NIKKO

Stereo receiver **5055**

Service manual

CONTENTS

SPECIFICATION

1. FM TUNER SECTION

		NOMINAL	LIMIT
Sensitivity	(IHF)	2.0μV	3.0μV
Quieting Slope	(S/N 50dB)	5.0μV	10μV
Selectivity	(IHF)	60dB	50dB
Image Rejection	(98MHz)	50dB	40dB
IF Rejection	(98MHz)	70dB	60dB
Signal to Noise ratio		65dB	60dB
Capture Ratio	(IHF)	1.0dB	3.0dB
Muting Sensitivity		1.6μV	2.0μV
Distortion	(MONO)	0.3%	0.5%
Distortion	(STEREO 1KHz)	0.5%	1.0%
Stereo Separation	(1KHz)	40dB	35dB
Output voltage	(TAPE OUT)	750mV	±2dB

2. AM TUNER SECTION

Sensitivity	(IHF)	300μV	1000μV
Selectivity	(IHF) ±10KHz	35dB	30dB
Image Rejection	(1000KHz)	45dB	40dB
IF Rejection	(1000KHz)	35dB	30dB
Distortion		1.0%	3.0%
Signal to Noise ratio		40dB	35dB
Output level	(TAPE OUT)	150mV	±2dB

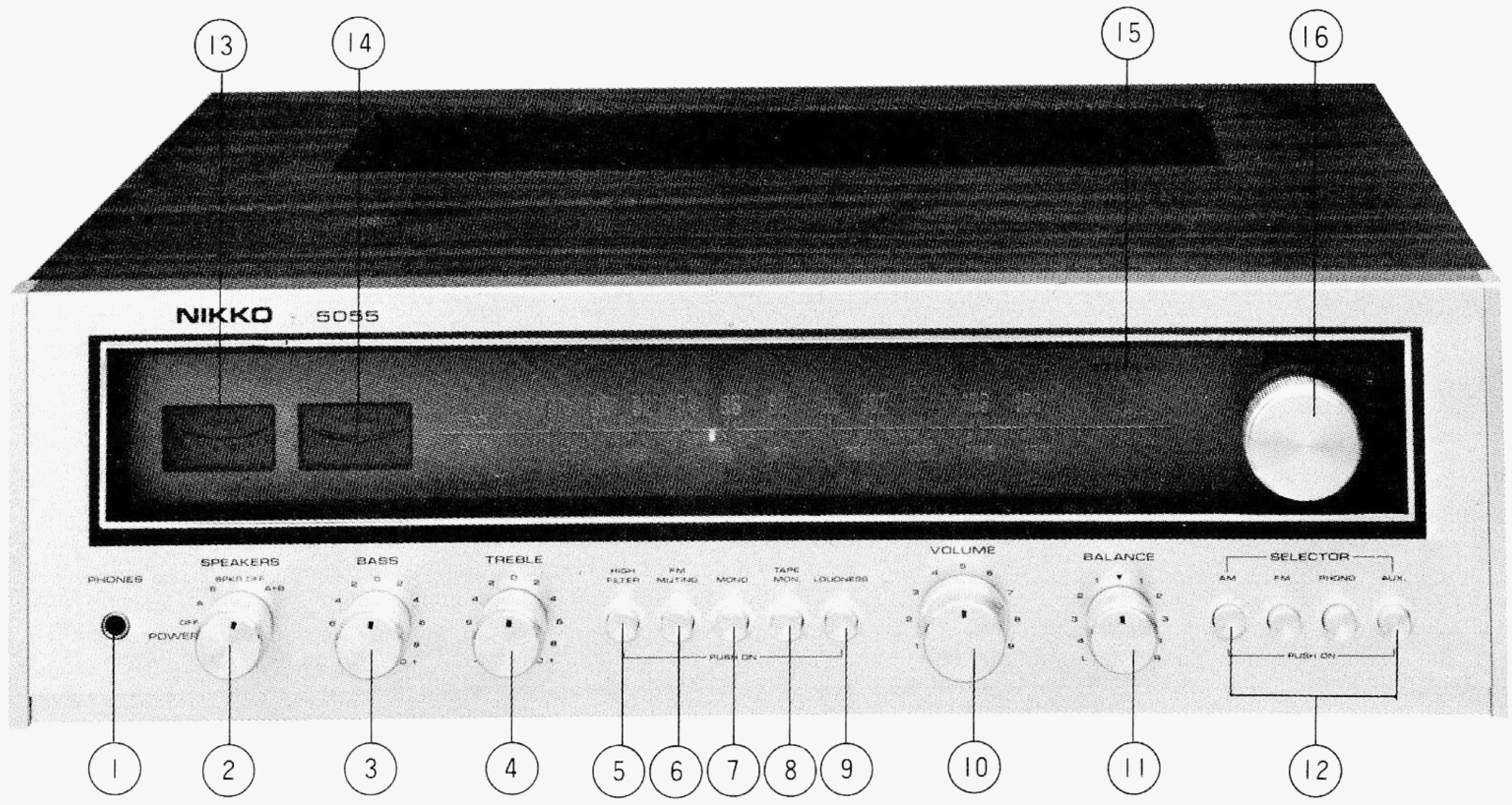
3. AMPLIFIER SECTION

Input sensitivity	PHONO	2.2mV	±2dB
	AUX.	180mV	±2dB
	TAPE MON.	180mV	±2dB
	TAPE MON. (DIN)	180mV	±2dB
Signal to noise ratio (IN PUT SHORT)			
	PHONO	65dB	60dB
	AUX	80dB	75dB
	TAPE MON.	80dB	75dB
Continuous power output			
2CH DRIVEN (8Ω) 20Hz ~ 20KHz		20W x 2	18W x 2
2CH DRIVEN (4Ω) 20Hz ~ 20KHz		22W x 2	20W x 2
2CH DRIVEN (8Ω) 1KHz		24W x 2	22W x 2
2CH DRIVEN (4Ω) 1KHz		28W x 2	26W x 2
Power Bandwidth			
2CH DRIVEN (8Ω) THD 0.8%		10Hz ~ 30KHz	20Hz ~ 20KHz
Frequency response			
PHONO (RIAA EQUALIZATION)		30Hz ~ 15KHz	±2dB
OTHERS		20Hz ~ 20KHz	±2dB

		NOMINAL	LIMIT
Output level			
TAPE OUT		170mV	±2dB
TAPE OUT (DIN)		30mV	±2dB
Tone control			
BASS 70Hz	CUT	−13dB	±2dB
	BOOST	+13dB	±2dB
TREBLE 10KHz	CUT	−10dB	±2dB
	BOOST	+8dB	±2dB
Loudness control			
(VOLUME: −30dB)	70Hz	+10dB	±2dB
	10KHz	+7dB	±2dB
High filter	10KHz	−6dB	±2dB
Idling current		20mA	±10mA
Mid. point voltage		0mV	±30mV
Residual Hum & Noise (8Ω)		0.5mV	1.5mV

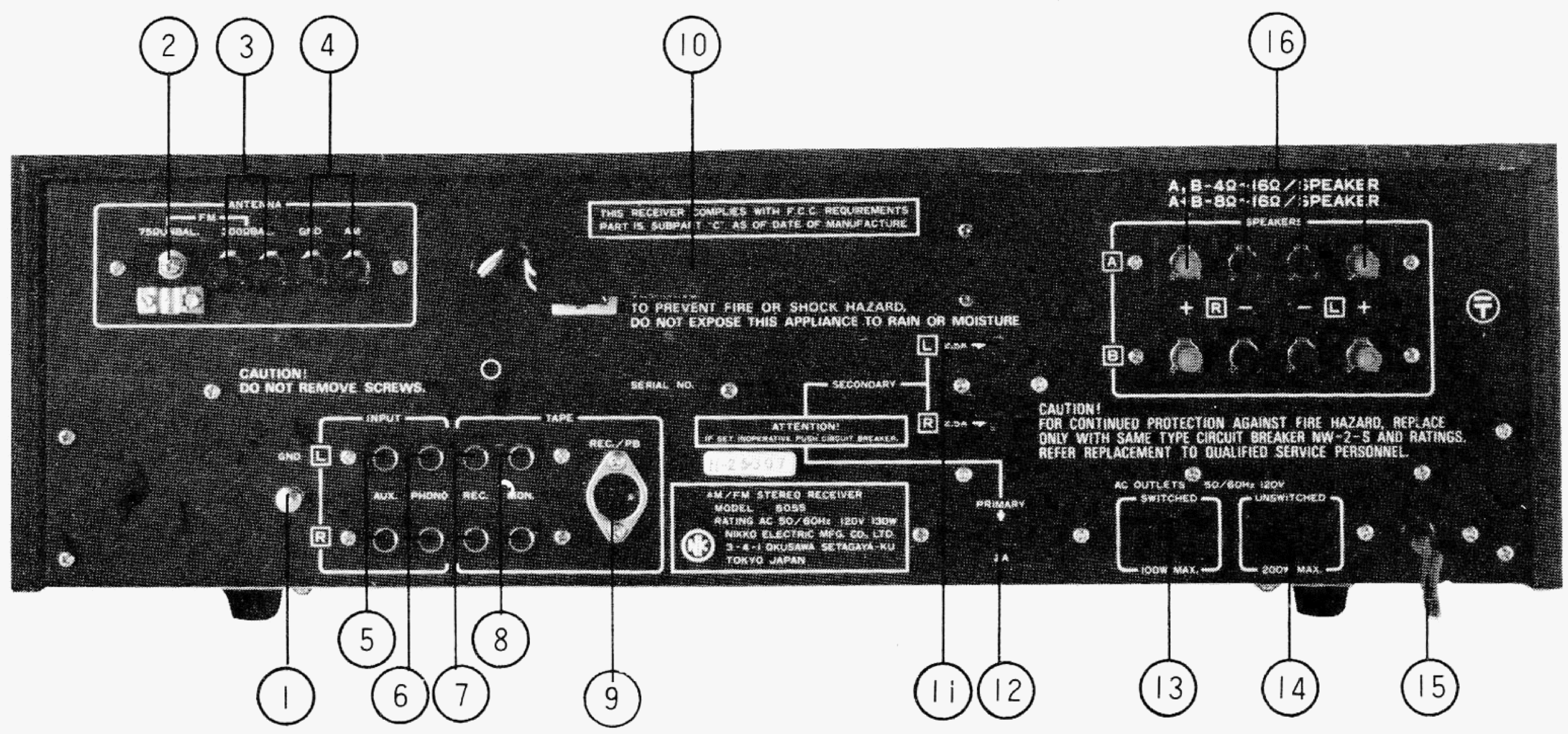
EXTERNAL VIEW

FRONT PANEL



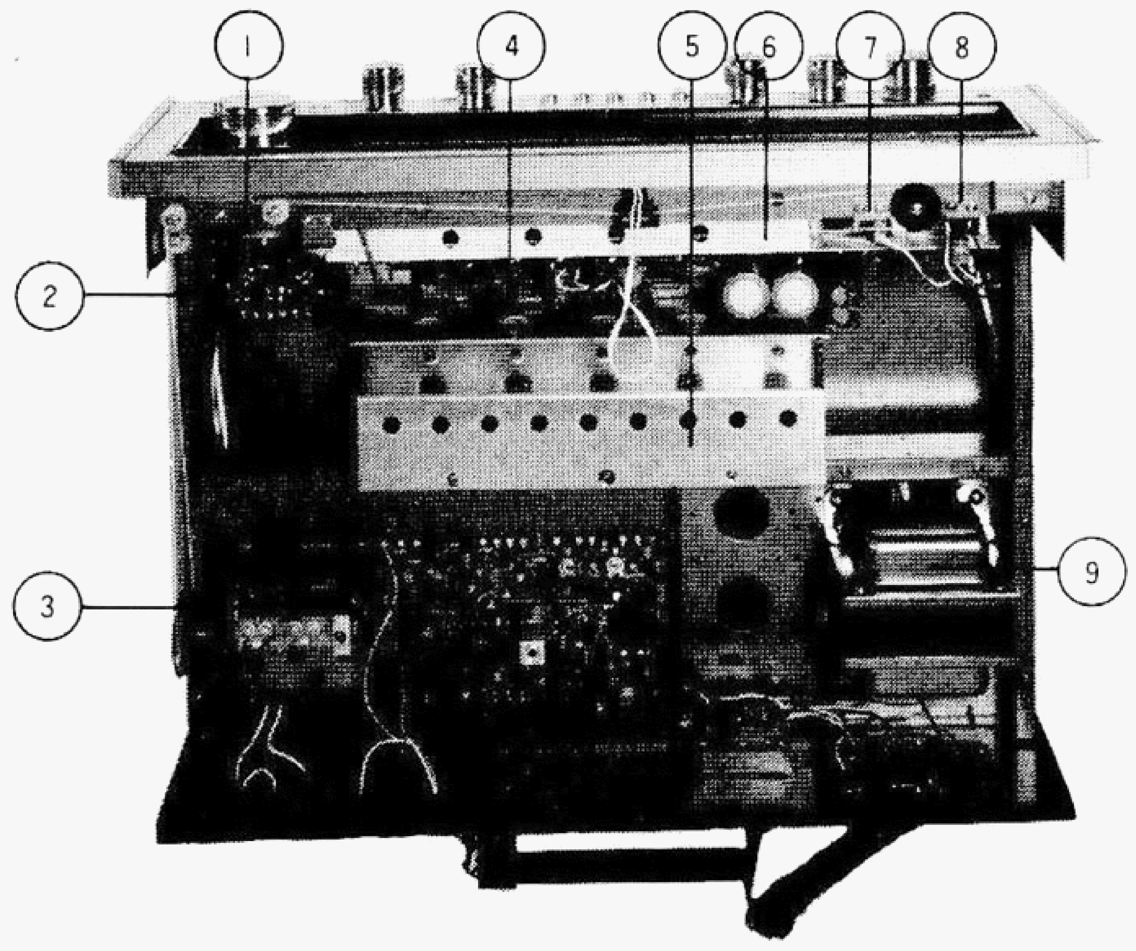
1 HEADPHONE JACK
2 POWER/SPEAKERS SWITCH
3 BASS CONTROL
4 TREBLE CONTROL
5 HIGH FILTER SWITCH
6 FM MUTING SWITCH
7 MONO SWITCH
8 TAPE MONITOR SWITCH
9 LOUDNESS SWITCH
10 VOLUME CONTROL
11 BALANCE CONTROL
12 SELECTOR SWITCH
13 SIGNAL METER
14 CENTER TUNING METER
15 STEREO INDICATOR
16 TUNING KNOB

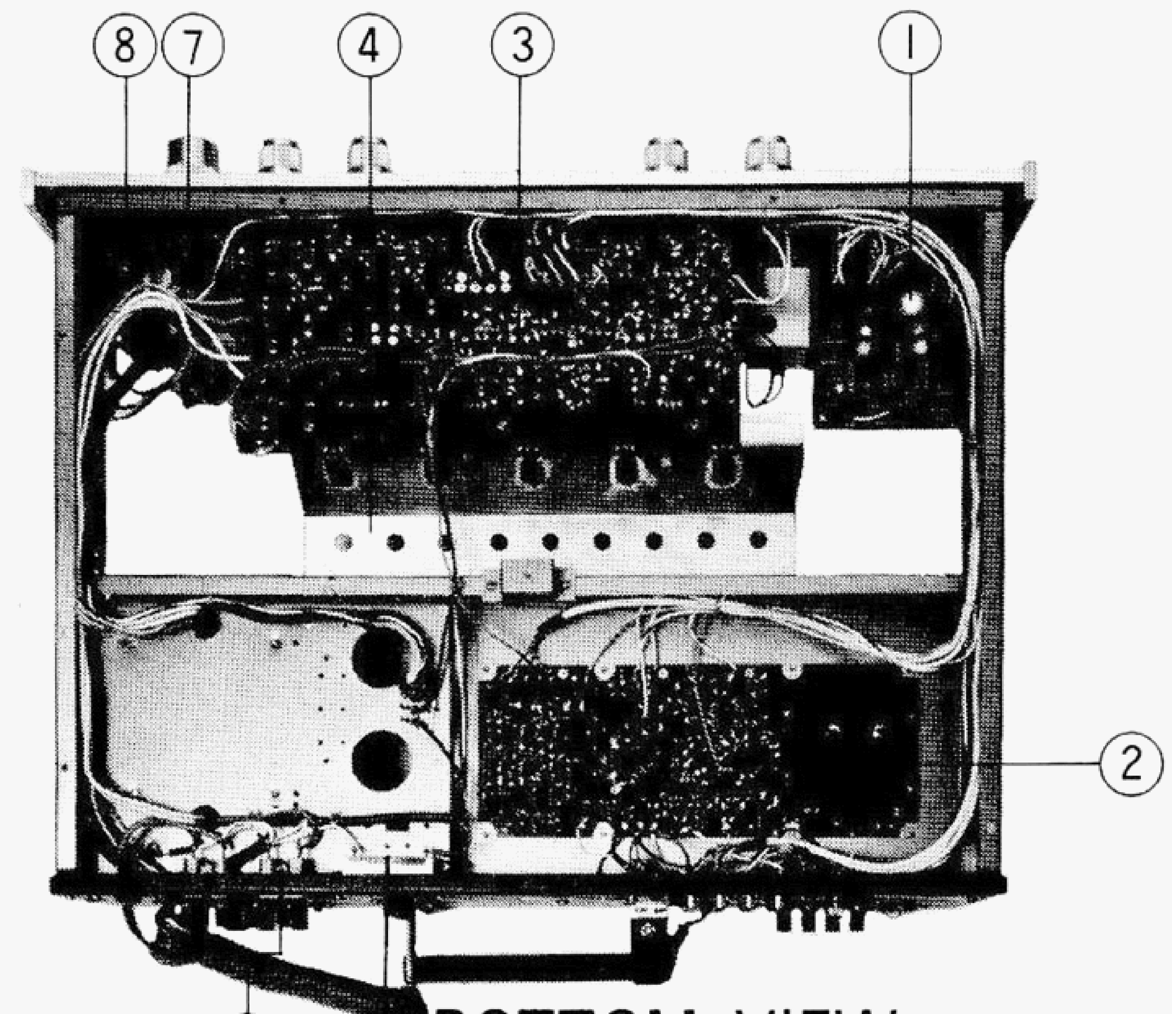
REAR PANEL



1 GROUND TERMINAL
2 FM ANTENNA TERMINAL (75Ω UNBALANCED)
3 FM ANTENNA TERMINAL (300Ω BALANCED)
4 AM ANTENNA TERMINAL
5 AUX. INPUT TERMINAL
6 PHONO INPUT TERMINAL
7 TAPE REC. TERMINAL
8 TAPE MONITOR TERMINAL
9 TAPE REC/PB DIN SOCKET
10 AM BAR ANTENNA
11 SECONDARY NO FUSE BREAKERS
12 PRIMARY NO FUSE BREAKER
13 AC OUTLET (SWITCHED)
14 AC OUTLET (UNSWITCHED)
15 AC CORD
16 SPEAKER TERMINALS

