



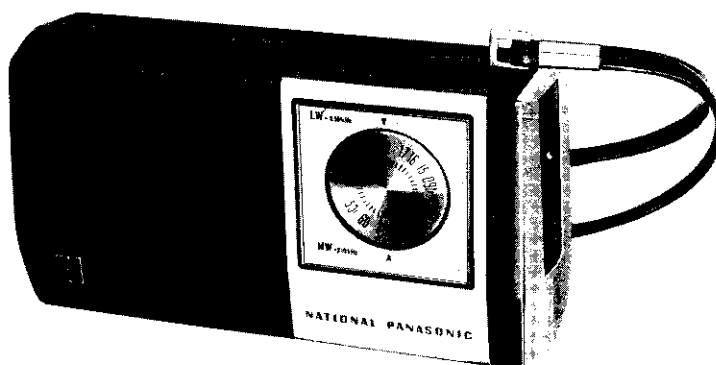
# NATIONAL PANASONIC

## Service Manual

ORDER NO. RD-740

### MW-LW 2-BAND PORTABLE RADIO

MODEL **R-2058L**



#### SPECIFICATIONS

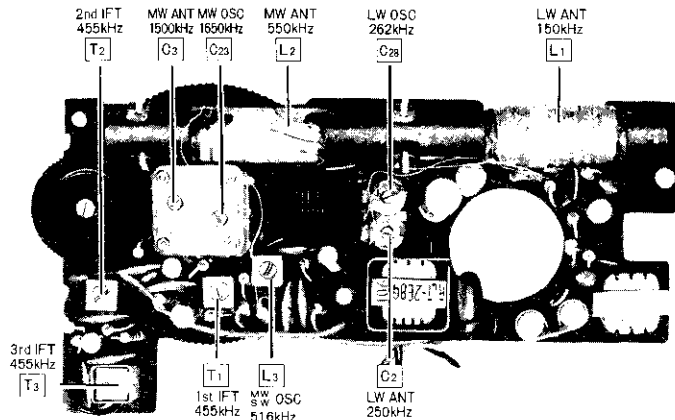
|                          |                                                                                                                                                   |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| Frequency Range :        | MW 525~1605 kHz (571~186m)<br>LW 150~250 kHz (2000~1200m)                                                                                         |
| Intermediate Frequency : | 455 kHz                                                                                                                                           |
| Transistors :            | 2SA102 Converter<br>2SA101 1st IF Amplifier<br>2SA101 2nd IF Amplifier<br>2SB175 AF Amplifier<br>2SB176 } Power Amplifier (push-pull)<br>2SB176 } |
| Diode :                  | 0 A 9 0 Detector & AGC                                                                                                                            |
| Sensitivity :            | MW 100 $\mu$ V/m for 50mW Output<br>LW 300 $\mu$ V/m for 50mW Output                                                                              |
| Power Output :           | 250mW Maximum                                                                                                                                     |
| Batteries :              | 6V (Four "AA" size penlight batteries)<br>(NATIONAL UM-3 or equivalent)                                                                           |
| Speaker :                | 6.5cm (2½") PM Dynamic Speaker, Imp. 8 $\Omega$                                                                                                   |
| Cabinet Dimensions :     | 152(Wide) × 80(High) × 43(Deep)mm<br>(5¾" × 3½" × 1⅞")                                                                                            |
| Weight :                 | 350g. (12½ oz.) without batteries                                                                                                                 |

〈EXPORT DIVISION〉

**MATSUSHITA ELECTRIC TRADING CO., LTD.**  
P. O. Box 288 Central, Osaka, Japan

**MATSUSHITA ELECTRIC INDUSTRIAL CO., LTD.**  
RADIO and STEREO DIVISION

## ■ ALIGNMENT INSTRUCTIONS

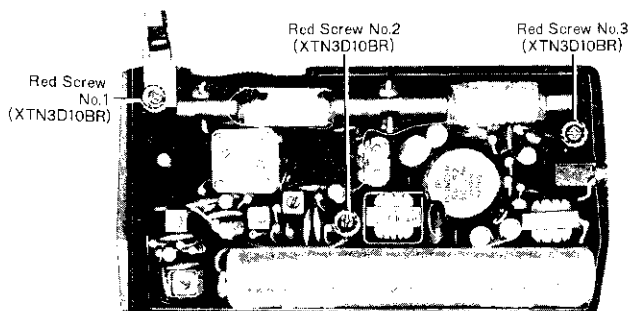


### IF & RF ALIGNMENT

| Output of signal generator should be no higher than necessary to obtain an output reading<br>Set volume control to maximum. Set power source voltage to 6V DC. |                                                                                 |                            |                           |                                    |                                                                                  |                                                                                 |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|----------------------------|---------------------------|------------------------------------|----------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| Band Switch Position                                                                                                                                           | SIGNAL GENERATOR COUPLING                                                       | SIGNAL GENERATOR FREQUENCY | RADIO DIAL SETTING        | INDICATOR                          | ADJUSTMENT                                                                       | REMARKS                                                                         |
| 1                                                                                                                                                              | Fashion loop of several turns of wire and radiate signal into loop of receiver. | 455 kHz (1000Hz Mod.)      | Tuning gang fully closed. | Output meter across earphone jack. | T <sub>1</sub> (1st IFT)<br>T <sub>2</sub> (2nd IFT)<br>T <sub>3</sub> (3rd IFT) | Adjust for maximum output.                                                      |
| 2 MW                                                                                                                                                           |                                                                                 | 516 kHz (1000Hz Mod.)      | "                         | "                                  | L <sub>3</sub> (OSC Coil)                                                        | Adjust for maximum output.                                                      |
| 3                                                                                                                                                              |                                                                                 | 1650 kHz (1000Hz Mod.)     | Tuning gang fully open.   | "                                  | C <sub>23</sub> (OSC Trimmer)                                                    | Adjust for maximum output. Repeat steps (2) and (3).                            |
| 4                                                                                                                                                              | "                                                                               | 262 kHz (1000Hz Mod.)      | Tuning gang fully open.   | "                                  | C <sub>28</sub> (OSC Trimmer)                                                    | Adjust for maximum output.                                                      |
| 5 LW                                                                                                                                                           |                                                                                 | 150 kHz (1000Hz Mod.)      | Tune to Signal            | "                                  | L <sub>1</sub> (ANT Coil)                                                        | Adjust for maximum output by sliding coil (L <sub>1</sub> ) along ferrite core. |
| 6                                                                                                                                                              |                                                                                 | 250 kHz (1000Hz Mod.)      | Tune to Signal            | "                                  | C <sub>2</sub> (ANT Trimmer)                                                     | Adjust for maximum output. Repeat steps (5) and (6).                            |
| 7                                                                                                                                                              | "                                                                               | 550 kHz (1000Hz Mod.)      | Tune to Signal            | "                                  | L <sub>2</sub> (ANT Coil)                                                        | Adjust for maximum output by sliding coil (L <sub>2</sub> ) along ferrite core. |
| 8 MW                                                                                                                                                           |                                                                                 | 1500 kHz (1000Hz Mod.)     | Tune to Signal            | "                                  | C <sub>3</sub> (ANT Trimmer)                                                     | Adjust for maximum output. Repeat steps (7) and (8).                            |

