

price 25 cents

RCA POWER-TUBE FITTINGS



RADIO CORPORATION of AMERICA
TUBE DEPARTMENT

HARRISON, N. J.

RCA Power-Tube Fittings

This booklet describes fittings for supporting and cooling power tubes and for making electrical connections to them. These fittings are designed especially for RCA power tubes but may be used with tubes of other manufacturers.

The fittings for use with any specific tube type are described and illustrated under that tube type. The various tube types are arranged in the numerical-alphabetical sequence of their type designations. Whenever two RCA tube types use a common group of fittings, the more recent type is listed first and this type only is illustrated. Dimensional drawings of the fittings are

included for the convenience of equipment designers.

The following table will assist the designer in finding the proper fittings for a specific tube type. First, find in column 2 the basic designation of the tube type of interest. If the type is made by a manufacturer other than RCA and has prefix letters preceding the basic designation, such letters will be found in column 1. Second, find in column 4 the corresponding designation of the equivalent RCA tube type. Then, look in column 5 for the number of the page containing the description of the applicable fittings for the tube type of interest.

Index

| Tube Type | | | For Fittings See | | Tube Type | | | For Fittings See | | Tube Type | | | For Fittings See | |
|--------------|-------------------|------|------------------|----------|--------------|-------------------|------|------------------|----------|--------------|-------------------|------|------------------|----------|
| Mfr's Prefix | Basic Designation | Mfr. | Tube Type | Page No. | Mfr's Prefix | Basic Designation | Mfr. | Tube Type | Page No. | Mfr's Prefix | Basic Designation | Mfr. | Tube Type | Page No. |
| ML | 7C24 | RCA | 7C24 | 16 | | 889-A | RCA | 889-A | 4 | | 892 | RCA | 892 | 8 |
| | 7C24 | ML | 7C24 | 16 | | 889-A | A | 889-A | 4 | | 892 | A | 892 | 8 |
| F | 7C25 | F | — | 22 | F | 889-A | F | 889-A | 4 | F | 892 | F | 892 | 8 |
| | 9C21 | RCA | 9C21 | 18 | GL | 889-A | GE | 889-A | 4 | GL | 892 | GE | 892 | 8 |
| | 9C21 | A | 9C21 | 18 | ML | 889-A | ML | 889-A | 4 | ML | 892 | ML | 892 | 8 |
| GL | 9C21 | GE | 9C21 | 18 | UE | 889-A | UE | 889-A | 4 | UE | 892 | UE | 892 | 8 |
| ML | 9C21 | ML | 9C21 | 18 | WL | 889-A | WL | 889-A | 4 | WL | 892 | WL | 892 | 8 |
| | 9C22 | RCA | 9C22 | 14 | | 889R | RCA | 889R-A | 6 | | 892-R | RCA | 892-R | 10 |
| | 9C22 | A | 9C22 | 14 | | 889R-A | RCA | 889R-A | 6 | | 892-R | A | 892-R | 10 |
| GL | 9C22 | GE | 9C22 | 14 | F | 889R-A | A | 889R-A | 6 | DR | 892-R | GES | 892-R | 10 |
| ML | 9C22 | ML | 9C22 | 14 | GL | 889R-A | F | 889R-A | 6 | F | 892-R | F | 892-R | 10 |
| | 9C25 | RCA | 9C25 | 12 | ML | 889R-A | GE | 889R-A | 6 | GL | 892-R | GE | 892-R | 10 |
| ML | 9C25 | ML | 9C25 | 12 | UE | 889R-A | ML | 889R-A | 6 | ML | 892-R | ML | 892-R | 10 |
| F | 129-8 | F | — | 22 | WL | 889R-A | UE | 889R-A | 6 | UE | 892-R | UE | 892-R | 10 |
| WT | 210-0086 | WT | 833-A | 3 | | 891 | RCA | 891 | 8 | WL | 892-R | WL | 892-R | 10 |
| | 833 | RCA | 833-A | 3 | | 891 | A | 891 | 8 | | 5592 | RCA | 5592 | 12 |
| | 833-A | RCA | 833-A | 3 | F | 891 | F | 891 | 8 | ML | 5592 | ML | 5592 | 12 |
| | 833-A | A | 833-A | 3 | GL | 891 | GE | 891 | 8 | | 5671 | RCA | 5671 | 14 |
| DR | 833-A | GES | 833-A | 3 | ML | 891 | ML | 891 | 8 | ML | 5671 | ML | 5671 | 14 |
| ML | 833-A | ML | 833-A | 3 | UE | 891 | UE | 891 | 8 | WL | 5671 | WL | 5671 | 14 |
| WL | 833-A | WL | 833-A | 3 | WL | 891 | WL | 891 | 8 | | 5762 | RCA | 5762 | 16 |
| | 880 | RCA | 880 | 20 | | 891-R | RCA | 891-R | 10 | | 5770 | RCA | 5770 | 18 |
| GL | 880 | GE | 880 | 20 | | 891-R | A | 891-R | 10 | | 5771 | RCA | 5771 | 20 |
| ML | 880 | ML | 880 | 20 | F | 891-R | F | 891-R | 10 | ML | 5771 | ML | 5771 | 20 |
| UE | 880 | UE | 880 | 20 | GL | 891-R | GE | 891-R | 10 | WT | T-105 | WT | 892 | 8 |
| WL | 880 | WL | 880 | 20 | ML | 891-R | ML | 891-R | 10 | WT | T-127 | WT | 833-A | 3 |
| | 889 | RCA | 889-A | 4 | UE | 891-R | UE | 891-R | 10 | | | | | |
| | | | | | WL | 891-R | WL | 891-R | 10 | | | | | |

KEY TO SYMBOLS IN "MFR." COLUMN

A = Amperex
F = Federal Telephone and Radio

GE = General Electric
GES = General Electronics
ML = Machlett Laboratories

UE = United Electronics
WL = Westinghouse
WT = Weltronic

See page 23 for Cross-Reference Index arranged in order of fitting-type designation.

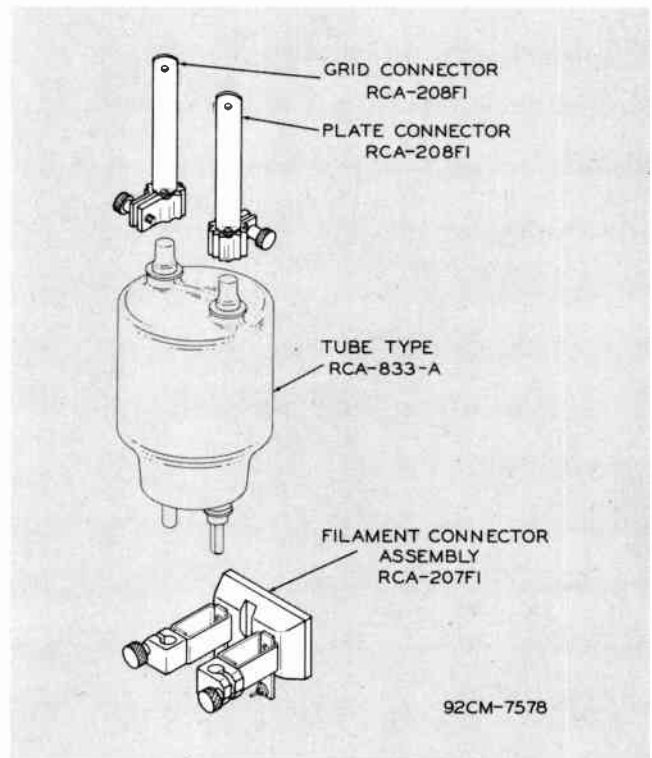
Power-Tube Fittings for Tube Type 833-A

DESCRIPTION

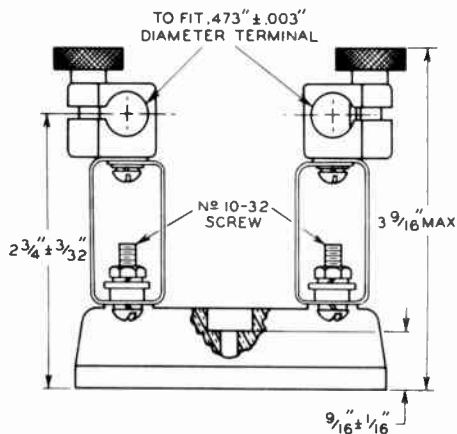
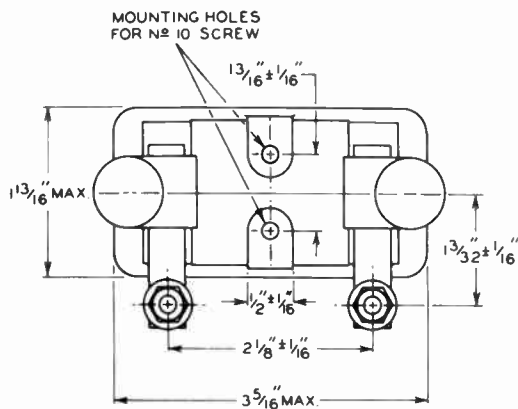
- Special grid and plate connectors --- designed to dissipate heat quickly
- Grid and plate connectors have positive opening feature which facilitates their removal after long periods of service
- Filament connectors act as the tube support --- spring-mounted to eliminate excessive seal strain
- Connectors easy to remove while tube is hot

FITTINGS

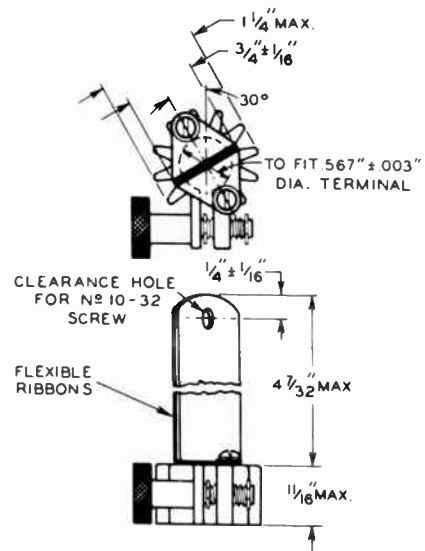
| Description | RCA Type No. |
|---|--------------|
| Filament Connector Assembly. | 207F1 |
| Grid or Plate Connector (2 required) | 208F1 |



