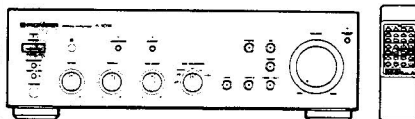


Service Manual

PIONEER®
The Art of Entertainment



The illustration shows model A-503R.

ORDER NO.
ARP2853

STEREO AMPLIFIER

A-503R

A-503R-G

A-403R

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

| Type | Model | | | Power Requirement | The voltage can be converted by the following method. |
|------|--------|----------|--------|-------------------|---|
| | A-503R | A-503R-G | A-403R | | |
| HE | ○ | — | ○ | AC220—230V | AC240V, * |
| HB | ○ | — | — | AC240V | AC220—230V, * |
| HEWZ | ○ | — | ○ | AC220—230V | AC240V, * |
| HEZ | — | ○ | — | AC220—230V | AC240V, * |

* : Alter the wiring of the Power-supply block at the primary winding of Power-transformer referring to the "Line Voltage Selection" described in Service Manual.

• For the following: A-503R/HB and HEWZ; A-503R-G/HEZ; A-403R/HEWZ, refer to page 26.

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O-FFO APR. 1994 Printed in Japan

1. EXPLODED VIEWS, PACKING AND PARTS LIST

NOTES:

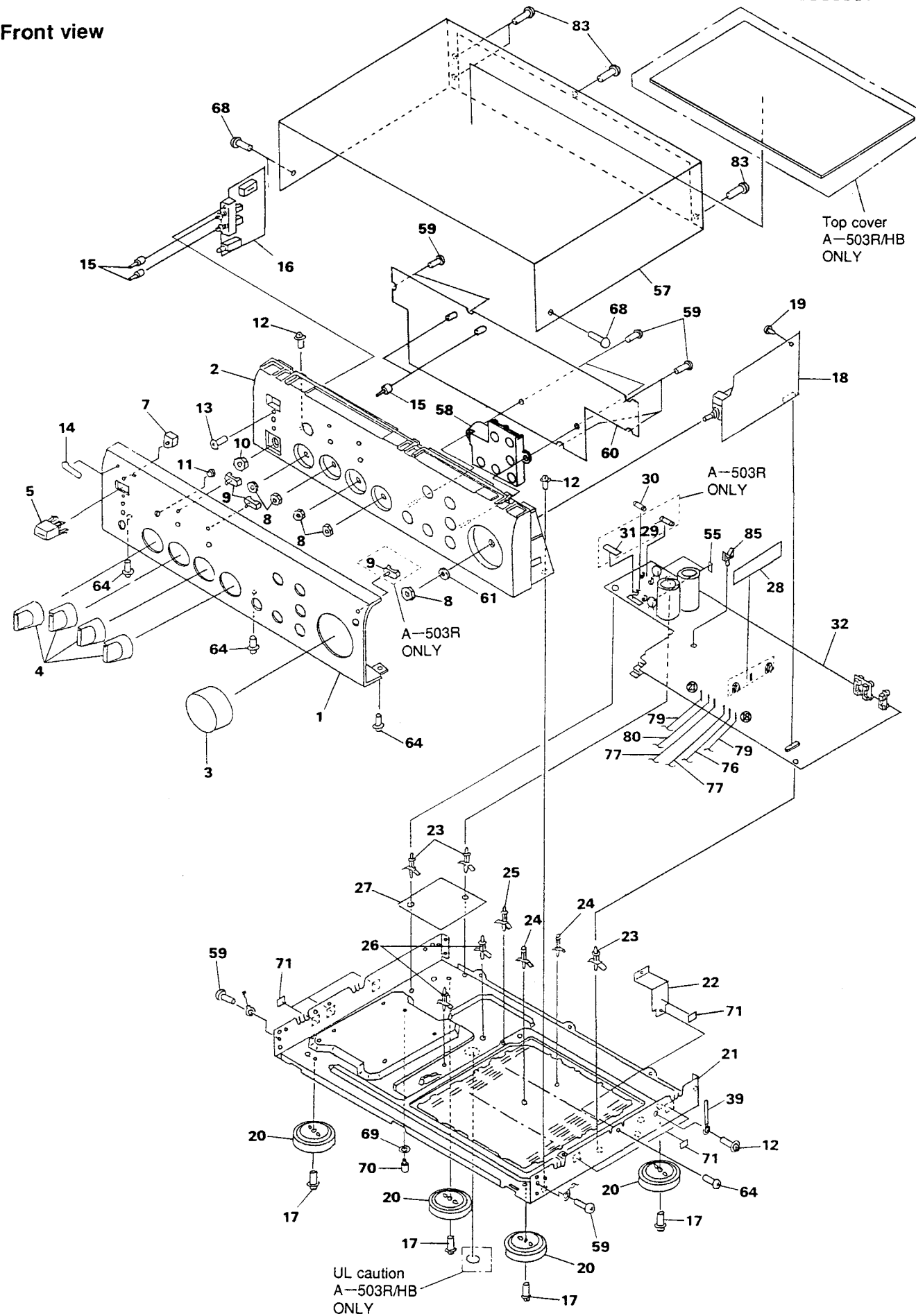
- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "●" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

1.1 FRONT VIEW AND REAR VIEW

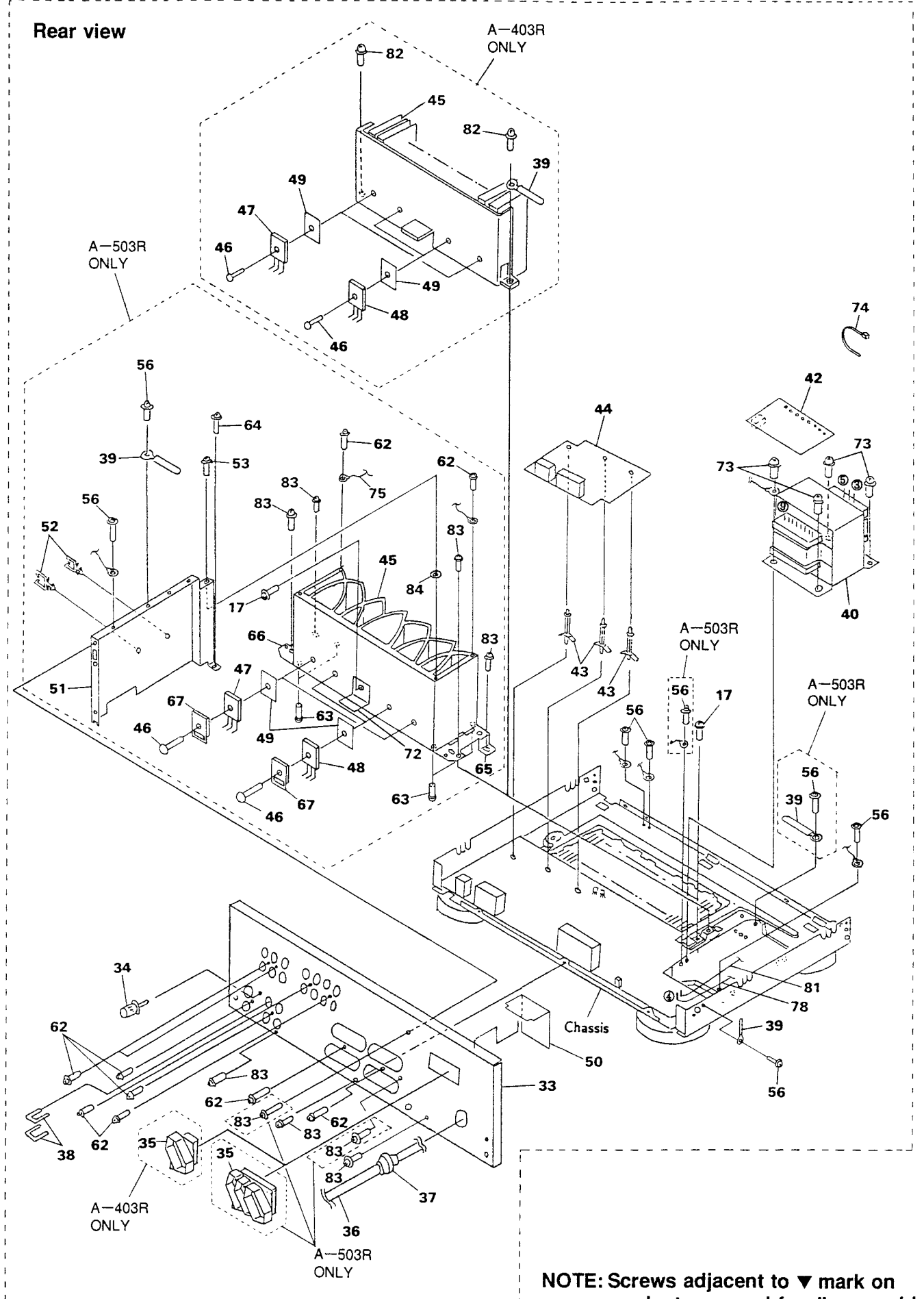
•Part List (For A-503R/HE and A-403R/HE)

| Mark | No. | Description | Parts No. | Mark | No. | Description | Parts No. |
|----------|-----|---------------------------------|--------------|----------|-----|------------------------------|-----------------|
| | 1 | Front panel (A-503R) | ANB1820 | | 42 | TRANS ass'y (A-403R) | AWZ5696 |
| | 1 | Front panel (A-403R) | ANB1821 | NSP | 43 | Cushion | AEC1286 |
| | 2 | Panel base | AMB2135 | | 44 | INPUT ass'y (A-503R) | AWZ5585 |
| | 3 | Rotary knob (PLS) | AAB1343 | | 44 | INPUT ass'y (A-403R) | AWZ5591 |
| | 4 | Rotary knob (PLS) | AAB1349 | | 45 | Heat sink (A-503R) | ANH1428 |
| | 5 | Power button (PLS) | AAD2421 | | 45 | Heat sink (A-403R) | ANH1266 |
| | 6 | ..... |  |  | 46 | Screw | ABA1082 |
| NSP | 7 | LED lens (ABS) | PNW2019 | Δ | 47 | Transistor (Q1, Q2) (A-503R) | 2SC3281 |
| | 8 | Nut | NK90FUC | Δ | 47 | Transistor (Q1, Q2) (A-403R) | 2SC3181N |
| | 9 | LED lens (PLS) | AAK2459 | Δ | 48 | Transistor (Q3, Q4) (A-503R) | 2SA1302 |
| | 10 | Nut | ABN-065 | Δ | 48 | Transistor (Q3, Q4) (A-403R) | 2SA1264N |
| | 11 | Remocon window (PLS) | AAK2457 | | 49 | Sheet | AEE1014 |
| | 12 | Screw (STEEL) | ABA1011 | NSP | 50 | Shield plate C | AEC1538 |
| | 13 | Screw | VMZ30P060FCU | | 51 | Chamber frame (A-503R) | ANG1820 |
| | 14 | Name plate (MET) | AAM1058 | NSP | 52 | Wire clip (A-503R) | AEC1388 |
| | 15 | Push button (PLS) | AAD2423 | NSP | 53 | Screw (A-503R) | ABA1088 |
| | 16 | SP switch ass'y (A-503R) | AWZ5581 | | 54 | Holder (A-503R) | ANG1922 |
| | 16 | SP switch ass'y (A-403R) | AWZ5589 | NSP | 55 | Tape (A-503R) | AEH1005 |
| | 17 | Screw | ABA-298 | | 56 | Screw (STEEL) | ABA1009 |
| | 18 | Motor VOL ass'y (A-503R) | AWZ5586 | | 57 | Bonnet case | ANE1438 |
| | 18 | Motor VOL ass'y (A-403R) | AWZ5592 | | 58 | Function button (PLS) | AAD2422 |
| | 19 | Nylon rivet | AEC1160 | | 59 | Screw | BPZ30P080FMC |
| | 20 | Insulator | PNW1912 | | 60 | CONTROL ass'y (A-503R) | AWZ5582 |
| NSP | 21 | Chassis | ANA1489 | | 60 | CONTROL ass'y (A-403R) | AWZ5590 |
| | 22 | VR PCB holder | ANG1821 | | 61 | Washer | ABE1018 |
| | 23 | PCB support | AEC1215 | | 62 | Screw (STEEL) | ABA1050 |
| NSP | 24 | PCB support | AEC1232 | | 63 | Screw (STEEL)(A-503R) | ABA1208 |
| NSP | 25 | PCB support | AEC1231 | | 64 | Screw (STEEL) | ABA1192 |
| NSP | 26 | PCB support | AEC1216 | | 65 | Heat sink holder A (A-503R) | ANG1818 |
| NSP | 27 | Barrier | AEC1241 | | 66 | Heat sink holder B (A-503R) | ANG1819 |
| | 28 | Shield ass'y | AWZ5583 | | 67 | Transistor cover LL (A-503R) | ANG1840 |
| Δ | 29 | Fuse (FU2, T500mA) (A-503R) | AEK-505 | | 68 | Screw | BBT30P060FZK |
| Δ | 30 | Fuse (FU1, T1.6A) (A-403R) | AEK-510 | | 69 | PVC ring | ABF1030 |
| Δ | 30 | Fuse (FU1, T2A) (A-503R) | AEK-511 | | 70 | Foot ass'y | AEC1531 |
| NSP | 31 | Fuse card (A-503R) | AAX1581 | NSP | 71 | Spacer | AEB1254 |
| | 32 | AF ass'y (A-503R) | AWZ5580 | NSP | 72 | PCB holder (A-503R) | ANG1062 |
| | 32 | AF ass'y (A-403R) | AWZ5588 | | 73 | Screw | ABA1200 |
| | 33 | Rear panel (A-503R) | ANC2214 | | 74 | Nylon binder | AEC-093 |
| | 33 | Rear panel (A-403R) | ANC2216 | | 75 | Ground lead (A-503R) | ADX1565 |
| | 34 | Terminal screw | AKE-031 | Δ | 76 | Cut wire (Y6) | YJ80W0-30-35/35 |
| Δ | 35 | AC socket 3-P (A-503R) | AKP-502 | Δ | 77 | Cut wire (Y7, Y11) | YJ80W1-30-35/35 |
| Δ | 35 | AC socket 1-P (A-403R) | AKP-508 | Δ | 78 | Cut wire (Y2) | YJ80W1-35-35/35 |
| Δ | 36 | AC power cord | ADG1049 | Δ | 79 | Cut wire (Y9, Y10) | YJ80W4-30-35/35 |
| | 37 | Strain relief | AEC-882 | Δ | 80 | Cut wire (Y8) | YJ80W8-30-35/35 |
| | 38 | plug | AKM1061 | Δ | 81 | Cut wire (Y1) | YJ80W9-35-35/35 |
| | 39 | Binder | AEP-215 | | 82 | Screw (A-403R) | ABA1054 |
| Δ | 40 | Power transformer (T1) (A-503R) | ATS1537 | | 83 | Screw | ABA1207 |
| Δ | 40 | Power transformer (T1) (A-403R) | ATS1532 | | 84 | Washer (A-503R) | ABE-053 |
| | 41 | ..... |  | NSP | 85 | Mini clamp | AEC1530 |
| | 42 | TRANS ass'y (A-503R) | AWZ5584 | | | | |

