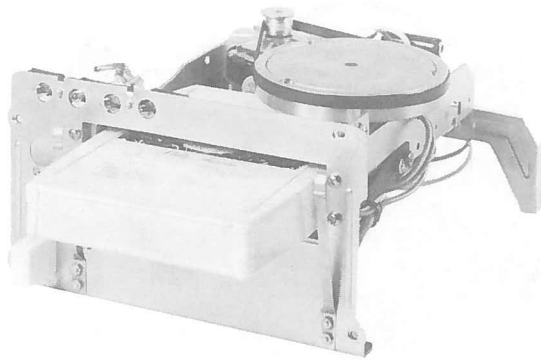




# PHOTOFACT<sup>®</sup> with

# CIRCUITRACE<sup>®</sup>

For Supplier Address See PHOTOFACT Index



Packard Bell Model RTS-22  
8-Track Stereo

## OPERATING INSTRUCTIONS

Rotate the volume control to turn radio on and move the selector switch to Tape.

Insert cartridge until it locks and turns unit on.

Set operating controls as desired.

Press program selector to play desired tracks, or allow unit to select tracks automatically.

Remove cartridge and rotate the volume control to turn unit off.

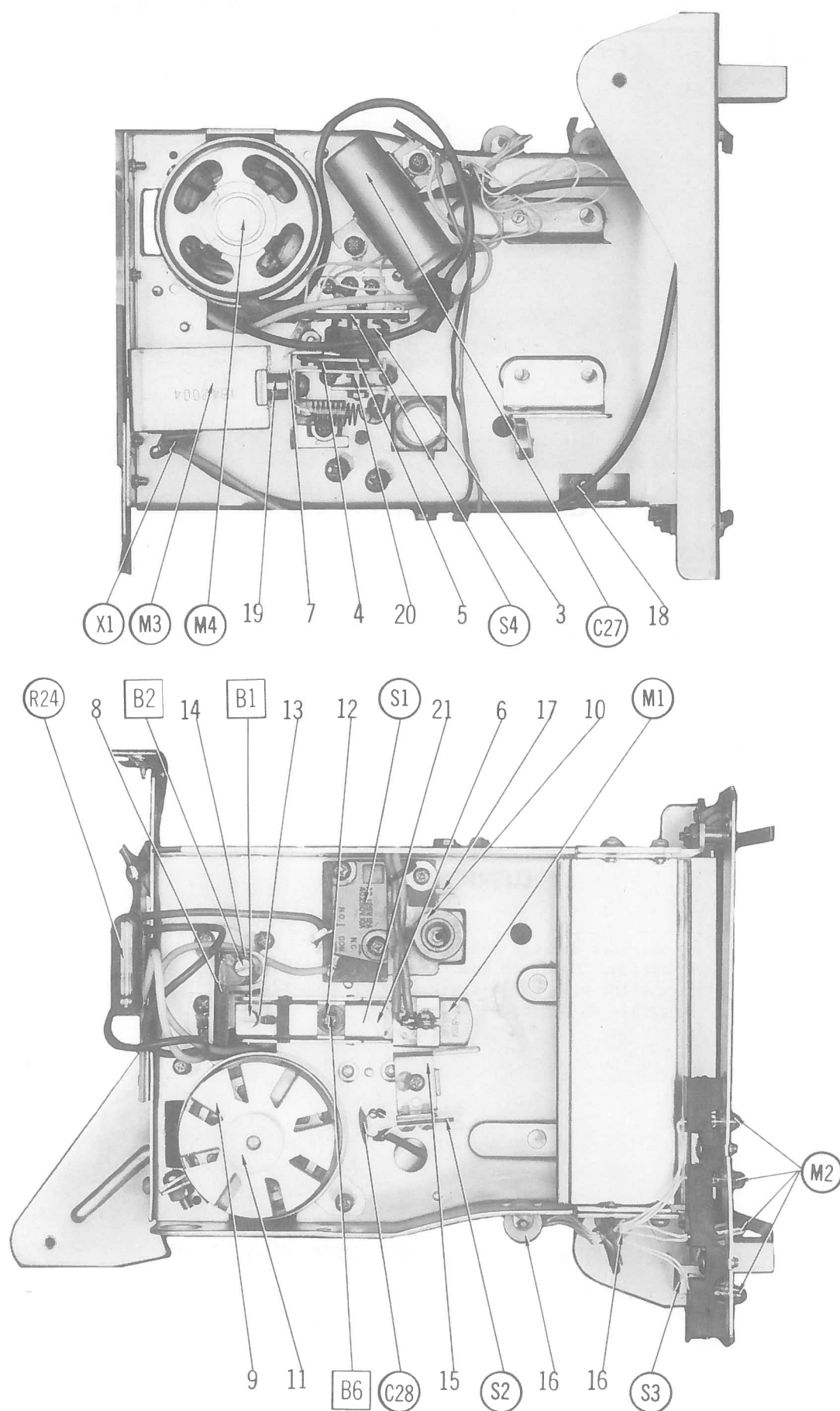
## LUBRICATING

Bearings are oil-less type and do not need lubrication. Lubricate bushings lightly with #20 machine oil. Use a light film of nonhardening grease on cam surfaces.

## CLEANING

## HEAD DEMAGNETIZING

Refer to "General Servicing Information" on page 4.



## ADJUSTMENTS

| ADJUST       | REMARKS   |
|--------------|---|
| Head Height  | Play a test cartridge, follow instructions with cartridge, and adjust B1 for proper response. |
| Head Azimuth | Connect an AC VTVM across right output. Play a test cartridge and adjust B2 for maximum.      |
| Head Tension | Adjust B6 for 1 ounce measured at head clamping screw.  |

## TROUBLE CHART

| SYMPTOM                           | REMARKS  |
|-----------------------------------|--|
| Capstan does not rotate           | Belt (1) dirty, worn, or broken.<br>Assembly (10) binding.<br>Motor defective or not supplied with power.  |
| Track-shift mechanism inoperative | Switch (S2) dirty.<br>Cam (3) binding or worn.<br>Pawl (4) worn.<br>Arm (6) binding.<br>Solenoid (M3) defective or not supplied with power.<br>Cartridge defective.<br>Pawl (5) worn or binding. |
| Wow or Flutter                    | Belt (1) dirty or worn.<br>Capstan dirty or binding.<br>Cartridge defective.<br>Motor defective.   |
| Sound weak or distorted           | Head dirty, misaligned, or defective.<br>Cartridge defective.<br>Amplifiers defective.   |
| Tape is pulled from cartridge     | Cartridge defective.<br>Capstan dirty or scored.   |