Exploded View of Fittings for 833-A

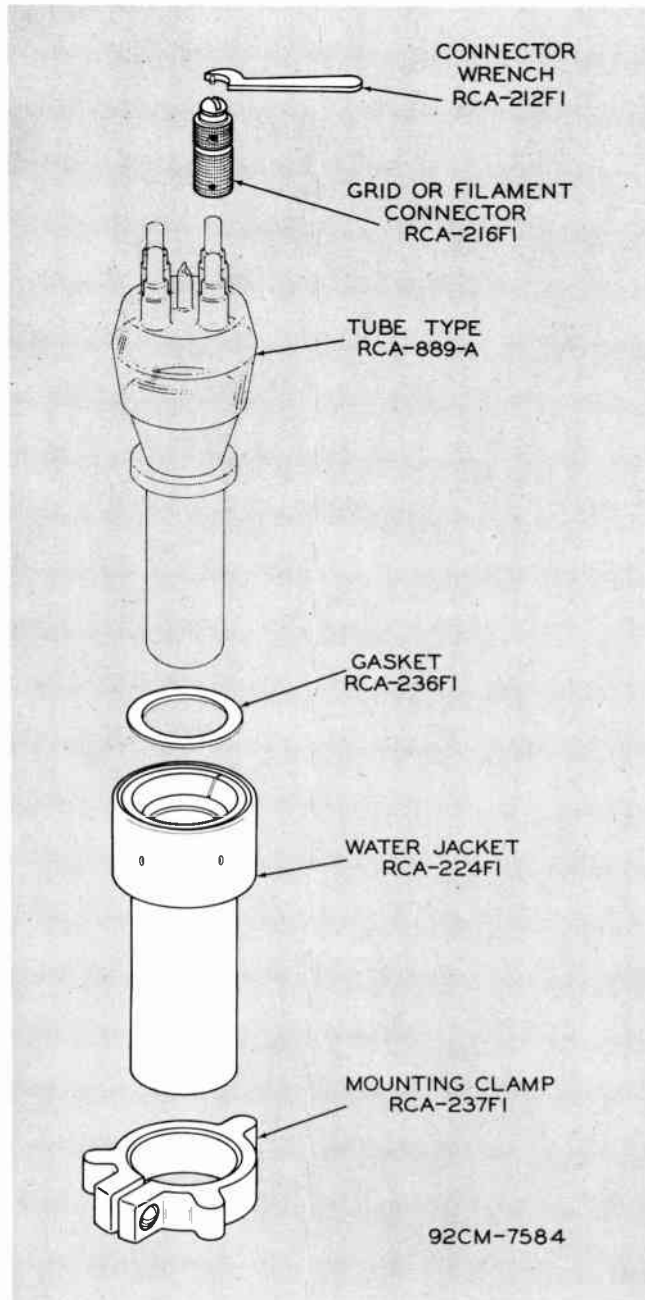


Filament Connector Assembly - 207F1



Grid or Plate Connector - 208F1

Power-Tube Fittings for Tube Type 889-A



Exploded View of Fittings for 889-A

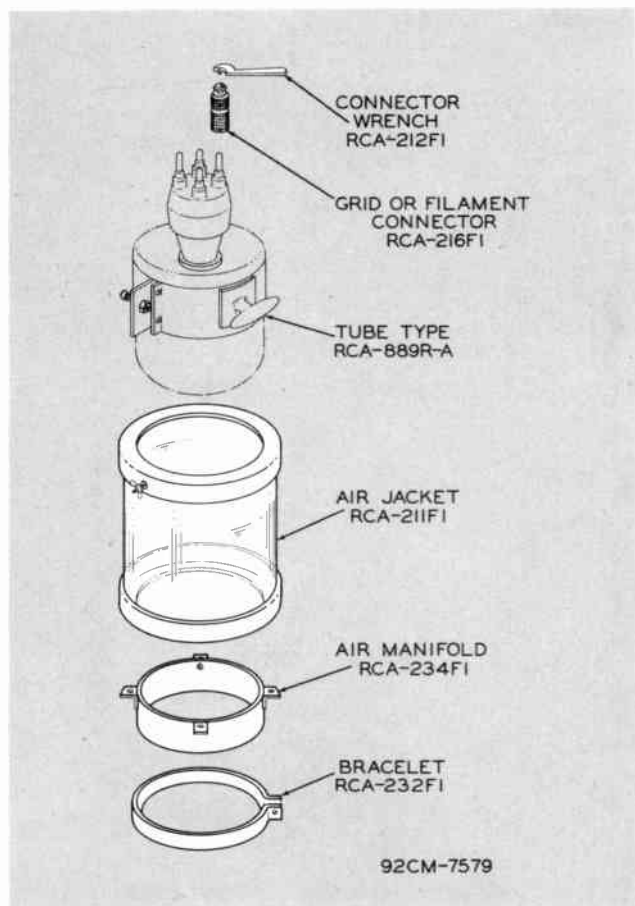
DESCRIPTION

- Fittings designed for water-cooling tube plate
- Split-ring clamping used in water jacket --- assures uniform pressure on tube flange --- provides short, low-loss path for very-high-frequency currents
- Tube centers automatically in water jacket
- No wrenches necessary --- knurled clamping ring permits hand turning --- no forced tightening
- Grid- and filament-post connectors easy to remove from hot tube
- Mounting clamp provided

FITTINGS

| Description | RCA Type No. |
|--|--------------|
| Connector Wrench (2 required) | 212F1 |
| Grid or Filament Con- nector (4 required) | 216F1 |
| Water Jacket | 224F1 |
| Gasket | 236F1 |
| Mounting Clamp | 237F1 |

Power-Tube Fittings for Tube Type 889R-A



Exploded View of Fittings for 889R-A

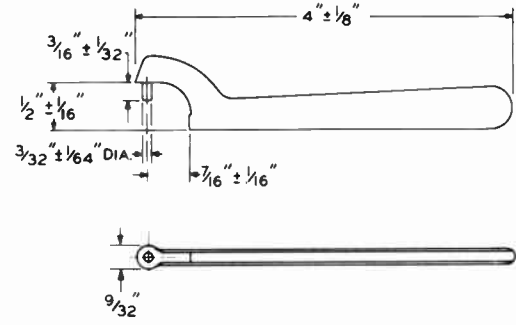
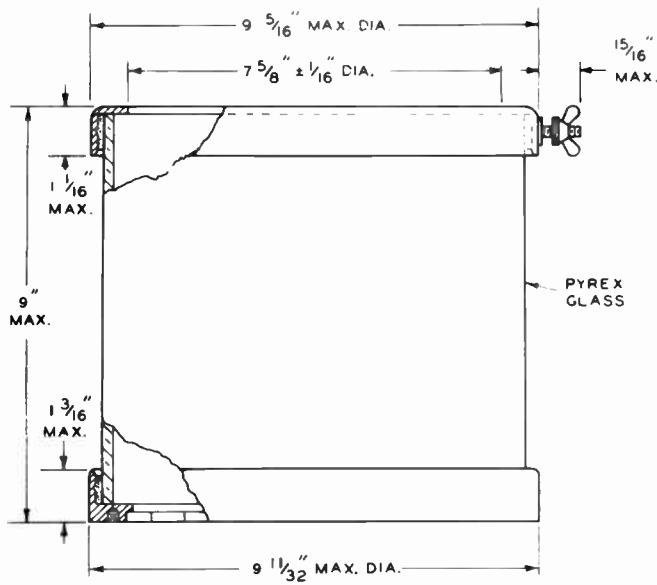
DESCRIPTION

- Fittings designed for cooling tube plate by means of forced air
- Tube rests in place inside air jacket --- no clamping necessary
- Filament and grid connectors provided
- Wing-nut on air jacket facilitates tube-plate connections
- Grid- and filament-post connectors easy to remove while tube is hot

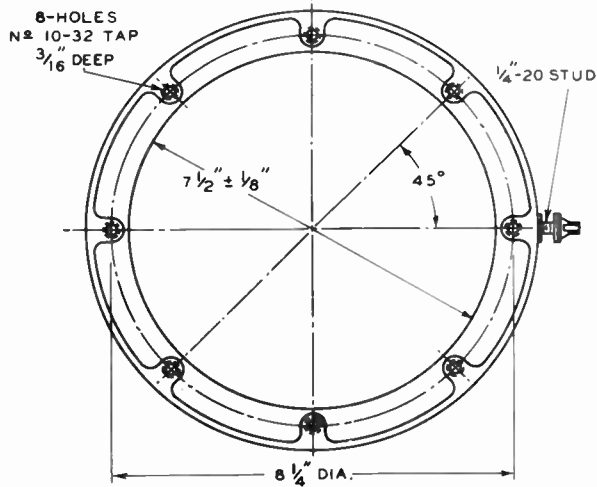
FITTINGS

| Description | RCA Type No. |
|--|--------------|
| Air Jacket. | 211F1 |
| Connector Wrench (2 required). | 212F1 |
| Grid or Filament Con- nector (4 required) | 216F1 |
| Bracelet. | 232F1 |
| Air Manifold. | 234F1 |

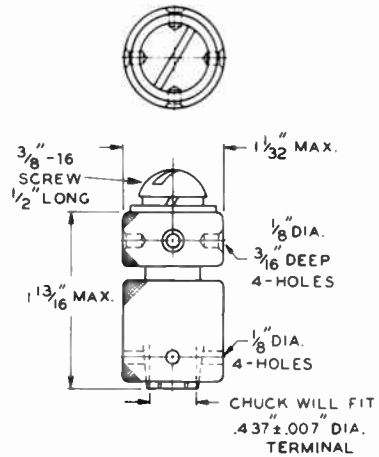
RCA POWER-TUBE FITTINGS FOR TUBE TYPE 889R-A



