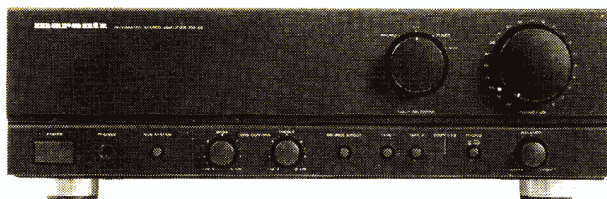


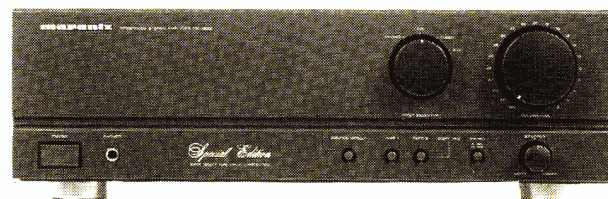
Service Manual

**74 PM40/00B/01B/02B/05B/07B
10B/12B/15B/17B**

Stereo amplifier



PM-40



PM-40SE

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model PM-40/PM-40SE

First issue: 1990

4822 725 50913

HC

MARANTZ DESIGN AND SERVICE

Using superior design and selected high grade components, MARANTZ company has created the ultimate in stereo sound.

Only **original MARANTZ parts** can insure that your MARANTZ product will continue to perform to the specifications for which it is famous.

Parts for your MARANTZ equipment are generally available to our National Marantz Subsidiary or Agent.

ORDERING PARTS:

Parts can be ordered either by mail or by telex. In both cases, correct part number has to be specified. The following information must be supplied to eliminate delays in processing your order:

1. Complete address
2. Complete part numbers and quantities required
3. Description of parts
4. Model number for which part is required
5. Way of shipment
6. Signature: any order form or telex must be signed otherwise such part order will be considered as null and void.

PARTS ORDERING

Parts may be ordered at the following addresses:

AUSTRIA

HORNYPHON
Vertriebsgesellschaft GmbH
Wienerbergstrasse 1
A 1101 Wien
Austria
Telex: 132.332

FINLAND

MARANTZ
DIVISION OF OY PHILIPS Ab
Kaivokatu 8
00100 Helsinki
Finland
Telex: 124811

GREAT BRITAIN

MARANTZ AUDIO U.K. Ltd
Unit 15/16
Saxon Way Industrial Estate
Moor Lane
Harmondsworth UB7 OLW
Great Britain
Telex: 935196

SAUDI ARABIA

AL ALAMIAH ELECTRONICS
P.O.Box 5954
University Street
Riyadh 11432
Saudi Arabia
Telex: 401530

SWITZERLAND

MARANTZ
Technischer Service
Duenstrasse 3
3186 Dürdingen
Switzerland

BELGIUM

SVD DIVISION MARANTZ
Industrialaan 1
1720 Groot-Bijgaarden
Belgium
Telex: 24466

FRANCE

MARANTZ FRANCE
4 Rue Bernard Palissy
92600 Asnières
France
Telex: 611651

GREECE

SHERTON ELECTRONICS S.A.
P.O.Box 21025
Hippocrates Street 188
Athens 11471
Greece
Telex: 216.795

SOUTH AFRICA

MARANTZ
DIVISION OF PHILIPS S.A.
Main Road Martindale
P.O. Box. 58088
Newville 21114
South Africa

TURKEY

DOGRUOL Ltd.
I.M.C.
6 Blok N°6310
Unkapani
Istanbul
Turkey
Telex: 22085

CHILE

MARANTZ
DIVISION OF PHILIPS S.A.
AV. Santa Maria, 0760
Casilla 2687
Santiago
Telex: 240.239

GERMANY

MARANTZ GERMANY GmbH
Alexanderstrasse 1
2000 Hamburg
Germany

JAPAN

MARANTZ JAPAN, Inc.
35-1, 7-chome, Sagamiono
Sagamihara-shi, Kanagawa
Japan

SPAIN

PHONO S.A.
Ignacio Iglesias 10
Badalona (Barcelona)
Spain
Telex: 59355

MALTA

CACHIA & GALEA
Republic Street, 68D
Valetta
Telex: 1682

DENMARK

MARANTZ
DIVISION OF PHILIPS
SERVICE A/S
Prags Boulevard 80
Postbox 1919
DK-2300 København S
Denmark
Telex: 31201

THE NETHERLANDS

Elpro Marantz
Wint Hontlaan 28
3526 KV Utrecht
The Netherlands
Telex: 4748

KUWAIT

AL ALAMIAH ELECTRONICS
Ussama Building
Fahd al Saleem Street
P.O.Box 23781
Safat-Kuwait
Telex: 22694

SWEDEN

MARANTZ
DIVISION OF PHILIPS
Försäljning AB
Tegeluddsvägen 1
S-115 84 Stockholm
Sweden
Telex: 14060

PORTUGAL

MARANTZ
Divisao philips S.A. service
Oturela-carnaxide
2795 LinDA-A-VELHA
Telex: 43906

NORWAY

MARANTZ
DIVISION OF PHILIPS A/S
Sandstuveien 40
0680 Oslo 6
Norway
Telex: 72640

ITALY

MARANTZ ITALIANA S.P.A.
Via Chiese, 74
20126 Milano
Italy

MARANTZ INTERNATIONAL

Vestdijk 9
5600 MD Eindhoven
The Netherlands
Phone: +31/40.758290
Telefax: +31/40.75.82.99
Telex: 35000 PHTC NL routing IND NLMTFAT

All of the above locations are fully equipped to take care of your total service needs. Because various countries have differing configuration requirements, it is necessary that you contact the service facility in your particular country. In the event that there is no service location listed for your country, please, contact the nearest facility for the necessary assistance.

In case of difficulties, do not hesitate to contact the Technical Department at abovementioned address.

TECHNICAL SPECIFICATIONS (DIN)

Power Amplifier Section

| | | |
|-------------------------------------|---------------------|----------|
| IHF Dynamic Power | | |
| 2 ohms | | : 100W |
| 4 ohms | | : 80W |
| 8 ohms | | : 54W |
| Power Output Per Channel | | |
| DIN 8 ohms | 1 kHz 1% THD | : 48W |
| FTC 4 ohms | 40–20 kHz 0.15% THD | : 55W |
| FTC 8 ohms | 40–20 kHz 0.08% THD | : 43W |
| Total Harmonic Distortion at 8 ohms | | : 0.015% |
| I.M. Distortion at 8 ohms | | : 0.015% |
| Damping Factor | | : 100 |

Phono Amplifier Section

| | | |
|------------------------------------|--|------------|
| MM Cartridge Input | | |
| Frequency Difference | | : ±0.5 dB |
| Signal to Noise Ratio (A weighted) | | : 87 dB |
| Input Sensitivity | | : 2.5 mV |
| Input Impedance | | : 47k Ohms |

High Level Section

| | | |
|---|--------|------------------------------------|
| Frequency Response | | : 10–60 kHz |
| Signal to Noise Ratio (A weighted) | | : 87 dB |
| Input Sensitivity | | : 150 mV |
| Input Impedance | | : 33k Ohms |
| Tape Output Level [Phono (MM) 5 mV 1 kHz Input] | | : 300 mV |
| Tape Output Impedance (Phono) | | : 220 Ohms |
| | | : 440 Ohms (only /02B/12B version) |
| Tone Control Action | 100 Hz | : ±6 dB |
| | 10 kHz | : ±6 dB |

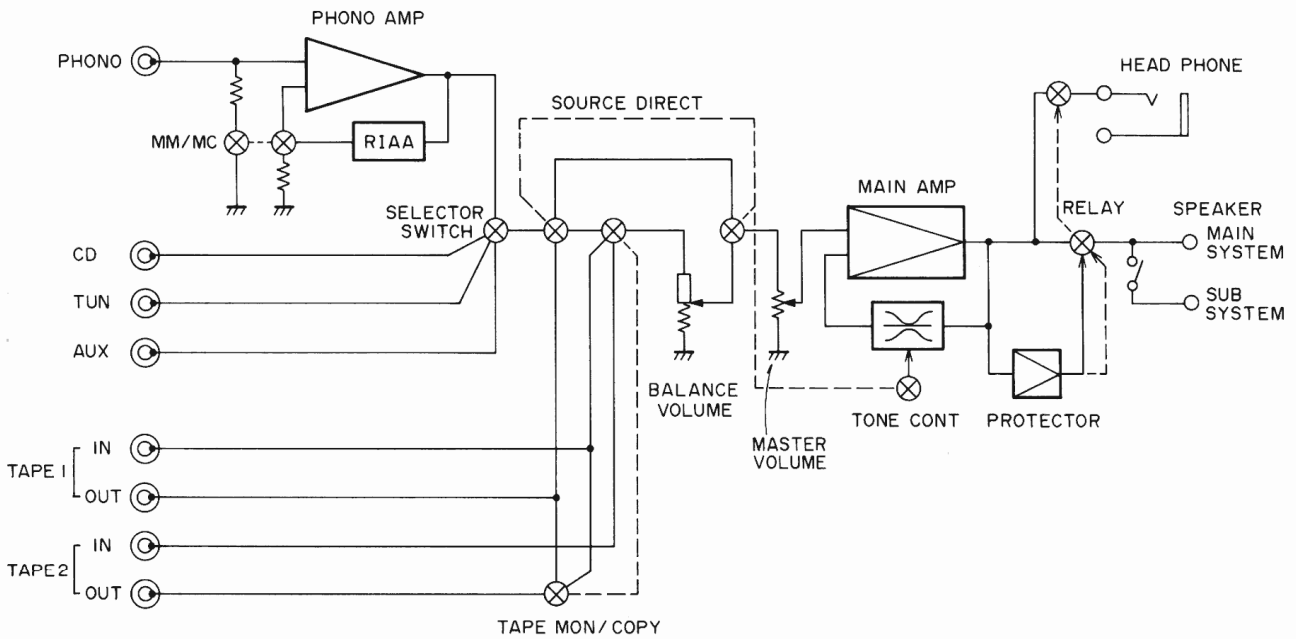
General

| | | |
|---------------------------------|--|-------------|
| Power Requirements | | |
| 2 Voltage version | | : 220V/240V |
| 4 Voltage version | | : 110V–240V |
| Power Consumption (Rated Power) | | |
| AB Class Moode | | : 170W |
| A Class Moode | | : — |
| Dimensions | | |
| Panel Width | | : 420 mm |
| Panel Height | | : 118 mm |
| Depth | | : 280 mm |
| Weight | | |
| Unit alone | | : 10 kg |

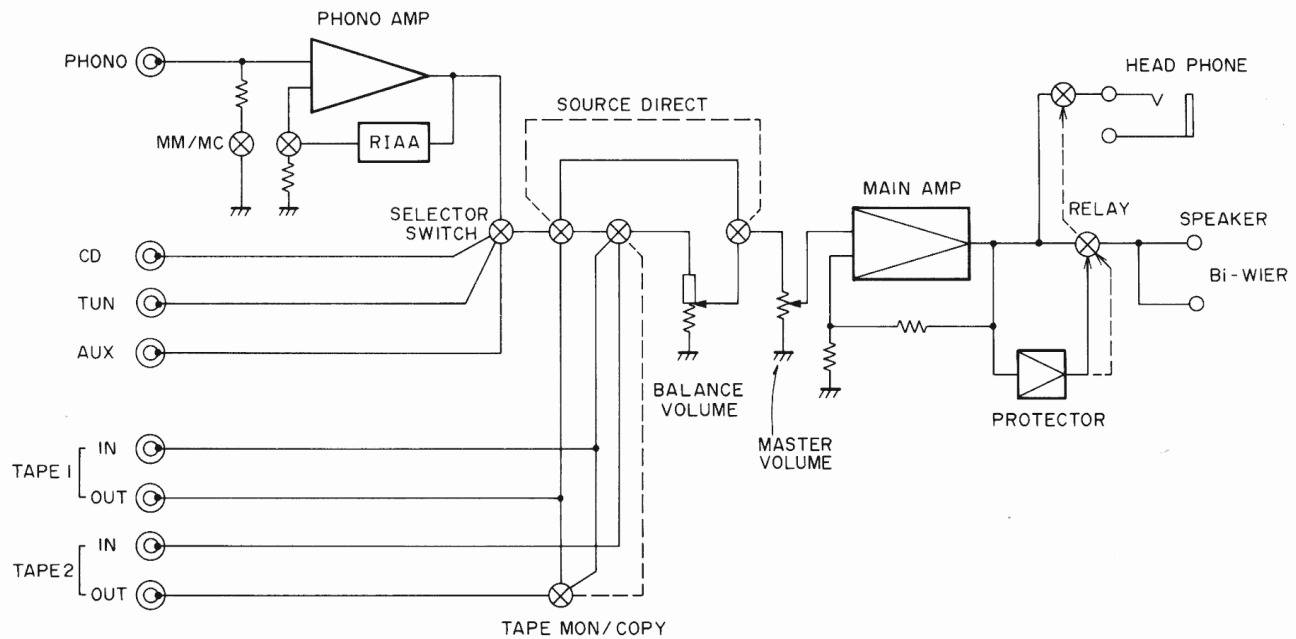
Specifications and appearance are subject to change for modification without notice.