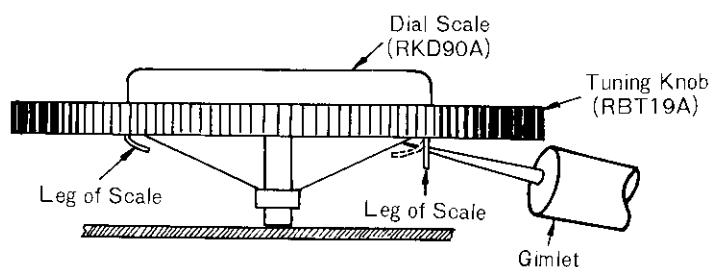
### ■ TO REMOVE CHASSIS

1. Pry the back cover open with a coin or key.
2. Remove three (3) red chassis screws, nos. 1~3, as illustrated in figure below.
3. To remove chassis completely, unsolder lead wires to speaker terminals and remove two speaker screws.
4. To reassemble, reverse the above procedure.

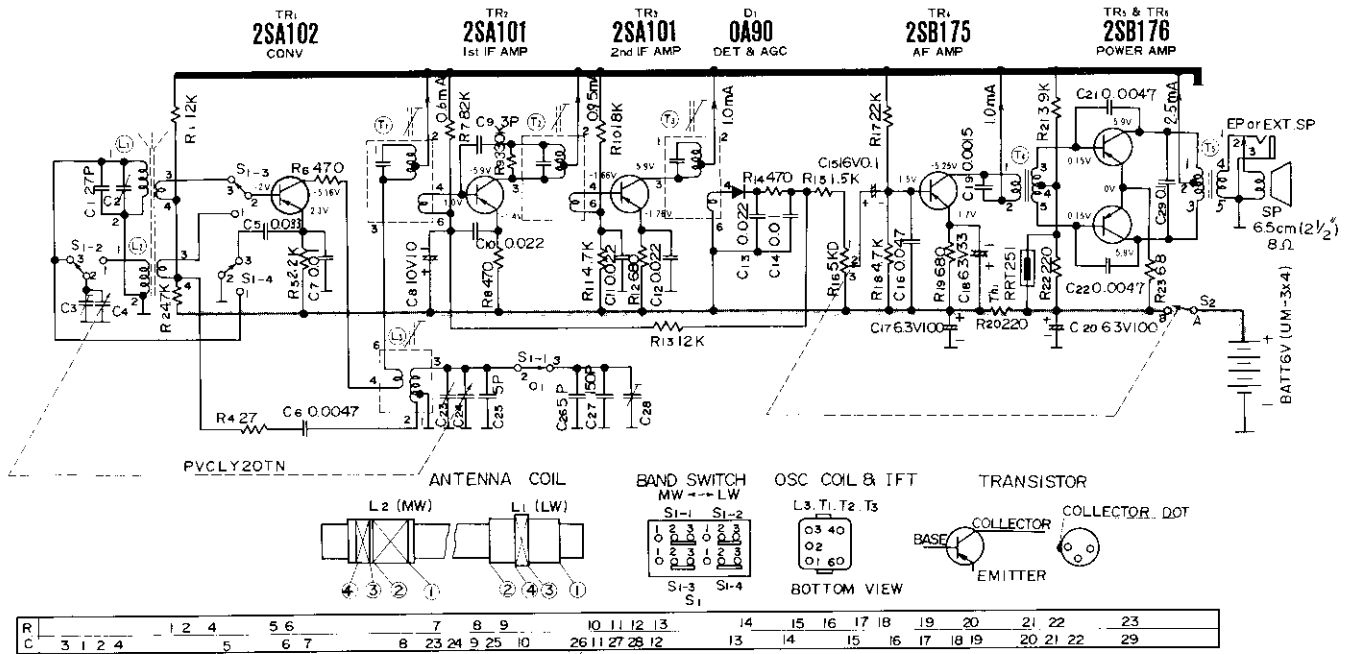


### ■ TO REMOVE DIAL SCALE & TUNING KNOB

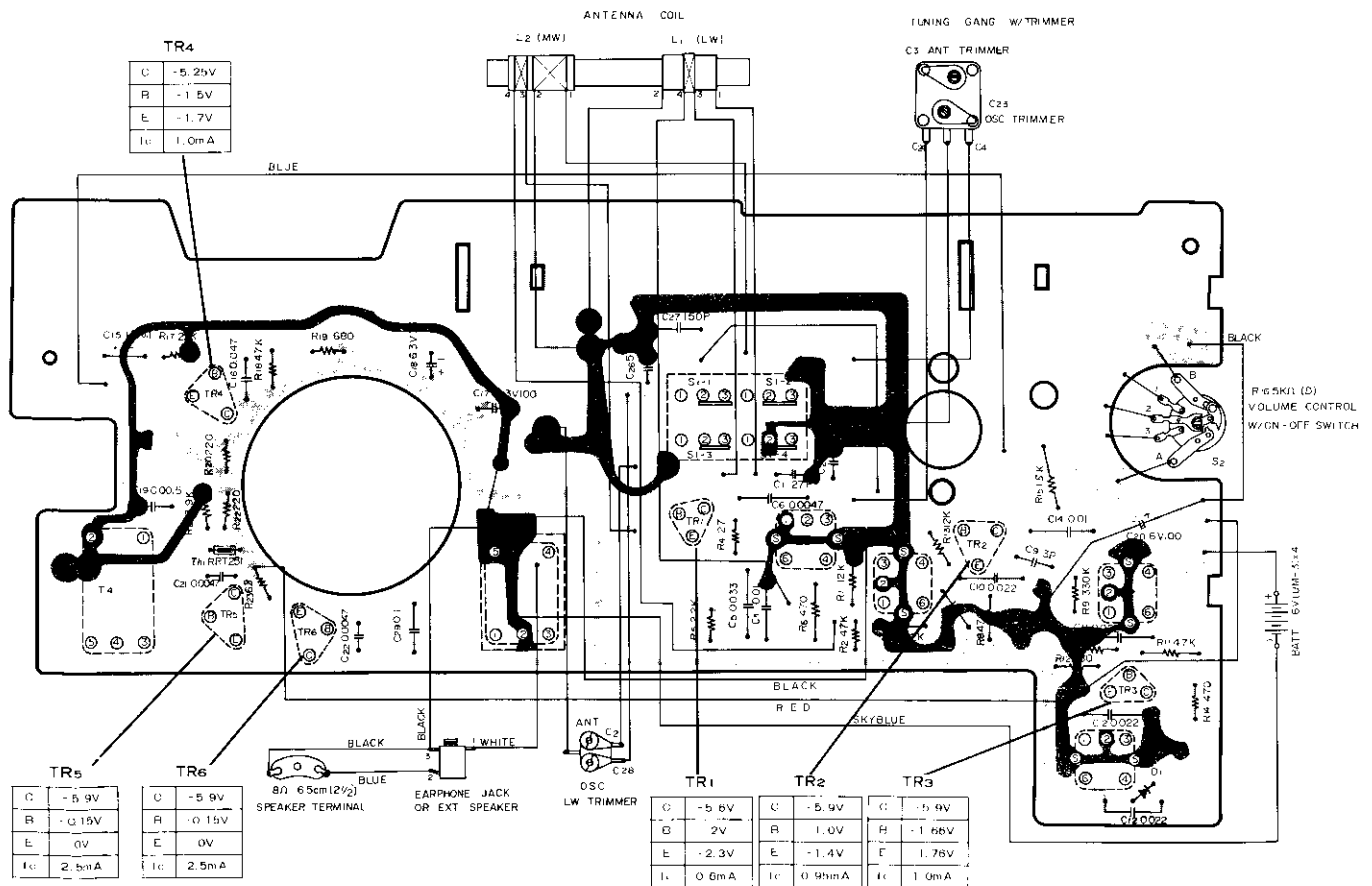
1. Remove dial scale.
2. Remove tuning knob.
3. To reassemble, reverse the above procedure.