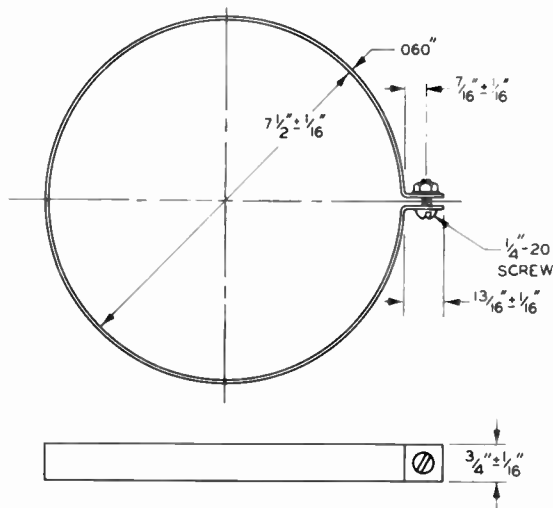
Connector Wrench - 212F1



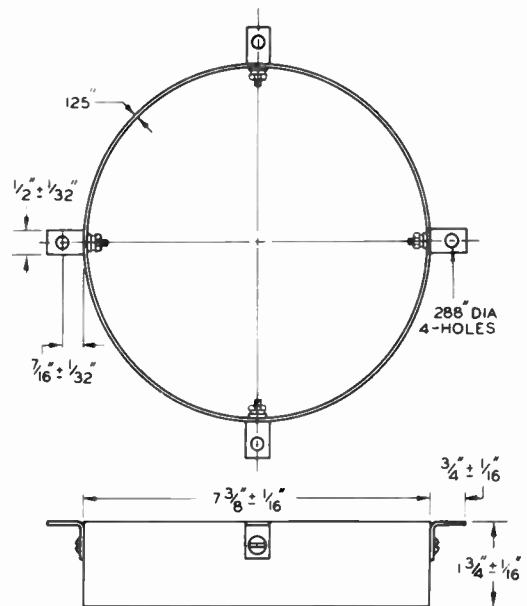
Air Jacket - 211F1



Grid or Filament
Connector - 216F1

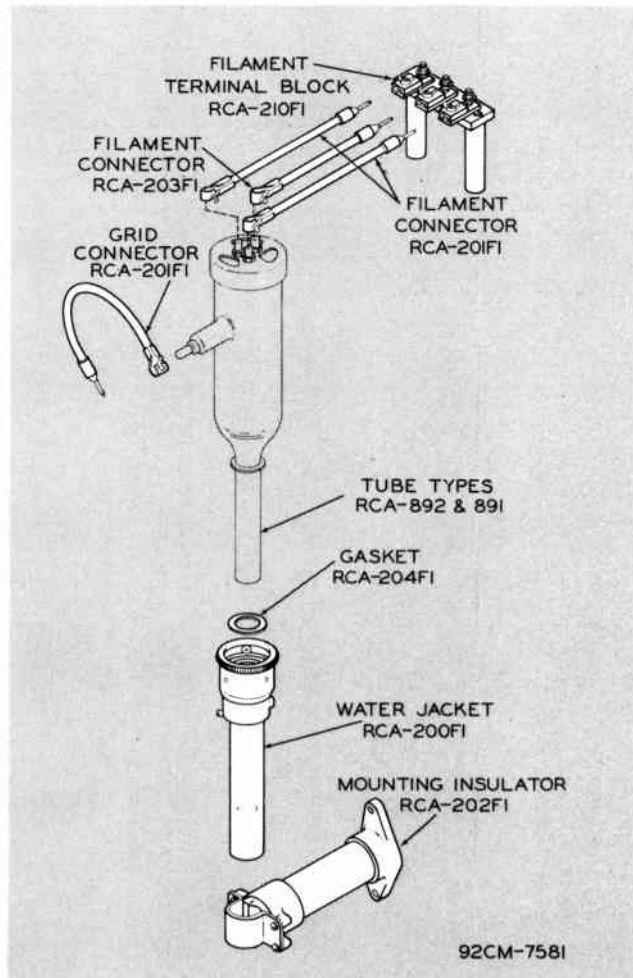


Bracelet - 232F1



Air Manifold - 234F1

Power-Tube Fittings for Tube Types 892 and 891



Exploded View of Fittings for 892 and 891

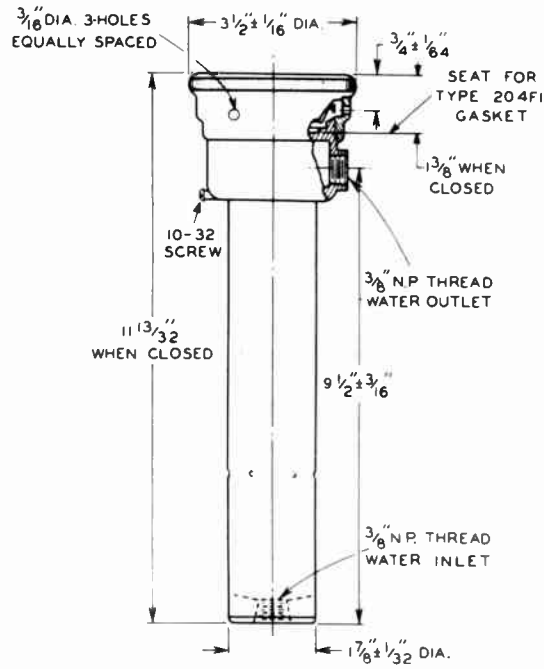
DESCRIPTION

- Designed for water-cooling tube plate
- Tube centers automatically in water jacket
- Roller-type clamping used in water jacket --- four rollers assure uniform pressure on tube flange
- No special wrenches --- knurled edge on clamping ring permits easy turning by hand
- Convenient mounting insulator for water jacket available
- Water jacket has threaded inlet and outlet water holes
- Special braided cables for filament and grid connections

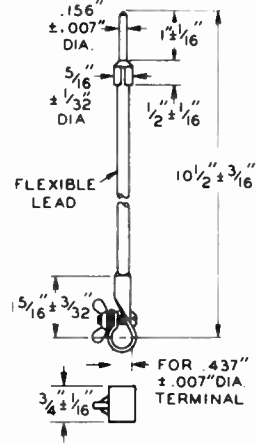
FITTINGS

| Description | RCA Type No. |
|------------------------------------|--------------|
| Water Jacket. | 200FI |
| Filament Connector (2 required) | 201FI |
| Grid Connector (1 required) | |
| Mounting Insulator. | 202FI |
| Filament Connector. | 203FI |
| Gasket. | 204FI |
| Filament Terminal Block . . | 210FI |

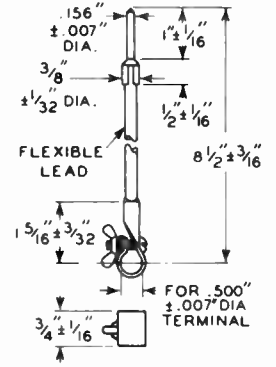
RCA POWER-TUBE FITTINGS FOR TUBE TYPES 892 AND 891



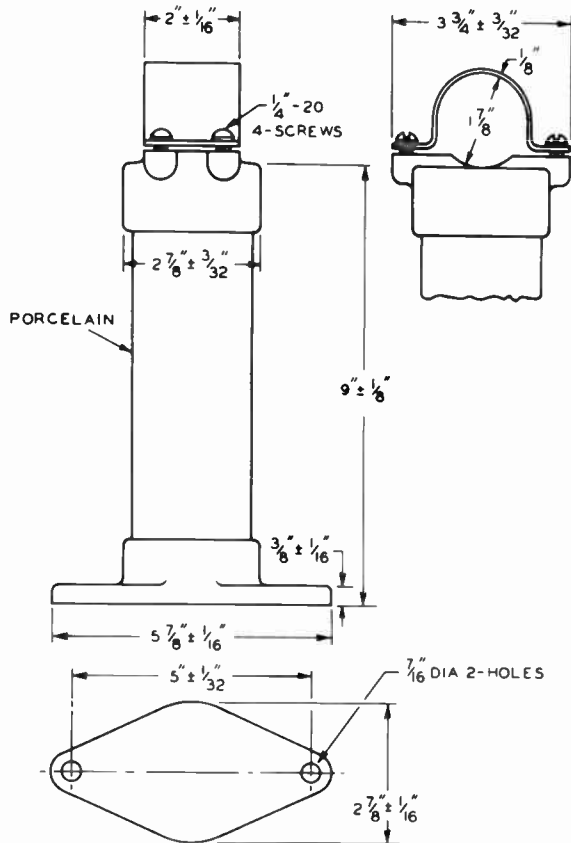
Water Jacket - 200F1



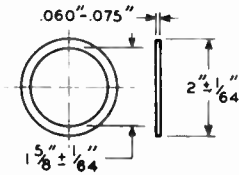
Grid or Filament Connector - 201F1



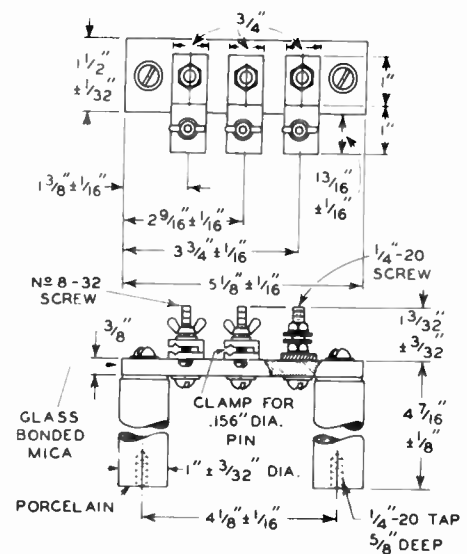
Filament Connector 203F1



Mounting Insulator - 202F1

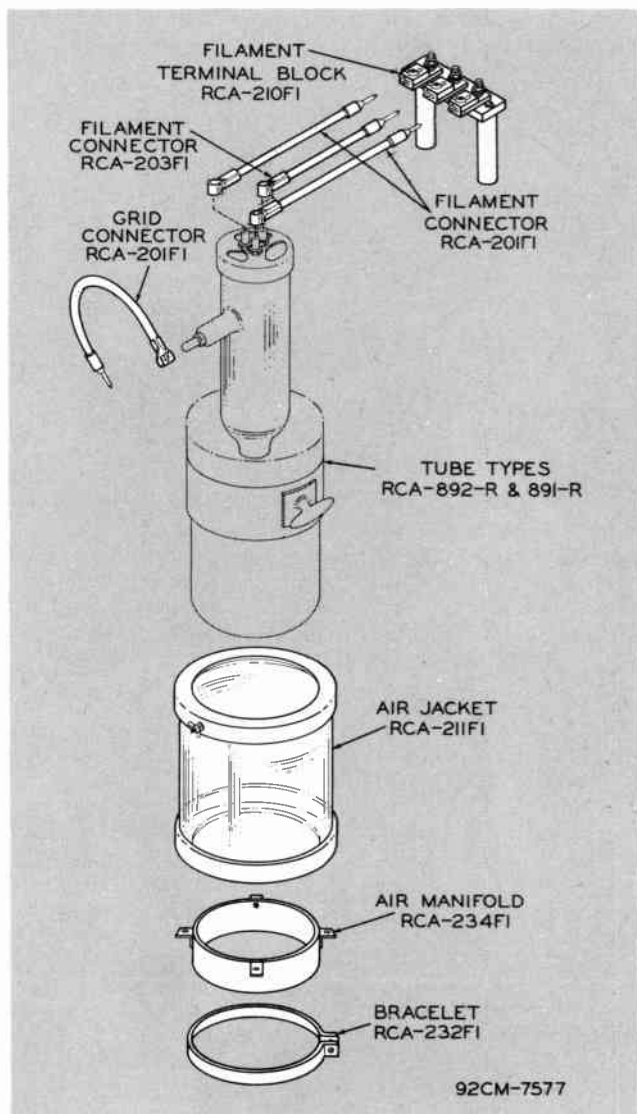


Gasket - 204F1



Filament Terminal Block - 210F1

Power-Tube Fittings for Tube Types 892-R and 891-R



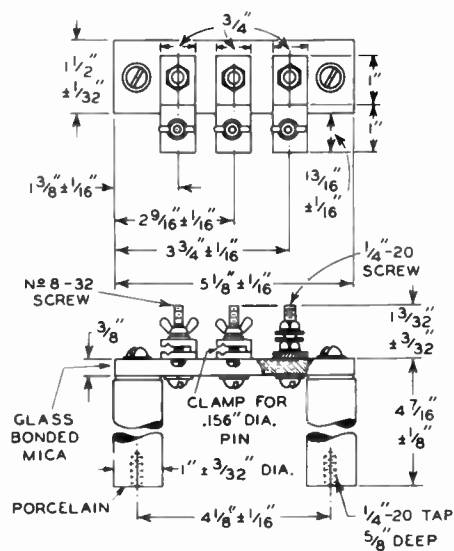
*Exploded View of Fittings for
892-R and 891-R*

DESCRIPTION

- Fittings designed for air-cooling tube plate
- Wing-nut on air jacket facilitates tube-plate connections
- Special braided cables for filament and grid connections
- Tube rests in place inside air jacket --- no clamping necessary

