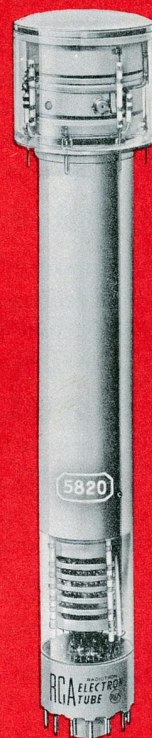


RCA

PHOTOSENSITIVE DEVICES AND CATHODE-RAY TUBES

- Gas and vacuum phototubes
- Multiplier phototubes
- Photoconductive cells
- Camera tubes
- Monoscopes
- Flying-spot cathode-ray tubes
- View-finder kinescopes
- Monitor kinescopes
- Transcriber kinescopes
- Projection kinescopes
- Oscillograph tubes
- Storage tubes
- Image-converter tubes



RADIO CORPORATION of AMERICA
ELECTRON TUBE DIVISION HARRISON, N. J.

RCA Photosensitive Devices and Cathode-Ray Tubes

THIS CATALOG provides concise technical information on RCA Photosensitive Devices and Cathode-Ray Tubes.

Covered for the first time are image-converter tubes for use with suitable optical systems in viewing a scene with infrared radiation, new varieties of storage tubes, new single-unit phototubes, new camera tubes, and new cathode-ray tubes.

In this revised edition are data for new multiplier phototubes including ultra-violet and infrared-sensitive types, a type having a 5" cathode, and a dormer-window type with a cathode sensitivity in excess of 100

microamperes per lumen. Also included for the first time are data for photoconductive cells. Two types of these cells can operate relays directly.

This catalog contains detailed information including spectral sensitivity curves and outlines on single- and twin-unit phototubes, suitable for design purposes. On other types, more complete information is available in the individual technical bulletins for each type on request to Commercial Engineering, RCA, Harrison, N. J. In requesting such bulletins, please specify the type in which you are interested.

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OTHER RCA PRODUCTS

In addition to the electron devices covered in this booklet, the ELECTRON TUBE DIVISION of the RADIO CORPORATION OF AMERICA offers the following:

RECEIVING TUBES FOR ENTERTAINMENT USE

Rectifiers, Diode Detectors, Converters, Voltage and Power Amplifiers, Oscillators, Mixers, and TV Picture Tubes.

POWER AND GAS TUBES

Vacuum Power Tubes, Rectifier Tubes, Thyratrons, and Ignitrons.

MICROWAVE TUBES

Magnetrons and Traveling-Wave Tubes.

TEST AND MEASURING EQUIPMENT

For AM, FM, and TV Servicing as well as for Laboratories and Industrial Use.

SEMICONDUCTOR DEVICES

Transistors and Semiconductor Diodes.

RECEIVING-TYPE INDUSTRIAL TUBES

"Special Red" Tubes, Premium Tubes, "Pencil-Type" Tubes, Computer Tubes, Glow-Discharge Tubes, Small Thyratrons, Vacuum-Gauge Tubes, and Other Special Types.

DRY BATTERIES

For Electron-Tube and Transistor Radios, Flashlights, and Industrial Applications.

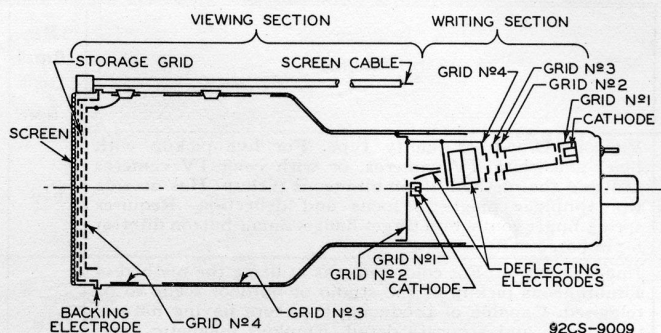
AUDIO DEVICES AND TV ACCESSORIES

Magnetic Recording Sound Tape and Accessories, TV-Set Couplers and Lightning Arrestors.

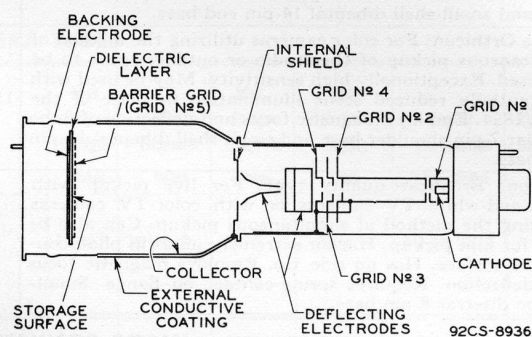
RCA VICTOR SERVICE PARTS

For RCA Phonographs, Radios, and TV Receivers.

