

Quality Uncompromised

ROTEL®

Technical Manual

RA-820B

STEREO INTEGRATED AMPLIFIER

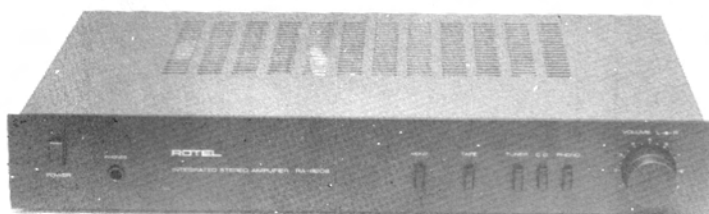


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THE ROTEL CO., LTD.

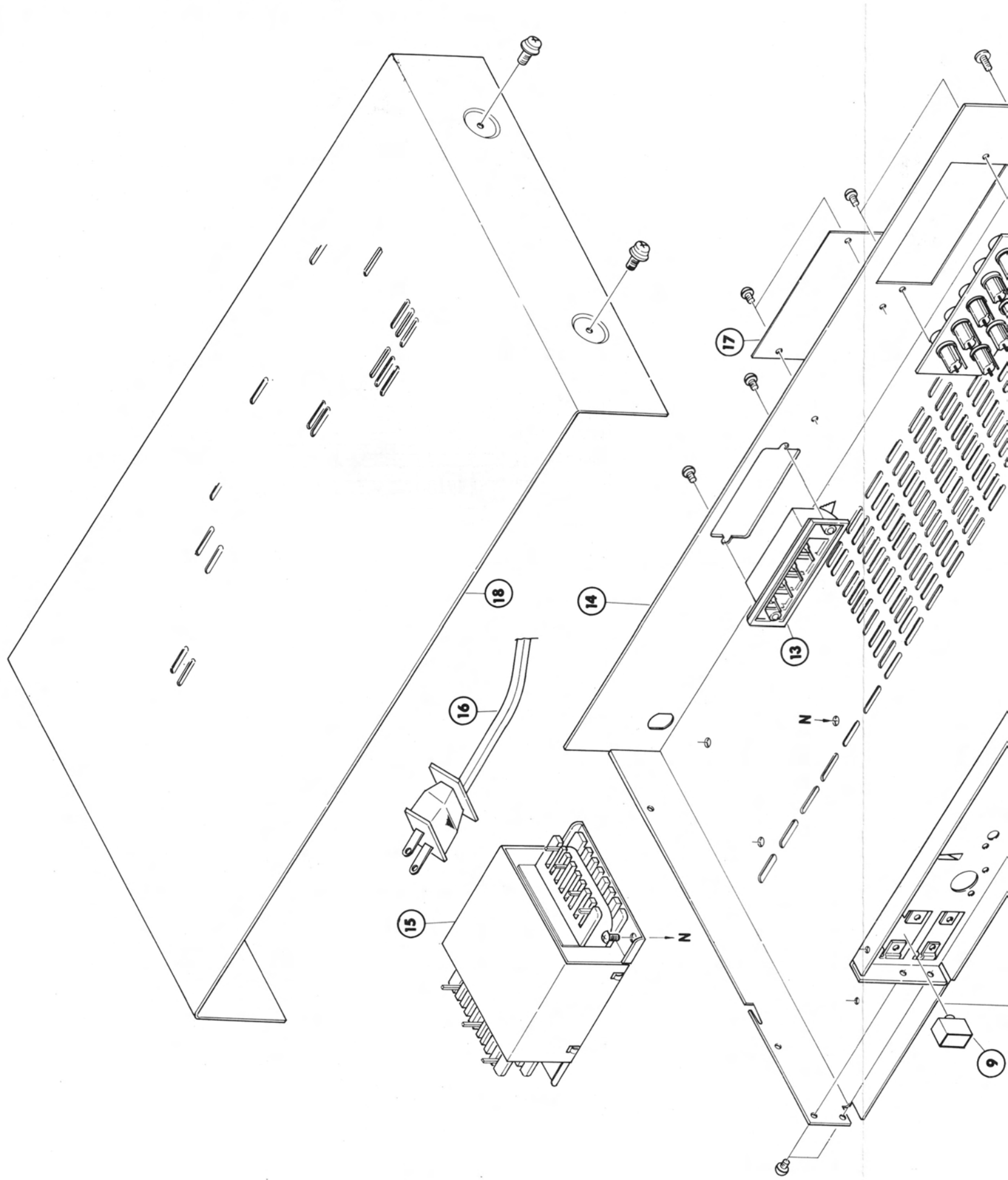
ROTEL ELECTRONICS CO., LTD.

