

## Philco Radio & Television Corp.

Model: 20

Chassis:

Year:

Power:

Circuit:

IF:

Tubes:

Bands:

### Resources

Riders Volume 2 - PHILCO 2-3

Riders Volume 2 - PHILCO 2-4

Riders Volume 1 - PHILCO 1-6

Radio College Of Canada - PHILCO 7

## PHILCO RADIO &amp; TELEVISION CORP.

MODEL 20, 20-A  
Voltage  
Values

## Models 20 and 20-A Receivers

Model 20 Receivers are for Operation on 105-125 volt, 50-60 cycle AC Lines.

Model 20-A Receivers are for Operation on 105-125 volt, 25-60 cycle AC Lines.

Bulletin 28 covers the first few weeks' production of Models 20 and 20-A. These Receivers can be identified as having one or two compensating condensers. The later models have three compensating condensers fastened to the tuning condenser housing and are covered by Bulletin 36.

Table 1—Tube Socket Readings Taken with AC Set Tester, AC Line, 115 Volts

| Tube |           | Filament Voltage | Plate Voltage | Grid Voltage | Screen Grid Voltage | Cathode Voltage | Plate Milliamperes |
|------|-----------|------------------|---------------|--------------|---------------------|-----------------|--------------------|
| Type | Circuit   |                  |               |              |                     |                 |                    |
| 24   | 1st R. F. | 2.3              | 250           | 3.0          | 90.0                | 12              | 4.5                |
| 24   | 2d R. F.  | 2.3              | 250           | 3.0          | 90.0                | 11              | 4.5                |
| 24   | Detector  | 2.3              | 35            | 1.0          | 2.0                 | 8               | ....               |
| 27   | 1st Audio | 2.3              | 120           | 1.0          | ....                | 8               | 3.0                |
| 71-A | 2d Audio  | 5.0              | 215           | 50.0         | ....                | ....            | 18.0               |
| 71-A | Push-Pull | 5.0              | 215           | 50.0         | ....                | ....            | 18.0               |
| 80   | Rectifier | 5.0              | ....          | ....         | ....                | ....            | 36/Plate           |

All readings taken with antenna disconnected and ground on. Volume Control on full.

Table 2—Power Transformer Voltages

| Terminals | A. C. Volts |                            |
|-----------|-------------|----------------------------|
| 1-2       | 2.5         | Heaters of 24 and 27 Tubes |
| 3-4       | 105 to 125  | Primary                    |
| 7-8       | 5.0         | Filament of 71-A Tubes     |
| 5         | ....        | Center Tap of 7-8          |
| 10-11     | 5.0         | Filament of 80 Tube        |
| 9-12      | 650         | Plates of 80 Tube          |
| 6         | ....        | Center Tap of 9-12 and 1-2 |

Table 4—Condenser Data

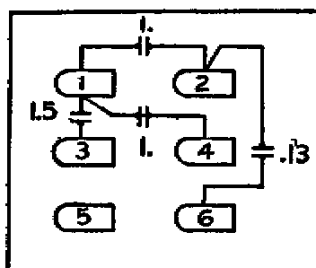
(Other Than Filter Condenser)

| No. on Figs. 3 and 4 | Capacity MFD                      |
|----------------------|-----------------------------------|
| (16)                 | .00025                            |
| (19)                 | .01                               |
| (5) (6) (22)         | .05                               |
| (8)                  | .05 with 250-ohm resistor winding |
| (14)                 | .25 (two sections)                |
| (13)                 | .5                                |

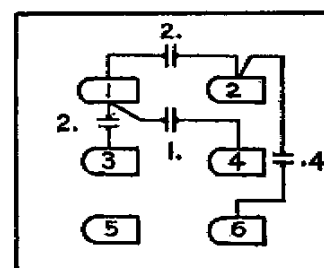
Table 3—Resistor Data

| No. on Figs. 3 and 4 | Terminal | Resistance | Color           |
|----------------------|----------|------------|-----------------|
| (25)                 | (1-2)    | (1,400)    | Long Tubular    |
|                      | (2-3)    | 187        |                 |
|                      | (3-4)    | 75         |                 |
|                      | (5-6)    | 2,470      |                 |
|                      | (6-7)    | 975        |                 |
| (12)                 |          | 50,000     | Orange          |
| (18)                 |          | 100,000    | Silver Gray     |
| (15)                 |          | 250,000    | White           |
| (17)-(20)            |          | 500,000    | Battleship Gray |