INTERNAL VIEW





TOP VIEW

1 FLY WHEEL
2 EQ AMP PCB ASSY BOARD
3 TUNER PCB ASSY BOARD
4 AMP PCB ASSY BOARD
5 HEAT SINK
6 REFLEX PLT
7 TUNING METER
8 SIGNAL METER
9 POWER TRANSFORMER

BOTTOM VIEW

1 EQ AMP PCB ASSY BOARD
2 TUNER PCB ASSY BOARD
3 AMP PCB ASSY BOARD
4 HEAT SINK
5 NW-2S 2.0A BRKER
6 AC OUTLETS
7 SPEAKERS/POWER SW
8 HEAD PHONE JACK

PARTIAL DISASSEMBLY

CABINET REMOVAL

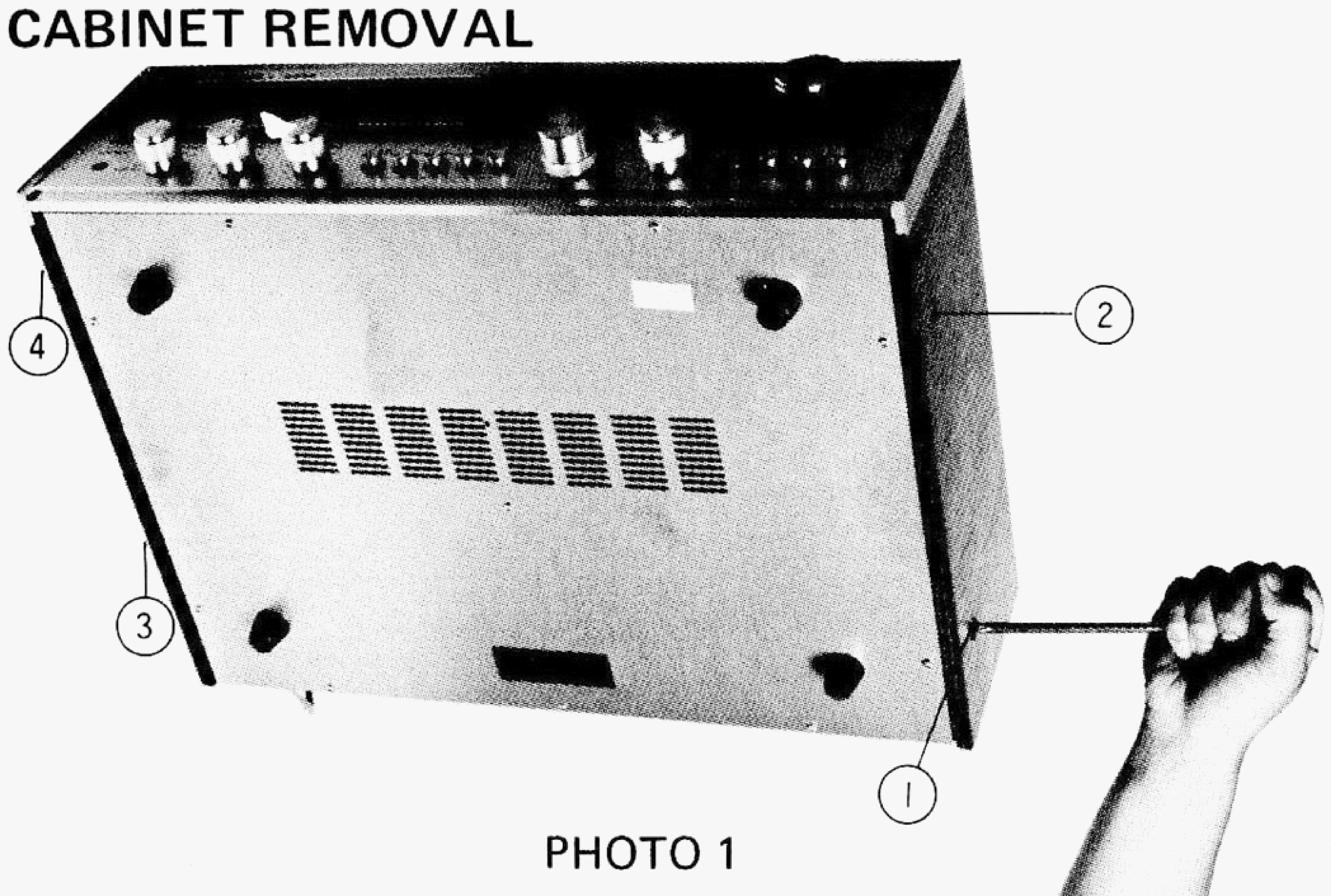


PHOTO 1

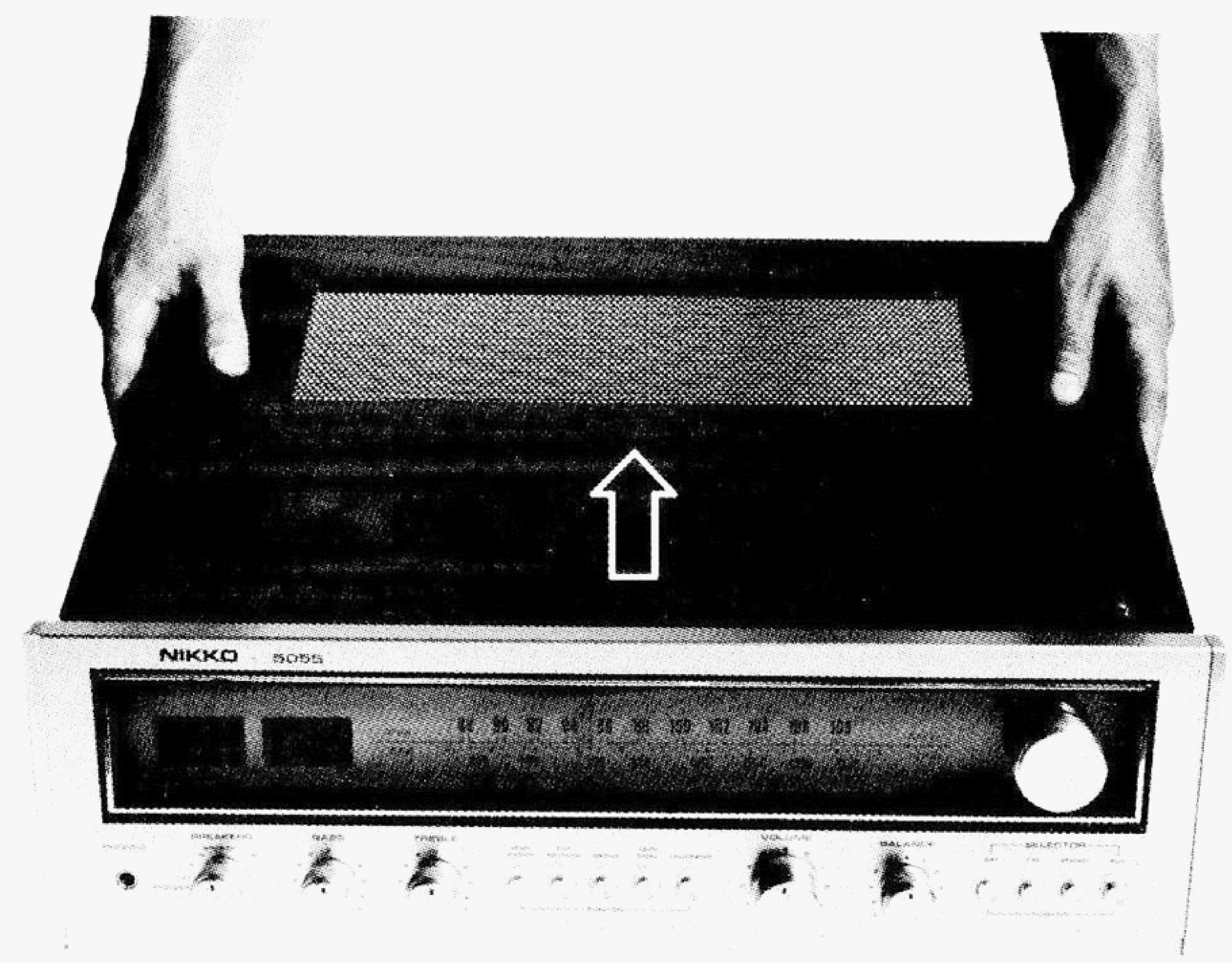


PHOTO 2

a. Stand the cabinet up and remove screws (1 ~ 4) as shown in Photo 1.
b. Return the cabinet to its original position and pull forward and then lift up to remove it. (Photo 2)

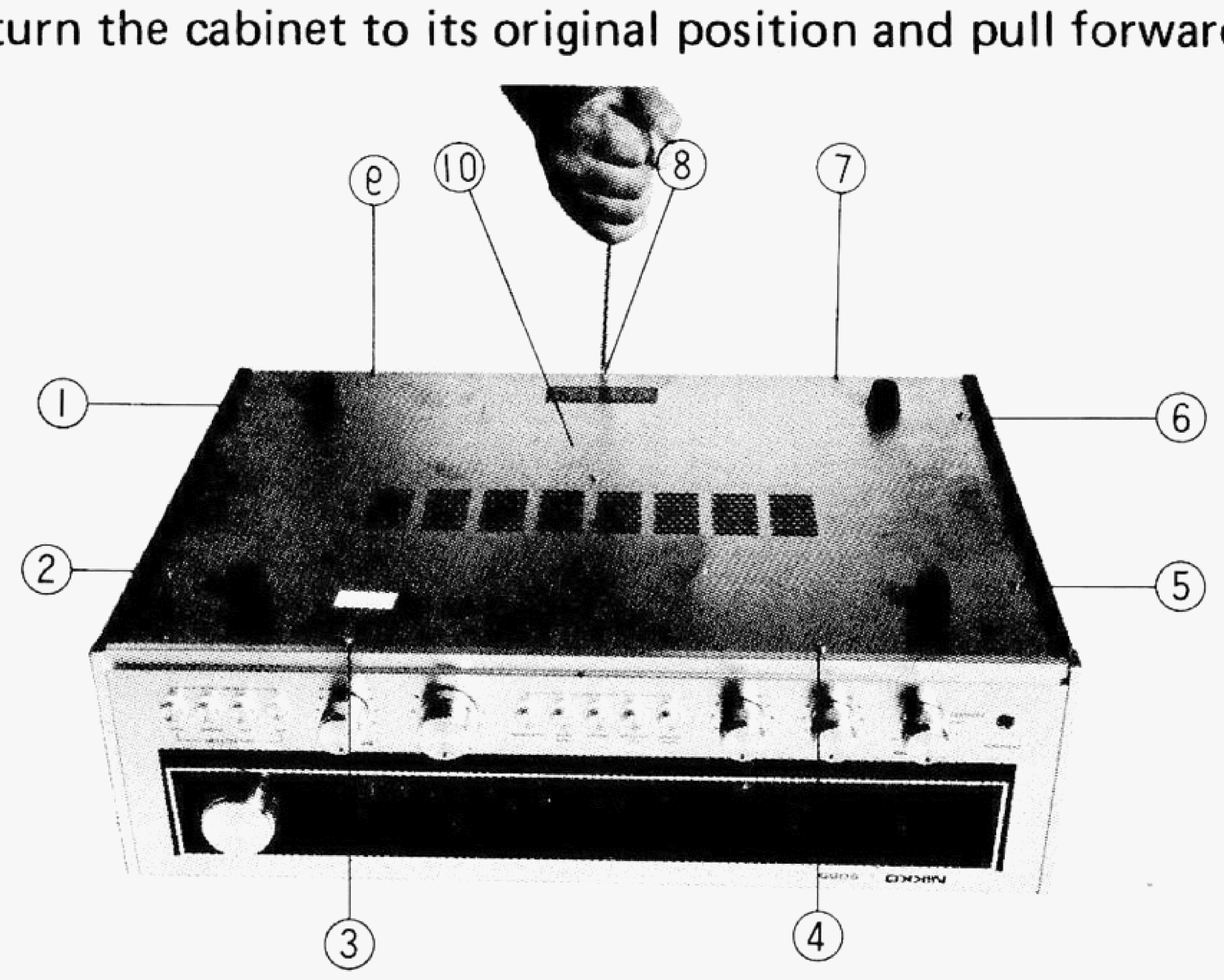


PHOTO 3

BOTTOM PLATE REMOVAL

Turn the cabinet and remove screws (1 ~ 10) as shown in Photo 3.

FRONT PANEL REMOVAL

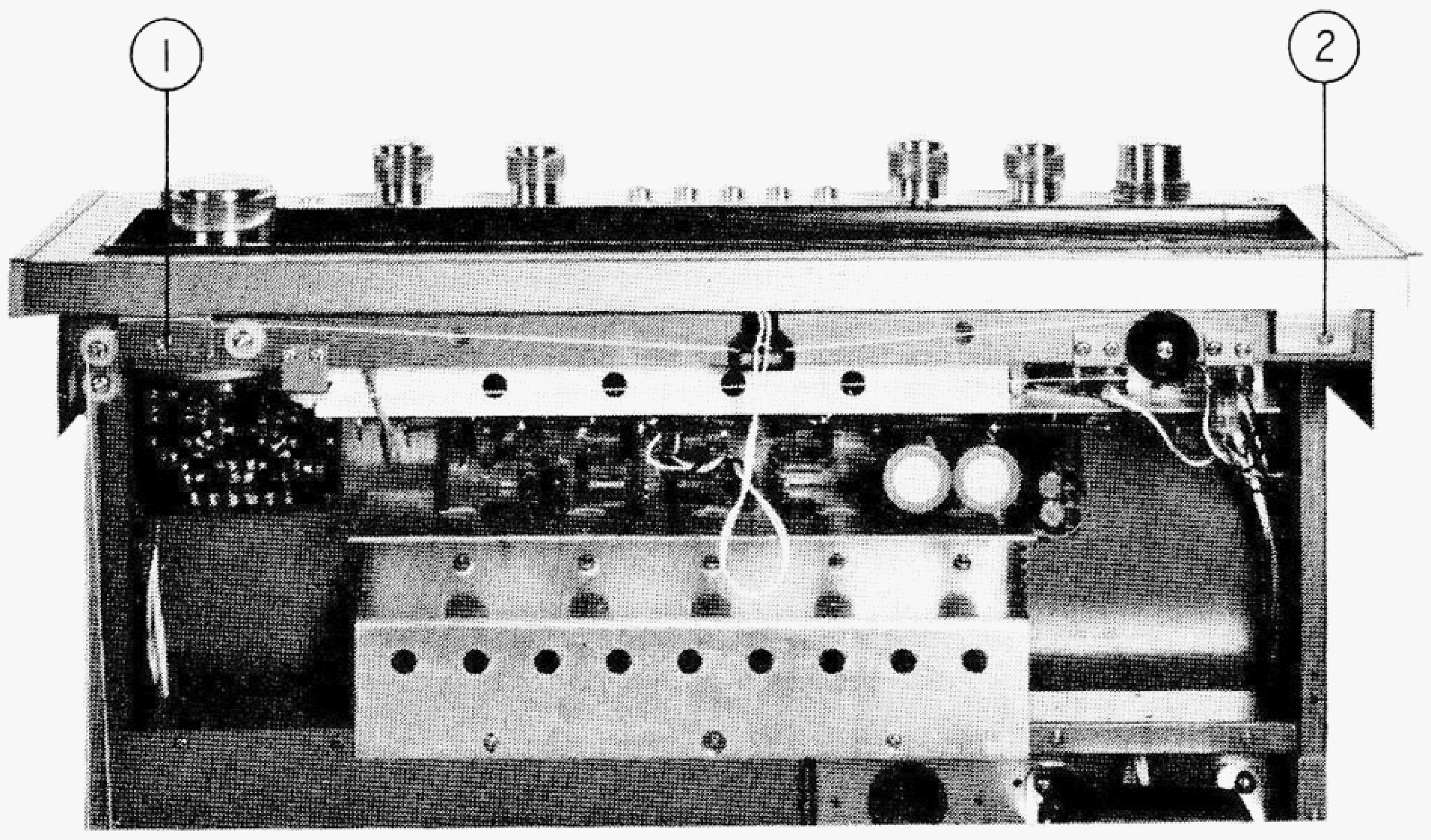


PHOTO 4

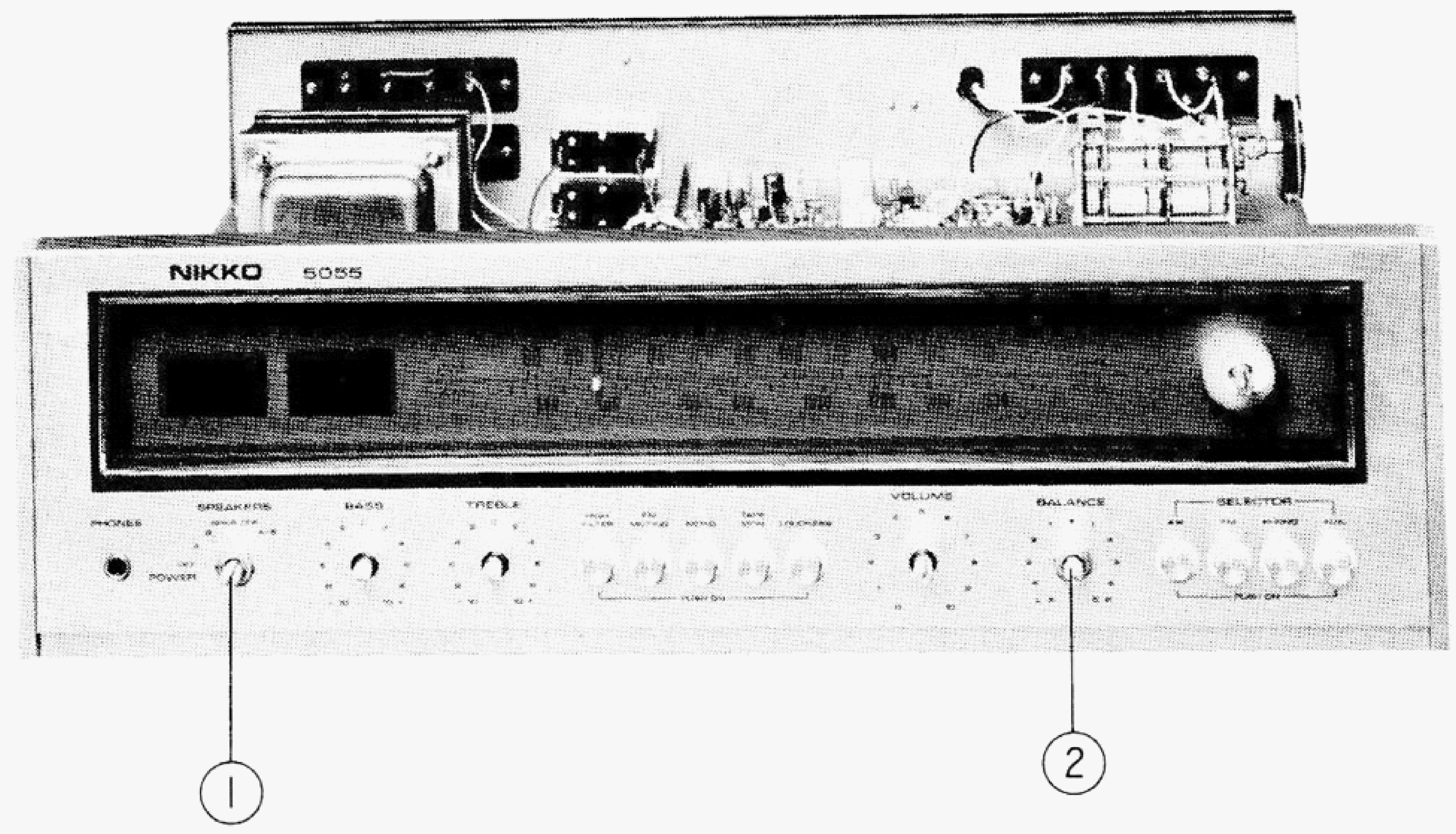


PHOTO 5

Remove screws (1 ~ 2) and nuts (1 ~ 2) as shown in Photo 4 ~ 5.