1. BLOCK DIAGRAM

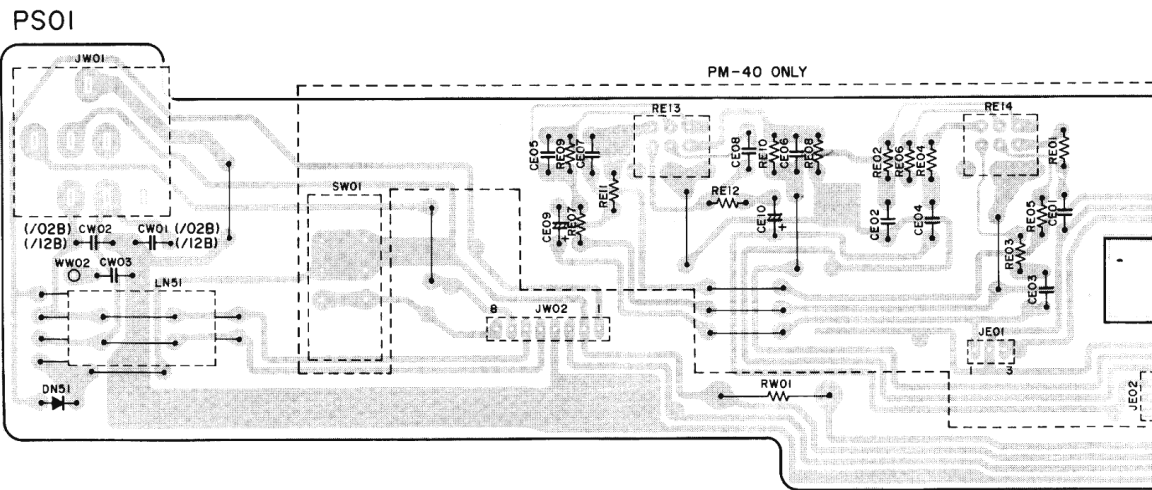
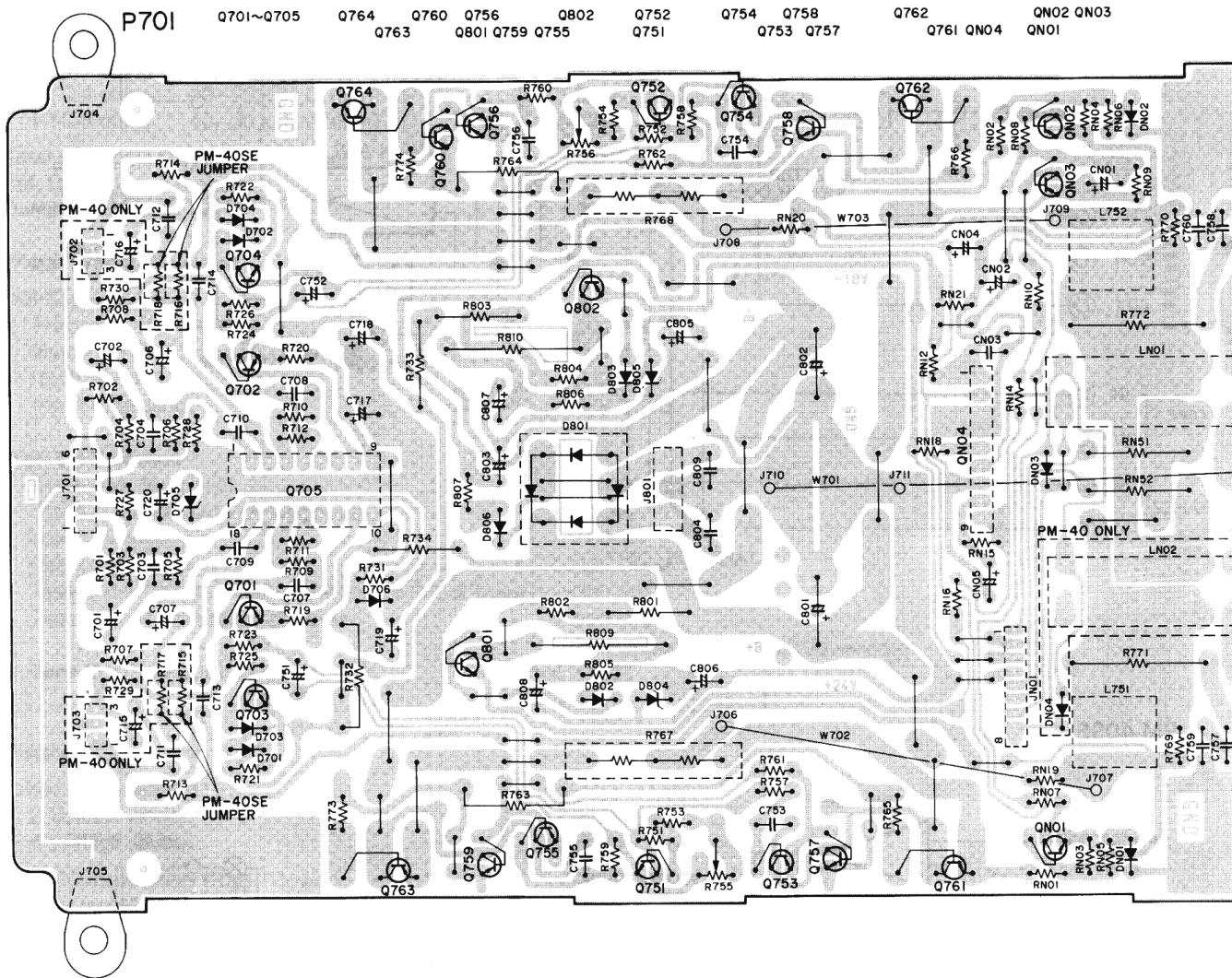
PM-40



PM-40SE



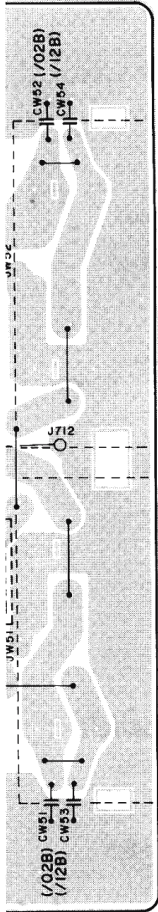
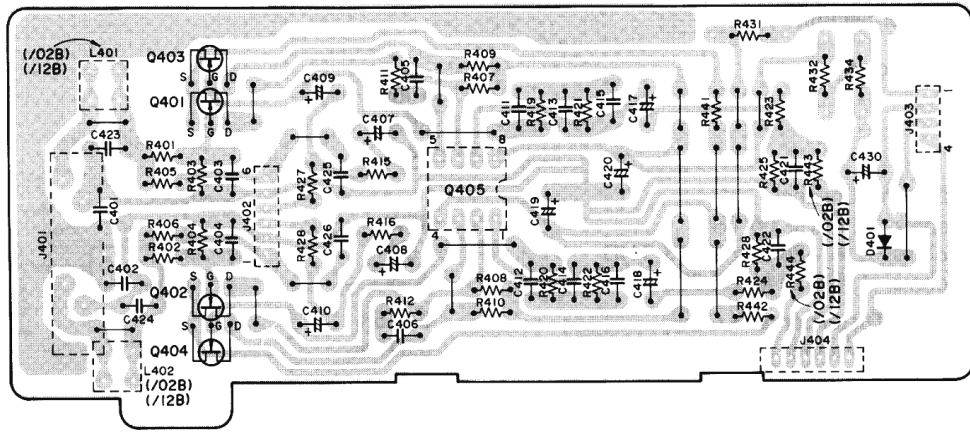
2. SCHEMATIC DIAGRAM AND PARTS LOCATION (Pattern side)



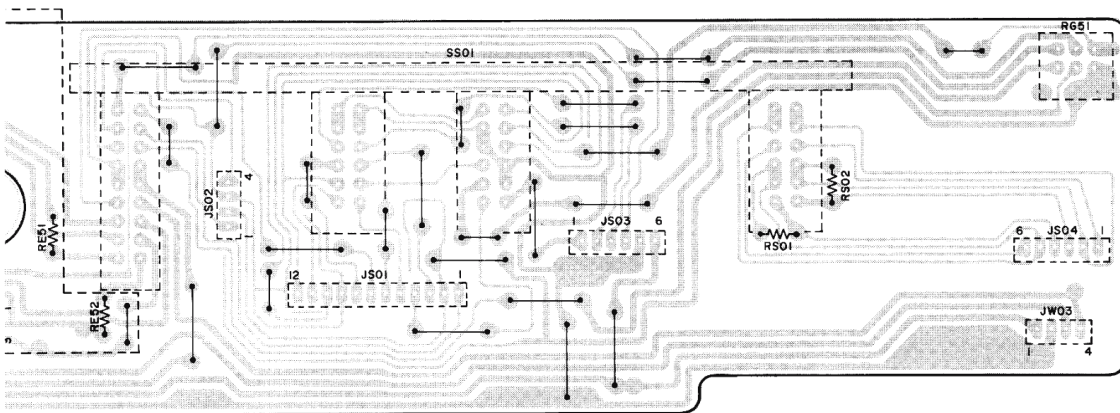
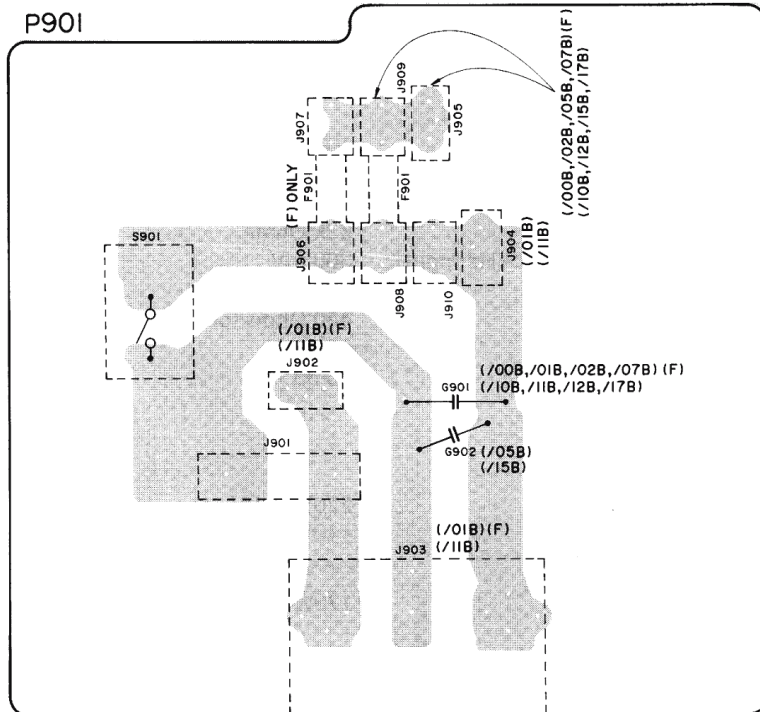
P401

