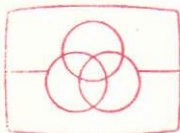


STEREO CASSETTE MUSIC SYSTEM

MODEL NO. **AF-5300E,K**

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AIWA®

[SERVICE MANUAL]



Cord No.: 05-530-000-18

DATE OF ISSUE 11/1978

SPECIFICATIONS

Model type: Stereo cassette system
Semiconductors: 8 IC's, 1 FET, 61 transistors
 31 diodes, 5 LED's
Power supply: AC 120V/220V
 switchable 50/60 Hz (E model)
 AC 120V/240V
 switchable 50/60 Hz (K model)
Power consumption: 170W
Dimensions: 591(W) x 168(H) x 469(D) mm
 (w/dust cover)
Weight: 13 kg (w/dust cover)
Accessories: Indoor FM antenna 1
 Head cleaning stick 1
 Cassette tape 1

< Tuner Section >

Frequency range: FM: 87.5~108 MHz
 (3.4~2.8 m)
 SW: 5.7~16.7 MHz
 (53~18 m)
 MW: 515~1650 kHz
 (582~182 m)
 LW: 145~350 kHz
 (2069~857 m)

Sensitivity: (IHF, THD 3%)
 (S/N 20 dB) FM: 6±2 dB (at 88, 98, 108 MHz)
 SW: 27±5 dB (at 6 MHz)
 25±3 dB (at 10 MHz)
 24±3 dB (at 16 MHz)

(S/N 20 dB) MW: 50±3 dB (at 600 kHz)
 49±3 dB (at 1000, 1600 kHz)
 (S/N 20 dB) LW: 62±3 dB (at 150 kHz)
 60±3 dB (at 240, 340 kHz)

FM Frequency response: 30~15,000 Hz
FM Signal to noise ratio: 70±5 dB
 (Weighted)

FM distortion: 0.1±0.05%
Muting level: 17±3 dB

Antennas: FM: 300 ohms (balanced)
 75 ohms (unbalanced)
 AM: Built-in antenna, terminal for
 external antenna

< FM Multiplex Section >

Separation: 43±3 dB (at 1 kHz)
Distortion: Less than 0.5%
Two signal selectivity: Less than 60 dB

< Turntable Section >

Model type: Belt drive automatic turntable
Motor: FG servo motor
Speeds: 33-1/3 and 45 rpm
Signal to noise ratio: More than 60 dB
 (Weighted, DIN B)

Wow and flutter: Less than 0.12% (DIN)
Cartridge type: Moving magnet (MM)
Separation: 19 dB (33-1/3 rpm, 1 kHz)
Tracking force: 2±0.3g

< Cassette Tape Deck Section >

Track format: 4 tracks 2 channel

Tape speed: 4.76 cm/sec. ±1.5%
Recording time: 60 minutes (C-60)
Recording system: AC bias
Erasing system: AC erase
Record bias frequency: 61 kHz
Frequency response: Normal (LH) tape: 30~12,500 Hz
 Fe-Cr tape: 30~16,000 Hz
 CrO₂ tape: 30~16,000 Hz

According to DIN 45500 Blatt 8
 Normal (LH) tape: 30~12,500 Hz
 Fe-Cr tape: 30~15,000 Hz
 CrO₂ tape: 30~15,000 Hz
Distortion: Normal (LH), 1.0 +1.0%
 Fe-Cr tape: -0.5%
 CrO₂ tape: 1.5 +1.0%
 -0.5%

Signal to noise ratio: Normal (LH) tape: 43±2 dB
 Fe-Cr, CrO₂ tape: 44±3 dB
Erase ratio: 65±5 dB
Wow and Flutter: Less than 0.07% (WRMS)
 According to DIN 45500 Blatt 8
 Less than 0.18%

Pinch roller pressure: 275±25g
Take-up torque: 50±10g-cm
FF torque: 100±10g cm
Rewind torque: 95 +10
 -5g-cm
FF & rewind time: 80±10 sec. (C-60)

< Audio Section >

Circuitry: Pure complementary SEPP OTL

Continuous output power: (20 Hz~40 kHz/THD 1%) 18W+18W (8 ohms)
 20W+20W (4 ohms)
 20W+20W (8 ohms)
 25W+25W (4 ohms)
 35W +35W (8 ohms)
 40W+40W (4 ohms)

Music output power: 40W+40W (4 ohms)
 40W+40W (8 ohms)

Loudness response: +8 ±2 dB (at 100 Hz)
 -6 ±2 dB (at 10 kHz)
Tone controls: Bass: 100 Hz ±8 dB
 Treble: 10 kHz ±9 dB

Gain and input impedance: MIC: 1 mV (200 ohms~
 10 k-ohms)
 DIN IN: 200 mV (500 k-ohms)
 (TAPE PLAY)

Output level and impedance: DIN OUT: 0.45 mV/k-ohm
 (TAPE REC)
SPEAKERS: 4~8 ohms
PHONES: 8 ohms

- Specifications and design are subject to change without notice due to product improvements.
- Dolby Noise Reduction Circuit under License from Dolby Laboratories Incorporated.
- The word "Dolby" and "Double-D" symbol are trademarks of Dolby Laboratories Incorporated.

DISASSEMBLY INSTRUCTIONS

1. To Remove Turntable

- 1) Remove the platter
- 2) Loosen 2 turntable frame securing screws and slide in directions shown by arrows.
- 3) Disconnect 3 turntable connectors. (Refer to Fig. 1)



Fig. 1

2. To Remove Main Cabinet

- 1) Pull out the 2 knobs.
- 2) Remove 8 screws. (Refer to Fig. 2, 3)

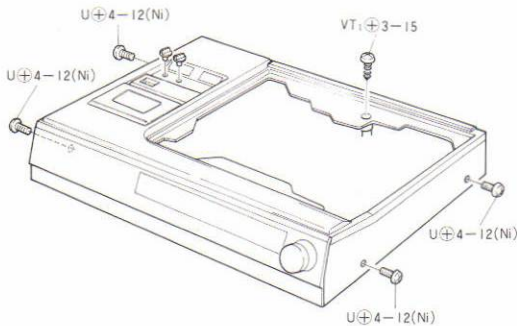


Fig. 2

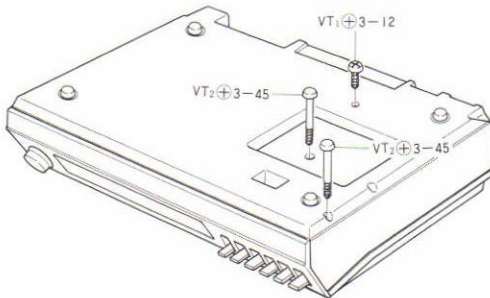


Fig. 3

3. To Remove Tuner Circuit Board

- 1) Remove the dial drum. (Refer to Fig. 4)
- 2) Remove 2 stoppers and 5 screws. (Refer to Fig. 5)

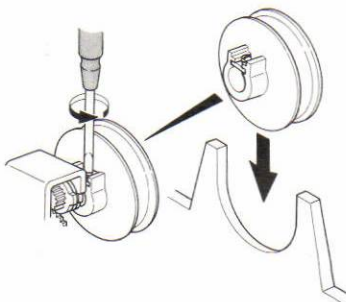


Fig. 4

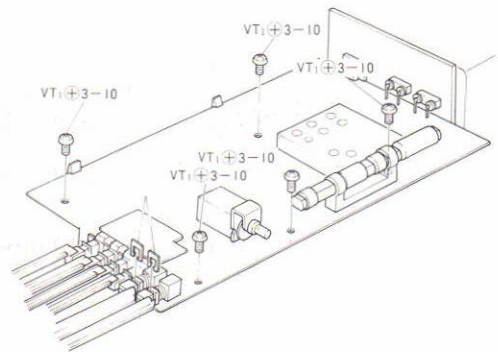


Fig. 5

4. To Remove Main Amp. Circuit Board

- 1) Remove 3 screws. (Refer to Fig. 6)

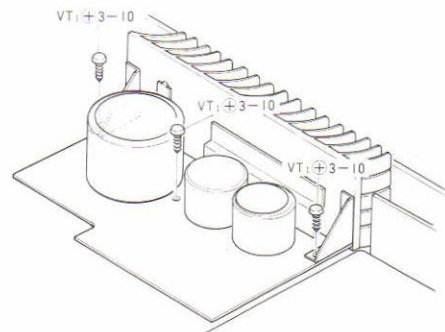


Fig. 6

5. To Remove Front Panel

- 1) Pull out the control knobs.
- 2) Remove 6 screws. (Refer to Fig. 7)

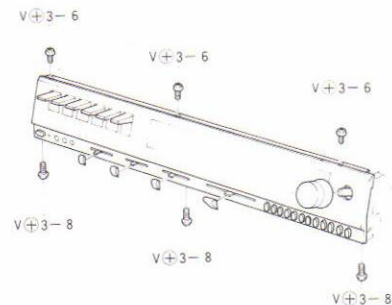


Fig. 7

6. To Remove FM Pre-set Circuit Board

- 1) Remove 2 screws. (Refer to Fig. 8)

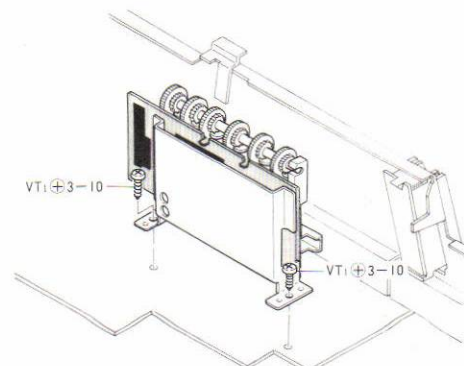


Fig. 8

7. To Remove Pre Amp./Switch Circuit Board

- 1) Remove 11 screws. (Refer to Fig. 9)

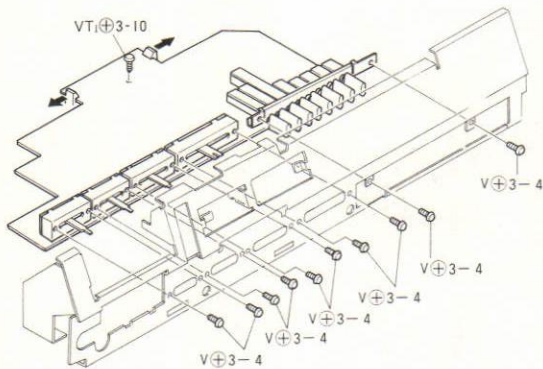
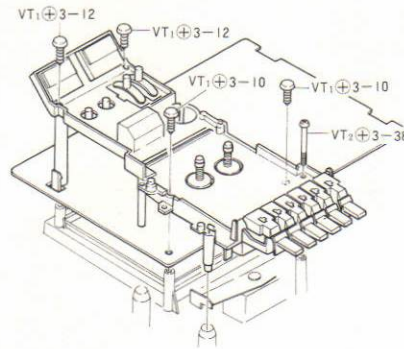


Fig. 9

9. To Remove Cassette Grille

- 1) Remove 7 screws. (Refer to Fig.10, 11)

**8. To Remove Rec./Pb. Circuit Board**

- 1) Remove the rec./pb. circuit board. (Refer to Fig. 10)