PACKARD BELL MODEL RTS-22

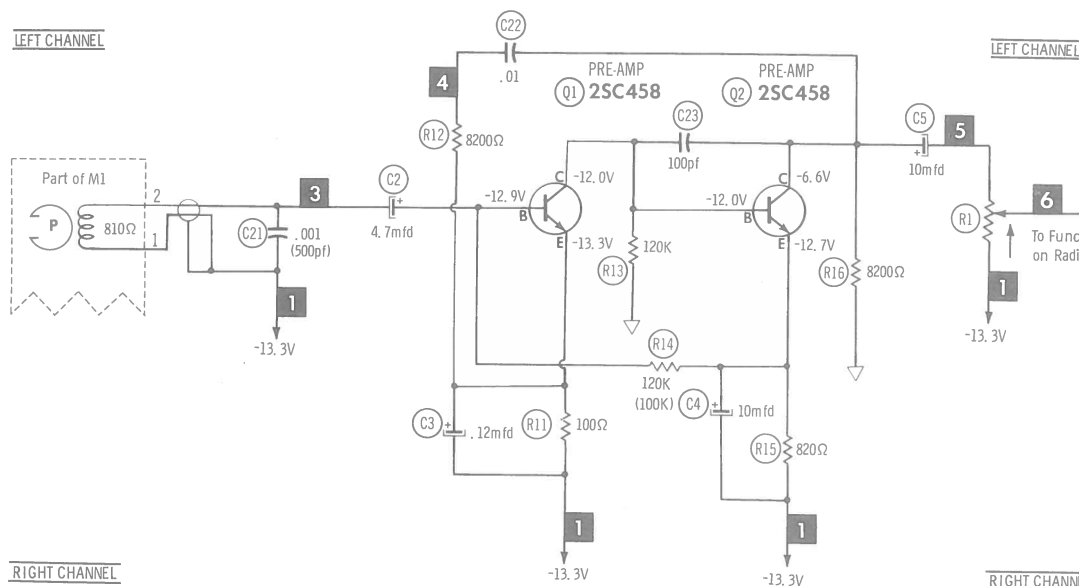
## MECHANICAL PARTS LIST

| REF. NO. | PART NO. | DESCRIPTION                   | REF. NO. | PART NO. | DESCRIPTION                 |
|----------|----------|-------------------------------|----------|----------|-----------------------------|
| 1        | FK-03013 | Motor Belt                    | 12       | FP-03037 | Head Arm Spring             |
| 2        | FR-03003 | Capstan and Flywheel Assembly | 13       | FP-03481 | Head Height Spring          |
| 3        | FR-03023 | Cam                           | 14       | FP-03038 | Azimuth Spring              |
| 4        | (1)      | Push Pawl                     | 15       | FR-02997 | Tape Guide                  |
| 5        | (1)      | Pull Pawl                     | 16       | FQ-03021 | Cartridge Guide Roller      |
| 6        | FR-02998 | Head Arm Assembly             | 17       | FR-03018 | Switch Actuator             |
| 7        | FR-03030 | Plunger Arm                   | 18       | FR-03019 | Cartridge Retainer Assembly |
| 8        | FR-03480 | Head Arm Stand                | 19       | FR-03485 | Plunger Shaft               |
| 9        | FR-03014 | Motor Fan                     | 20       | FR-03025 | Camshaft                    |
| 10       | FR-03349 | Flywheel Metal                | 21       | FQ-03034 | Head Indexing Shaft         |
| 11       | FR-03015 | Motor Pulley                  |          |          |                             |

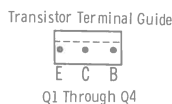
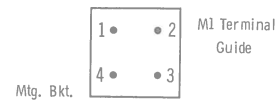
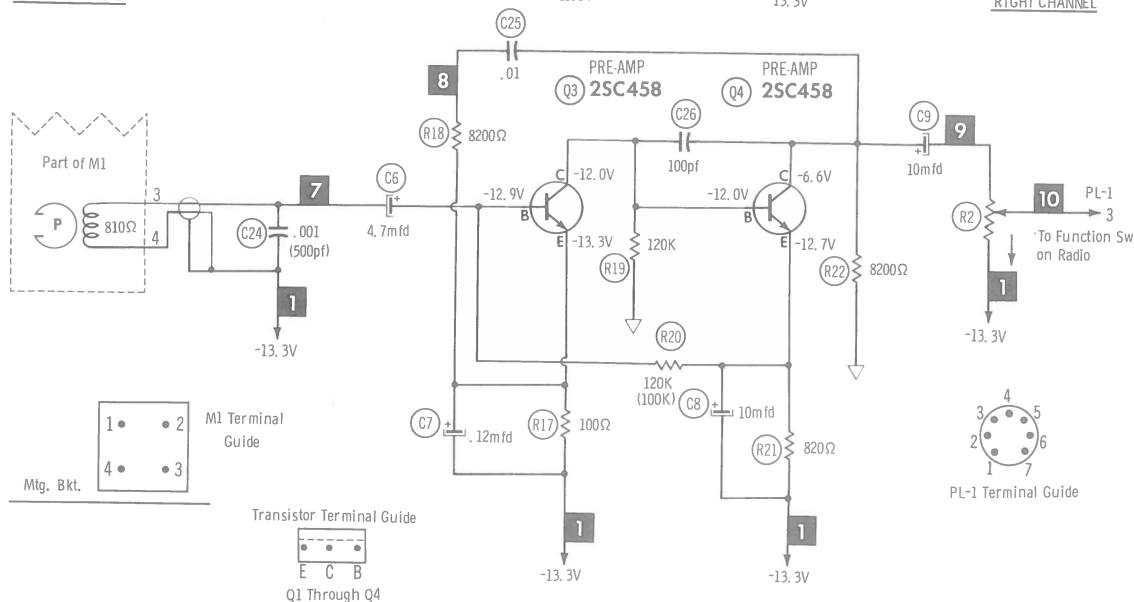
(1) Part of Arm (7).

