



# MANUAL



PRICE: \$1.00

FISHER RADIO CORPORATION • NEW YORK



# PARTS DESCRIPTION LIST

## CHASSIS SERIAL NUMBERS 50001—59999 INCLUSIVE

### CAPACITORS

20% tolerance for all fixed capacitors, unless otherwise noted or marked GMV (guaranteed minimum value.)

| Symbol   | Description                                                            | Order No.   |
|----------|------------------------------------------------------------------------|-------------|
| C1       | Ceramic, 820uuf 10%, 1000V                                             | C50072-7    |
| C2, 3    | Ceramic, 390uuf 10%, 1000V                                             | C50072-6    |
| C4       | Ceramic, 1800uuf 10%, 1000V                                            | C50072-8    |
| C5       | Ceramic, 82uuf 10% N1500, 1000V                                        | C50070-7    |
| C6       | Ceramic, 1800uuf 10%, 1000V                                            | C50072-8    |
| C7, 8    | Ceramic, 560uuf 10%, 1000V                                             | C50072-14   |
| C9, 10   |                                                                        |             |
| 11, 12   | Molded, .01uf 10%, 250V                                                | C50074-25   |
| C13, 14  | Ceramic, .005uf, 500V                                                  | C50089-1    |
| C15, 16  | Molded, .022uf 10%, 250V                                               | C50074-26   |
| C17      | Ceramic, 7uuf 10% NPO, 1000V                                           | C50070-20   |
| C18      | Ceramic, 8uuf 10% NPO, 1000V                                           | C50070-14   |
| C19, 20  | Ceramic, 68uuf 10%, 500V                                               | CC21GP680K5 |
| C21, 22  | Electrolytic, 25uf, 6V                                                 | C639-114    |
| C23, 24  | Molded, .01uf 10%, 250V                                                | C50074-25   |
| C25      | Ceramic, 1000uuf 10%, 1000V                                            | C50072-3    |
| C26      | Molded, .022uf 10%, 250V                                               | C50074-26   |
| C27      | Ceramic, 1000uuf 10%, 1000V                                            | C50072-3    |
| C28      | Molded, .022uf 10%, 250V                                               | C50074-26   |
| C29      | Electrolytic, 100uf, 100V                                              | C663-143    |
| C30      | Ceramic, 150uuf 10%, 500V                                              | CC21GP151K5 |
| C31      | Molded, .0027uf 10%, 200V                                              | C68P272K2   |
| C32      | Ceramic, 150uuf 10%, 500V                                              | CC21GP151K5 |
| C33      | Molded, .0027uf 10%, 200V                                              | C68P272K2   |
| C34      | Electrolytic, three section:<br>40uf, 450V<br>40uf, 450V<br>20uf, 450V | C563-127    |
| C35, 36  | Molded, .01uf 10%, 250V                                                | C50074-25   |
| C37      | Electrolytic, two section:<br>60uf, 450V<br>40uf, 450V                 | C663-136    |
| C38, 39, |                                                                        |             |
| 40, 41   | Molded, .01uf 10%, 250V                                                | C50074-25   |
| C42, 43  | Not used                                                               | —           |
| C44, 45  | Ceramic, 68uuf 10%, 500V                                               | CC21GP680K5 |
| C46, 47  | Ceramic, 47uuf 10%, 500V                                               | CC21GP470K5 |
| C48      | Not used                                                               | —           |
| C49      | Molded, .047uf 10%, 500V                                               | C50074-37   |
| C50      | Not used                                                               | —           |
| C51, 52, |                                                                        |             |
| 53       | Molded, .047uf 10%, 500V                                               | C50074-37   |
| C54      | Molded, .01uf, 600V                                                    | C2747       |

### RESISTORS AND POTENTIOMETERS

In ohms, 10% tolerance, 1/2 watt, unless otherwise noted. K = kilohm, M = megohm.