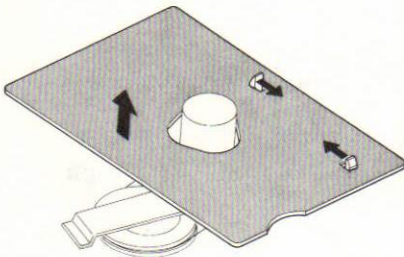


Fig. 10

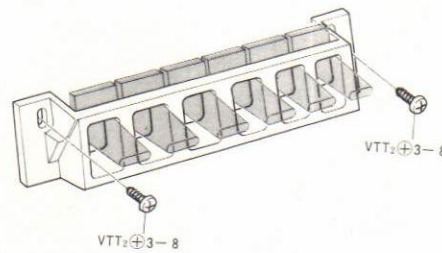
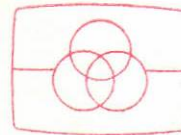


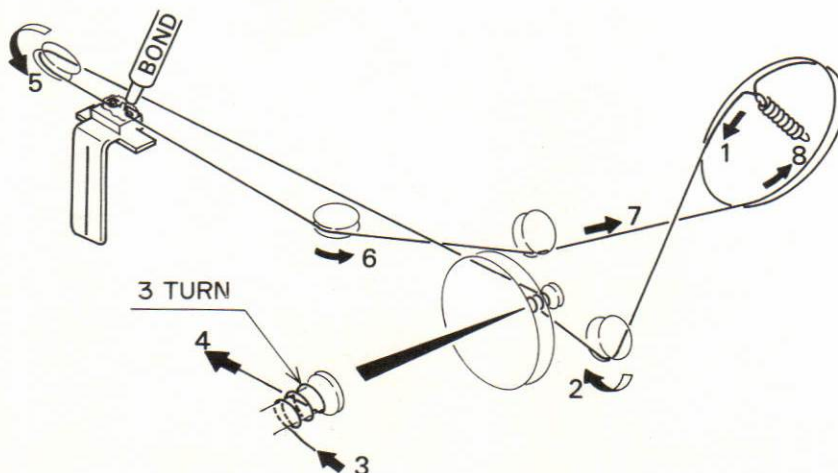
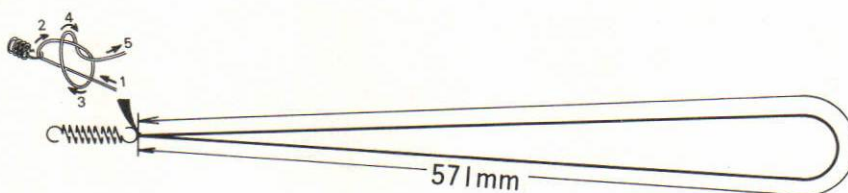
Fig. 11



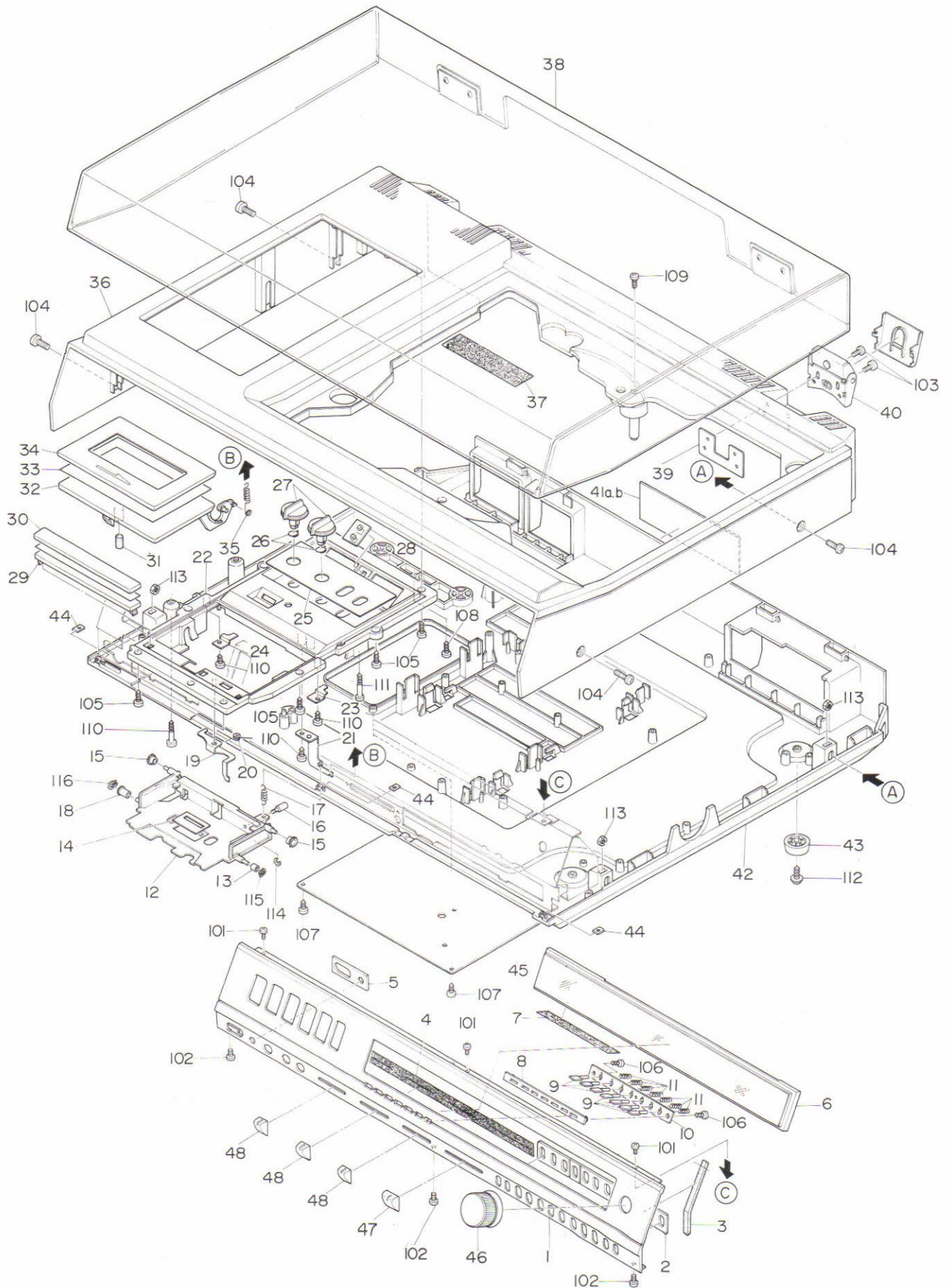
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DIAL CORD STRINGING

EXPLODED VIEW-1



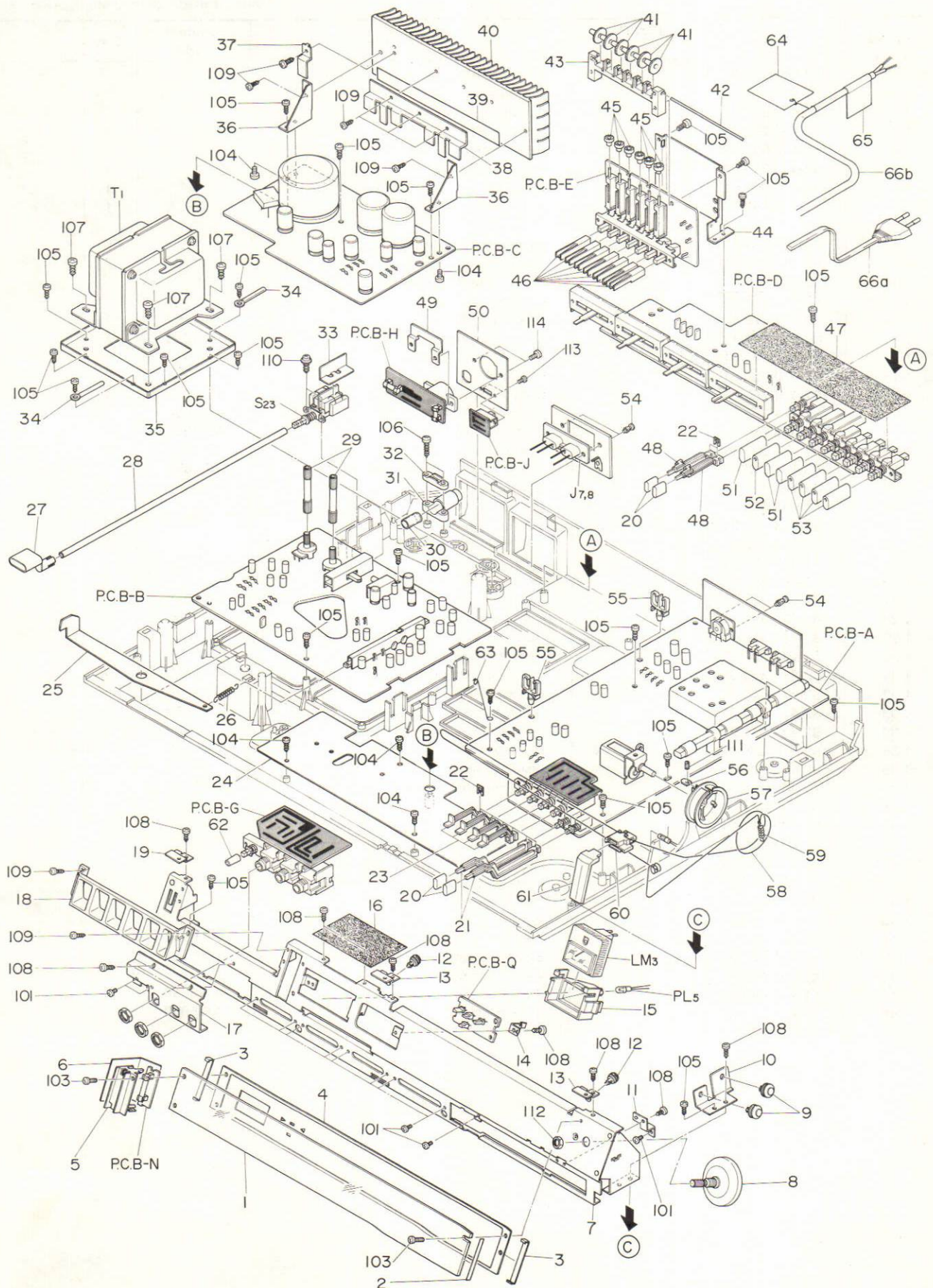
PARTS LIST

MECHANICAL PARTS

■ * mark in this part list shows exclusive part
(which is used) for only Model AF-5300.