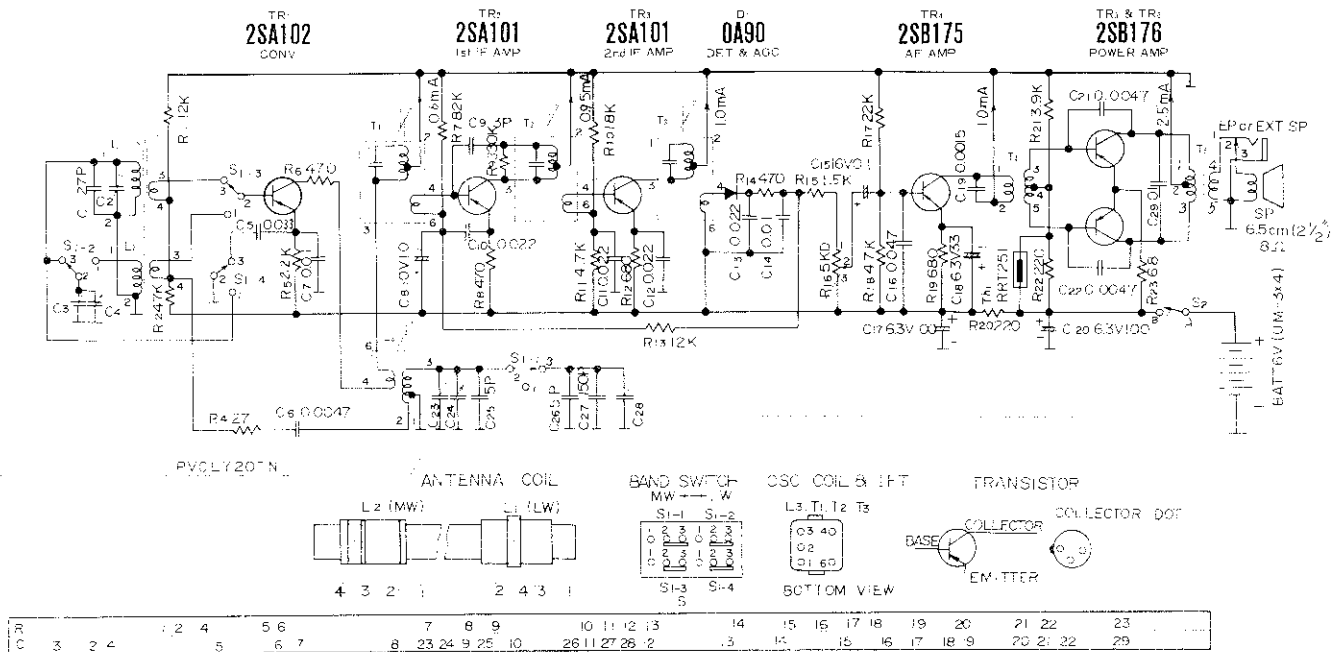
# Schematic Diagram – Model R-2058L



# Circuit Board Wiring View – Model R-2058L



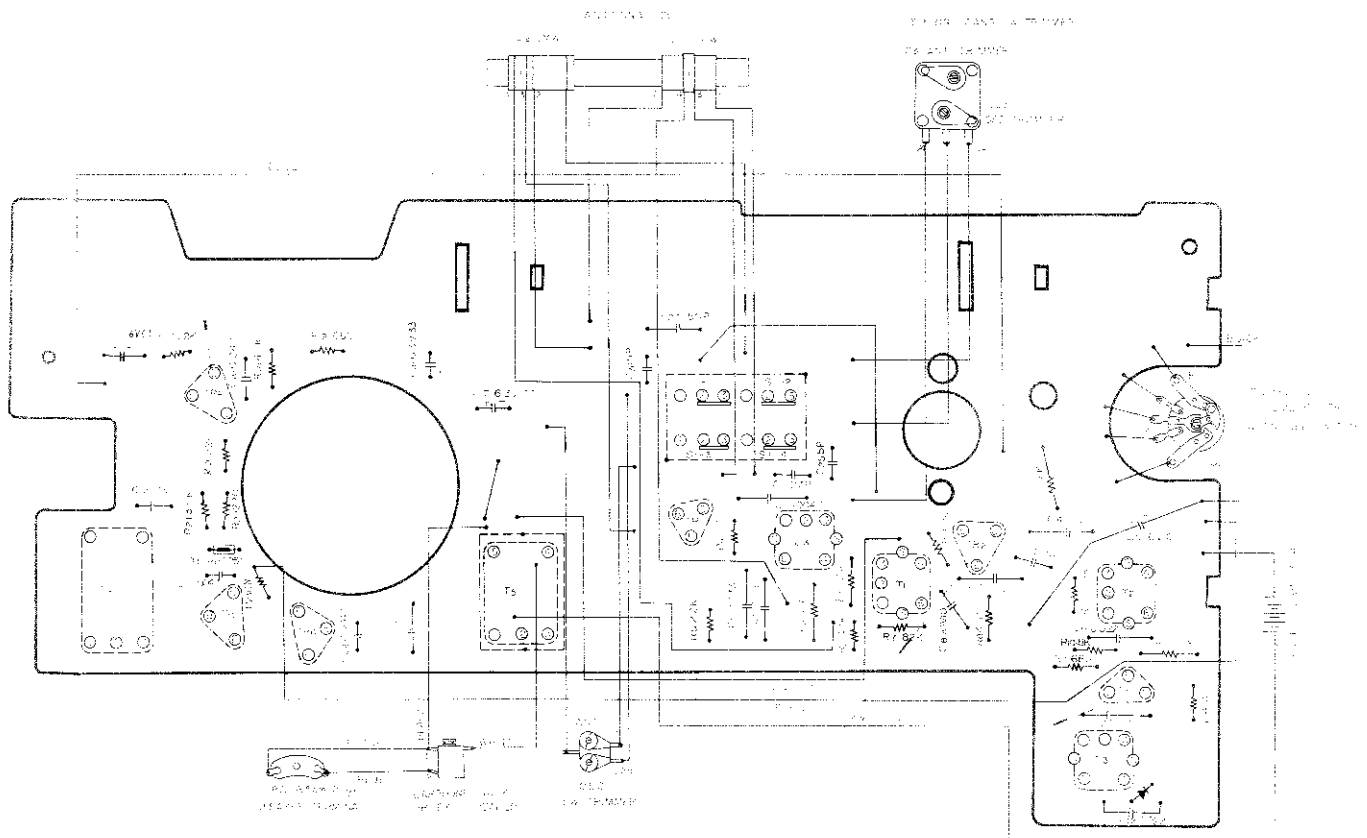
# Schematic Diagram - Model R-2058L



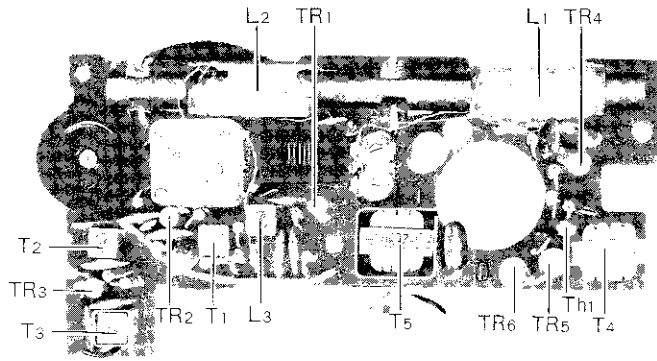
## Notes

1. S<sub>1</sub>-4: Band selector switch in "LW" position.
2. Power source switch in "OFF" position.
3. Voltage measurements are taken with circuit under test.
4. Same as circuit diagram.
5. Same as circuit diagram.
6. Same as circuit diagram.
7. Same as circuit diagram.