TUNER PCB ASSY BOARD REMOVAL

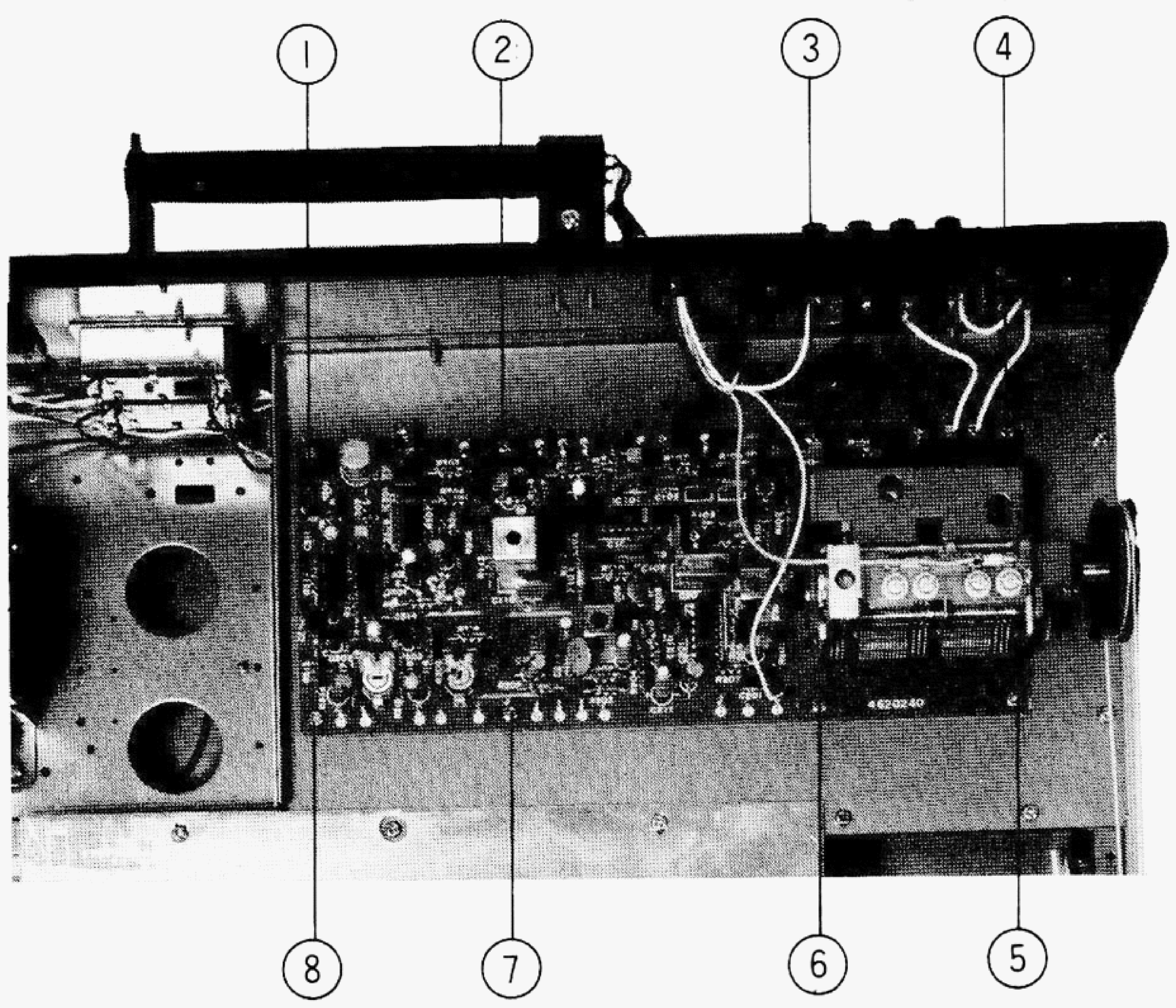


PHOTO 6

Remove screws (1 ~ 8) as shown in Photo 6 then lift the circuit board up to remove it.

POWER TRANSFORMER REMOVAL

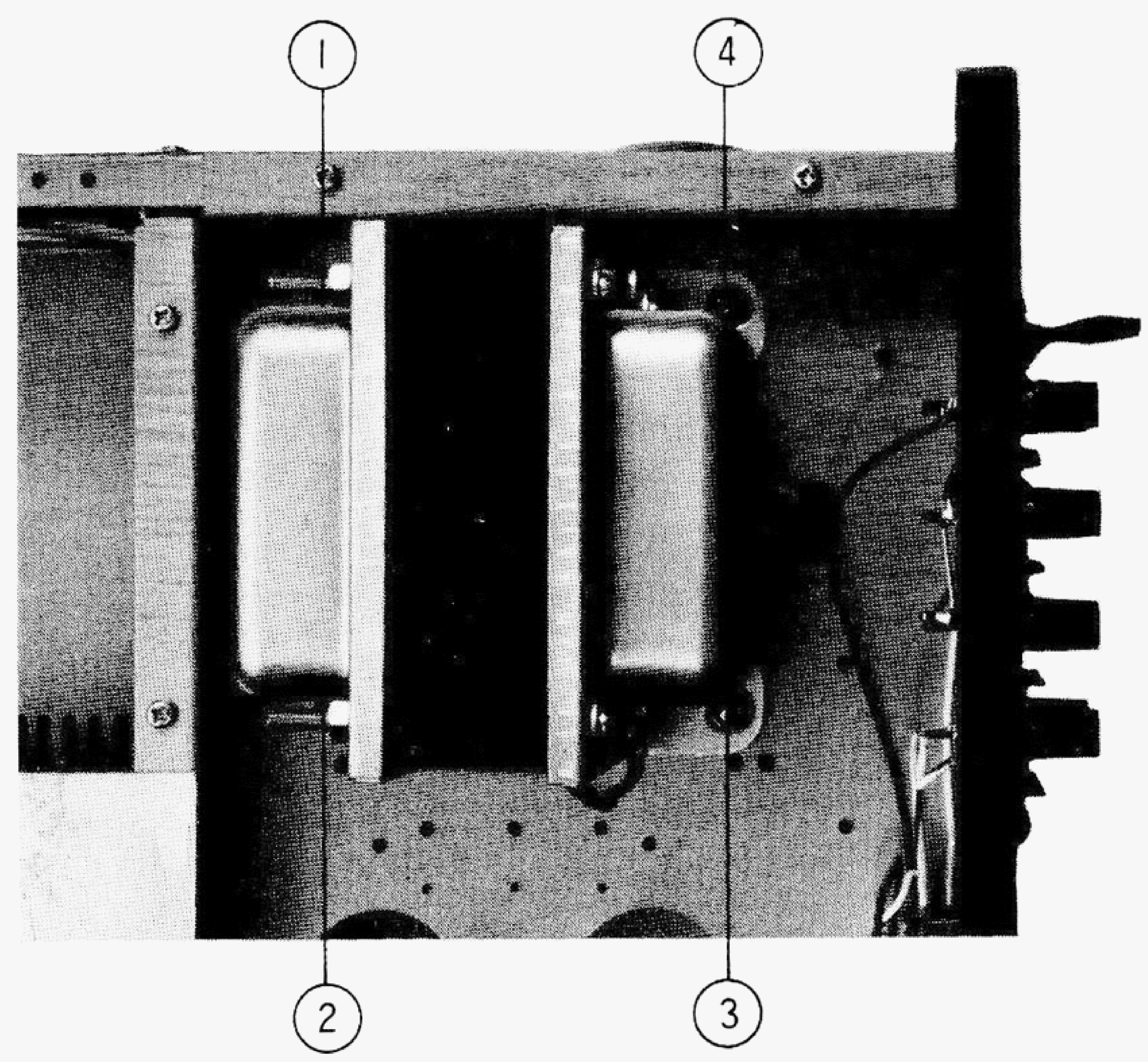


PHOTO 7

Remove screws (1 ~ 4) as shown in Photo 7 then lift the transformer up to remove it.

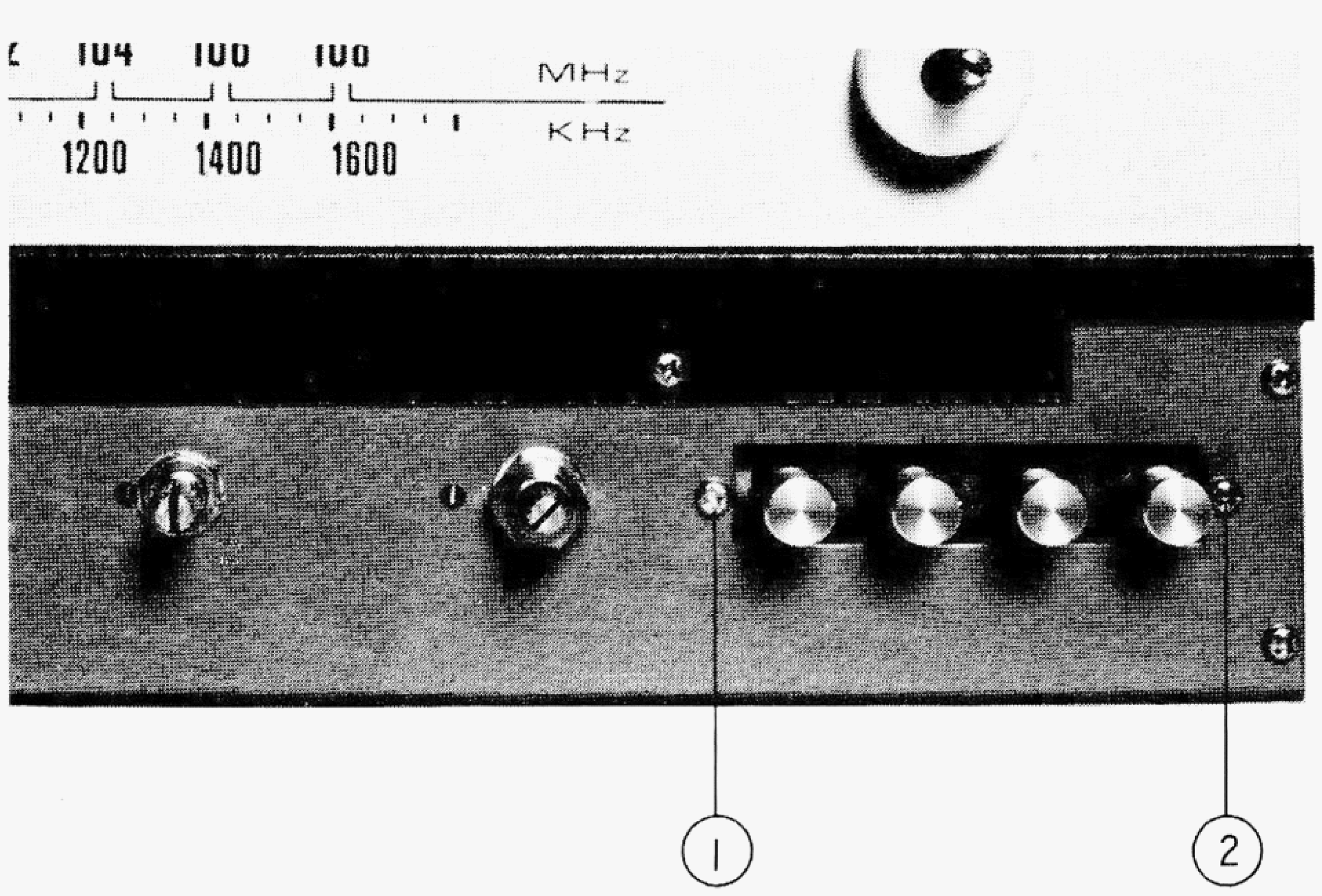


PHOTO 8

EQ AMP PCB ASSY BOARD REMOVAL

Remove screws (1 ~ 2) as shown in Photo 8 and pull forward to remove it.

AMP PCB ASSY BOARD REMOVAL

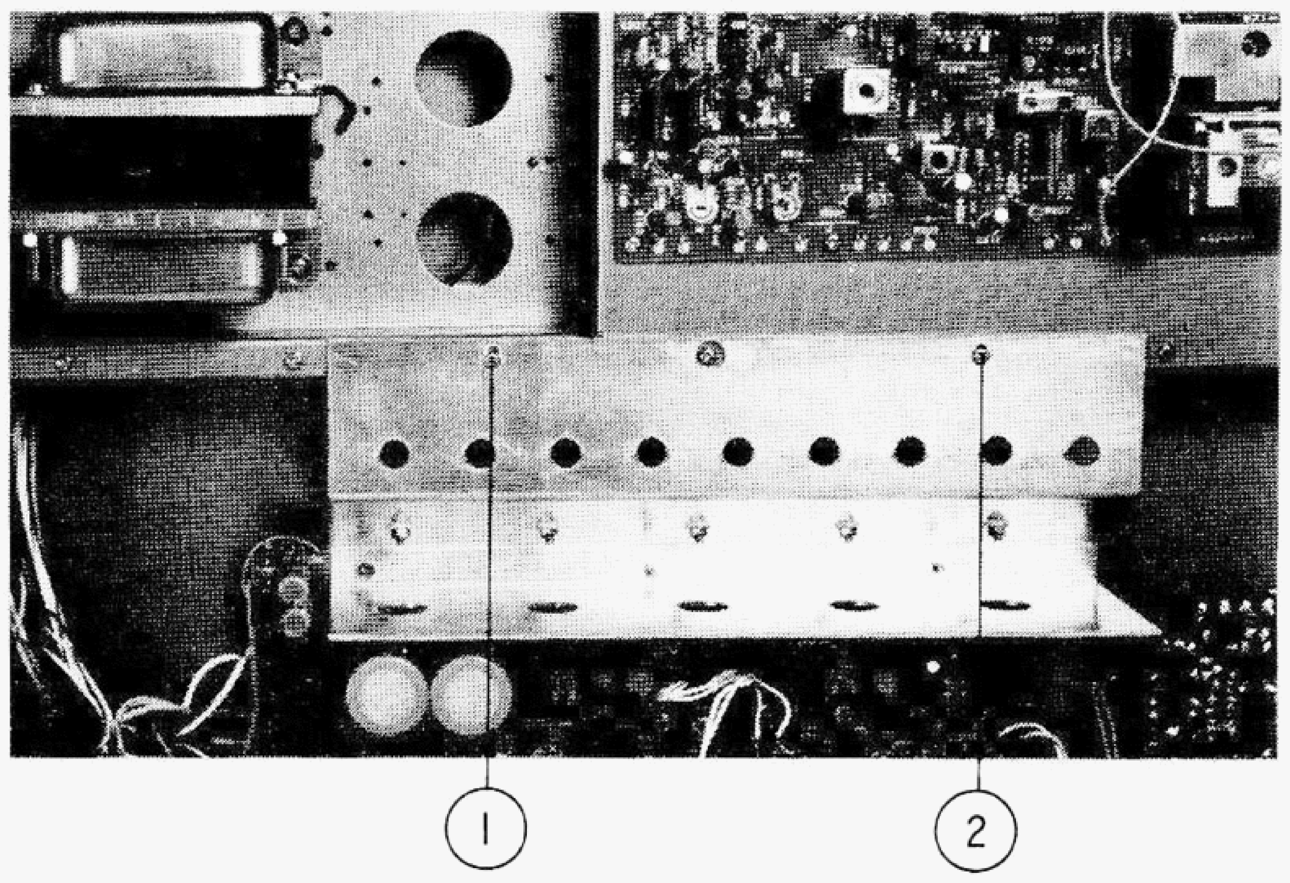


PHOTO 9

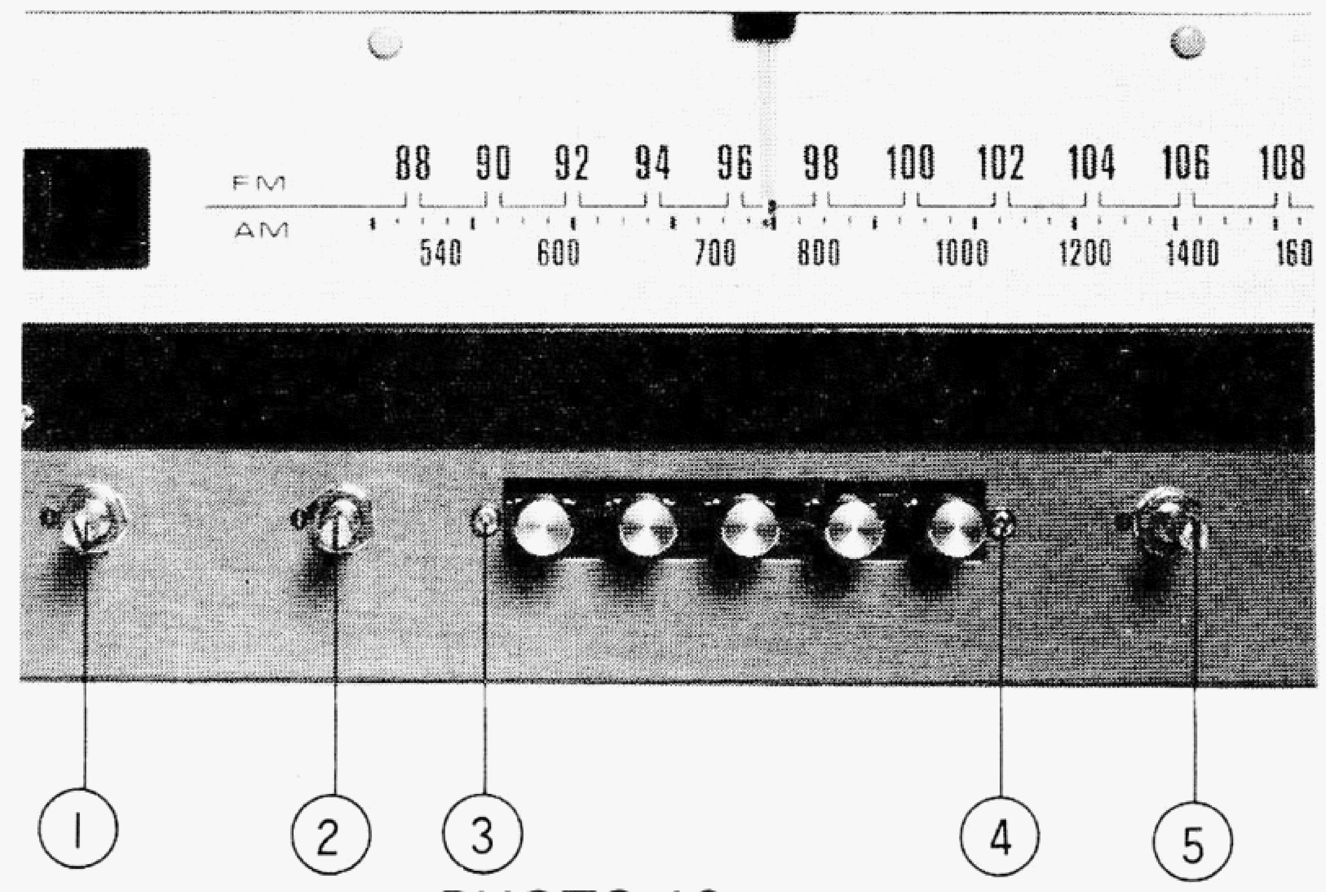


PHOTO 10

a. Remove screws (1 ~ 2) as shown Photo 9.

b. Remove screws (3 ~ 4) and nuts (1, 2, 5) as shown Photo 10, then pull forward to remove it.