| Symbol  | Description                     | Order No.  |
|---------|---------------------------------|------------|
| R1, 2   | Potentiometer, 250K 20%         | R657-134   |
| R3      | Composition, 10K                | RC20BF103K |
| R4      | Composition, 100K               | RC20BF104K |
| R5      | Composition, 10K                | RC20BF103K |
| R6      | Composition, 100K               | RC20BF104K |
| R7, 8   | Composition, 2.7K, 1W           | RC30BF272K |
| R9      | Composition, 3.3M               | RC20BF335K |
| R10     | Composition, 2.2M               | RC20BF225K |
| R11     | Composition, 1.2M               | RC20BF125K |
| R12     | Composition, 270K               | RC20BF274K |
| R13     | Composition, 10M                | RC20BF106K |
| R14     | Composition, 270K               | RC20BF274K |
| R15     | Composition, 10M                | RC20BF106K |
| R16, 17 | Composition, 120K               | RC20BF124K |
| R18, 19 | Potentiometer, 250K 20%         | R657-134   |
| R20, 21 | Composition, 330K, 1W           | RC30BF334K |
| R22, 23 | Composition, 220K               | RC20BF224K |
| R24, 25 | Composition, 10M                | RC20BF106K |
| R26, 27 | Composition, 3.3M               | RC20BF335K |
| R28, 29 | Composition, 2.2M               | RC20BF225K |
| R30, 31 | Composition, 3.3M               | RC20BF335K |
| R32     | Composition, 100K               | RC20BF104K |
| R33     | Composition, 1.2K               | RC20BF122K |
| R34     | Composition, 100K               | RC20BF104K |
| R35     | Composition, 1.2K               | RC20BF122K |
| R36, 37 | Composition, 15M                | RC20BF156K |
| R38, 39 | Composition, 180K               | RC20BF184K |
| R40     | Composition, 220K               | RC20BF224K |
| R41     | Potentiometer, Dual, 1M         | R50160-9   |
| R42     | Composition, 15K                | RC20BF153K |
| R43     | Composition, 220K               | RC20BF224K |
| R44     | Composition, 15K                | RC20BF153K |
| R45, 46 | Composition, 47K                | RC20BF473K |
| R47     | Potentiometer, Dual, 1M         | R50160-9   |
| R48     | Not used                        | —          |
| R49     | Composition, 100K               | RC20BF104K |
| R50     | Composition, 1.2K               | RC20BF122K |
| R51     | Composition, 100K               | RC20BF104K |
| R52     | Composition, 1.2K               | RC20BF122K |
| R53     | Composition, 47K                | RC20BF473K |
| R54     | Potentiometer, Dual Volume 500K | R663-138   |
| R55     | Composition, 10K, 1W            | RC30BF103K |
| R56, 57 | Composition, 47K                | RC20BF473K |
| R58, 59 | Composition, 120K               | RC20BF124K |
| R60     | Composition, 4.7K, 1W           | RC30BF472K |
| R61, 62 | Composition, 270K               | RC20BF274K |

|         |                                              |            |
|---------|----------------------------------------------|------------|
| R63     | Wirewound, 2.2K, 7W                          | R563-148   |
| R64     | Composition, 68K                             | RC20BF683K |
| R65     | Potentiometer, Balance 500K, 20%             | R663-131   |
| R66     | Composition, 68K                             | RC20BF683K |
| R67     | Wirewound, 250, 7W<br>(Two Used in Parallel) | R539-121   |
| R68     | Composition, 390K                            | RC20BF394K |
| R69     | Composition, 1.5K                            | RC20BF152K |
| R70     | Composition, 390K                            | RC20BF394K |
| R71     | Composition, 1.5K                            | RC20BF152K |
| R72     | Composition, 100K                            | RC20BF104K |
| R73     | Composition, 82K                             | RC20BF823K |
| R74     | Potentiometer, 50K, 20%                      | R50103-3   |
| R75     | Composition, 100K                            | RC20BF104K |
| R76     | Composition, 82K                             | RC20BF823K |
| R77     | Potentiometer, 50K, 20%                      | R50103-3   |
| R78, 79 | Composition, 47K                             | RC20BF473K |
| R80, 81 | Composition, 470K                            | RC20BF474K |
| 82, 83  |                                              |            |
| R84     | Composition, 2.2K                            | RC20BF222K |
| R85     | Composition, 33K                             | RC20BF333K |
| R86     | Composition, 2.2K                            | RC20BF222K |
| R87     | Composition, 33K                             | RC20BF333K |
| R88, 89 | Composition, 10                              | RC20BF100K |
| R90, 91 | Composition, 100K                            | RC20BF104K |
| R92     | Composition, 10K                             | RC20BF103K |
| R93     | Composition, 6.8K                            | RC20BF682K |

