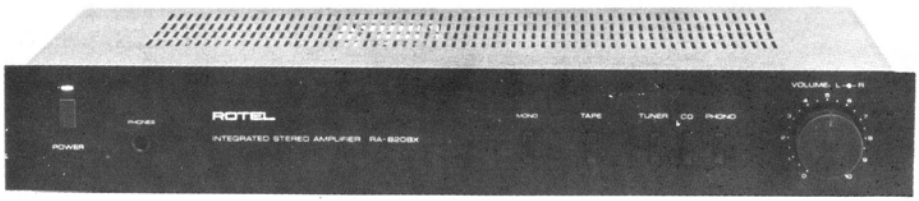
TECHNICAL MANUAL



ROTEL®

RA-820BX

INTEGRATED STEREO AMPLIFIER

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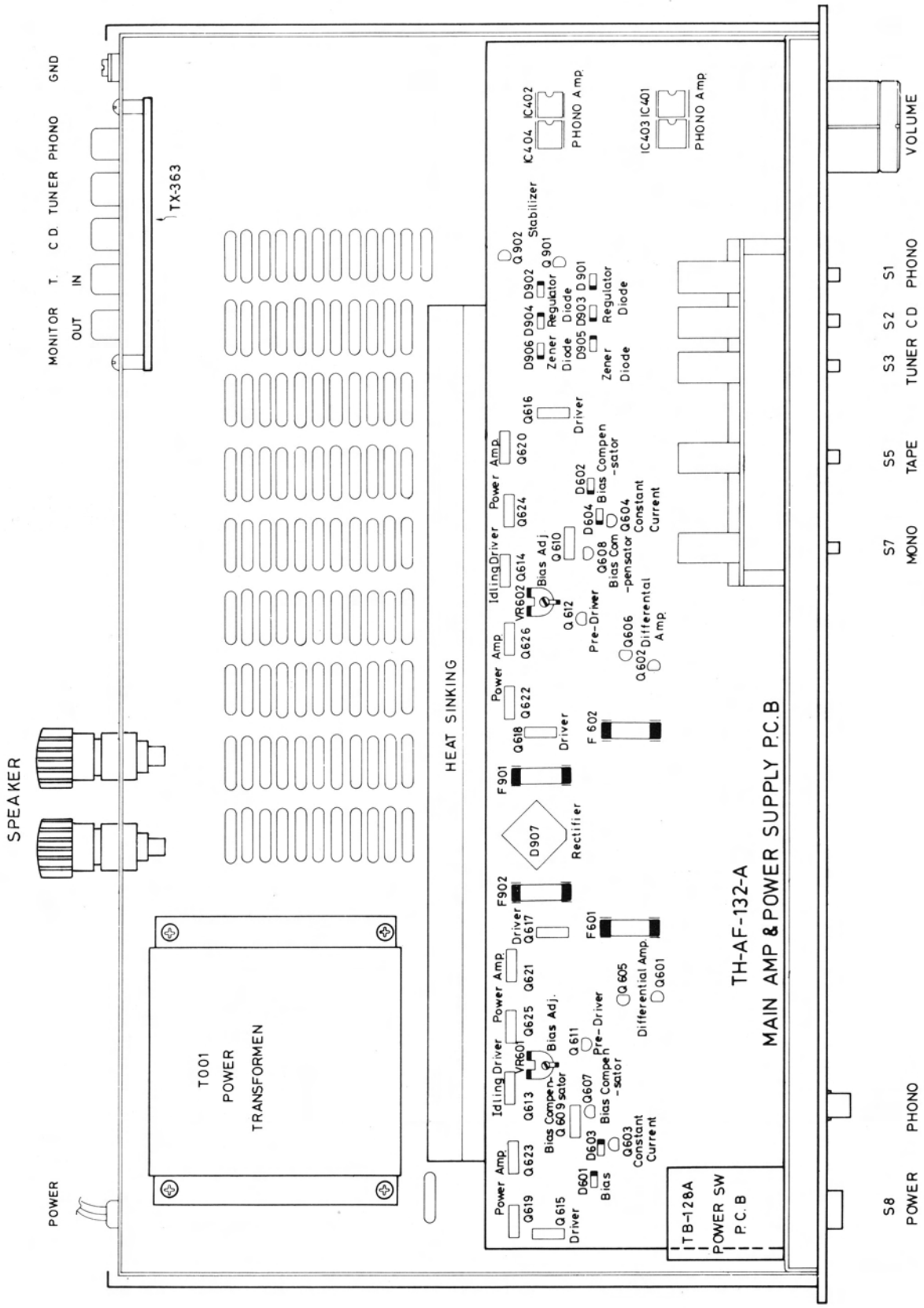
THE ROTEL CO., LTD.
ROTEL ELECTRONICS CO., LTD.