METER REMOVAL

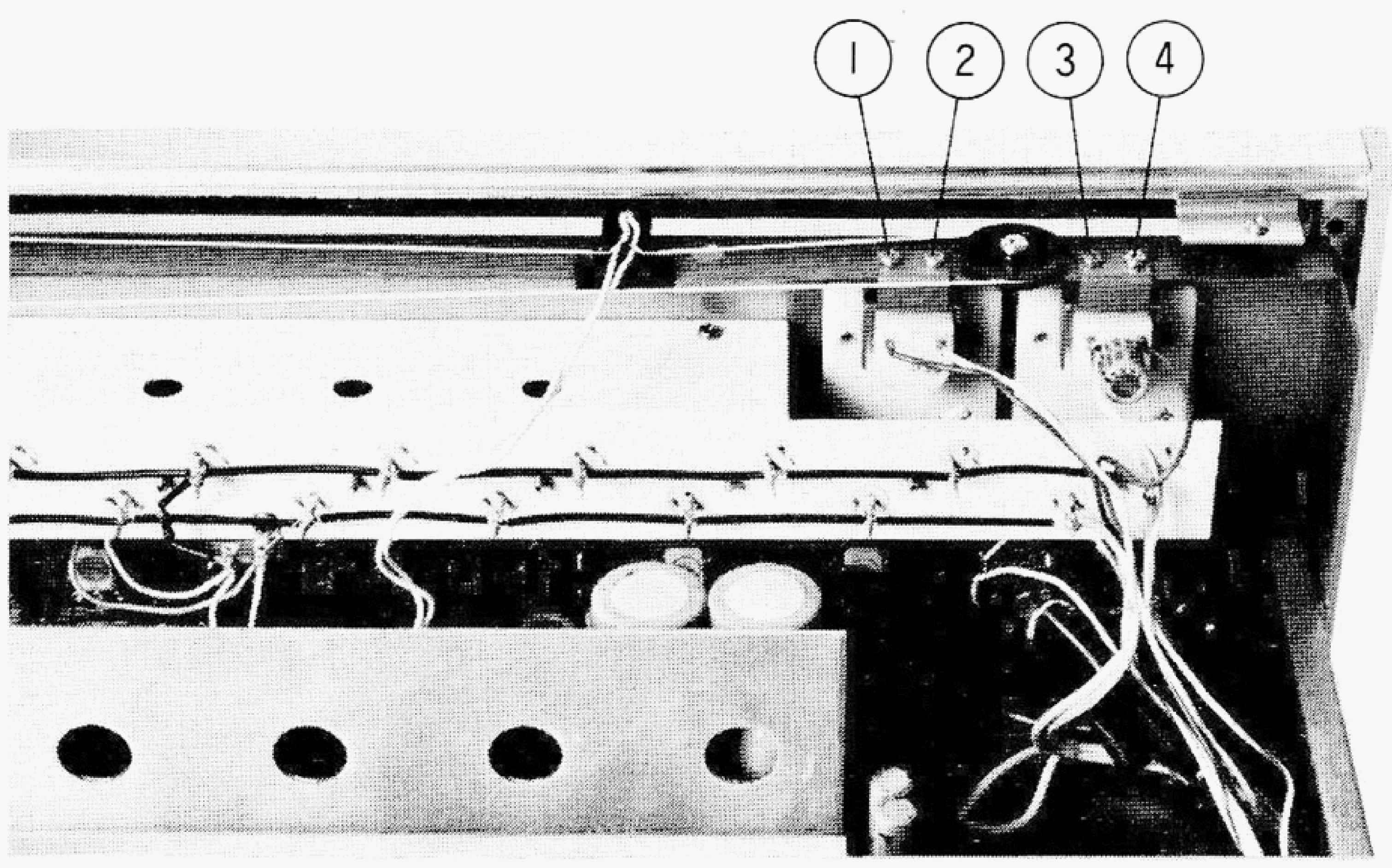


PHOTO 11

Remove screws (1 ~ 4) as shown Photo 11 and pull forward to remove it.

REFLEX PLT REMOVAL

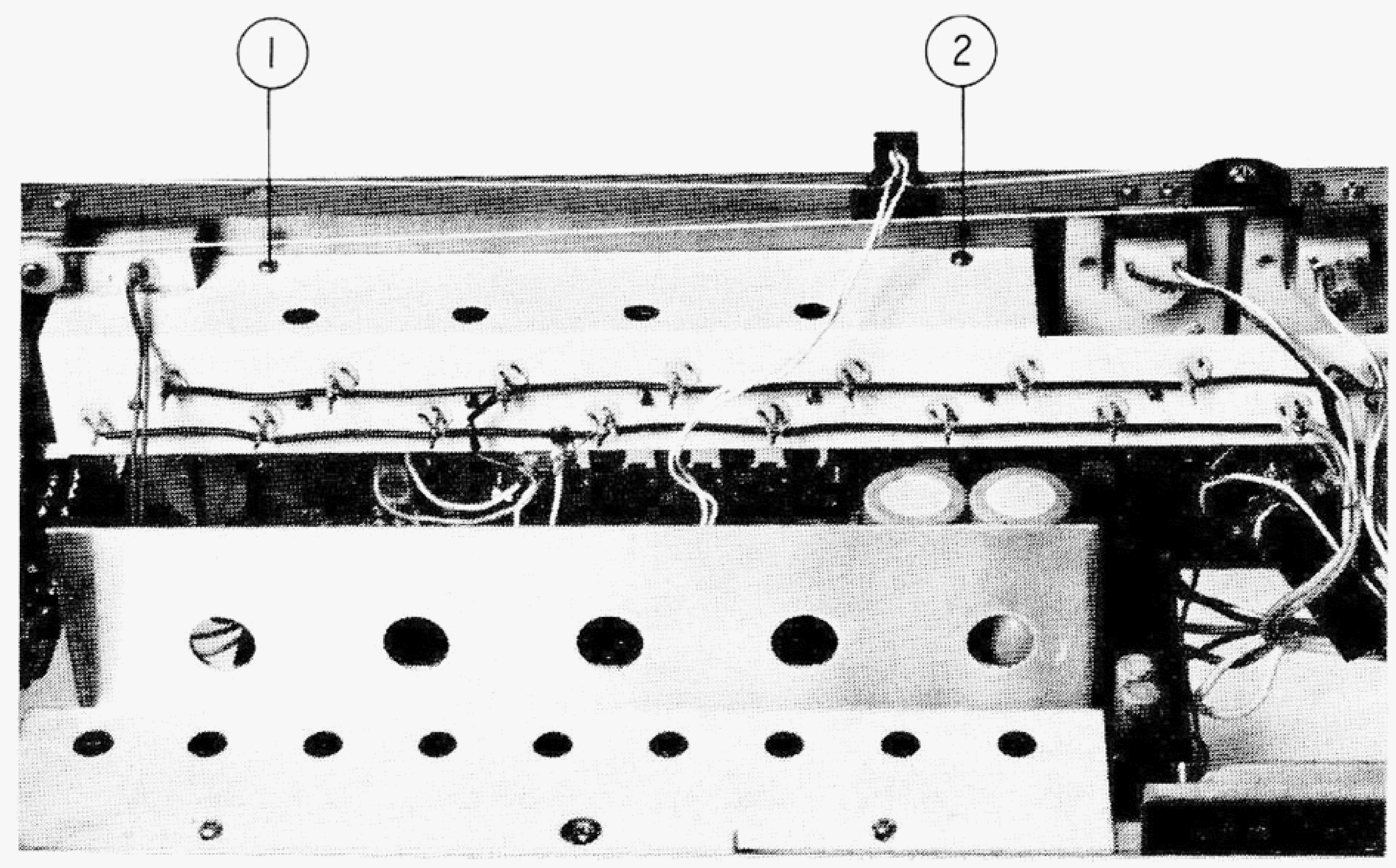
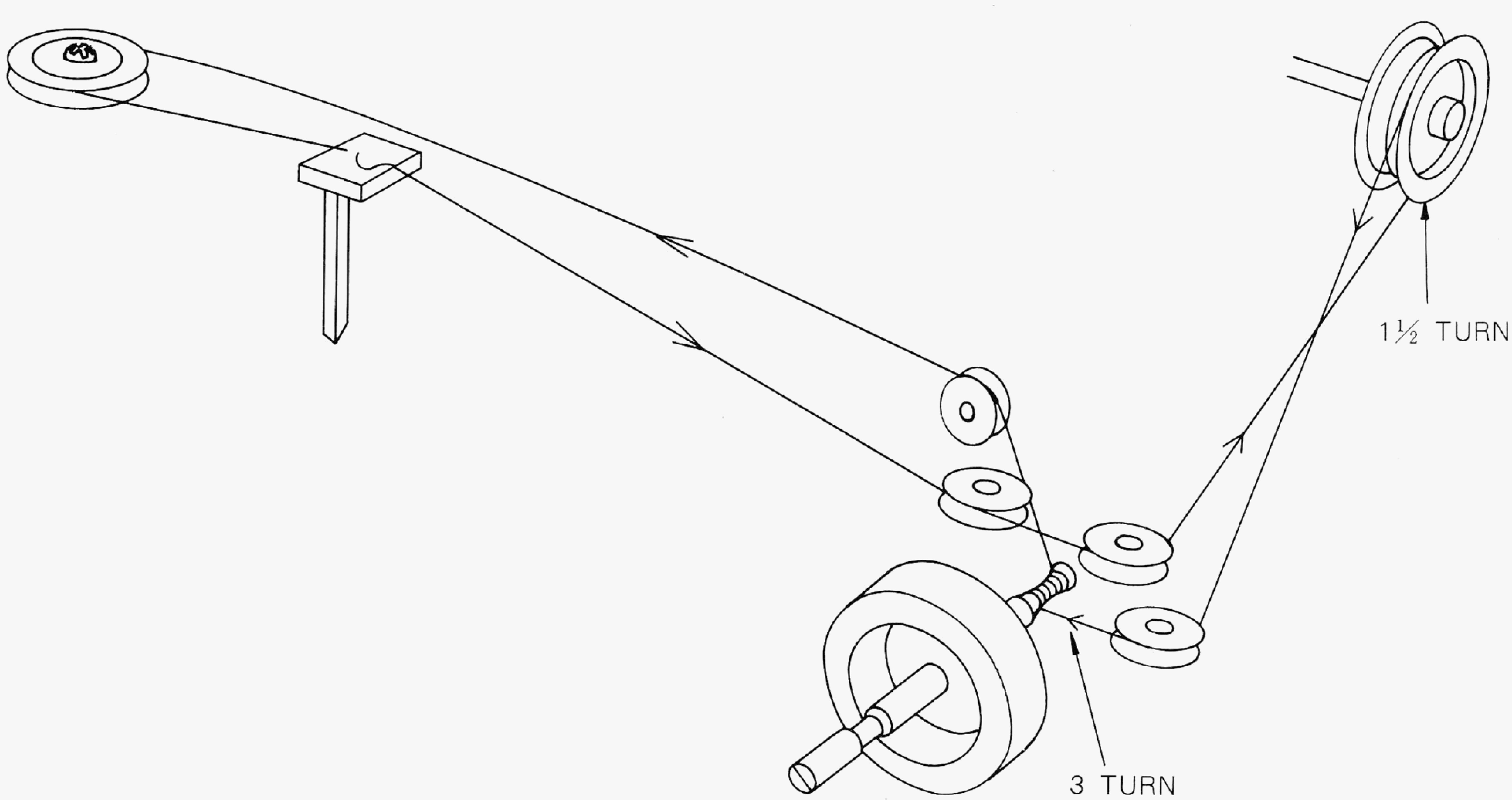


PHOTO 12

Remove screws (1 ~ 2) as shown in Photo 12 then pull forward to remove it.

DIAL MECHANISM



MEASUREMENT AND ADJUSTMENT

FM SECTION ADJUSTMENT

1. FM-IF ADJUSTMENT

For adjustment of the discriminator coil T101, connect the testing instruments as shown in Fig. 1 and then proceed as follows:

(1) With no RF signal applied to the receiver, adjust the lower core of T101 until the pointer of the tuning meter (M1) on the receiver indicates the center position of the meter scale.

(2) Apply RF signal to the receiver and adjust the tuning knob so that the tuning meter (M1) indicates the center position and the signal meter (M2) causes maximum deflection.

(3) Under this condition, adjust the upper core of T101 for minimum distortion.

(4) Repeat the above steps (1) through (3) two or three times so that the distortion factor is most improved.

Note: For adjusting point, refer to Fig. 3.

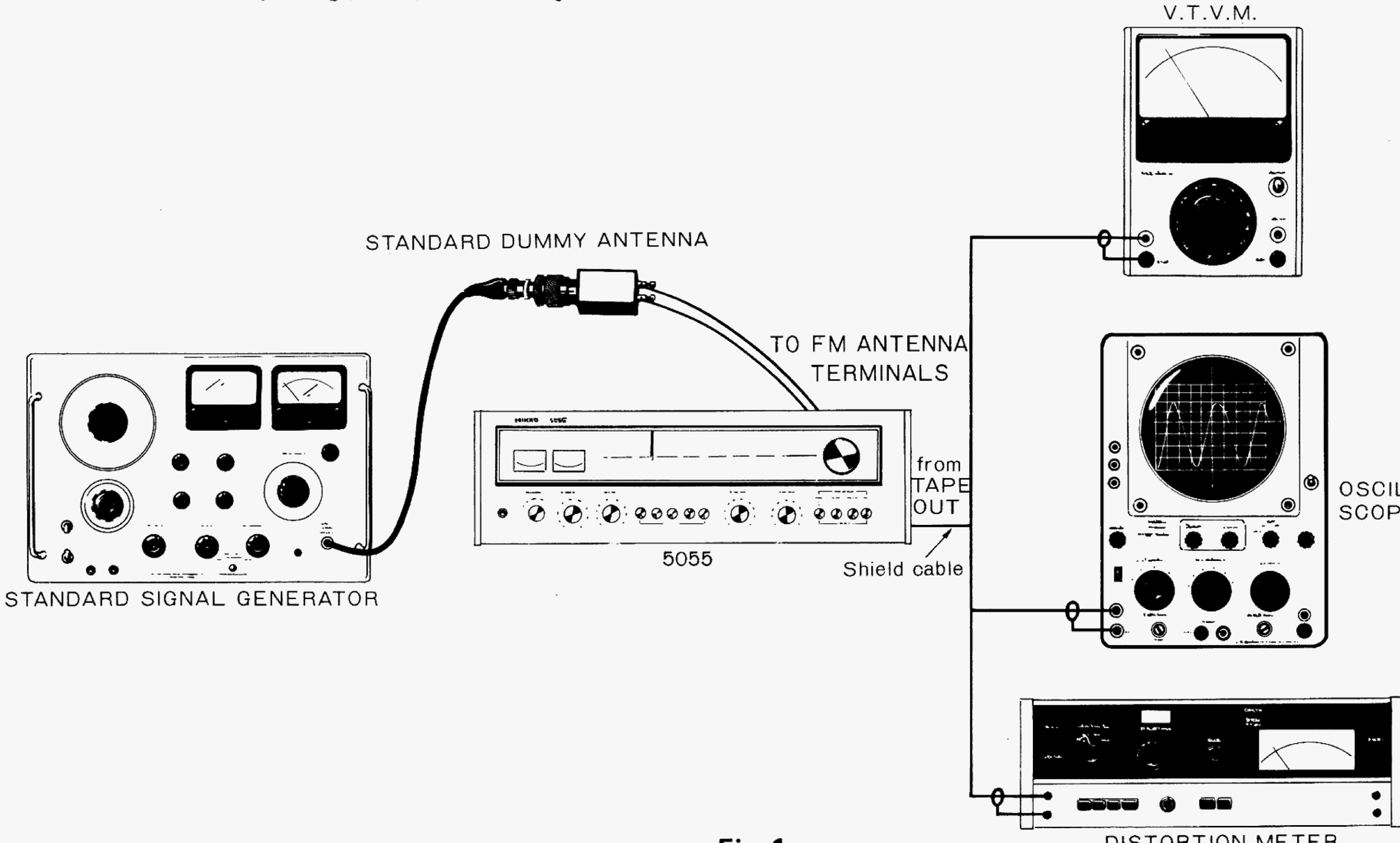


Fig. 1

2. FREQUENCY COVERAGE ADJUSTMENT

The tuner section is provided with the pre-adjusted front end, eliminating the need for frequency coverage adjustment; however, the dial scale may be checked by adjusting OSC-C as necessary (see Fig. 2).