Q401~Q404

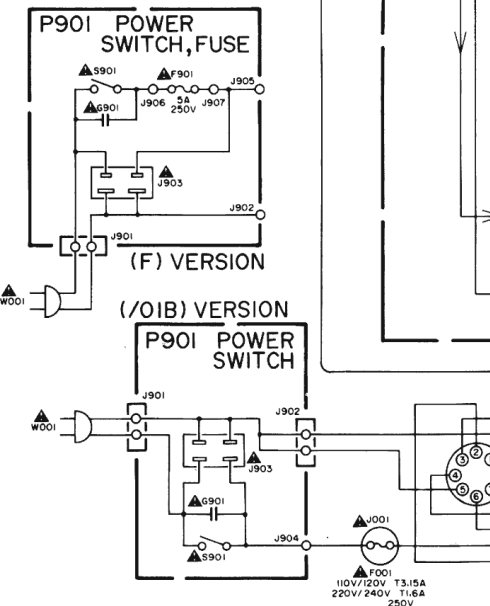
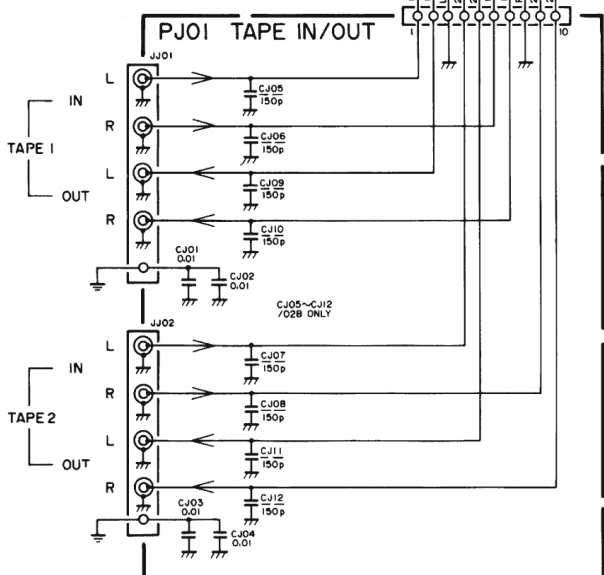
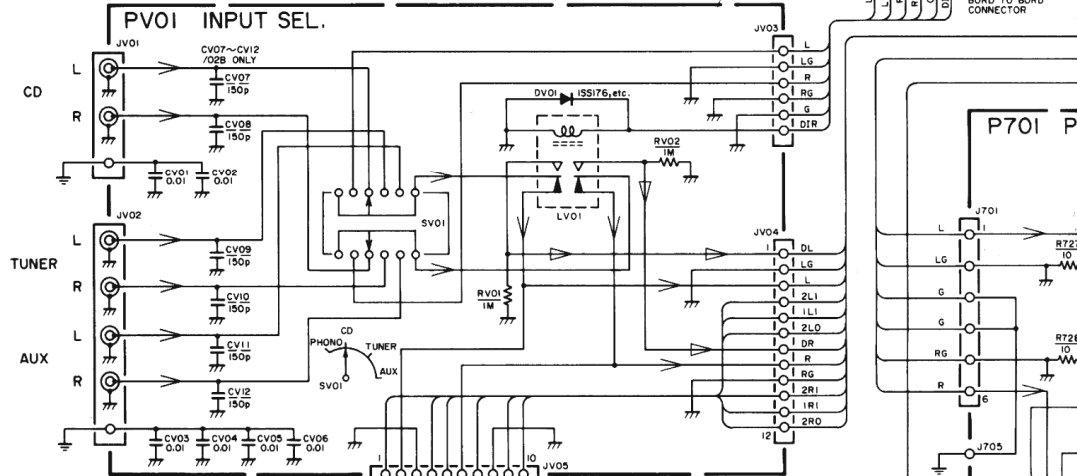
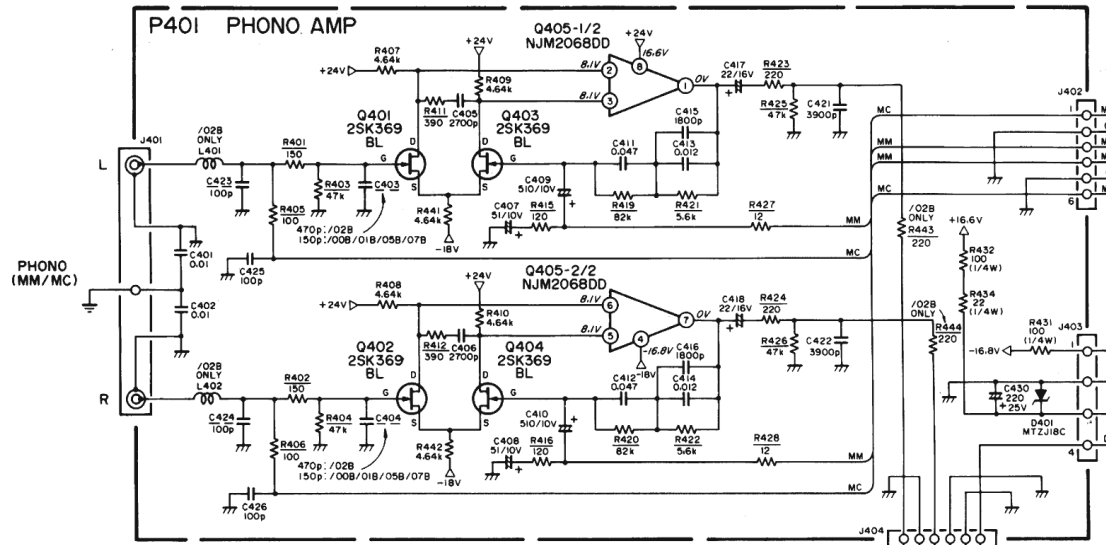
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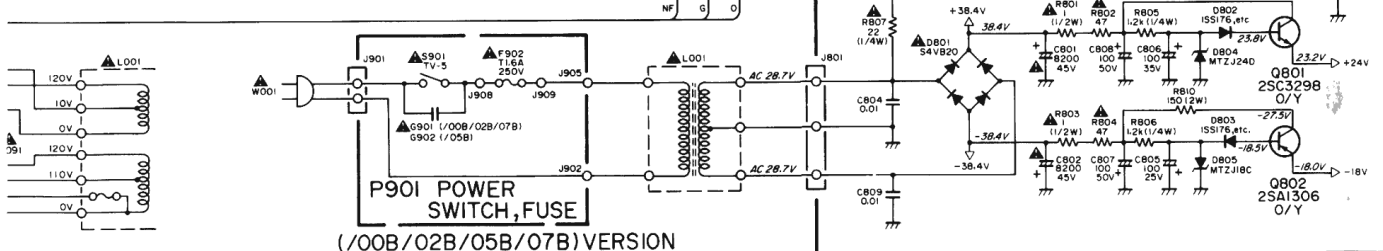
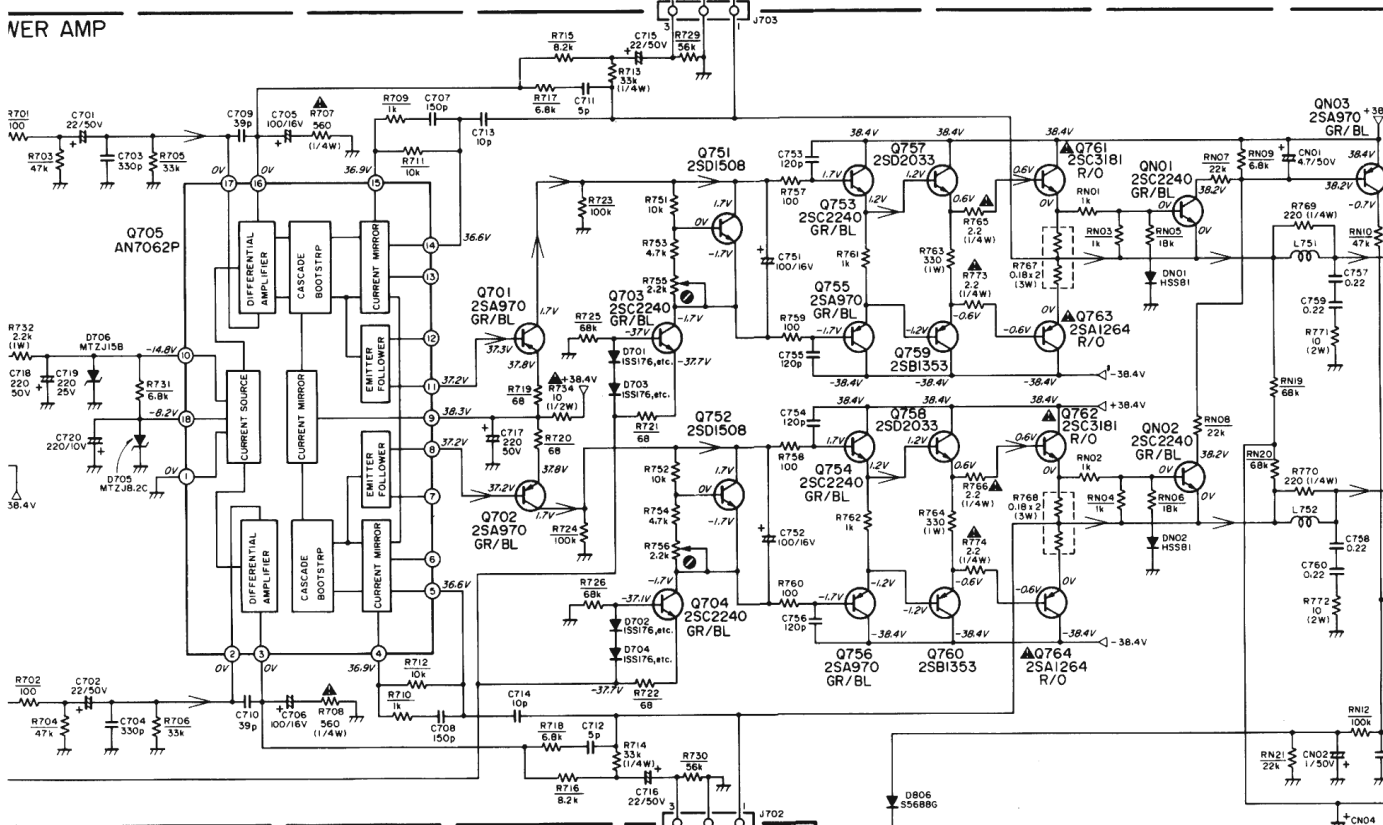
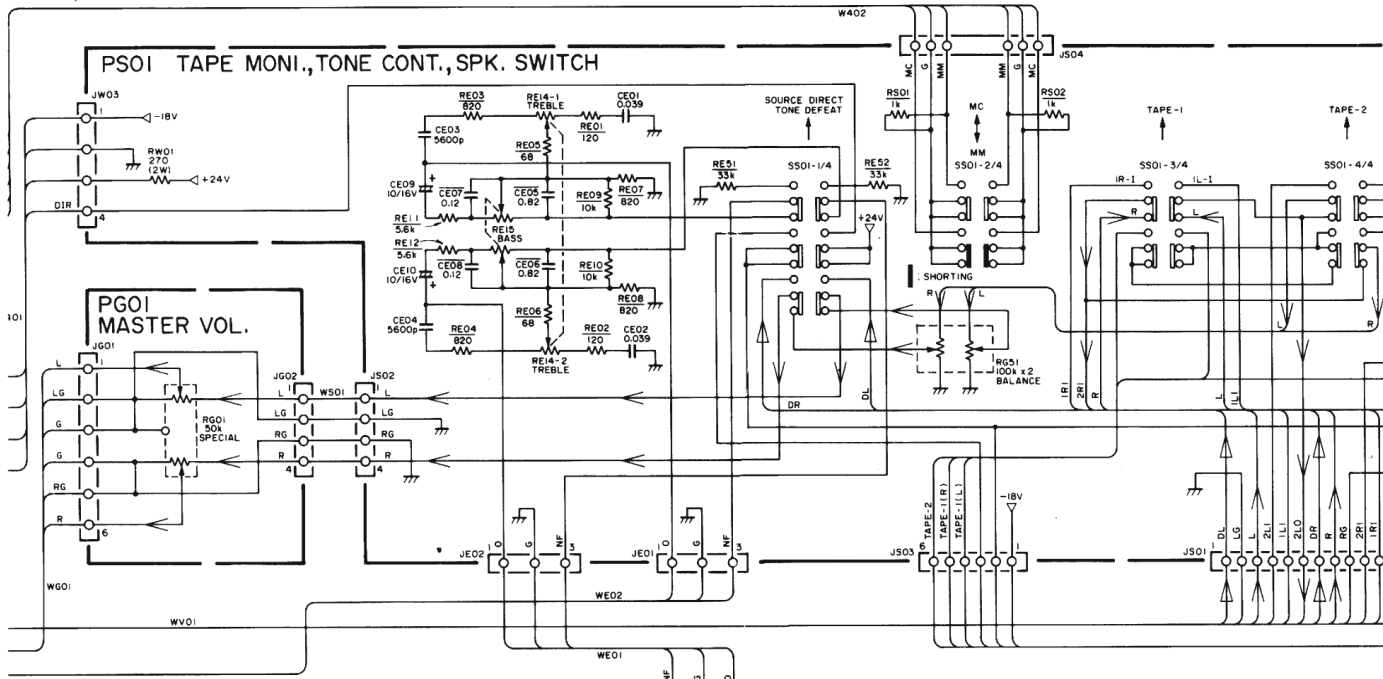