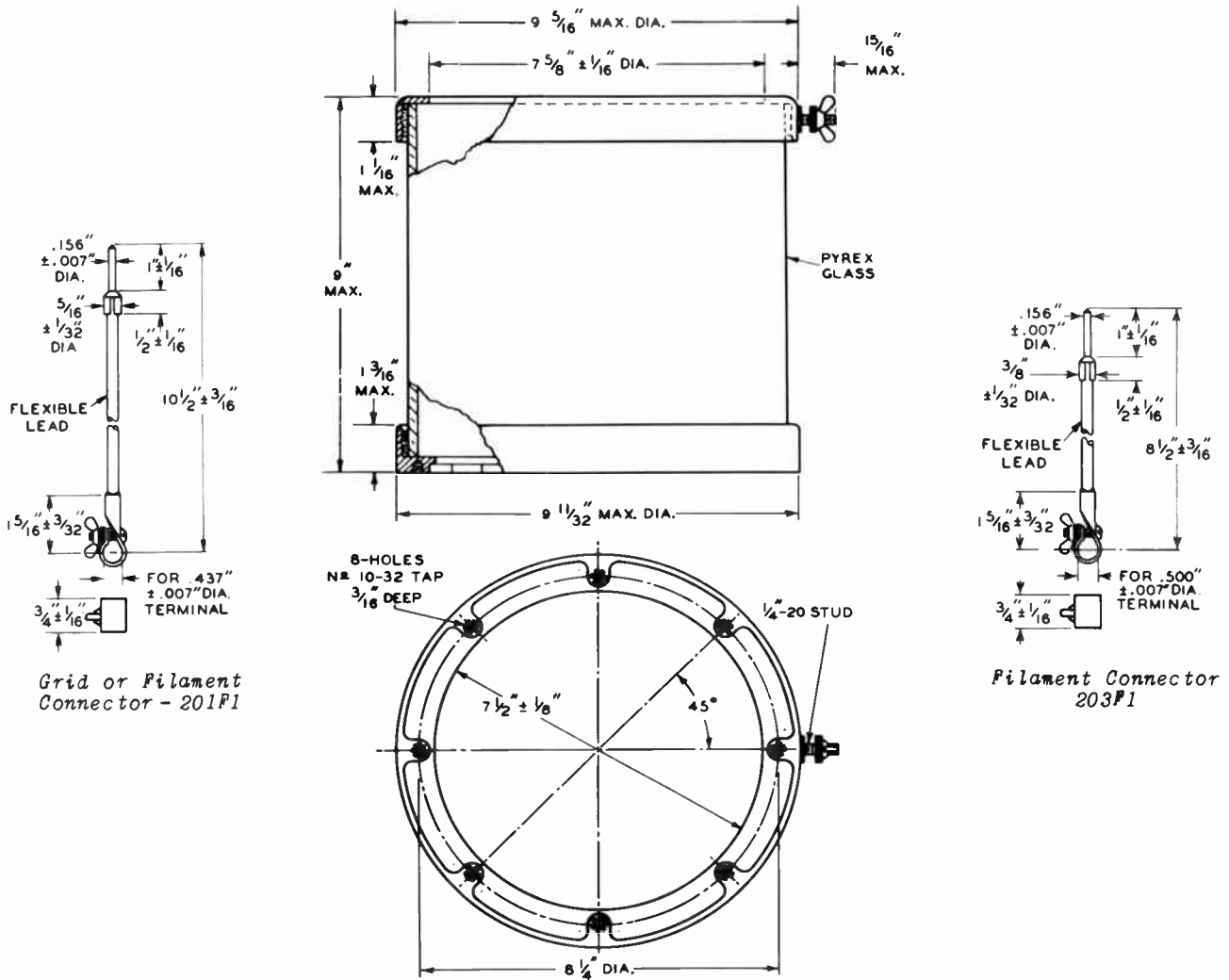
FITTINGS

| Description | RCA Type No. |
|------------------------------------|--------------|
| Filament Connector (2 required) | 201F1 |
| Grid Connector (1 required) | |
| Filament Connector | 203F1 |
| Filament Terminal Block | 210F1 |
| Air Jacket | 211F1 |
| Bracelet | 232F1 |
| Air Manifold | 234F1 |



Filament Terminal Block - 210F1

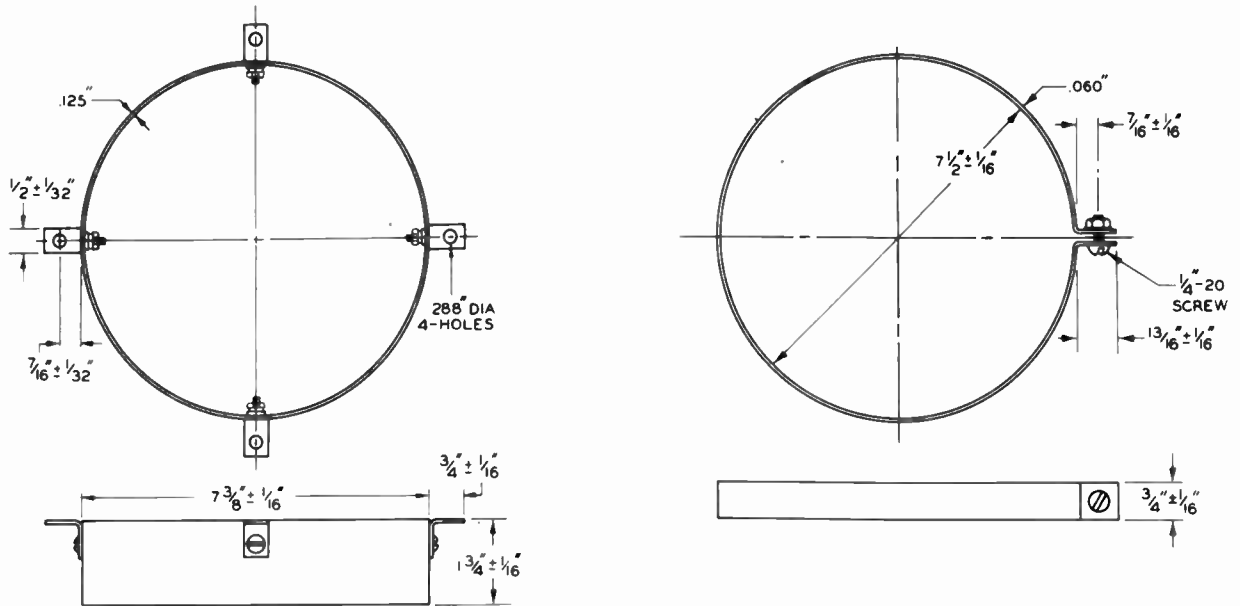
RCA POWER-TUBE FITTINGS FOR TUBE TYPES 892-R AND 891-R



Grid or Filament Connector - 201F1

Filament Connector 203F1

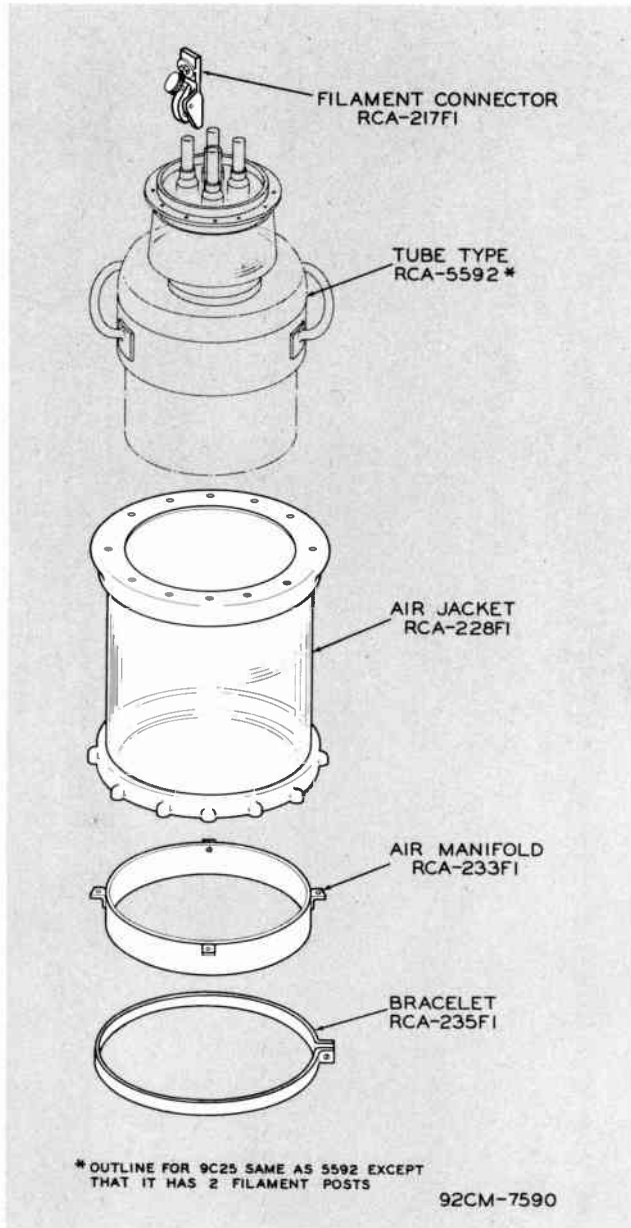
Air Jacket - 211F1



Air Manifold - 234F1

Bracelet - 232F1

Power-Tube Fittings for Tube Types 5592 and 9C25



*Exploded View of Fittings
for 5592 and 9C25*

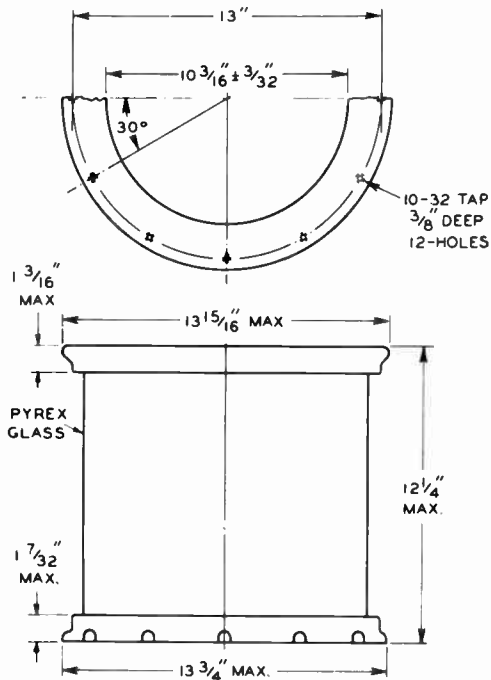
DESCRIPTION

- Designed for air-cooling tube plate
- Tube rests in place inside air jacket
- Filament-post connectors easy to remove from hot tube
- Multiple tapped holes provided in air jacket for convenient tube-plate connections

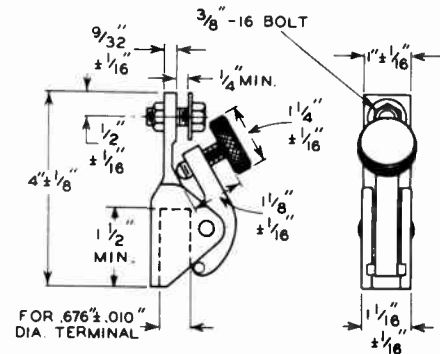
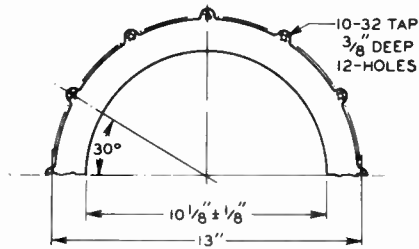
FITTINGS

| Description | RCA Type No. |
|--|--------------|
| Filament Connector (2 required for 9C25; 4 required for 5592). | 217FI |
| Air Jacket | 228FI |
| Air Manifold | 233FI |
| Bracelet | 235FI |

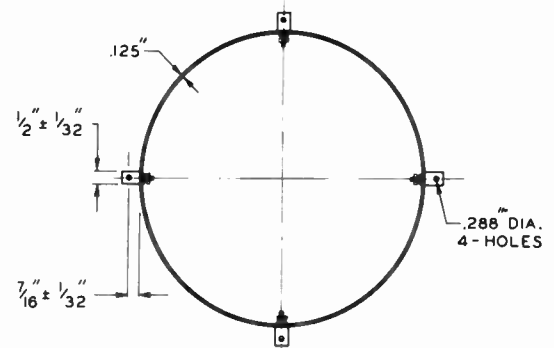
RCA POWER-TUBE FITTINGS FOR TUBE TYPES 5592 AND 9C25