Front view



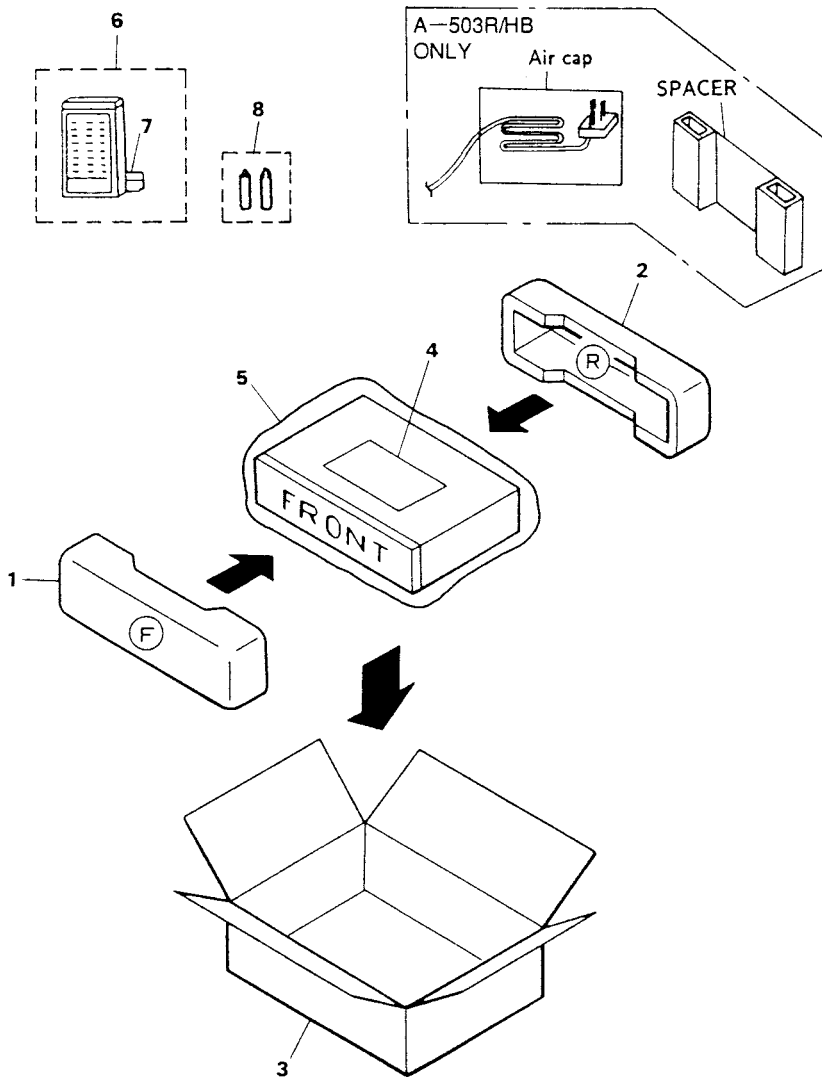
Rear view



NOTE: Screws adjacent to ▼ mark on product are used for disassembly

1.2 PACKING (For A-503R/HE and A-403R/HE)

| Mark | No. | Description | Parts No. |
|------|-----|--|-----------|
| | 1 | Front pad | AHA1590 |
| | 2 | Rear pad | AHA1591 |
| | 3 | Packing case (A-503R) | AHD2740 |
| | 3 | Packing case (A-403R) | AHD2743 |
| | 4 | Operating instructions (English/German/French/Italian/ Swedish/Spanish/Dutch/Portuguese) | ARE1314 |
| | 5 | Packing sheet | AHG1016 |
| | 6 | Remote control unit (CU-A011) (A-503R) | AXD1391 |
| | 6 | Remote control unit (CU-A010) (A-403R) | AXD1392 |
| | 7 | Battery cover | AZN2249 |
| NSP | 8 | Battery (R6P) | AEX-010 |



2. SCHEMATIC AND PCB CONNECTION DIAGRAMS

2.1 OVERALL WIRING DIAGRAM, AF, CONTROL, SP SWITCH AND SHIELD ASSEMBLIES

AF ASS'Y (AWZ5580 : A-503R/HE, A-503R/HEWZ AND A-503R-G/HEZ)
(AWZ5587 : A-503R/HB)
(AWZ5588 : A-403R/HE AND A-403R/HEWZ)

A

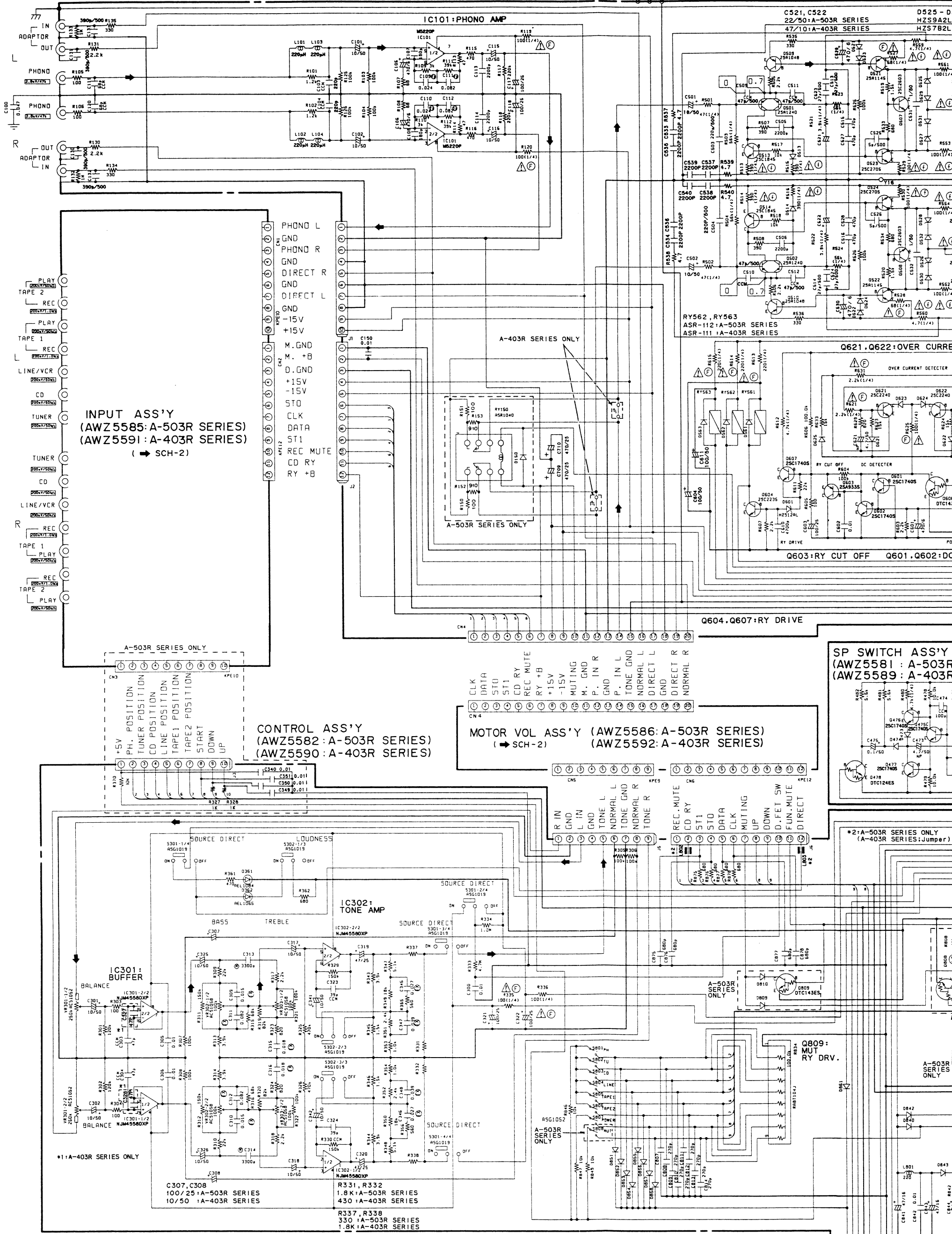
B

C

D

E

F



SCH-1

OVERALL, AF ASSY, CONTROL ASSY, SP SWITCH ASSY, SHIELD ASSY

RESISTORS

Indicated in \square . 1/BW $\pm 5\%$ tolerance unless otherwise noted. \times : M.K.

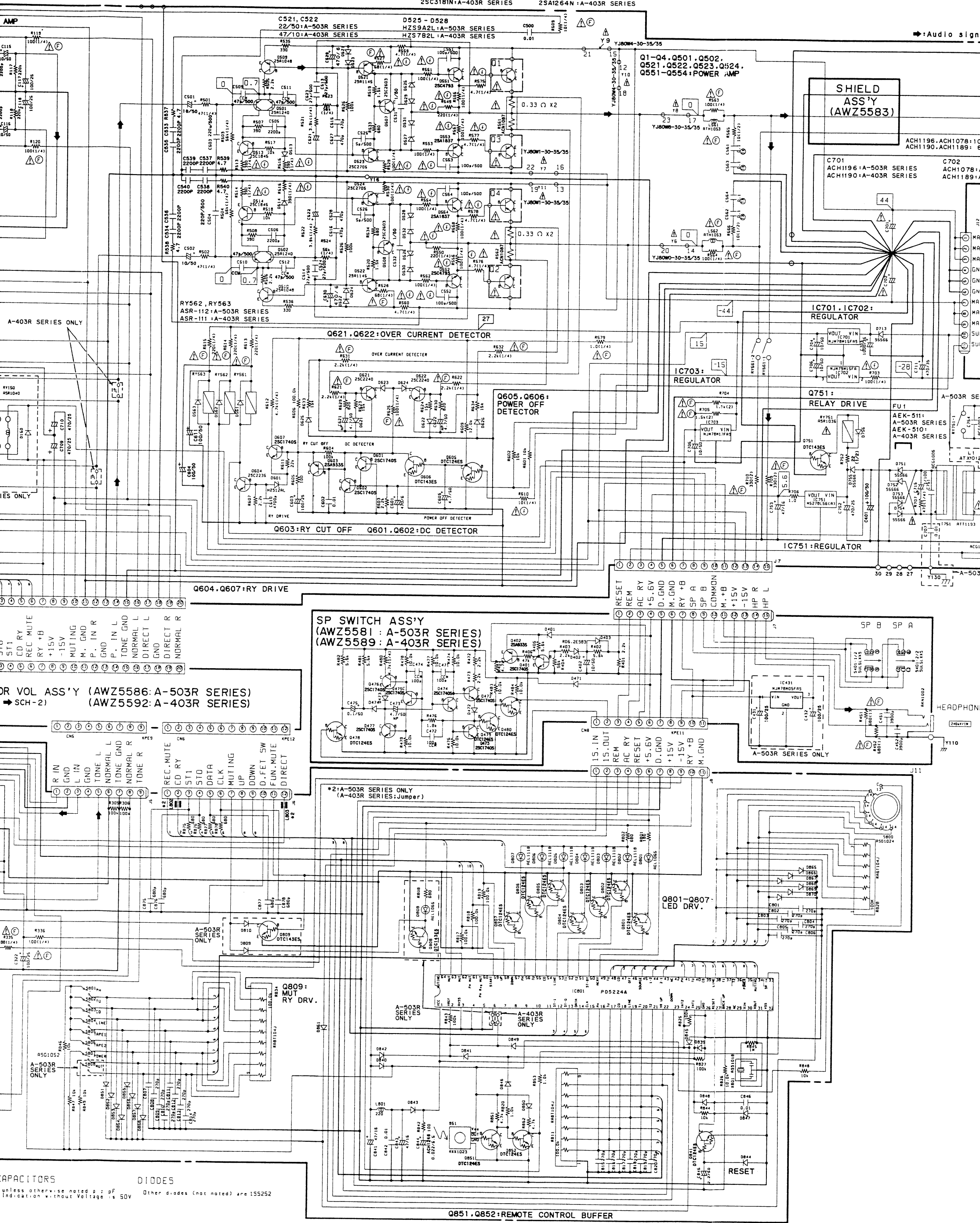
CAPACITORS

unless otherwise noted μ : μ F. Indication without Voltage is 50V

DIODES

Other diodes (not noted) are 1SS252

Q1, Q2 2SC3281 : A-503R SERIES
2SC3181N : A-403R SERIES
Q3, Q4 2SA1302 : A-503R SERIES
2SA1264N : A-403R SERIES



SHIELD ASS'Y (AWZ5583)

C701 ACH1196 : A-503R SERIES
C702 ACH1078 : A-503R SERIES
ACH1190 : A-403R SERIES
ACH1189 : A-503R SERIES

IC701, IC702 : REGULATOR

IC703 : REGULATOR

Q751 : RELAY DRIVE

IC751 : REGULATOR

SP SWITCH ASS'Y (AWZ5581 : A-503R SERIES)
(AWZ5589 : A-403R SERIES)

SP B SP A

HEADPHONE

*2 : A-503R SERIES ONLY
(A-403R SERIES : Jumper)

Q801-Q807 : LED DRV.

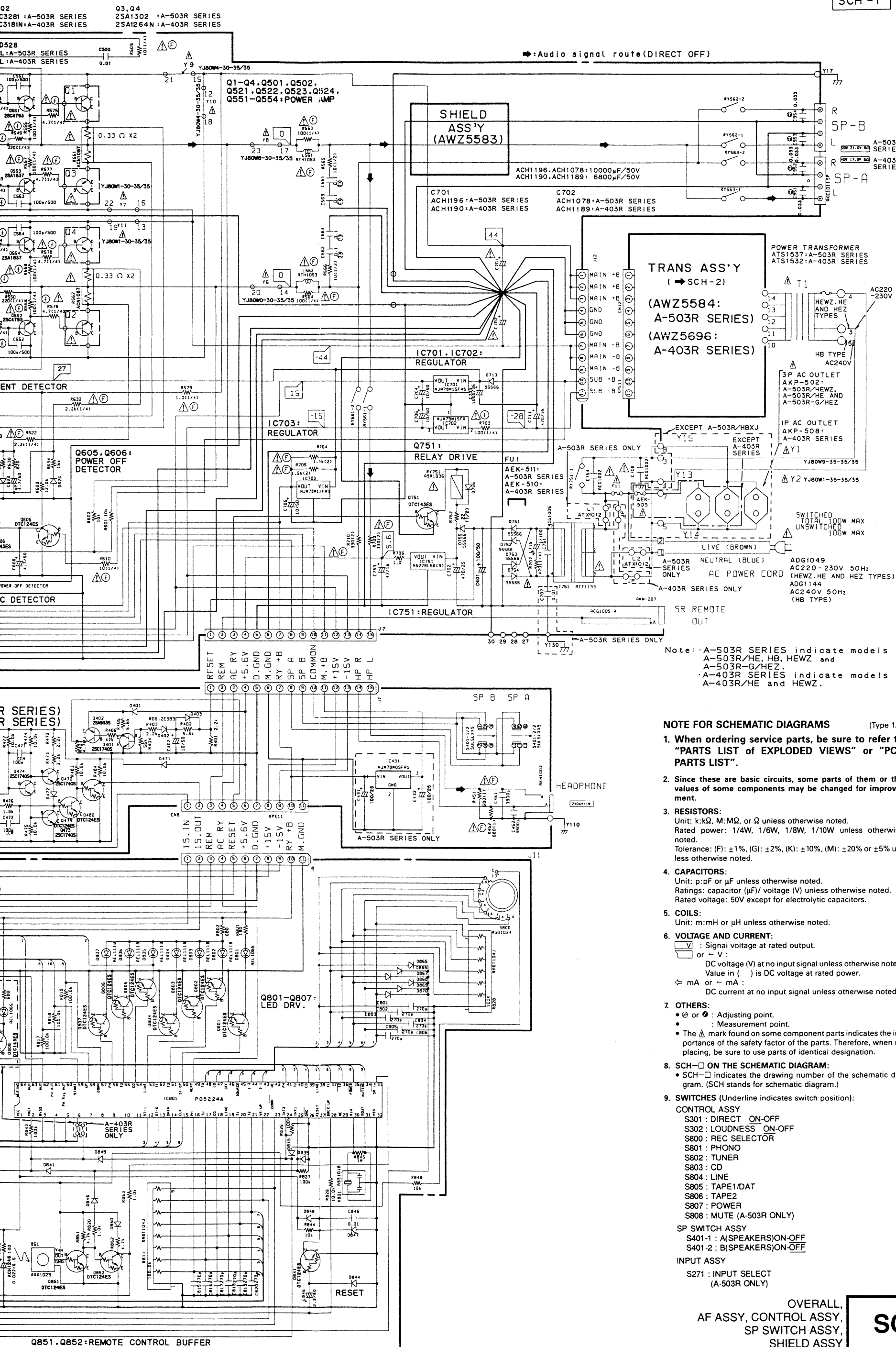
Q809 : MUT RY DRV.

