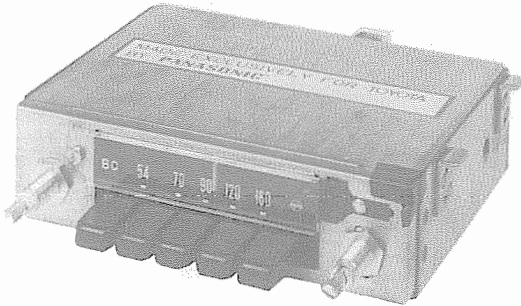


# PHOTOFACT<sup>®</sup> with

# CIRCUITRACE<sup>®</sup>

For Supplier Address See PHOTOFACT Index

NOTE: MANUFACTURER PART NUMBERS SHOWN ARE MATSUSHITA



MODEL 86120-20090 (CR-127FT) (Carina)

## ALIGNMENT INSTRUCTIONS

TOYOTA MODEL 86120-20090

Check for specified source voltage.

Use only enough generator output to provide a usable indication.

Suggested Alignment Tools:

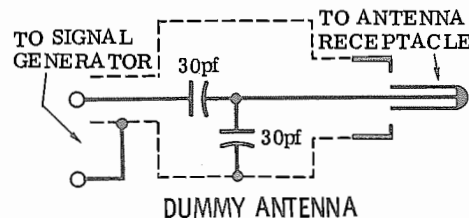
A1 thru A8 .....GENERAL CEMENT #9440

### PUSH-BUTTON ADJUSTMENT

1. Pull button out.
2. Tune manually to desired station.
3. Press button in firmly.
4. Repeat for remaining buttons.

|  | GENERATOR COUPLING   | GENERATOR FREQUENCY           | RADIO DIAL SETTING   | INDICATOR                       | ADJUST          | REMARKS  |
|--|--|-------------------------------|----------------------|---------------------------------|-----------------|--|
| 1.   | High side thru .1mfd to point $\Delta$ , low side to ground. | 455KC<br>400 cycle modulation | High freq. end stop. | Output meter across voice coil. | A1,A2,<br>A3,A4 | Adjust for maximum.  |
| 2.   | Thru dummy antenna to antenna input.                         | 600KC                         | Tune to Signal       | "                               | A5              | "  |
| Step 3 is not necessary unless tuner or associated components have been disturbed. If necessary, back tuning cores (A8,A9,A10) out of coils but not out of forms. Repeat Step 2. |  |                               |                      |                                 |                 |  |
| 3.   | Thru dummy antenna to antenna input.                         | 1615KC                        | High Freq. End Stop  | Output meter across voice coil  | A6,A7,<br>A8    | Adjust for maximum. Repeat Steps 2 and 3 until no further improvement is noted |