1-36-8 OHOKAYAMA, MEGURO-KU, TOKYO 152, JAPAN
ROTEL BLDG., 3F. NO. 35, FUSING N. ROAD, TAIPEI, TAIWAN, REPUBLIC OF CHINA

MN20001251

Chassis Layout



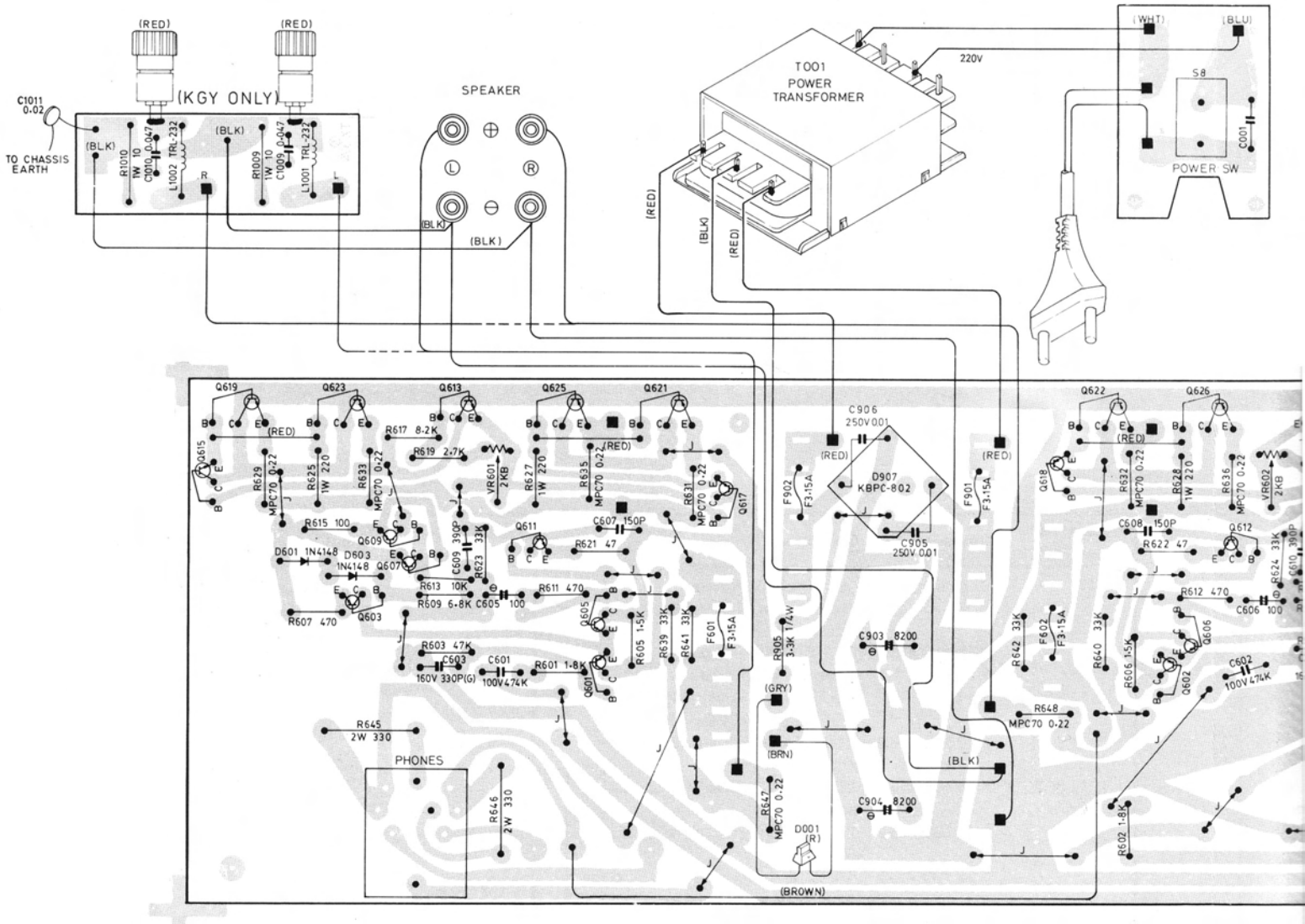
Power Amplifier Bias Adjustment

