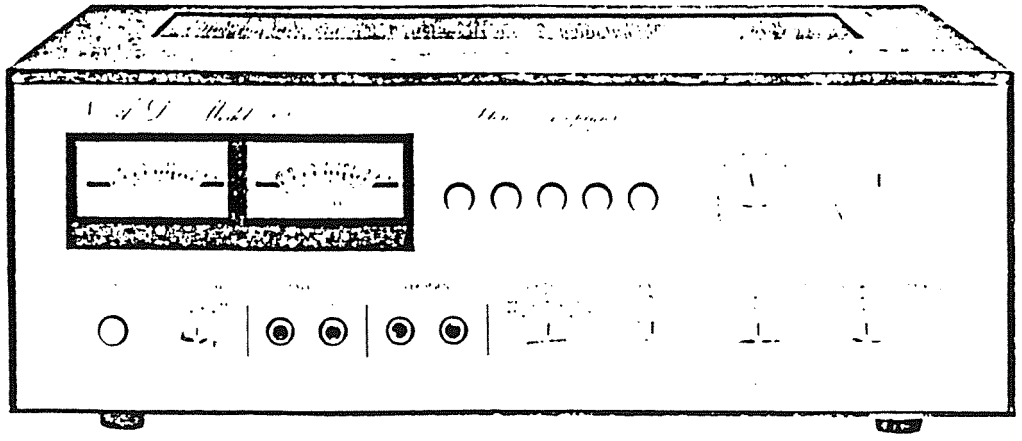
SERVICE MANUAL

NAD Model 90

STEREO AMPLIFIER



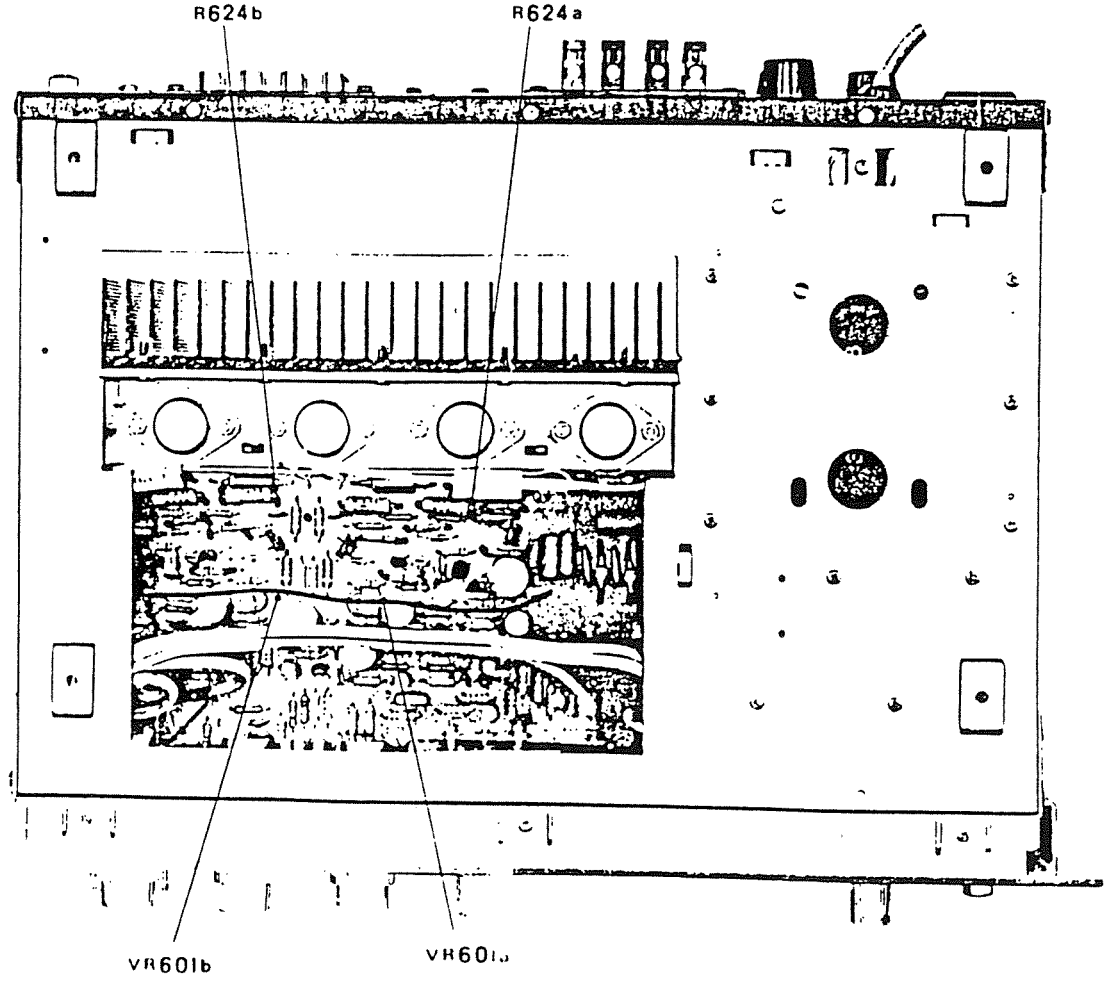
2. BIAS ADJUSTMENT PROCEDURE

The proper bias adjustment is most important to assure correct performance of the amplifier. Bias adjustment is necessary if any of the transistors are