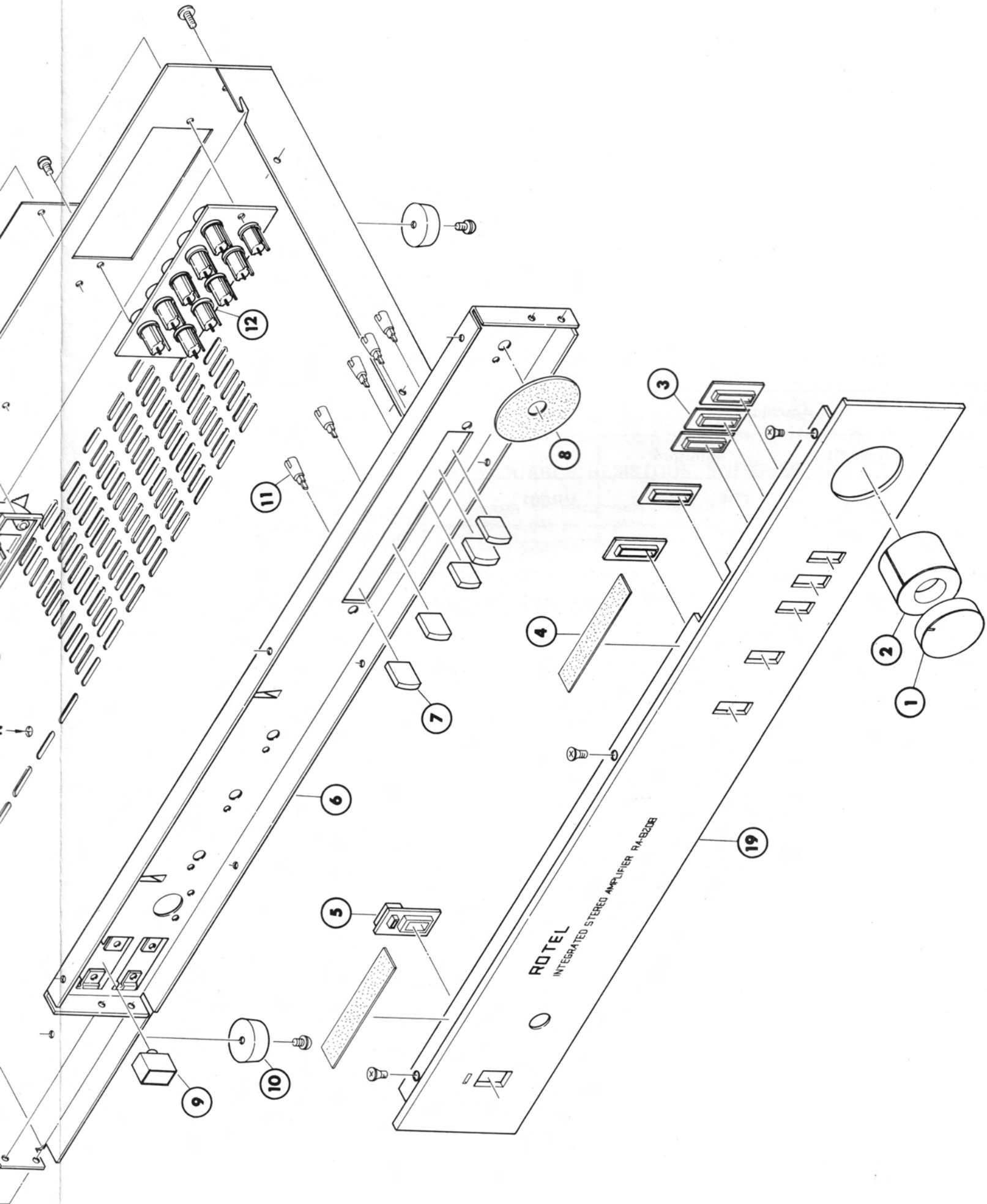
ROTEL HI FI LIMITED.