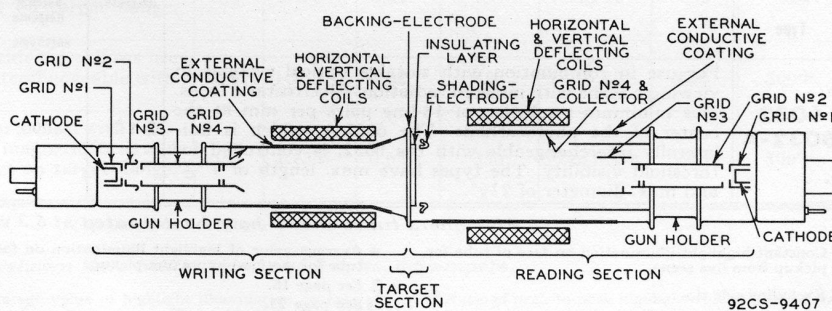
For a complete listing of these RCA products, or for technical information on any of these items, see your RCA Tube Distributor, or write to Commercial Engineering, RCA, Harrison, New Jersey.



Schematic Arrangement of Type 6866

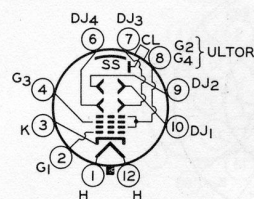



Schematic Arrangement of Type 6499



Schematic Arrangement of Type 6896/1855

For Key to Base and Envelope Connection Diagrams, see page 30.



 Type	Description ^Δ	Maximum Dimensions		Max. High Voltage Electrode volts	Number of Beams	Operational Information
		Overall Length inches	Envelope Diam. inches			
COMPUTER STORAGE TUBE—Primary-Current-Modulation Type						
6571	3" electrostatic-focus-and-deflection type. Intended primarily for use in binary-digital computer systems. Single-beam type has storage surface on the inner surface of the faceplate, and requires an external signal-output electrode. Recessed small cavity cap. Small-shell duodecal 10-pin base.	11¾	3⅛	2500•	1	Employs redistribution writing and capacitance-discharge reading. Storage surface has uniform secondary emission. Focused beam has exceptionally small effective area.
DISPLAY STORAGE TUBE—Direct-View Type						
6866	5" direct-view type. Intended for use in applications requiring a bright, non-flickering display of stored information for about 60 seconds after writing has ceased. Writing gun is electrostatic-focus-and-deflection type. Viewing gun floods screen, controls storage function and brightness of display. Insulated flexible lead for screen and 2 recessed small cavity caps. Thirtyfivar 31-pin base. Viewing screen employs P20 phosphor.*	15½	5⅛	11000†	2	At 10000 volts on screen produces full 4"-diameter display having brightness of 2750 foot lamberts, good resolution in half-tone displays. Writing speed of about 300,000 in/sec "freezes" μsec. transients.
RADECHON—Single-Beam, Barrier-Grid Type						
6499	Charge storage tube of barrier-grid, single-beam type intended for information-processing systems. Non-equilibrium writing and capacitance-discharge reading. Electron gun is of the electrostatic-focus-and-deflection type. Base on large end of tube is small-button twenty-ninar 8-pin. Base on small end of tube is small-shell diheptal 14-pin.	12⅞	3.35	1500†	1	Information in digital or analog form may be introduced to the active elements of the tube, stored (time controllable from μsec. to minutes), and then extracted at a rate the same as or different from the writing rate.
GRAPHECHON—Signal-Converter Type						
6896/ 1855	Charge storage tube intended for data-processing applications where signal information must be transformed continuously from one time base to another. Has a writing gun at one end of tube, reading gun at other end, and a target between them. Both guns have electrostatic focus and utilize magnetic deflection. Base for writing section is a long medium-shell octal 8-pin type, base for reading section is a small-shell diheptal 14-pin type.	19⅞	2.33	13000†	2	Permits PPI radar information to be observed on TV-viewing screens. Also allows information from several radar and TV systems to be mixed and presented as a composite display. Storage time may be adjusted from several seconds to more than a minute.

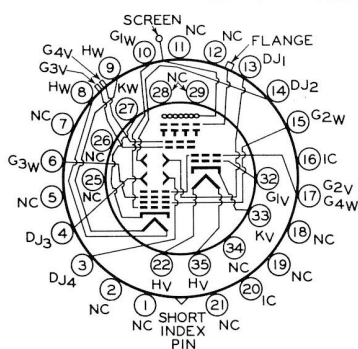
^Δ Heaters employed in these types have a rating of 6.3 volts and 0.6 amp.

[•] Design-center values.