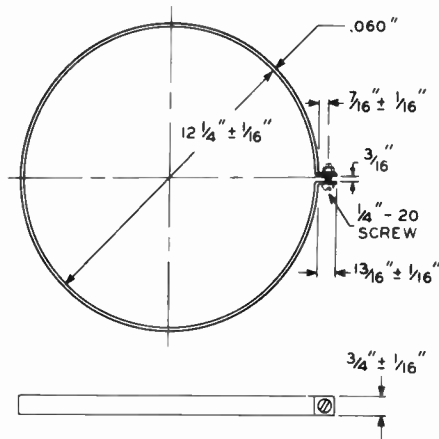
Air Jacket - 228F1



Filament Connector - 217F1

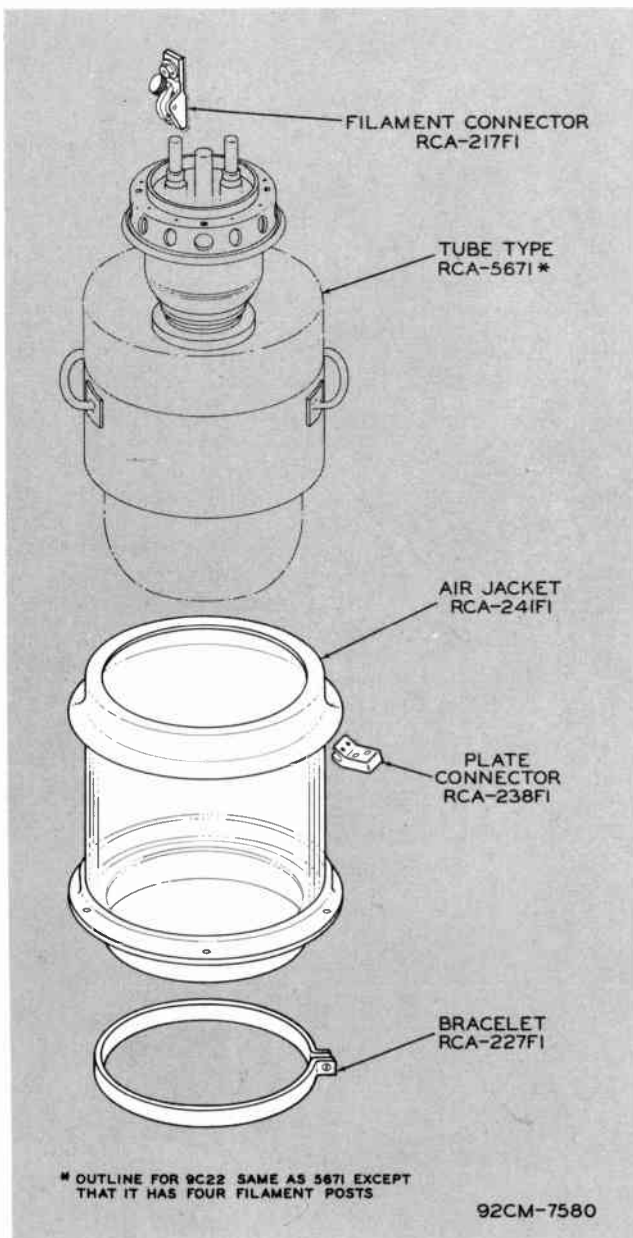


Air Manifold - 233F1



Bracelet - 235F1

Power-Tube Fittings for Tube Types 5671 and 9C22



DESCRIPTION

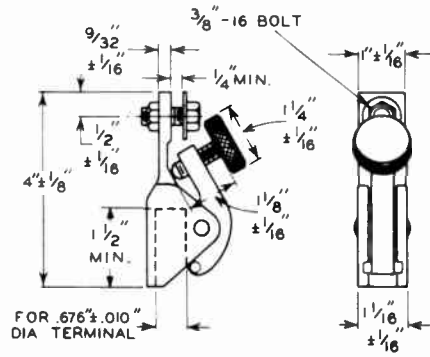
- Provides for tube-plate cooling with forced air
- Tube rests in place inside air jacket --- no clamping necessary
- Special connector facilitates connections to tube plate
- Filament-post connectors easy to remove from hot tube

FITTINGS

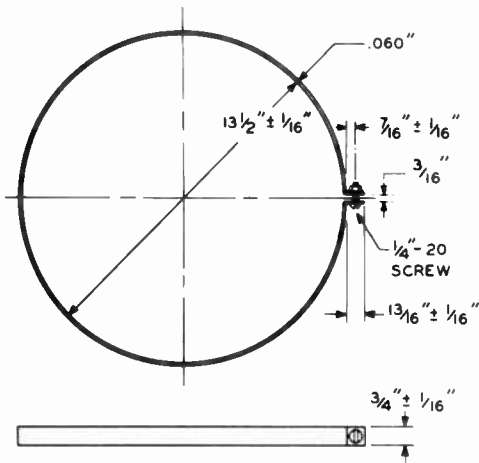
| Description | RCA Type No. |
|--|--------------|
| Filament Connector (2 required for 5671; 4 required for 9C22). | 217F1 |
| Bracelet | 227F1 |
| Plate Connector. | 238F1 |
| Air Jacket | 241F1 |

*Exploded View of Fittings
for 5671 and 9C22*

RCA POWER-TUBE FITTINGS FOR TUBE TYPES 5671 AND 9C22



Filament Connector - 217F1



Bracelet - 227F1

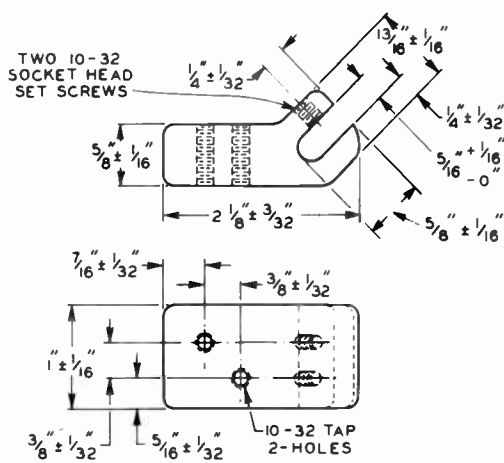
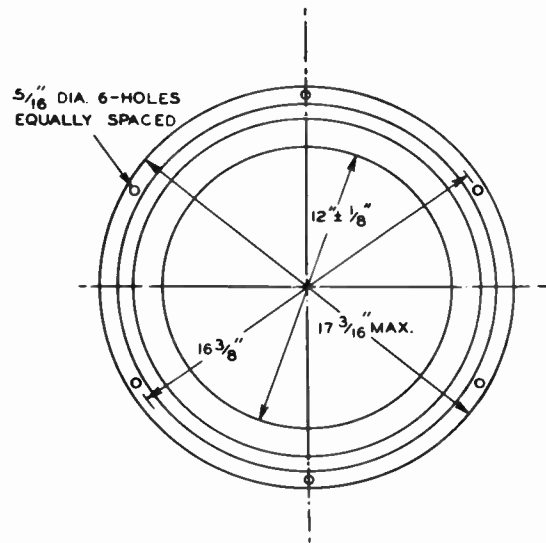
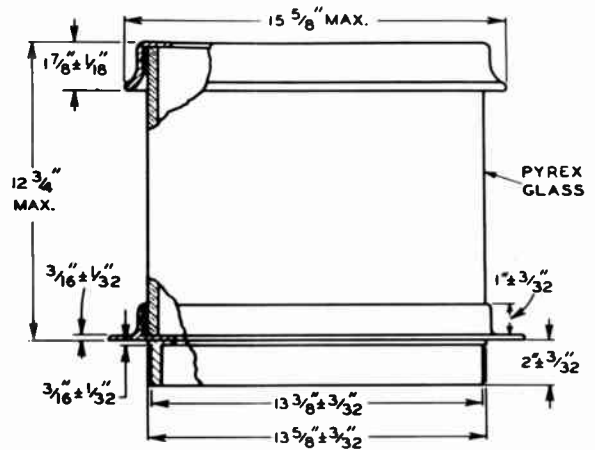


Plate Connector - 238F1



Air Jacket - 241F1

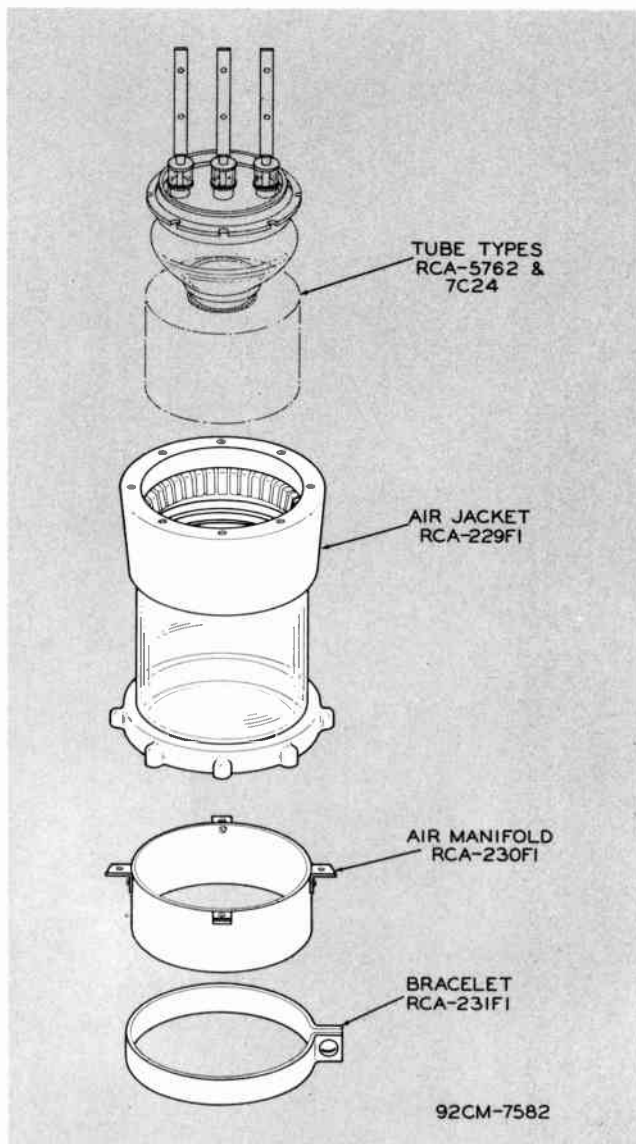
Power-Tube Fittings for Tube Types 5762 and 7C24

DESCRIPTION

- Fittings designed for air-cooling tube plate
- Multi-leaf spring in air jacket provides good electrical contact to plate
- Tube centers in air jacket automatically --- no clamping
- Several threaded holes allow tube-plate connections from all sides

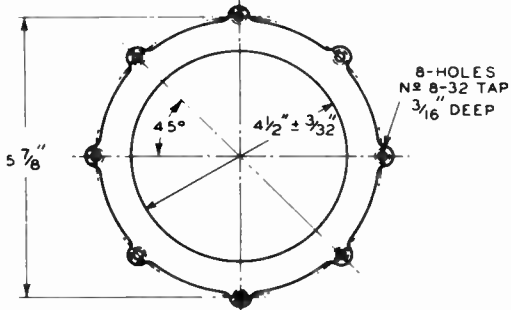
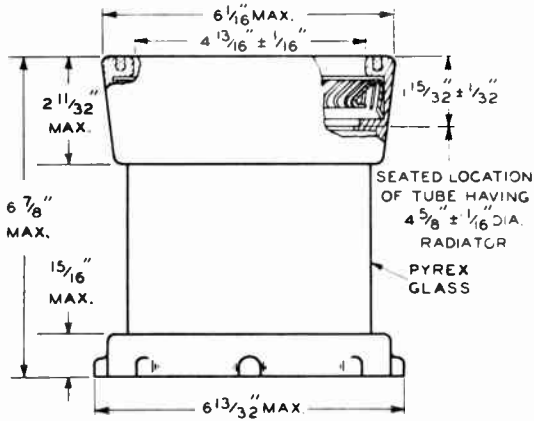
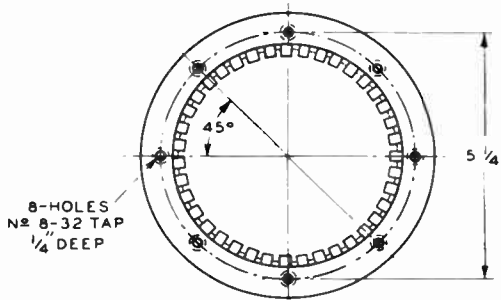
FITTINGS

| Description | RCA Type No. |
|-----------------------|--------------|
| Air Jacket. | 229FI |
| Air Manifold. | 230FI |
| Bracelet. | 231FI |

