower energy rays are stopped more readily.

Protection of Operators

It is important that radio-active isotopes should be handled in such a way that radiation received by operators is kept to a minimum. A check should be kept on the amount of radiation received by carrying film badges or ionisation chambers. The maximum permissible dose from iridium 192 for continuous working is 0.3 röntgens per week. The radiation from an unshielded source is 0.5 milli-röntgens/hour/milli-curie. A 2-curie radiographic source would therefore give a week's radiation in 20 minutes at a distance of one metre.

Availability of Sources

Iridium sources are available from the Atomic Energy Research Establishment, Harwell, in four standard sizes in the form of cylinders with their length equal to their diameter, the sizes being 6×6 mm, 4×4 mm, 2×2 mm and 1×1 mm, and also as wire 1 mm diameter and as foil 0.05 inch thick.

References

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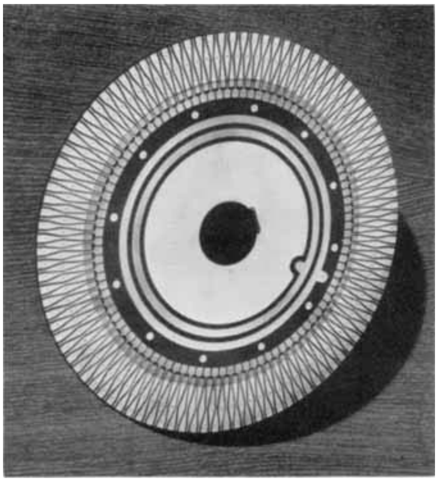
RHODIUM PLATED PRINTED CIRCUITS



Printed circuit techniques based on conventional etched, copper-clad laminates are well established for the manufacture of multi-way switches. Such techniques greatly simplify construction and reduce manufacturing time and cost.

Electrodeposited rhodium is generally accepted as the most satisfactory means of providing such switches with wear-resistant, tarnish-free contact surfaces. Used in conjunction with suitable gold-alloy or palladium-alloy brush materials these switches give low values of contact resistance and electrical noise coupled with a surprisingly long life.

The illustration shows the nine-inch stator of a 200-way switch to be used in telemetry equipment. The rhodium has been deposited on the contact surfaces of the 200 sectors as well as on the two slip rings in the centre. Originally the stator had an outside band of copper linking the sectors, as well as a connecting strip to the two slip rings, to permit plating.