NOTE: DEMAGNETIZE HEADS AFTER SERVICING

LEFT CHANNEL



RIGHT CHANNEL

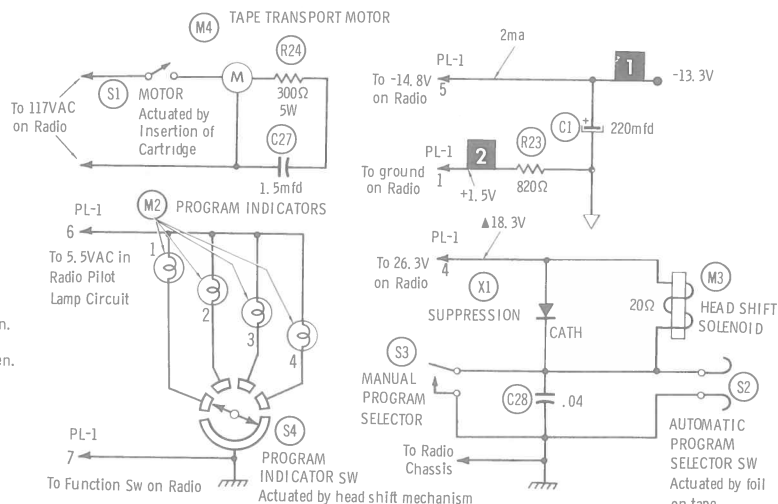


- ▲ Solenoid Energized
- ▽ Measurement Reference
- Denotes chassis
- Denotes ground
- Indicates connection used in some versions.
- X- Indicates connection not used in some versions.
- \* Omitted in some versions.
- ⊙ See parts list.

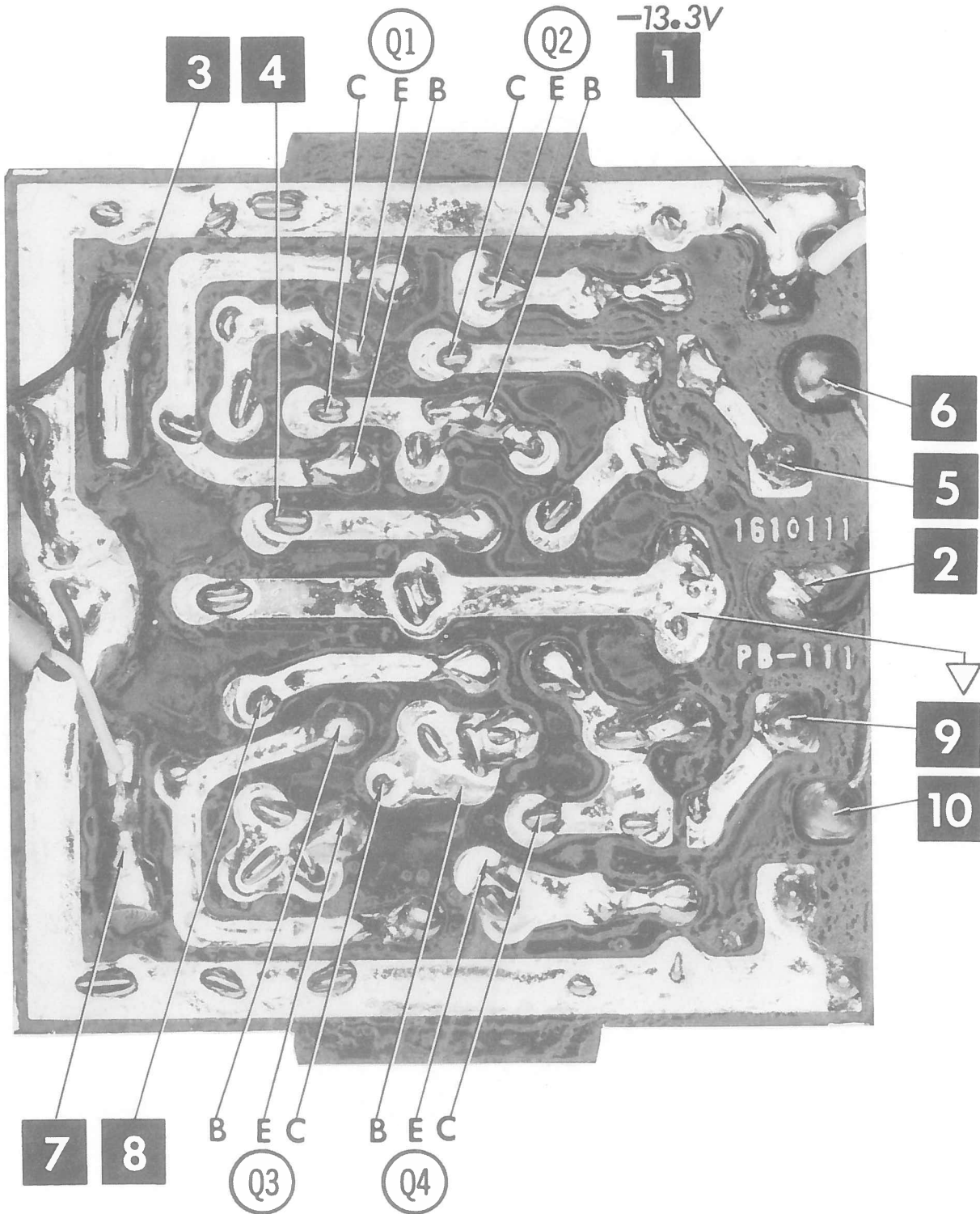
Values shown in ( ) are used in some applications.  
Resistors are 1/2W or less, 10% or 20%, unless otherwise indicated.  
Supply voltage maintained at rated value for measurements.  
Voltage and resistance measured with VTVM or equivalent meter,  
no signal applied and controls adjusted for normal operation.  
Controls viewed from actuator end. Arrow indicates clockwise rotation.  
Numbers assigned to terminals may not be found on the unit.  
Transistor resistances vary widely. No resistance measurements taken.