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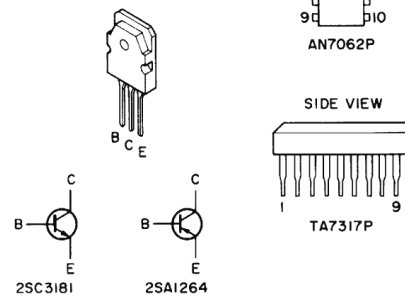
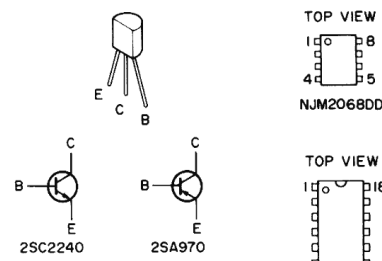
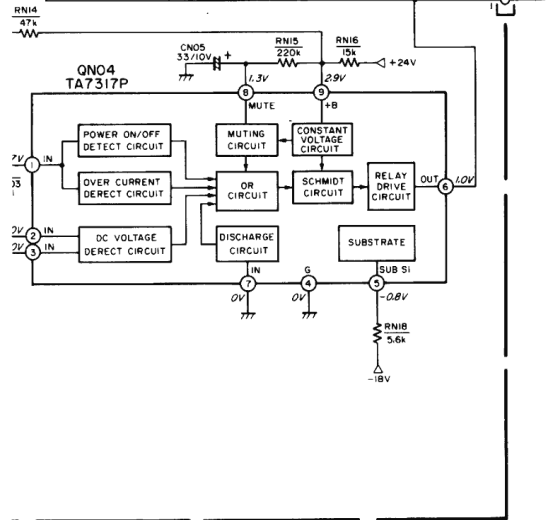
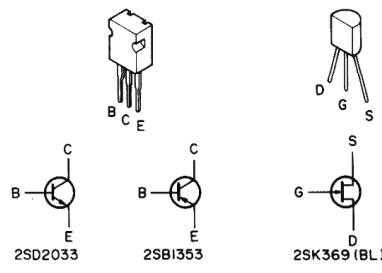
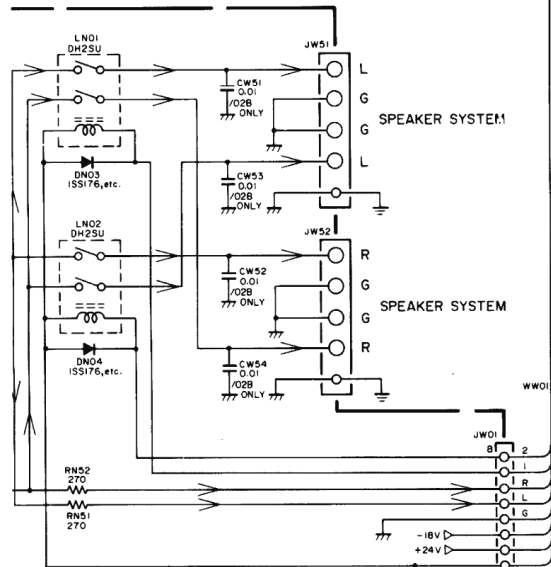
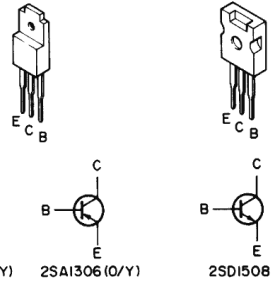
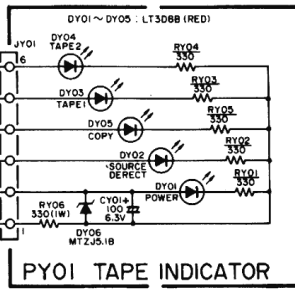
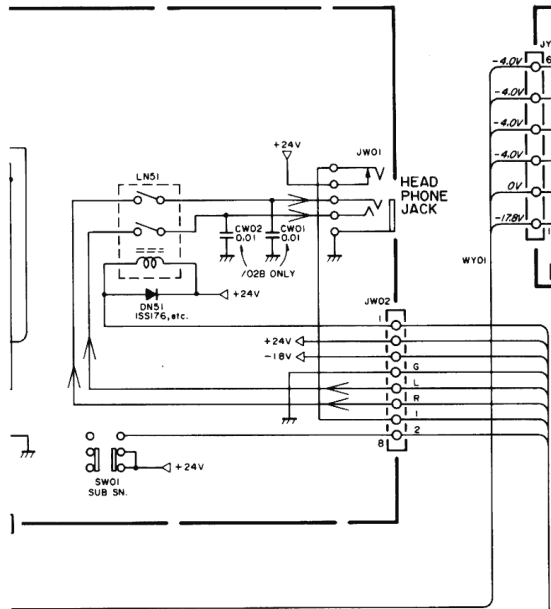


PM-40





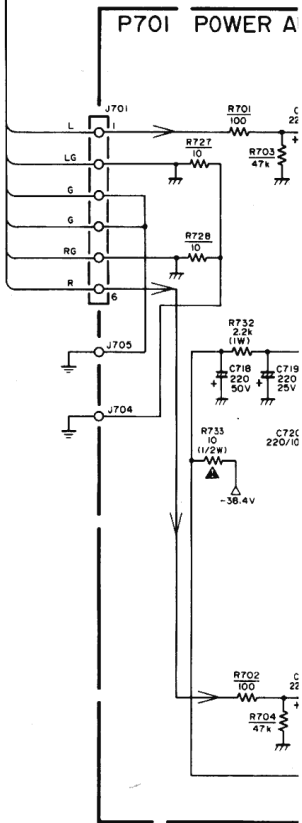
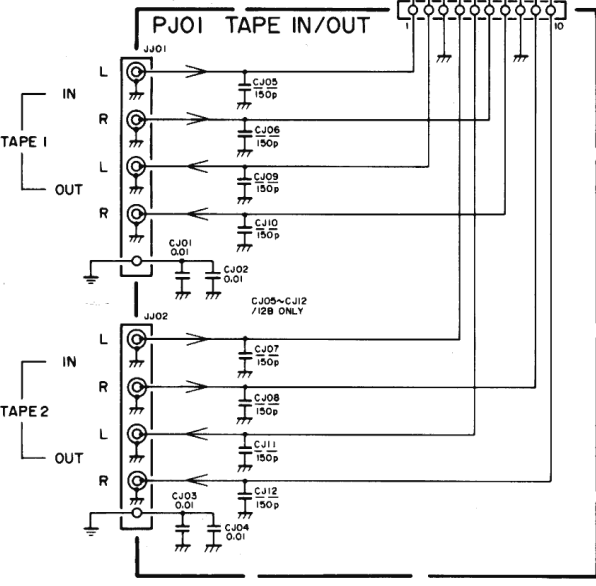
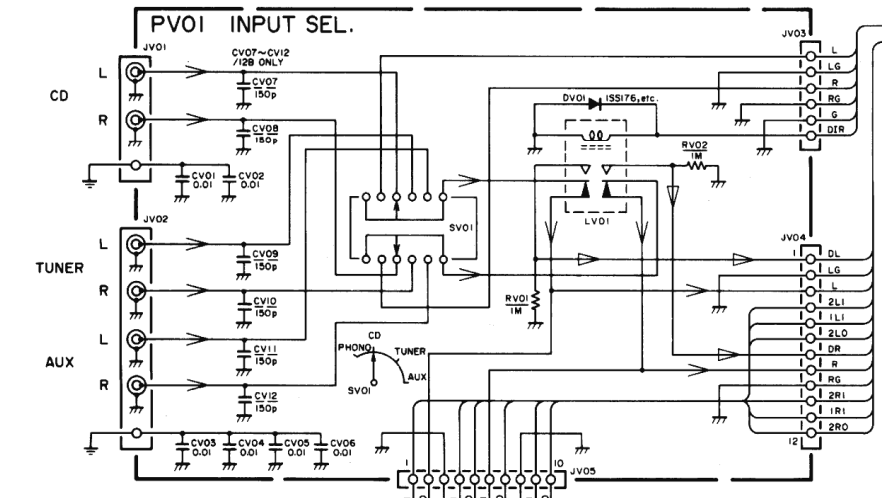
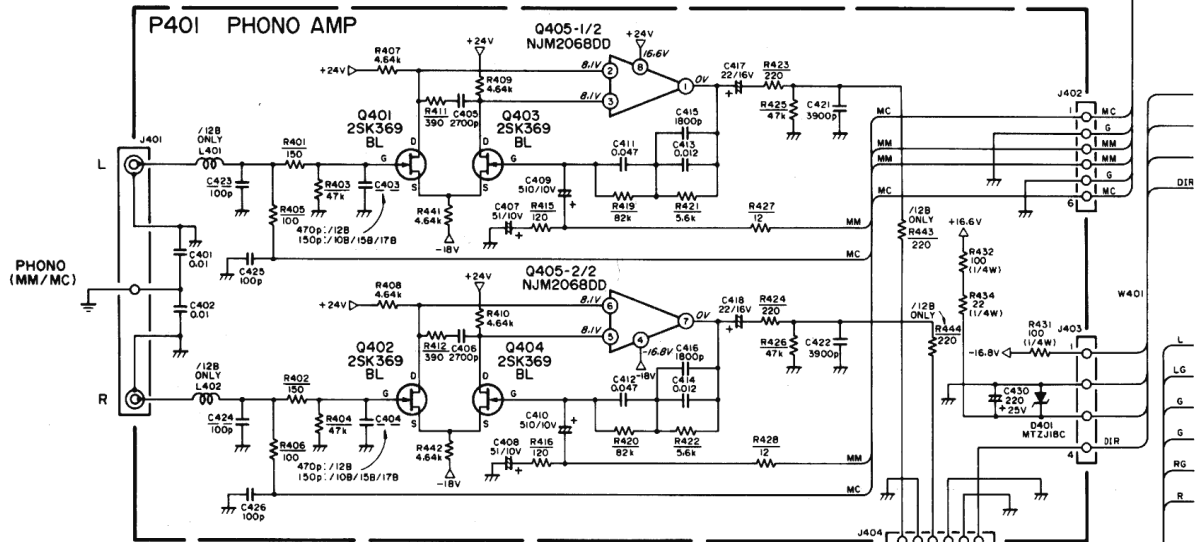
NOTE ON SAFETY:
 Symbol ▲ Fire or electrical shock hazard. Only original part be used to replace any part marked with symbol ▲. Any other substitution (other than original type), may increase risk or electrical shock hazard.