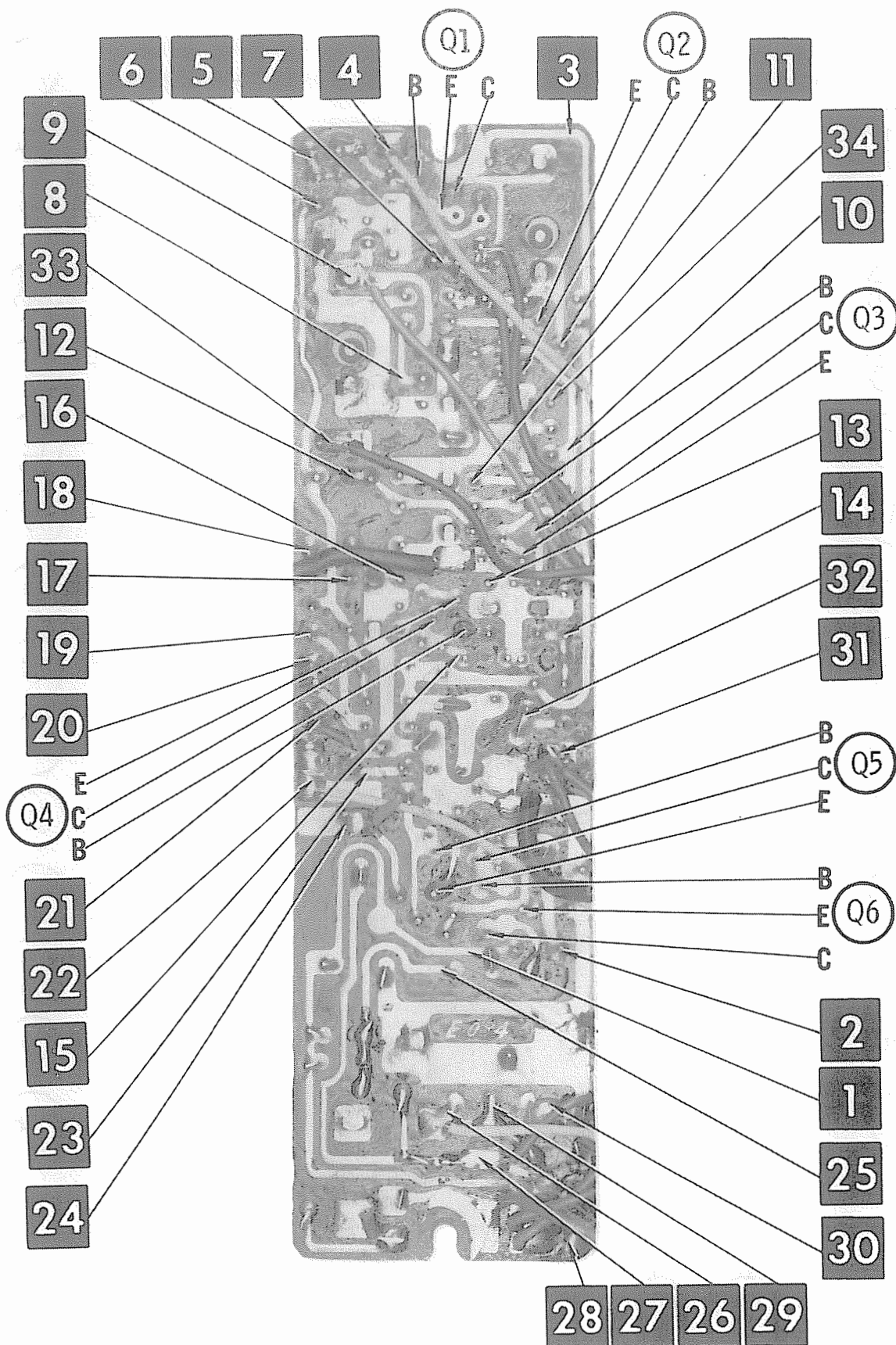
With radio installed in car and antenna extended to desired height, tune in a weak station near 1400KC and adjust A8 for maximum output. Antenna adjustment (A8) is located on bottom left rear corner.