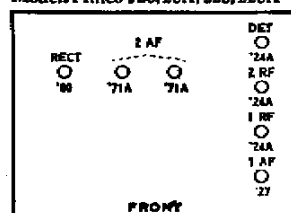
Model 20—Filter Condenser—Part No. 4235



Model 20-A—Filter Condenser—Part No. 4269

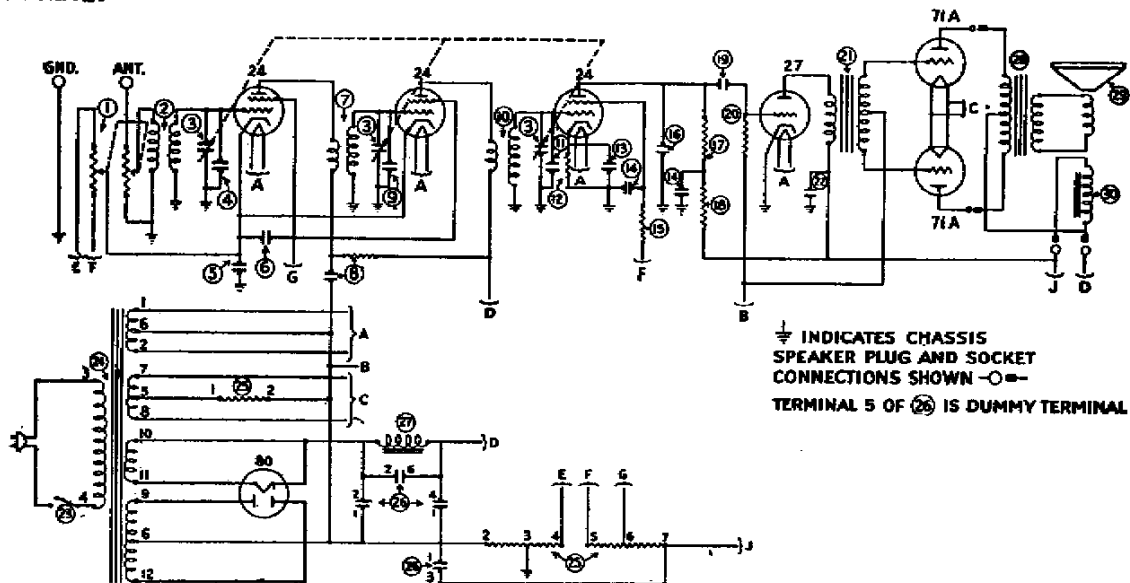


Models Philco's 20, 20A, 220, 220A



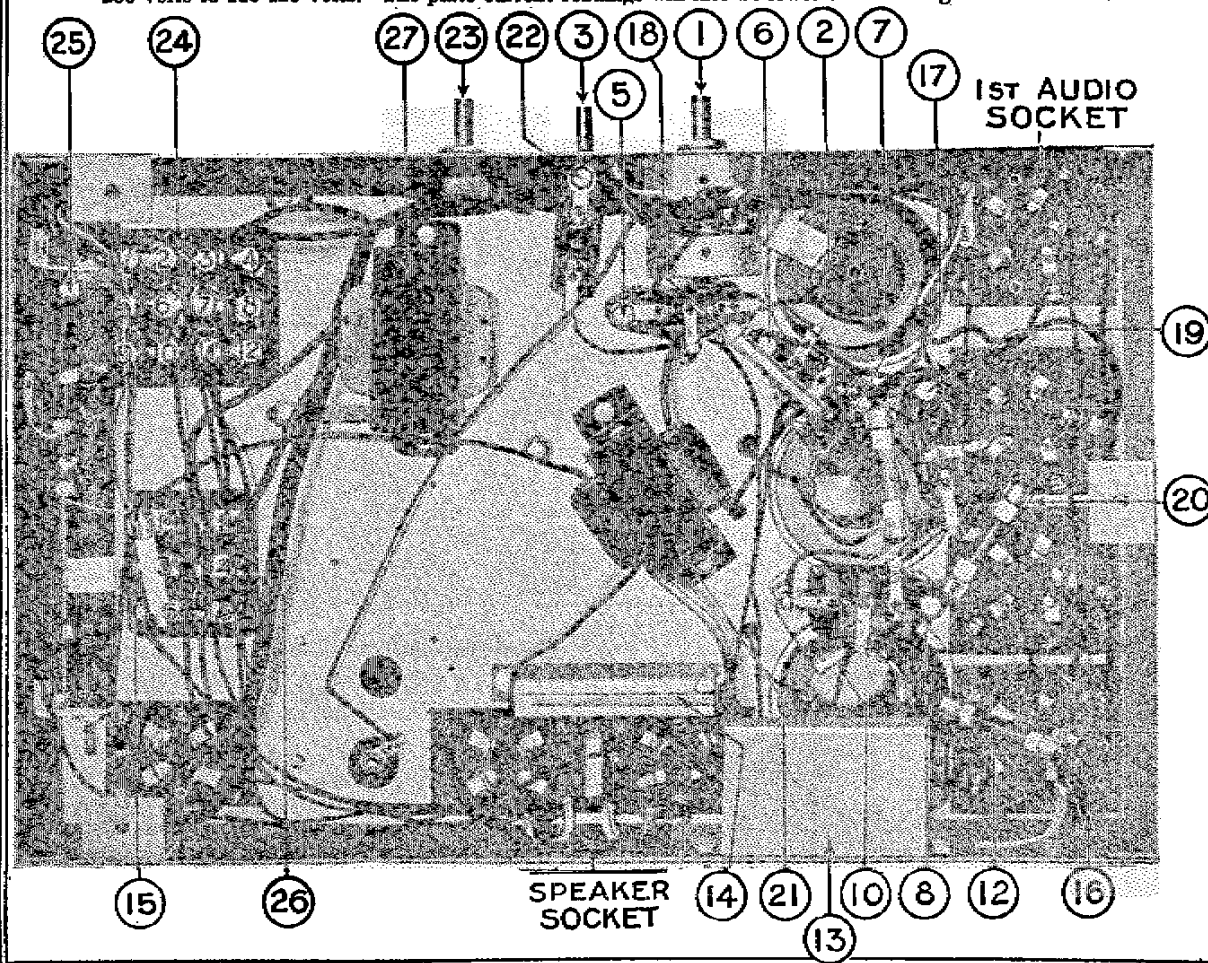
**MODEL 20, 20-A**  
**Chassis**  
**Schematic**