replaced in the power amplifier circuitry or the amplifier exhibits overheating of the output transistors under normal operating condisions.

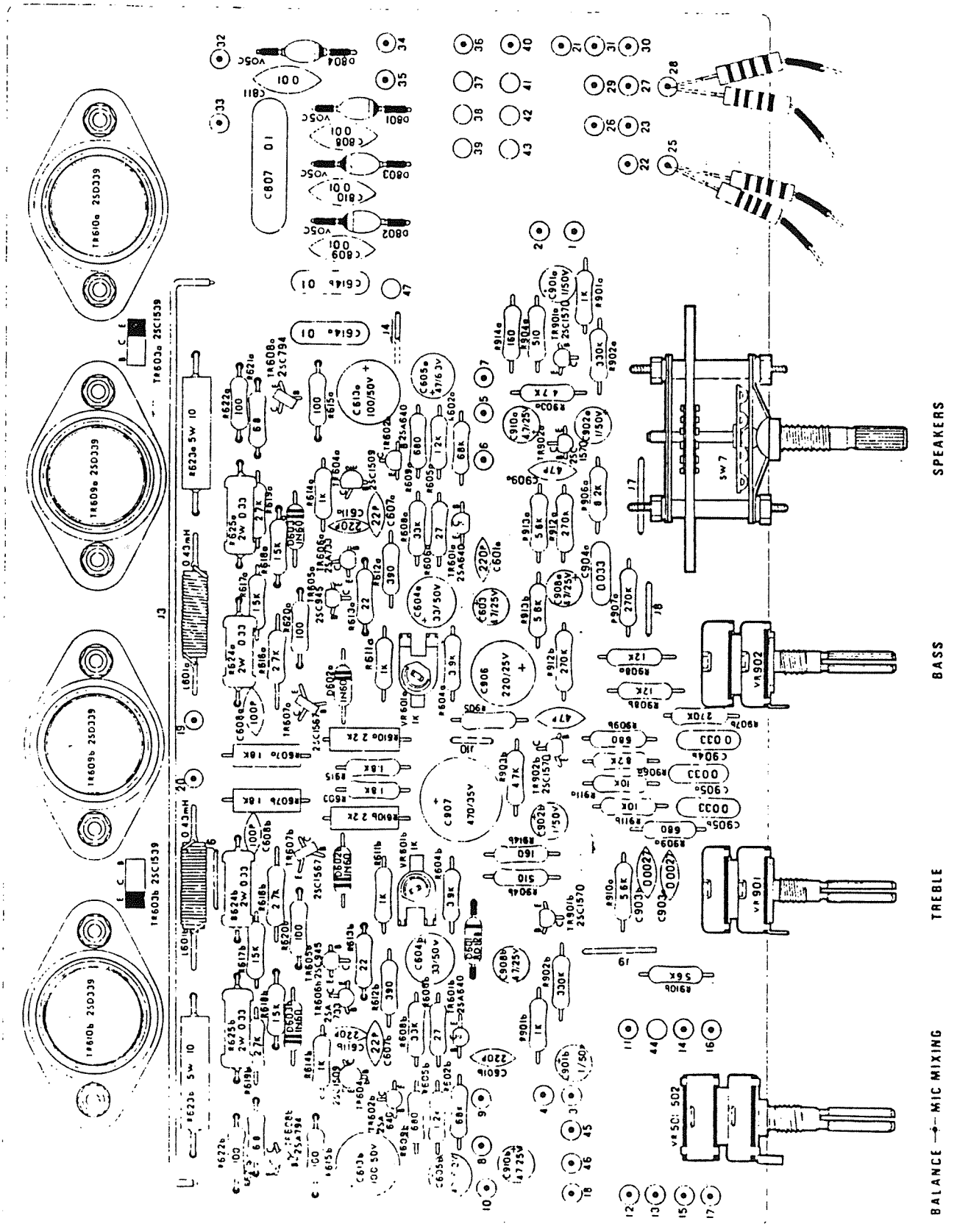
INDICATOR	ADJUSTMENT	REMARKS
DC Voltmeter	VR601a, b (1 Kohm)	Adjust for 0.006 – 0.015 V across R624a, b (0.33 ohm) with NO SIGNAL