Q851, Q852 : REMOTE CONTROL BUFFER

CAPACITORS
Unless otherwise noted : pF
Indication without Voltage : 50V

DIODES
Other diodes (not noted) are 1N52252

SCH-1



Note: A-503R SERIES indicate models A-503R/HE, HB, HEWZ and A-503R-G/HEZ. A-403R SERIES indicate models A-403R/HE and HEWZ.

NOTE FOR SCHEMATIC DIAGRAMS (Type 1A)

- When ordering service parts, be sure to refer to "PARTS LIST OF EXPLODED VIEWS" or "PCB PARTS LIST".
- Since these are basic circuits, some parts of them or the values of some components may be changed for improvement.
- RESISTORS:**
Unit: k: kΩ, M: MΩ, or Ω unless otherwise noted.
Rated power: 1/4W, 1/6W, 1/8W, 1/10W unless otherwise noted.
Tolerance: (F): ±1%, (G): ±2%, (K): ±10%, (M): ±20% or ±5% unless otherwise noted.
- CAPACITORS:**
Unit: p: pF or μF unless otherwise noted.
Ratings: capacitor (μF)/voltage (V) unless otherwise noted.
Rated voltage: 50V except for electrolytic capacitors.
- COILS:**
Unit: m: mH or μH unless otherwise noted.
- VOLTAGE AND CURRENT:**
V: Signal voltage at rated output.
or -V: DC voltage (V) at no input signal unless otherwise noted. Value in () is DC voltage at rated power.
mA or -mA: DC current at no input signal unless otherwise noted.
- OTHERS:**
⊙ or ⊙: Adjusting point.
⊙: Measurement point.
The Δ mark found on some component parts indicates the importance of the safety factor of the parts. Therefore, when replacing, be sure to use parts of identical designation.
- SCH-□ ON THE SCHEMATIC DIAGRAM:**
SCH-□ indicates the drawing number of the schematic diagram. (SCH stands for schematic diagram.)
- SWITCHES** (Underline indicates switch position):
CONTROL ASSY
S301: DIRECT ON-OFF
S302: LOUDNESS ON-OFF
S800: REC SELECTOR
S801: PHONO
S802: TUNER
S803: CD
S804: LINE
S805: TAPE1/DAT
S806: TAPE2
S807: POWER
S808: MUTE (A-503R ONLY)
SP SWITCH ASSY
S401-1: A(SPEAKERS)ON-OFF
S401-2: B(SPEAKERS)ON-OFF
INPUT ASSY
S271: INPUT SELECT (A-503R ONLY)

OVERALL, AF ASSY, CONTROL ASSY, SP SWITCH ASSY, SHIELD ASSY

SCH-1

A
B
C
D
E
F

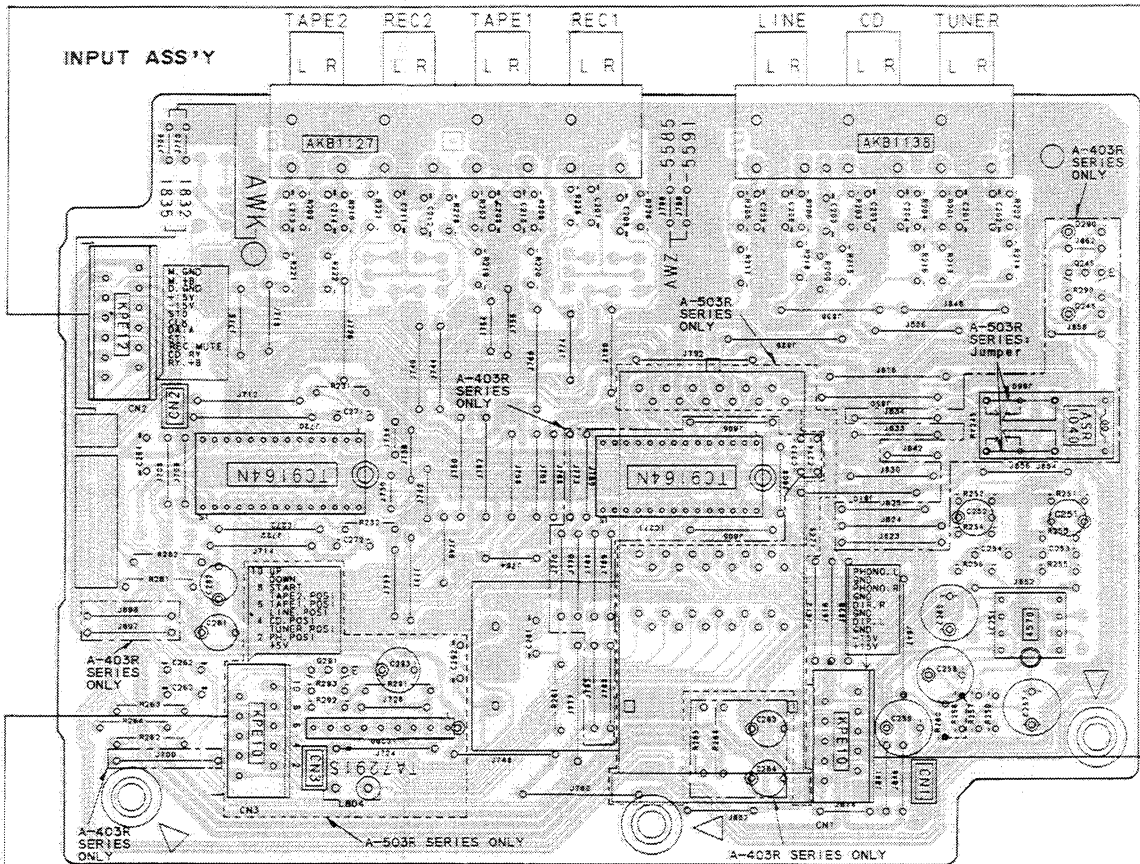
NOTE FOR PCB DIAGRAMS:

- 1. Part numbers in PCB diagrams match those in the schematic diagrams.
- 2. A comparison between the main parts of PCB and schematic diagrams is shown below.

| Symbol in PCB Diagrams | Symbol in Schematic Diagrams | Part Name |
|------------------------|------------------------------|-----------------------|
| <p>Q504</p> | <p>Q504</p> | Transistor |
| <p>D203</p> | <p>D203</p> | Diode |
| <p>C513</p> | <p>C513</p> | Capacitor (Polarized) |

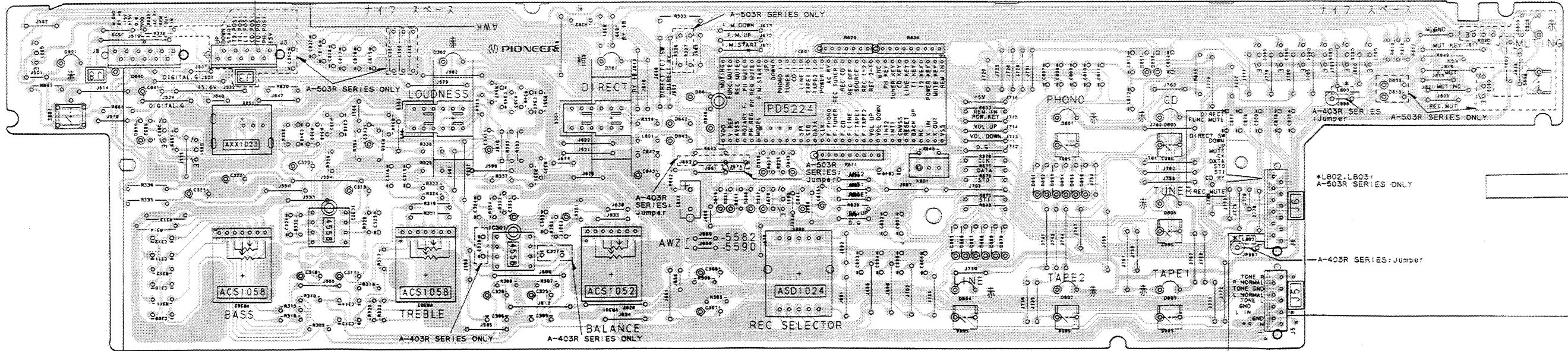
- 3. The transistor terminal marked with E or shows the emitter.
- 4. The diode terminal marked with or shows cathode side.
- 5. The capacitor terminal marked with or shows negative terminal.

Note: A-503R SERIES indicate models
 A-503R/HE, HB, HEWZ and
 A-503R-G/HEZ.
 A-403R SERIES indicate models
 A-403R/HE and HEWZ.



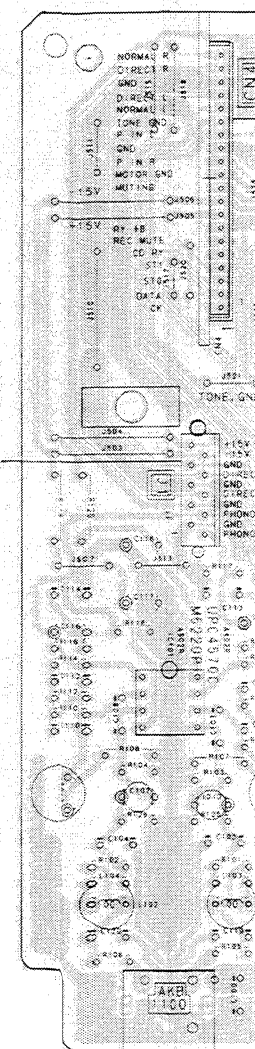
IC272 IC290 IC271 IC251 Q245
 Q291

CONTROL ASS'Y



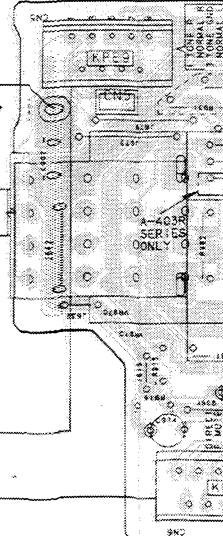
Q801 Q852 Q851 IC302 IC301 Q841 IC801 Q802 Q804 Q806 Q808
 Q803 Q805 Q807 Q809

AF ASS'Y



Q1-Q4
 IC703
 Q622 Q508 Q507 Q621
 IC702
 IC701
 Q552 Q554 Q553 Q551
 Q522 Q521
 Q509
 Q524 Q523 Q510
 Q501 Q502
 Q514 Q513
 Q751
 IC101
 Q605 Q606
 Q603 IC751
 Q602 Q601 Q604 Q607

MOTOR VOL ASS'Y



A

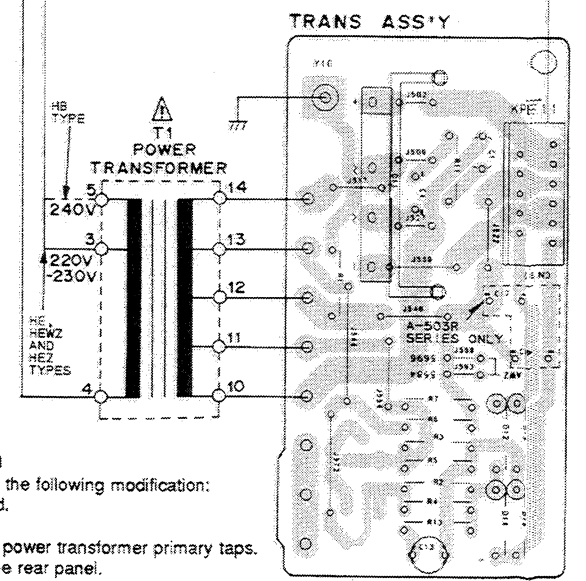
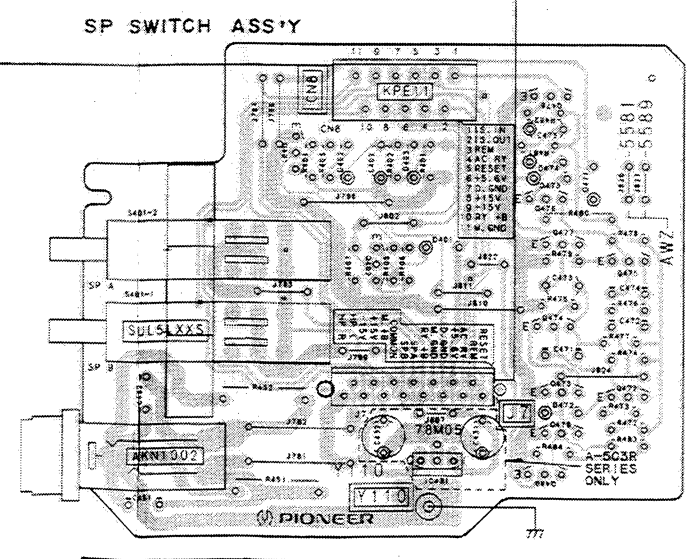
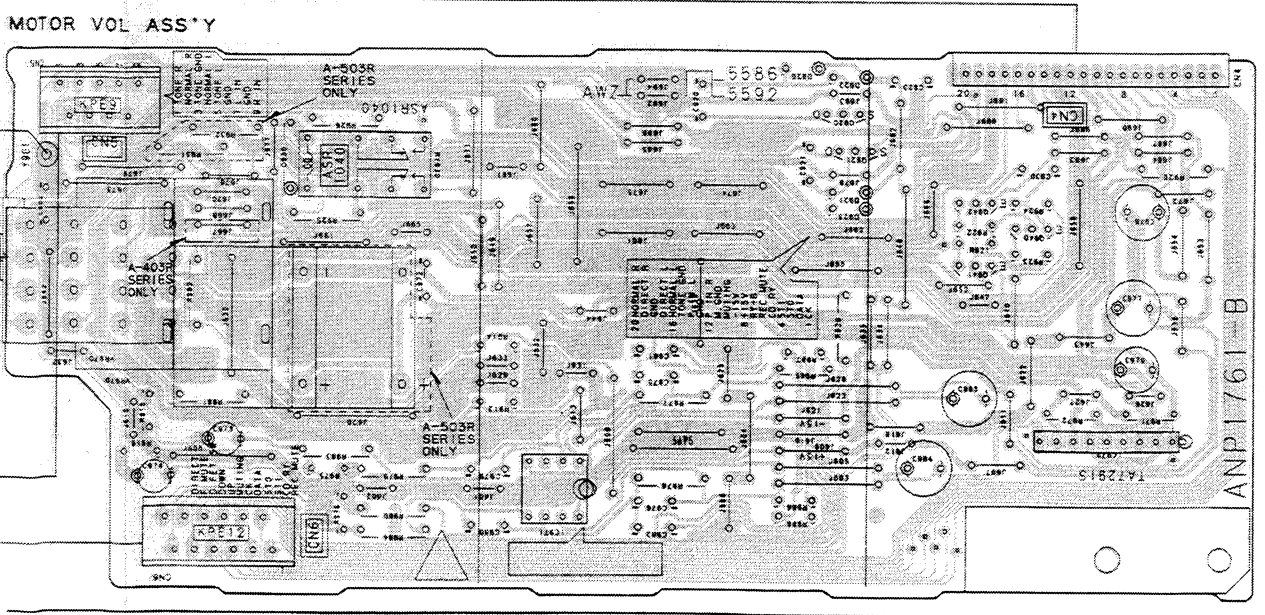
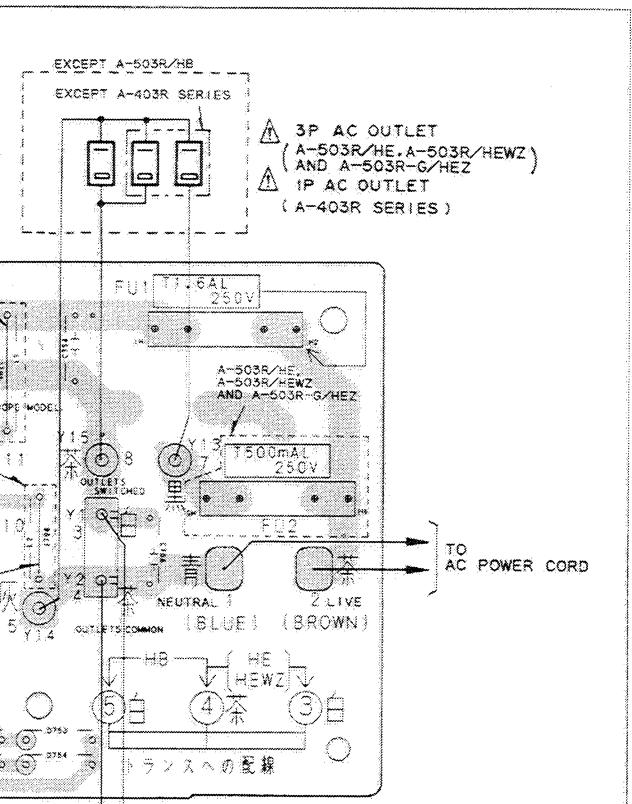
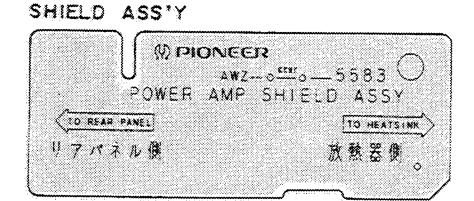
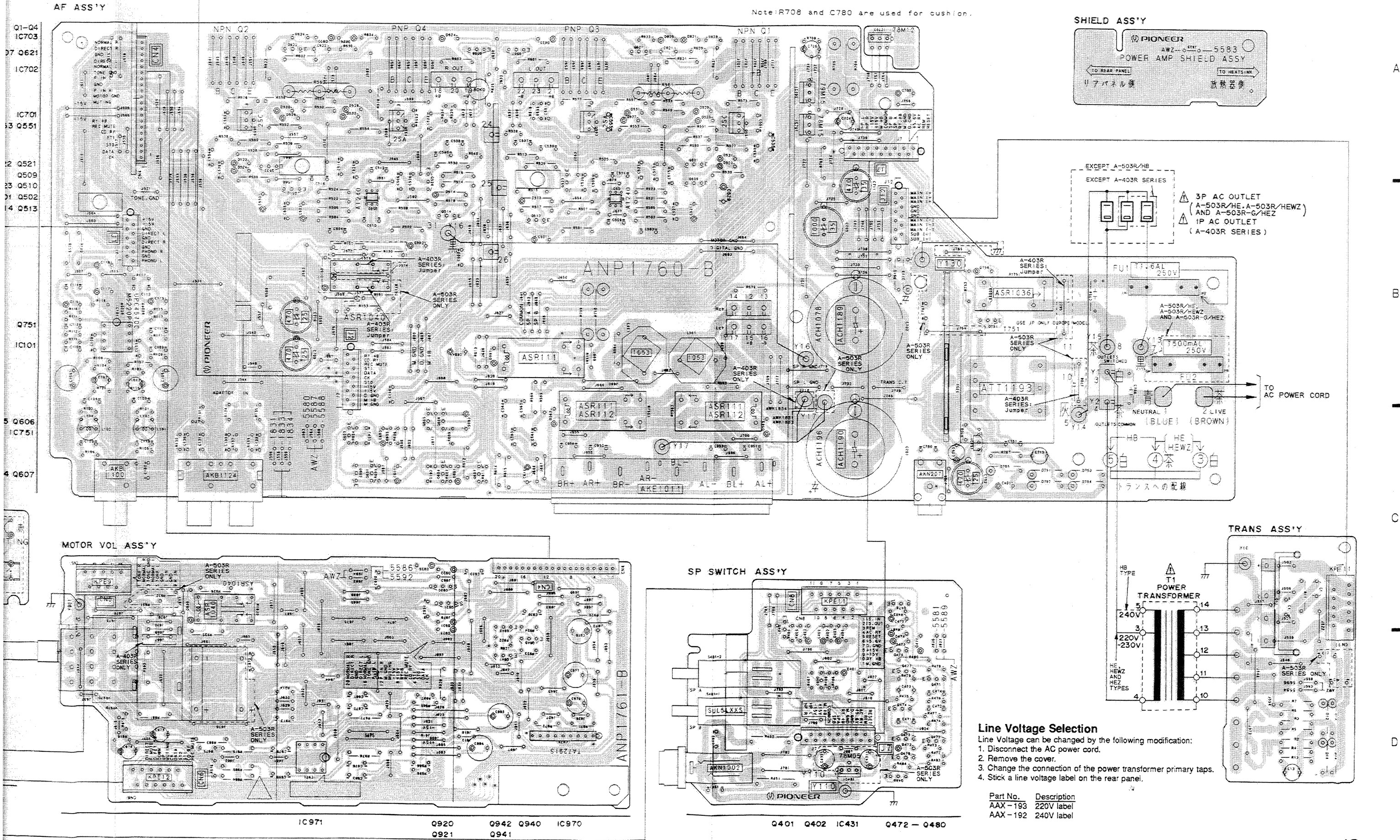
B