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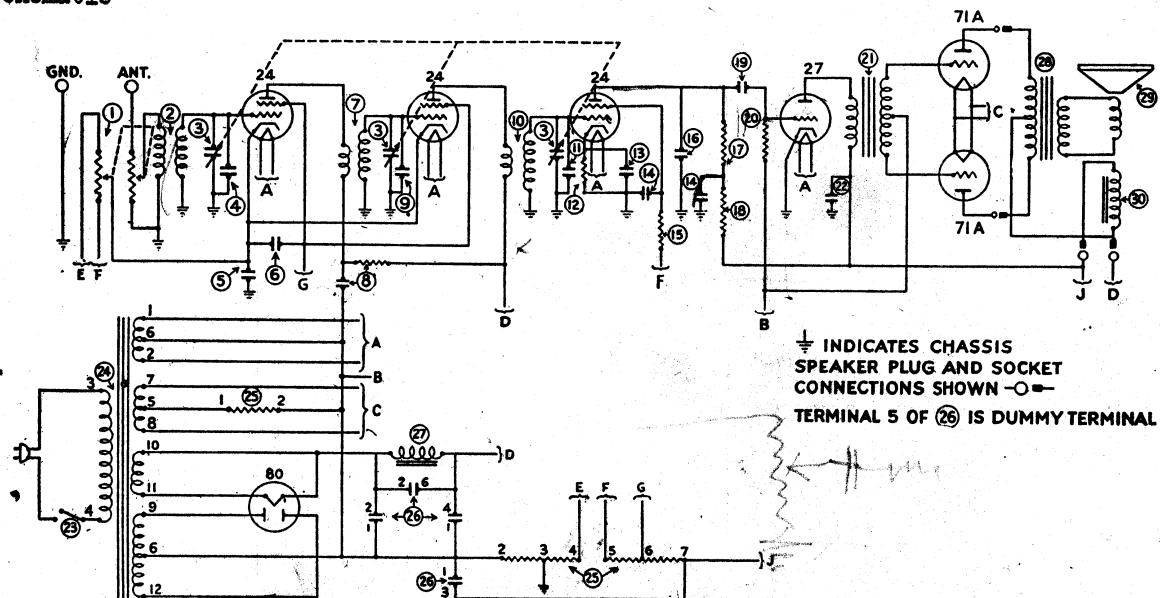
**DIFFERENT CIRCUIT ARRANGEMENT FOR MODEL 20-A**

Model 20-A for use on 25-60 cycle lines is wired differently than the Model 20. The plate supply lead for the two 24 R. F. Tubes is taken from the low side of the Speaker field Coil. The lead "D" to the 24 tubes should be changed to "J" for the Model 20-A only. This will change the plate voltage from 250 volts to 115-125 volts. The plate current readings will also be lower than those given in the table.



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