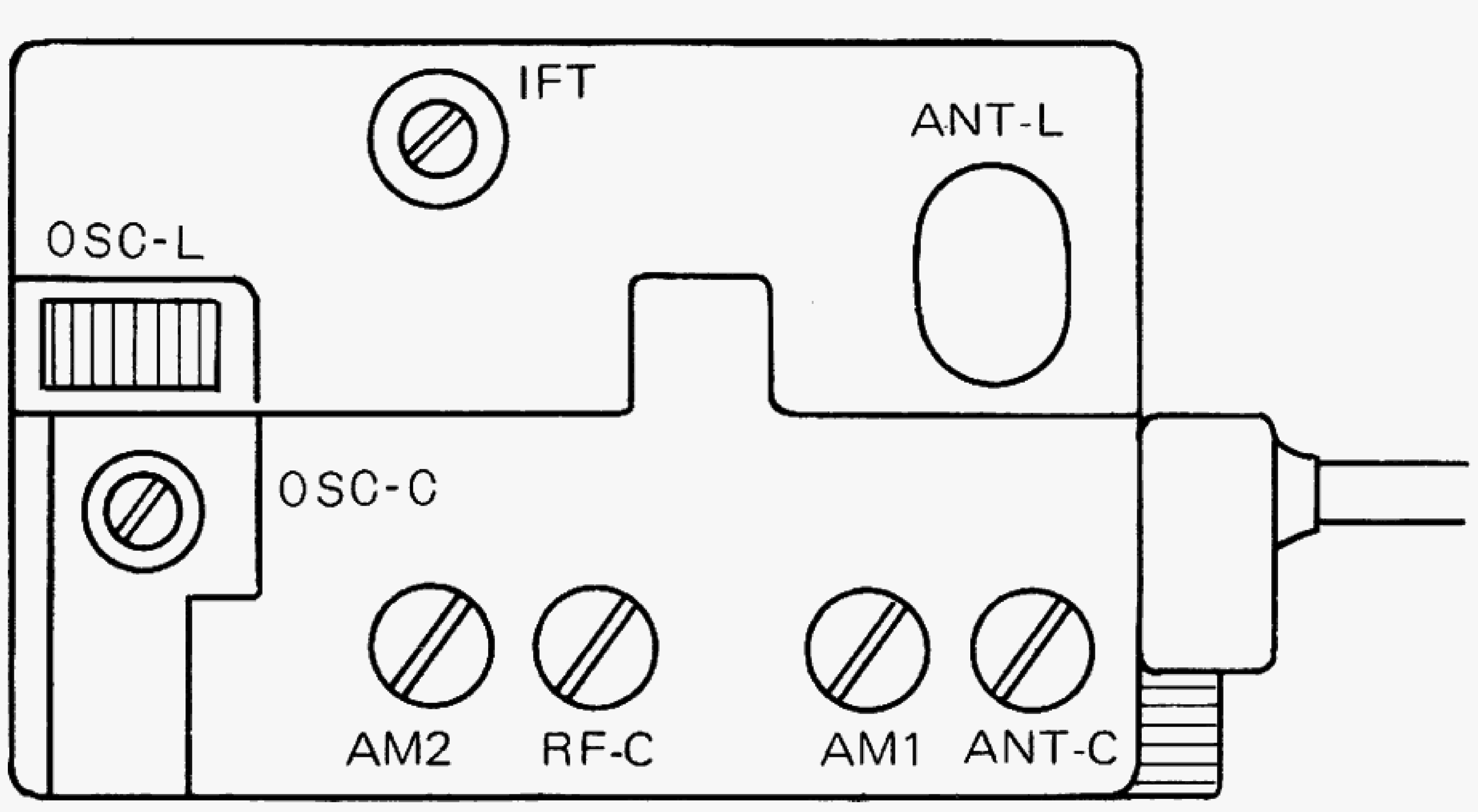


Fig. 2

3. TRACKING ADJUSTMENT

The tracking adjustment is not required because of the use of pre-adjusted front end. If necessary, adjust ANT-C and RF-C for maximum sensitivity, with the receiver tuned in 104MHz. The input of SG should be controlled with ATT.

Note: For adjusting points, refer to Fig. 2.

4. FM SEPARATION ADJUSTMENT

With stereo-modulated RF signal applied to the receiver, make adjustment as follows:

(1) Turn the semi-fixed resistor R319 (HVR 20K-B) fully clockwise.

(2) Connect a frequency counter to the point #27 on the Tuner PCB Ass'y Board. Adjust the semi-fixed resistor R305 (HVR 5K-B) for the frequency of 19KHz ±19Hz.

(3) Adjust the semi-fixed resistor R319 (20K-B) for maximum stereo separation.

Note: For adjusting points, refer to Fig. 3

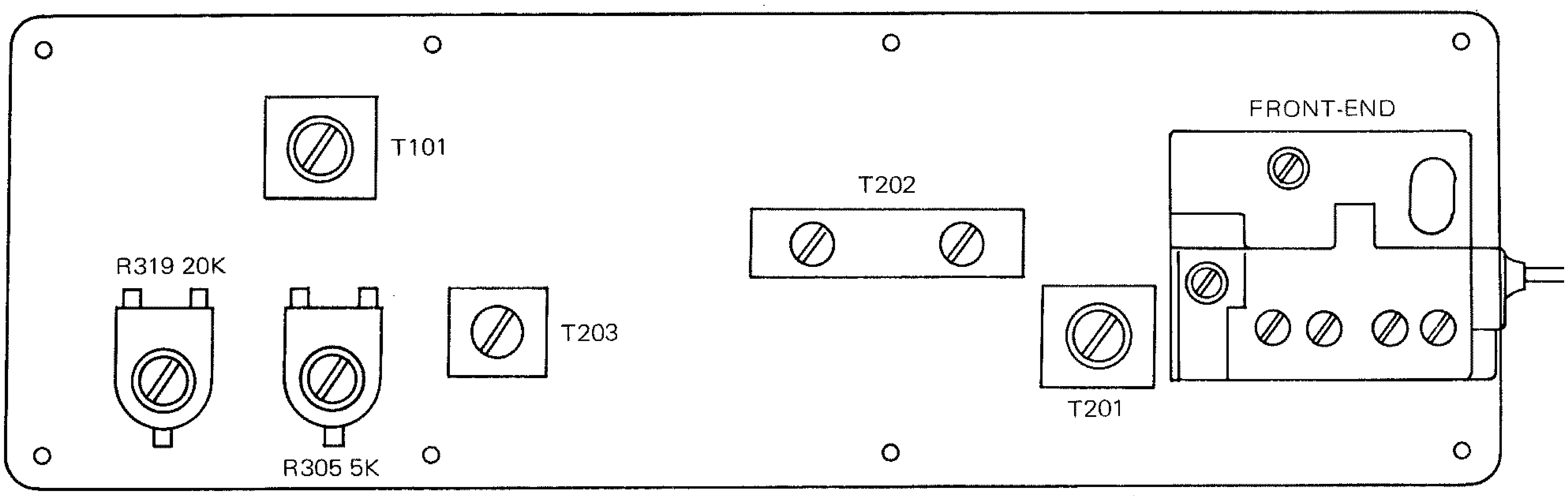


Fig. 3 TUNER PCB ASS'Y BOAD

AM SECTION ADJUSTMENT

The following is intended to describe the procedure of adjusting the AM section of the receiver using a sweep generator. In the adjustment, the output voltage is applied through inductive coupling.

1. AM-IF ADJUSTMENT

For adjustment, place a loop antenna near the receiver under test and observe the waveform of detector output (at the point #18 on the Tuner PCB Ass'y Board) displayed on the alignment oscilloscope.

The adjusting procedure is as follows:

(1) With the receiver set to a high receiving frequency (variable capacitor in full open position), adjust T202 and T203 until the IF waveform becomes maximum.

(2) If, in this case, the adjustment is difficult because of disturbing signals, the variable capacitor may be turned to facilitate the adjustment.

(3) The waveform displayed on the alignment oscilloscope is as shown in Fig. 4.

Note: For adjusting points, refer to Fig. 3.

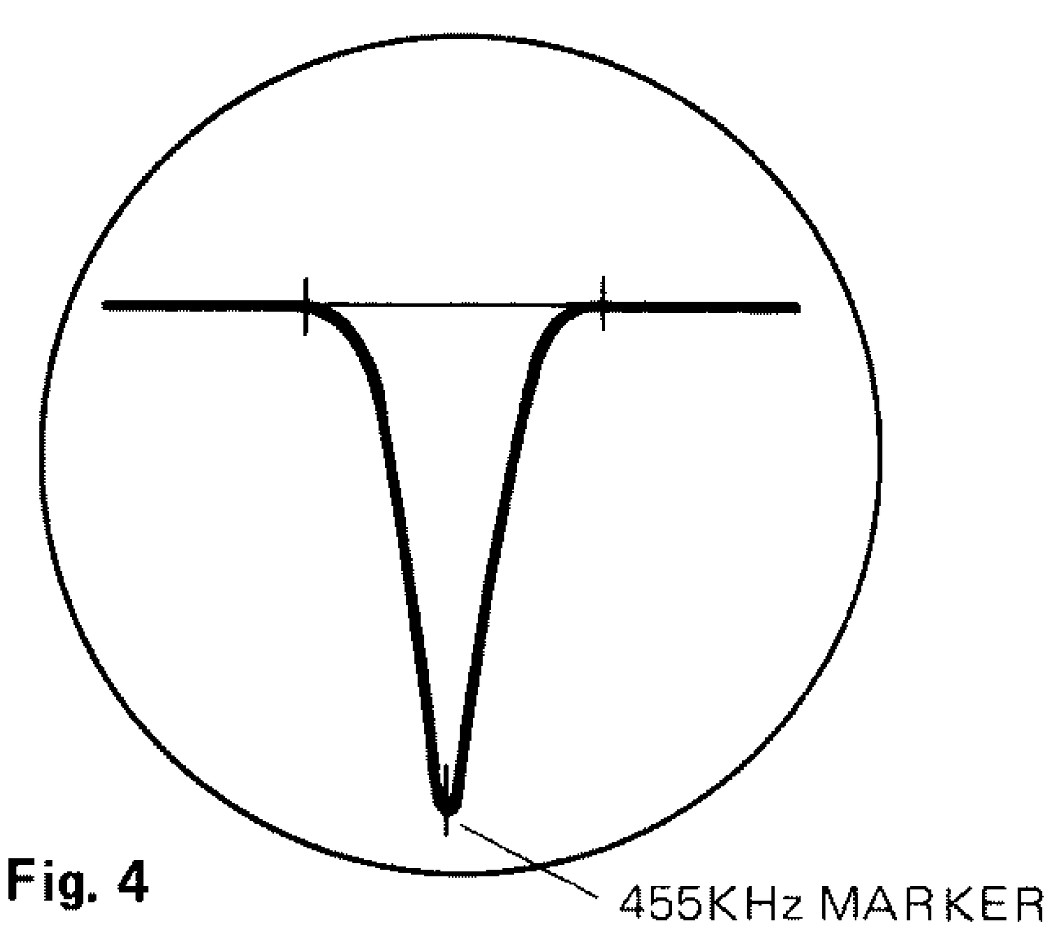


Fig. 4

2. FREQUENCY COVERAGE ADJUSTMENT

This adjustment is similar to the AM-IF adjustment. Switch the sweep generator from IF to RF and follow the procedure below.

(1) With the variable capacitor fully closed, adjust T201 for 520kHz. Then, fully open the variable capacitor and turn AM2 for 1,650kHz.
Repeat the above adjustments two or three times so that the receiving range of 520kHz to 1,650kHz can be obtained.

(2) The waveform displayed on the alignment oscilloscope is as shown in Fig. 5.

Note: For adjusting points, refer to Fig. 2. and Fig. 3.

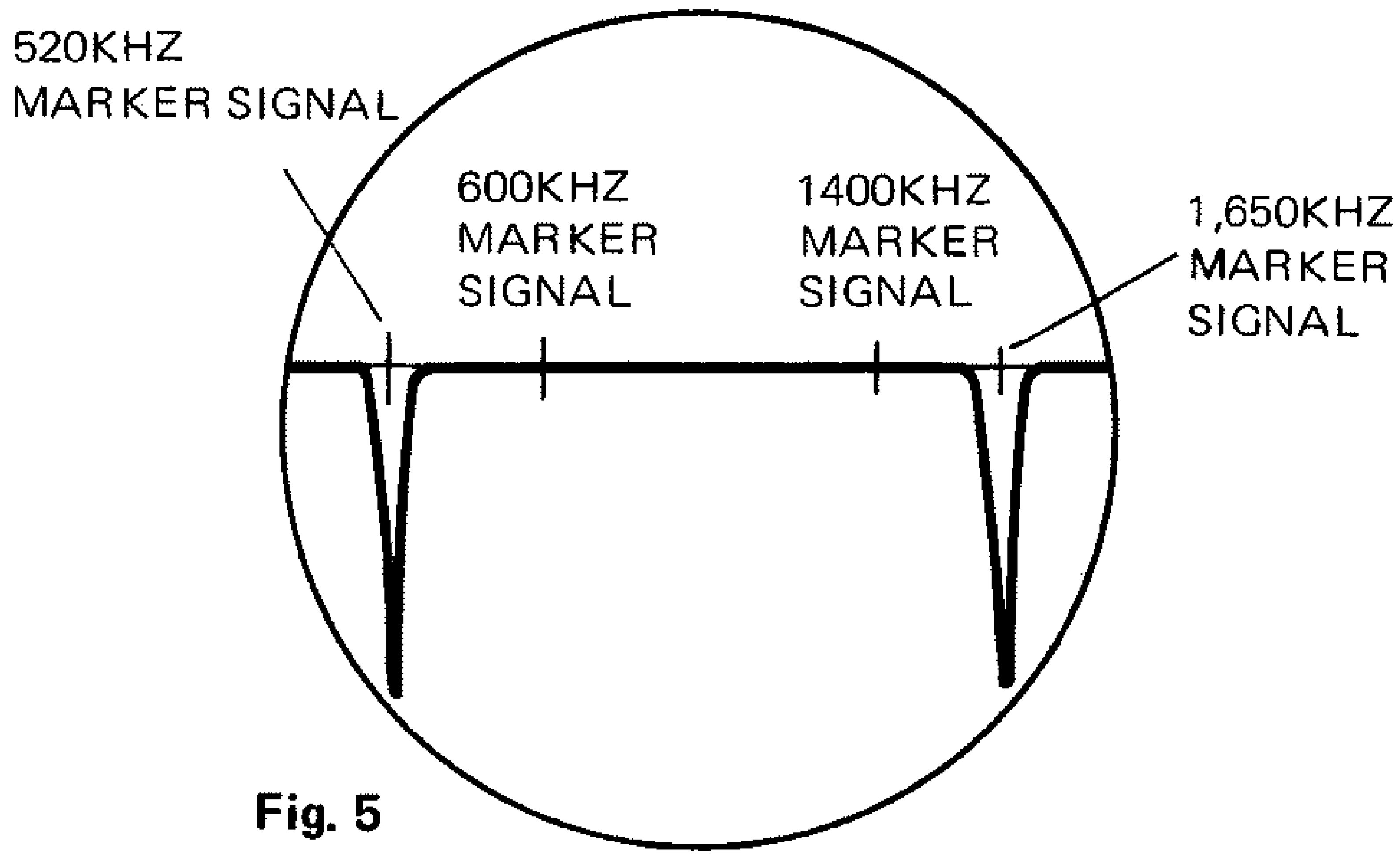


Fig. 5

3. TRACKING ADJUSTMENT

(1) Use the sweep generator in the same manner as described in Item 2 "Frequency Coverage Adjustment". First set the sweep waveform to the 600kHz marker and adjust AM ANT Coil (L1) for maximum waveform. Then set the receiver to 1400kHz and adjust AM1 for maximum waveform. Repeat the above adjustments two or three times so that tracking error can be fully eliminated.
Note: To obtain maximum sensitivity, the input signal level should be adjusted with an attenuator.

(2) To check tracking errors, use a jig made up of a copper wire ring and ferrite rod (see Fig. 6). Bring the ring and the ferrite rod alternately close to the ANT Coil and confirm that the sweep waveform is minimized.
Note: For adjusting points, refer to Fig. 2.