8. Same as circuit diagram.
9. Same as circuit diagram.
10. Same as circuit diagram.
11. Same as circuit diagram.
12. Same as circuit diagram.
13. Same as circuit diagram.
14. Same as circuit diagram.
15. Same as circuit diagram.
16. Same as circuit diagram.
17. Same as circuit diagram.
18. Same as circuit diagram.
19. Same as circuit diagram.
20. Same as circuit diagram.
21. Same as circuit diagram.
22. Same as circuit diagram.
23. Same as circuit diagram.

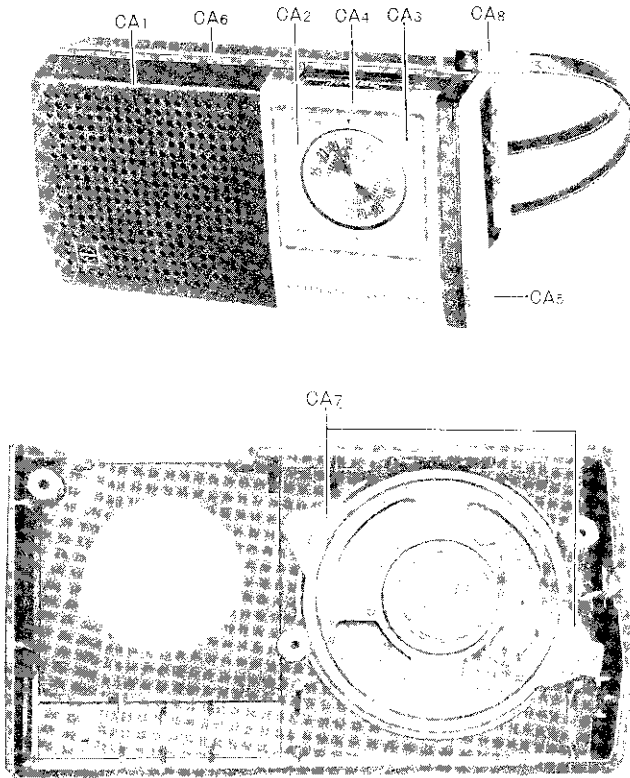
# Circuit Board Wiring View - Model R-2058L