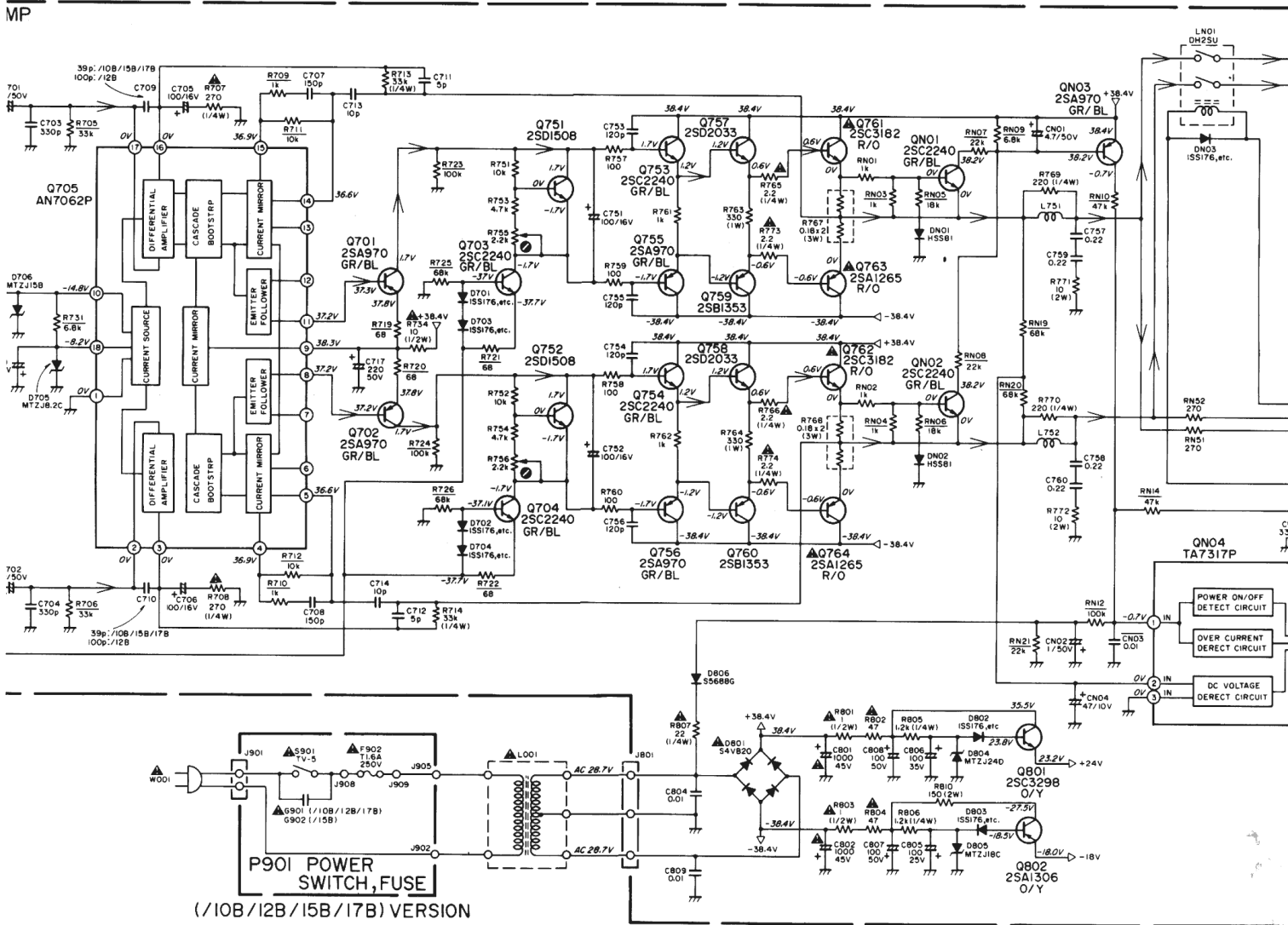
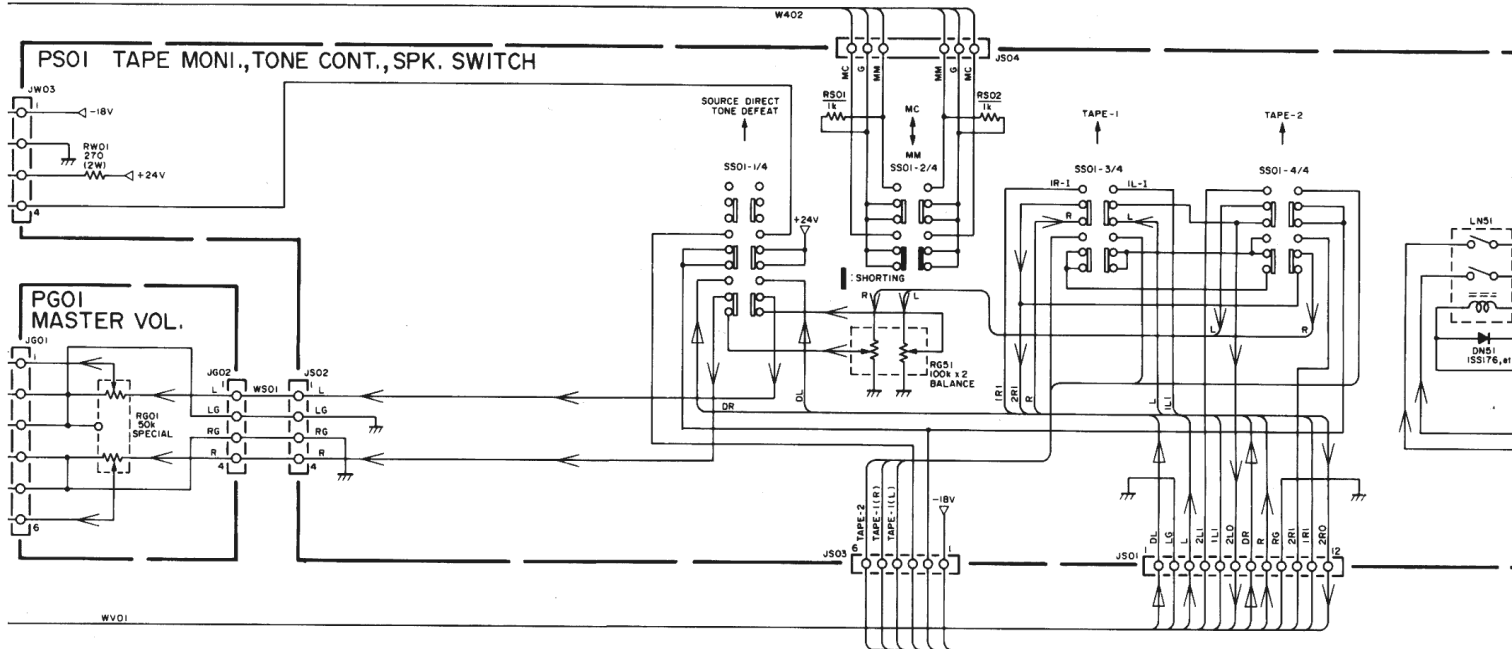


NOTE :
 ———> NORMAL SIGNAL LINE
 ———> SOURCE DIRECT SIGNAL LINE

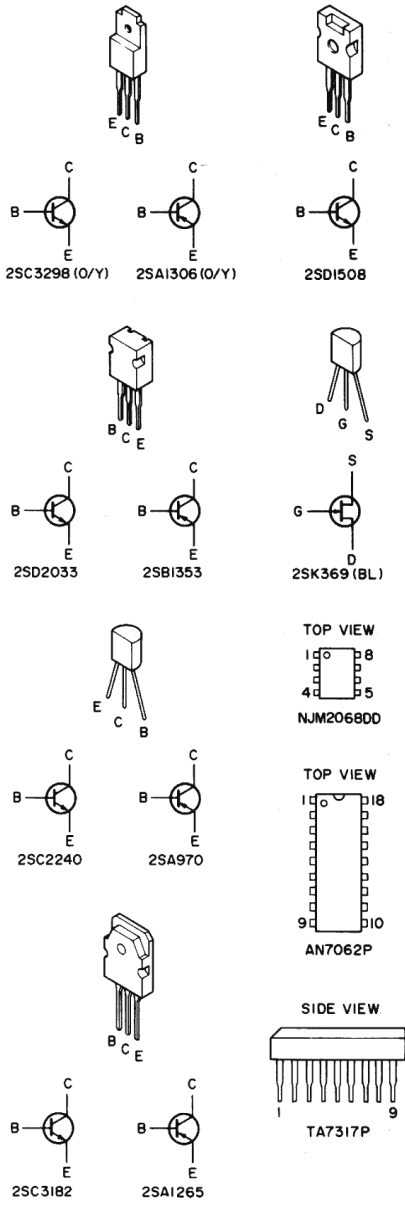
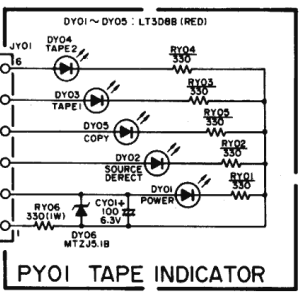
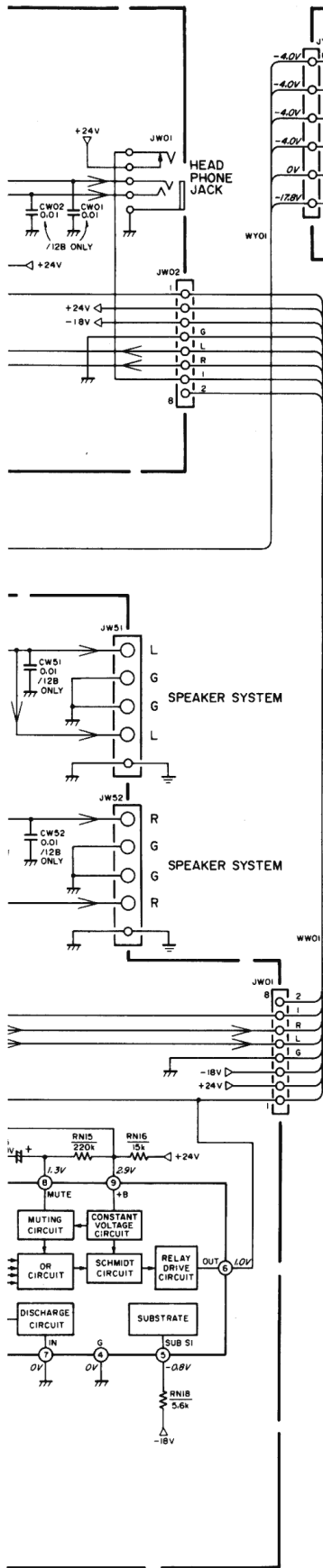
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PM-40SE





NOTE ON SAFETY:
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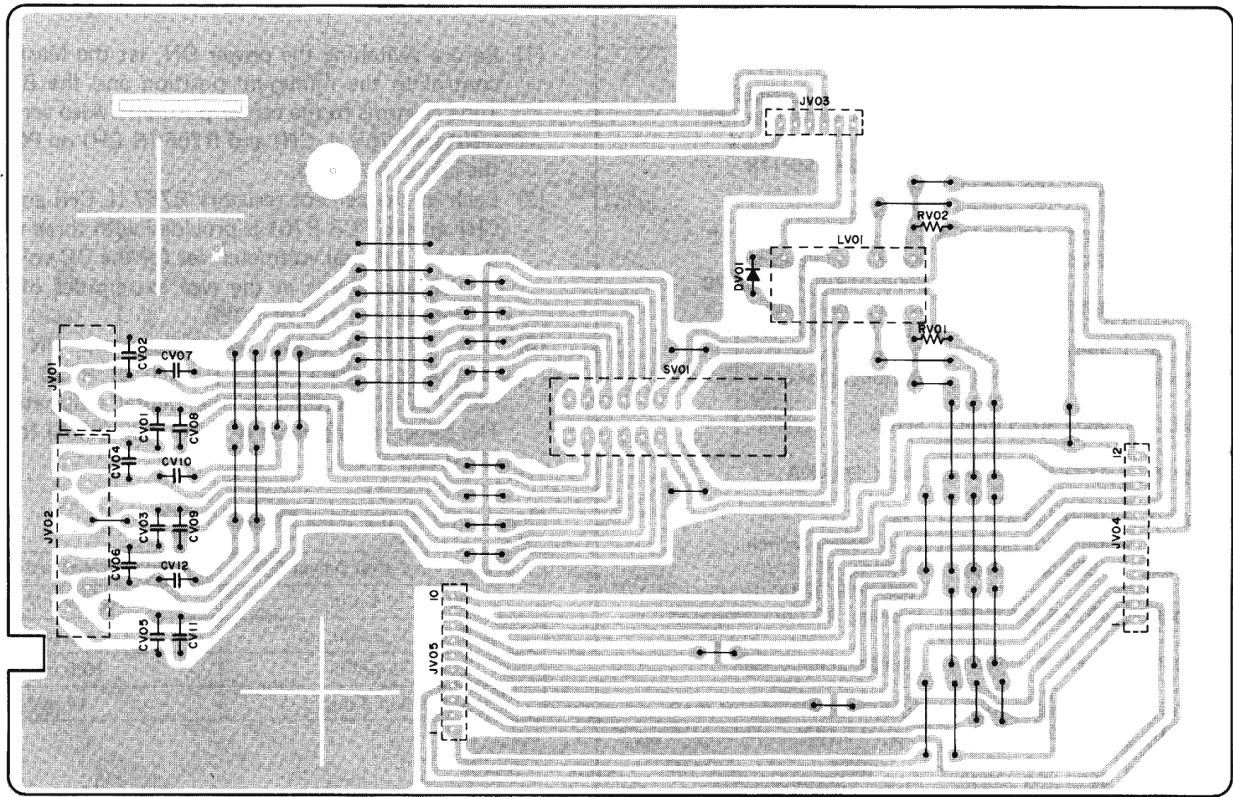