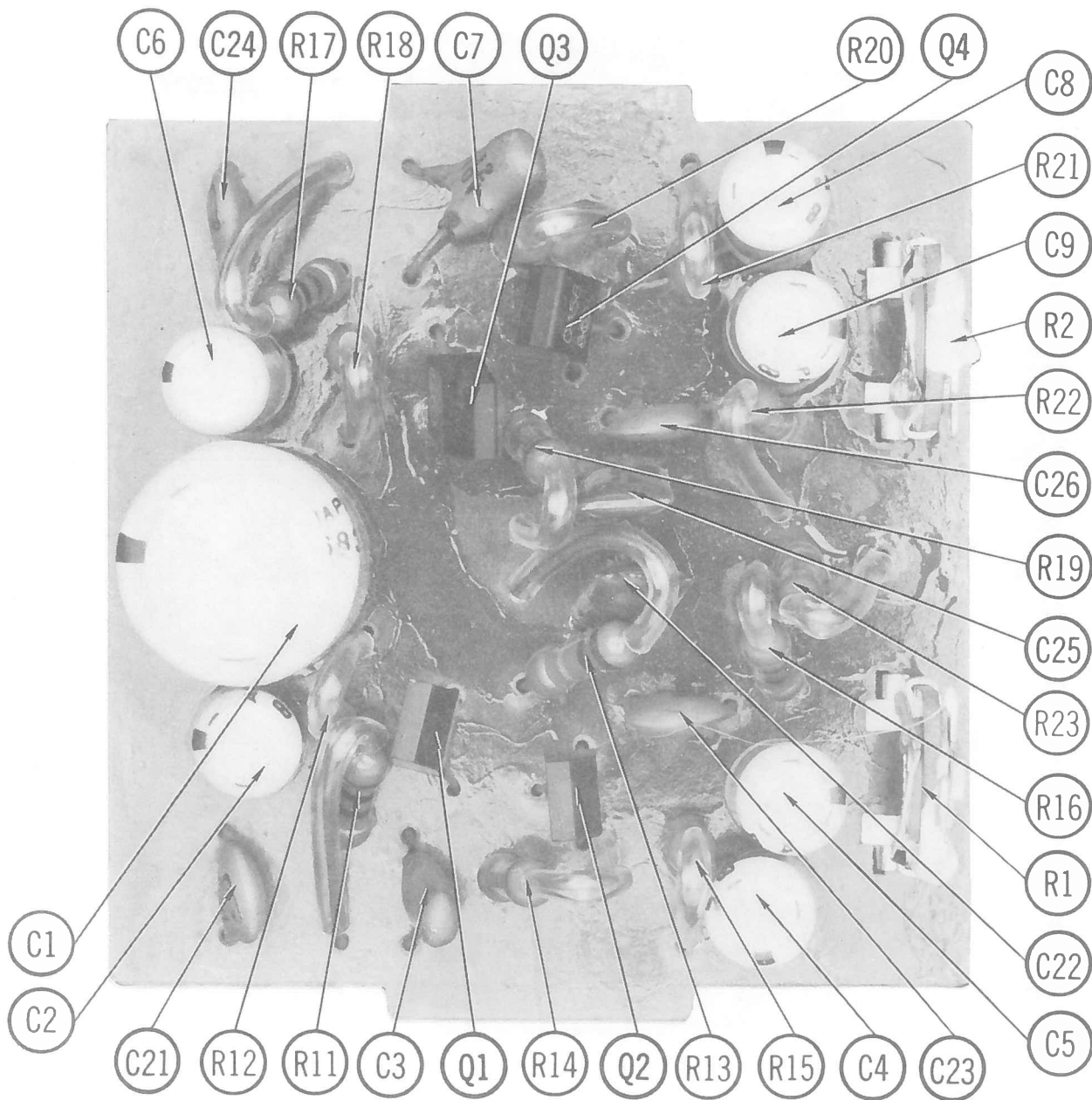
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with **CIRCUITRACE**