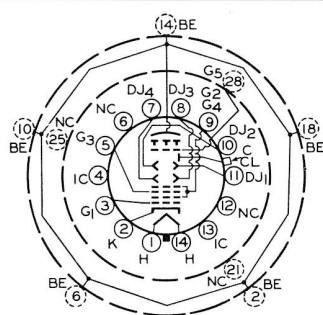
* For information on fluorescent screens, see page 23.

[†] Absolute value.

For Key to Base and Envelope Connection Diagrams, see page 30.

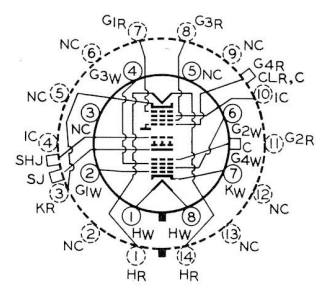


6866



SOLID-LINE CIRCLES DEPICT DIHEPTAL BASE
BROKEN-LINE CIRCLES DEPICT TWENTYFIVAR BASE

6499



SOLID-LINE CIRCLES DEPICT DIHEPTAL BASE
BROKEN-LINE CIRCLES DEPICT TWENTYFIVAR BASE

6896/1855

TECHNICAL PUBLICATIONS



ELECTRON TUBES—

● **RCA TUBE HANDBOOK—HB-3** (7 $\frac{3}{8}$ " x 5 $\frac{1}{4}$ "). Five deluxe 2-inch-capacity binders imprinted in gold. The bible of the industry—contains over 3400 pages of loose-leaf data and curves on RCA receiving tubes; picture tubes; oscillograph tubes; special-purpose kinescopes; photosensitive devices including phototubes, photoconductive cells, and camera tubes; storage tubes; power tubes; gas tubes; transistors and semiconductor diodes; and other miscellaneous types for special applications. Available on subscription basis. Price \$17.50* including service for first year. Write to Commercial Engineering for descriptive folder and order form.

● **RCA RECEIVING TUBE MANUAL—RC-18** (8 $\frac{3}{8}$ " x 5 $\frac{3}{8}$ ")—384 pages. Revised, expanded, and brought up to date. Contains the latest receiving tubes, including types for black-and-white and color television applications. Features tube theory written for the layman, application data, Resistance-Coupled Amplifier Section, and several new circuits for high-fidelity audio amplifiers. Features lie-flat binding. Price 75 cents.*

● **RADIOTRON DESIGNER'S HANDBOOK—4th Edition** (8 $\frac{3}{4}$ " x 5 $\frac{1}{2}$ ")—1500 pages. New, enlarged, up-to-date 4th Edition is comprehensive reference thoroughly covering the design of radio and audio circuits and equipment. Written for the design engineer, student, and experimenter. Contains 1000 illustrations, 2500 references, and cross-referenced index of 7000 entries. Edited by F. Langford-Smith of Amalgamated Wireless Valve Company Pty Ltd. in Australia. Price \$7.00.*

● **RCA TRANSMITTING TUBES—TT-4** (8 $\frac{3}{8}$ " x 5 $\frac{3}{8}$ ")—256 pages. Written for the engineer, service technician, radio amateur, student, and experimenter. Contains basic information on generic tube types, on tube parts and materials, on tube installation and application, and on interpretation of tube data. Includes maximum ratings, typical operating values, and characteristic curves for power tubes having plate-input ratings up to 4 kilowatts, and maximum ratings and operating values for associated rectifier tubes. Contains sections on transmitter design considerations and on rectifier circuits and filters. Features classification charts for quick, easy selection of tubes, and circuit diagrams for transmitting and industrial applications. Features lie-flat binding. Price \$1.00.*

● **RCA POWER AND GAS TUBES—PG-101C** (10 $\frac{7}{8}$ " x 8 $\frac{3}{8}$ ")—24 pages. Technical information on 174 RCA vacuum power tubes, rectifier tubes, thyratrons, ignitrons, magnetrons, and vacuum-gauge tubes. Includes terminal connections. Price 20 cents.*

● **RCA RECEIVING-TYPE TUBES FOR INDUSTRY AND COMMUNICATIONS—RIT-104A** (10 $\frac{7}{8}$ " x 8 $\frac{3}{8}$ ")—24 pages. Technical information on 150 RCA "special red" tubes, premium tubes, computer tubes, pencil tubes, glow-discharge tubes, small thyratrons, low-microphonic amplifier tubes, and other special types. Includes socket connection diagrams. Price 25 cents.*

● **RCA RECEIVING TUBES FOR AM, FM, AND TELEVISION BROADCAST—1275-H** (10 $\frac{7}{8}$ " x 8 $\frac{3}{8}$ ")—36 pages. New booklet contains classification chart, characteristics chart, and base and envelope connection diagrams on more than 700 entertainment receiving tubes and picture tubes. Price 25 cents.*

● **TECHNICAL BULLETINS**—Complete authorized information on RCA transmitting tubes and other tubes for communications and industry. Be sure to mention tube-type bulletin desired. Single copy on any type free on request.