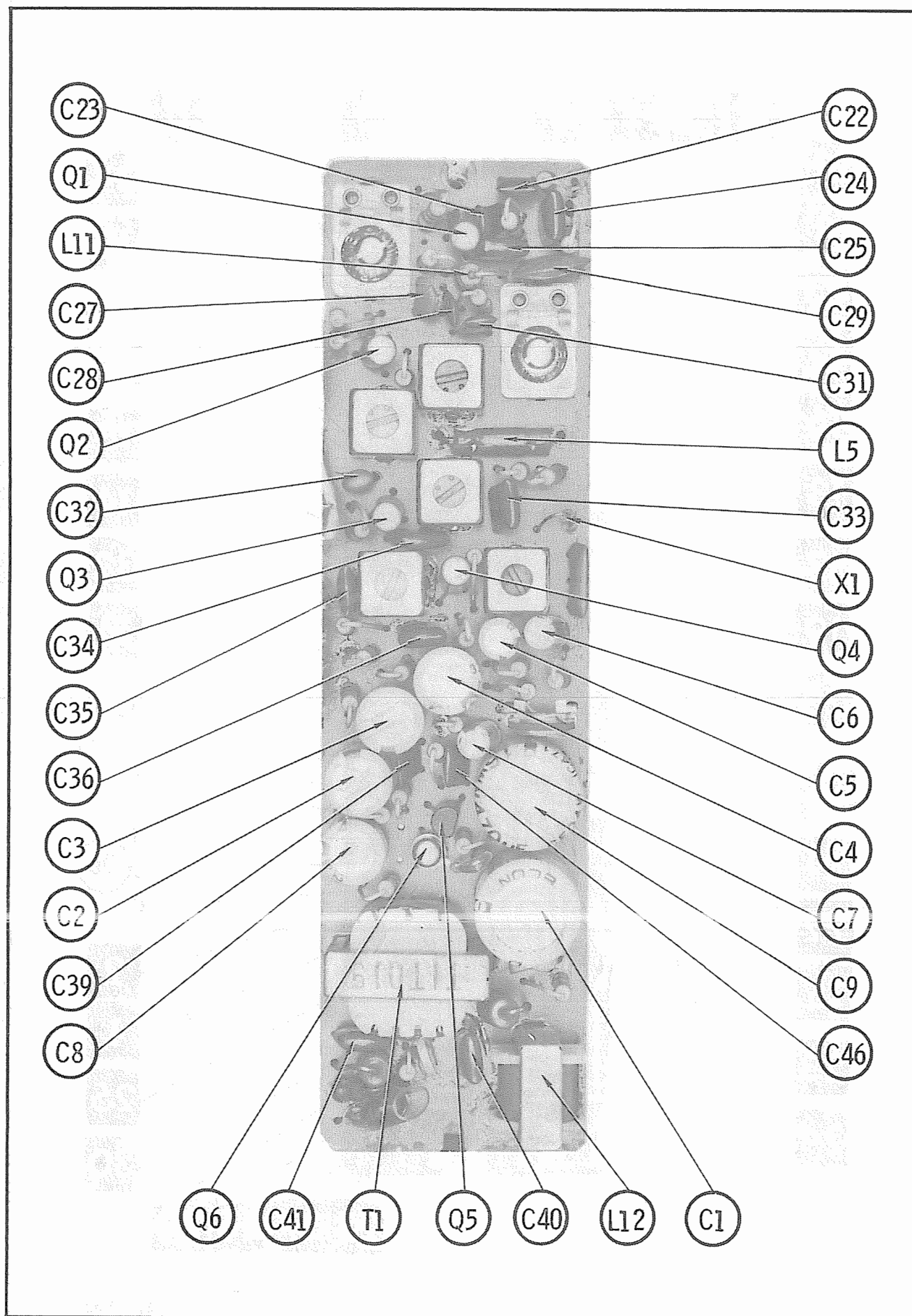


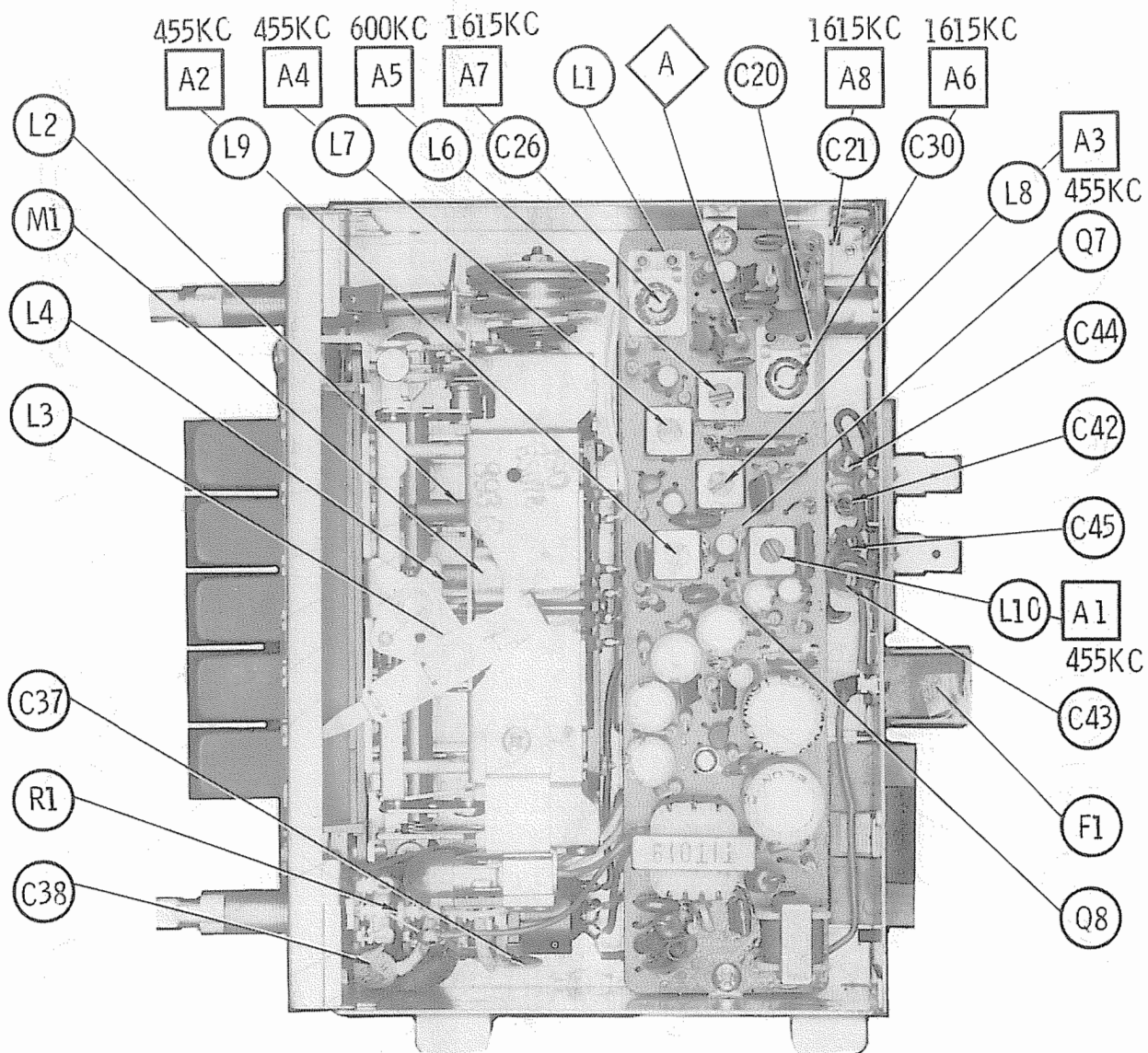