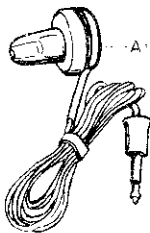
## ■ ELECTRIC PARTS LOCATIONS



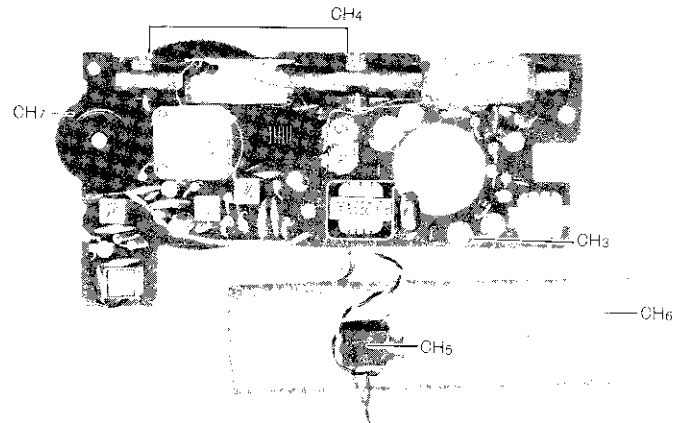
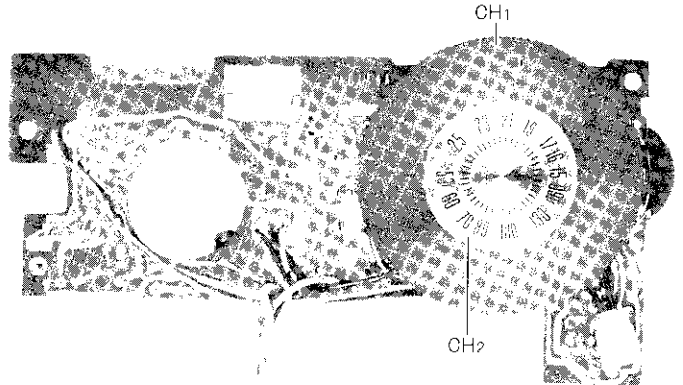
## ■ CABINET PARTS LOCATIONS



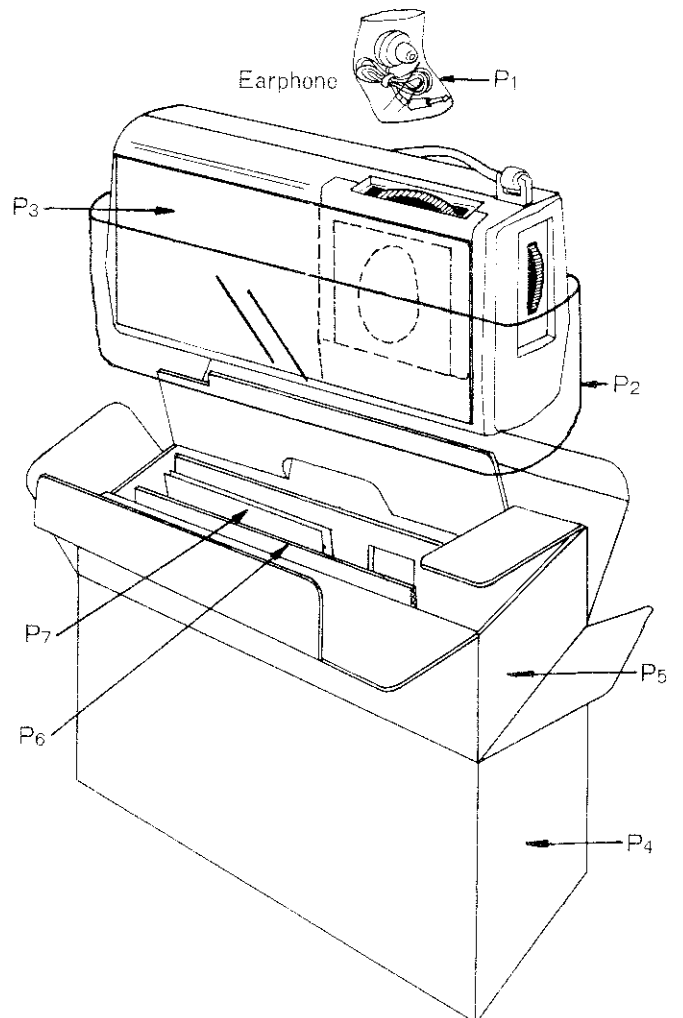
## ■ ACCESSORY



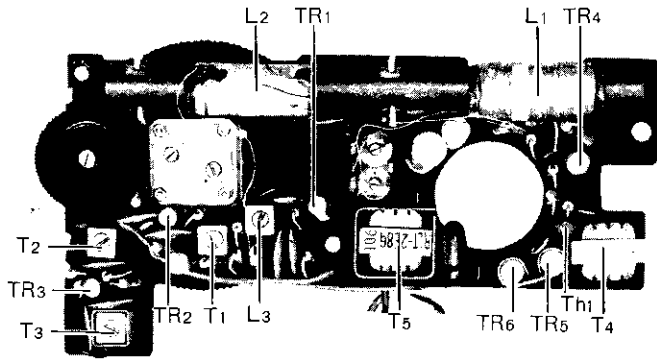
## ■ CHASSIS PARTS LOCATIONS



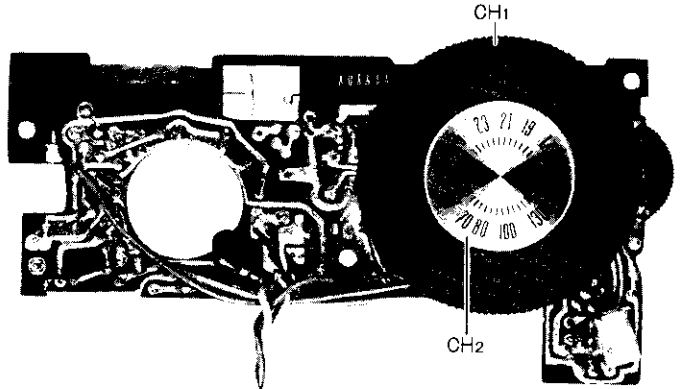
## ■ PACKING PARTS LOCATIONS



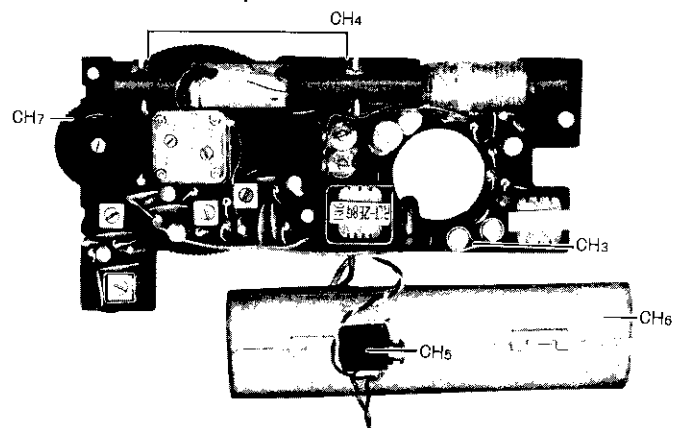
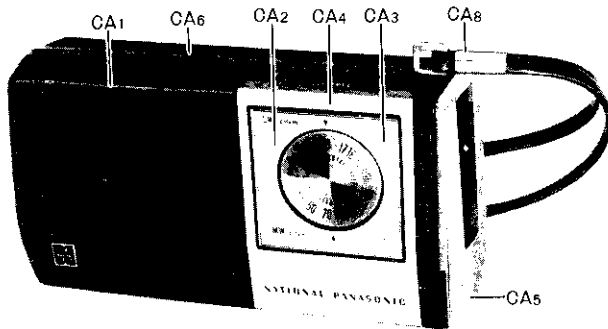
## ■ ELECTRIC PARTS LOCATIONS