Instruments: DC milli-voltmeter

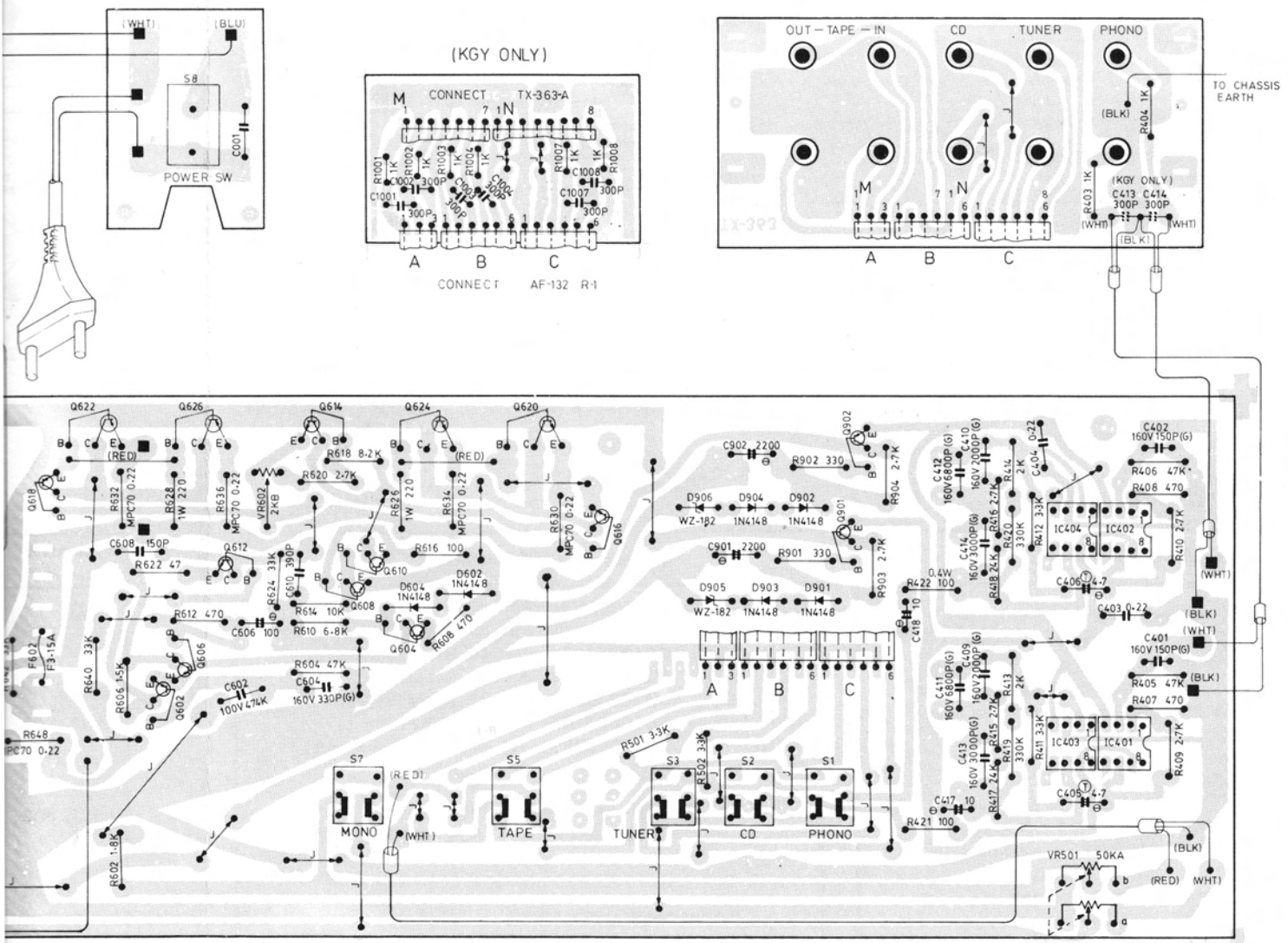
Notes: Prior to Bias Adjustment, run about 5 minutes with rated output (8 ohm) and warm up Power Transistor and Heat Sink.
Set Volume Control to Minimum.