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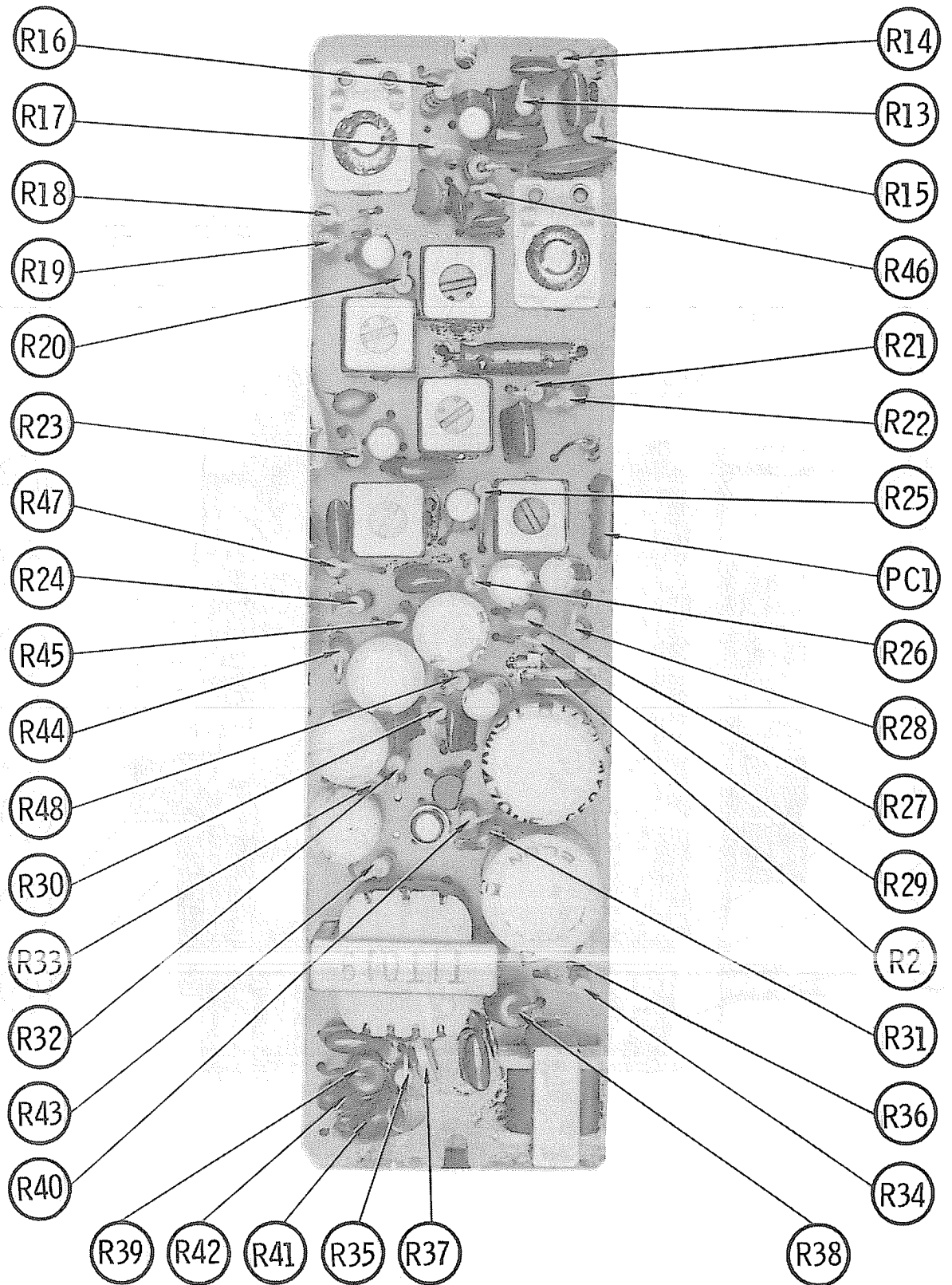