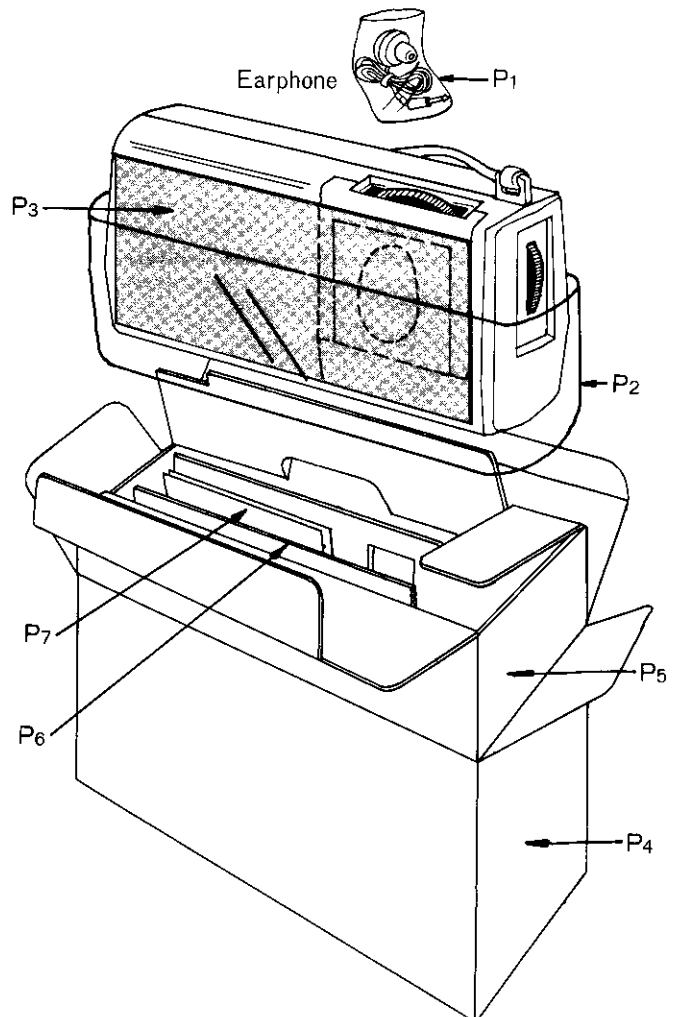
## ■ CHASSIS PARTS LOCATIONS



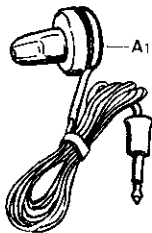
## ■ CABINET PARTS LOCATIONS



## ■ PACKING PARTS LOCATIONS



## ■ ACCESSORY

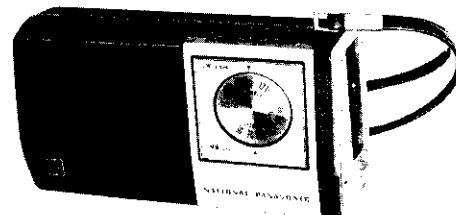




# REPLACEMENT PARTS LIST

## RADIO MODEL R-2058L

- NOTES:**
1. Part numbers are indicated on most mechanical parts.  
Please use this part number for parts orders.
  2. ISO metric thread screws & parts which employ ISO metric thread screws are identified by ISO marking (**ISO**).
  3. **N** indicates the New Parts.
  4. **A~C** rank: **A** rank parts will cover 80% of repair needs.  
**A+B** rank parts will cover 95% of repair needs.  
**C** rank parts are less necessary.
  5. Old part No. is shown in ( ).
  6. Please use the "Price" column as desired.
  7. These parts are illustrated on prior pages according to their reference numbers.



### R-2058L

| Ref.No.                | Part No.           | Description                     | Per Set<br>(Pcs.) | Remarks | Price |  |
|------------------------|--------------------|---------------------------------|-------------------|---------|-------|--|
|                        |                    |                                 |                   |         |       |  |
| TRANSISTORS AND DIODE  |                    |                                 |                   |         |       |  |
| TR <sub>1</sub>        | 2SA102             | Converter                       | 1                 | A       |       |  |
| TR <sub>2,3</sub>      | 2SA101             | 1st & 2nd IF Amplifier          | 2                 | A       |       |  |
| TR <sub>4</sub>        | 2SB175             | AF Amplifier                    | 1                 | A       |       |  |
| TR <sub>5,6</sub>      | 2SB176             | Power Amplifier(Push-pull)      | 2                 | A       |       |  |
| D <sub>1</sub>         | 0A90               | Detector & AGC                  | 1                 | A       |       |  |
|                        |                    |                                 |                   |         |       |  |
| THERMISTOR             |                    |                                 |                   |         |       |  |
| Th <sub>1</sub>        | RRT251<br>(MT-250) | Temperature Compensator         | 1                 | A       |       |  |
|                        |                    |                                 |                   |         |       |  |
| COILS AND TRANSFORMERS |                    |                                 |                   |         |       |  |
| L <sub>1,2</sub>       | RLF6D5-U           | LW& MW Antenna Coil             | 1                 | A       |       |  |
| L <sub>3</sub>         | RLO2B43-M          | Oscillator Coil                 | 1                 | A       |       |  |
| T <sub>1</sub>         | RLI2B151-M         | 1st IF Transformer              | 1                 | A       |       |  |
| T <sub>2</sub>         | RLI2B250-M         | 2nd IF Transformer              | 1                 | A       |       |  |
| T <sub>3</sub>         | RLI2B451-M         | 3rd IF Transformer              | 1                 | A       |       |  |
| T <sub>4</sub>         | RLT3E12-W          | Input Transformer, P=8KΩ:S=4KΩ  | 1                 | A       |       |  |
| T <sub>5</sub>         | RLT2E8-W           | Output Transformer, P=200Ω:S=8Ω | 1                 | A       |       |  |
|                        |                    |                                 |                   |         |       |  |
| RESISTORS              |                    |                                 |                   |         |       |  |
| R <sub>23</sub>        | ERD14VK6R8         | 6.8Ω, ¼Watt, ±10%, Carbon       | 1                 | B       |       |  |
| R <sub>4</sub>         | ERD14VK270         | 27Ω, ¼Watt, ±10%, Carbon        | 1                 | B       |       |  |
| R <sub>20,22</sub>     | ERD14VK221         | 220Ω, ¼Watt, ±10%, Carbon       | 2                 | B       |       |  |
| R <sub>6,8,14</sub>    | ERD14VK471         | 470Ω, ¼Watt, ±10%, Carbon       | 3                 | B       |       |  |
| R <sub>12,19</sub>     | ERD14VK681         | 680Ω, ¼Watt, ±10%, Carbon       | 2                 | B       |       |  |
| R <sub>15</sub>        | ERD14VK152         | 1.5KΩ, ¼Watt, ±10%, Carbon      | 1                 | B       |       |  |
| R <sub>5</sub>         | ERD14VK222         | 2.2KΩ, ¼Watt, ±10%, Carbon      | 1                 | B       |       |  |