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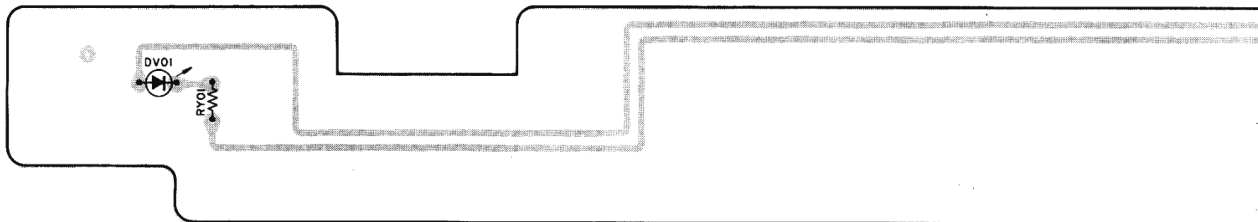
→ NORMAL SIGNAL LINE

→ SOURCE DIRECT SIGNAL LINE

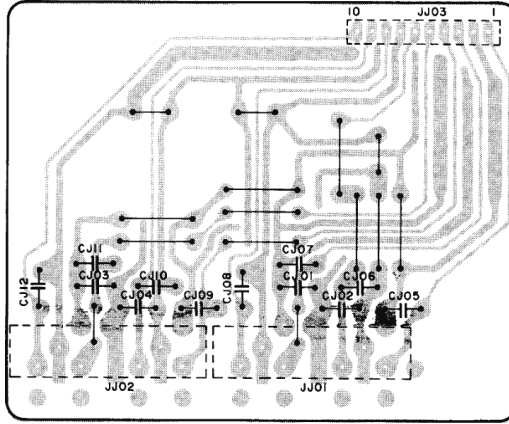
PV01



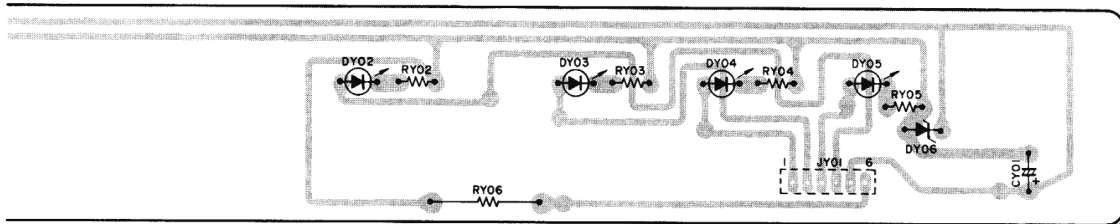
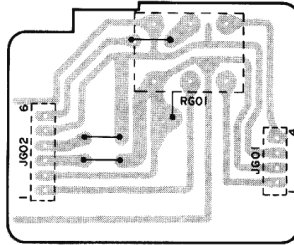
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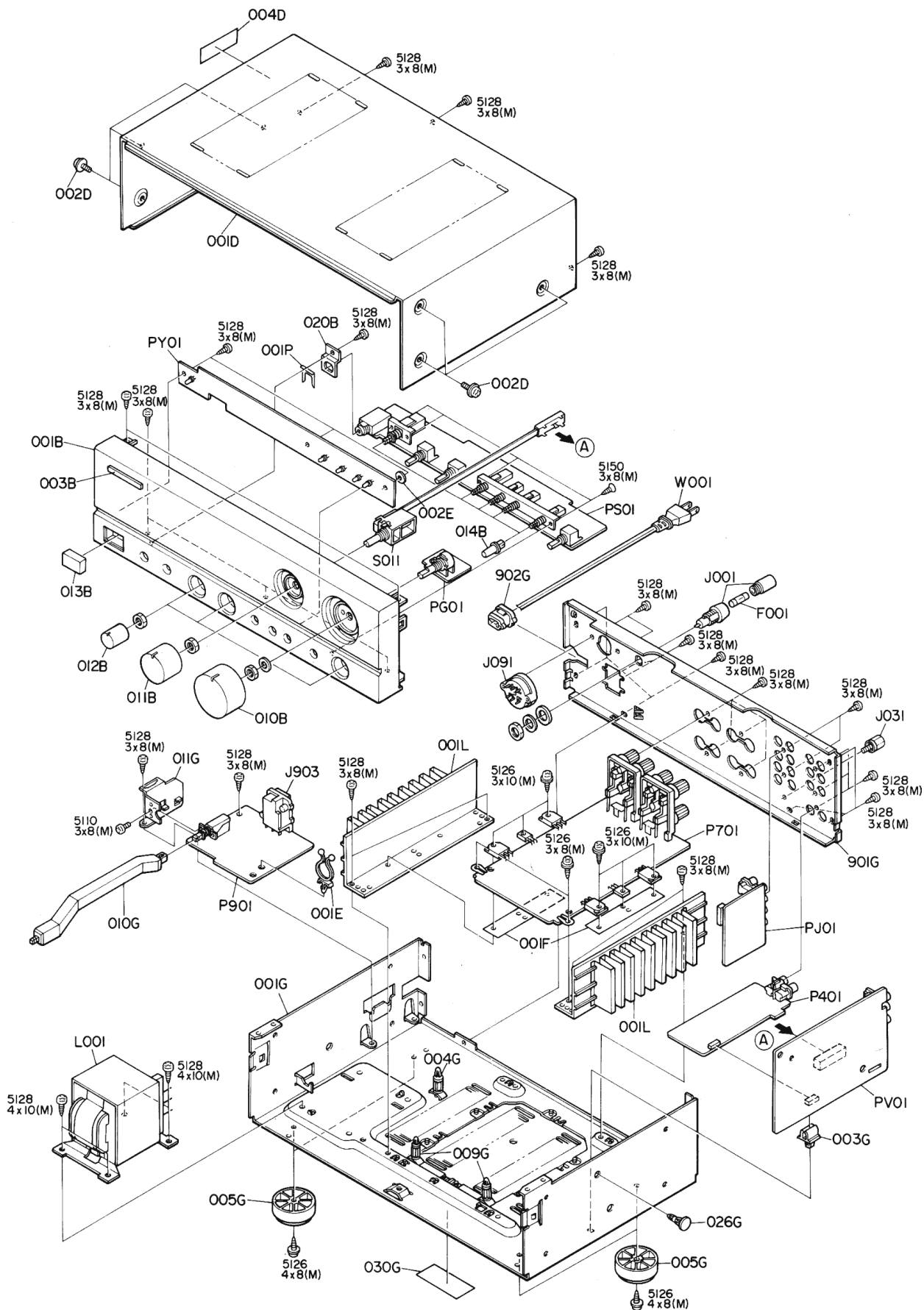
PJ01



PG01



3. EXPLODED VIEW AND PARTS LIST



| REF. DESIG. | PART NO. | DESCRIPTION |
|-------------|----------------|--|
| 001B | 4822 425 40177 | Front Panel Assembly /00B/01B/02B/05B/07B |
| | 4822 425 40178 | Front Panel Assembly /10B/12B/15B/17B |
| 003B | 4822 459 10943 | Badge |
| 010B | 4822 413 41544 | Knob, Volume |
| 011B | 4822 413 41545 | Knob, Selector |
| 012B | 4822 413 41589 | Knob, Tone/Balance /00B/01B/02B/05B/07B |
| | 4822 413 31551 | Knob, Tone/Balance /10B/12B/15B/17B |
| 013B | 4822 410 60395 | Button, Power |
| 014B | 4822 410 60343 | Button, Speaker |
| 002D | 4822 501 11008 | Screw |
| 001F | 4822 466 92914 | Sheet, DENKA |
| 005G | 4822 462 41477 | Leg |
| 010G | 4822 404 60628 | Link, Power Switch |
| 902G | 4822 532 60948 | Bushing, AC Cord /00B/01B/02B/07B/10B/12B/17B |
| 902G | 4822 532 61184 | Bushing, AC Cord /05B/15B |
| 001P | 4822 401 11351 | Clamper, Phono Jack |
| ▲ F001 | 4822 253 30191 | Fuse, T1.6A 250V /01B |
| F002 | 4822 253 30027 | Fuse, T3.15A 250V /01B |
| ▲ J001 | 4822 256 30233 | Jack, Fuse Holder /01B |
| J031 | 4822 290 40297 | Terminal, GND |
| ▲ J091 | 4822 272 10227 | Voltage Selector /01B |
| J092 | 4822 265 10092 | Jack, AC Adapter /01B |
| ▲ J903 | 4822 264 30313 | Jack, AC Outlet |
| ▲ L001 | 4822 146 21552 | Power Transformer /00B/02B/05B/07B/10B/12B/15B/17B |
| | 4822 146 21555 | Power Transformer /01B |
| S011 | 4822 273 10214 | Rotary Switch, Selector |
| 001T | 4822 736 20695 | User Manual /00B/01B/02B/05B/07B |
| | 4822 736 20715 | User Manual /10B/12B/15B/17B |

4. IDLING CURRENT ADJUSTMENT

- (1) Before switching the power ON, set the Master Volume control to the minimum position and the Balance and Tone controls to the center positions. Also set semi-fixed resistors R755 (L CH) and R756 (R CH) on PCB P701 to the center positions.
- (2) Each of the cement resistors R767 (L CH) and R768 (R CH) on the PCB P701 is provided with three test points. Connect a digital voltmeter, set for the DC voltage input, to the test points at the two extremities of the three test points of R767 or R768.
- (3) After the setup above, switch the power ON and adjust semi-fixed resistor R755 (L CH) or R756 (R CH) on PCB P701 according to the digital voltmeter reading. The target setting value is 14 mV (38.9 mA) for both the L CH and R CH.

Please refer to the table below.

| Elapsed time after power ON | Idling current setting value |
|-----------------------------|------------------------------|
| 30 sec. — 1 min. | 5 mV |
| 1 min. — 2 min. | 8 mV |
| 2 min. — 4 min. | 10.5 mV |
| More than 4 min. | 14 mV |

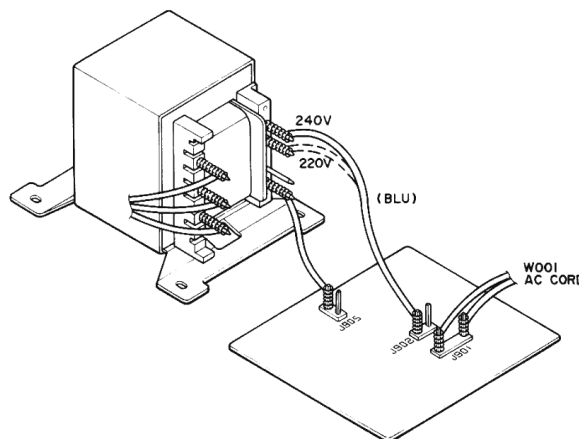
Note on Safety:

Symbol ▲ Fire or electrical shock hazard. Only original parts should be used to replace any part marked with symbol ▲. Any other component substitution (other than original type), may increase risk of fire or electrical shock hazard.

5. HOW TO CHANGE THE SUPPLY VOLTAGE (/00B/02B/05B/07B/10B/12B/15B/17B Versions)

With the /05B/07B/15B/17B Versions, the rated supply voltage of 240V can be changed to 220V. In the same way, the 220V rated supply voltage of the /00B/02B/10B/12B Versions can be changed to 240V.

Refer to the following diagram for the voltage change procedure.