C

D

This diagram is viewed from the mounted parts side.

Note: R708 and C780 are used for cushion.

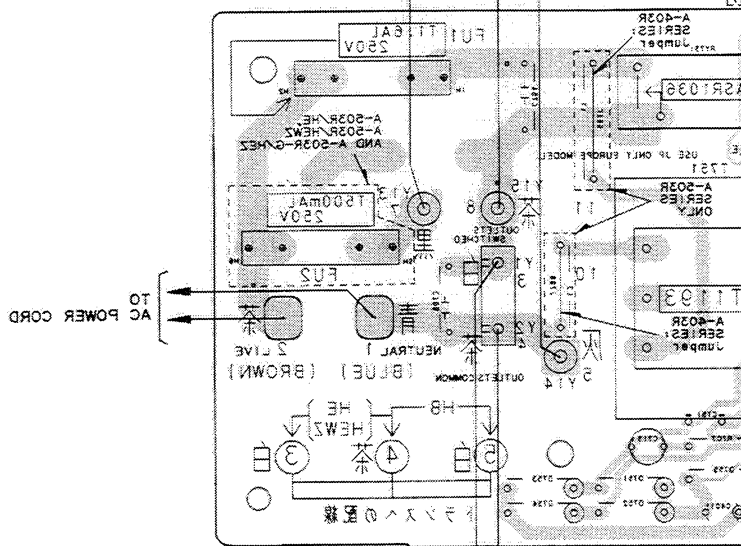
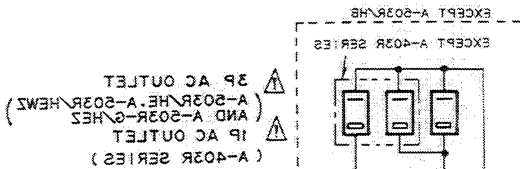
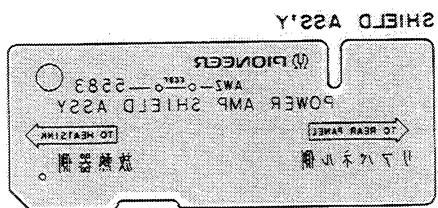


Line Voltage Selection
 Line Voltage can be changed by the following modification:
 1. Disconnect the AC power cord.
 2. Remove the cover.
 3. Change the connection of the power transformer primary taps.
 4. Stick a line voltage label on the rear panel.

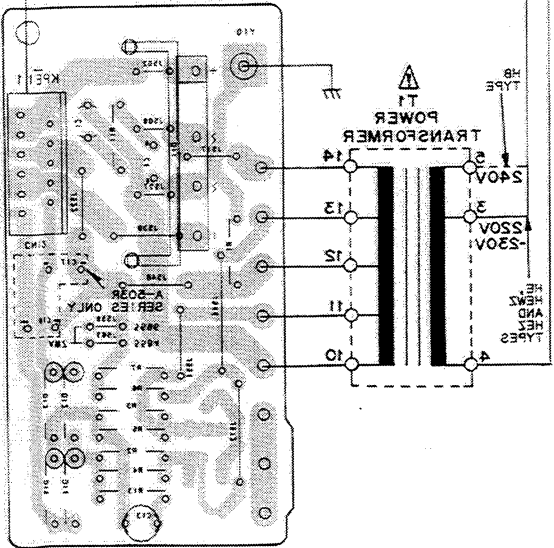
| Part No. | Description |
|----------|-------------|
| AAX-193 | 220V label |
| AAX-192 | 240V label |

This diagram is viewed from the foil side.

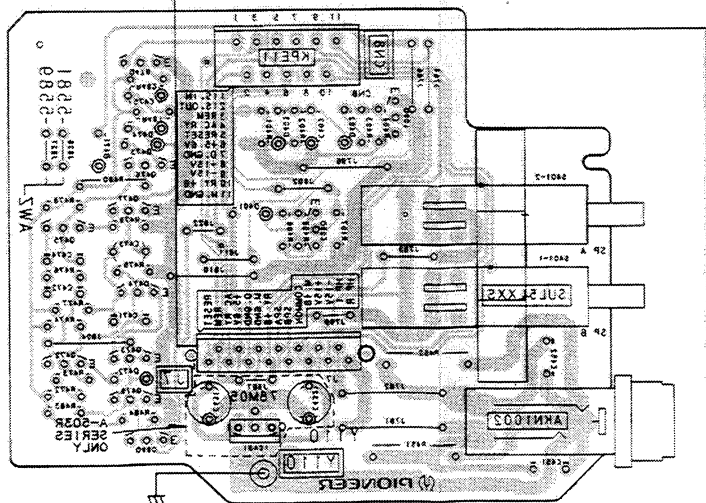
AF ASS'Y



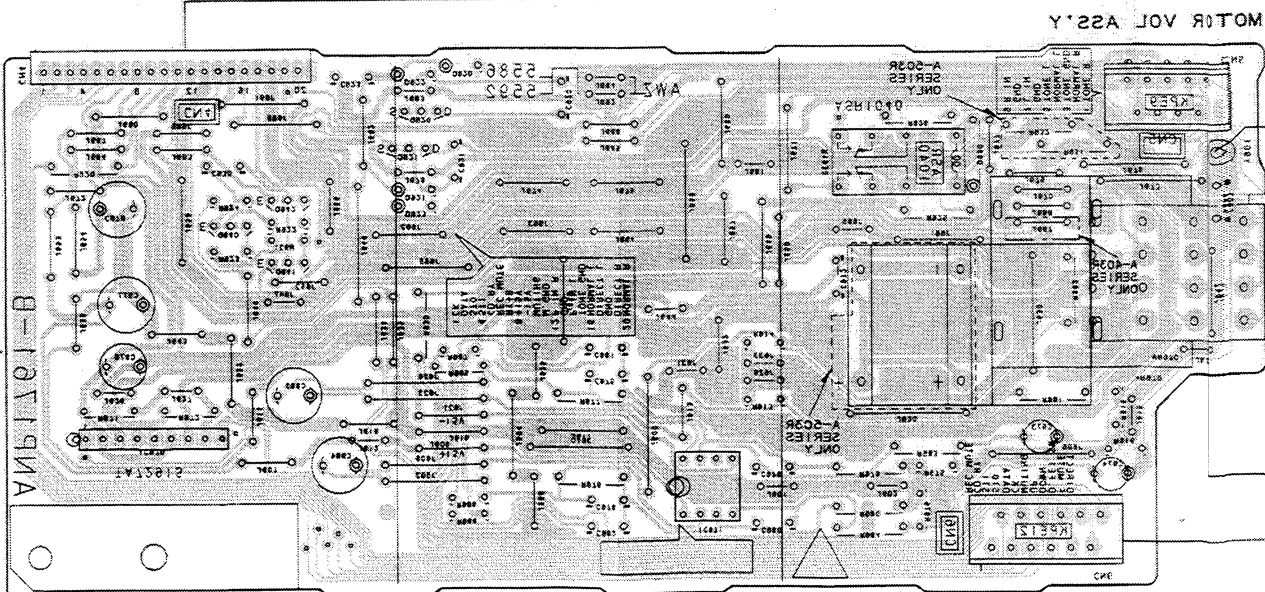
TRANS ASS'Y



2P SWITCH ASS'Y



0401 0405 1C421 0425 - 0480



0451 0450 0455 0460 1C420

14 0213
01 0205
23 0210
0808
25 0251
23 0221
1C701
1C705
01 0251
1C703
01-04



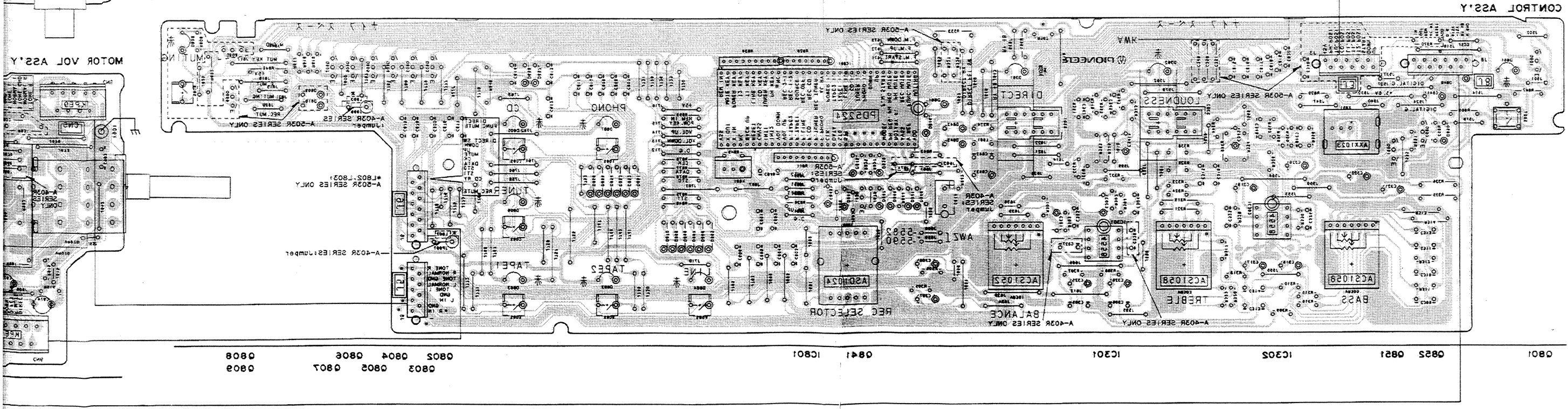
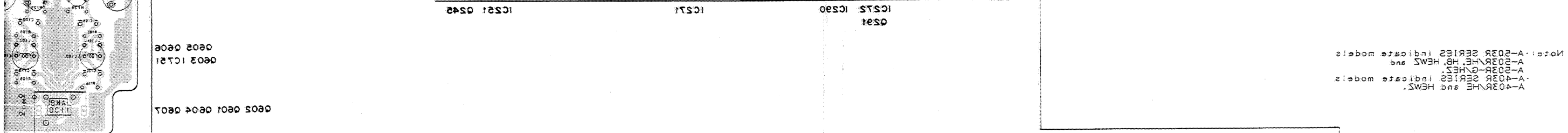
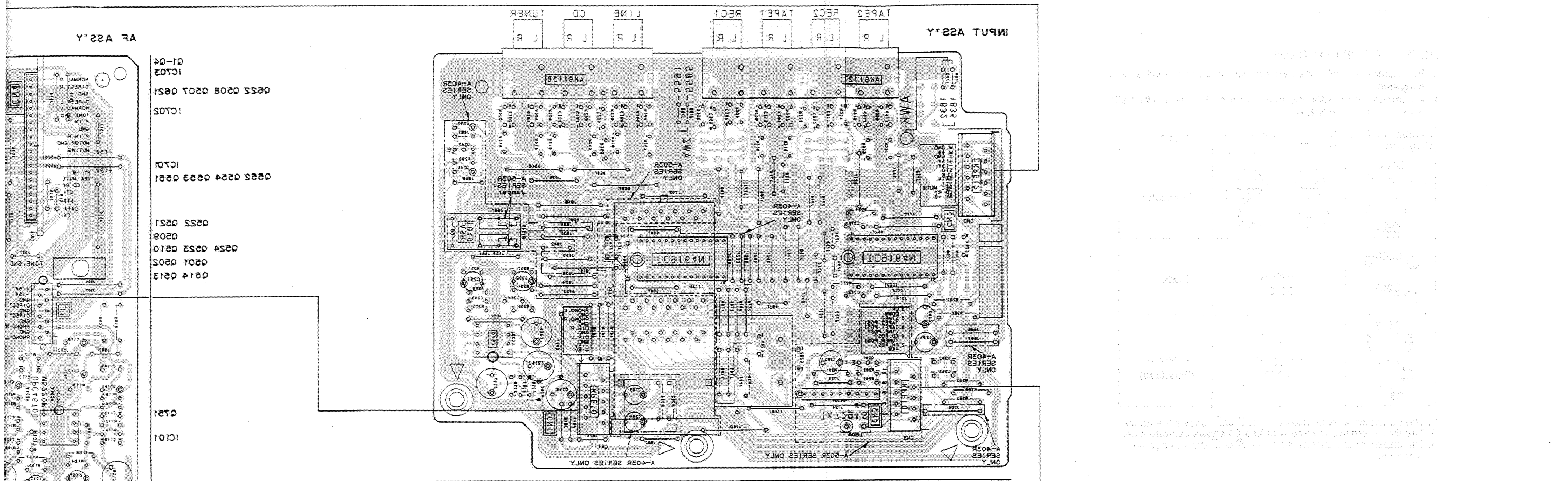
A

B

C

D

Note: R708 and C780 are used for cushion.