TOYOTA MODEL 86120-20090





## PARTS LIST AND DESCRIPTION

(When ordering parts, state Model, Part Number, and Description.)

Replacement parts shown may be superseded by the availability of newly introduced replacements.  
Have your local distributor check Sams COUNTER FACTS® for the most up-to-date replacement.

### WIRING DATA

|   |  |
|---|--|
| General-use Unshielded Hook-up Wire ..... | Use BELDEN No. 8530 (Solid) Available in 12 Colors<br>8524 (Stranded) Available in 12 Colors |
| Shielded Hook-up Wire .....               | Use BELDEN No. 8885  |
| Rear Seat Speaker Extension Cable .....   | Use BELDEN No. 8782 (Stranded) Coded Parallel Leads  |
| Bonding Strap .....                       | Use BELDEN No. 8661 (3/8 In.) or 8670 (3/4 In.)  |

### TRANSISTORS

| ITEM No. | TYPE No.   | FUNCTION   | REPLACEMENT DATA |                           |                                  |                   |              |                   |
|----------|------------|------------|------------------|---------------------------|----------------------------------|-------------------|--------------|-------------------|
|          |            |            | MFGR. PART No.   | GENERAL ELECTRIC PART No. | INTERNATIONAL RECTIFIER PART No. | MOTOROLA PART No. | RCA PART No. | SYLVANIA PART No. |
| Q1       | 2SA102(AA) | RF Amp     |                  | GE-9                      | TR-11                            | HEP638            | SK3007       | ECG 126           |
| Q2       | 2SA103(CA) | Converter  |                  | GE-9                      | TR-11                            | HEP638            | SK3006       | ECG 126           |
| Q3       | 2SA102(AA) | 1st IF Amp |                  | GE-9                      | TR-11                            | HEP638            | SK3007       | ECG 126           |
| Q4       | 2SA102(BA) | 2nd IF Amp |                  | GE-9                      | TR-11                            | HEP638            | SK3007       | ECG 126           |
| Q5       | 2SC644     | RF Amp     |                  | GE-18                     | 1RTR-51                          | HEP55             | SK3020       | ECG 108           |
| Q6       | 2SC538     | Driver     |                  | GE-17                     | TR-24                            | HEP54             | SK3020       | ECG 123A          |
| Q7       | 2SB481     | Output (1) |                  | GE-31MP*                  | 1RTR-50                          | HEP642            | SK3052       | ECG 131MP*        |
| Q8       | 2SB481     | Output (1) |                  |                           | 1RTR-50                          | HEP642            | SK3052       |                   |

(1) When replacing, apply silicone grease to both sides of insulator. Tighten mounting screws securely.