**R-2058L**

| Ref.No.                    | Part No.      | Description                                                          | Per Set<br>(Pcs.) | Remarks  | Price |  |
|----------------------------|---------------|----------------------------------------------------------------------|-------------------|----------|-------|--|
|                            |               |                                                                      |                   |          |       |  |
| R <sub>21</sub>            | ERD14VK392    | 3.9K $\Omega$ , 1/4Watt, $\pm 10\%$ , Carbon                         | 1                 | <b>B</b> |       |  |
| R <sub>2, 11, 18</sub>     | ERD14VK472    | 4.7K $\Omega$ , 1/4Watt, $\pm 10\%$ , Carbon                         | 3                 | <b>B</b> |       |  |
| R <sub>1, 13</sub>         | ERD14VK123    | 12K $\Omega$ , 1/4Watt, $\pm 10\%$ , Carbon                          | 2                 | <b>B</b> |       |  |
| R <sub>10</sub>            | ERD14VK183    | 18K $\Omega$ , 1/4Watt, $\pm 10\%$ , Carbon                          | 1                 | <b>B</b> |       |  |
| R <sub>17</sub>            | ERD14VK223    | 22K $\Omega$ , 1/4Watt, $\pm 10\%$ , Carbon                          | 1                 | <b>B</b> |       |  |
| R <sub>7</sub>             | ERD14VK823    | 82K $\Omega$ , 1/4Watt, $\pm 10\%$ , Carbon                          | 1                 | <b>B</b> |       |  |
| R <sub>9</sub>             | ERD14VK334    | 330K $\Omega$ , 1/4Watt, $\pm 10\%$ , Carbon                         | 1                 | <b>B</b> |       |  |
|                            |               |                                                                      |                   |          |       |  |
|                            |               |                                                                      |                   |          |       |  |
|                            |               |                                                                      |                   |          |       |  |
| <b>VARIABLE RESISTORS</b>  |               |                                                                      |                   |          |       |  |
| R <sub>16</sub>            | EVLM0BT12D53  | 5K $\Omega$ (D), Volume Control,<br>W/ON-OFF Switch(S <sub>2</sub> ) | 1                 | <b>A</b> |       |  |
|                            |               |                                                                      |                   |          |       |  |
| <b>CAPACITORS</b>          |               |                                                                      |                   |          |       |  |
| C <sub>9</sub>             | ECCD05030C    | 3mmf, 50WV, $\pm 0.25$ mmf, Ceramic                                  | 1                 | <b>C</b> |       |  |
| C <sub>25, 26</sub>        | ECCD05050CC   | 5mmf, 50WV, $\pm 0.25$ mmf, Ceramic                                  | 2                 | <b>C</b> |       |  |
| C <sub>1</sub>             | ECCD05270KC   | 27mmf, 50WV, $\pm 10\%$ , Ceramic                                    | 1                 | <b>C</b> |       |  |
| C <sub>27</sub>            | ECMS05151J-H  | 150mmf, 50WV, $\pm 5\%$ , Mica                                       | 1                 | <b>C</b> |       |  |
| C <sub>6</sub>             | ECKE05472MY   | 0.0047mfd, 50WV, $\pm 20\%$ , Ceramic                                | 1                 | <b>C</b> |       |  |
| C <sub>7, 14</sub>         | ECKE05103MY   | 0.01mfd, 50WV, $\pm 20\%$ , Ceramic                                  | 2                 | <b>C</b> |       |  |
| C <sub>10, 11, 12</sub>    | ECKE05223P    | 0.022mfd, 50WV, $\pm 100\%$ , Ceramic                                | 3                 | <b>C</b> |       |  |
| C <sub>5</sub>             | ECKE05333MY   | 0.033mfd, 50WV, $\pm 20\%$ , Ceramic                                 | 1                 | <b>C</b> |       |  |
| C <sub>19</sub>            | ECQG05152MZ-N | 0.0015mfd, 50WV, $\pm 20\%$ , Polyester                              | 1                 | <b>C</b> |       |  |
| C <sub>13</sub>            | ECQG05223MZ-N | 0.022mfd, 50WV, $\pm 20\%$ , Polyester                               | 1                 | <b>C</b> |       |  |
| C <sub>16</sub>            | ECQG05473MZ-N | 0.047mfd, 50WV, $\pm 20\%$ , Polyester                               | 1                 | <b>C</b> |       |  |
| C <sub>29</sub>            | ECQG05104MZ-N | 0.1mfd, 50WV, $\pm 20\%$ , Polyester                                 | 1                 | <b>C</b> |       |  |
| C <sub>21, 22</sub>        | ECQG05472MZ-N | 0.0047mfd, 50WV, $\pm 20\%$ , Polyester                              | 2                 | <b>C</b> |       |  |
| C <sub>15</sub>            | ECAG16ER1-Y   | 0.1mfd, 16WV, Electrolytic                                           | 1                 | <b>B</b> |       |  |
| C <sub>8</sub>             | ECEA10V10     | 10mfd, 10WV, Electrolytic                                            | 1                 | <b>B</b> |       |  |
| C <sub>18</sub>            | ECEA6V33      | 33mfd, 6.3WV, Electrolytic                                           | 1                 | <b>B</b> |       |  |
| C <sub>17, 20</sub>        | ECEA6V100     | 100mfd, 6.3WV, Electrolytic                                          | 2                 | <b>B</b> |       |  |
|                            |               |                                                                      |                   |          |       |  |
|                            |               |                                                                      |                   |          |       |  |
|                            |               |                                                                      |                   |          |       |  |
| <b>VARIABLE CAPACITORS</b> |               |                                                                      |                   |          |       |  |
| C <sub>4, 24</sub>         | PVCLY20TN     | Tuning Gang, W/Trimmer (C <sub>3, 23</sub> )                         | 1                 | <b>A</b> |       |  |
| C <sub>2, 28</sub>         | RCV2T-16M     | Trimmer                                                              | 1                 | <b>A</b> |       |  |
|                            |               |                                                                      |                   |          |       |  |