● **RCA PREFERRED TYPES LIST—PTL-501F** (10 $\frac{7}{8}$ " x 8 $\frac{3}{8}$ ")—4 pages. Lists RCA Preferred Tube Types both receiving and non-receiving by function. An aid to equipment designers in the selection of tube types for new equipment design. Single copy free on request.

● **RCA HEADLINERS FOR HAMS—HAM-103B** (10 $\frac{7}{8}$ " x 8 $\frac{3}{8}$ ")—4 pages. Technical information and terminal connection diagrams for 48 RCA "HAM" PREFERENCE TYPES: modulators, class C amplifiers and oscillators, frequency multipliers, rectifier tubes, thyratrons, cold-cathode (glow-discharge) tubes, and cathode-ray tubes. Single copy free on request.

● **RCA TUBE PICTURE BOOK—TPB-1** (10 $\frac{7}{8}$ " x 8 $\frac{3}{8}$ ")—16 pages. Collection of photographs and cutaway drawings of representative tube types. Prepared especially for use by students. A visual aid for the details of tube construction. Price 25 cents.*

● **RCA INTERCHANGEABILITY DIRECTORY OF INDUSTRIAL-TYPE ELECTRON TUBES—ID-1020A** (10 $\frac{7}{8}$ " x 8 $\frac{3}{8}$ ")—16 pages. Lists more than 2000 type designations of 26 different manufacturers arranged in alphabetical-numerical sequence; shows the RCA Direct Replacement Type or the RCA Similar Type, when available. Price 20 cents.*

● **RCA PHOTOSENSITIVE DEVICES AND CATHODE-RAY TUBES—CRPD-105A** (10 $\frac{7}{8}$ " x 8 $\frac{3}{8}$ ")—32 pages. Contains technical information on 134 RCA tubes including single-unit, twin-unit, and multiplier phototubes; camera and image-converter tubes; flying-spot tubes; monitor, projection, transcriber, and view-finder kinescopes; oscillograph and storage tubes. Price 30 cents.*

● **TV SERVICING—TVS-1030** (10 $\frac{7}{8}$ " x 8 $\frac{3}{8}$ ") 48 pages. This booklet contains a compilation of articles on TV trouble shooting, TV tuner alignment, and TV circuit analysis by RCA's expert in the field of TV servicing and test equipment—John R. Meagher. Price 35 cents.*

● **TV SERVICING, SUPPLEMENT 1—TVS-1031** (10 $\frac{7}{8}$ " x 8 $\frac{3}{8}$ ") 12-page booklet by John R. Meagher on solving trouble-shooting problems in those hard-to-service television receivers known to service technicians as "tough" sets or "dogs". Emphasizes time-saving component-checking techniques and proper use of test equipment. Price 15 cents.*

● **PRACTICAL COLOR TELEVISION—Revised Edition** (11" x 8 $\frac{1}{2}$ ")—84 pages. Black-and-white and color illustrations. Presents comprehensive information on basic color principles, transmitted color signal, color camera, and color kinescope. Covers commercial-model receiver circuit using the RCA-15GP22 color picture tube, as well as installation and service of color receivers. Provides detailed description of color-test equipment. Price \$2.00.*

● **PRACTICAL COLOR TELEVISION, SUPPLEMENT 1—**(11" x 8 $\frac{1}{2}$ ")—Contains 36 pages plus fold-out schematic and block diagrams; describes theory, operation and servicing of large-screen color TV receiver utilizing RCA-21AXP22 color picture tube; includes 55 black-and-white and color illustrations including schematic and block diagrams, wave-forms, and explanations of color circuits and adjustments. Price 75 cents.*

TRANSISTORS AND SEMICONDUCTOR DIODES—

● **RCA TRANSISTORS AND SEMICONDUCTOR DIODES—SCD-108A** (10 $\frac{7}{8}$ " x 8 $\frac{3}{8}$ ")—32-page booklet contains technical data on RCA transistors and semiconductor diodes. Includes section on transistor theory, an interchangeability directory which lists over 750 type designations of 27 different manufacturers, and a section on circuits containing 24 schematics illustrating some of the more important applications of transistors and semiconductor diodes. Price 25 cents.

* Prices shown apply in U.S.A. and are subject to change without notice.

Copies of the publications listed above may be obtained as follows:

ELECTRON TUBES
From your RCA Tube Distributor
or
From RCA, Commercial Engineering,
Electron Tube Division,
Harrison, New Jersey

TRANSISTORS, SEMICONDUCTOR DIODES
From your RCA Transistor Distributor
or
From RCA, Commercial Engineering,
Semiconductor and Materials Division,
Somerville, New Jersey