\* Matched Pair

### POWER RECTIFIERS & SIGNAL DIODES

| ITEM No. | MFGR. PART OR TYPE No. | REPLACEMENT DATA          |                                  |              |                   | NOTES |
|----------|------------------------|---------------------------|----------------------------------|--------------|-------------------|-------|
|          |                        | GENERAL ELECTRIC PART No. | INTERNATIONAL RECTIFIER PART No. | RCA PART No. | SYLVANIA PART No. |       |
| X1       | 1N60                   | 1N60                      | 1N60                             | SK3088       | ECG 109           |       |

### ELECTROLYTIC CAPACITORS

| ITEM No. | RATING  | REPLACEMENT DATA |                  |                    |                           |                           |                  |                  |
|----------|---------|------------------|------------------|--------------------|---------------------------|---------------------------|------------------|------------------|
|          |         | PART No.         | AEROVOX PART No. | CENTRALAB PART No. | CORNELL-DUBILIER PART No. | GENERAL ELECTRIC PART No. | MALLORY PART No. | SPRAGUE PART No. |
| C1       | 470 16V | ECEA16V470U      | PRS1220          | EA15-500           | WBR500-16                 | QT1-30A                   | MTV500DN15       | TL-1166          |
| C2       | 220 16V | ECEA16V220N      | CRE481A          | EA15-250           | WBR250-16                 | MT1-23                    | MTV200DE15       | TE-1164          |
| C3       | 220 16V | ECEA16V220N      | CRE481A          | EA15-250           | WBR250-16                 | MT1-23                    | MTV200DE15       | TE-1164          |
| C4       | 330 10V | ECEA10V330N      | PRS1540          | EA15-250           | WBR300-35                 | QT1-30A                   | MTA300G50        | TE-1165.5        |
| C5       | 33 6V   | ECEA6V33N        | MCD-110          | EP6-25             | WBR35-50                  | MT1-13                    | MTV30CB50        | TE-1093          |
| C6       | 10 10V  | ECEA10V10N       | MCD-70           | EP15-10            | WBR10-25                  | MT1-5                     | MTV10CB50        | TE-1128          |
| C7       | 10 10V  | ECEA10V10N       | MCD-70           | EP15-10            | WBR10-25                  | MT1-5                     | MTV10CB50        | TE-1128          |
| C8       | 220 6V  | ECEA6V220N       | MCD-210          | EA6-250            | WBR250-16                 | MT1-23                    | MTV200DB10       | TE-1104          |
| C9       | 470 16V | ECEA16V470U      | PRS1220          | EA15-500           | WBR500-16                 | QT1-30A                   | MTV500DN15       | TL-1166          |