6. TEST EQUIPMENT REQUIRED FOR SERVICING

This table lists the test equipment required for servicing

| Item | Use |
|--------------------------|---|
| Distortion Analyzer | Distortion measurements |
| Audio Oscillator | Sinewave and squarewave signal source |
| ACVTVM | Voltage measurements (AC) |
| Oscilloscope | Waveform analysis and trouble shooting and ASO aignment |
| Circuit Tester | Trouble shooting |
| DCVTVM | Voltage measurements (DC) |
| AC Wattmeter | Monitors primary power to amplifier |
| Line Voltmeter | Monitors potential of primary power to amplifier |
| Variable Autotransformer | Adjust level of primery power to amplifier |
| Shorting Plug | Shorts amplifier input to eliminate noise pickup |

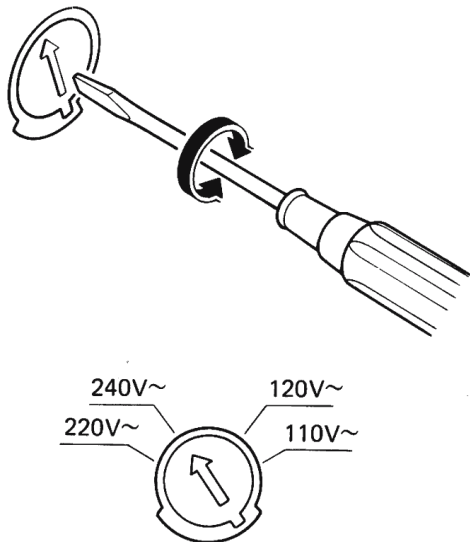
7. VOLTAGE CONVERSION

● EUROPEAN MODEL ONLY

To convert the unit to a different power source voltage, change the position as illustrated in the drawing below.

VOLTAGE SELECTOR

CAUTION
DISCONNECT POWER SUPPLY CORD FROM AC
OUTLET BEFORE CONVERTING VOLTAGE.



8. ELECTRICAL PARTS LIST

ASSIGNMENT OF COMMON PARTS CODES.

RESISTOR

- R*****: (1) GD05 --- 140, Carbon film fixed resistor, $\pm 5\%$, 1/4W
R***: (2) GD05 --- 160, Carbon film fixed resistor, $\pm 5\%$, 1/6W

① — Resistance value

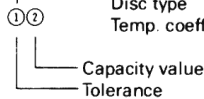
Examples

- ① Resistance value
 0.1 Ω ...001 10 Ω ...100 1k Ω ...102 100k Ω ...104
 0.5 Ω ...005 18 Ω ...180 2.7k Ω ...272 680k Ω ...684
 1 Ω ...010 100 Ω ...101 10k Ω ...103 1M Ω ...105
 6.8 Ω ...068 390 Ω ...391 22k Ω ...223 4.7M Ω ...475

(Note) Please distinguish 1/4W from 1/6W by the shape of parts used actually.

C***: CERAMIC CAP.

- (1) DD1 --- 370, Ceramic condenser
 Disc type
 Temp. coeff. P350 ~ N1000, 50V



Examples

- ① Tolerance (Capacity deviation)
 $\pm 0.25\text{pF}$...0
 $\pm 0.5\text{pF}$...1
 $\pm 5\%$...5

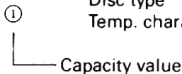
* Tolerance of COMMON PARTS handled here are as follows:

- 0.5pF ~ 5pF... $\pm 0.25\text{pF}$
 6pF ~ 10pF... $\pm 0.5\text{pF}$
 12pF ~ 560pF... $\pm 5\%$

- ② Capacity value
 0.5pF...005 3pF...030 100pF...101
 1pF...010 10pF...100 220pF...221
 1.5pF...015 47pF...470 560pF...561

C***: CERAMIC CAP.

- (1) DK16 --- 300, High dielectric constant ceramic condenser
 Disc type
 Temp. chara. 2B4, 50V

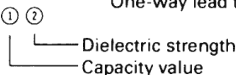


Example

- ② Capacity value
 100pF...101 1000pF...102 10000pF...103
 470pF...471 2200pF...222

C***: ELECTROLY CAP. (---), FILM CAP. (---)

- (1) EA --- 10, Electrolytic condenser
 One-way lead type, Tolerance $\pm 20\%$

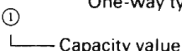


Examples

- ① Capacity value
 0.1 μF ...104 4.7 μF ...475 100 μF ...107
 0.33 μF ...334 10 μF ...106 330 μF ...337
 1 μF ...105 22 μF ...226 1100 μF ...108
 2200 μF ...228

- ② Working voltage
 6.3V...006 25V...025
 10V...010 35V...035
 16V...016 50V...050

- (2) DF15 --- 350, Plastic film condenser
 One-way type, Mylar $\pm 5\%$ 50V



Examples

- ① Capacity value
 0.001 μF (1000pF)...102 0.1 μF ...104
 0.0018 μF ...182 0.56 μF ...564
 0.01 μF ...103 1 μF ...105
 0.015 μF ...153

| REF. DESIG. | PART NO. | DESCRIPTION |
|-------------------|----------------|---|
| | | PG01-MASTER VOLUME CIRCUIT BOARD |
| RG01 | 4822 101 30653 | Variable Resistor 50K Ω |
| | | PJ01-TAPE IN/OUT CIRCUIT BOARD |
| CJ01 } CJ04 | 4822 122 32486 | Ceramic Cap. 0.01 μF +80% -20% |
| JJ01 | 4822 266 30284 | Terminal, 4P RCA |
| JJ02 | 4822 266 30284 | Terminal, 4P RCA |
| | | PS01-TAPE/TONE/SPK. CIRCUIT BOARD |
| CE01 | 4822 121 43133 | Film Cap. 0.039 μF $\pm 5\%$ /00B/01B/02B/05B/07B |
| CE02 | 4822 121 43133 | Film Cap. 0.039 μF $\pm 5\%$ /00B/01B/02B/05B/07B |
| CE03 | 4822 121 51389 | Film Cap. 5600pF $\pm 5\%$ /00B/01B/02B/05B/07B |
| CE04 | 4822 121 51389 | Film Cap. 5600pF $\pm 5\%$ /00B/01B/02B/05B/07B |
| CE09 | 4822 124 90352 | Elect Cap. 10 μF 16V /00B/01B/02B/05B/07B |
| CE10 | 4822 124 90352 | Elect Cap. 10 μF 16V /00B/01B/02B/05B/07B |
| CW01 | 4822 122 32486 | Ceramic 0.01 μF +80% -20% /02B/12B |
| CW02 | 4822 122 32486 | Ceramic 0.01 μF +80% -20% /02B/12B |
| RE13 | 4822 100 30139 | Variable Resistor 50K Ω (C) /00B/01B/02B/05B/07B |
| RE14 | 4822 100 30139 | Variable Resistor 50K Ω (C) /00B/01B/02B/05B/07B |
| RG51 | 4822 100 30138 | Variable Resistor 100K Ω (MN) |
| RW01 | 4822 116 60455 | Metal Resistor 270 Ω $\pm 5\%$ 2W |
| DN51 | 4822 130 33305 | Diode 1SS176, etc. |
| JW01 | 4822 267 31227 | Jack, Headphone /00B/01B/02B/05B/07B |
| | 4822 267 31229 | Jack, Headphone /10B/12B/15B/17B |
| LN51 | 4822 280 20196 | Relay |
| SS01 | 4822 276 12197 | Push Switch |
| SW01 | 4822 276 12218 | Push Switch /00B/01B/02B/05B/07B |
| | | PV01-INPUT SELECTOR CIRCUIT BOARD |
| CV01 } CV06 | 4822 122 32486 | Ceramic Cap. 0.01 μF +80% -20% |
| DV01 | 4822 130 33305 | Diode 1SS176, etc. |
| JV01 | 4822 266 30282 | Terminal, 2P RCA |
| JV02 | 4822 266 30284 | Terminal, 4P RCA |
| LV01 | 4822 280 20195 | Relay, SZ-2104 |
| SV01 | 4822 277 21412 | Slide Switch, Selector |

| REF. DESIG. | PART NO. | DESCRIPTION |
|---------------------------|----------------------------------|--|
| | | PY01-TAPE INDICATOR CIRCUIT BOARD |
| CY01 | 4822 124 21737 | Elect Cap. 100 μ F 6.3V |
| RY06 | 4822 111 50474 | Resistor 330 Ω \pm 5% |
| DY01 } DY05 DY06 | 4822 130 80326 4822 130 80317 | L.E.D. LT3D8B (RED) Zener Diode RD5.1JB2/MTZJ5.1B |
| | | P401-PHONO AMP. CIRCUIT BOARD |
| | | P401-CAPACITORS |
| C401 | 4822 122 32486 | Ceramic 0.01 μ F +80% -20% |
| C402 | 4822 122 32486 | Ceramic 0.01 μ F +80% -20% |
| C403 | 4822 126 11069 | Ceramic 150pF \pm 10% /00B/01B/05B/07B |
| C403 | 4822 121 51037 | Film 150pF \pm 5% /10B/15B/17B |
| C404 | 4822 126 11069 | Ceramic 150pF \pm 10% /00B/01B/05B/07B |
| C404 | 4822 121 51037 | Film 150pF \pm 5% /10B/15B/17B |
| C405 | 4822 121 42761 | Film 2700pF \pm 5% |
| C406 | 4822 121 42761 | Film 2700pF \pm 5% |
| C407 | 4822 124 22278 | Elect 51 μ F 10V |
| C408 | 4822 124 22278 | Elect 51 μ F 10V |
| C409 | 4822 124 22279 | Elect 510 μ F 10V |
| C410 | 4822 124 22279 | Elect 510 μ F 10V |
| C411 | 4822 121 42764 | Film 0.047 μ F \pm 5% |
| C412 | 4822 121 42764 | Film 0.047 μ F \pm 5% |
| C413 | 4822 121 42755 | Film 0.012 μ F \pm 5% |
| C414 | 4822 121 42755 | Film 0.012 μ F \pm 5% |
| C415 | 4822 121 42758 | Film 1800pF \pm 5% |
| C416 | 4822 121 42758 | Film 1800pF \pm 5% |
| C417 | 4822 124 90358 | Elect 22 μ F 16V |
| C418 | 4822 124 90358 | Elect 22 μ F 16V |
| C419 | 4822 124 90365 | Elect 220 μ F 25V |
| C420 | 4822 124 90365 | Elect 220 μ F 25V |
| C421 | 4822 121 42763 | Film 3900pF \pm 5% |
| C422 | 4822 121 42763 | Film 3900pF \pm 5% |
| C430 | 4822 124 90365 | Elect 220 μ F 25V |
| | | P401-RESISTORS |
| R407 } R410 | 4822 116 53691 | 4.64K Ω \pm 1% 1/6W |
| R431 | 4822 116 52892 | 100 Ω \pm 5% 1/4W |
| R432 | 4822 116 52892 | 100 Ω \pm 5% 1/4W |
| R434 | 5322 116 53479 | 22 Ω \pm 5% 1/4W |
| R441 | 4822 116 53691 | 4.64K Ω \pm 1% 1/6W |
| R442 | 4822 116 53691 | 4.64K Ω \pm 1% 1/6W |
| | | P401-SEMICONDUCTORS |
| D401 | 4822 130 80838 | Zener RD18JB2/MTZJ18C |
| Q401 } Q404 Q405 | 4822 130 42839 4822 209 73064 | F.E.T. 2SK369(BL) IC NJM2068DD |
| | | P401-MISCELLANEOUS |
| J401 | 4822 265 20355 | Terminal, 2P RCA |
| L401 | 4822 156 11019 | Choke Coil, 320 μ H [/02B/12B] |
| L402 | 4822 156 11019 | Choke Coil, 320 μ H [/02B/12B] |