1-36-8. OHOKAYAMA, MEGURO-KU, TOKYO 152, JAPAN
ROTEL BUILDING, 2F, 35, FU HSING N. ROAD, TAIPEI,
TAIWAN, REPUBLIC OF CHINA

2-4 ERICA ROAD, STACEY BUSHES, MILTON KEYNES,
BUCKINGHAMSHIRE, ENGLAND

Disassembly Diagram





ROTEL
 INTEGRATED STEREO AMPLIFIER RA-820R

| Key No. | Computer No. | Parts No. | Description |
|---------|--------------|----------------|--|
| 1 | KB10000821 | 012C-3872A-T#2 | Knob, 30 ϕ VOLUME (L) |
| 2 | KB10000833 | 012C-3873A-T#2 | Knob, 30 ϕ VOLUME (R) |
| 3 | BU00000396 | 019C-3546-T#2 | Push Ring (TUNER/C D/PHONO/ MONO/TAPE) |
| 4 | FE00000080 | 0194TR-1087 | Felt |
| 5 | BU00000384 | 0194TR-1546#2 | Push Ring (POWER) |
| 6 | AF20000106 | 0132TWB-2C | Front Chassis |
| 7 | KB20000519 | 012C-3372#3 | Push Button (TUNER/CD/PHONO/ MONO/TAPE) |
| 8 | FE00000079 | 0194TR-1083B#3 | Felt |
| 9 | KB20000507 | 012C-3982#2 | Push Button (POWER) |
| 10 | FT00000035 | 0194TR-1257A | Plastic Foot |
| 11 | OM00000471 | 0194TR-1216 | Push Button Connector |
| 12 | JP10000047 | 0624TR-1138B#2 | Terminal, 10P, RCA Type |
| 13 | TP10000088 | 0623TR-1732#1 | Terminal, Push 4P, SPEAKER |
| 14 | AM00000806 | 015TRP-323 | Chassis Body (TRP-323) |
| | AM00000818 | 015TRP-324 | Chassis Body (TRP-324) |
| | AM00000820 | 015TRP-325 | Chassis Body (TRP-325) |
| 15 | PT00000060 | 022T-170AF | Transformer (CSA) |
| | PT00000011 | 022T-170G | Transformer |
| 16 | CD00000036 | 0724TR-670#1 | Line Cord (UL) |
| | CD00000097 | 0724TR-670#2 | Line Cord (CSA) |
| | CD00000048 | 0724TR-815 | Line Cord (for Europe) |
| | CD00000085 | 072C-2504 | Line Cord (for BEAB) |
| | CD00000115 | 072C-3763 | Line Cord (for Austria) |
| 17 | NP00000441 | 015TNP-234 | Name Plate (for BEAB) |
| 18 | AU00000270 | 0142TWE-5#13 | Upper Cover |
| 19 | AA20000270 | 0102TVA-1#1 | Front Panel |

Repair Parts List

| Schematic Location | Computer No. | Part No. | Description |
|--|--------------|-----------------|---|
| TRANSISTORS, DIODES AND IC'S | | | |
| IC401-404 | IC00000731 | 031NE5534N | Phono Amp. |
| Q601, 602 | TR10000023 | 0332SA1016-E, F | Differential Amp. |
| Q603, 604 | TR10000023 | 0332SA1016-E, F | Constant Current |
| Q605, 606 | TR10000023 | 0332SA1016-E, F | Differential Amp. |
| Q607, 608 | TR10000023 | 0332SA1016-E, F | Main Amp. Bias Compensator |
| Q609, 610 | TR10000047 | 0332SB631-E, D | Main Amp. Bias Compensator |
| Q611, Q612 | TR30000169 | 0332SC1941-L, K | Pre-Driver |
| Q613, 614 | TR30000110 | 0332SD600K-E, D | Idling Driver |
| Q615, 616 | TR30000110 | 0332SD600K-E, D | Driver |
| Q617, 618 | TR10000047 | 0332SB631-E, D | Driver |
| Q619, 620, 623, 624 | TR40000021 | 0332SD896-E, D | Power Amp. |
| Q621, 622, 625, 626 | TR40000014 | 0332SB776-E, D | Power Amp. |
| Q901 | TR30000108 | 0332SC1570-E, F | Stabilizer |
| Q902 | TR10000023 | 0332SA1016-E, F | Stabilizer |
| D601-604 | DD10000100 | 0341N4148 | Bias Compensator |
| D901, 902 | DD10000100 | 0341N4148 | Regulator Diodes |
| D903, 904 | DD10000100 | 0341N4148 | Regulator Diodes |
| D905, 906 | DD20000041 | 034WZ-18Z | Zener Regulator |
| D907 | DD10000147 | 034KBPC-802 | Rectifier |
| D001 | DD40000095 | 034LN-224RP | Power LED (Red LED) |
| VARIABLE RESISTORS, SWITCHES AND OTHERS | | | |
| VR501 | RV10000408 | 0514TR-1505 | 50KAx2 Volume Control |
| VR601, 602 | RV20000338 | 0518-1401-2K | Bias Adj. |
| S1~S7 | SH17000018 | 0614TR-1562 | Switch Push 7 Key. TUNER/C D/ PHONO/TAPE/MONO |
| S8 | SH40000120 | 061C-3600B | Power Switch |
| T001 | PT00000060 | 022T-170AF | Power Transformer (120V Only) |
| | PT00000011 | 022T-170G | Power Transformer (Multi Type) |
| F601, 602, 901, 902 | FU11000050 | 036L250V3A | Fuse 3A Speaker Protector (Long Size) |
| | FU12000082 | 036ASG3-250V3A | Fuse 3A Speaker Protector (Long Size UL) |
| | FU21000058 | 036M3. 15A | Fuse 3.15A Speaker Protector (Mini Size) |
| | FU23000062 | 036SF3.15A | Fuse 3.15A Speaker Protector (Mini Size "S" "D" Mark) |