REMARK: Bias can also be adjusted by using a line wattmeter. Adjust the VR601a and VR601b to the point at which the line wattmeter shows very slight increase.

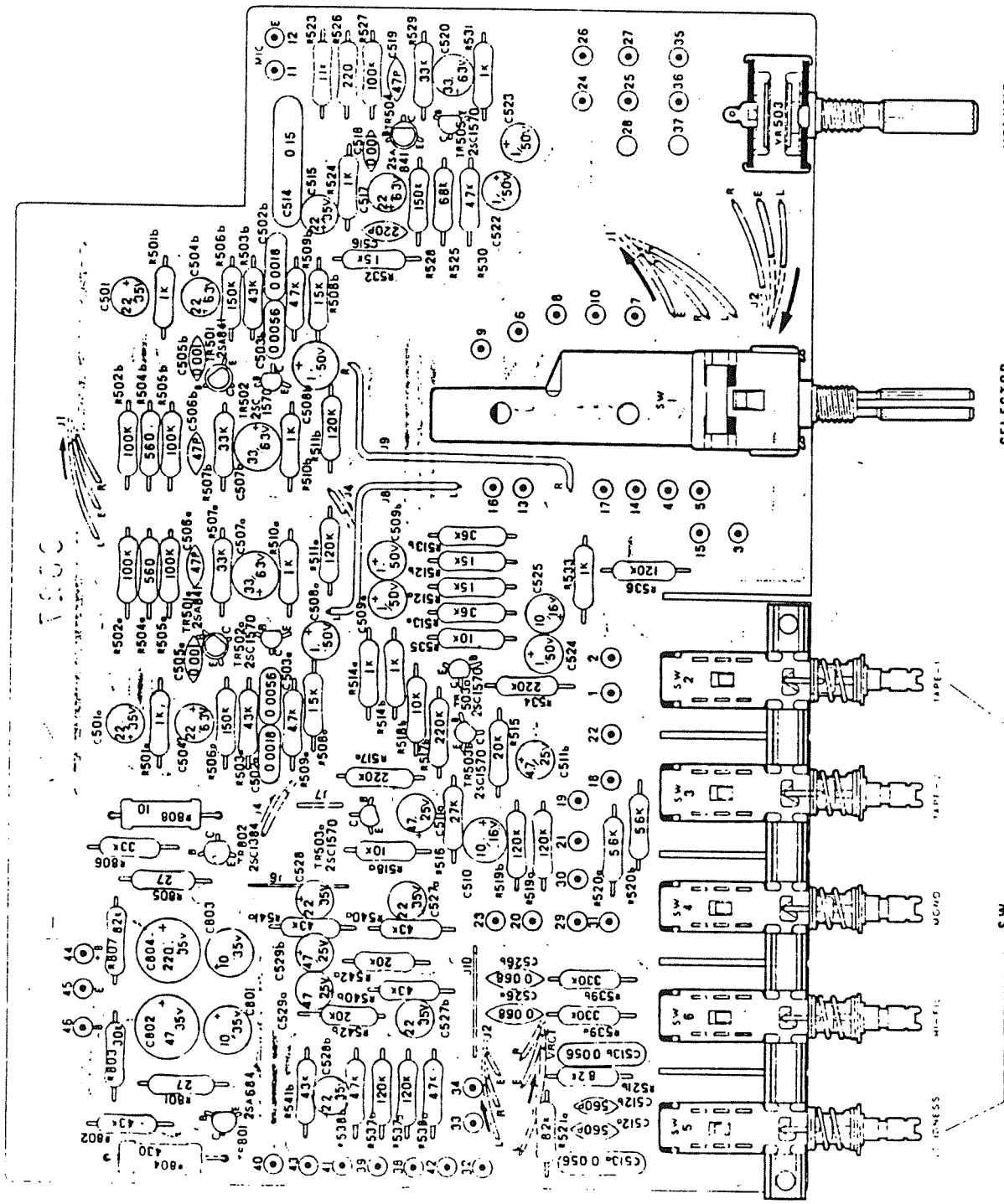
3. ADJUSTMENT AND CHECK POINTS



7. 0027 PRE-AMP BOARD (TOP VIEW)



9. 0028 MAIN AMP BOARD (TOP VIEW)



Transistors.