Ref. No.	Part No.	Part No. Changed to	Description	Common Model	Q'ty	
1~7	09-047-131-01		Panel Assembly			
1-1	82-493-008-01		Front panel	*	1	
1-2	82-493-217-01		Push-button guide A	*	1	
1-3	82-493-255-01		S-cushion	*	1	
1-4	82-493-042-01		Blind himeron cloth	*	1	
1-5	82-493-219-01		Power button guide	*	1	
1-6	82-493-007-01		Dial window	*	1	
1-7	82-493-252-01		Himeron cloth, Pre-set	*	1	
1-8	82-493-218-01		Push-button guide B	*	1	
1-9	82-493-039-01		Pre-set button	*	7	
1-10	82-493-210-01		Holder, Preset button	*	1	
1-11	82-493-242-01		C spring	*	7	
1-12	82-474-229-01		Up-plate ass'y	AF-5050	1	
1-13	82-386-211-11		Collar, Up-plate	AD-1250	1	
1-14	82-474-072-01		Label, Tape indication	AF-5050	1	
1-15	82-470-224-01		Push gear	AF-3030	2	
1-16	82-474-260-01		CrO ₂ shaft	AF-5050	1	
1-17	82-474-240-01		H spring, Up-plate	AF-5050	1	
1-18	82-386-258-01		Gear, Up-plate	AD-1250	1	
1-19	82-474-221-01		Cassette lock lever	AF-5050	1	
1-20	82-474-288-01		T spring, Cassette lock lever	AF-5050	1	
1-21	82-474-225-01		Holder N	AF-5050	1	
1-22	82-493-005-01		Cassette grille A	*	1	
1-23	82-493-236-01		Holder, Cassette lid R	*	1	
1-24	82-493-237-01		Holder, Cassette lid L	*	1	
1-25	82-493-020-01		Plate, Rec. volume	*	1	
1-26	82-493-256-01		Knob spring	*	2	
1-27	82-541-025-01		Knob	TPR-950	2	
1-28	82-493-046-01		Rec. plate E	*	1	
1-29	82-493-029-01		Head cover	*	1	
1-30	82-493-030-01		Decorative plate, Head cover	*	1	
1-31	82-474-303-01		Cushion P, Cassette holder	AF-5050	1	
1-32	82-474-012-01		Cassette lid	AF-5050	1	
1-33	82-470-282-01		Adhesive paper, Cassette lid	AF-3030	1	
1-34	82-493-045-01		Decorative plate, Head cover	*	1	
1-35	82-474-239-01		H spring	AF-5050	1	
1-36	82-493-001-01		Main cabinet	*	1	
1-37	82-493-055-01		Himeron cloth 20 x 63	*	1	
1-38	82-493-003-01		Dust cover ass'y	*	1	
1-39	82-493-211-01		Holder, Hinge	*	2	
1-40	87-064-090-01		Hinge ass'y		2	
1-41a	82-493-040-01		Name plate, Spec. (E model only)	*	1	
1-41b	82-493-048-01		Name plate, Spec. (K model only)	*	1	
1-42	87-493-002-01		Rear cabinet	*	1	
1-43	87-085-161-01		Foot		4	
1-44	82-461-378-01		Leaf nut	TPR-930	3	
1-45	82-493-202-01		Bottom plate	*	1	
1-46	82-494-031-01		Knob, Tuning	AF-5600	1	
1-47	82-474-042-01		Slide knob B	AF-5050	1	
1-48	82-474-041-01		Slide knob A	AF-5050	3	

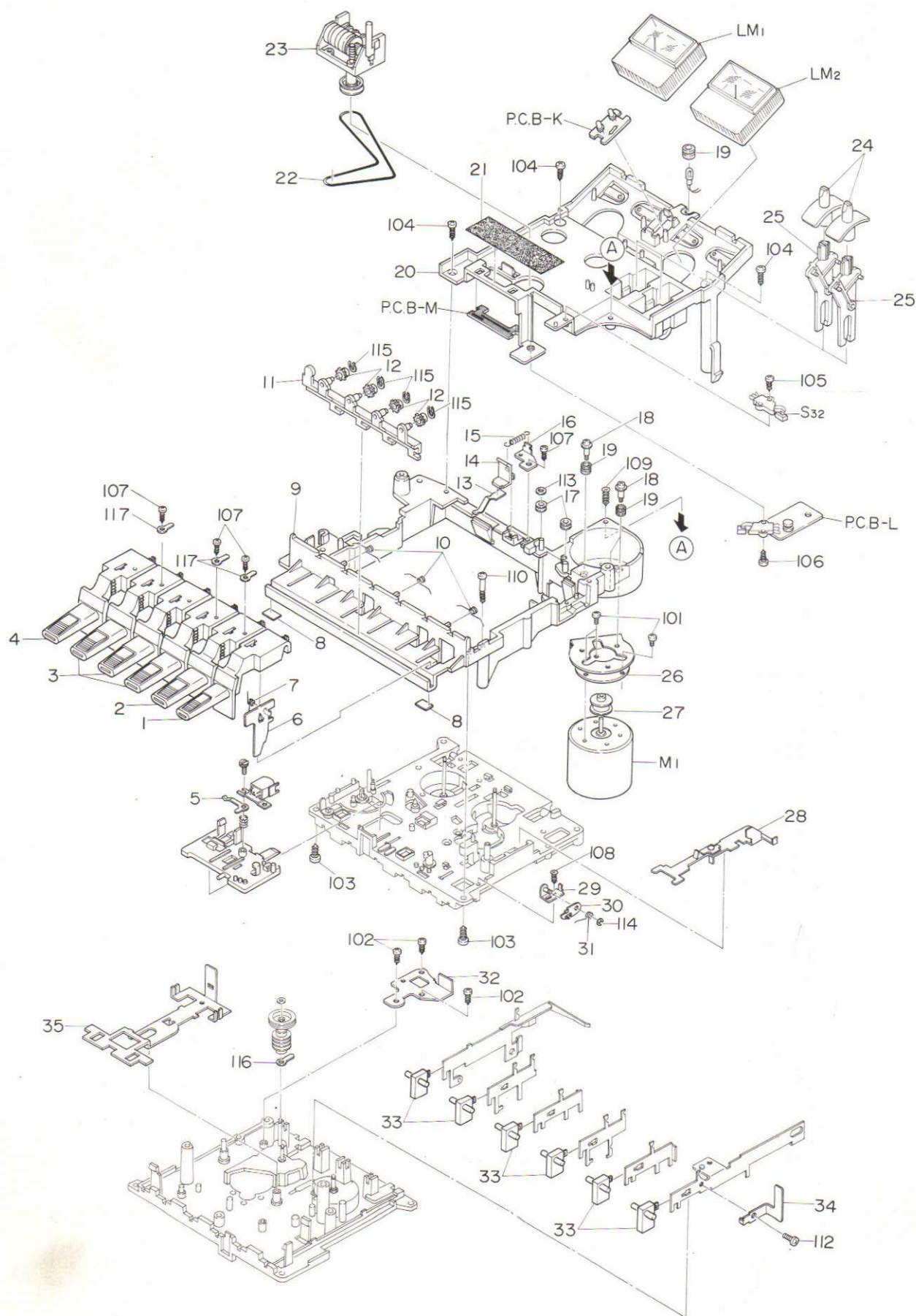
EXPLODED VIEW-2



Ref. No.	Part No.	Part No. Changed to	Description	Common Model	Q'ty
2-1	82-493-015-01		Back plate, Tuning dial	*	1
2-2	82-493-253-01		Sheet 3.5 x 4.2	*	1
2-3	82-493-241-01		Clamp, Dial plate	*	2
2-4	82-493-010-01		Dial plate	*	1
2-5	82-493-250-01		Lamp holder	*	1
2-6	82-493-257-01		Sheet fibre	*	1
2-7	82-493-244-01		Front chassis ass'y	*	1
2-8	82-493-234-01		Tuning shaft ass'y	*	1
2-9	87-071-020-01		Roller 12φ		2
2-10	82-493-209-01		Holder, Pulley	*	1
2-11	82-493-213-01		Holder, Push-switch	*	1
2-12	87-071-019-01		Roller 7φ		2
2-13	82-493-248-01		Holder, Front panel A	*	2
2-14	82-493-243-01		Holder, LED circuit board	*	1
2-15	82-493-215-01		Reflector plate, Meter	*	1
2-16	82-493-254-01		Himeron cloth 45 x 90	*	1
2-17	82-493-206-01		Holder, MIC jack	*	1
2-18	82-493-017-01		Push-key guide	*	1
2-19	82-493-251-01		Holder, Front panel	*	1
2-20	82-493-023-01		Push-button C	*	4
2-21	82-493-223-01		Rod A	*	2
2-22	82-385-383-01		Stopper, Rod	AD-6300	8
2-23	82-493-224-01		Rod B	*	4
2-24	82-493-664-01		Shield plate, Pulley	*	1
2-25	82-493-214-01		Rec. lever	*	1
2-26	82-493-238-01		E spring	*	1
2-27	82-493-051-01		Power button	*	1
2-28	82-493-222-01		Switch joint, Power	*	1
2-29	82-493-220-01		Shaft, Rec. volume	*	2
2-30	87-830-605-01		Tube 6φ x 50 (E model only)		1
2-31	87-085-094-01		AC cord holder A		1
2-32	87-085-095-01		AC cord holder B		1
2-33	87-493-632-01		Shield plate, AC	*	1
2-34	87-038-039-01		Wire binder		2
2-35	82-493-204-01		Holder, Transformer	*	1
2-36	82-493-230-01		Holder, Heat sink	*	2
2-37	82-474-211-01		Transistor clamp	AF-5050	1
2-38	82-493-606-01		Transistor clamp	*	1
2-39	82-493-607-01		Insulation film	*	1
2-40	82-493-605-01		Heat sink	*	1
2-41	82-493-022-01		Knob, Pre-set	*	6
2-42	82-493-229-01		Shaft, Pre-set	*	1
2-43	82-493-212-01		Holder, Pre-set knob	*	1
2-44	82-493-205-01		Holder, Pre-set	*	1
2-45	82-493-227-01		Gear, pre-set	*	6
2-46	82-493-226-01		Rod D	*	7
2-47	82-493-258-01		Himeron cloth	*	1
2-48	82-493-225-01		Rod C	*	2
2-49	82-488-234-01		Holder, Voltage selector	AX-7400	1
2-50	82-493-013-01		AC cord plate	*	1
2-51	82-485-036-01		Push-button B	AF-5090	3
2-52	82-485-038-01		Push-button B (orange)	AF-5090	1
2-53	82-485-037-01		Push-button B (green)	AF-5090	4
2-54	87-084-063-01		Nylon rivet		4
2-55	87-064-089-01		Cable clip		2
2-56	82-461-378-01		Leaf nut	TPR-930	1
2-57	82-470-240-01		Dial drum	AF-3030	1
2-58	87-096-086-01		Dial string		1
2-59	82-439-359-01		Drum spring	TPR-300	1
2-60	82-474-053-01		Holder, Dial pointer	AF-5050	1
2-61	82-493-012-01		Tuning pointer	*	1
2-62	82-493-037-01		Speaker selector knob	*	1
2-63	82-471-212-01		Dial wire guide	AF-5080	1
2-64	87-056-014-01		Tag, Voltage selector (K model only)		1
2-65	87-056-008-01		Label, AC power cord (K model only)		1
2-66a	87-034-877-01		AC power cord (E model only)		1
2-66b	87-034-872-01		AC power cord (K model only)		1

EXPLODED VIEW-3

As this is a PM-1 mechanism, the exploded view is omitted (see the supplement PM-1 mechanism adjustment manual). The exploded view below shows the additional mechanism of the PM-1. Also shown are the attachments of the motor and a list of such.