Step	Coupling		Adjust	Adjust for
	Plus Lead	Minus Lead		
1	TP3	TP1	VR601	DC milli-voltmeter reads 3.5mV
2	TP4	TP2	VR602	

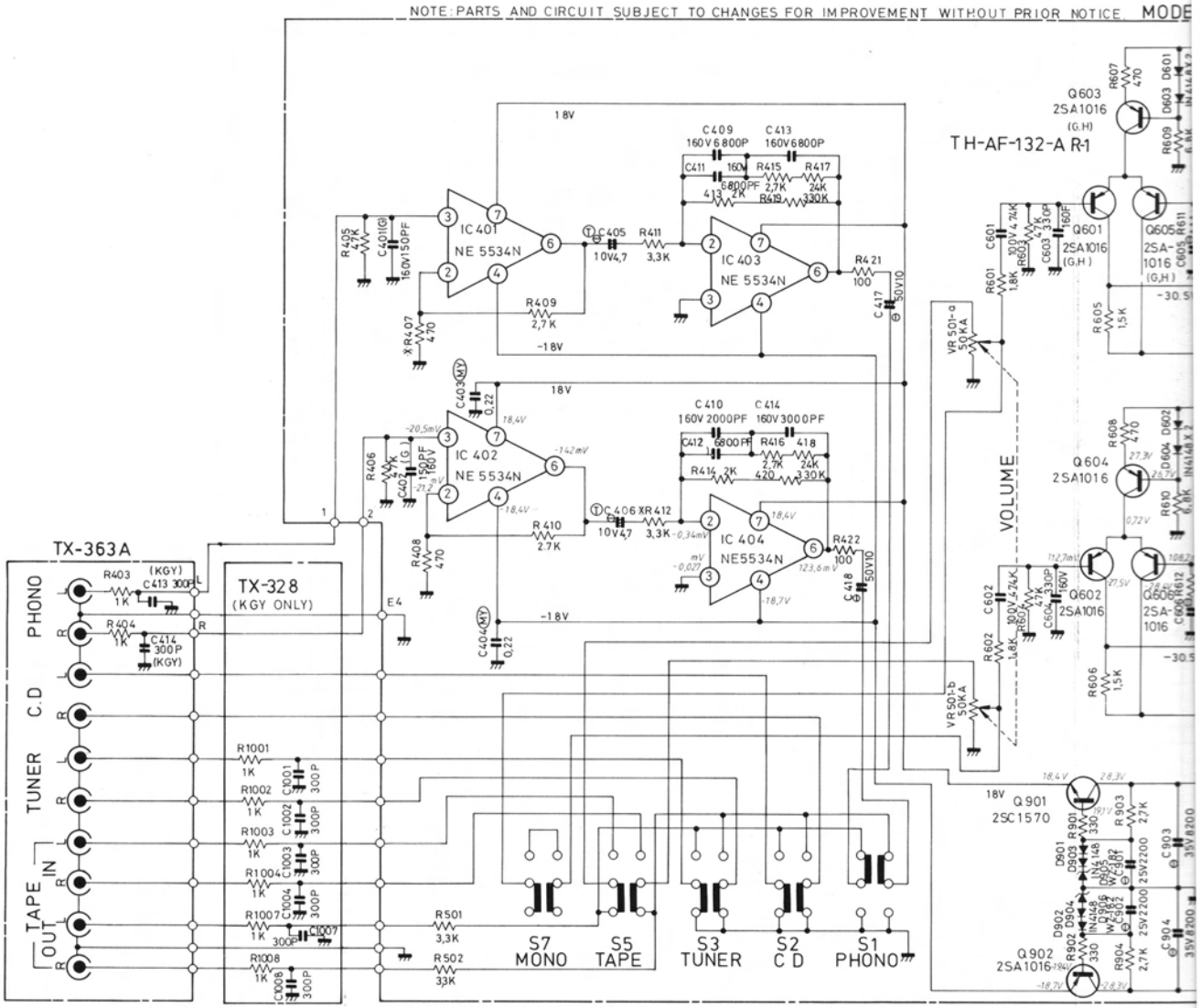
Wiring Diagram



Sink.