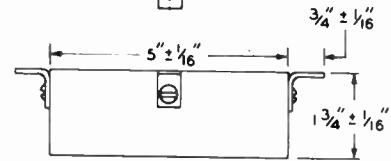
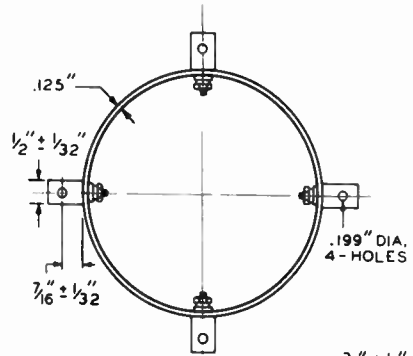


*Exploded View of Fittings
for 5762 and 7C24*

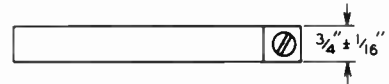
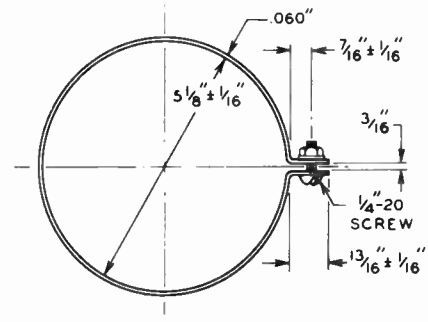
RCA POWER-TUBE FITTINGS FOR TUBE TYPES 5762 AND 7C24



Air Jacket - 229F1



Air Manifold - 230F1



Bracelet - 231F1

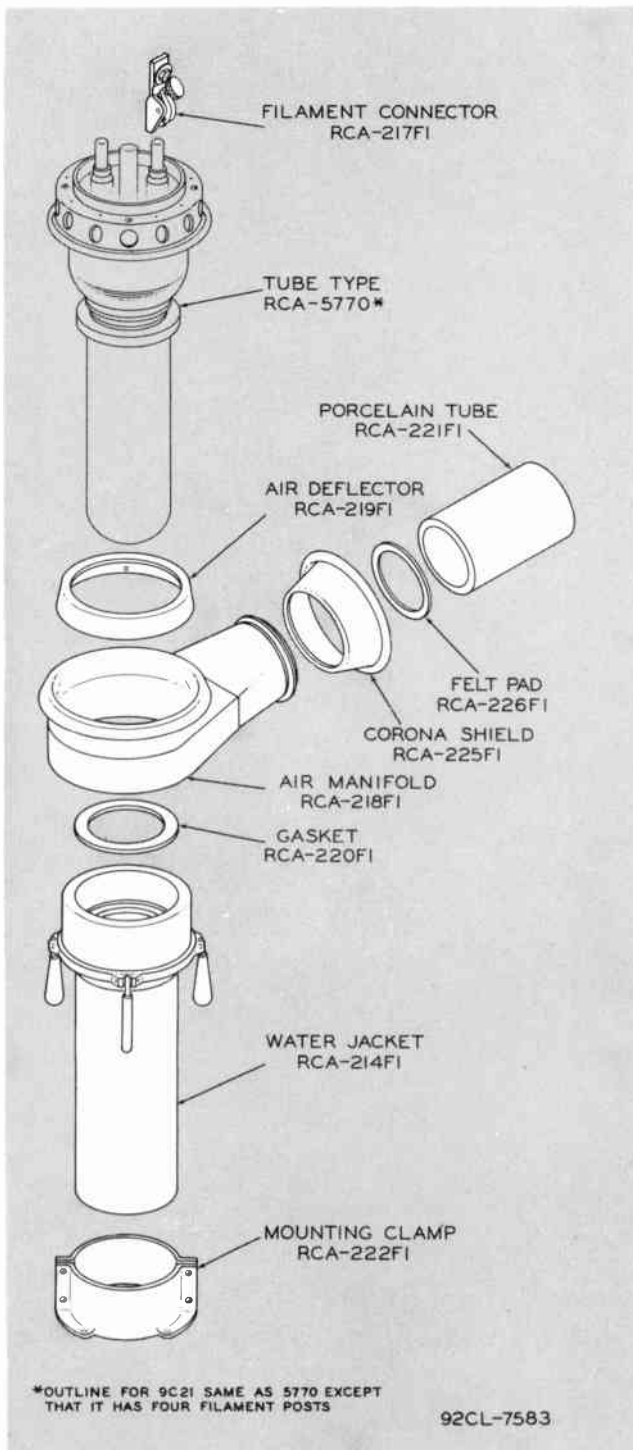
Power-Tube Fittings for Tube Types 5770 and 9C21

DESCRIPTION

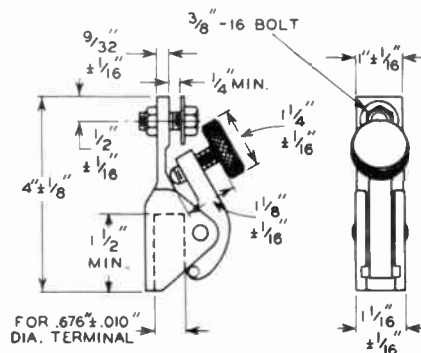
- Designed for water-cooling tube plate and air-cooling other parts
- Air manifold and deflector distribute cooling air uniformly around plate seal and bulb
- Tube centers automatically in water jacket
- Roller-type clamping used in water jacket --- eight rollers assure uniform pressure on tube flange --- eliminate danger of water leakage and tube-seal breakage
- No special wrenches --- four lever handles facilitate clamping tube in water jacket
- Filament-post connectors easy to remove from hot tube

FITTINGS

| Description | RCA Type No. |
|---|--------------|
| Water Jacket | 214F1 |
| Filament Connector (4 required for 9C21; 2 required for 5770) | 217F1 |
| Air Manifold | 218F1 |
| Air Deflector | 219F1 |
| Gasket | 220F1 |
| Porcelain Tube | 221F1 |
| Mounting Clamp | 222F1 |
| Corona Shield | 225F1 |
| Felt Pad | 226F1 |

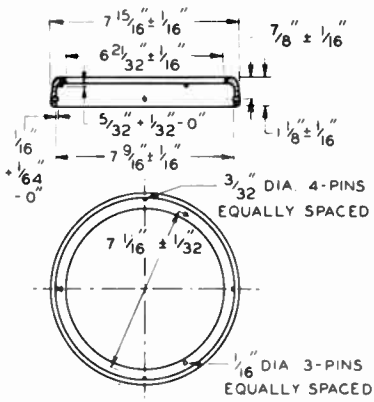


*Exploded View of Fittings
for 5770 and 9C21*

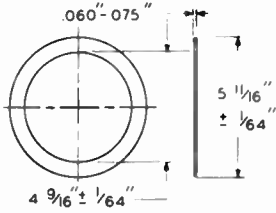


Filament Connector - 217F1

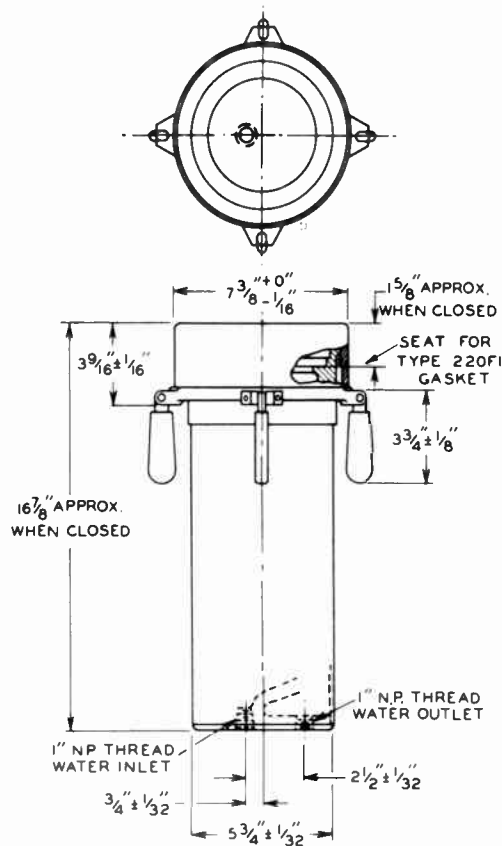
RCA POWER-TUBE FITTINGS FOR TUBE TYPES 5770 AND 9C21