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PACKARD BELL MODEL RTS-22





# PARTS LIST AND DESCRIPTION

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

## TRANSISTORS

| ITEM No. | TYPE No. | FUNCTION | REPLACEMENT DATA |                |                           |                                  |                   |              |                   |
|----------|----------|----------|------------------|----------------|---------------------------|----------------------------------|-------------------|--------------|-------------------|
|          |          |          | MFGR. PART No.   | DELCO PART No. | GENERAL ELECTRIC PART No. | INTERNATIONAL RECTIFIER PART No. | MOTOROLA PART No. | RCA PART No. | SYLVANIA PART No. |
| Q1       | 2SC458   | Preamp   | HC-458           | DS-66          | GE-10                     | TR-21                            | HEP53             | SK3020       | ECG 123           |
| Q2       | 2SC458   | Preamp   | HC-458           | DS-66          | GE-10                     | TR-21                            | HEP53             | SK3020       | ECG 123           |
| Q3       | 2SC458   | Preamp   | HC-458           | DS-66          | GE-10                     | TR-21                            | HEP53             | SK3020       | ECG 123           |
| Q4       | 2SC458   | Preamp   | HC-458           | DS-66          | GE-10                     | TR-21                            | HEP53             | SK3020       | ECG 123           |

## POWER RECTIFIERS & SIGNAL DIODES

| ITEM No. | MFGR. PART OR TYPE No. | REPLACEMENT RECTIFIERS & DIODES |                                  |                    | REPLACEMENT RECTIFIERS | NOTES |
|----------|------------------------|---------------------------------|----------------------------------|--------------------|------------------------|-------|
|          |                        | GENERAL ELECTRIC PART No.       | INTERNATIONAL RECTIFIER PART No. | SYLVANIA PART No.  | RCA PART No.           |       |
| X1       | JC-10D1 (10D1)         | GE-504A                         | 8D4 or 5A4-D                     | ECG 116 or ECG 117 | SK3031 or SK3017A      |       |

## 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       | 220    | 16V | BJ-42228         | BCD20200         | EA15-250           | NLW200-15                 | MT1-23                    | MTV200CK15       | TE-1164          |
| C2       | 4.7    | 16V | BJ-42476         | BCD25005         | EP15-5             | NLW5-15                   | MT1-3                     | MTV5CB50         | TE-1152          |
| C3       | .12    | 10V | BV-23125         |                  |                    | TYR13BF124K               |                           | TAS124K035POA    | 196D104X         |
| C4       | 10     | 16V | BJ-42107         | BCD25010         | EP15-10            | NLW10-15                  | MT1-5                     | MTV10CB50        | 0035DB           |
| C5       | 10     | 16V | BJ-42107         | BCD25010         | EP15-10            | NLW10-15                  | MT1-5                     | MTV10CB50        | TE-1155          |
| C6       | 4.7    | 16V | BJ-42476         | BCD25005         | EP15-5             | NLW5-15                   | MT1-3                     | MTV5CB50         | TE-1152          |
| C7       | .12    | 10V | BV-23125         |                  |                    | TYR13BF124K               |                           | TAS124K035POA    | 196D104X         |
| C8       | 10     | 16V | BJ-42107         | BCD25010         | EP15-10            | NLW10-15                  | MT1-5                     | MTV10CB50        | 0035DB           |
| C9       | 10     | 16V | BJ-42107         | BCD25010         | EP15-10            | NLW10-15                  | MT1-5                     | MTV10CB50        | TE-1155          |