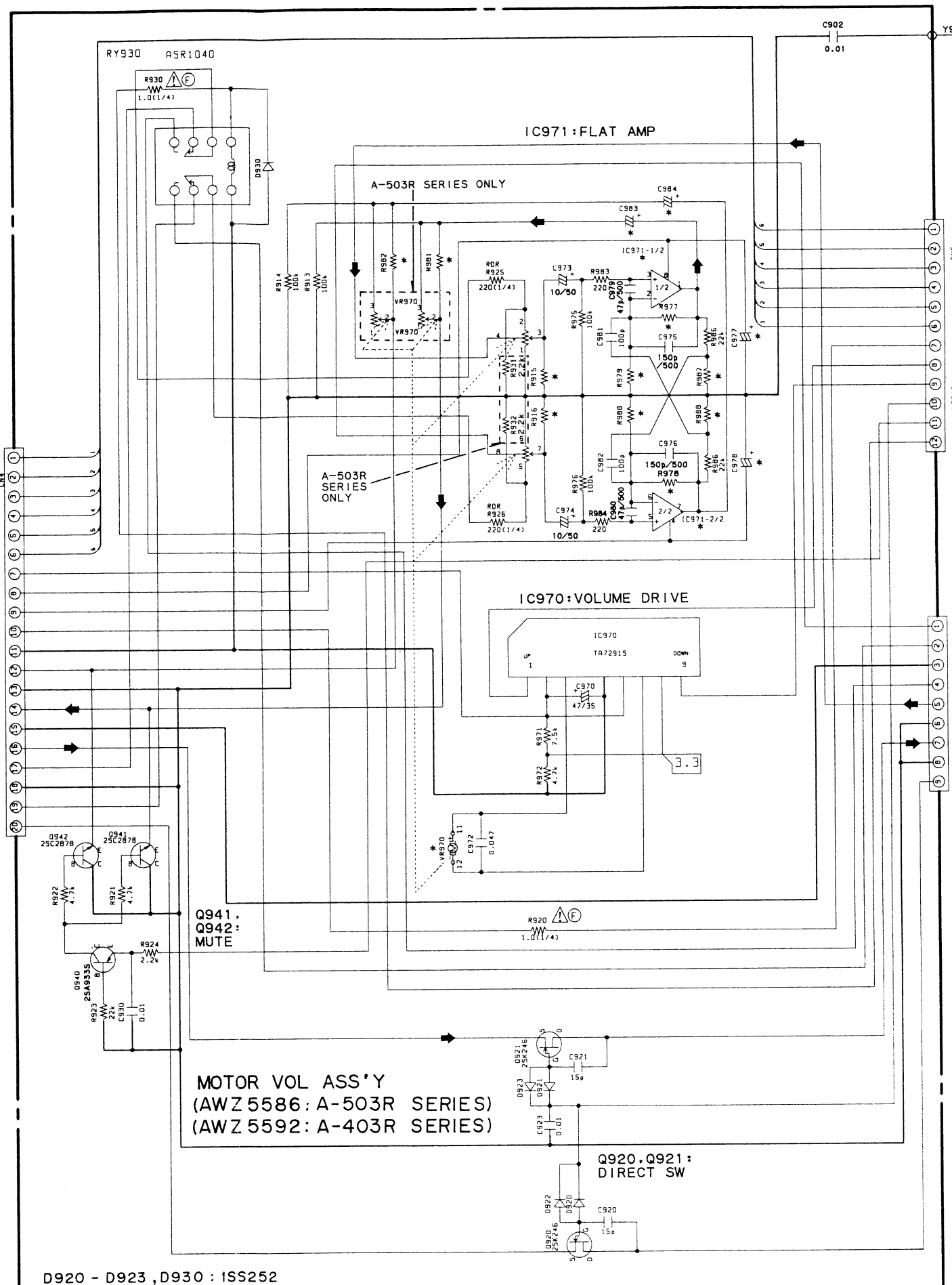


0801 0802 0803 0804 0805 0806 0807 0808

0809 0810 0811 0812 0813 0814 0815 0816 0817 0818 0819 0820 0821 0822 0823 0824 0825 0826 0827 0828 0829 0830 0831 0832 0833 0834 0835 0836 0837 0838 0839 0840 0841 0842 0843 0844 0845 0846 0847 0848 0849 0850 0851 0852 0853 0854 0855 0856 0857 0858 0859 0860 0861 0862 0863 0864 0865 0866 0867 0868 0869 0870 0871 0872 0873 0874 0875 0876 0877 0878 0879 0880 0881 0882 0883 0884 0885 0886 0887 0888 0889 0890 0891 0892 0893 0894 0895 0896 0897 0898 0899 0900

Note: A-403R SERIES indicates models A-403RHE, HB, HEWS and A-203R SERIES indicates models A-203RHE, HB, HEWS.

Audio signal route(DIRECT OFF)



TO AF ASS'Y J1 (SCH-1)
 TO AF ASS'Y J2 (SCH-1)
 TO AF ASS'Y CN4 (SCH-1)
 CLK
 DATA
 STO
 ST1
 CD RY
 REC MUTE
 RY +B
 +15V
 -15V
 MUTING
 M.GND
 POWER IN R
 GND
 POWER IN L
 TONE GND
 NORMAL L
 DIRECT L
 GND
 DIRECT R
 NORMAL R

REC MUTE
 CD RY
 ST1
 STO
 DATA
 CLK
 MUTING
 UP
 DOWN
 D.FET SW
 F.MUTE
 DIRECT

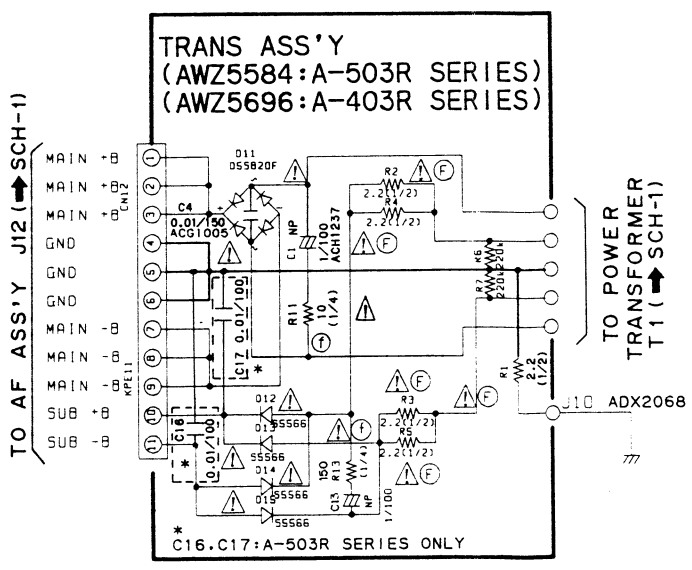
TONE R
 NORMAL R
 TONE GND
 NORMAL L
 TONE L
 GND
 L IN
 GND
 R IN

D920 - D923, D930 : ISS252

MOTOR VOL ASS'Y
 (AWZ 5586 : A-503R SERIES)
 (AWZ 5592 : A-403R SERIES)

| | A-503R SERIES | A-403R SERIES |
|------------------------|---------------|---------------|
| C977, C978, C983, C984 | 100/25 | 10/50 |
| IC971 | NJM5532D-D | UPC4570C |
| R915, R916 | 8.2K | 100K |
| R977, R978 | 2.7K | 2.2K |
| R979, R980 | 390 | 430 |
| R981, R982 | 3.3K | 1K |
| R987 | 820 | 1K |
| R988 | 1K | 2K |
| VR970 | ACX1083 | ACX1084 |

Note: A-503R SERIES indicate models A-503R/HE, HB, HEWZ and A-503R-G/HEZ.
 A-403R SERIES indicate models A-403R/HE and HEWZ.



TO AF ASS'Y J12 (SCH-1)
 MAIN +B
 MAIN +0.02
 MAIN +1.00
 GND
 GND
 GND
 MAIN -B
 MAIN -0.02
 MAIN -1.00
 SUB +B
 SUB +0.02
 SUB +1.00
 SUB -B
 SUB -0.02
 SUB -1.00

TO POWER TRANSFORMER T1 (SCH-1)
 J10 ADX2068

C16, C17: A-503R SERIES ONLY

INPUT ASSY,
 MOTOR VOL ASSY,
 TRANS ASSY

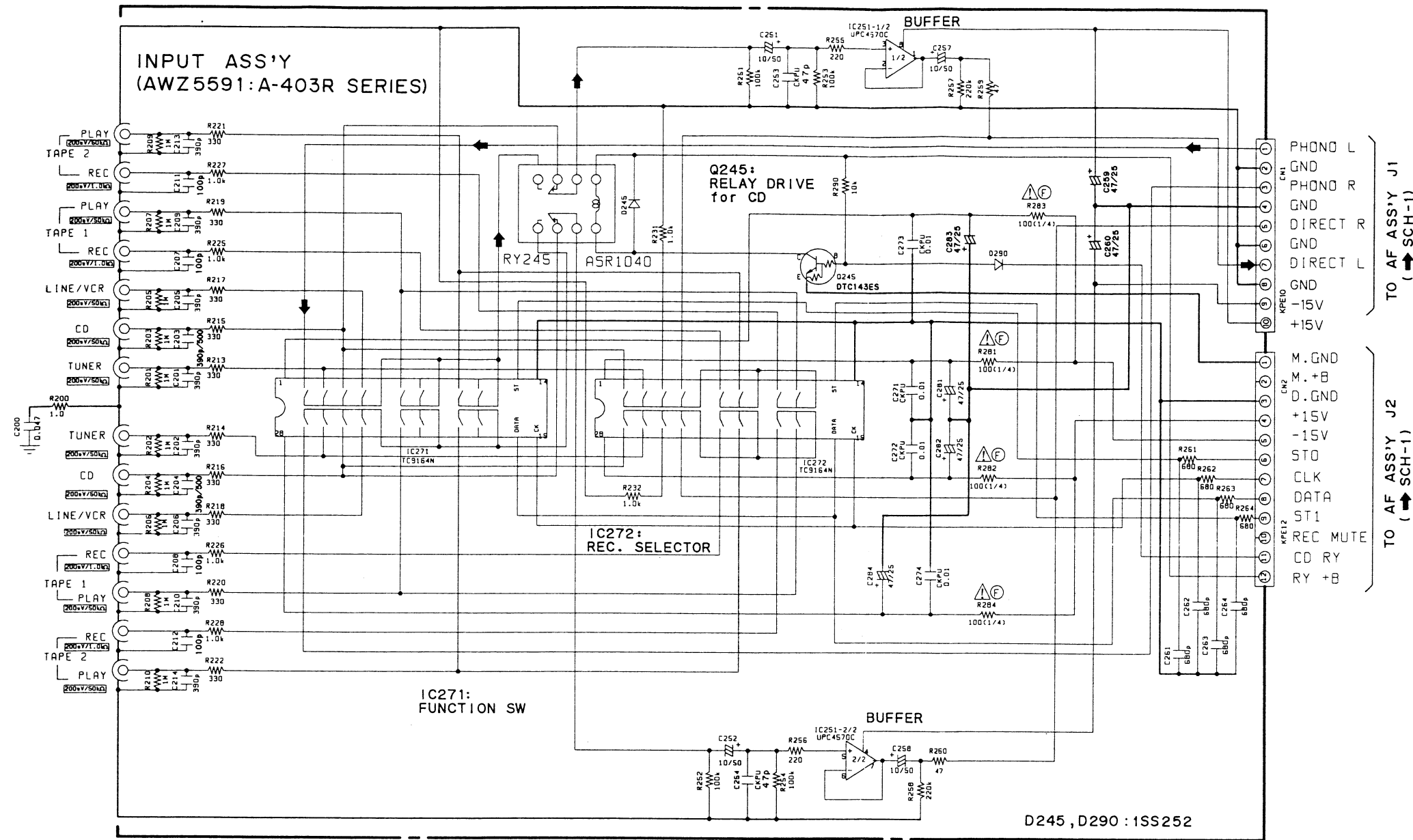
2.2 INPUT, MOTOR VOL AND TRANS ASSEMBLIES

A

B

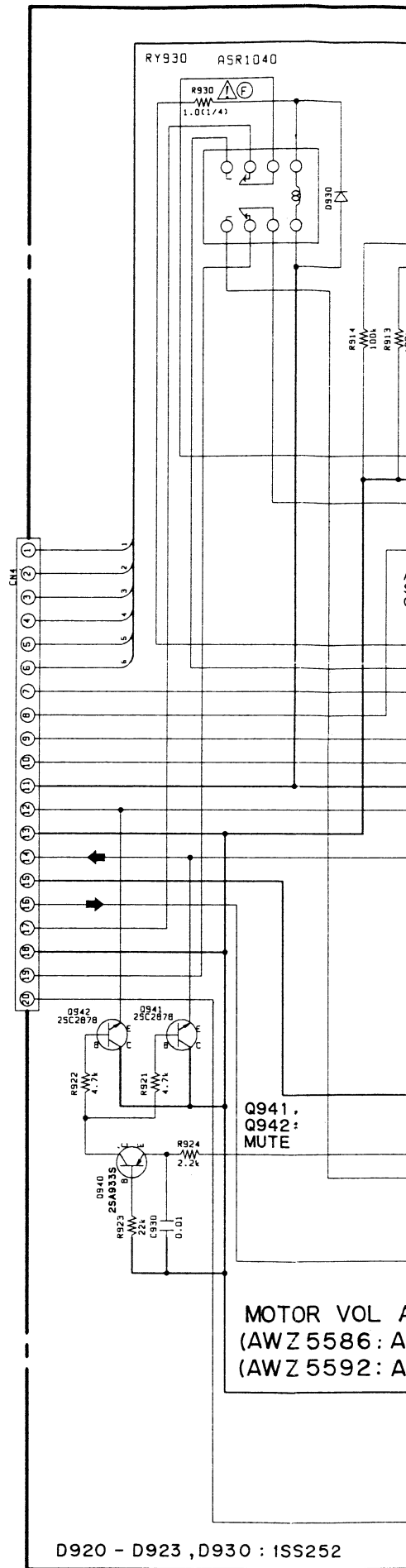
C

D



TO AF ASS'Y J1 (SCH-1)
 TO AF ASS'Y J2 (SCH-1)
 TO AF ASS'Y CN4 (SCH-1)

CLK
 DATA
 STO
 ST1
 CD RY
 REC MUTE
 RY +B
 +15V
 -15V
 MUTING
 M. GND
 POWER IN R
 GND
 POWER IN L
 TONE GND
 NORMAL L
 DIRECT L
 GND
 DIRECT R
 NORMAL R