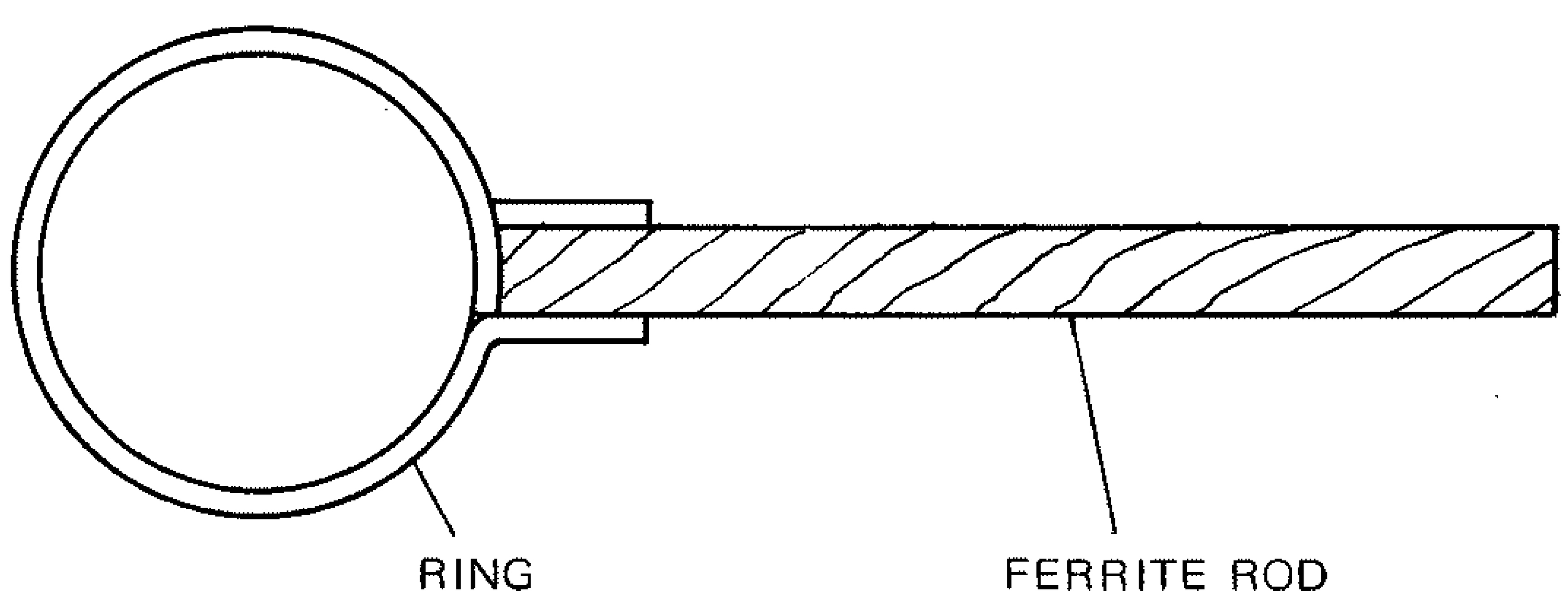


Fig. 6

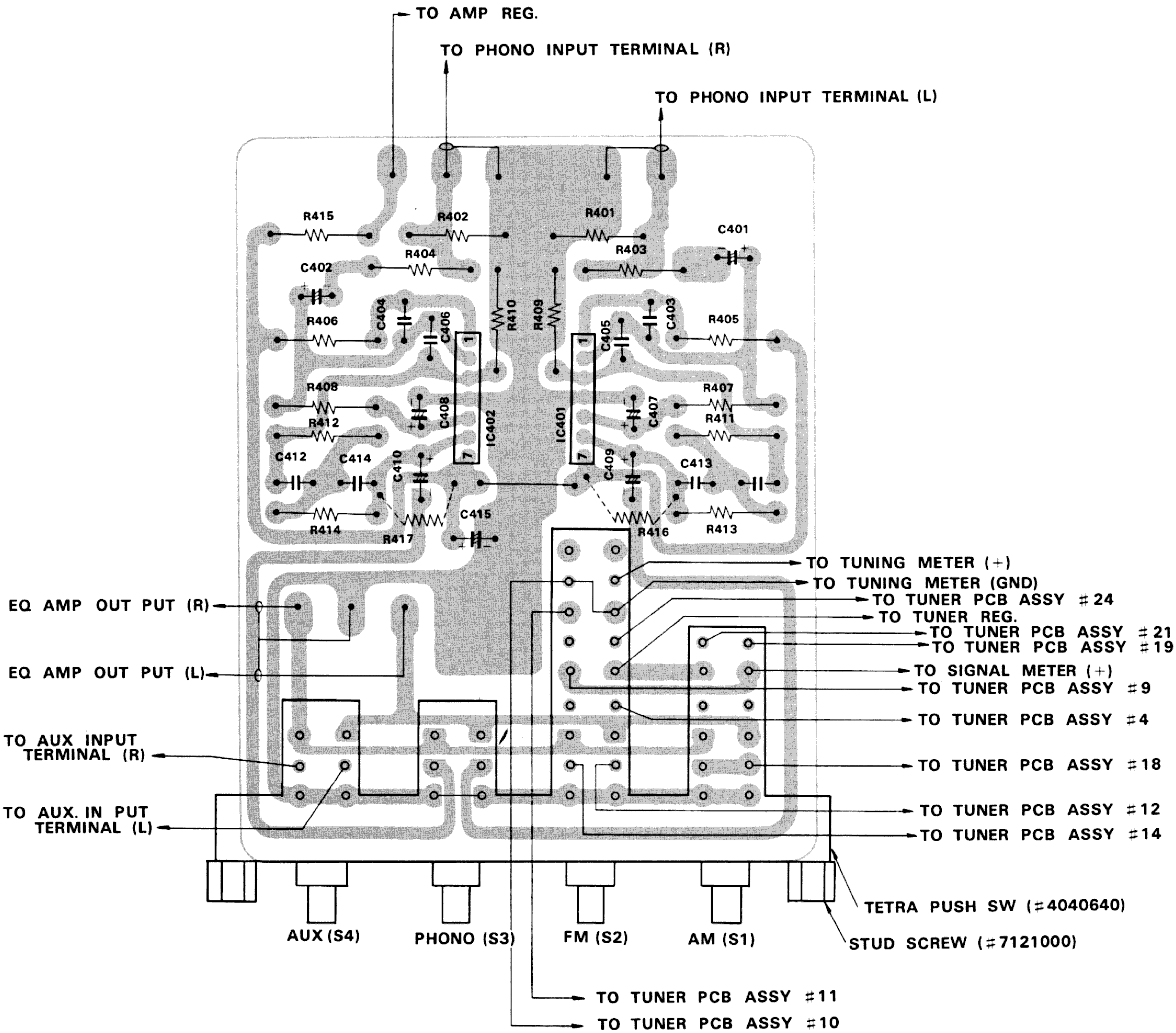
AMPLIFIER SECTION ADJUSTMENT

(1) To adjust the center voltage, connect an 8-ohm dummy load resistor across the speaker terminals and set the Volume Control to the minimum position (fully counter-clockwise). Using a high sensitivity DC voltmeter, adjust R709 and R710 so that the voltage between GND (chassis) and TP1 on the Amplifier PCB Ass'y Board becomes 0±30mV (TP1 is located on the left and right sides of the PCB Ass'y Board).

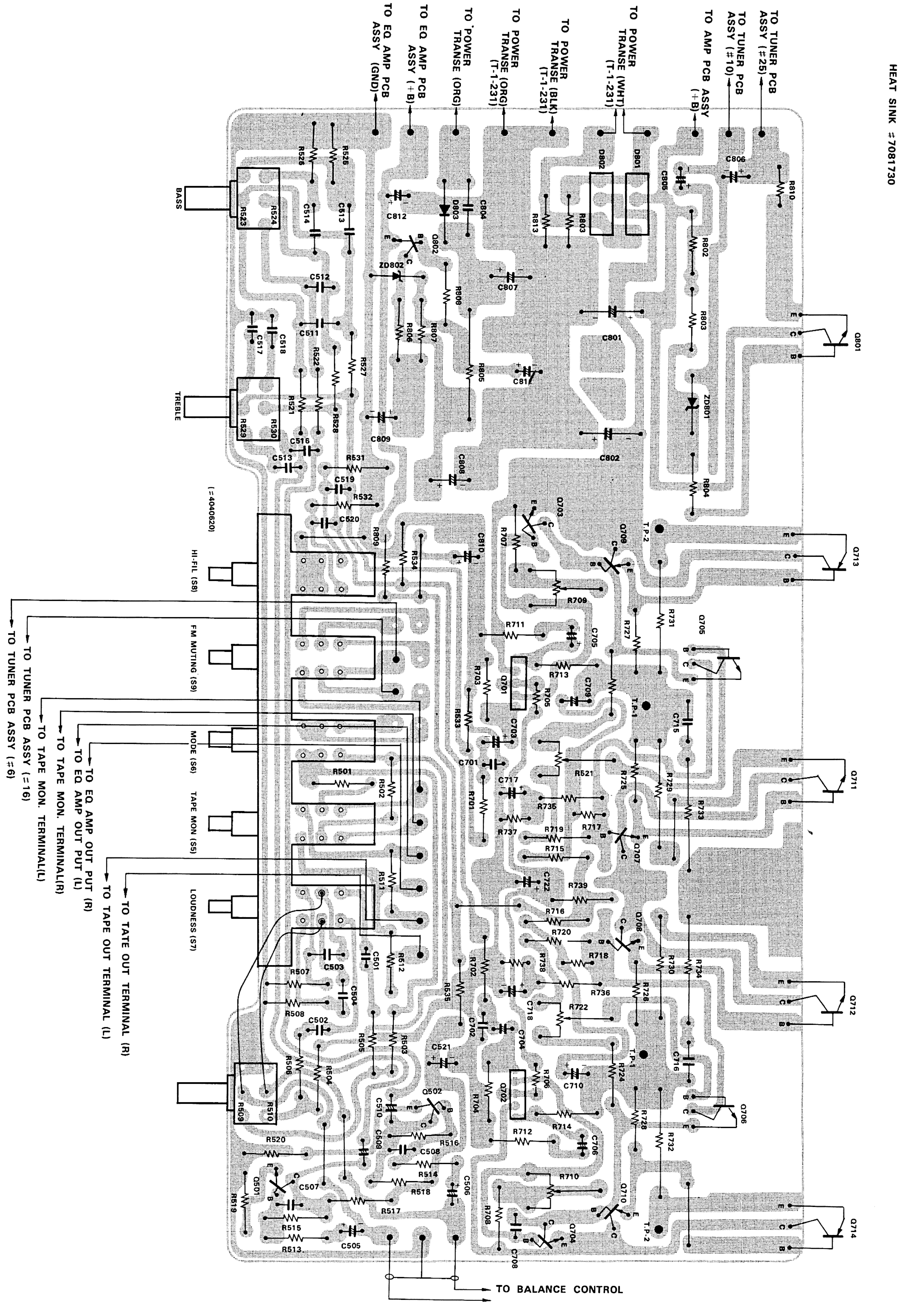
(2) Similarly, adjust R721 and R722 so that the voltage between TP1 and TP2 becomes 10mV, with the Volume Control set to the minimum position.

PRINTED CIRCUIT BOARD

EQ AMP PCB ASSY

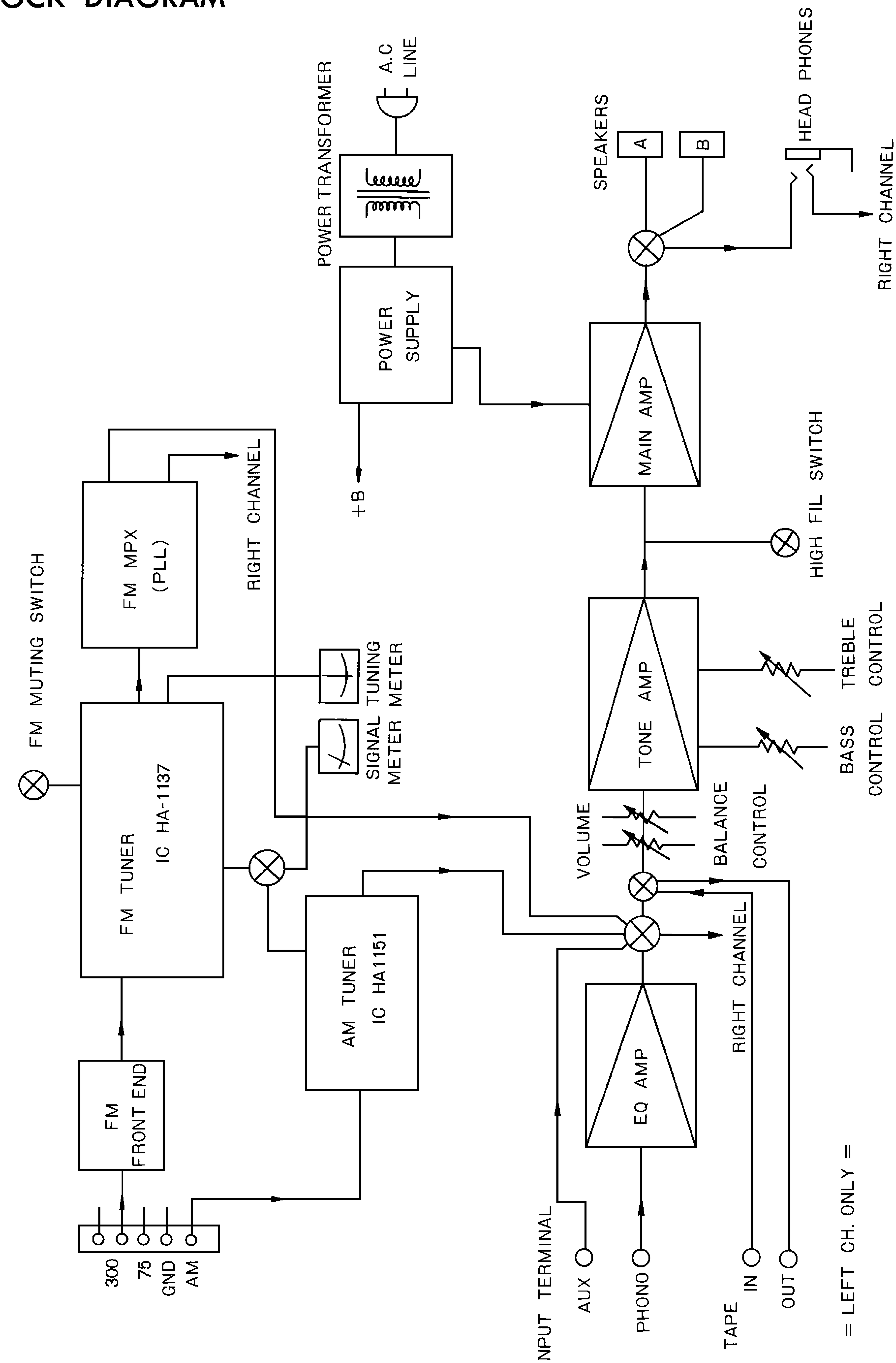


AMP PCB ASSY


HEAT SINK #7081730
TO TUNER PCB ASSY (#25)
TO TUNER PCB ASSY (#10)
TO AMP PCB ASSY (+B)
TO POWER TRANSE (WHT) (T-1-231)
TO POWER TRANSE (BLK) (T-1-231)
TO POWER TRANSE (ORG) (T-1-231)
TO POWER TRANSE (ORG)
TO EQ AMP PCB ASSY (+B)
TO EQ AMP PCB ASSY (GND)
BASS
TREBLE
(#4040620)
HI-FIL (S8)
FM MUTING (S9)
MODE (S6)
TAPE MON (S5)
LOUDNESS (S7)
TO TUNER PCB ASSY (#6)
TO TUNER PCB ASSY (#16)
TO TAPE MON. TERMINAL(R)
TO TAPE MON. TERMINAL(L)
TO EQ AMP OUT PUT (L)
TO EQ AMP OUT PUT (R)
TO TAPE OUT TERMINAL (L)
TO TATE OUT TERMINAL (R)
TO BALANCE CONTROL