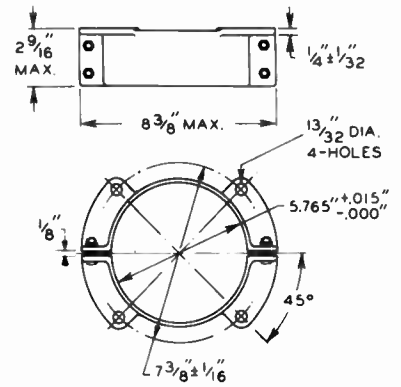
Air Deflector - 219F1



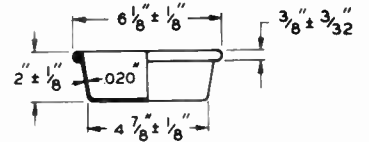
Gasket - 220F1



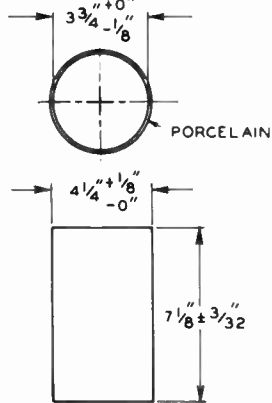
Water Jacket - 214F1



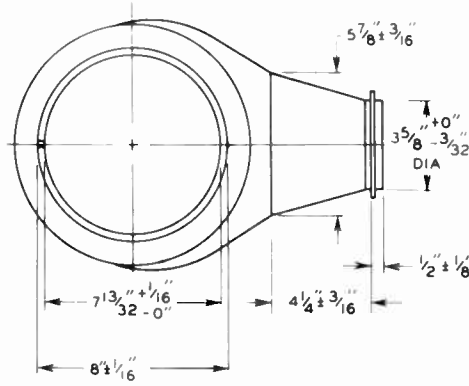
Mounting Clamp - 222F1



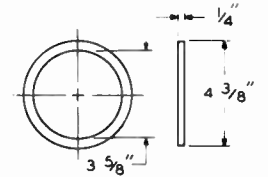
Corona Shield - 225F1



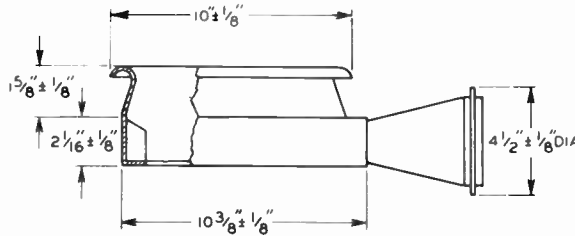
Porcelain Tube
221F1



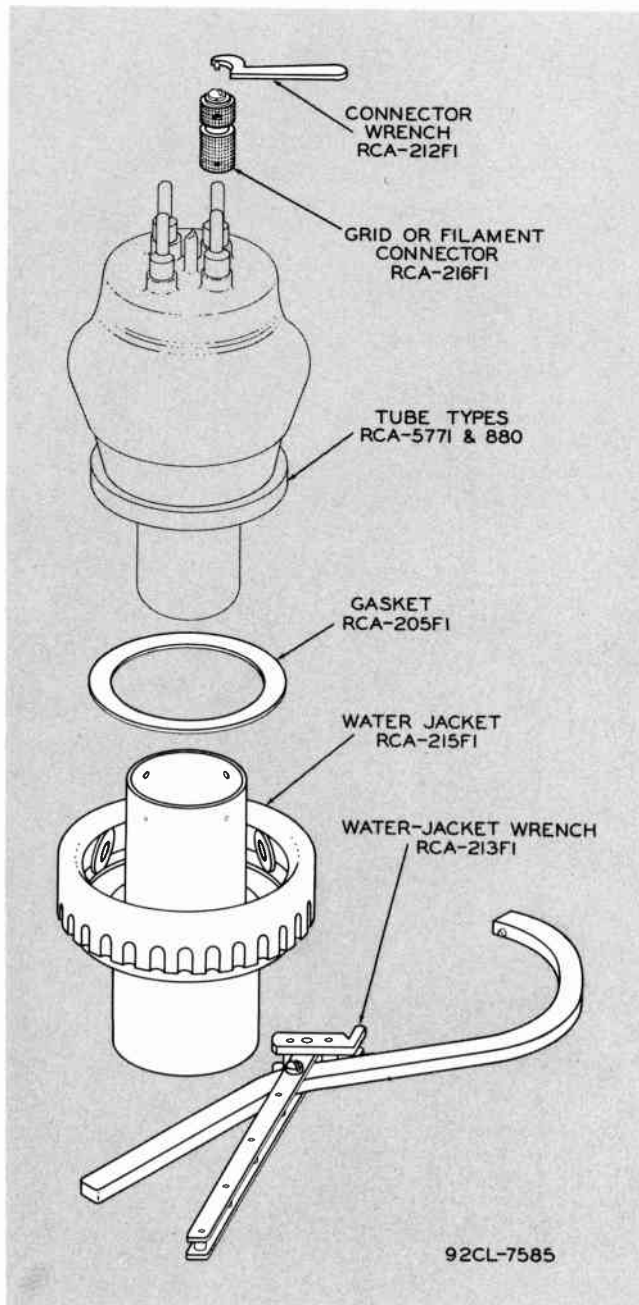
Air Manifold - 218F1



Felt Pad - 226F1



Power-Tube Fittings for Tube Types 5771 and 880



*Exploded View of Fittings
for 5771 and 880*

DESCRIPTION

- Designed for water-cooling tube plate
- Roller-type clamping in water jacket --- eliminates danger of water leakage and tube-seal breakage --- uniform pressure on tube flange assured by four clamping rollers
- Tube centers automatically in water jacket
- Wrenches for water jacket and connectors available

FITTINGS

| Description | RCA Type No. |
|---|--------------|
| Gasket | 205F1 |
| Connector Wrench (2 required) | 212F1 |
| Water-Jacket Wrench | 213F1 |
| Water Jacket | 215F1 |
| Grid or Filament Connector (4 required). | 216F1 |

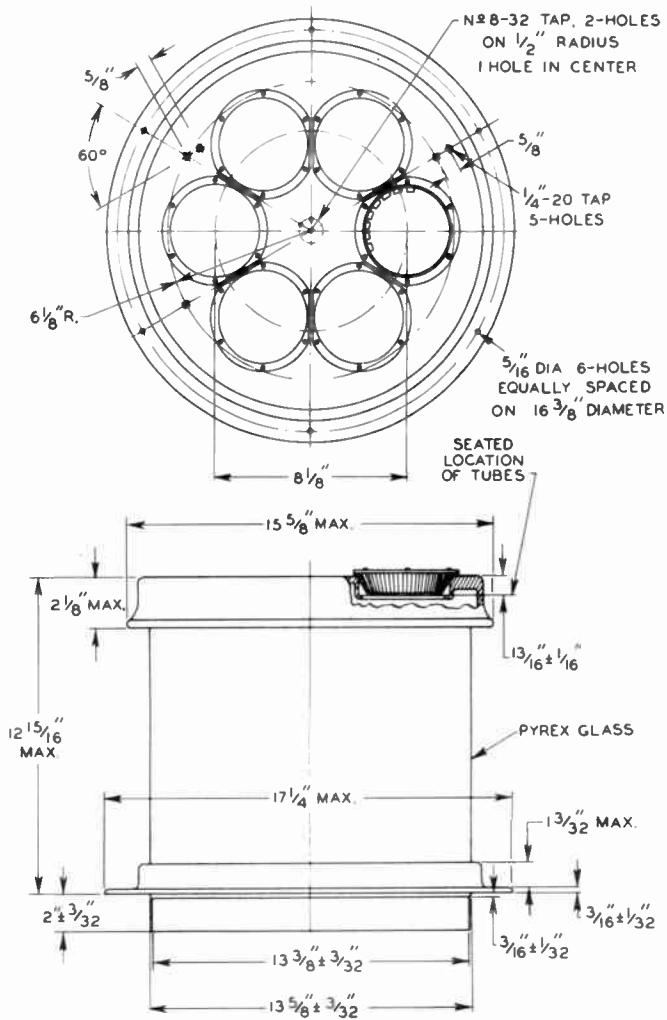
Power-Tube Fittings for Tube Types F-7C25 and F-129-B

FOR F-7C25

- Designed to hold and air-cool six F-7C25 tubes
- Tubes rest in place inside air jacket --- no clamping necessary

FITTING

| Description | RCA Type No. |
|---------------------|--------------|
| Air Jacket. | 240F1 |



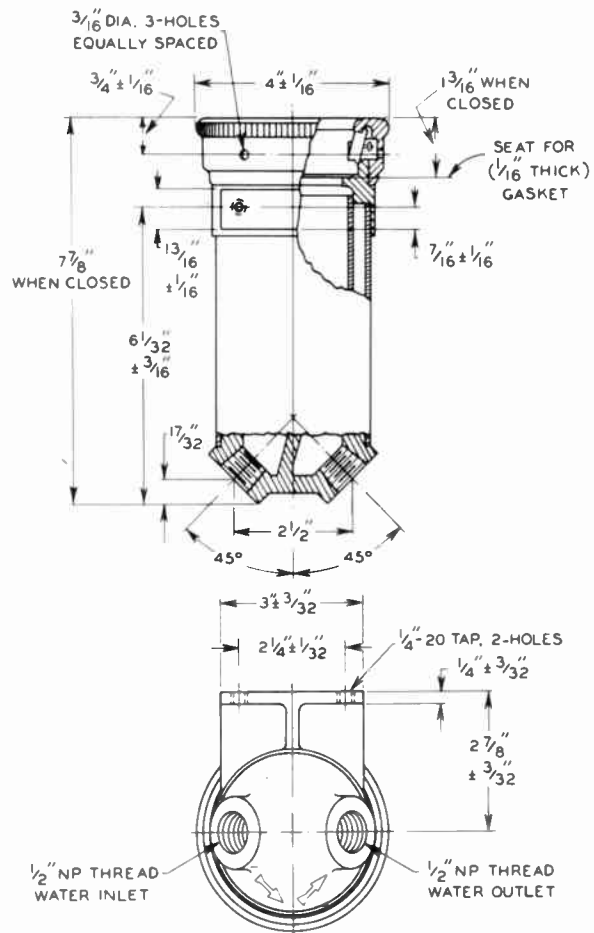
Air Jacket - 240F1

FOR F-129-B

- Designed for water-cooling tube plate
- Roller-type clamping in water jacket --- eliminates danger of water leakage and tube-seal breakage --- four rollers assure uniform pressure on flange
- Water jacket has built-in mounting flange
- Centering pins automatically position tube in water jacket
- Water jacket has threaded inlet and outlet water holes

FITTING

| Description | RCA Type No. |
|-----------------------|--------------|
| Water Jacket. | 239F1 |



Water Jacket - 239F1

CROSS-REFERENCE INDEX

In Order of Fitting Type Number

| RCA Fitting Type No. | Used With Tube Type | See Page No. | RCA Fitting Type No. | Used With Tube Type | See Page No. |
|-------------------------------|--|--------------------|-------------------------------|------------------------|--------------------|
| 200F1 | 892, 891 | 8 | 219F1 | 5770, 9C21 | 18 |
| 201F1 | 892, 891 892-R, 891-R | 8 10 | 220F1 | 5770, 9C21 | 18 |
| 202F1 | 892, 891 | 8 | 221F1 | 5770, 9C21 | 18 |
| 203F1 | 892, 891 892-R, 891-R | 8 10 | 222F1 | 5770, 9C21 | 18 |
| 204F1 | 892, 891 | 8 | 224F1 | 889-A | 4 |
| 205F1 | 5771, 880 | 20 | 225F1 | 5770, 9C21 | 18 |
| 207F1 | 833-A | 3 | 226F1 | 5770, 9C21 | 18 |
| 208F1 | 833-A | 3 | 227F1 | 5671, 9C22 | 14 |
| 210F1 | 892, 891 892-R, 891-R | 8 10 | 228F1 | 5592, 9C25 | 12 |
| 211F1 | 889R-A 892-R, 891-R | 6 10 | 229F1 | 5762, 7C24 | 16 |
| 212F1 | 889-A 889R-A 5771, 880 | 4 6 20 | 230F1 | 5762, 7C24 | 16 |
| 213F1 | 5771, 880 | 20 | 231F1 | 5762, 7C24 | 16 |
| 214F1 | 5770, 9C21 | 18 | 232F1 | 889R-A 892-R, 891-R | 6 10 |
| 215F1 | 5771, 880 | 20 | 233F1 | 5592, 9C25 | 12 |
| 216F1 | 889-A 889R-A 5771, 880 | 4 6 20 | 234F1 | 889R-A 892-R, 891-R | 6 10 |
| 217F1 | 5592, 9C25 5671, 9C22 5770, 9C21 | 12 14 18 | 235F1 | 5592, 9C25 | 12 |
| 218F1 | 5770, 9C21 | 18 | 236F1 | 889-A | 4 |
| | | | 237F1 | 889-A | 4 |
| | | | 238F1 | 5671, 9C22 | 14 |
| | | | 239F1 | F-129-8 | 22 |
| | | | 240F1 | F-7C25 | 22 |
| | | | 241F1 | 5671, 9C22 | 14 |

See page 2 for Index
arranged in order of tube-type designation.

• **TUBE HANDBOOK—ALL TYPES HB-3** (7³/₈" x 5"). The bible of the industry—contains over 2500 pages of loose-leaf data and curves on all RCA receiving tubes including kinescopes, power tubes, cathode-ray tubes, phototubes, and special tubes. Three deluxe 4-prong binders imprinted in gold. Available on subscription basis. Price \$10.00* including service for first year. Write to Commercial Engineering for descriptive folder and order form.

• **RECEIVING TUBE MANUAL—RC-16** (8³/₈" x 5¹/₂")—over 300 pages. Supersedes RC-15. Revised, expanded, and brought up to date. Contains the latest receiving tubes, including miniature types and kinescopes. Features tube theory written for the layman, application data, up-to-date Resistance-Coupled Amplifier Section, and many new circuits for audio amplifiers and radio receivers. Features lie-flat binding. Price 50 cents.*

• **PHOTOTUBES BOOKLET—PT-20R1** (11" x 8¹/₂")—16 pages. Phototube theory, data on 15 types, curves and circuits for light-operated relays, light measurements, and sound reproduction. Single copy free on request.