### TRANSFORMERS

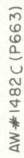
| Symbol | Description         | Order No. |
|--------|---------------------|-----------|
| T1     | Transformer, Output | T663-135  |
| T2     | Transformer, Output | T663-114  |
| T3     | Transformer, Power  | T663-115  |

### MISCELLANEOUS

| Symbol | Description               | Order No.   |
|--------|---------------------------|-------------|
| F1     | Fuse, 3.2 Ampere, Slo-Blo | F3319       |
| I1     | Lamp Panel                | A50118      |
| S1     | Switch, Input Selector    | S663-132    |
| S2     | Switch, Output Selector   | S663-130    |
| S3, 4  | Switch, Slide             | S663-133    |
| S5     | Switch, AC Power          | Part of R54 |



## 50001-59999





# VOLTAGE MEASUREMENTS

All readings taken with vacuum tube voltmeter and, except where indicated, are with respect to chassis ground. Volume control at minimum setting. Bass and Treble tone controls at mid-position. 16-ohm load at speaker terminals. Line voltage 117 volts, 50-60 cycles. All readings are DC unless otherwise noted.

| TUBE SYMBOL | TUBE SOCKET PINS |      |      |       |      |       |     |     |      |
|-------------|------------------|------|------|-------|------|-------|-----|-----|------|
|             | 1                | 2    | 3    | 4     | 5    | 6     | 7   | 8   | 9    |
| V1          | 86               | -0.7 | 0    | 12    | 23.5 | 80    | 0   | 0.8 | 18.0 |
| V2          | 147              | 0    | 1.1  | 3.1*  | 3.1* | 147   | 0   | 1.1 | 3.1* |
| V3          | 210              | 105  | 105  | 3.1*  | 3.1* | 105   | 0   | 1.1 | 3.1* |
| V4          | NC               | 8.5  | 21.0 | 3.1*  | 3.1* | NC    | 400 | NC  | 370  |
| V5          | NC               | 8.5  | 21.0 | 3.1*  | 3.1* | NC    | 400 | NC  | 370  |
| V6          | 86               | -0.7 | 0    | 0     | 12.0 | 87    | 0   | 1.1 | 6.0  |
| V7          | 150              | 0    | 1.1  | 3.1*  | 3.1* | 150   | 0   | 1.1 | 3.1* |
| V8          | 210              | 105  | 105  | 3.1*  | 3.1* | 105   | 0   | 1.1 | 3.1* |
| V9          | NC               | 8.5  | 21.0 | 3.1*  | 3.1* | NC    | 400 | NC  | 370  |
| V10         | NC               | 8.5  | 21.0 | 3.1*  | 3.1* | NC    | 400 | NC  | 370  |
| V11         | NC               | 430  | NC   | 360AC | NC   | 360AC | NC  | 430 | —    |

| CAPACITOR | TERMINAL SYMBOL | VOLTAGE | <b>NOTES</b><br>NC No connection<br>* AC voltage measured between center tap of filament and pin indicated. |
|-----------|-----------------|---------|-------------------------------------------------------------------------------------------------------------|
| C34A      | ▲               | 305     |                                                                                                             |
| C34B      | ■               | 260     |                                                                                                             |
| C34C      | ◐               | 180     |                                                                                                             |
| C37A      | ◑               | 400     |                                                                                                             |
| C37B      | ▲               | 350     |                                                                                                             |

# ADJUSTMENT INSTRUCTIONS

## PHASE INVERTER BALANCE ADJUSTMENT

The phase inverter balance adjustments for Channel A and Channel B are located on the top surface of the chassis. These adjustments should not be attempted unless you have an audio generator and a harmonic or intermodulation distortion analyzer. To make the adjustment, proceed as follows:

1. Connect the audio generator to the AUX or TUNER INPUT of the appropriate channel of the X-101 Master Control Amplifier.
2. Load the output of the amplifier and connect the distortion analyzer to it.
3. Set the audio generator to 1000 cycles or use an intermodulation analyzer. Adjust the output so that the amplifier is slightly (approx. 1 db) below the clipping point.
4. Keeping this output constant, adjust the phase inverter balance control (R74 or R77 on the Schematic Diagram) for minimum distortion as observed on the analyzer.



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