Ref. No.	Part No.	Part No. Changed to	Description	Common Model	Q'ty
3-1	82-493-028-01		Pause key	*	1
3-2	82-493-026-01		Push-key (blue)	*	1
3-3	82-493-025-01		Push-key	*	3
3-4	82-493-027-01		Push-key (red)	*	1
3-5	82-539-206-01		Earth plate, Erase head	TPR-905	1
3-6	82-474-209-01		Push-lever	AF-5050	6
3-7	82-474-234-01		Spring, Push-key	AF-5050	6
3-8	82-385-342-01		Spacer, Chassis	AD-6300	2
3-9	82-290-201-01		Sub-chassis		1
3-10	82-474-236-01		Spring, Push-key	AF-5050	3
3-11	82-474-211-01		Shaft, Gear	AF-5050	1
3-12	82-470-224-01		Gear	AF-3030	4
3-13	82-474-318-01		P spring	AF-5050	1
3-14	82-474-316-01		Cassette holder	AF-5050	1
3-15	82-474-320-01		E spring	AF-5050	1
3-16	82-474-317-01		Spring, Holder	AF-5050	1
3-17	82-474-321-01		Roller, Counter	AF-5050	2
3-18	87-081-483-01		Motor screw M2.6		3
3-19	82-439-319-01		Rubber cushion B	TPR-300	4
3-20	82-493-203-01		Holder, Counter	*	1
3-21	82-493-055-01		Himeron cloth 20 x 63	*	1
3-22	82-493-232-01		Belt, Counter	*	1
3-23	87-040-105-01		Counter		1
3-24	82-493-050-01		Selector knob	*	2
3-25	82-493-249-01		Selector lever	*	2
3-26	82-474-224-01		Holder M	AF-5050	1
3-27	82-541-279-01		Motor pulley	TPR-950	1
3-28	82-474-305-01		Up-plate lock lever ass'y	AF-5050	1
3-29	82-439-455-01		Holder lock plate ass'y	TPR-300	1
3-30	82-439-457-01		Lock plate	TPR-300	1
3-31	82-439-275-01		Spring, Lock plate	TPR-300	1
3-32	82-493-246-01		Auxiliary metal fitting, Motor	*	1
3-33	82-290-222-01		Knob		6
3-34	82-474-245-01		Rec. plate spring	AF-5050	1
3-35	82-439-269-01		Brake plate	TPR-300	1

The following is the part number list of the ☆☆☆☆ marked parts of the PM-1 mechanism.

Ref. No.	Part No.	Description	Q'ty	Ref. No.	Part No.	Description	Q'ty
1-13	82-385-332-11	Spring B, Head adjusting	1	2-49	82-493-247-01	Main belt	1
1-14	87-046-130-01	Rec./Pb head	1	2-50	82-439-489-01	Flywheel ass'y	1
1-31	87-046-127-01	Erase head	1	2-51	82-385-314-21	Rubber belt	1
2-33	82-439-228-31	Mounting screw, REC plate spring	1	2-52	82-385-311-01	Screw for thrust	1
				2-53	82-474-219-11	Lower shaft bearing plate	1
				2-60	82-385-309-21	Worm gear B ass'y	1

Ref. No.	Part No.	Description	Q'ty
1-101	87-261-094-21	V + 3-6	3
1-102	87-261-095-21	V + 2-8	3
1-103	87-261-096-21	V + 3-10	8
1-104	87-253-172-11	U + 4-12	4
1-105	87-351-074-21	UT ₁ + 2.6-8	8
1-106	87-351-094-21	VT ₁ + 3-6	2
1-107	87-351-096-21	VT ₁ + 3-10	5
1-108	87-351-097-21	VT ₁ + 3-12	1

Ref. No.	Part No.	Description	Q'ty
1-109	87-351-099-21	VT ₁ + 3-15	1
1-110	87-341-073-21	UT ₁ + 2.6-6	3
1-111	87-352-107-21	VT ₂ + 3-45	2
1-112	87-510-095-01	VTF + 3-8	4
1-113	87-391-034-11	N-4	4
1-114	87-441-009-01	STE-3	1
1-115	87-442-002-01	STP-2	1
1-116	87-442-004-01	STP-4	1

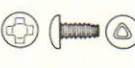
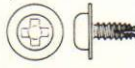
Ref. No.	Part No.	Description	Q'ty
2-101	87-261-092-21	V + 3-4	12
2-102	87-261-094-21	V + 3-6	2
2-103	87-261-095-21	V + 3-8	2
2-104	87-351-094-21	VT ₁ + 3-6	3
2-105	87-351-096-21	VT ₁ + 3-10	25
2-106	87-351-102-21	VT ₁ + 3-20	2

Ref. No.	Part No.	Description	Q'ty
2-107	87-081-876-01	UTT + 4-8	4
2-108	87-081-782-01	VTT ₂ + 3-4	10
2-109	87-081-785-01	VTT ₂ + 3-8	8
2-110	87-513-096-01	VTF ₂ + 3-10	2
2-111	87-374-092-11	SS3-4	1
2-112	87-081-253-11	N-9	1
2-113	87-253-033-01	U + 2-4(Black)	2
2-114	87-253-095-01	U + 3-8(Black)	2

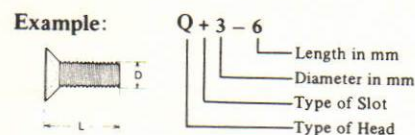
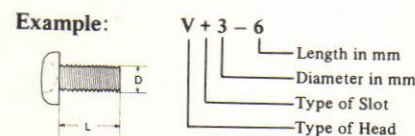
Ref. No.	Part No.	Description	Q'ty
3-101	87-251-070-21	U + 2.6-3	3
3-102	87-351-095-21	VT ₁ + 3-8	3
3-103	87-351-096-21	VT ₁ + 3-10	5
3-104	87-351-097-21	VT ₁ + 3-12	4
3-105	87-341-037-21	UT ₁ + 2-10	1
3-106	87-341-038-21	UT ₁ + 2-12	1
3-107	87-341-073-21	UT ₁ + 2.6-6	4
3-108	87-321-073-21	QT ₁ + 2.6-8	1
3-109	87-321-096-21	QT ₁ + 3-8	1

Ref. No.	Part No.	Description	Q'ty
3-110	87-352-105-21	VT ₂ + 3-35	1
3-111	87-081-276-01	VT ₂ + 3-38	1
3-112	87-480-071-01	VS + 2.6-4	1
3-113	87-081-300-01	FW2.6-6-0.5	1
3-114	87-441-003-01	STE-1.5	1
3-115	87-442-004-01	STP-4	4
3-116	87-450-411-01	LB-1	1
3-117	87-450-412-01	LB-2	3

HARDWARE NOMENCLATURE

V:	Pan head screw	
U:	Binding head screw	
VT ₁ :	Pan head tapping screw	
UT ₁ :	Binding head tapping screw	
VT ₂ :	Pan head tapping screw	
QT ₁ :	Flat countersunk head tapping screw	
VTF:	Flange and Pan head tapping screw	
VS:	Pan head screw with spring washer	
UTT:	Pan head tap-tight screw	
VTT ₂ :	Pan head tap-tight screw	
VTF ₂ :	Flange and Pan head tapping screw	

STP:	Powerful stop ring	
STE:	E ring	
FW:	Fiber washer	
LB:	Lug terminal plate	
N:	Nut	
SS:	Set screw	



Description of special circuitry

Preset tuning circuit

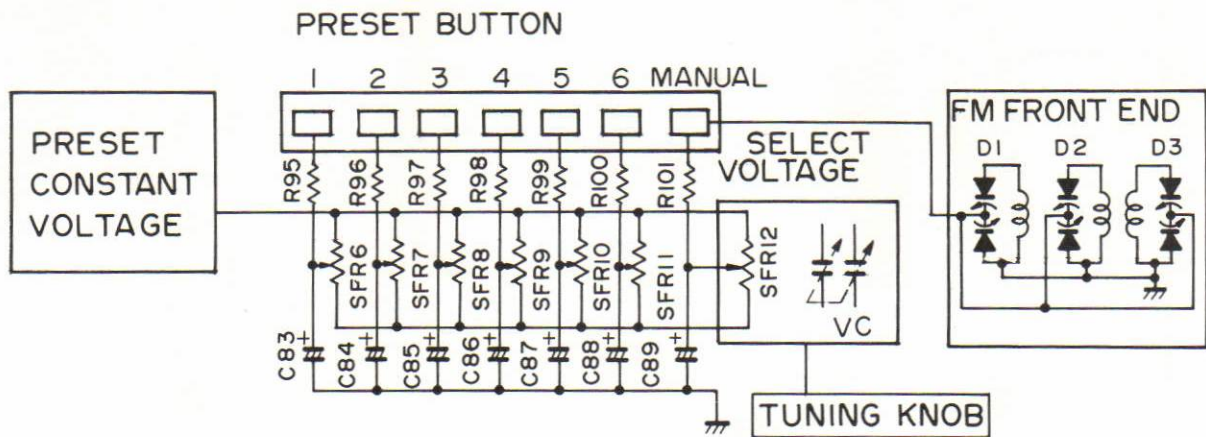


Fig. 1

LC resonance circuits, which are composed of coils (L) and capacitors (C), are almost always used in the front end circuitry of FM tuners commonly employed today. This tuning circuit features variable capacitors which are used to select the desired reception frequency by varying the capacitance. However, this model features a preset tuning circuit system. It is an electronic tuning circuit which substitutes varactor diodes for the capacitors of the LC resonance circuit and which allows the supplied voltage to be varied in order to achieve the same effect as the LC resonance circuit.

By varying the reverse bias voltage, which is a characteristic of varactor diodes, the junction capacitance (C) is made to change. In other words, the voltage-dependency characteristics of the diodes are used to produce the desired effect. (See Fig. 2)

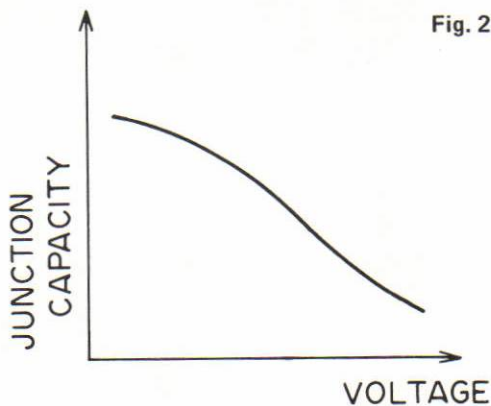


Fig. 2

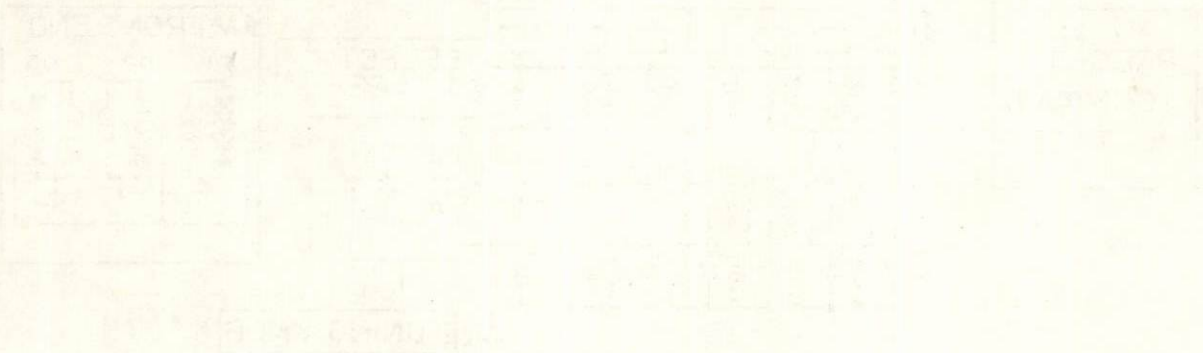
[Reference]

$$\frac{C_{\max} + C_D}{C_{\min} + C_D} = \left(\frac{f_{\max}}{f_{\min}} \right)^2 = k$$

$C_{\max}$ $C_{\min}$: Maximum and minimum values of varactor diode capacitance
 C_D : Stray capacitance, trimmer capacitance
 $f_{\max}$: Maximum reception frequency
 $f_{\min}$: Minimum reception frequency

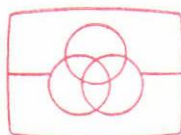
Since tough demands are placed on the selectivity of FM tuners, devices with as high a Ω factor as possible are required. For this reason, epitaxial planar devices which allow devices with a low resistance to be used, are employed.