### CAPACITORS

| ITEM No. | RATING | REMARKS      | REPLACEMENT DATA |                    |                           |                  |                  |                  |
|----------|--------|--------------|------------------|--------------------|---------------------------|------------------|------------------|------------------|
|          |        |              | AEROVOX PART No. | CENTRALAB PART No. | CORNELL-DUBILIER PART No. | ELMENCO PART No. | MALLORY PART No. | SPRAGUE PART No. |
| C20      | 20     | #YECPPT100   |                  | DTZ-20             | NP020                     | CCT0-200         | CN0420           | 10TCC-Q20        |
| C21      |        |              |                  |                    |                           |                  |                  |                  |
| C22      | .018   |              | TTP-02           | CK-203             | MGP02                     | CCD-203          | TA120            | TG-S20           |
| C23      | .0022  |              | GPD X5F222K      | DD-222             | GP2200                    | CCO-222          | GP222            | 10TS-022         |
| C24      | .047   |              | TTP-05           | CK-503             | MGP05                     | CCO-503          | TA150            | TGL-S50          |
| C25      | .047   | #YECTTT70    | TTP-05           | CK-503             | MGP05                     | CCD-503          | TA150            | TGL-S50          |
| C26      |        |              |                  |                    |                           |                  |                  |                  |
| C27      | 100    |              |                  | DTZ-100            | NP0100                    | CCT0-101         | CN0310           | 10TCC-T10        |
| C28      | .0047  |              | GPD X5R472K      | DD-472G            | GP4700                    | CCD-472          | JF247            | 10TS-D47         |
| C29      | 200    |              | GPD X5F201K      | DM-201             | GP200                     | CCO-201          | GP320            | 10TS-T20         |
| C30      |        | #YECTTT70    |                  |                    |                           |                  |                  |                  |
| C31      | .01    |              | TTP-01           | CK-103             | MGP01                     | CCD-103          | TA110            | TG-S10           |
| C32      | 4      |              |                  |                    | NP03P9                    |                  |                  | 10TCC-V39        |
| C33      | .047   |              | TTP-05           | CK-503             | MGP05                     | CCD-503          | TA150            | TGL-S50          |
| C34      | .047   |              | TTP-05           | CK-503             | MGP05                     | CCD-503          | TA150            | TGL-S50          |
| C35      | .047   | #YECCLS10210 | TTP-05           | CK-503             | MGP05                     | CCD-503          | TA150            | TGL-S50          |
| C36      | .047   |              | TTP-05           | CK-503             | MGP05                     | CCD-503          | TA150            | TGL-S50          |
| C37      | .2 12V |              |                  | UK10-204           |                           |                  | MAG12022         | HY-470           |
| C38      | .2 12V |              |                  | UK10-204           |                           |                  | MAG12022         | HY-470           |
| C39      | .01    |              | TTP-01           | CK-103             | MGP01                     | CCO-103          | TA110            | TG-S10           |
| C40      | .047   | #YECCLS10210 | TTP-05           | CK-503             | MGP05                     | CCO-503          | TA150            | TGL-S50          |
| C41      | .047   |              | TTP-05           | CK-503             | MGP05                     | CCD-503          | TA150            | TGL-S50          |
| C42      | .001   |              |                  |                    |                           |                  |                  |                  |
| C43      | .001   |              |                  |                    |                           |                  |                  |                  |
| C44      | .001   |              |                  |                    |                           |                  |                  |                  |
| C45      | .001   | #YECCLS10210 |                  |                    |                           |                  |                  |                  |
| C46      | .018   |              | TTP-02           | CK-203             | MGP02                     | CCO-203          | TA120            | TG-S20           |

# Matsushita Part Number.

TOYOTA MODEL 66120-20090

## PARTS LIST AND DESCRIPTION (CONTINUED)

(When ordering parts, state Model, Part Number, and Description.)

Replacement parts shown may be superseded by the availability of newly introduced replacements.  
Have your local distributor check Sams COUNTER FACTS\* for the most up-to-date replacement.

### CONTROLS (All wattages 1/2 watt, or less, unless listed)

| ITEM No.            | FUNCTION                                 | RESIST-ANCE       | REPLACEMENT DATA            |                     |                    |                  |                  |
|---------------------|--|-------------------|-----------------------------|---------------------|--------------------|------------------|------------------|
|                     |  |                   | MFGR. PART No.              | CENTRALAB PART No.  | CLAROSTAT PART No. | CTS-IRC PART No. | MALLORY PART No. |
| R1a<br>b<br>c<br>R2 | Tone<br>Volume<br>Volume/Switch<br>Level | 50K<br>10K<br>10K | EVK35S20758<br>EVL50AA00B14 | TSV-10K or<br>T-10K |                    | X201R103B        | MTC14L1          |

### RESISTORS (Power and Special)

| ITEM No.   | RATING                 | REPLACEMENT DATA |                              | ITEM No.   | RATING   | REPLACEMENT DATA |                          |
|------------|------------------------|------------------|------------------------------|------------|----------|------------------|--------------------------|
|            |                        | WORKMAN PART No. | MFGR. PART No.               |            |          | WORKMAN PART No. | MFGR. PART No.           |
| R36<br>R37 | 13 (Cold)<br>13 (Cold) |                  | ERTD38FK130M<br>ERT538FK130M | R41<br>R42 | .2<br>.2 |                  | ERM12VXR20<br>ERM12VXR20 |