• **RADIOTRON DESIGNER'S HANDBOOK**—(9" x 6")—356 pages. Edited by F. Langford Smith of Amalgamated Wireless Valve Company Pty. Ltd. in Australia. Of value to anyone interested in fundamental principles of practical circuit design. Copiously illustrated. Price \$1.25.*

• **POWER AND GAS TUBES FOR RADIO AND INDUSTRY**—Bulletin PG-101-A (11" x 8¹/₂")—20 pages. Technical information on more than 150 RCA vacuum power tubes, rectifier tubes, thyratrons, ignitrons, and voltage regulators. Includes terminal connections. Price 15 cents.*

• **PHOTOTUBES, CATHODE-RAY AND SPECIAL TUBES**—Bulletin CRPS-102-A (11" x 8¹/₂")—20 pages. Completely revised and brought up to date. Technical information on 145 single-unit, twin-unit, and multiplier phototubes, cathode-ray tubes, camera tubes, monoscopes, and types for special applications. Includes terminal connections. Price 15 cents.*

• **RECEIVING TUBES FOR AM, FM, AND TELEVISION BROADCAST**—Bulletin 1275-E (11" x 8¹/₂")—24 pages. Completely revised and brought up to date. Contains characteristics on more than 450 RCA receiving tubes including kinescopes. Socket connection diagrams arranged for quick and easy reference. Price 10 cents.*

• **INSTRUCTION BOOKLETS** Complete authorized information on RCA transmitting tubes and other tubes for communications and industry. Be sure to mention tube-type booklet desired. Single copy on any type free on request.

• **AIR-COOLED TRANSMITTING TUBES MANUAL—TT3** (8³/₈" x 5³/₈") 192 pages. Published several years ago, this book still retains popularity for instruction purposes. It contains basic information on generic tube types, tube parts and materials, tube ratings, tube installation and application, transmitter-design considerations, rectifiers and filters, as well as data on many of the older tube types. Price 35 cents.*

• **HEADLINERS FOR HAMS**—Bulletin HAM-103A (11" x 8¹/₂") 4 pages. Technical information and terminal connections on 30 RCA "HAM" PREFERENCE TYPES: class B modulators, class C amplifiers and oscillators, frequency multipliers, rectifier tubes, thyratrons, and cold-cathode (glow-discharge tubes). Single copy free on request.

• **TRIPLE PINDEX—2F366R** (8" x 3³/₄") Receiving-tube base-diagram guide on over 600 receiving tube types including kinescopes arranged in numerical-alphabetical sequence. The diagrams of any three tubes can be located and kept in front of you at the same time. Price 75 cents.*

• **TELEVISION SERVICE DATA—TV1003** (11" x 8¹/₂") 112 pages. For RCA Victor Models 630TS and 648PTK. Contains alignment procedures, schematic diagrams, complete parts lists, wiring diagrams, and chassis layout. Price \$1.50.*

• **RCA PREFERRED TYPES LIST**—Bulletin PTL-501-A (11" x 8¹/₂")—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 INTERCHANGEABILITY DIRECTORY ON TUBES FOR COMMUNICATIONS AND INDUSTRY** Bulletin ID-1020 (11" x 8¹/₂") 20 pages. Lists 1600 type designations of 24 different manufacturers arranged in alphabetical-numerical sequence; shows the RCA Direct Replacement Type or the RCA Similar Type. Price 15 cents.*

• **RCA TELEVISION "PICT-O-GUIDE" VOLUMES I & II.** Covers different phases of TV trouble shooting by picture analysis. Vol. I contains 100 pages and more than 40 photographs; Vol. II, 224 pages and more than 80 photographs. Each volume contains circuit diagrams, basic television information, and detailed descriptions of picture troubles. Price \$2.50 *per volume.



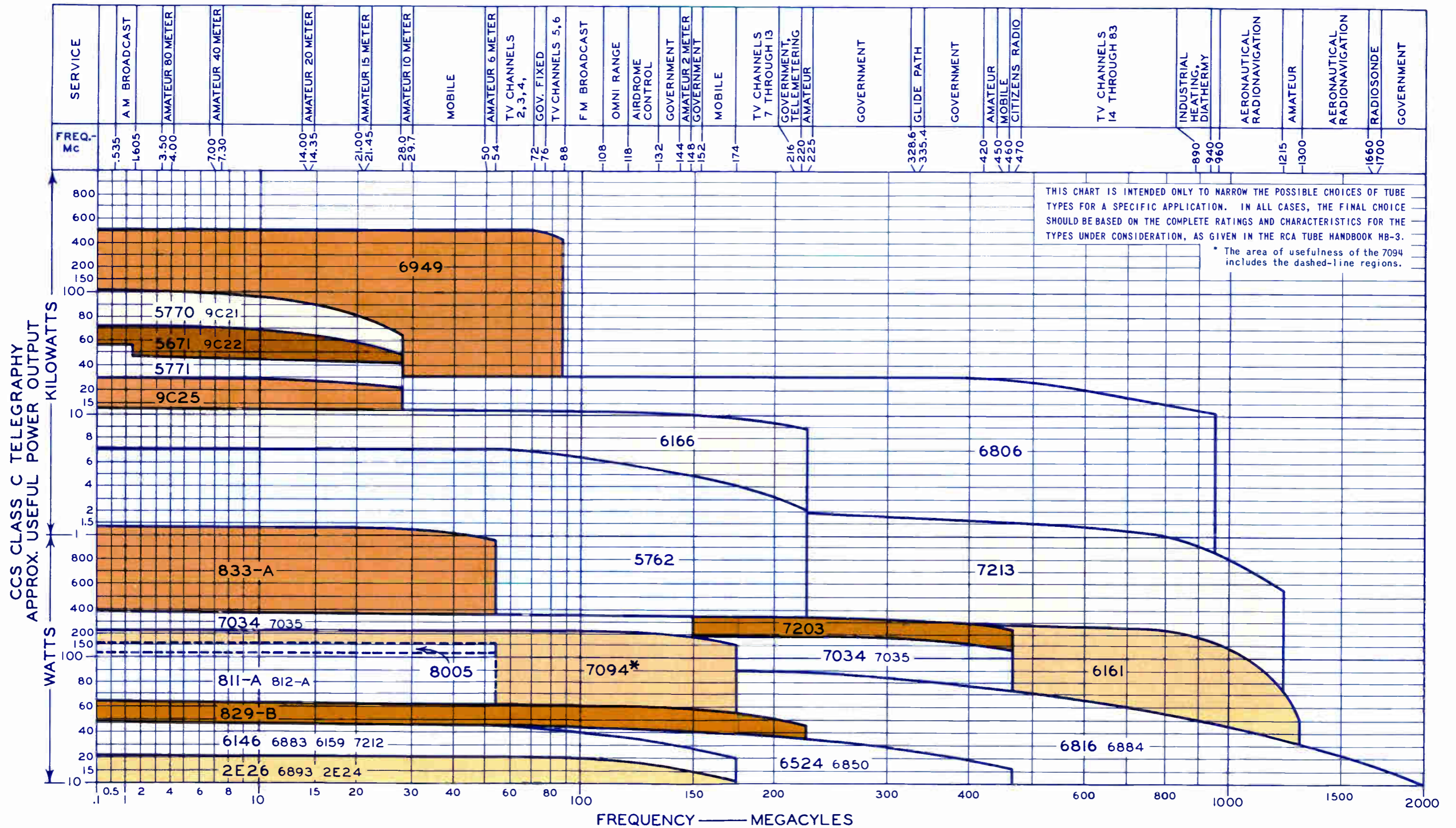
TECHNICAL PUBLICATIONS ON RCA ELECTRON TUBES



The Fountainhead of Modern Tube Development is RCA

Copies of the publications listed above may be obtained from your RCA Tube Distributor, or direct from Commercial Engineering, Tube Department, Radio Corporation of America, Harrison, New Jersey.

RCA POWER TUBE SELECTION CHART



power output of 10 kilowatts on synchronizing-signal peaks. The multiplier for class B or class C Television service is 0.8. Therefore, a tube capable of delivering 10 x 0.8 or 8 kilowatts at 54 to 72 megacycles in class C Telegraphy service is required. The indicated tube type in this case is the 6166.

When the desired operating point is near a power or frequency limit of an area, consideration should be given to parallel or push-pull operation of tubes in lower adjacent areas or to single tubes in higher adjacent areas. Thus, in the second example given above, it might be more economical or otherwise advantageous to use two parallel-connected type 5762 triodes, instead of a single type 6166, as indicated in the chart.

TABLE I

| Type of Service | To Determine CCS Class C Telegraphy Power-Output Requirements | |
|--|---|------|
| | Multiply Required | By |
| Plate-Modulated RF Power Amplifier--Class C Telephony | Carrier Power | 1.5 |
| AF Amplifier or Modulator--Class AB ₂ or Class B | Maximum-Signal Power Output for Two Tubes in Push-Pull | 0.7 |
| Linear RF Power Amplifier--Class AB ₁ --Single-Sideband, Suppressed-Carrier Service | Peak Envelope Power | 1.45 |
| Grid- or Screen-Grid-Modulated RF Power Amplifier--Class C Telephony | Carrier Power | 5 |
| RF Power Amplifier--Class B Telephony | Carrier Power | 5 |
| RF Power Amplifier--Class B Television Service (Bandwidth = 6 Mc) | Synchronizing-Level Power Output | 0.8 |
| Grid- or Bias-Modulated RF Power Amplifier--Class C Television Service (Bandwidth = 6 Mc) | Synchronizing-Level Power Output | 0.8 |

Additional Considerations

It is important to emphasize that the power output obtainable from a tube at a given frequency depends upon the conditions under which the tube is operated, and upon the circuit efficiency. The power-output values shown on the chart can be achieved by operation of the indicated tube types within their maximum ratings, in circuits having reasonably high efficiency, but are not guaranteed values. A tube type indicated for use in a particular power-frequency area can be expected to perform as well or better in any area below or to the left of the one in which it is listed.

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Frequency and Power-Output Chart for RCA Transmitting Tubes

This Note presents a chart designed to simplify selection of an RCA transmitting-tube type for use in any type of service at a given frequency and power output. The chart, which is printed on the inside pages of this Note, covers power-output requirements up to 500 kilowatts, and operating frequencies up to 2000 megacycles per second. It is divided into power-frequency areas, each of which is labelled with the type designation of the RCA transmitting tube which can be expected to deliver optimum performance over that area. In some cases, two or more tube types are shown in an area. The tube type shown in large letters is the most popular or economical type for operation in that area; the types shown in small letters have essentially the same power-output and frequency characteristics as the one shown in large letters, but may differ in other respects. If the area is subdivided by dashed lines, the tube type shown in large letters outside the dashed lines is recommended for use over the entire area.

Conversion Table

The power-output values shown in the chart are for CCS class C Telegraphy service. To permit quick conversion of power-output requirements for other types of service to class C Telegraphy values, a conversion table is given in Table I. This table gives the approximate factor by which the required power output for each such type of service should be multiplied to obtain a corresponding class C Telegraphy output which can be read on the chart.

As an example of the use of the conversion table, assume that a grid-modulated class C amplifier capable of delivering an unmodulated-carrier output of 500 watts at a frequency of 2 megacycles is required. The multiplier for grid-modulated class C service is 5. Therefore, a tube capable of delivering 500 x 5 or 2500 watts in class C Telegraphy service at 2 megacycles is required. The indicated tube type in this case, as shown in the Selection Chart, is the 5762.

As another example, assume that the output stage of a television transmitter operating on vhf channel 2, 3, or 4 is required to deliver a