In Fig. 1 each of the preset buttons is provided with a variable resistor (VR through VR) for each of the broadcasting stations (six with this model). Once the resistances of these resistors are preset to the reception frequency of the corresponding broadcasting station, the voltage, which is supplied from the preset regulated power supply to the position at which the desired broadcasting station is tuned with the preset button, is supplied to the varactor diodes (D1, D2, D3, 1SV55) via the variable resistors, the required capacitance is provided, and the resonance frequency of the resonance circuit composed of the diodes and coils is determined. This circuit system, which connects the varactor diodes displaying the two characteristics alternately in the reverse direction and which supplies the voltage at the midpoint, displays commendable values with respect to the dynamic range for high input signals, intermodulation distortion and others. As has already been mentioned, the control voltage is an important factor with the preset tuning circuit, and it is essential that the control voltage be stabilized and that the frequency drift be improved by the AFC circuit. If, in an electronic preset tuning circuit, the resistance is set beforehand to correspond to the required broadcasting stations with the variable resistors, there is no need to rotate a tuning knob and all that has to be done in order to tune a station and receive the program is to depress the corresponding preset button. However, in the manual mode, the system can be made to function in the same way as a conventional tuner since the broadcasting station is tuned in with the tuning knob.



STEREO CASSETTE MUSIC SYSTEM

MODEL NO. **AF-5300E.K**
MODEL NO. **AF-5600E.K**



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AIWA® **[SERVICE MANUAL]**

AF-5300



AF-5600



CORD NO: 05-530-010-50

DATE OF ISSUE 12/1978

TURNTABLE SECTION MANUAL

CONTENTS

< AF-5300 >

- Adjustments Page 2~3
- Exploded View & Part List Page 4~7

< AF-5600 >

- Adjustments Page 8~9
- Exploded View & Part List Page 10~14

MODEL NO. AF-5300E,K

ADJUSTMENTS

1. Auto return start position adjustment

Proceed with the following adjustment if the auto return mechanism works during record play but not after record play.

- 1) When the auto return mechanism works too soon, rotate the leading arm assembly fine adjust screw clockwise and adjust.
- 2) When the auto return mechanism works too late, rotate the leading arm assembly fine adjust screw counterclockwise and adjust. (Refer to Fig. 1)

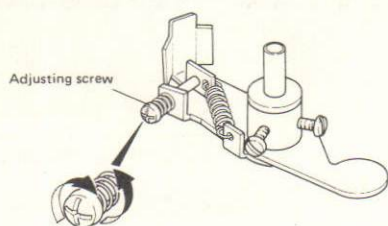


Fig. 1

2. Leading arm position adjustment when the tonearm is replaced

- 1) Secure the tonearm to the tonearm rest, and after clamping with the clamp screw so that the clearance between the leading arm assembly and the operating tonearm is brought to about 4 mm, proceed with the adjustments outlined in step 1. (Refer to Fig. 2)

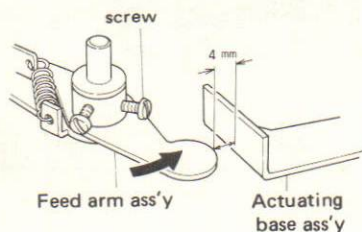


Fig. 2

3. Tonearm return adjustment

When the tonearm does not return to the tonearm rest in the tonearm return mode, or when the tonearm returns too far and strikes the tonearm rest, proceed with the following adjustments.

- 1) Remove the platter, and move the tonearm gently toward the platter shaft until it will go no further.
- 2) Set the platter shaft and the main gear as illustrated in the figure, and rotate them gently by hand in the counterclockwise direction.
- 3) With the operation in 2), the tonearm rises and moves in the direction of the tonearm rest. The movement of the tonearm in about 180 degrees is the maximum.
When the tonearm does not return to the tonearm rest, rotate the eccentric pin clockwise and adjust.
When the tonearm returns too far and strikes the tonearm rest, rotate the eccentric pin counterclockwise and adjust. (Refer to Fig. 3)

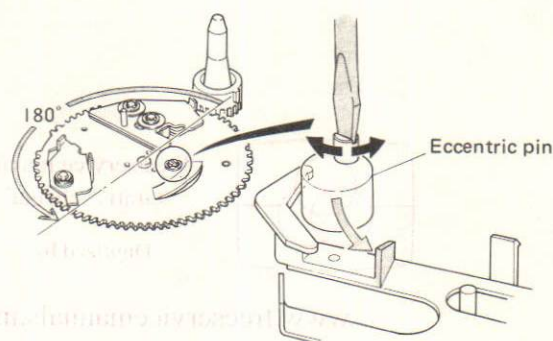


Fig. 3

Note: Rotate the eccentric pin either clockwise or counterclockwise and adjust so that the tonearm is lightly touching the tonearm rest.

4. Tonearm vertical position during return

When the record has been played, the tonearm moves up and down with the automatic return operation. Proceed with the following adjustment if the tonearm rises too far or if it does not move much in the vertical direction at all.

- 1) Set the turntable to the stop mode, bend the tip of the seesaw and adjust so that the clearance between the stylus tip and the surface of the record is brought to within the specification (about 8 mm).

When the clearance exceeds the specification, bend the seesaw down.

When the clearance is less than the specification, bend the seesaw up. (Refer to Fig. 4)

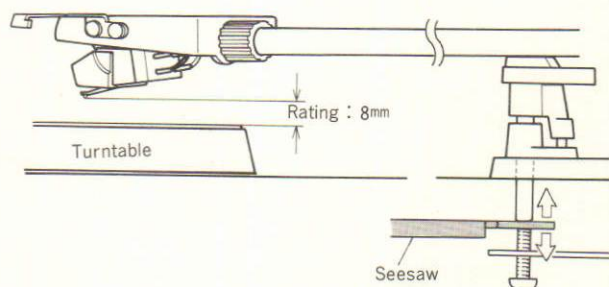
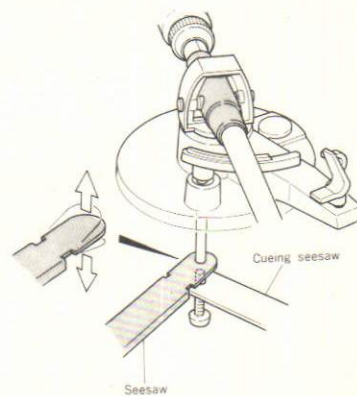


Fig. 4

Note: If the seesaw is bent too much, the stylus may no longer be able to trace the sound grooves on the record and there will be no play. Avoid, therefore, excessive bending.

5. Adjustment of vertical position of tonearm with cueing lever

- 1) Rotate the cueing seesaw adjust screw so that a clearance between the stylus tip and the surface of the record meets the specification (8 mm) when the tonearm is placed on the arm support and the cueing lever is set to the "⊙" position. When this clearance is more than the specification (8 mm), rotate the adjust screw counterclockwise and adjust. When this clearance is less than the specification (8 mm), rotate the adjust screw clockwise and adjust. (Refer to Fig. 5)

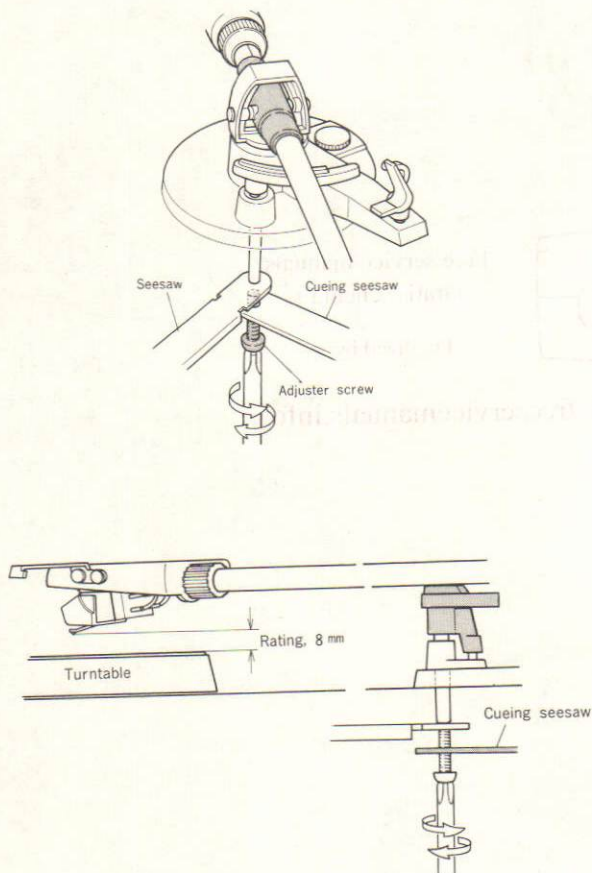


Fig. 5

6. Adjustments accompanying replacement of servo motor

When the motor is replaced, attach the motor pulley so that the clearance between the motor and the motor pulley is brought to 3 mm. (Refer to Fig. 6)

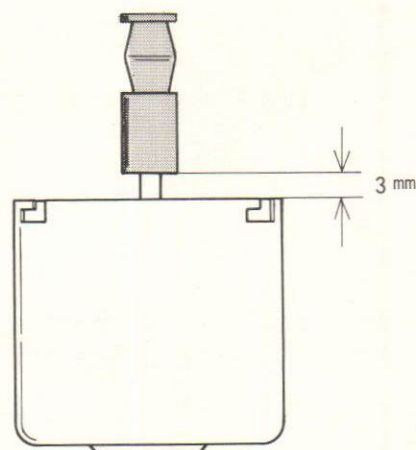


Fig. 6

7. Syncrate adjustment

Make absolutely sure that the syncrate adjustment is performed when replacing parts which are related to the reject mechanism (including the microswitch) and the seesaw arm.

- 1) Bend the part (pawl) where the seesaw arm assembly comes into contact with the microswitch of the reject mechanism, and adjust.

Adjust the degree of the pawl bending so that the motor starts operating in less than 0.5 sec. after the stylus has made contact with the surface of the record.

When the syncrate operation is too early, bend the pawl down and widen the gap.