D920 - D923, D930 : 1SS252

TRANS ASS'Y

3. PCB PARTS LIST (FOR A-503R/HE AND A-403/HE)

NOTES:

- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "⊙" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.
- When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).

| | | | | | | | |
|------|---|----------------------|-------|-----|-------|---------|---|
| 560Ω | → | 56 × 10 ¹ | → | 561 | ..... | RD1/8PM | 5 6 1 J |
| 47kΩ | → | 47 × 10 ³ | → | 473 | ..... | RD1/4PS | 4 7 3 J |
| 0.5Ω | → | 0R5 | ..... |  |  | RN2H | 0 R 5 K |
| 1Ω | → | 010 | ..... |  |  | RS1P | 0 1 0 K |

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

| | | | | | | | |
|--------|---|-----------------------|---|------|-------|---------|---|
| 5.62kΩ | → | 562 × 10 ¹ | → | 5621 | | RN1/4PC | 5 6 2 1 F |
|--------|---|-----------------------|---|------|-------|---------|---|

| Mark | No. | Description | Parts No. | Mark | Mark | No. | Description | Parts No. | Mark |
|------|-----|-------------|-----------|------|------|-----|-------------|-----------|------|
|------|-----|-------------|-----------|------|------|-----|-------------|-----------|------|

LIST OF ASSEMBLIES

For A-503R

| | | |
|-----|-------------------|---------|
| NSP | AF ASS'Y | AWK1831 |
| | — AF ASS'Y | AWZ5580 |
| | — SP SWITCH ASS'Y | AWZ5581 |
| | — CONTROL ASS'Y | AWZ5582 |
| | — SHIELD ASS'Y | AWZ5583 |

| | | |
|-----|-------------------|---------|
| NSP | INPUT ASS'Y | AWK1832 |
| | — TRANS ASS'Y | AWZ5584 |
| | — INPUT ASS'Y | AWZ5585 |
| | — MOTOR VOL ASS'Y | AWZ5586 |

For A-403R

| | | |
|-----|-------------------|---------|
| NSP | AF ASS'Y | AWK1834 |
| | — SHIELD ASS'Y | AWZ5583 |
| | — AF ASS'Y | AWZ5588 |
| | — SP SWITCH ASS'Y | AWZ5589 |
| | — CONTROL ASS'Y | AWZ5590 |

| | | |
|-----|-------------------|---------|
| NSP | INPUT ASS'Y | AWK1835 |
| | — INPUT ASS'Y | AWZ5591 |
| | — MOTOR VOL ASS'Y | AWZ5592 |
| | — TRANS ASS'Y | AWZ5696 |

AF ASS'Y

SEMICONDUCTORS

| | |
|----------------|-------------|
| IC101 | M5220P |
| IC751 | M5278L56 |
| IC703 | NJM78M12FAS |
| IC701 | NJM78M15FAS |
| IC702 | NJM79M15FA |
| Q509,Q510 | 2SA1048 |
| Q521,Q522 | 2SA1145 |
| Q501,Q502 | 2SA1240 |
| Q553,Q554 | 2SA1837 |
| Q603 | 2SA933S |
| Q601,Q602,Q607 | 2SC1740S |
| Q513,Q514 | 2SC1845 |
| Q604 | 2SC2235 |
| Q621,Q622 | 2SC2240 |
| Q507,Q508 | 2SC2603 |

| | |
|-----------------------------|----------|
| Q523,Q524 | 2SC2705 |
| Q551,Q552 | 2SC4793 |
| Q605 | DTC124ES |
| Q606,Q751 | DTC143ES |
| D150 (A-503R only) | 1SS252 |
| D513,D514,D521-D524 | 1SS252 |
| D529-D532,D561-D563 | 1SS252 |
| D621-D626,D756 | 1SS252 |
| D601 | HZS12AL |
| D525-D528 (For A-503R only) | HZS9A2L |
| D525-D528 (For A-403R only) | HZS7B2L |
| D713,D751-D755 | S5566 |

COILS AND FILTERS

| | |
|---------------------|---------|
| L561,L562 (1.5uH) | ATH1053 |
| L1,L2 (A-503R only) | ATX1012 |
| L101-L104 | LAU221K |

TRANSFORMERS

| | |
|-----------------------|---------|
| Δ T751 (1.6VA) | ATT1193 |
|-----------------------|---------|

SWITCHES AND RELAYS

| | |
|---------------------------|---------|
| RY561 | ASR-111 |
| RY562 ,RY563 (For A-503R) | ASR-112 |
| RY562 ,RY563 (For A-403R) | ASR-111 |
| Δ RY751 | ASR1036 |
| RY150 (A-503R only) | ASR1040 |

CAPACITORS

| | |
|---------------------------------------|--------------|
| Δ C708,C754 (0.01/AC400V) | ACG1002 |
| C751,C780 (0.01/AC150V) | ACG1005 |
| Δ C702 (10000/50) (For A-503R) | ACH1078 |
| Δ C702 (6800/50) (For A-403R) | ACH1189 |
| Δ C701 (10000/50) (For A-503R) | ACH1196 |
| Δ C701 (6800/50) (For A-403R) | ACH1190 |
| C551-C554 | CCCSL101K500 |
| C503,C504 | CCCSL221K500 |
| C513,C514,C523,C524 | CCCSL270K500 |
| C509-C512 | CCCSL470K500 |
| C119,C120 | CCMSL680J50 |
| C715 | CEANP010M100 |
| C621,C622 | CEANP47M50 |
| C101,C102,C115,C116 | CEAS100M50 |
| C704-C706 | CEAS100M50 |

| Mark | No. | Description | Parts No. | Mark | Mark | No. | Description | Parts No. | Mark |
|------|-----|--|--|------|------|------|--|---|------|
| | | C117,C118,C603 C401,C604,C611 C703 C753 C709,C710,C752 | CEAS101M25 CEAS101M50 CEAS102M35 CEAS470M16 CEAS471M25 | | | | SP SWITCH ASS'Y | | |
| | | C711 C105,C106,C529,C530,C601 C605 C501,C502 (For A-503R) C501,C502 (For A-403R) | CEAS471M35 CEAS471M6 CEAS4R7M50 CEEA100M50 CEAS100M50 | | | | SEMICONDUCTORS | | |
| | | C521,C522 (For A-503R) C521,C522 (For A-403R) C109,C110 C111,C112 C561-C564 | CEEA220M50 CASA470M10 CFTXA243J50 CFTXA823J50 CFTYA104J50 | | | | IC431 (A-503R only) Q402 Q401,Q472-Q477 Q478-Q480 D401,D403,D471-D474 | NJM78M05FAS 2SA933S 2SC1740S DTC124ES 1SS252 | |
| | | C531,C532 C951-C954 C113,C114,C505,C506,C533-C540 C130-C133 C515,C516,C527,C528 | CFTYA105J50 CFTYA333J50 CKCYB222K50 CKCYB391K500 CKCYB471K50 | | | D402 | | RD6.2ESB3 | |
| | | C610 C150,C500,C602 C707 (A-503R only) C100 C107,C108 | CKCYB472K50 CKCYF103Z50 CKCYF103Z50 CKCYF473Z50 CKMYB181K50 | | | | SWITCHES AND RELAYS | | |
| | | C103,C104 C525,C526 | CKMYB221K50 CMA050D500 | | | | S401 | SUL5LXXS | |
| | | | | | | | CAPACITORS | | |
| | | | | | | | C471,C472,C474 C473 C475 C402 C431,C432 (A-503R only) C451,C452 | CCMSL101J50 CEANP4R7M50 CEASOR1M50 CEAS100M50 CEAS101M25 CGMYX392M25 | |
| | | | | | | | RESISTORS | | |
| | | | | | | | R480 △ R451,R452 | RD1/4PM472J RS1LMF681J | |
| | | | | | | | Other Resistors | RD1/8PM□□□J | |
| | | | | | | | OTHERS | | |
| | | | | | | | JACK CN8 CONNECTOR(11P) | AKN1002 KPE11 | |
| | | | | | | | CONTROL ASS'Y | | |
| | | | | | | | SEMICONDUCTORS | | |
| | | | | | | | IC301,IC302 IC801 Q801-Q807,Q841,Q851,Q852 Q808,Q809 (A-503R only) D809,D810 (A-503R only) | NJM4558DXP PD5224A DTC124ES DTC143ES 1SS252 | |
| | | | | | | | D839-D858,D861 D865-D870 D808 (RED) (A-503R only) D362,D801 (RED) D361 (ORANGE) | 1SS252 1SS252 AEL1065 AEL1065 AEL1084 | |
| | | | | | | | D802-D807 (RED) | AEL1118 | |
| | | | | | | | COILS AND FILTERS | | |
| | | | | | | | L801 L802,L803 (A-503R only) | LAU221K ATX1008 | |
| | | | | | | | SWITCHES AND RELAYS | | |
| | | | | | | | S800 S301,S302 S808 (A-503R only) S801-S806 S807 | ASD1024 ASG1019 ASG1034 ASG1034 ASG1052 | |
| | | | | | | | CAPACITORS | | |
| | | | | | | | C844 (0.022F/5.5) C327,C328 (A-403R only) C323,C324 C303,C304 C301,C302,C317,C318 C325,C326,C341,C342 | ACH1246 CCCSL470J50 CCMSL390J50 CCMSL470J50 CEAS100M50 CEAS100M50 | |
| | | | | | | | RESISTORS | | |
| △ | | R561,R562 (0.33/5W) R752 | ACN1087 RD1/2PM220J RD1/2PMF100J RD1/4PM101J RD1/4PM392J | | | | | | |
| △ | | R565,R566 R150,R151 (A-503R only) R521,R522 | | | | | | | |
| | | R501,R502 R612 R503,R504,R523,R524 R152,R153 (A-503R only) R579 | RD1/4PM470J RD1/4PM472J RD1/4PM563J RD1/4PM911J RD1/4PMF010J | | | | | | |
| △ | | R509 | RD1/4PMF100J | | | | | | |
| △ | | R119,R120,R563,R564,R625 | RD1/4PMF101J | | | | | | |
| △ | | R613-R615 | RD1/4PMF221J | | | | | | |
| △ | | R621,R622,R631,R632 | RD1/4PMF222J | | | | | | |
| △ | | R527,R528 | RD1/4PMF680J | | | | | | |
| △ | | R610 | RFA1/4PS100J | | | | | | |
| △ | | R529,R530,R551-R558,R703 | RFA1/4PS101J | | | | | | |
| △ | | R549,R550 | RFA1/4PS221J | | | | | | |
| △ | | R513-R516 | RFA1/4PS391J | | | | | | |
| △ | | R707 | RFA1/4PS471J | | | | | | |
| △ | | R559,R560,R575-R578 | RFA1/4PS4R7J | | | | | | |
| △ | | R704,R705 | RS2LMF152J | | | | | | |
| △ | | R709,R710 | RS2LMF331J | | | | | | |
| | | Other Resistors | RD1/8PM□□□J | | | | | | |
| | | OTHERS | | | | | | | |
| | | CN8104 PIN JACK(2P) PIN JACK(4P) SPEAKER TERMINAL 8-P | AKB1100 AKB1124 AKE1011 | | | | | | |
| | | CN8108 JACK | AKN-207 | | | | | | |

| Mark | No. | Description | Parts No. | Mark | Mark | No. | Description | Parts No. | Mark |
|------|-------------------------|---|--------------|------|------|----------------------------------|-------------|--------------|------|
| | C307,C308 | (A-503R only) | CEAS101M25 | | | IC251 | | UPC4570C | |
| | C307,C308 | (A-403R only) | CEAS100M50 | | | Q245 (A-403R only) | | DTC143ES | |
| | C321,C322 | | CEAS101M25 | | | Q291 (A-503R only) | | DTC124ES | |
| | C845 | | CEAS2R2M50 | | | D245,D290 (A-403R only) | | 1SS252 | |
| | C841,C843 | | CEAS470M16 | | | | | | |
| | C319,C320 | | CEAS470M25 | | | COILS AND FILTERS | | | |
| | C309,C310 | | CFTYA153J50 | | | L804 (A-503R only) | | ATX1008 | |
| | C315,C316 | | CFTYA183J50 | | | SWITCHES AND RELAYS | | | |
| | C345,C346 | | CFTYA273J50 | | | S271 (A-503R only) | | ASD1025 | |
| | C347,C348 | | CFTYA393J50 | | | RY245 (A-403R only) | | ASR1040 | |
| | C311,C312 | | CFTYA823J50 | | | CAPACITORS | | | |
| | C340 (A-503R only) | | CKCYF103Z50 | | | C257,C258 (100/25) (For A-503R) | | ACH1262 | |
| | C300,C305,C306,C842 | | CKCYF103Z50 | | | C257,C258 (For A-403R) | | CEAS100M50 | |
| | C846 | | CKCYF103Z50 | | | C207,C208,C211,C212 (For A-503R) | | CCCSL101K500 | |
| | C801-C820 | | CKMYB271K50 | | | C207,C208,C211,C212 (For A-403R) | | CCCSL101J50 | |
| | C875-C878 | | CKMYB681K50 | | | C253,C254 | | CCPUSL470J50 | |
| | C349-C351 (A-503R only) | | CKPUYF103Z25 | | | C259,C260 (For A-503R) | | CEAS221M25 | |
| | C313,C314 | | CQMA332J50 | | | C259,C260 (For A-403R) | | CEAS470M25 | |
| | | | | | | C281,C282 | | CEAS470M25 | |
| | | | | | | C283,C284 (A-403R only) | | CEAS470M25 | |
| | | | | | | C293 (A-503R only) | | CEAS470M35 | |
| | | | | | | C251,C252 (A-503R only) | | CEEA100M50 | |
| | | | | | | C251,C252 (A-403R only) | | CEAS100M50 | |
| | | | | | | C201,C202,C205,C206 | | CKCYB391K500 | |
| | | | | | | C209,C210,C213,C214 | | CKCYB391K50 | |
| | | | | | | C203,C204 | | CKCYB391K500 | |
| | | | | | | C200 | | CKCYF473Z50 | |
| | | | | | | C292 (A-503R only) | | CKCYX473M25 | |
| | | | | | | C261-C264 | | CKMYB681K50 | |
| | | | | | | C271,C272 | | CKPUYF103Z25 | |
| | | | | | | C273,C274 (A-403R only) | | CKPUYF103Z25 | |
| | | | | | | RESISTORS | | | |
| | | | | | | △ R281,R282 | | RD1/4PMF101J | |
| | | | | | | △ R283,R284 (A-403R only) | | RD1/4PMF101J | |
| | | | | | | Other Resistors | | RD1/8PM□□□J | |
| | | | | | | OTHERS | | | |
| | X801 | CERAMIC RESONATOR(4.19MHZ) REMOTE RECEIVER UNIT | ASS1018 | | | CN8204 PIN JACK(8P) | | AKB1127 | |
| | | | AXX1023 | | | CN8205 PIN JACK(6P) | | AKB1138 | |
| | | | | | | CN3 CONNECTOR(10P)(A-503R only) | | KPE10 | |
| | | | | | | CN1 CONNECTOR(10P) | | KPE10 | |
| | | | | | | CN2 CONNECTOR(12P) | | KPE12 | |
| | | | | | | MOTOR VOL ASS'Y | | | |
| | | | | | | SEMICONDUCTORS | | | |
| | | | | | | IC971 (For A-503R) | | NJM5532D-D | |
| | | | | | | IC971 (For A-403R) | | UPC4570C | |
| | | | | | | IC970 | | TA7291 S | |
| | | | | | | Q940 | | 2SA933 S | |
| | | | | | | Q941,Q942 | | 2SC2878 | |
| | | | | | | Q920,Q921 | | 2SK246 | |
| | | | | | | D920-D923,D930 | | 1SS252 | |
| | | | | | | SWITCHES AND RELAYS | | | |
| | | | | | | RY930 | | ASR1040 | |
| | | | | | | CAPACITORS | | | |
| | | | | | | C977,C978,C983,C984 (100/25) | | ACH1262 | |
| | | | | | | (For A-503R) | | CEAS100M50 | |
| | | | | | | C977,C978,C983,C984 (For A-403R) | | CCCSL101K500 | |
| | | | | | | C981,C982 | | CCCSL151K500 | |
| | | | | | | C975,C976 | | | |
| | | | | | | RESISTORS | | | |
| | | | | | | △ R1-R5 | | | |
| | | | | | | △ R11 | | | |
| | | | | | | △ R13 | | | |
| | | | | | | Other Resistors | | | |
| | | | | | | OTHERS | | | |
| | | | | | | SCREW | | | |
| | | | | | | CN12 CONNECTOR(11P) | ABA-298 | | |
| | | | | | | | KPE11 | | |
| | | | | | | INPUT ASS'Y | | | |
| | | | | | | SEMICONDUCTORS | | | |
| | | | | | | IC290 (A-503R only) | TA7291 S | | |
| | | | | | | IC271 (A-403R only) | TC9164N | | |
| | | | | | | IC272 | TC9164N | | |