(WHT)
(BLU)
S8
POWER SW
C001
(KGY ONLY)
CONNECT TX-363-A
CONNECT AF-132 R-1
OUT — TAPE — IN
CD
TUNER
PHONO
TO CHASSIS EARTH
(BLK)
R404 1K
(KGY ONLY)
C413 300P
C414 300P
R403 1K
(WHT)
(BLK)
(WHT)
Q622
Q626
Q614
Q624
Q620
(RED)
R618 8·2K
R620 2·7K
R632 MPC70 0·22
R628 1W 220
R636 MPC70 0·22
VR602 2KB
R626 1W 220
R634 MPC70 0·22
R630 MPC70 0·22
Q618
Q616
C608 150P
R622 47
Q612
C610 390P
R624 33K
Q610
R616 100
D602 1N4148
D604 1N4148
Q608
R614 10K
R610 6·8K
R612 470
C606 100
Q604
R608 470
Q606
R640 33K
R606 1·5K
Q602
C602 100V 474K
R604 47K
C604 160V 330P(G)
F602 F3·15A
R648 PC70 0·22
R602 1·8K
S7
MONO
(RED)
(WHT)
S5
TAPE
S3
TUNER
S2
CD
S1
PHONO
R501 3·3K
R502 3·3K
C902 2200
R902 330
Q902
R904 2·7K
D906 WZ-182
D904 1N4148
D902 1N4148
Q901
C901 2200
R901 330
R903 2·7K
D905 WZ-182
D903 1N4148
D901 1N4148
R422 0·4W 100
C418 10
C412 160V 6800P(G)
C410 160V 2000P(G)
R414 2K
C404 0·22
C414 160V 3000P(G)
R416 2·7K
R418 2·7K
R420 330K
R412 3·3K
IC404
IC402
C406 4·7
C403 0·22
C411 160V 6800P(G)
C409 160V 2000P(G)
R413 2K
C413 160V 3000P(G)
R415 2·7K
R417 2·7K
R419 330K
R411 3·3K
IC403
IC401
C405 4·7
C417 10
R421 100
C402 160V 150P(G)
R406 47K
R408 470
R410 2·7K
C401 160V 150P(G)
R405 47K
R407 470
R409 2·7K
VR501 50KA
(BLK)
(RED)
(WHT)