When the syncrate operation is too late, bend the pawl up and narrow down the gap. (Refer to Fig. 7)

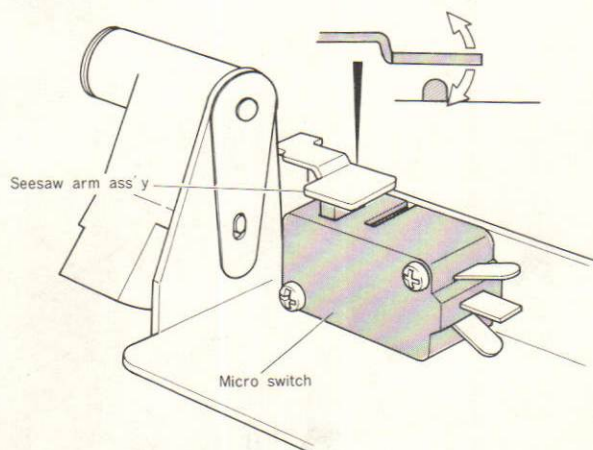
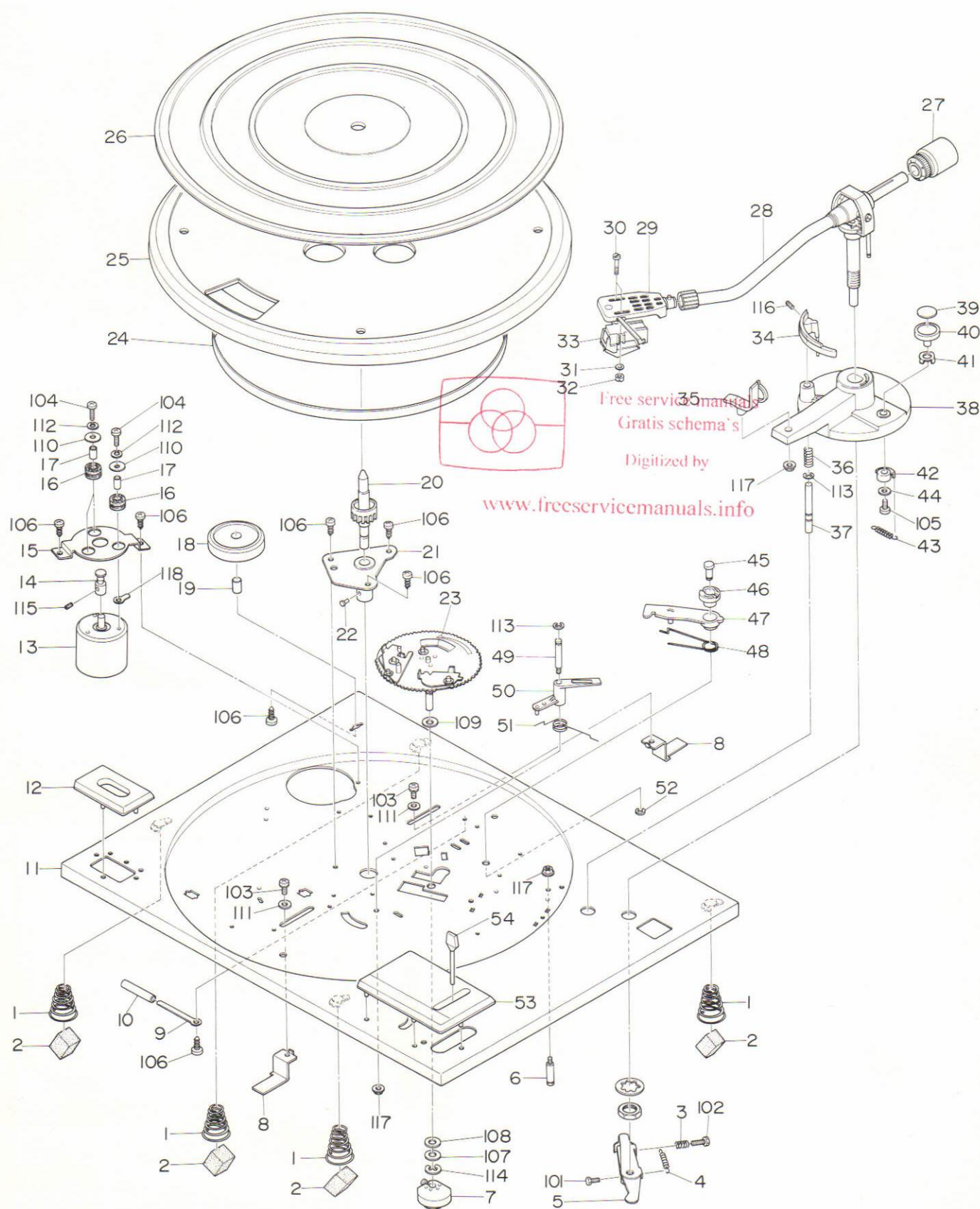


Fig. 7

MODEL NO. AF-5300E,K

EXPLODED VIEW-1



PARTS LIST

■ * mark in this part list shows exclusive part (which is used) for only Model AF-5300.

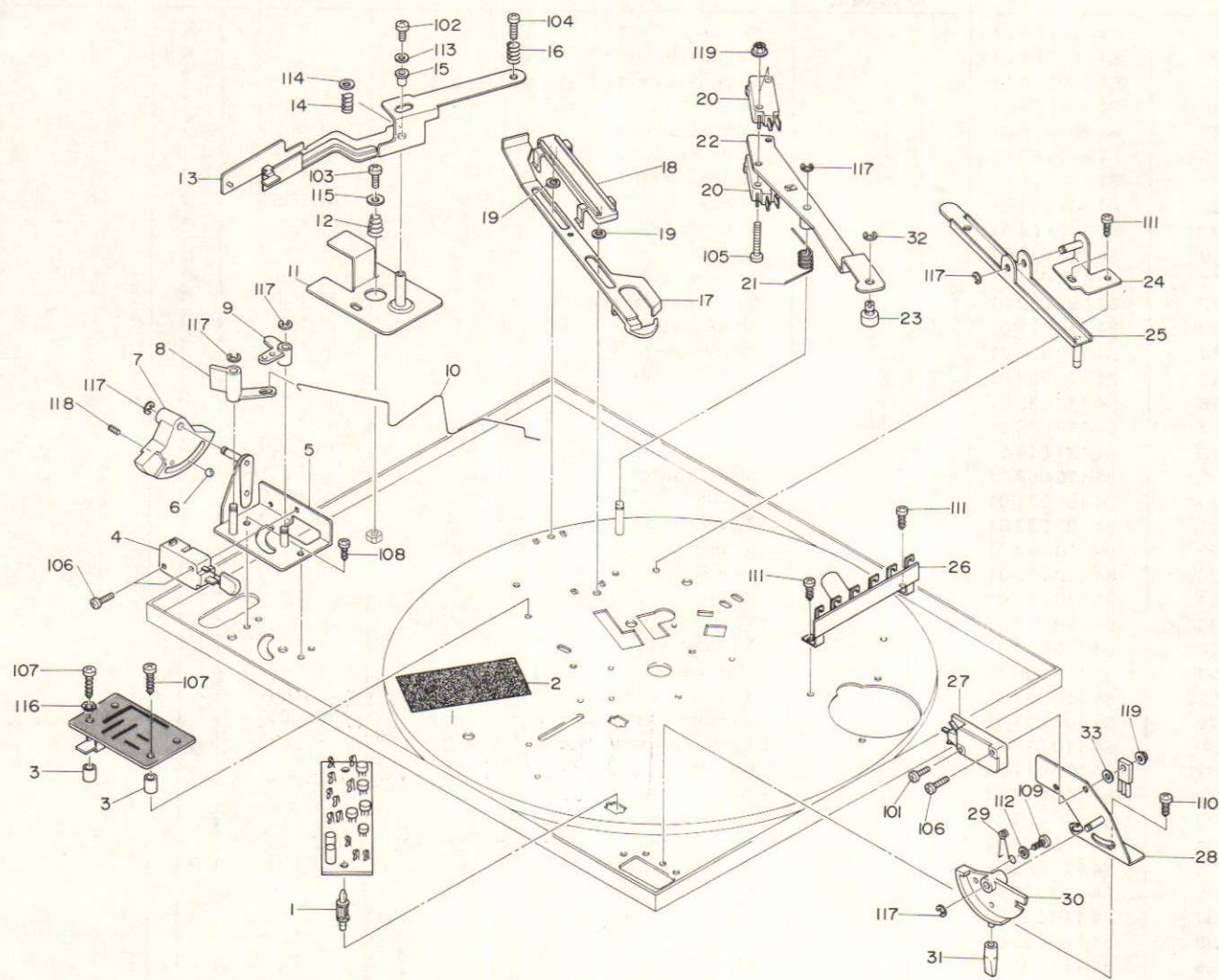
Ref. No.	Part No.	Part No. Changed to	Description	Common Model	Q'ty
1-1	84-110-203-01		Spring	*	4
1-2	84-110-204-01		Cushion, Rubber	*	4
1-3	84-110-218-01		Lock plate spring	*	2
1-4	84-110-226-01		Plate spring, Arm	*	1
1-5	84-187-210-01		Forward arm ass'y	AF-5050	1
1-6	84-110-256-01		Shaft, Reject lever	*	1
1-7	84-110-231-01		Switch lever B ass'y	*	1
1-8	84-187-218-01		Stopper	AF-5050	2
1-9	84-110-609-01		Metal binder, Lead wire	*	1
1-10	84-110-610-01		UL tube	*	1
1-11	84-110-001-01		Frame board	*	1
1-12	82-493-052-01		Cover, Speed selector	TPR-300	1
1-13	84-110-601-01		Motor ass'y	*	1
1-14	84-110-237-01		Pulley	*	1
1-15	84-110-232-01		Motor bracket	*	1
1-16	84-110-235-01		Rubber, Bumper	*	3
1-17	84-110-236-01		Pipe	*	3
1-18	84-181-014-01		EP adapter	AP-2050	1
1-19	84-110-002-01		Shaft, Adapter	*	1
1-20	84-187-231-01		TT shaft ass'y	AF-5050	1
1-21	84-187-232-01		TT shaft bearing ass'y	AF-5050	1
1-22	84-110-212-01		Stopper pin	*	1
1-23	84-110-205-01		Gear R ass'y	*	1
1-24	84-110-234-01		Belt	*	1
1-25	84-110-233-01		Turntable	*	1
1-26	84-110-005-01		TT sheet ass'y	*	1
1-27	84-110-008-01		Main weight	*	1
1-28	84-110-007-01		Tone arm ass'y	*	1
1-29	84-187-005-01		Head shell ass'y	AF-5050	1
1-30	84-110-010-01		Screw, Cartridge stopper	*	2
1-31	84-110-011-01		Washer	*	2
1-32	84-110-012-01		Nut	*	2
1-33	84-110-009-01		Cartridge ass'y	*	1
1-34	84-110-222-01		Elevation plate	*	1
1-35	84-110-006-01		Rest platform ass'y	*	1
1-36	84-110-221-01		Plate spring, Elevation	*	1
1-37	84-110-220-01		Shaft, Elevation	*	1
1-38	84-110-223-01		PU base	*	1
1-39	84-110-004-01		Mark, IFC	*	1
1-40	84-110-003-01		Knob, IFC	*	1
1-41	84-110-241-01		Friction washer	*	1
1-42	84-110-242-01		Boss, IFC	*	1
1-43	84-110-244-01		Spring, IFC	*	1
1-44	84-110-243-01		Washer	*	1
1-45	84-181-216-01		Stud, GS	AP-2050	1
1-46	84-181-217-01		Eccentric shaft	AP-2050	1
1-47	84-181-218-01		Arm, GS	AP-2050	1
1-48	84-181-219-01		Spring, GS	AP-2050	1
1-49	84-110-201-01		Shaft, Reject lever	*	1
1-50	84-181-221-01		Kick lever	AP-2050	1
1-51	84-181-222-01		Return spring	AP-2050	1
1-52	84-110-211-01		E ring	*	1
1-53	82-493-053-01		Reject cover	TPR-300	1
1-54	84-185-012-01		Knob, Reject		1

Ref. No.	Part No.	Description	Q'ty
1-101	84-110-255-01	V + 3-6	2
1-102	84-110-254-01	V + 3-14	1
1-103	87-481-172-21	V + 4-12	2
1-104	87-352-076-21	V + 2.6-12	3
1-105	87-261-036-21	V + 2-5	1
1-106	87-352-095-21	VTT + 3-8	7
1-107	84-110-248-01	FW5-10-0.3	1
1-108	84-110-250-01	FW5-10-1	1
1-109	84-110-249-01	FW5-10-0.5	1

Ref. No.	Part No.	Description	Q'ty
1-110	87-410-218-01	FW3.7-1.3-0.8	3
1-111	87-081-037-01	NW5-10-1	2
1-112	87-422-305-01	SW-2.6	3
1-113	87-441-010-01	STE-3.2	2
1-114	87-441-011-01	STE-4	1
1-115	87-371-032-01	SS - 2-3	1
1-116	87-371-071-01	SS - 2.6-4	1
1-117	84-110-245-02	FN-3	3
1-118	84-110-602-01	LB-3	1