TUNER PCB ASSY

BLOCK DIAGRAM



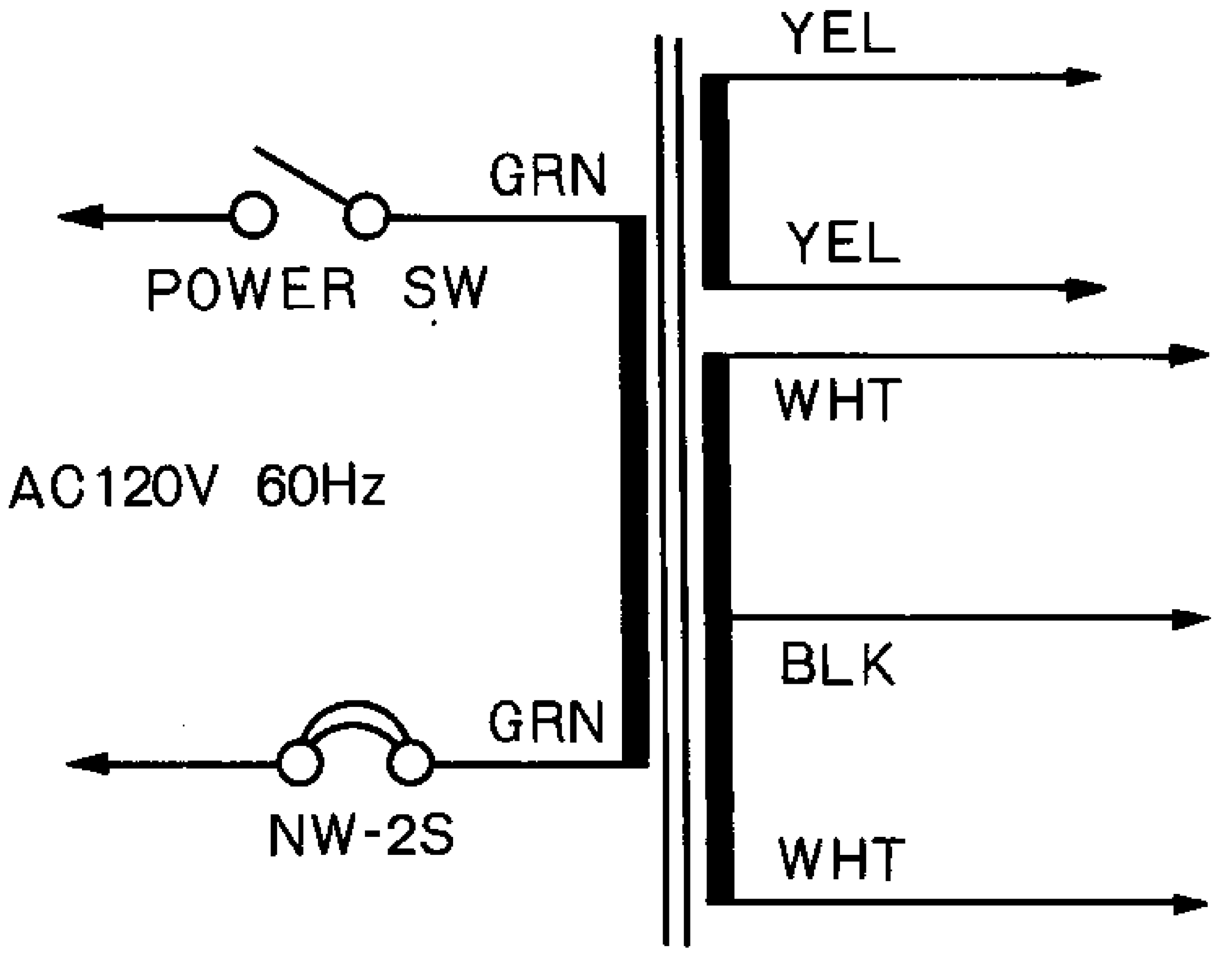
OVERALL DIAGRAM MODEL 5055

*DE-EMPHASIS

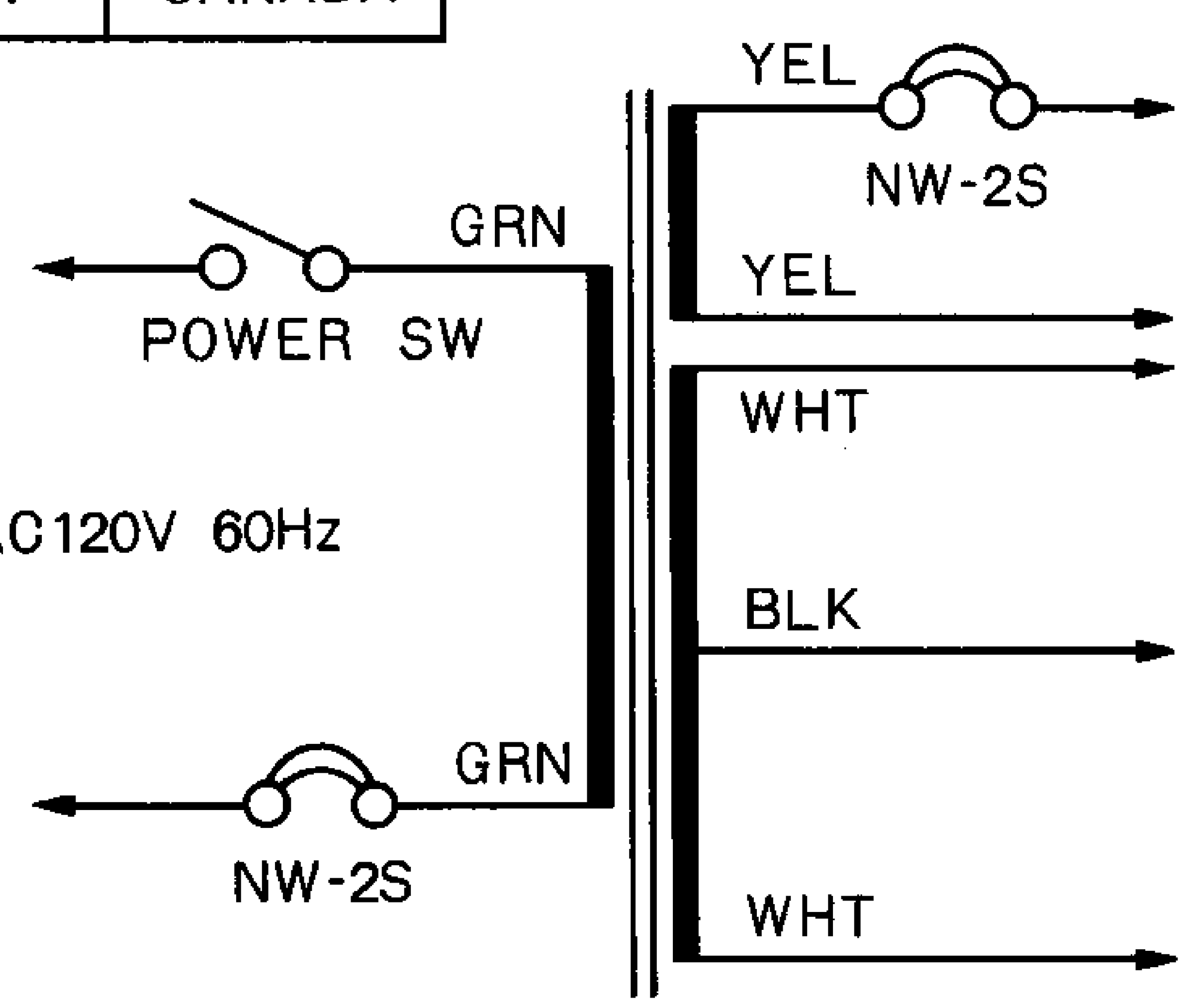
	C307 C308
75μS	0.0047μF
50μS	0.0022μF

PARTIAL CHANGES MADE ACCORDING DESTINATION

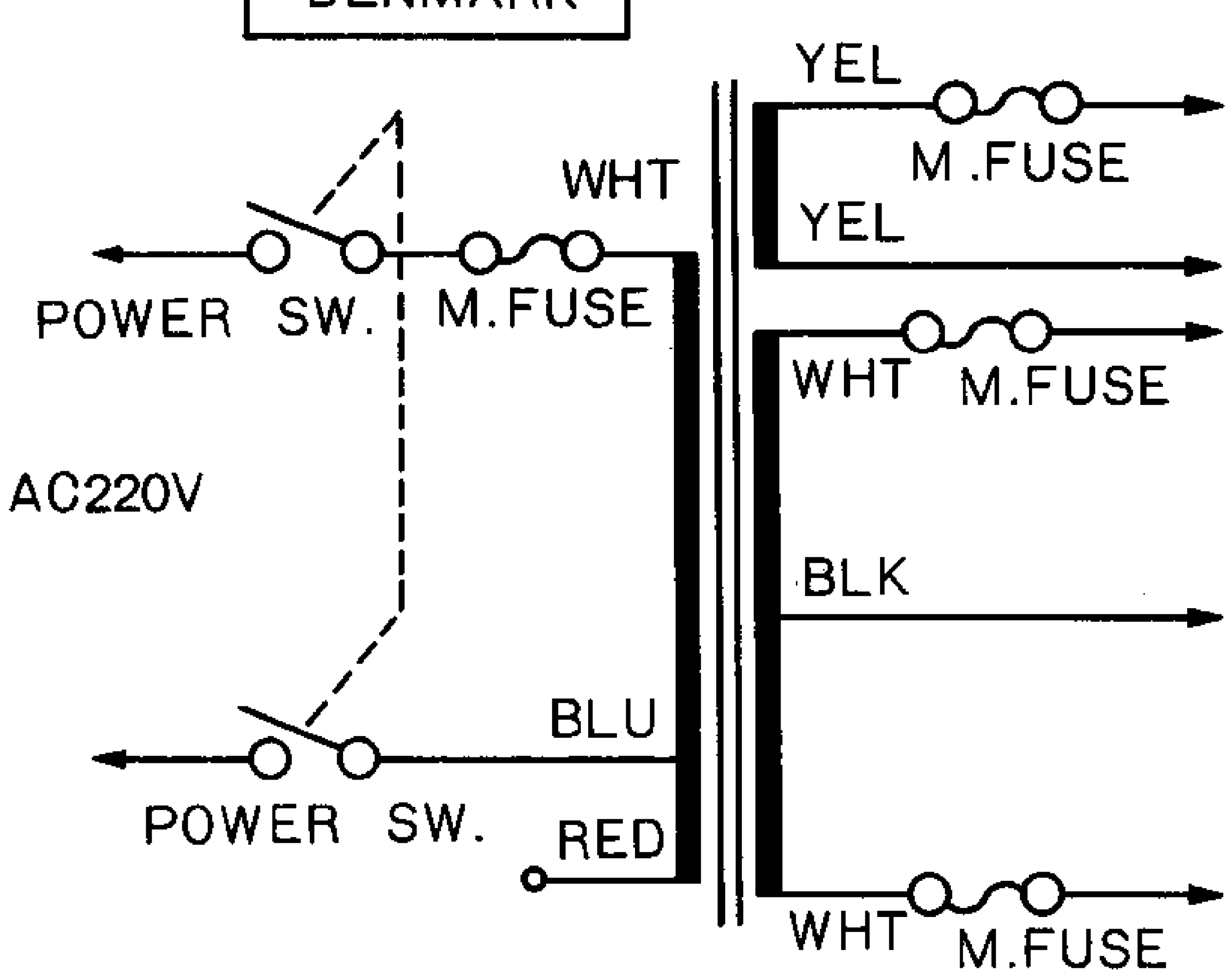
120V	U.S.A



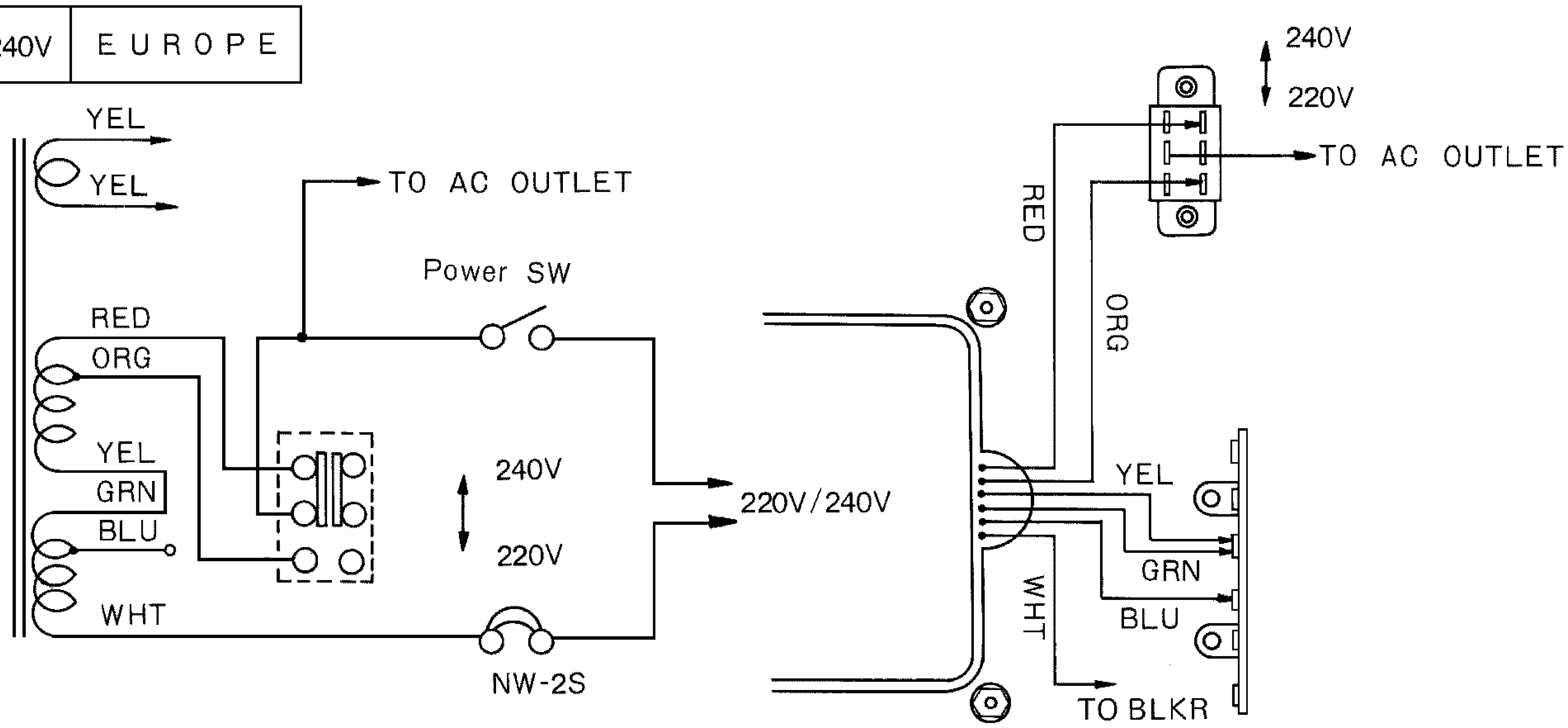
120V	CANADA



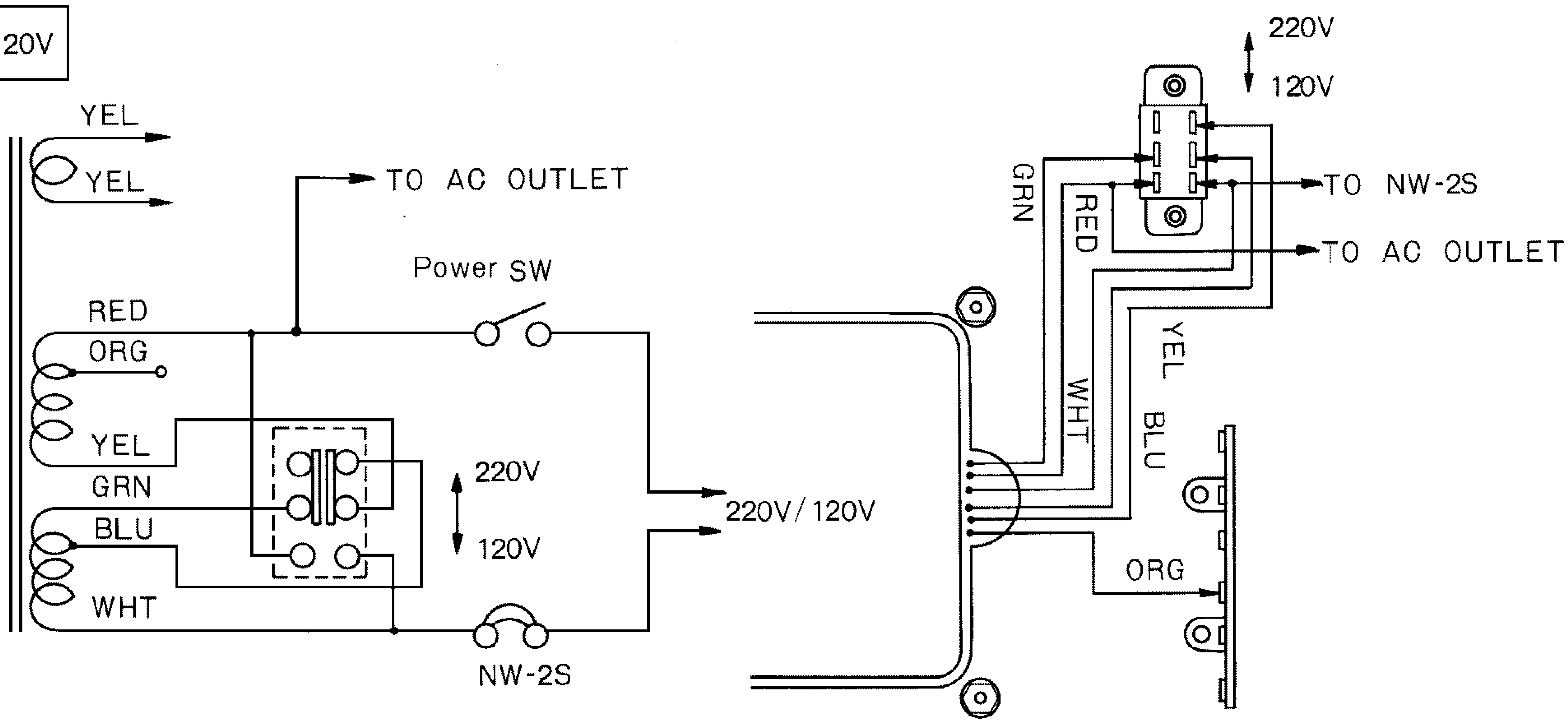
220V	SWEDEN	WEST-GERNANY
	DENMARK	



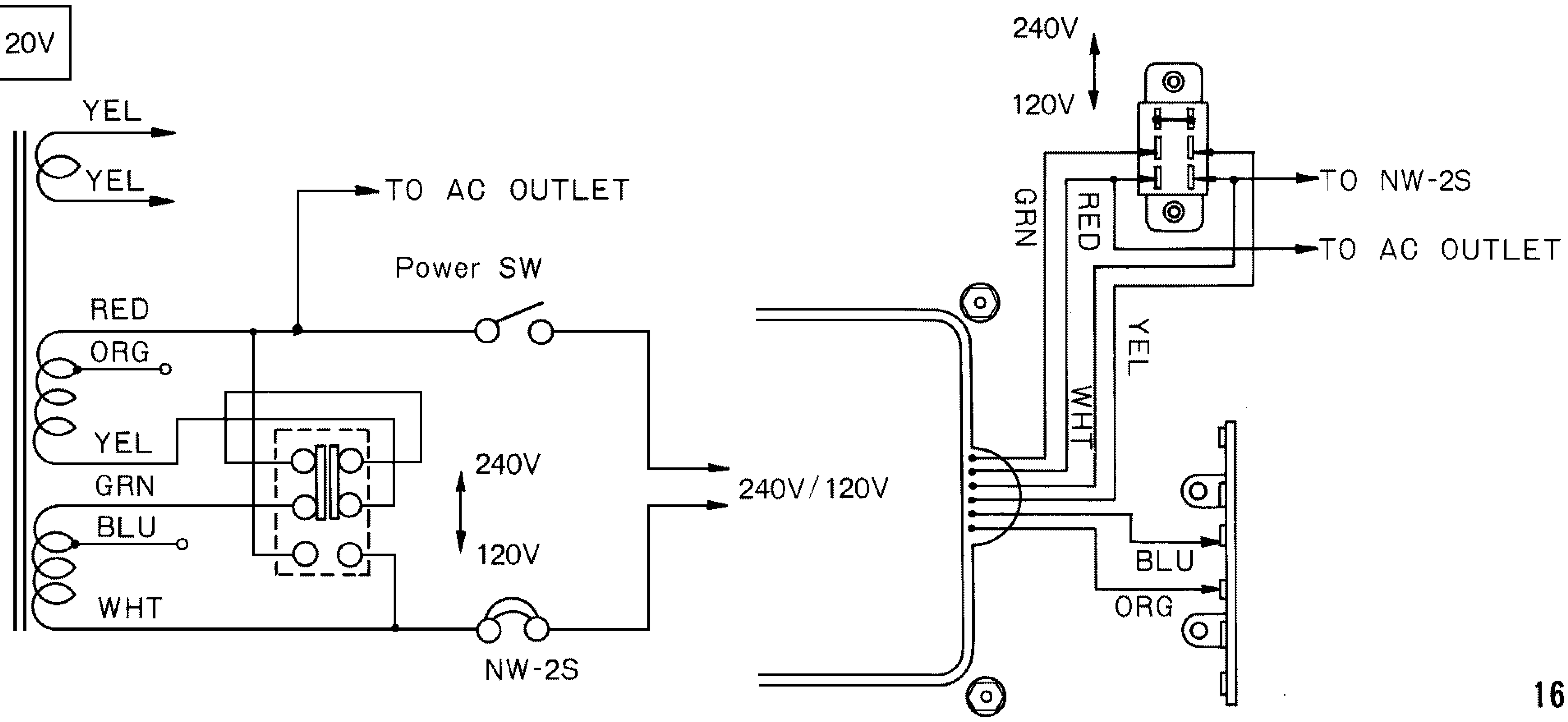
220V/240V | EUROPE



220V/120V



240V/120V



PARTS LIST

Parts No.	Description	Symbol
FINAL ASSEMBLY		
982476 O	CARTON BOX	
984057 O	STYROL PAD	
960147 E	OWNERS MANUAL	
961117 E	DIAGRAM	
967003 A	WARRANTY CARD	
969004 O	POLI CLOTH	
458136 O	Q-MATCH ANT (EX)	
788308 O	PANEL SUB ASSEMBLY	
700167 O	DUST RING	
785104 O	KNOB R9GL-37	TUNING
785117 O	KNOB R9GL-29D	VOLUME
785102 O	KNOB R9GL-23D	OTHERS
785116 O	PUSH BUTTON OL-4	
783103 O	WOOD COVER	
887416 W	TFTS 4×16	WOOD COVER.
732359 O	BOTTOM PLT	
740054 O	POLY FOOT	
CHASS ASSEMBLY		
110221 O	PT T-1-221	T1
315225 K	RES. RC 1/2 GF 2.2MOHM ±10%	R9
740086 O	DIAL DRUM 37ϕ MKZ	
744029 O	SPRING (J)	
786048 O	NEEDLE SUB ASSEMBLY	
580505 O	PL-5 5V75MA	Z9
FRONT PLATE ASSEMBLY		
580806 J	PL-8 8V0,3A	Z1~Z8
580107 O	PL-12 12V30MA (WIRE FR-1)	Z10
324560 O	RES RD1/4S 56 OHM1/4W	R8
712098 O	PULLY SHAFT	
740079 O	PULLY 9ϕ	
740083 O	PULLY 20ϕ	
715212 O	DIAL SHAFT	
780190 O	DIAL SCALE	
458152 O	METER (TUNING)	M1
458153 O	METER (SIGNAL)	M2
431040 O	VR V24L52N 3BM 250K 25KC	R5 (BALANCE)
405097 O	ROTARY SW SR26N 2-4-5 25KC (TV-5)	S9
455010 O	EAR JACK	
239103 P	C-CAP 0,01MF$\left(^{+100}_{-0}\%\right)$ 1,4KV	C4
362331 B	MO-RES. RS2B 330 OHM 2W	R6. R7
362100 B	MO-RES. RS2B 10 OHM 2W	R10. R11
BACK PLATE ASSEMBLY		
606002 J	PLUG CORD KP-2	POWER SUPPLY
740062 O	CORD STP SR-39-4	
450015 O	AC SOCKET	AC OUTLET
490067 O	NW-2S 2.0A	
490068 O	NW-2S 2.5A	
445046 O	SP SCW TER 4P	SPEAKER
445052 O	ANT TER	ANTENNA TERMINAL
120025 O	AM BAR ANT	L1
440005 O	GND TER NUT	
444081 O	US PIN TER 4P×2	
453022 O	DIN CONCT	
324104 J	RES RD1/4S 100 KOHM	R3, R4,
324334 J	RES RD1/4S 330 KOHM	R1, R2,
231222 Z	C-CAP 0.0022MF$\left(^{+80}_{-20}\%\right)$ CK45YG	C2, C3,
EQ AMP PCB ASSEMBLY		
463057 O	EQ AMP PCB	
404064 O	TETRA PUSH SW 25EF2020	
518035 S	IC TA-7129P	IC 410, IC402
324221 J	RES RD1/4S 220OHM1/4W	R409, R410, R415
324222 J	RES RD1/4S 2.2 KOHM1/4W	R403, R404,
324333 J	RES RD1/4S 33 KOHM1/4W	R416, R417,
324123 J	RES RD1/4S 12 KOHM1/4W	R411, R412,
324683 J	RES RD1/4S 68 KOHM1/4W	R401, R402,
324104 J	RES RD1/4S 100KOHM1/4W	R407, R408,
324154 J	RES RD1/4S 150KOHM1/4W	R413, R414,
324105 J	RES RD1/4S 1MOHM 1/4W	R405, R406,
232470 K	C-CAP 47PF ±10% SL	C403, C404,
232101 K	C-CAP 100PF ±10% SL	C405, C406,
222472 J	M-CAP 0,0047MF±5% CQ92M	C411, C412,
222123 J	M-CAP 0,012MF±5% CQ92M	C413, C414,
211415 Q	E-CAP 35R4,7 CEO4W	C410, C420,
211420 Q	E-CAP 35R10 CEO4W	C409, C410,
211130 Q	E-CAP 10R100 CEO4W	C407, C408,
211432 Q	E-CAP 35R20 CEO4W	C415,
AMP PCB ASSEMBLY 1/3		
4630580	AMP PCB	
MAIN AMP SECTION		
708172 O	H-SINK	
513059 S	TR 2SB596	Q713, Q714,
513060 S	TR 2SD526	Q711, Q712,
510040 S	TR 2SB548	Q709, Q701, Q703, Q707
515074 S	TR 2SD414	Q704, Q708
515077 S	TR 2SC945 (L)	Q705, Q706,
514085 S	TR 2SA798	Q701, Q702,
324221 J	RES RD1/4S 220 OHM 1/4W	R725, R726, R727, R728
324681 J	RES RD1/4S 680 OHM 1/4W	R711, R712