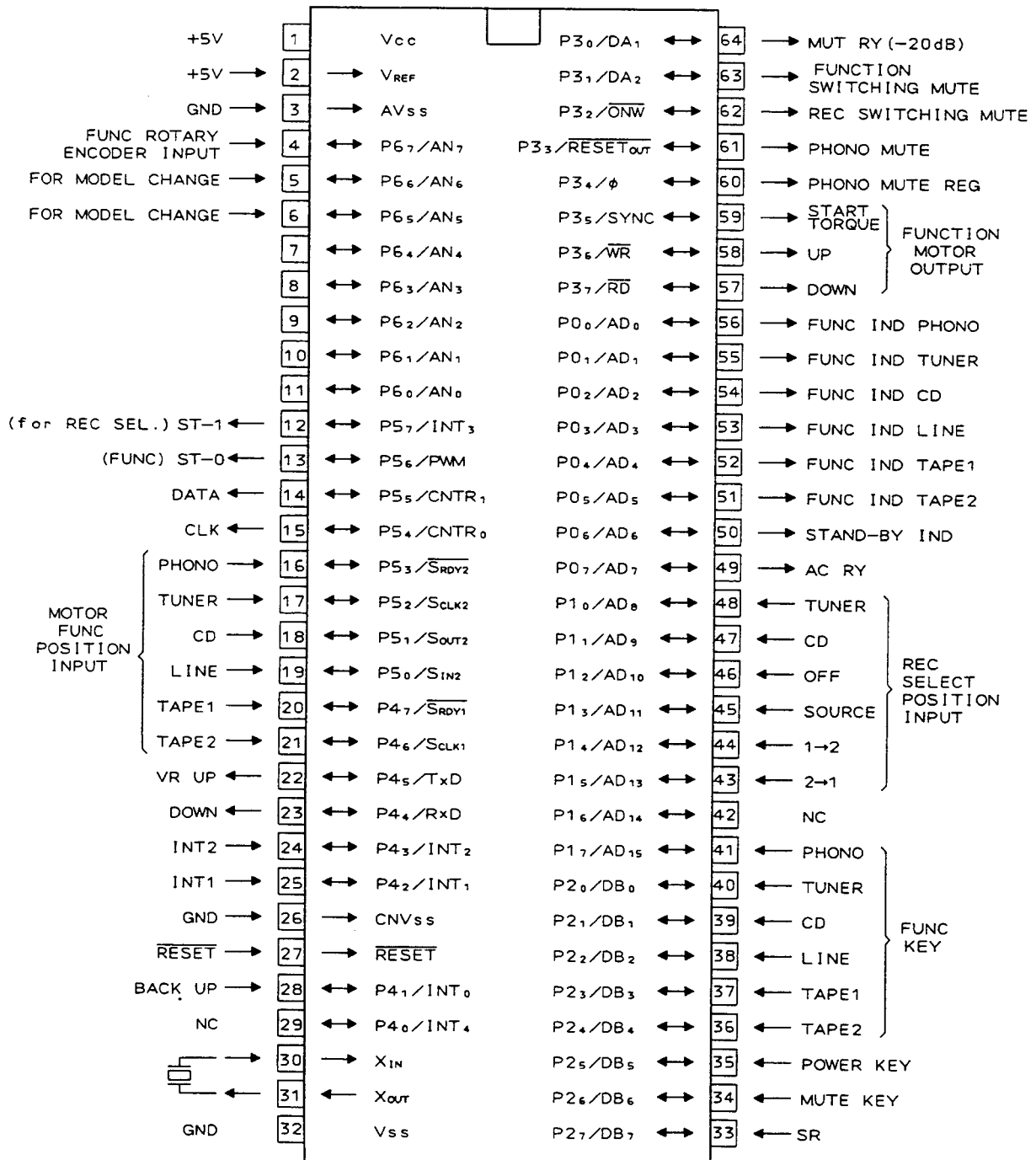
| Mark | No. | Description | Parts No. | Mark |
|------------------|-----------------------------------|----------------|--------------|------|
| | C979,C980 | | CCCSL470K500 | |
| | C920,C921 | | CCMSL150J50 | |
| | C970 | | CEAS470M35 | |
| | C973,C974 (For A-503R) | | CEEA100M50 | |
| | C973,C974 (For A-403R) | | CEAS100M50 | |
| | C902,C923,C930 | | CKCYF103Z50 | |
| | C972 | | CKCYX473M25 | |
| RESISTORS | | | | |
| | R925,R926 | | RD1/4PM221J | |
| | R931,R932 | | RD1/4PM222J | |
| | R977,R978 (For A-503R) | | RD1/4PM272J | |
| | R977,R978 (For A-403R) | | RD1/4PM222J | |
| | R981,R982 (For A-503R) | | RD1/4PM332J | |
| | R981,R982 (For A-403R) | | RD1/4PM102J | |
| | R979,R980 (For A-503R) | | RD1/4PM391J | |
| | R979,R980 (For A-403R) | | RD1/4PM431J | |
| △ | R920,R930 | | RD1/4PMF010J | |
| | VR970 (20k×2, 30k×2) (For A-503R) | | ACX1083 | |
| | VR970 (50k-A5×2) (For A-403R) | | ACX1084 | |
| | Other Resistors | | RD1/8PM□□□J | |
| OTHERS | | | | |
| | CN6 | CONNECTOR(12P) | KPE12 | |
| | CN5 | CONNECTOR(9P) | KPE9 | |

4. IC INFORMATION

● The information shown in the list is basic information and may not correspond exactly to that shown in the schematic diagrams.

■ **IC801 : (PD5224A)**
 ● **AMP CONTROL μ - COM**

Pin Assignment



Pin Function

| No. | Name | I/O | Function name | Function | Logic |
|-----|-------------------|-----|-----------------|--|---------------|
| 1 | V _{CC} | | Vcc | Input voltage +5V | - |
| 2 | V _{INT} | I | - | "H" Pull up | - |
| 3 | AV _{SS} | I | - | Digital GND | - |
| 4 | P67/AN7 | I | F - EN | Function Rotary encoder input | Step V input |
| 5 | P66/AN6 | I | | For model change | "H" |
| 6 | P65/AN5 | I | | For model change | "H" |
| 7 | P64/AN4 | | | | |
| 8 | P63/AN3 | | | | |
| 9 | P62/AN2 | | | | |
| 10 | P61/AN1 | | | | |
| 11 | P60/AN0 | | | | |
| 12 | P57/INT3 | O | ST | REC. SEL. SW(TC9164N) ST - 1 | |
| 13 | P56/PWM | O | ST | FUNCTION REC. SEL. SW(TC9164N) ST - 0 | |
| 14 | P55/CNTR1 | O | DATA | FUNCTION AND REC. SEL. SW(TC9164N) DATA | |
| 15 | P54/CNTR0 | O | CLK | FUNCTION AND REC. SEL. (TC9164N) CLK | |
| 16 | P53/SRDY2 | I | F - PHONO | Motor FUNC PHONO POSITION INPUT | "H" |
| 17 | P52/SCLK2 | I | F - TUNER | Motor FUNC TUNER POSITION INPUT | "H" |
| 18 | P51/SOUT2 | I | F - CD | Motor FUNC CD POSITION INPUT | "H" |
| 19 | P50/SIN2 | I | F - LINE | Motor FUNC LINE POSITION INPUT | "H" |
| 20 | P47/SRDY1 | I | F - TAPE1 | Motor FUNC TAPE1 POSITION INPUT | "H" |
| 21 | P46/SCLK1 | I | F - TAPE2 | Motor FUNC TAPE2 POSITION INPUT | "H" |
| 22 | P45/TxD | O | V - UP | VR UP | "H" (UP) |
| 23 | P44/RxD | O | V - DOWN | VR DOWN | "H" (DOWN) |
| 24 | P43/INT2 | I | IN T2 | Silent mode input (FUNCTION, POWER, MUTE, REC) | "H" (Release) |
| 25 | P42/INT1 | I | INT1 | Silent mode input (SR only) | "H" (Release) |
| 26 | CNV _{SS} | I | - | (to V _{SS}) | - |
| 27 | RESET | I | RST | Reset terminal | "L" (Reset) |
| 28 | P41/INT0 | I | BACK UP | BACK UP detection (Back up mode) | "L" |
| 29 | P40/INT4 | - | - | | - |
| 30 | X _{IN} | I | XIN | Oscillation (4.19MHz) | - |
| 31 | X _{OUT} | O | XOUT | Oscillation (4.19MHz) | - |
| 32 | V _{SS} | - | V _{SS} | Digital GND | - |
| 33 | P27/DB7 | I | SR | Remote controller signal input | - |
| 34 | P26/DB6 | I | MUT.K | Muting key input | "H" (ON) |
| 35 | P25/DB5 | I | POW.K | Power key input | "H" (ON) |
| 36 | P24/DB4 | I | T2.K | FUNCTION TAPE2 key input | "H" (ON) |
| 37 | P23/DB3 | I | TLK | FUNCTION TAPE1 key input | "H" (ON) |
| 38 | P22/DB2 | I | LLK | FUNCTION LINE key input | "H" (ON) |
| 39 | P21/DB1 | I | CD.K | FUNCTION CD key input | "H" (ON) |
| 40 | P20/DB0 | I | TU.K | FUNCTION TUNER key input | "H" (ON) |
| 41 | P17/AD15 | I | PH.K | FUNCTION PHONO key input | "H" (ON) |
| 42 | P16/AD14 | - | - | | - |
| 43 | P15/AD13 | I | T2→1 | RECEV T2→T1 Copy Position input | "H" (ON) |
| 44 | P14/AD12 | I | T1→2 | RECEV T1→T2 Copy Position input | "H" (ON) |
| 45 | P13/AD11 | I | SOURCE | Sel.SOURCE Position input | "H" (ON) |
| 46 | P12/AD10 | I | OFF | Sel. OFF Position input | "H" (ON) |
| 47 | P11/AD9 | I | CD | sel. CD Position input | "H" (ON) |
| 48 | P10/AD8 | I | TUNER | sel. TUNER Position input | "H" (ON) |
| 49 | P07/AD7 | O | AC RY | AC Primary Relay | "H" (ON) |
| 50 | P06/AD6 | O | ST. IND | STANDBY IND | "H" (ON) |
| 51 | P05/AD5 | O | T2.IND | FUNCTION IND TAPE2 | "H" (ON) |
| 52 | P04/AD4 | O | T1.IND | FUNCTION IND TAPE1 | "H" (ON) |
| 53 | P03/AD3 | O | LI.IND | FUNCTION IND LINE | "H" (ON) |
| 54 | P02/AD2 | O | CD.IND | FUNCTION IND CD | "H" (ON) |
| 55 | P01/AD1 | O | TU.IND | FUNCTION IND TUNER | "H" (ON) |
| 56 | P00/AD0 | O | PH.IND | FUNCTION IND PHONO | "H" (ON) |
| 57 | P37/RD | O | F - DOWN | Motor FUNCTION DOWN | "H" (ON) |
| 58 | P36/WR | O | F - UP | Motor FUNCTION UP | "H" (ON) |
| 59 | P35/SYNC | O | F - MOTOR | Motor FUNCTION Start Torque | "L" |
| 60 | P34/φ | O | P - REG | PHONO POWER ON/OFF | "H" |
| 61 | P33/RESET OUT | O | P - MUT | PHONO MUTE except (FUNCTION PHONO) | "H" |
| 62 | P32/ONW | O | R - MUT | REC change MUTE | "H" |
| 63 | P31/DA2 | O | F - MUT | FUNCTION change MUTE | "H" |
| 64 | P30/DA1 | O | MUT - RY | Muting relay | "H" |

5. FOR A-503R/HB, HEWZ, A-503R-G/HEZ AND A-403R/HEWZ

NOTES:

- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "☉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

5.1 FOR A-503R/HB, HEWZ, A-503R-G/HEZ

CONTRAST OF MISCELLANEOUS PARTS

A-503R/HB, HEWZ, A503R-G/HEZ and A-503R/HE have the same construction except for the following:

| Mark | Symbol & Description | Part No. | | | | Remarks |
|----------|--|--------------|--------------|----------------|-----------------|-----------------|
| | | A-503R HE | A-503R HB | A-503R HEWZ | A-503R-G HEZ | |
| | AF assembly | AWZ5580 | AWZ5587 | AWZ5580 | AWZ5580 | |
| Δ | AC power cord | ADG1049 | ADG1144 | ADG1049 | ADG1049 | |
| Δ | Fuse (FU2 T500mA/250V) | AEK-505 | ..... | AEK-505 | AEK-505 | |
| Δ | AC socket 3-P | AKP-502 | ..... | AKP-502 | AKP-502 | |
| | Rotary knob L (PLS) | AAB1343 | AAB1343 | AAB1343 | AAB1355 | |
| | Rotary knob S (PLS) | AAB1349 | AAB1349 | AAB1349 | AAB1350 | |
| | Power button (PLS) | AAD2421 | AAD2421 | AAD2421 | AAD2450 | |
| | Function button (PLS) | AAD2422 | AAD2422 | AAD2422 | AAD2451 | |
| | Push button (PLS) | AAD2423 | AAD2423 | AAD2423 | AAD2452 | |
| | Name plate | AAM1058 | AAM1058 | AAM1058 | AAM1059 | |
| | Screw | BBT30P060FZK | BBT30P060FZK | BBT30P060FZK | ABA-274 | For bonnet side |
| | Spacer | ..... | AHB1110 | ..... | ..... | For packing |
| | Packing case | AHD2740 | AHD2741 | AHD2740 | AHD2742 | |
| NSP | Air cap | ..... | AHG1087 | ..... | ..... | For packing |
| | Panel base | AMB2135 | AMB2135 | AMB2135 | AMB2156 | |
| NSP | UL caution | ..... | AAX-313 | ..... | ..... | See P3. |
| | Top cover (PLS) | ..... | AME1086 | ..... | ..... | See P3. |
| | Front panel | ANB1820 | ANB1820 | ANB1820 | ANB1822 | |
| NSP | Rear panel | ANC2214 | ANC2215 | ANC2214 | ANC2214 | |
| | Bonnet case | ANE1438 | ANE1437 | ANE1438 | ANE1433 | |
| | Remote control unit | AXD1391 | AXD1391 | AXD1391 | AXD1396 | |
| | Battery cover | AZN2249 | AZN2249 | AZN2249 | AZN2250 | |
| | Operating Instructions (German) | ..... | ..... | ARC1472 | ..... |  |
| | Operating Instructions (English) | ..... | ARB1485 | ..... | ..... |  |
| | Operating Instructions (English/German/French/ Italian/Swedish/Dutch/ Spanish/Portuguese) | ARE1314 | ..... | ..... | ARE1314 | |

AF ASSEMBLY

Although AWZ5587 and AWZ5580 are different in part number, they have the same service parts.