MODEL NO. AF-5300E,K

EXPLODED VIEW-2



Ref. No.	Part No.	Part No. Changed to	Description	Common Model	Q'ty
2-1	87-064-094-01		PC Supporter		1
2-2	84-110-229-01		Himeron cloth sheet	*	1
2-3	84-110-227-01		Collar, Motor circuit board	*	1
2-4	84-110-606-01		Micro switch	*	1
2-5	84-110-214-01		Reject plate ass'y	*	1
2-6	87-073-007-01		Steel ball 4φ		1
2-7	84-187-226-01		Cam, Reject	AF-5050	1
2-8	84-187-220-01		Lever A, Cam	AF-5050	1
2-9	84-187-217-01		Lever B, Cam	AF-5050	1
2-10	84-110-213-01		Spring, Reject	*	1
2-11	84-110-217-01		Seesaw base ass'y	*	1
2-12	84-110-224-01		Spring	*	1
2-13	84-187-223-01		Seesaw arm ass'y	AF-5050	1
2-14	84-110-219-01		Plate spring	*	1
2-15	84-187-214-01		Seesaw cap	AF-5050	1
2-16	84-110-218-01		Lock plate spring	*	1
2-17	84-182-208-01		Actuating arm ass'y	AP-2060	1
2-18	84-182-207-01		Actuating base ass'y	AP-2060	1
2-19	84-110-251-01		Actuating washer	*	2
2-20	84-187-604-01		Switch A	AF-5050	2
2-21	84-182-232-01		Spring, Arm	AP-2060	1
2-22	84-187-228-01		Switch arm ass'y	AF-5050	1
2-23	84-110-228-01		Eccentric pin	*	1
2-24	84-110-216-01		Seesaw base ass'y	*	1
2-25	84-110-215-01		Seesaw Arm ass'y	*	1
2-26	82-182-604-01		Terminal plate	AP-2060	1
2-27	84-181-601-01		Micro switch	AP-2050	1
2-28	84-187-221-01		Lever holder ass'y	AF-5050	1
2-29	84-110-239-01		Click plate spring	*	1
2-30	84-187-213-01		Cam, SP	AF-5050	1
2-31	82-493-054-01		Knob, Speed selector	TPR-300	1
2-32	84-110-211-01		E ring	*	1
2-33	84-110-608-01		Washer	*	1

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Ref. No.	Part No.	Description	Q'ty
2-101	87-261-102-21	V + 3-20	1
2-102	87-352-095-21	V + 3-6	1
2-103	87-261-171-21	V + 4-10	1
2-104	87-261-096-21	V + 3-10	1
2-105	87-261-104-21	V + 3-30	2
2-106	87-261-098-01	V + 3-14	3
2-107	87-081-760-01	VT ₀ + 3-20	2
2-108	87-352-094-21	VT ₂ + 3-6	2
2-109	87-352-074-21	VT ₂ + 2.6-8	1
2-110	87-352-094-21	VT ₂ + 3-6	1

Ref. No.	Part No.	Description	Q'ty
2-111	87-352-095-21	VTT + 3-8	3
2-112	87-410-215-01	FW3-8-0.5	1
2-113	87-410-224-01	FW5-10-1	1
2-114	87-081-442-01	FW3	1
2-115	87-410-227-01	FW4-13-1	1
2-116	87-432-904-01	WTE-3	1
2-117	87-441-010-01	STE3.2	6
2-118	87-374-070-01	SS - 2.6-3	1
2-119	84-110-245-01	FN-3	3

ADJUSTMENTS

1. Lead-in adjustment

When the stylus does not descend onto the record in the proper place, proceed with the adjustment outlined below so that the stylus descends properly.

1) With LP (30 cm) records.

Rotate the lead-in adjust screw to the left or right, and adjust.

- * If the stylus descends on the outside of the lead-in groove, rotate the adjust screw to the right.
 - * If the stylus descends on the inside of the lead-in groove, rotate the adjust screw to the left.
- (Refer to Fig. 1)

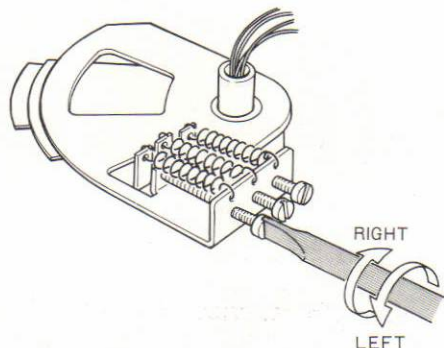


Fig. 1

2) With single (17 cm) record.

- * If the stylus descends on the outside of the lead-in groove, rotate the adjust screw to the right.
 - * If the stylus descends on the inside of the lead-in groove, rotate the adjust screw to the left.
- (Refer to Fig. 2)

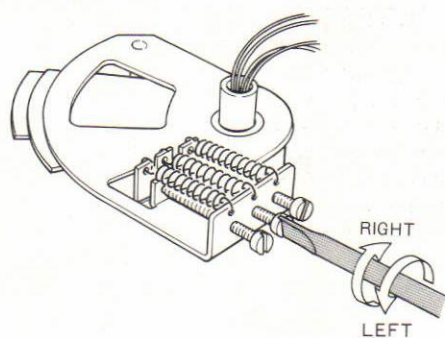


Fig. 2

2. Return adjustment

When the return operation is not executed properly, proceed with the adjustment outlined below.

- 1) When the return operation is too early, rotate the adjust screw to the right.
 - 2) When the return operation is too late, rotate the adjust screw to the left.
- (Refer to Fig. 3)

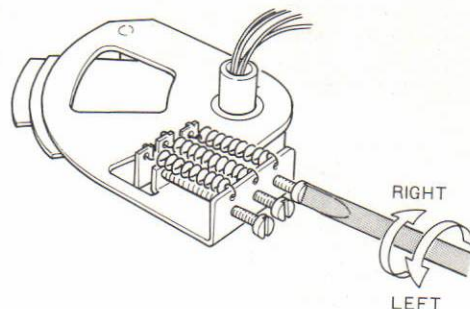


Fig. 3

3. Stylus height adjustment

- 1) The stylus height is adjusted first by rotating the adjust screw to the left or right when the cue lever is at the DOWN position and the mechanism is set to the operation mode. If the stylus is set too high, rotate the adjust screw to the right. If the stylus is set too low, rotate the adjust screw to the left.
- (Refer to Fig. 4)

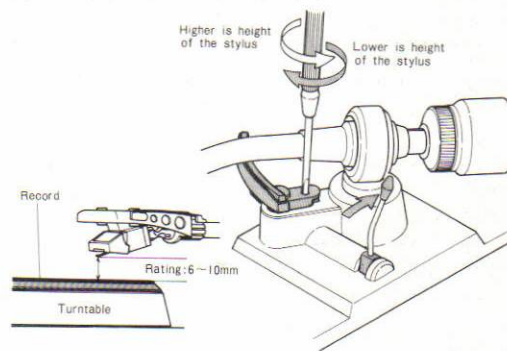


Fig. 4

- 2) The mechanism operation is adjusted by rotating the adjust screw and returning the cue lever to the UP position from the DOWN position.

If the stylus is set too high, rotate the adjust screw to the left.

If the stylus is set too low, rotate the adjust screw to the right.

Note: Adjust so that there is a clearance of 6 mm to 10 mm between the record and stylus when the cue lever is at the UP position.

(Refer to Fig. 5)

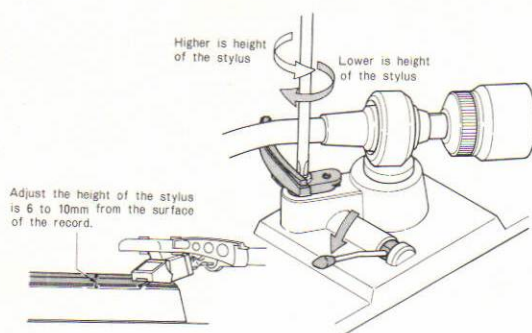


Fig. 5

4. Syncrate adjustment

If the syncrate timing is out of sync, proceed with the adjustment outlined below.

Note: Perform the syncrate adjustment after the stylus height adjustment.

If the syncrate timing is too fast, rotate the adjust screw to the right.

If the syncrate timing is too slow, rotate the adjust screw to the left.

(Refer to Fig. 6)

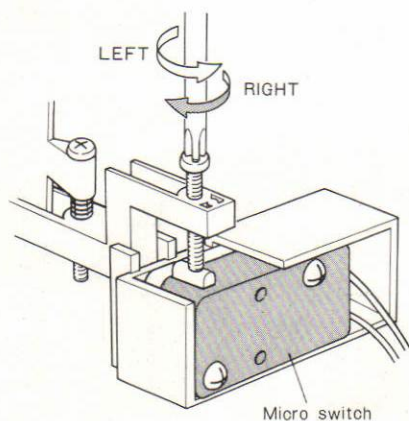


Fig. 6

5. Power and neon tube switch adjustment

- 1) Bend the adjust screw to the left or right and adjust so that the switch works smoothly when the power is switched on and off. (Refer to Fig. 7)

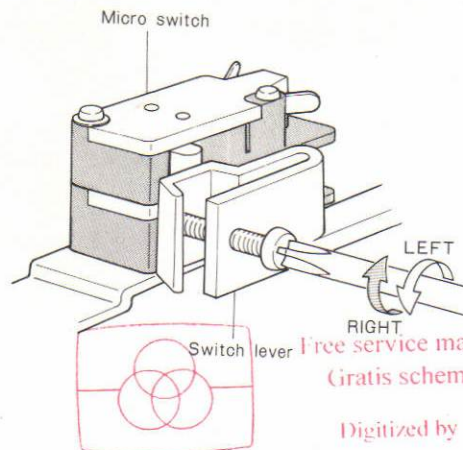


Fig. 7

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6. Trip adjustment

- 1) Check that the clearance between trip A and the platter gear is 0.4 or 0.5 mm.
- 2) When the standard clearance is not obtained, bend the gear pin to the left or right, and adjust the clearance between trip A and the platter. (Refer to Fig. 8)