## 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. |
| C21      | .001    |           | GPD X5F102K      | DD-102             | JBS601YP102K              | CCD-102          | GP210            | 10TS-D10         |
| C22      | .01 50V |           | V1612S1          | CPR-10000J         | WMF1S1                    | 1DP-1-103        | PVC211           | 225P10391        |
| C23      | 100     |           | GPD X5F101K      | DD-101             | JBZ601YP101K              | CCD-101          | GP310            | 10TS-T10         |
| C24      | .001    |           | GPD X5F102K      | DD-102             | JBS601YP102K              | CCD-102          | GP210            | 10TS-D10         |
| C25      | .01 50V |           | V1612S1          | CPR-10000J         | WMF1S1                    | 1DP-1-103        | PVC211           | 225P10391        |
| C26      | 100     |           | GPD X5F101K      | DD-101             | JBZ601YP101K              | CCD-101          | GP310            | 10TS-T10         |
| C27      | 1.5mfd  | BW-26156# |                  |                    |                           |                  |                  |                  |
| C28      | .04     |           |                  | DD-403             |                           |                  | GP140            |                  |

# Packard Bell Part Number.

PACKARD BELL MODEL RTS-22

# PARTS LIST AND DESCRIPTION (CONTINUED)

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

## 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. |
| R1       | Level    | 10K         | AR-04201         | T-10K              |                    | X201R103B        | MTC14L1          |
| R2       | Level    | 10K         | AR-04201         | T-10K              |                    | X201R103B        | MTC14L1          |

## RESISTORS (Power and Special)

| ITEM No. | RATING | REPLACEMENT DATA |                  |                | ITEM No. | RATING | REPLACEMENT DATA |                  |                |
|----------|--------|------------------|------------------|----------------|----------|--------|------------------|------------------|----------------|
|          |        | IRC PART No.     | WORKMAN PART No. | MFGR. PART No. |          |        | IRC PART No.     | WORKMAN PART No. | MFGR. PART No. |
| R24      | 300 5W | PW5-300          | 5W-SQ-300        | AE-17302       |          |        |                  |                  |                |

## TAPE HEADS

| ITEM No. | MEASURED   |                        |            | PART No. | NORTRONICS PART No. | DESCRIPTION                                       |
|----------|------------|------------------------|------------|----------|---------------------|---|
|          | INDUCTANCE | BIAS/ERASE VOLTS (RMS) | BIAS FREQ. |          |                     |   |
| M1       | 455mh      |                        |            | GE-40007 | 5800 (1)            | 8-Track Stereo Play<br>(1) Use original mounting. |

## MISCELLANEOUS

| ITEM No. | PART NAME             | PART No. | NOTES                                 |
|----------|-----------------------|----------|---------------------------------------|
| M2       | Lamp                  | HJ-00020 | Program Indicator (4 used)            |
| M3       | Solenoid              | OH-80001 | Head Shift (Coil only)                |
| M4       | Motor                 | OD-40056 | Tape Transport                        |
| S1       | Switch                | FB-72006 | Motor (Micro Type)                    |
| S2       | Switch                | FR-03016 | Automatic Program Selector (Contacts) |
| S3       | Switch                | FP-03039 | Moving Contact                        |
| S4       | Switch                | FR-03041 | Fixed Contact                         |
|          |                       | FR-03032 | Manual Program Selector               |
|          |                       | FE-03031 | Contact                               |
|          |                       | FE-03012 | Board                                 |
|          | Printed Circuit Board |          |                                       |

## WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in 12 Colors  
8524 (Stranded) Available in 12 Colors

Low-Loss Shielded Lead (Interconnecting) ..... Use BELDEN No. 8401 or 8421

Phono Pick-up Arm Cable ..... Use BELDEN No. 8430 (Two Conductor-Unshielded)  
8429 (Two Conductor-Shielded)  
8419 (Three Conductor-Shielded)