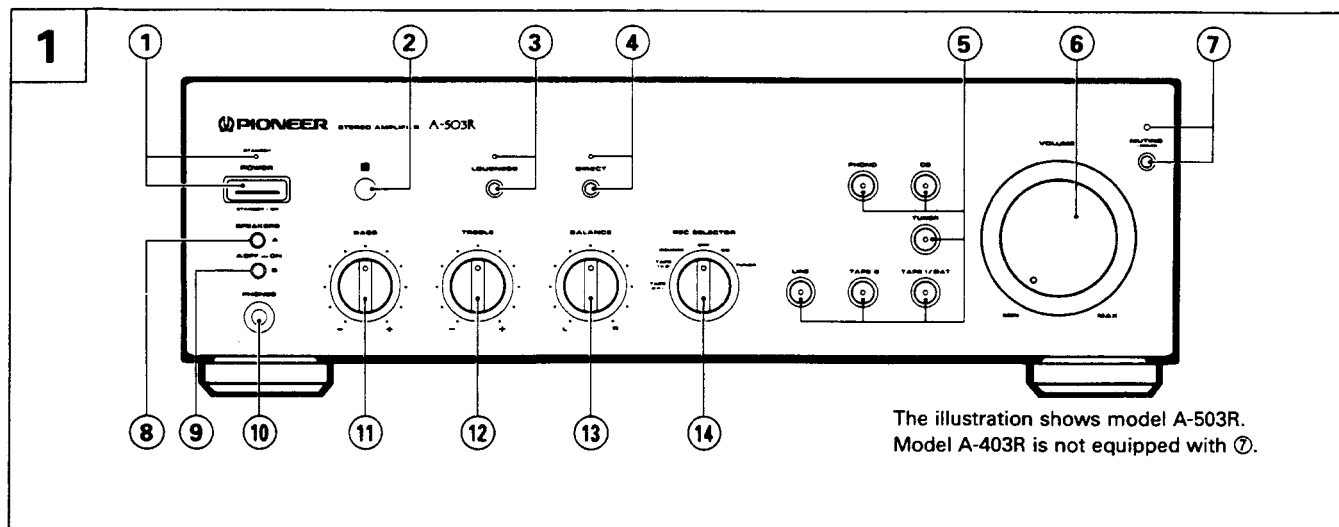
5.2 FOR A-403R/HEWZ

CONTRAST OF MISCELLANEOUS PARTS

A-403R/HEWZ and A-403R/HE have the same construction except for the following:

| Mark | Symbol & Description | Part No. | | Remarks |
|------|--|-----------|-------------|---------|
| | | A-403R/HE | A-403R/HEWZ | |
| | Operating Instructions (German) | ..... | ARC1472 | |
| | Operating Instructions (English/German/French/ Italian/Swedish/Dutch/ Spanish/Portuguese) | ARE1314 | ..... |  |

6. PANEL FACILITIES



FRONT PANEL ①

① POWER STANDBY/ON switch/indicator

This is the switch for electric power.

ON : When set to the ON position, power is supplied and the unit becomes operational.

STANDBY : When set to the STANDBY position, the main power flow is cut and the unit is no longer fully operational. A minute flow of power feeds the unit to maintain operation readiness. When the STANDBY indicator lights, the unit is in STANDBY.

② Remote control sensor window

③ LOUDNESS button/indicator

Use when listening at low volume levels.

On : The indicator lights: Boosts low and high frequencies to give added punch to playback even at a low volume level.

Off : The indicator goes off: Should normally be left in this position.

NOTE:

This button does not operate when the DIRECT button is in the on position.

④ DIRECT button/indicator

Use this button when you do not wish to pass the output from input terminal equipment through the various frequency adjusting circuits (BASS, TREBLE, BALANCE, LOUDNESS) and adaptor terminals (ADAPTOR).

On : The indicator lights: The signals input through the input terminals are reproduced without passing through the various frequency adjusting circuits. This results in flat, pure sound which is a more faithful reproduction of the input source.

Off : The indicator goes out: The signal passes through the various frequency adjusting circuits.

⑤ Input selector buttons/indicators

Use to select the playback source.

PHONO : For record playback with a turntable.

CD : For compact disc playback with a CD player.

TUNER : For AM or FM broadcast reception with a tuner.

TAPE 1/DAT : For playback with a cassette deck or digital audio cassette deck connected to TAPE 1/DAT terminals.

TAPE 2 : For playback with a cassette deck connected to TAPE 2 terminals.

LINE : For playback with a component connected to LINE terminals.

NOTE:

Circuit switching is performed by motor-driven rotary switches. Therefore, there is a slight time lag between pressing of the button and switching (A-503R only).

⑥ VOLUME control

Use to adjust the volume level.

NOTE:

This unit is equipped with a circuit that attenuates LOUDNESS and tone effects as volume is turned up.

⑦ MUTING button/indicator (A-503R only)

Use to temporarily lower sound volume.

On : The indicator lights: The sound volume is lowered to one-tenth (-20 dB).

Off : The indicator goes off: The sound will return to its previous volume.

⑧ SPEAKERS A selector button

Use this button to listen to the speaker system connected to SPEAKER A terminals.

ON (■) : Depressed position: Sound is heard from the speaker system.

OFF (□) : Released position: No sound is heard from the speaker system. Set to this position when listening with headphones.

⑨ SPEAKERS B selector button

Use this button to listen to the speaker system connected to SPEAKER B terminals.

- ON (■)** : Depressed position: Sound is heard from the speaker system.
- OFF (■)** : Released position: No sound is heard from the speaker system. Set to this position when listening with headphones.

⑩ PHONES jack

When using headphones, insert the plug into this jack.

⑪ BASS tone control

Use to adjust the low-frequency tone. The center position is the flat (normal) position. When turned to the right, low-frequency tones are emphasized; when turned to the left, low-frequency tones are de-emphasized.

NOTE:

- *This control does not operate when DIRECT button is in the on position.*
- *When the volume knob is positioned before the 11 o'clock position, the set tone control effect is obtained.*
When the volume knob is positioned past the 11 o'clock position, the effect becomes increasingly weaker.

⑫ TREBLE tone control

Use to adjust the high-frequency tone. The center position is the flat (normal) position. When turned to the right, high-frequency tones are emphasized; when turned to the left, high-frequency tones are de-emphasized.

NOTE:

- *This control does not operate when DIRECT button is in the on position.*
- *When the volume knob is positioned before the 11 o'clock position, the set tone control effect is obtained.*
When the volume knob is positioned past the 11 o'clock position, the effect becomes increasingly weaker.

⑬ BALANCE control

Should normally be left in the center position. Adjust balance if the sound is louder from one of the speakers. If the right side is louder, turn toward the L position and if the left side is louder, turn toward the R position.

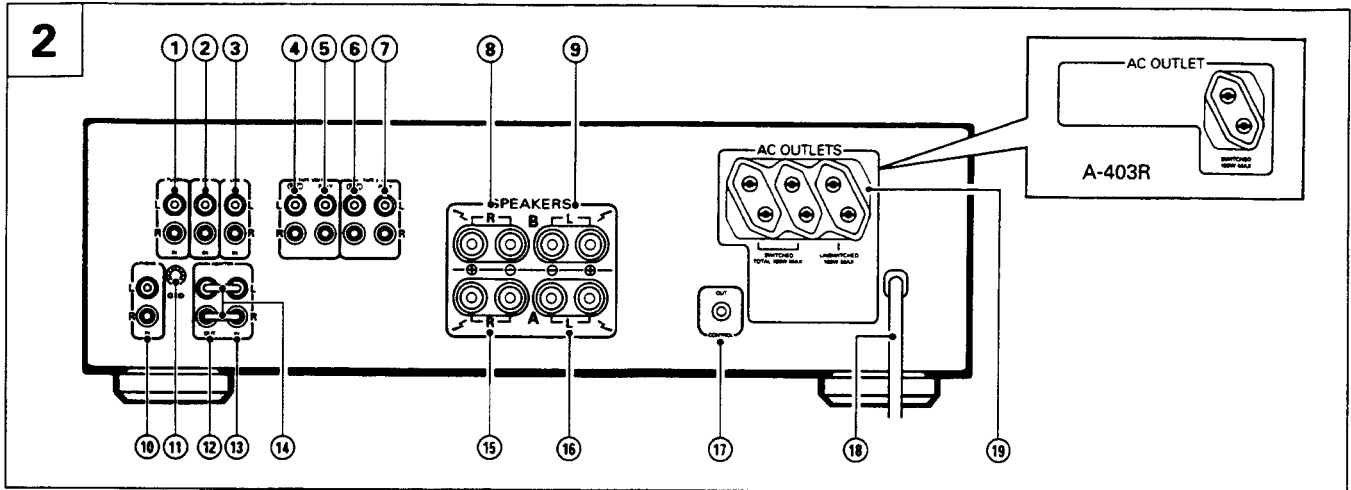
NOTE:

This control does not operate when DIRECT button is in the on position.

⑭ REC SELECTOR switch

When this switch is set to a position other than SOURCE or OFF, the equipment selected by REC SELECTOR switch can be recorded from, irrespective of the settings of the input selector buttons and DIRECT button.


- TUNER** : To record from the equipment connected to TUNER terminals.
- CD** : To record from the equipment connected to CD terminals.
- OFF** : In this position, nothing from the REC terminals of TAPE 1/DAT and TAPE 2 is output. Set to this position when not recording; the cassette deck will be disconnected, improving sound quality.
- SOURCE** : To record from the equipment selected by input selector button.
- TAPE 1 ► 2** : To record (copy) from the cassette deck of TAPE 1/DAT terminals, to the cassette deck of TAPE 2 terminals.
- TAPE 2 ► 1** : To record (copy) from the cassette deck of TAPE 2 terminals, to the cassette deck of TAPE 1/DAT terminals.



REAR PANEL 2

- ① TUNER terminals
- ② CD terminals
- ③ LINE terminals
- ④ TAPE 1/DAT REC terminals
- ⑤ TAPE 1/DAT PLAY terminals
- ⑥ TAPE 2 REC terminals
- ⑦ TAPE 2 PLAY terminals
- ⑧ SPEAKER B terminals (right channel)
- ⑨ SPEAKER B terminals (left channel)
- ⑩ PHONO terminals
- ⑪ Turntable ground terminal (GND)
- ⑫ ADAPTOR OUT terminals

- ⑬ ADAPTOR IN terminals
- ⑭ Shorting bars
- ⑮ SPEAKER A terminals (right channel)
- ⑯ SPEAKER A terminals (left channel)
- ⑰ CONTROL OUT jack

This jack is for output of control signals when operating other components bearing the  mark with the attached remote control unit.

- ⑱ Power cord
- Connect this cord to an AC wall socket, or the AC outlet of an audio timer.
- ⑲ AC OUTLETS

7. SPECIFICATIONS

[A-503R]

Amplifier Section

| | |
|---|---------------|
| DIN Continuous power output (both channels driven at 1 kHz) | |
| T.H.D. 1 %, 4 Ω | 100 W + 100 W |
| T.H.D. 1 %, 8 Ω | 70 W + 70 W |
| Continuous power output (both channels driven at 20 Hz to 20 kHz)** | |
| T.H.D. 0.05 %, 4 Ω | 75 W + 75 W* |
| T.H.D. 0.03 %, 8 Ω | 55 W + 55 W* |
| Dynamic power output (on EIA dynamic test signal) | |
| 4 Ω/2 Ω | 110 W/135 W |
| Total harmonic distortion** | |
| 20 Hz to 20 kHz, 30 W, 8 Ω | 0.01 %* |

• The above values are applicable when AC 230 V power is supplied.

| | |
|--|-------------------------------------|
| Input sensitivity/impedance | |
| PHONO (MM) | 2.8 mV/50 kΩ |
| CD, TUNER, LINE, TAPE | 200 mV/50 kΩ |
| PHONO overload level | |
| 1 kHz, T.H.D. 0.1 % | 150 mV |
| Output level/impedance | |
| TAPE REC | 200 mV/1 kΩ |
| Frequency response | |
| PHONO (MM) | 20 Hz to 20 kHz, ±0.5 dB |
| CD, TUNER, LINE, TAPE | 5 Hz to 100 kHz, ± ₃ dB* |
| Tone control (volume control set at -30 dB position) | |
| BASS | ±8 dB (100 Hz) |
| TREBLE | ±8 dB (10 kHz) |
| Loudness contour (volume control set at -30 dB position) | +6 dB (100 Hz)/ +3 dB (10 kHz) |
| Signal-to-Noise ratio (IHF short circuit, A network) | |
| PHONO (MM, 5 mV input) | 89 dB* |
| CD, TUNER, LINE, TAPE | 107 dB* |
| Signal-to-Noise ratio (DIN, continuous power/50 mW) | |
| PHONO (MM) | 72 dB/70 dB* |
| CD, TUNER, LINE, TAPE | 95 dB/80 dB* |
| MUTING | -20 dB |

Power Supply/Miscellaneous

| | |
|--------------------------|--------------------------------|
| Power requirements | a.c. 220 — 230 Volts, 50/60 Hz |
| Power consumption | 500 W |
| Dimensions | 420 (W) x 360 (D) x 125 (H) mm |
| Weight (without package) | 8.4 kg |

Accessories

| | |
|-------------------------|---|
| Remote control unit | 1 |
| Batteries (IEC R6P, AA) | 2 |
| Operating instructions | 1 |

NOTE:

Specifications and design are subject to possible modifications without notice, due to improvements.

*Measured with DIRECT button set to on.

**Measured by Audio Spectrum Analyzer.

[A-403R]

Amplifier Section

| | |
|---|--------------|
| DIN Continuous power output (both channels driven at 1 kHz) | |
| T.H.D. 1 %, 4 Ω | 75 W + 75 W |
| T.H.D. 1 %, 8 Ω | 60 W + 60 W |
| Continuous power output (both channels driven at 20 Hz to 20 kHz)** | |
| T.H.D. 0.05 %, 4 Ω | 50 W + 50 W* |
| T.H.D. 0.03 %, 8 Ω | 40 W + 40 W* |
| Dynamic power output (on EIA dynamic test signal) | |
| 4 Ω/2 Ω | 85 W/95 W |
| Total harmonic distortion** | |
| 20 Hz to 20 kHz, 20 W, 8 Ω | 0.01 %* |

• The above values are applicable when AC 230 V power is supplied.

| | |
|--|-------------------------------------|
| Input sensitivity/impedance | |
| PHONO (MM) | 2.8 mV/50 kΩ |
| CD, TUNER, LINE, TAPE | 200 mV/50 kΩ |
| PHONO overload level | |
| 1 kHz, T.H.D. 0.1 % | 150 mV |
| Output level/impedance | |
| TAPE REC | 200 mV/1 kΩ |
| Frequency response | |
| PHONO (MM) | 20 Hz to 20 kHz, ±0.5 dB |
| CD, TUNER, LINE, TAPE | 5 Hz to 100 kHz, ± ₃ dB* |
| Tone control (volume control set at -30 dB position) | |
| BASS | ±8 dB (100 Hz) |
| TREBLE | ±8 dB (10 kHz) |
| Loudness contour (volume control set at -30 dB position) | +6 dB (100 Hz)/ +3 dB (10 kHz) |
| Signal-to-Noise ratio (IHF short circuit, A network) | |
| PHONO (MM, 5 mV input) | 85 dB* |
| CD, TUNER, LINE, TAPE | 106 dB* |
| Signal-to-Noise ratio (DIN, continuous power/50 mW) | |
| PHONO (MM) | 71 dB/67 dB* |
| CD, TUNER, LINE, TAPE | 95 dB/71 dB* |

Power Supply/Miscellaneous

| | |
|--------------------------|--------------------------------|
| Power requirements | a.c. 220 — 230 Volts, 50/60 Hz |
| Power consumption | 440 W |
| Dimensions | 420 (W) x 360 (D) x 125 (H) mm |
| Weight (without package) | 6.7 kg |

Accessories

| | |
|-------------------------|---|
| Remote control unit | 1 |
| Batteries (IEC R6P, AA) | 2 |
| Operating instructions | 1 |

NOTE:

Specifications and design are subject to possible modifications without notice, due to improvements.

*Measured with DIRECT button set to on.

**Measured by Audio Spectrum Analyzer.