R-2058

| Ref.No.                           | Part No.   | Description                         | Per Set<br>(Pcs.) | Remarks | Price |  |
|-----------------------------------|------------|-------------------------------------|-------------------|---------|-------|--|
|                                   |            |                                     |                   |         |       |  |
| SWITCH                            |            |                                     |                   |         |       |  |
| S <sub>1</sub> ~ S <sub>1-4</sub> | RSS83      | Band Selector Switch                | 1                 | A       |       |  |
|                                   |            |                                     |                   |         |       |  |
| SPEAKER                           |            |                                     |                   |         |       |  |
| SP                                | RAS6P01S   | 65cm(2½") PM Dynamic Speaker, 8Ω    | 1                 | A       |       |  |
|                                   |            |                                     |                   |         |       |  |
| CABINET                           |            |                                     |                   |         |       |  |
|                                   | RYAR2058LX | Cabinet (Complete)                  | 1                 | Ⓝ A     |       |  |
|                                   | RYMR2058LX | Cabinet Front (Complete)            | 1                 | Ⓝ C     |       |  |
| CA <sub>1</sub>                   | RKM62A     | Cabinet Only                        | 1                 | Ⓝ C     |       |  |
| CA <sub>2</sub>                   | RDH20A     | Ornament, Dial Scale                | 1                 | Ⓝ C     |       |  |
| CA <sub>3</sub>                   | RGP55A     | Panel, Dial                         | 1                 | Ⓝ B     |       |  |
| CA <sub>4</sub>                   | RGX146A    | Ornament, Out Side of Crystal Panel | 1                 | Ⓝ B     |       |  |
| CA <sub>5</sub>                   | RGC10A     | Ornament, Volume Knob               | 1                 | Ⓝ B     |       |  |
| CA <sub>6</sub>                   | RKF45A     | Cover Only, Cabinet Back            | 1                 | Ⓝ B     |       |  |
|                                   | RGT127A    | Name Plate                          | 1                 | Ⓝ B     |       |  |
| CA <sub>7</sub>                   | RMS30      | Bracket, Speaker                    | 2                 | C       |       |  |
| CA <sub>8</sub>                   | RKH14B     | Hand Strap                          | 1                 | Ⓝ A     |       |  |
|                                   |            |                                     |                   |         |       |  |
| CHASSIS                           |            |                                     |                   |         |       |  |
| CH <sub>1</sub>                   | RBT19A     | Knob, Tuning                        | 1                 | Ⓝ A     |       |  |
| CH <sub>2</sub>                   | RKD90A     | Scale, Dial                         | 1                 | Ⓝ B     |       |  |
| CH <sub>3</sub>                   | RMV6A      | Heat Sink, Transistor               | 1                 | C       |       |  |
| CH <sub>4</sub>                   | RHG109     | Rubber Cushion, Core Antenna M'tg.  | 2                 | C       |       |  |
| CH <sub>5</sub>                   | RJJ13A     | Jack, Earphone or EXT Speaker       | 1                 | B       |       |  |
| CH <sub>6</sub>                   | RJK3419-2  | Case, Battery                       | 1                 | B       |       |  |
| CH <sub>7</sub>                   | RBV89      | Knob, Volume                        | 1                 | A       |       |  |
|                                   | XTN3D10BR  | Red Screw, Chassis M'tg.            | 3                 | B       |       |  |
|                                   |            |                                     |                   |         |       |  |
| ACCESSORY                         |            |                                     |                   |         |       |  |
| A <sub>1</sub>                    | EAE1FB     | Earphone, Magnetic Imp, 8Ω          | 1                 | A       |       |  |
|                                   |            |                                     |                   |         |       |  |
| PACKING                           |            |                                     |                   |         |       |  |
| P <sub>1</sub>                    | RPF1A      | Polyethylene Cover                  | 1                 | C       |       |  |
| P <sub>2</sub>                    | RPP22A     | Polyethylene Cover                  | 1                 | Ⓝ C     |       |  |
| P <sub>3</sub>                    | RPH43A     | Soft Sheet                          | 1                 | C       |       |  |
|                                   | RPK9066A   | Gift Box (Complete)                 | 1                 | Ⓝ B     |       |  |
| P <sub>4</sub>                    | RPK74A     | Gift Box (Supply as RPK9066A)       | (1)               | Ⓝ C     |       |  |

**R-2058L**

| Ref.No.        | Part No. | Description                       | Per Set<br>(Pcs.) | Remarks    | Price |  |
|----------------|----------|-----------------------------------|-------------------|------------|-------|--|
|                |          |                                   |                   |            |       |  |
| P <sub>5</sub> | RPN413A  | Inside Carton(Supply as RPK9066A) | (1)               | ㊟ <b>C</b> |       |  |
| P <sub>6</sub> | RPN449A  | Inside Carton                     | 1                 | ㊟ <b>C</b> |       |  |
| P <sub>7</sub> | RQX5172A | Instruction Book                  | 1                 | ㊟ <b>B</b> |       |  |
|                |          |                                   |                   |            |       |  |

**RECOMMENDED STOCK OF REPLACEMENT PARTS**

| Rank of Part        | Estimated Selling Q'ty of Radio Set |     |       |       |       |        |
|---------------------|-------------------------------------|-----|-------|-------|-------|--------|
|                     | 100                                 | 500 | 1,000 | 2,000 | 5,000 | 10,000 |
| <b>A</b> rank Parts | 2                                   | 7   | 10    | 15    | 20    | 30     |
| <b>B</b> rank Parts | 1                                   | 3   | 5     | 7     | 10    | 20     |
| <b>C</b> rank Parts | 0                                   | 1   | 2     | 3     | 4     | 5      |