Powerboard :

TR601a	A640	BC560
TR601b	A640	BC560
TR 602b	BC560	hfe 498
TR 602a	BC560	hfe 498
TR 604b	2SC3328 (y)	hfe 144
TR 604a	2SC3328	hfe 144
TR 605b	C945	hfe 242
TR 605a	C945	hfe 246
TR 606b	A733	hfe 338 new
TR 606a	A733	hfe 338 new
TR 607b	BD 139	hfe 110
TR 607a	BD 139	hfe 110
TR 608b	BD140	hfe 117
TR 608a	BD 140	hfe 117
TR 901b	BC550	hfe 580 new
TR 901a	BC550	hfe 580 new
TR 902b	BC550	hfe 594 new
TR 902a	BC550	hfe 594 new

Tone control board

TR 501a	BC 560	Hfe 542 new.
TR 501b	BC 560	Hfe 546 new
TR 502a	C1570 (G)	Hfe 339
TR 502b	C1570 (G)	Hfe 339
TR 503a	BC550	Hfe 651 new
TR 503b	BC550	Hfe 651 new
TR 504	BC560	Hfe 547 new
TR 505	BC550	Hfe 607 new
TR 506	BC550	Hfe 607 new
TR 801	2SA684	hfe 200
TR 802	2SC1384	hfe 200

C1570 =BC 550
A640 = BC 560
A841 = BC 560
A733 = BC 557
C945 = BC 182

Ceramic caps.

Tone board.

C514 = 154k =150000 pf = 150nF = 0,15 uF = MKT 0,15
C503b = 562k = 5600pf = 5,6nF
C503a = 562k = 5600pf = 5,6nF newtone
C519 = 47pf
C506b = 47pf
C506a = 47pf
C502a = 182k = 1800 pf =1,8nf
C503b = 182k = 1800pf = 1,8nf
C505a = ,001k = 0,001uf = 1 nf newtone
C505b = ,001k = 0,001uF = 1nf
c518 = .001k =0,001uf = 1nf
C516 = 220pf newtone
c 512a= 560 = 560pf
c512b = 560 = 560pf
c513a = 563k = 56000 pf = 56nf ebay 2,50
c513b = 56nf0= 56000pf = 56nf

C526a = .0068 = 0.0068uf = 68nf
C526b = .0068 = 0.0068uf = 68nf

powerboard :