### COILS (RF-IF)

| ITEM No.   | USE  | REPLACEMENT DATA  |   |                                      |                                      |
|--|--|---|---|--------------------------------------|--------------------------------------|
|  |  | PART No.  | MEISSNER PART No.                             | MILLER PART No.                      | WORKMAN PART No.                     |
| L1<br>L2<br>L3<br>L4<br>L5<br>L6<br>L7<br>L8<br>L9<br>L10<br>L11 | RF Choke (8.9uh)<br>Ant.<br>RF<br>Osc. Tuning<br>Image Trap (5.8uh)<br>Osc.<br>Input IF<br>Interstage IF<br>Interstage IF<br>Output IF<br>RF Choke (1.8uh) | YELQ09N004<br>(1)<br>(1)<br>(1)<br>YELQ04N011<br>YELL11S012<br>YE1A10S1030A<br>YE1A10S1031B<br>YE1A10S1032C<br>YE1A10S1033D<br>YELQ04N008 | 19-1009<br><br><br>19-1008<br><br><br>19-1001 | 4611<br><br><br>4609<br><br><br>4604 | T960<br><br><br>T959<br><br><br>T856 |

(1) Part of M1

### FILTER CHOKE

| ITEM No. | RATINGS            |         |                              | REPLACEMENT DATA |                  |                     |                | NOTES |
|----------|--------------------|---------|------------------------------|------------------|------------------|---------------------|----------------|-------|
|          | CURRENT (Measured) | DC RES. | INDUCTANCE (0 CURRENT 1000~) | MFGR. PART No.   | STANCOR PART No. | THORDARSON PART No. | TRIAD PART No. |       |
| L12      | 210ma              | .3      | 5mh                          | YETQ020F012      |                  |                     |                |       |

### TRANSFORMER (Driver)

| ITEM No. | TURNS RATIO |        |        | REPLACEMENT DATA |                  |                     |                | NOTES |
|----------|-------------|--------|--------|------------------|------------------|---------------------|----------------|-------|
|          | PRI.        | SEC. 1 | SEC. 2 | MFGR. PART No.   | STANCOR PART No. | THORDARSON PART No. | TRIAD Part No. |       |
| T1       | 4           | 1      | 1      | YETD026F019      |                  |                     |                |       |

### SPEAKER

| ITEM No. | TYPE              | REPLACEMENT DATA |               | NOTES |
|----------|-------------------|------------------|---------------|-------|
|          |                   | MFGR. PART No.   | QUAM PART No. |       |
| SP1      | 5" x 9" PM 4 ohms | ESA18D55SC       |               |       |

### FUSE DEVICES

| ITEM No. | DESCRIPTION | REPLACEMENT DATA |           |               |        |                     |        |                  |  |
|----------|-------------|------------------|-----------|---------------|--------|---------------------|--------|------------------|--|
|          |             | PART No.         |           | BUSS PART No. |        | LITTELFUSE PART No. |        | WORKMAN PART No. |  |
|          |             | DEVICE           | HOLDER    | DEVICE        | HOLDER | DEVICE              | HOLDER | DEVICE           |  |
| F1       | 3 Amp       | XBB1C30NR1       | YEFK02008 | AGC 3         | 3823-1 | 312003              | 357001 |                  |  |

### MISCELLANEOUS

| ITEM No.  | PART NAME             | PART No.             | NOTES |
|-----------|-----------------------|----------------------|-------|
| M1<br>PC1 | Tuner<br>Det. Network | YEAU05078<br>YEXA004 |       |

### CABINETS & CABINET PARTS (When ordering specify model, chassis & color)

| ITEM  | PART No.                          | ITEM                     | PART No.               |
|---|-----------------------------------|--------------------------|------------------------|
| Knob, Tuning or Volume<br>Knob, Tone or Dummy<br>Dial Pointer | YEF07012<br>YEF08009<br>YEFH01049 | Dial Glass<br>Fuse Cover | YEFJ08102<br>YEFK02009 |