| REF. DESIG. | PART NO. | DESCRIPTION |
|-------------|----------------|--|
| | | P701-POWER AMP. CIRCUIT BOARD |
| | | P701-CAPACITORS |
| CN01 | 4822 124 22274 | Elect 4.7 μ F 50V |
| CN02 | 4822 124 41543 | Elect 1 μ F 50V |
| CN04 | 4822 124 22275 | Elect 47 μ F 10V |
| CN05 | 4822 124 23417 | Elect 33 μ F 10V |
| CW51 | 4822 122 32486 | Ceramic 0.01 μ F +80% -20% [/02B/12B] |
| CW52 | 4822 122 32486 | Ceramic 0.01 μ F +80% -20% [/02B/12B] |
| CW53 | 4822 122 32486 | Ceramic 0.01 μ F +80% -20% [/02B] |
| CW54 | 4822 122 32486 | Ceramic 0.01 μ F +80% -20% [/02B] |
| C701 | 4822 124 90362 | Elect 22 μ F 50V |
| C702 | 4822 124 90362 | Elect 22 μ F 50V |
| C703 | 4822 126 11071 | Ceramic 330pF \pm 10% |
| C704 | 4822 126 11071 | Ceramic 330pF \pm 10% |
| C705 | 4822 124 90354 | Elect 100 μ F 16V |
| C706 | 4822 124 90354 | Elect 100 μ F 16V |
| C707 | 4822 121 51037 | Film 150pF \pm 5% |
| C708 | 4822 121 51037 | Film 150pF \pm 5% |
| C709 | 4822 126 11068 | Ceramic 39pF \pm 5% /00B/01B/05B/07B |
| | 4822 126 10364 | Ceramic 100pF \pm 5% /02B/12B |
| | 4822 121 43135 | Film 30pF \pm 10% /10B/15B/17B |
| C710 | 4822 126 11068 | Ceramic 39pF \pm 5% /00B/01B/05B/07B |
| | 4822 126 10364 | Ceramic 100pF \pm 5% /02B/12B |
| | 4822 121 43135 | Film 30pF \pm 10% /10B/15B/17B |
| C711 | 4822 121 43127 | Film 5pF \pm 10% |
| C712 | 4822 121 43127 | Film 5pF \pm 10% |
| C713 | 4822 121 43128 | Film 10pF \pm 10% |
| C714 | 4822 121 43128 | Film 10pF \pm 10% |
| C715 | 4822 124 90362 | Elect 22 μ F 50V /00B/01B/02B/05B/07B |
| C716 | 4822 124 90362 | Elect 22 μ F 50V /00B/01B/02B/05B/07B |
| C717 | 4822 124 90366 | Elect 220 μ F 50V |
| C718 | 4822 124 90366 | Elect 220 μ F 50V |
| C719 | 4822 124 90365 | Elect 220 μ F 25V |
| C720 | 4822 124 90363 | Elect 220 μ F 10V |
| C751 | 4822 124 90354 | Elect 100 μ F 16V |
| C752 | 4822 124 90354 | Elect 100 μ F 16V |
| C753 | 4822 121 43126 | Film 120pF \pm 5% |
| C754 | 4822 121 43126 | Film 120pF \pm 5% |
| C755 | 4822 121 43126 | Film 120pF \pm 5% |
| C756 | 4822 121 43126 | Film 120pF \pm 5% |
| ▲ C801 | 4822 124 42042 | Elect 8200 μ F 45V /00B/01B/02B/05B/07B |
| ▲ C801 | 4822 124 42043 | Elect 10000 μ F 45V /10B/12B/15B/17B |
| ▲ C802 | 4822 124 42042 | Elect 8200 μ F 45V /00B/01B/02B/05B/07B |
| ▲ C802 | 4822 124 42043 | Elect 10000 μ F 45V /10B/12B/15B/17B |
| C804 | 4822 122 32486 | Ceramic 0.01 μ F +80% -20% |
| C805 | 4822 124 41535 | Elect 100 μ F 25V |
| C806 | 4822 124 41536 | Elect 100 μ F 35V |
| C807 | 4822 124 90355 | Elect 100 μ F 50V |
| C808 | 4822 124 90355 | Elect 100 μ F 50V |
| C809 | 4822 122 32486 | Ceramic 0.01 μ F +80% -20% |

| REF. DESIG. | PART NO. | DESCRIPTION |
|----------------------------|----------------|--|
| P701-RESISTORS | | |
| RN01 | 4822 111 91257 | 1K Ω \pm 5% 1/6W |
| RN02 | 4822 111 91257 | 1K Ω \pm 5% 1/6W |
| RN51 | 4822 116 60455 | 270 Ω \pm 5% 2W, Metal |
| RN52 | 4822 116 60455 | 270 Ω \pm 5% 2W, Metal |
| ▲ R707 | 4822 113 90231 | 560 Ω \pm 2% 1/4W, Fuse [/02B/05B] |
| ▲ R707 | 4822 116 80828 | 270 Ω \pm 2% 1/4W [/12B/15B] |
| ▲ R708 | 4822 113 90231 | 560 Ω \pm 2% 1/4W, Fuse [/02B/05B] |
| ▲ R708 | 4822 116 80828 | 270 Ω \pm 2% 1/4W [/12B/15B] |
| R713 | 4822 050 23303 | 33K Ω \pm 5% 1/4W |
| R714 | 4822 050 23303 | 33K Ω \pm 5% 1/4W |
| R732 | 4822 116 60346 | 2.2K Ω \pm 5% 1W |
| ▲ R733 | 4822 116 60313 | 10 Ω \pm 5% 1/4W, Fusible |
| ▲ R734 | 4822 116 60313 | 10 Ω \pm 5% 1/4W, Fusible |
| R755 | 4822 100 20681 | 2.2K Ω , Trimming |
| R756 | 4822 100 20681 | 2.2K Ω , Trimming |
| R757 | 4822 111 91285 | 100 Ω \pm 5% 1/6W |
| R758 | 4822 111 91285 | 100 Ω \pm 5% 1/6W |
| R759 | 4822 111 91285 | 100 Ω \pm 5% 1/6W |
| R760 | 4822 111 91285 | 100 Ω \pm 5% 1/6W |
| R761 | 4822 111 91257 | 1K Ω \pm 5% 1/6W |
| R762 | 4822 111 91257 | 1K Ω \pm 5% 1/6W |
| R763 | 4822 111 50474 | 330 Ω \pm 5% 1W |
| R764 | 4822 111 50474 | 330 Ω \pm 5% 1W |
| ▲ R765 | 4822 116 52348 | 2.2 Ω \pm 5% 1/4W |
| ▲ R766 | 4822 116 52348 | 2.2 Ω \pm 5% 1/4W |
| R767 | 4822 116 82049 | 0.18 Ω x2 \pm 10% 3W |
| R768 | 4822 116 82049 | 0.18 Ω x2 \pm 10% 3W |
| R769 | 4822 116 52849 | 220 Ω \pm 5% 1/4W |
| R770 | 4822 116 52849 | 220 Ω \pm 5% 1/4W |
| R771 | 4822 111 90726 | 10 Ω \pm 5% 2W |
| R772 | 4822 111 90726 | 10 Ω \pm 5% 2W |
| ▲ R773 | 4822 116 52348 | 2.2 Ω \pm 5% 1/4W |
| ▲ R774 | 4822 116 52348 | 2.2 Ω \pm 5% 1/4W |
| ▲ R801 | 4822 116 60306 | 1 Ω \pm 5% 1/4W, Fusible |
| ▲ R802 | 4822 111 90731 | 47 Ω \pm 2% 1/4W, Fuse |
| ▲ R803 | 4822 116 60306 | 1 Ω \pm 5% 1/4W, Fusible |
| ▲ R804 | 4822 111 90731 | 47 Ω \pm 2% 1/4W, Fuse |
| R805 | 4822 111 91423 | 1.2K Ω \pm 5% 1/4W |
| R806 | 4822 111 91423 | 1.2K Ω \pm 5% 1/4W |
| ▲ R807 | 4822 113 90119 | 22 Ω \pm 2% 1/4W, Fuse |
| R810 | 4822 116 60338 | 150 Ω \pm 5% 2W |
| P701-SEMICONDUCTORS | | |
| DN01 | 4822 130 80837 | Diode HSS81 |
| DN02 | 4822 130 80837 | Diode HSS81 |
| DN03 | 4822 130 33305 | Diode 1SS176, etc. |
| DN04 | 4822 130 33305 | Diode 1SS176, etc. |
| D701 | 4822 130 33305 | Diode 1SS176, etc. |
| D704 | | |
| D705 | | |
| D706 | 4822 130 80273 | Zener RD8.2JB2/MTZJ8.2C |
| | 4822 130 80322 | Zener RD15JB1/MTZJ15B |
| ▲ D801 | 4822 130 31007 | Diode S4VB-20 |
| D802 | 4822 130 33305 | Diode 1SS176, etc. |
| D803 | 4822 130 33305 | Diode 1SS176, etc. |
| D804 | 4822 130 80116 | Zener RD24JB2/MTZJ24D |
| D805 | 4822 130 80838 | Zener RD18JB2/MTZJ18C |
| ▲ D806 | 4822 130 80839 | Diode S5688G |
| QN01 | 4822 130 43233 | Transistor 2SC2240(GR, BL) |
| QN02 | 4822 130 43233 | Transistor 2SC2240(GR, BL) |
| QN03 | 4822 130 42951 | Transistor 2SA970(GR, BL) |
| QN04 | 4822 290 83312 | IC TA7317P |

| REF. DESIG. | PART NO. | DESCRIPTION |
|--|----------------|--|
| Q701 | 4822 130 42951 | Transistor 2SA970(GR, BL) |
| Q702 | 4822 130 42951 | Transistor 2SA970(GR, BL) |
| Q703 | 4822 130 43233 | Transistor 2SC2240(GR, BL) |
| Q704 | 4822 130 43233 | Transistor 2SC2240(GR, BL) |
| Q705 | 4822 209 83732 | IC AN7062P |
| Q751 | 4822 130 60526 | Transistor 2SD1508 |
| Q752 | 4822 130 60526 | Transistor 2SD1508 |
| Q753 | 4822 130 43233 | Transistor 2SC2240(GR, BL) |
| Q754 | 4822 130 43233 | Transistor 2SC2240(GR, BL) |
| Q755 | 4822 130 42951 | Transistor 2SA970(GR, BL) |
| Q756 | 4822 130 42951 | Transistor 2SA970(GR, BL) |
| Q757 | 4822 130 62335 | Transistor 2SD2033(E) |
| Q758 | 4822 130 62335 | Transistor 2SD2033(E) |
| Q759 | 4822 130 62334 | Transistor 2SB1353(E) |
| Q760 | 4822 130 62334 | Transistor 2SB1353(E) |
| ▲ Q761 | 4822 130 61319 | Transistor 2SC3181(R, O) /00B/01B/02B/05B/07B |
| | 4822 130 61747 | Transistor 2SC3182N(R, O) /10B/12B/15B/17B |
| ▲ Q762 | 4822 130 61319 | Transistor 2SC3181(R, O) /00B/01B/02B/05B/07B |
| | 4822 130 61747 | Transistor 2SC3182N(R, O) /10B/12B/15B/17B |
| ▲ Q763 | 4822 130 43018 | Transistor 2SA1264(R, O) /00B/01B/02B/05B/07B |
| | 4822 130 61746 | Transistor 2SA1265N(R, O) /10B/12B/15B/17B |
| ▲ Q764 | 4822 130 43018 | Transistor 2SA1264(R, O) /00B/01B/02B/05B/07B |
| | 4822 130 61746 | Transistor 2SA1265N(R, O) /10B/12B/15B/17B |
| Q801 | 4822 130 43311 | Transistor 2SC3298(O, Y) |
| Q802 | 4822 130 43023 | Transistor 2SA1306(O, Y) |
| P701-MISCELLANEOUS | | |
| JW51 | 4822 290 60837 | Terminal, Speaker [/00B/01B/05B/07B/10B/11B/15B/17B] |
| JW51 | 4822 290 60841 | Terminal, Speaker /02B/12B |
| JW52 | 4822 290 60836 | Terminal, Speaker [/00B/01B/05B/07B/10B/11B/15B/17B] |
| JW52 | 4822 290 60839 | Terminal, Speaker /02B/12B |
| LN01 | 4822 280 20197 | Relay, DH2SU |
| LN02 | 4822 280 20197 | Relay, DH2SU /00B/01B/02B/05B/07B |
| L751 | 4822 157 51739 | Coil, Speaker |
| L752 | 4822 157 51739 | Coil, Speaker |
| P901-POWER SWITCH CIRCUIT BOARD | | |
| ▲ F902 | 4822 253 30191 | Fuse 5A 250V /00B/02B/05B/07B |
| ▲ G901 | 4822 121 43732 | Film Cap. 0.01 μ F \pm 20% /00B/01B/02B/07B/10B/12B/17B |
| ▲ G902 | 4822 122 33276 | Ceramic Cap. 0.01 μ F \pm 20% /05B/15B |
| ▲ J903 | 4822 264 30313 | Jack, AC Outlet /01B |
| ▲ S901 | 4822 276 11654 | Push Switch, Power |

NOTE ON SAFETY:

Symbol ▲ Fire or electrical shock hazard. Only original parts should be used to replace any part marked with symbol ▲. Any other component substitution (other than original type), may increase risk of fire or electrical shock hazard.