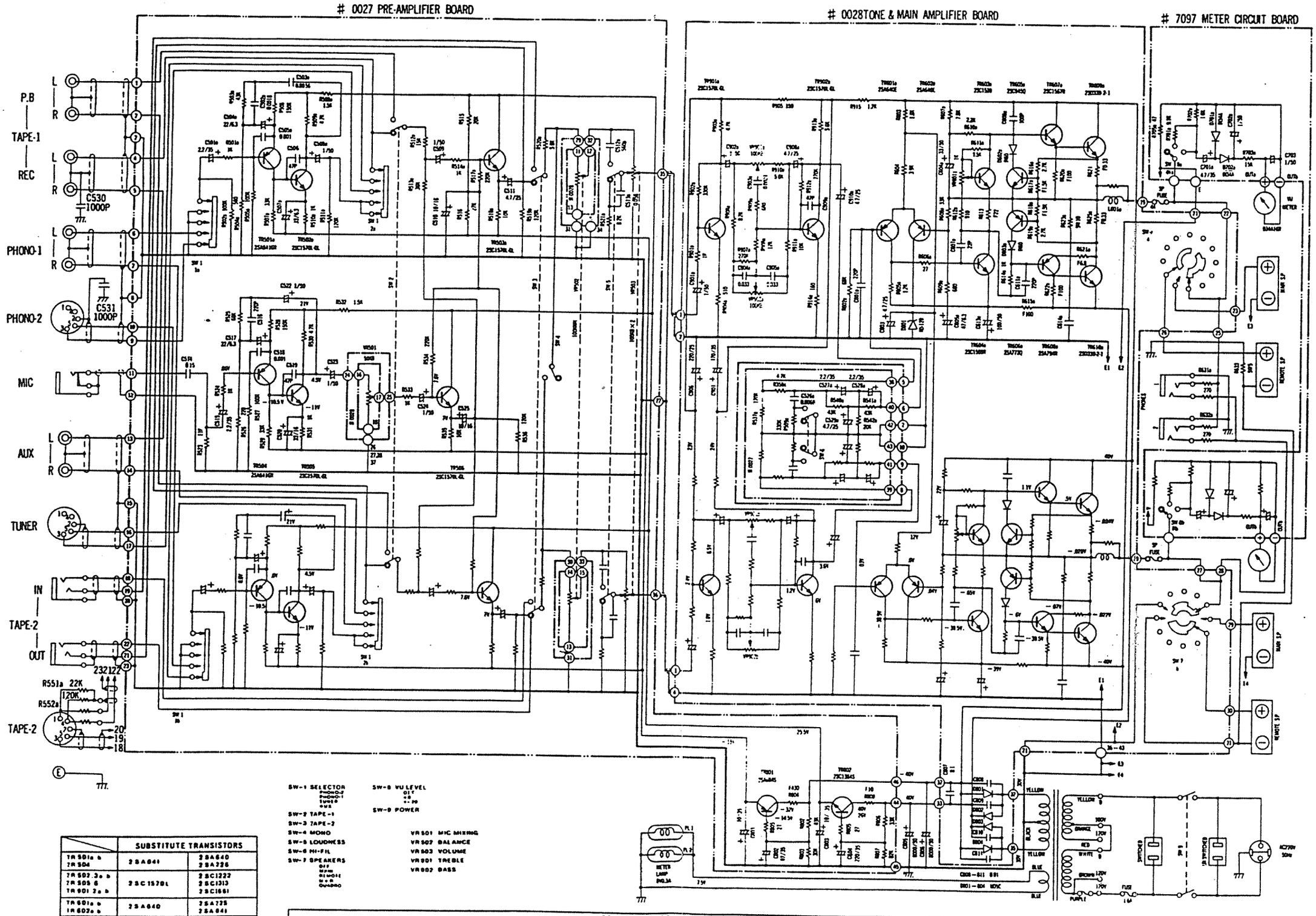
C608b = 100pf
c 608a = 100pf
c904a = 333k 33000pf = 33nf
c 904b = 333k 33000pf = 33nf
c909b = 47 pf
c909a = 47 pf
c 905 a= 333k 33000pf = 33nf
c905 b = 3335 33000pf = 33nf
c 903a =,0027k 0,0027 uf = 2,7 nf
c903b = ,0027k 0.0027uf = 2,7nf
c601a = 220pf
c 601b = 220pf
c607a = 22pf-*+
c607b = 22pf
c611a = 220pf
c611b = 220pf

c808-811 = ,01uF 4x = 10nF

15. SCHEMATIC DIAGRAM

N.A.G. Model 90

Stereo Amplifier



	SUBSTITUTE TRANSISTORS	
TR 501a b TR 504	2 SA 641	2 SA 640 2 SA 726
TR 502 3a b TR 505 6 TR 801 2a b	2 SC 1570 L	2 SC 1222 2 SC 1313 2 SC 1861
TR 601a b TR 602a b	2 SA 640	2 SA 726 2 SA 641
TR 603a b	2 SC 1539	NONE
TR 604a b	2 SC 1509	2 SD 438
TR 605a b	2 SC 845	2 SC 663
TR 606a b	2 SA 733	2 SA 641
TR 607a b	2 SC 1567	2 SC 1124 2 SD 415
TR 608a b	2 SA 784	2 SA 706 2 SB 548
TR 609a b TR 610a b	2 SD 339	2 SD 287 2 SD 533
TR 801	2 SA 684	2 SA 773
TR 802	2 SC 1384	2 SC 1475

TRANSISTOR CONNECTIONS

TR501a.b TR504	TR601a b TR602a.b	TR606a.b	TR608a.b	TR801	TR604a.b	TR605a b	TR603a b	TR502.3a.b TR505 6 TR801.2a.b	TR609a b TR610 a.b	TR802	TR607a b
2SA641	2SA640	2SA733	2SA784	2SA684	2SC1509	2SC845	2SC1539	2SC1570	2SD336	2SC1384	2SC1567

1. Resistance values are indicated in ohms unless otherwise specified (K= 1,000, M= 1,000,000).
2. Capacitance values are shown in microfarads unless otherwise noted (P= micro-microfarads).
3. DC voltages are reference to ground under the following conditions
   No signal.
   ( ) 1,000μV FM stereo signal
4. Numbers shown in circles are pin points