Power Amplifier Bias Adjustment

Instruments: DC milli-voltmeter

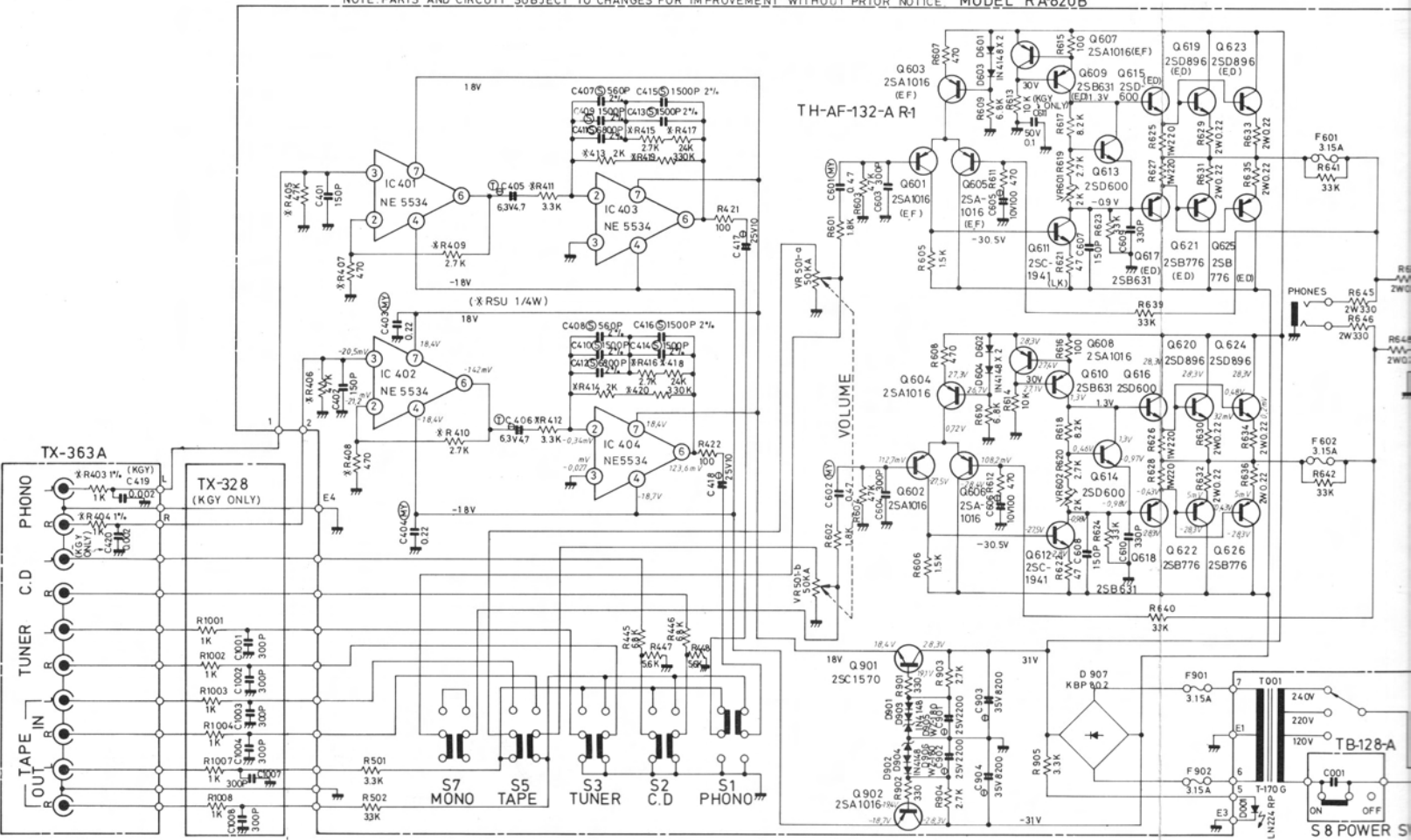
Notes: Prior to Bias Adjustment, run about 5 minutes with rated output (8 ohm) and warm up Power Transistor and Heat Sink.