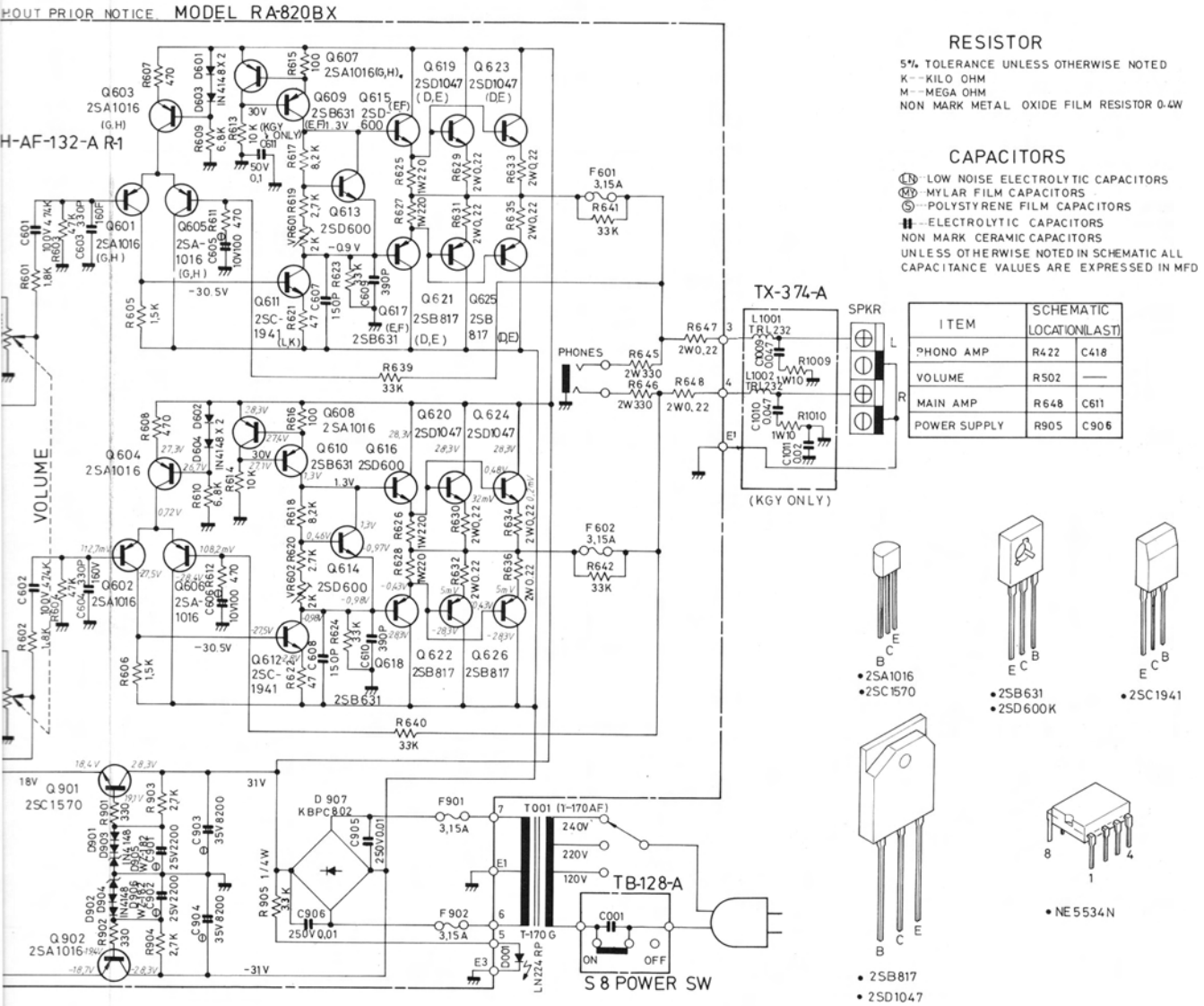
Schematic Diagram



Repair Parts List

Schematic Location	Computer No.	Description
	TRANSISTORS, DIODES AND IC'S	
IC401 ~ 404	IC00000731	NE5534N, Phono Amp.
Q601, 602	TR10000023	2SA1016, Differential Amp.
Q603, 604	TR10000023	2SA1016, Constant Current
Q605, 606	TR10000023	2SA1016, Differential Amp.
Q607, 608	TR10000023	2SA1016, Main Amp. Compensator
Q609, 610	TR10000047	2SB631, Main Amp. Compensator
Q611, 612	TR30000169	2SC1941, Pre-Driver
Q613, 614	TR40000069	2SD600K, Idling Driver
Q615, 616	TR40000069	2SD600K, Driver
Q617, 618	TR10000047	2SB631, Driver
Q619, 620	TR40000045	2SD1047, Power Amp.
Q621, 622	TR20000040	2SB817, Power Amp.
Q623, 624	TR40000045	2SD1047, Power Amp.
Q625, 626	TR20000040	2SB817, Power Amp.

Schematic Location	Computer No.	Description
Q901	TR10000108	2SC1570/1571, Stabilizer
Q902	TR10000023	2SA1016, Stabilizer
D601 ~ 604	DD10000100	IN4148, Bias Compensator
D901 ~ 904	DD10000100	IN4148, Regulator
D905, 906	DD20000041	WZ182, Zener Regulator
D907	DD10000147	KBPC-802, Rectifier
D001	DD40000095	LN224RP, LED For Power Indicator
	COILS AND VARIABLE RESISTORS	
VR501	RV10000408	4TR-1505, 50KAXZ, Volume Control
VR601, 602	RV20000338	08-301, 2DB, Bias Adj.
	SWITCHES AND OTHERS	
S1 ~ S7	SH17000018	4TR-1562A, 7 Key Push Switch, For Function
S8	SH40000120	C-3600B-T, Power Switch



ITEM	SCHEMATIC LOCATION(LAST)	
PHONO AMP	R422	C418
VOLUME	R502	—
MAIN AMP	R648	C611
POWER SUPPLY	R905	C906

Schematic Location	Computer No.	Description
T001	PT00000111	002 T-170G, Power Transformer (120V, 220V, 240V)
	PT00000060	002 T-170AF, Power Transformer (120V)
F601, 602	FU12000082	250V 4A UL Fuse, Speaker Protector
	FU23000062	250V 4A Mini Fuse, Speaker Protector
F901, 902	FU12000082	250V 4A UL Fuse, AC Circuit Protector
	FU23000062	250V 4A Mini Fuse, AC Circuit Protector
	FS23000031	RA-820BX Front Panel Assembly
	KB10000821	C-3872B-T #2 Knob 30F
	KB10000833	C-3873A-T #2, Knob 15F
	KB20000507	012 C-3982 #2, Push Button

Schematic Location	Computer No.	Description
		8×14
	KB20000519	012 C-3372 #3, Push button 4×14
	AU00000397	2 TWE-5B #22, Upper Cover