Parts No.	Description	Symbol
324152 J	RES RD1/4S 1.5K OHM 1/4W	R708, R709, R715 R716, R723, R724
324332 J	RES RD1/4S 3.3K OHM 1/4W	R701, R702,
324472 J	RES RD1/4S 4.7K OHM 1/4W	R717, R718 R719, R720,
324103 J	RES RD1/4S 10K OHM 1/4W	R735, R736, R737, R738, R739,
324223 J	RES RD1/4S 22K OHM 1/4W	R705, R706,
324563 J	RES RD1/4S 56K OHM 1/4W	R703, R704, R713, R714,
362479 B	MO-RES RS2B 0.47 OHM 2W	R729, R703, R731, R732,
361100 B	MO-RES RS1B 10 OHM 1W	R733, R734,
430040 O	KVSF10-7SNF B500	R709, R721, R710, R722,
232470 K	C-CAP 47PF±10% SL	C707, C708,
232471 K	C-CAP 470PF ±10%SL	C701, C702,
222104 M	M-CAP 0.1MF ±20% CQ92M	C715, C716,
252410 M	T-CAP 35D1 CS15E	C703, C704,
211525 Q	E-CAP 50R47 CEO4W	C709, C710,
211415 Q	E-CAP 35R4.7 CEO4W	C717,
211125 Q	E-CAP 10R47 CEO4W	C705, C706, C717, C718,

AMP PCB ASSEMBLY 2/3

TONE AMP SECTION

Parts No.	Description	Symbol
404062 O	PENTA PUSH SW IEF1620	
432049 O	V16L4G3 N25KC B100K×2	R509, R510,
432050 O	V16 L4 G3 N25KC A100K×2	R509, R530,
515069 S	TR 2SC900	Q501, Q502
324221 J	RES RD1/4S 220 OHM 1/4W	R513, R514, R519, R520,
324152 J	RES RD1/4S 1.5 KOHM 1/W	R525, R526, R535,
324472 J	RES RD1/4S 4.7 KOHM 1/W	R507, R508,
324562 J	RES RD1/4S 5.6 KOHM 1/W	R517, R521, R527, R518, R522, R528,
324103 J	RES RD1/4S 10 KOHM 1/W	R501, R503, R511, R502, R504, R512,
324153 J	RES RD1/4S 15 KOHM 1/W	R505, R506,
324104 J	RES RD1/4S 100KOHM 1/W	R531, R532,
324474 J	RES RD1/4S 470KOHM 1/W	R533, R534,
324105 J	RES RD1/4S 1MOHM 1/W	R515, R516,
232220 K	C-CAP 22PF ±10% SL	C507, C508,
222102 K	M-CAP 0.001MF ±10%	C502, C501,
222122 K	M-CAP 0.0012MF ±10%	C515, C516,
222682 K	M-CAP 0.0068MF ±10%	C519, C520,
222123 K	M-CAP 0.012MF ±10%	C517, C518
222333 K	M-CAP 0.033MF ±10%	C511, C512,
222104 K	M-CAP 0.1MF ±10%	C503, C504,
222224 K	M-CAP 0.22MF ±10%	C513, C514,

Parts No.	Description	Symbol
252410 M	T-CAP 35D1 CS15E	C505, C506,
211220 Q	E-CAP 16R10 CEO4W	C509, C510,
211332 Q	E-CAP 25R220 CEO4W	C521

AMP PCB ASSEMBLY 3/3

REG SECTION

Parts No.	Description	Symbol
513056 S	TR 2SD235	Q801,
515074 S	TR 2SD414	Q802,
560028 S	D, 1B2C1	D801,
560029 S	D, 1B2Z1	D802,
560033 S	D, 1S1886	D803,
502027 S	ZD, RD15E	ZD801,
502029 S	ZD, RD33E	ZD802,
324220 J	RES, RD1/4S 22 OHM 1/4W	R810,
324470 J	RES, RD1/4S 47 OHM 1/4W	R809,
324101 J	RES RD1/4S 100OHM 1/4W	R804, R808,
324681 J	RES RD1/4S 680 OHM 1/4W	R803, R807,
324182 J	RES RD1/4S 1.8 KOHM 1/4W	R806
324222 J	RES RD1/4S 2.2 KOHM 1/4W	R802,
361221 B	MO-RES RS1B 220 OHM	R805,
238103 P	C-CAP 0.01MF $\left(\begin{smallmatrix}+100\\-0\end{smallmatrix}\%\right)$ 500V	C803, C804, C813,
211530 Q	E-CAP 50R100 CEO4W	C809,
211532 Q	E-CAP 50R220 CEO4W	C807, C808,
211432 Q	E-CAP 35R220 CEO4W	C801, C811, C812
211332 Q	E-CAP 25R220 CEO4W	C805,
211232 Q	E-CAP 16R220 CEO4W	C806,
211445 Q	E-CAP 35R4700 CEO4W	C801, C802,

TUNER PCB ASSEMBLY 1/3

Parts No.	Description	Symbol
462024 O	TUNER PCB	
491003 O	FRONT END FB5121112	

FM IF SECTION

Parts No.	Description	Symbol
518038 S	IC HA1137W	IC 101
515082 S	TR 2SC1675	Q101
121067 O	INDUCTOR 180J (18mH)	L102
121070 O	PEAKING COIL (2.2μH)	L101
124025 O	FM DET	T101
128023 A	C-FIL SFE10.7 MA8	CF101, CF102
324470 J	RES RD1/4S 47 OHM 1/4W	R106
324101 J	RES RD1/4S 100 OHM 1/4W	R101
324271 J	RES RD1/4S 330 OHM 1/4W	R104, R108
224102 J	RES RD1/4S 1 KOHM 1/4W	R105
324182 J	RES RD1/4S 1.8 KOHM 1/4W	R103
324222 J	RES RD1/4S 2.2 KOHM 1/4W	R111, R113

Parts No.	Description	Symbol
324103 J	RES RD1/4S 10 KOHM 1/4W	R102, R115
324123 J	RES RD1/4S 12 KOHM 1/4W	R114
324183 J	RES RD1/4S 18 KOHM 1/4W	R112
324333 J	RES RD1/4S 33 KOHM 1/4W	R117
324473 J	RES RD1/4S 47 KOHM 1/4W	R110
324104 J	RES RD1/4S 220 KOHM 1/4W	R109
324224 J	RES RD1/4S 200 KOHM 1/4W	R118
324564 J	RES RD1/4S 560 KOHM 1/4W	R107
232470 J	C-CAP 47PF ±10% SL	C113
231101 Z	C-CAP 0.001MF $\left(\begin{smallmatrix}+80\\-20\end{smallmatrix}\%\right)$ CK45YG	C101
231103 Z	C-CAP 0.01MF $\left(\begin{smallmatrix}+80\\-20\end{smallmatrix}\%\right)$ CK45YG	C102, C115
231473 Z	C-CAP 0.047MF $\left(\begin{smallmatrix}+80\\-20\end{smallmatrix}\%\right)$ CK45YG	C103, C105, C107 C110, C104, C106, C109
211505 Q	E-CAP 50R0.47 CE04W	C111
211415 Q	E-ACP 35R4.7 CE04W	C112
211220 Q	E-CAP 16R10 CE04W	C114
211510 Q	E-CAP 50R1 CE04W	C108

TUNER PCB ASSEMBLY 2/3

AM SECTION

Parts No.	Description	Symbol
518039 S	IC HA1151	IC201,
122006 O	AM OSC COIL	T201,
123011 O	AM IFT COIL	T203,
128021 O	C-FIL CF-455D-3	T202
324151 J	RES RD1/4S 150 OHM 1/4W	R207
324331 J	RES RD1/4S 330 OHM 1/4W	R206,
324272 J	RES RD1/4S 2.7KOHM 1/4W	R208
324392 J	RES RD1/4S 3.9KOHM 1/4W	R201, R203,
324103 J	RES RD1/4S 10K OHM 1/4W	R204, R205,
324473 J	RES RD1/4S 47 KOHM 1/4W	R209,
231150 K	C-CAP 15PF ±10% SL	C203
2321102Z	C-CAP 0.001MF $\left(\begin{smallmatrix}+80\\-20\end{smallmatrix}\%\right)$ CK45YG	C209,
231103 Z	C-CAP 0.01 MF $\left(\begin{smallmatrix}+80\\-20\end{smallmatrix}\%\right)$ CK45YG	C201, C207, C212 C206, C210
231473 Z	C-CAP 0.047MF $\left(\begin{smallmatrix}+80\\-20\end{smallmatrix}\%\right)$ CK45YG	C214,
222103 K	M-CAP 0.01MF ±10% CQ92M	C204,
223361 K	S-CAP 360PF ±10% CQ09S	C202,
211510 Q	E-CAP 50R1 CE04W	C208,
211513 Q	E-CAP 50R3.3	C211
211220 Q	E-CAP 16R10 CE04W	C205, C213,

TUNER PCB ASSEMBLY 3/3

MPX AMP SECTION

Parts No.	Description	Symbol
518036 S	IC HA1156	IC 301,
515077 S	TR 2SC945 (L)	Q301, Q302, Q303,
128025 O	FIL EXA-6FD04	FIL,301, FIL,302,
324100 J	RES RD1/4S 10 OHM 1/4W	R301,
324680 J	RES RD1/4S 68 OHM 1/4W	R309,
324122 J	RES RD1/4S 1.2 KOHM 1/4W	R317, R318,
324332 J	RES RD1/4S 3.3 KOHM 1/4W	R303, R306,
324392 J	RES RD1/4S 3.9 KOHM 1/4W	R301, R302,
324562 J	RES RD1/4S 5.6 KOHM 1/4W	R315, R316,
324123 J	RES RD1/4S 12 KOHM 1/4W	R304,
324333 J	RES RD1/4S 33 KOHM 1/4W	R311, R312,
324104 J	RES RD1/4S 100 KOHM 1/4W	R307, R308,
324105 J	RES RD1/4S 1 MOHM 1/4W	R313, R314,
430031 O	KVSF 10-7ANF ·B5K	R305,
430033 O	KV8F 10-7ANF ·B20K	R319,
231222 K	C-CAP 0.0022MF ±10% CK45YP	C311, C312,
222682 K	M-CAP 0.0068MF ±10% CQ92M	(C307,C308)75μS
222222 K	M-CAP 0.0022MF ±10% CQ92M	(307,C308)50μS
222473 K	M-CAP 0.047MF ±10% CQ92M	C301,
252402 M	T-CAP 35D0.22 CS15E	C303,
223471 J	S-CAP 470PF ±5% CQ09S	C302,
211505 Q	E-CAP 50R0.47 CE04W	C304, C305,
211513 Q	E-CAP 50R3.3 CE04W	C309, C313, C315, C310, C314, C316,
211230 Q	E-CAP 16R100 CE04W	C306

SEMICONDUCTOR SPECIFICATION

TRANSISTOR COMPLEMENT.

Type	Description	Class of Service	Maximum Ratings (T_A=25℃) (Absolute Values)						Electrical Characteristics (Typical Value) T_A=25℃											Manufacture
			Collector to Base Voltage VCBO	Emitter to Base Voltage V_{EBO}	Collector Current I_C	Emitter Current I_E	Collector Dissipation PC	Junction Temperature	Condition of Measurement		hfe (hFE)	NF	fαb (fT)	Cob	hie (real)	Collector Cut-off Current		Emitter Cut-off Current		
																I_{CBO} (max. µA)	V_{CB}	V_{EB} (max. µA)	V_{EB}	
			(V)	(V)	(mA)	(mA)	(mw)	(℃)	(V)	(mA)		dB	MHz	pF	Ω		(V)		(V)	
2SC785	NPN Si E-P	RF AMP	40	4	20		100	125	6	1.0	120	5	500	1.2		0.5	18	0.5	4	TOSHIBA
2SC535	NPN Si E-P	RF AMP	30	4	20		100	125	6	1.0	120	3.5	700	0.9		0.5	10			HITACHI
2SC1342	NPN Si P	RF AMP	30	4	30		100	125	6	1.0	120	5.5	250	1.1		0.5	10			HITACHI
2SC1675	NPN Si E-P	RF AMP	50	5	30		250	125	6	1.0	90	2.0	250	1.9		0.1	50	0.1	5	NEC
2SC945	NPN Si E	Low FREQ. Amp	50	5	100		250	125	6	1.0	150	4.0	300	4.5		0.1	40	0.1	3	NEC
2SC900	NPN Si E	Low FREQ. Low Noise Amp	30	5	30		250	125	3	0.5	400		100			0.05	25	0.1	3	NEC
2SD414	NPN Si E	Power Output	120	5	1.5A		750	150	5	100	80		80			1.0	80	1.0	3	NEC
2SD235	NPN Si D-J	Power Output	50	10	3.0A		1.5W	150	5	500	80		10			100	20	100	5	TOSHIBA
2SA798	PNP Si E-P	Low Noise Diff. Amp	−50	−5	−100		200	125	−6	−1.0	600		100			10	−50	10	−5	MITSUBISHI
2SB548	PNP Si E	Power Output	−100	−5	−1.5A		750	150	−5	−100	80		80			1.0	−80	1.0	−3	NEC
2SD526	NPN Si TMe	Power Output	80	5	4.0A		30W	150	5	500	100		3			30	80	100	5	TOSHIBA
2SB596	PNP Si TMe	Power Output	−80	−5	−4.0A		30	150	−5	−500	100		3			30	−80	100	−5	TOSHIBA

RECTIFIER, DIODE, ZENER-DIODE COMPLEMENT.

Type	Description	Maximum Ratings (T_A=25℃)						Electrical Characteristics (Typical Value) T_A=25℃						Manufacture
		Peak Inverse Voltage (V)	Dissipation (mw)	Output Current (mA)	Inverse Current (A)	Surge Current (A)	Junction Temperature (℃)	Condition		Condition		Condition		
1B2C1	Si RECTIFIER	100		2.0A (Ta=50℃)	V_R=100V MAX. 0.4mA	60	150							TOSHIBA
1B2Z1	Si RECTIFIER	100		2.0A (Ta=50℃)	V_R=100V MAX. 0.4mA	60	150							TOSHIBA
1S1886	Si RECTIFIER	200		1.0A (Ta=65℃)	V_R=200V MAX. 0.4mA	60	150							TOSHIBA
RD15E Ⓑ	Si ZENER DIODE			400	V_R=11V 2µA		175	V_Z I_Z=10mA	13.8V ~ 15.6V	R_D I_Z=10mA	MAX 30Ω	ZEK I_Z=0.5mA	MAX 150Ω	NEC
RD33E Ⓑ	Si ZENER DIODE			400	V_R=25V 2µA		175	V_Z IZ=5mA	31.0V ~ 35.0V	R_D I_Z=5mA	MAX 160Ω	ZEK I_Z=0.5mA	MAX 400Ω	NEC

FIELD EFFECT TRANSISTOR COMPLEMENT.

Type	Description	Class of Service		Maximum Ratings					Electrical Characteristics (Typical Value) T_A=25℃																Manufacture
			B_{DSE}	V_{GDO}	I_D	P_T	T_{stg}	T_{ch}	I_{GSS}		I_{DSS}		V_{GS}		Y_{fs}		Y_{OS}		C_{RSS}		P_G		N_F		
			(V)	(V)	(mA)	(mw)	(℃)	(℃)	Condition	(nA)	Condition	(mA)	Condition	(V)	Condition	(mV)	Condition	(m℧)	Condition	(PF)	Condition	(dB)	Condition	(dB)	
2SK55	N-CH : Si J-FET	RF AMP		−18		150	−55 ~ +125	125	V_{GS} =−0.5V V_{DS} =0V	MAX. −10	V_{DS} =10V V_{GS} =0V	3 ~ 14	V_{DS} =10V I_D =10µA	−0.3 ~ −5.5	V_{DS} =10V V_{GS} =0V f=100MHz	TYP 8			V_{DS} =10V V_{GS} =0V f=1MHz	MAX 0.6	V_{DD} =10V R_S =33Ω f=100MHz	TYP 18	V_{DD} =10V R_S =33Ω f=100MHz	MAX. 3.5	HITACHI
2SK19	N-CH Si J-FET	RF AMP		−18		200	−55 ~ +125	125	V_{GS} =−1.0V V_{DS} =0V	MAX −10	V_{DS} =10V V_{GS} =0	3 ~ 24	V_{DS} =10V I_D =1µA	−1.2 ~ −3	V_{DS} =10V V_{GS} =0V f=100MHz	TYP 8			V_{GD} =10V f=1MHz	MAX 0.65	V_{DD} =10V f=100MHz	TYP 20	V_{DD} =10V f=100MHz	MAX. 3.5	TOSHIBA

NIKKO ELECTRIC CORP. OF AMERICA
16270 RAYMER STREET
VAN NUYS CALIF. 91406 U.S.A.

NIKKO ELECTRIC CORP. OF AMERICA
218 SHERWOOD AVENUE
FARMINGDALE NEW YORK 11735, U.S.A.

NIKKO ELECTRIC MFG. CO., LTD.
4-1, 3-CHOME, OKUSAWA
SETAGAYA-KU, TOKYO, JAPAN

PRINTED IN JAPAN

965145E