Set Volume Control to Minimum.

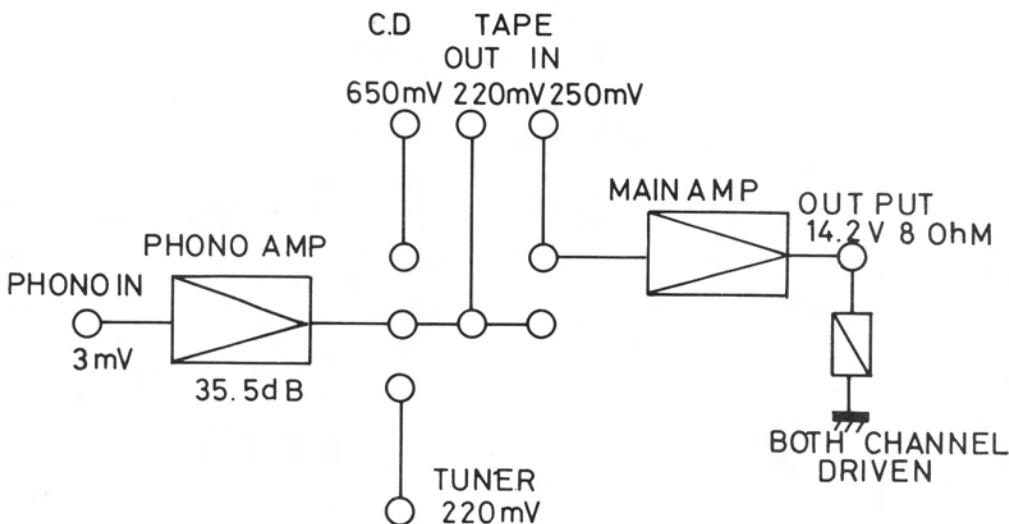
| Step | Coupling | | Adjust | Adjust for |
|------|-----------|------------|--------|--------------------------------|
| | Plus Lead | Minus Lead | | |
| 1 | TP3 | TP1 | VR601 | DC milli-voltmeter reads 4.4mV |
| 2 | TP4 | TP2 | VR602 | |

Schematic Diagram

NOTE: PARTS AND CIRCUIT SUBJECT TO CHANGES FOR IMPROVEMENT WITHOUT PRIOR NOTICE. MODEL RA-820B



Gain Diagram

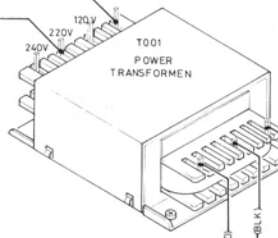
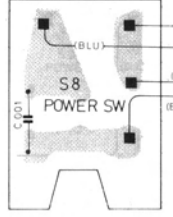


- RESISTOR**
 5% TOLERANCE UNLESS
 K - KILO OHM
 M - MEGA OHM
 * - COMPOSITION RESIS
 RSU - METAL OXIDE FILM
 NON MARK LOW NOISE
- CAPACITOR**
 (L) - LOW NOISE ELECTR
 (M) - MYLAR FILM CAPAC
 (P) - POLYSTYRENE FILM
 (E) - ELECTROLYTIC CAP
 NON MARK CERAMIC CAP
 UNLESS OTHERWISE M
 CAPACITANCE VALUES

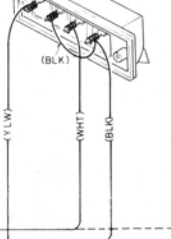
| ITEM | VALUE |
|--------------|-------------------|
| PHONO AMP | 35.5 dB |
| VOLUME | VR50 |
| MAIN AMP | IC 403, IC 404 |
| POWER SUPPLY | T-170, D907, C904 |



POWER SW C B D



SPEAKERS



(KGY ONLY)