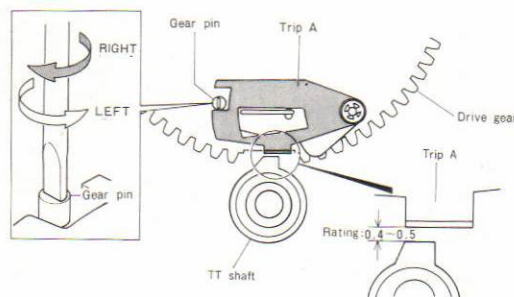


Fig. 8

PARTS LIST

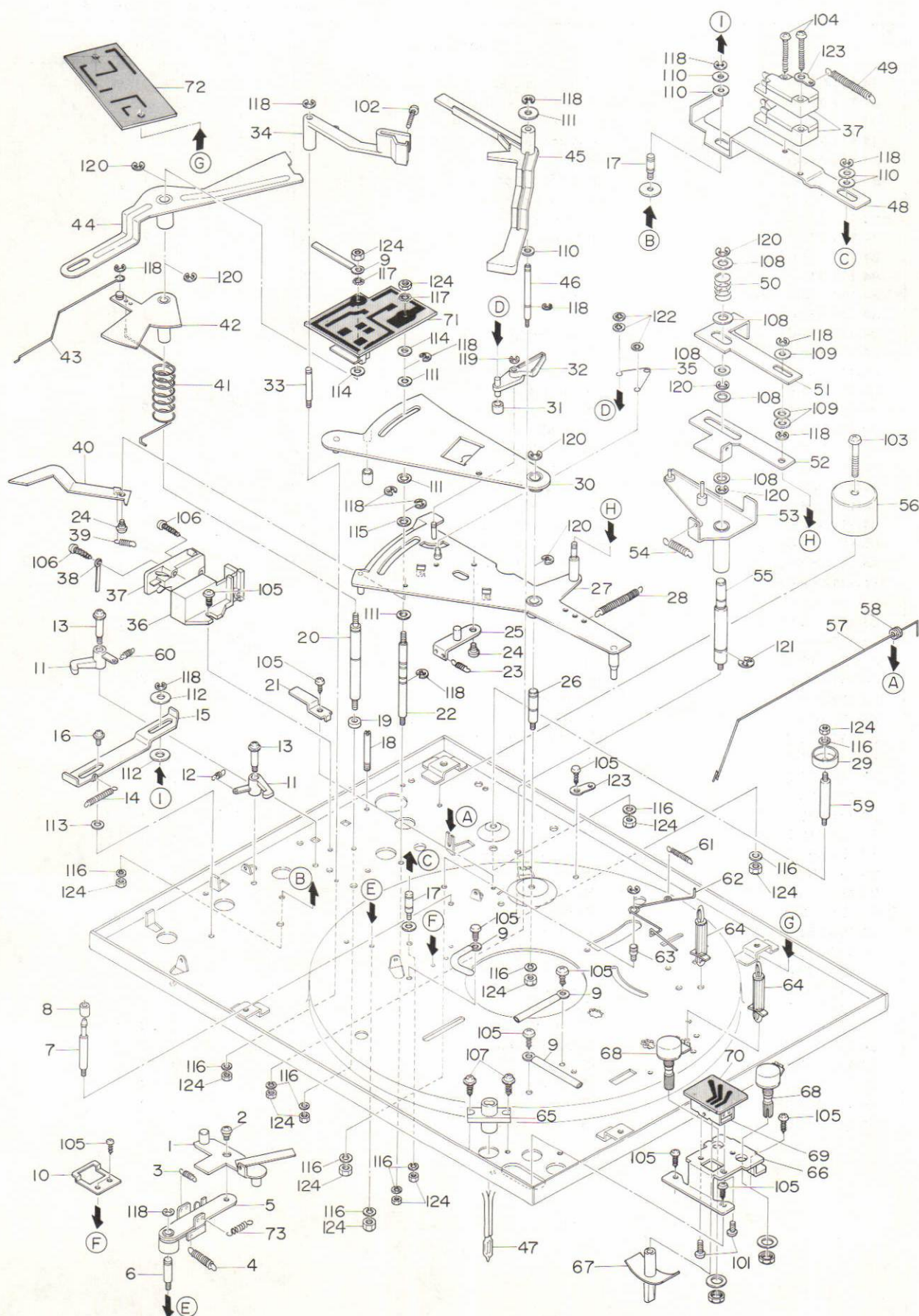
MECHANICAL PARTS

■ * mark in this part list shows exclusive part
(which is used) for only Model AF-5600.

Ref. No.	Part No.	Part No. Changed to	Description	Common Model	Q'ty
1-1	84-111-001-01		Motor board ass'y	*	1
1-2	84-111-201-01		Spring 1	*	2
1-3	84-111-202-01		Spring 2	*	2
1-4	84-111-203-01		Cushion, Spring	*	4
1-5	84-111-012-01		Base, Speed selector	*	1
1-6	84-111-003-01		Base, Function	*	1
1-7	84-111-002-01		Arm rest ass'y	*	1
1-8	84-111-276-01		Friction plate	*	1
1-9	84-111-277-01		Friction pat	*	2
1-10	84-111-011-01		Cueing lever ass'y	*	1
1-11	84-111-010-01		Knob, Cueing	*	1
1-12	84-111-278-01		Cueing cam	*	1
1-13	84-111-270-01		Thrust	*	1
1-14	84-111-272-01		Lifter spring	*	1
1-15	84-111-280-01		Adjuster spring	*	1
1-16	84-111-007-01		Arm support	*	1
1-17	84-111-279-01		Adjuster screw	*	1
1-18	84-111-204-01		Mounting metal fitting	*	2
1-19	84-111-286-01		Stud, Motor	*	3
1-20	84-111-289-01		Spring, Return plate	*	1
1-21	84-111-259-01		Cam, START	*	2
1-22	84-111-288-01		Select plate B ass'y	*	1
1-23	84-111-205-01		Fixed plate ass'y	*	1
1-24	84-111-208-01		Spring, Fixed plate	*	3
1-25	84-111-206-01		Adjuster screw A	*	2
1-26	84-111-207-01		Adjuster screw B	*	1
1-27	84-111-209-01		Shaft, Fixed plate	*	1
1-28	84-111-275-01		Lever, IFC	*	1
1-29	84-111-276-01		Spring, IFC	*	1
1-30	84-111-274-01		Cam, IFC	*	1
1-31	84-111-246-01		Cam, Repeat	*	1
1-32	84-111-006-01		Knob, START	*	2
1-33	84-111-005-01		Knob, Repeat	*	1
1-34	84-185-008-01		45 adaptor	*	1
1-35	84-111-255-01		Stopper, Return arm	*	1
1-36	84-111-234-01		Shaft, Gear stopper	*	1
1-37	84-111-235-01		Spring, Gear stopper	*	1
1-38	84-111-233-01		Gear stopper	*	1
1-39	84-111-015-01		Tonearm ass'y	*	1
1-40	84-111-016-01		Main weight		1
1-41	84-184-954-01		Screw, Cartridge		2
1-42	84-184-956-01		Washer, Cartridge		2
1-43	84-185-605-01		Headshell ass'y		1
1-44	84-194-203-01		Spacer		1
1-45	84-190-961-01		Cartridge ass'y		1
1-46	84-181-955-01		Nut		2
1-47	84-111-232-01		Shaft B, Drive gear		1
1-48	84-111-231-01		Drive gear ass'y		1
1-49	84-111-004-01		Turntable		1
1-50	84-190-004-01		TT sheet		1
1-51	84-111-013-01		Knob, Volume		2
1-52	84-111-009-01		Knob, IFC		1
1-53	84-111-603-01		Motor ass'y		1
1-54	84-111-008-01		Rubber, Arm support		1
1-55	84-111-271-01		Bar, Arm support		1

MODEL NO. AF-5600E,K

EXPLODED VIEW-2



Ref. No.	Part No.	Part No. Changed to	Description	Common Model	Q'ty	
2-1	84-111-238-01		Repeat arm ass'y	*	1	
2-2	84-111-241-01		Special screw, Repeat arm	*	1	
2-3	84-111-243-01		E spring 1, Repeat lever	*	1	
2-4	84-111-244-01		E spring2, Repeat lever	*	1	
2-5	84-111-240-01		Repeat lever ass'y	*	1	
2-6	84-111-239-01		Shaft, Repeat lever	*	1	
2-7	84-111-229-01		Stop shaft	*	1	
2-8	84-111-230-01		Cushion Stopper A	*	1	
2-9	84-111-292-01		Cord binder	*	4	
2-10	84-111-242-01		Guide, Repeat plate	*	1	
2-11	84-111-249-01		Ratchet lever	*	2	
2-12	84-111-250-01		Spring 1, Ratchet lever	*	1	
2-13	84-111-252-01		Shaft B	*	2	
2-14	84-111-265-01		Spring, Start plate	*	1	
2-15	84-111-266-01		Start plate	*	1	
2-16	84-111-267-01		Special screw, Start plate	*	1	
2-17	84-111-263-01		Shaft, Start plate	*	2	
2-18	84-111-281-01		Shaft A	*	1	
2-19	84-111-248-01		Spacer	*	1	
2-20	84-111-237-01		Shaft, Stopper plate A	*	1	
2-21	84-111-283-01		Repeat spring guide	*	1	
2-22	84-111-226-01		Spacer shaft A	*	1	
2-23	84-111-219-01		Spring, Latch plate	*	1	
2-24	84-111-220-01		Special screw, Latch plate	*	2	
2-25	84-111-218-01		Latch plate ass'y	*	1	
2-26	84-111-217-01		Shaft, Return plate	*	1	
2-27	84-111-216-01		Return plate ass'y	*	1	
2-28	84-111-290-01		Spring, Lead-in plate	*	1	
2-29	84-111-291-01		Special washer, Spacer shaft B	*	1	
2-30	84-111-228-01		Lead-in plate ass'y	*	1	
2-31	84-111-222-01		Cushion Stopper B	*	1	
2-32	84-111-221-01		Lever, Roll down	*	1	
2-33	84-111-269-01		Shaft, Switch lever	*	1	
2-34	84-111-268-11		Switch lever	*	1	
2-35	84-111-223-01		Spring, Roll down lever	*	1	
2-36	84-111-258-01		Switch cover	*	1	
2-37	84-111-601-01		Micro switch	*	3	
2-38	84-111-293-01		Mini clamp	*	1	
2-39	84-111-225-01		Spring, Pawl	*	1	
2-40	84-111-224-01		Pawl	*	1	
2-41	84-111-254-01		Spring, Stopper plate	*	1	
2-42	84-111-236-01		Stopper plate A ass'y	*	1	
2-43	84-111-261-01		Connecting roll	*	1	
2-44	84-111-287-01		Select plate A ass'y	*	1	
2-45	84-111-256-01		Return arm	*	1	
2-46	84-111-257-01		Shaft, Return arm	*	1	
2-47	84-111-602-01		Lamp	*	1	
2-48	84-111-247-01		Repeat plate	*	1	
2-49	84-111-289-01		Spring, Return plate	*	1	
2-50	84-112-214-01		Spring, Reset lever B	*	1	
2-51	84-111-212-01		Reset lever B	*	1	
2-52	84-111-211-01		Reset lever A	*	1	
2-53	84-111-210-01		Stopper plate B ass'y	*	1	
2-54	84-113-215-01		Spring, Stopper plate	*	1	
2-55	84-111-213-01		Shaft, Stopper plate B	*	1	
2-56	84-185-015-01		Weight	*	1	
2-57	84-111-262-01		Spring, Reject	*	1	
2-58	84-111-253-01		Spacer, Reject spring G	*	1	
2-59	84-111-227-01		Spacer shaft B	*	1	
2-60	84-111-251-01		Spring 2, Ratchet lever	*	1	
2-61	84-111-264-01		Spring, Trip	*	1	
2-62	84-111-260-01		Spring, Repeat	*	1	
2-63	84-111-282-01		Shaft, Repeat spring	*	1	
2-64	84-111-606-01		Support, Circuit board	*	2	
2-65	84-111-284-01		Holder, Lamp	*	1	
2-66	84-111-285-01		Selector angle	*	1	
2-67	84-111-014-01		Knob, Speed selector	*	1	
2-68	84-111-607-01		Volume	*	2	
2-69	84-111-608-01		Selector switch	*	1	
2-70	84-111-609-01		Speed selector circuit board ass'y	*	1	
2-71	84-111-605-01		Muting circuit board ass'y	*	1	
2-72	84-111-604-01		Power circuit board ass'y	*	1	
2-73	84-111-245-01		E spring 3, Repeat lever	*	1	

MODEL NO. AF-5600E,K

Ref. No.	Part No.	Description	Q'ty
1-101	87-261-170-21	V + 4-8	2
1-102	87-231-096-21	Q + 3-10	1
1-103	87-322-094-21	VT ₂ + 3-6	1
1-104	87-351-129-01	VT ₂ + 3.5-8	4
1-105	87-351-093-01	VT ₂ + 3-5	3
1-106	87-351-072-01	VT ₂ + 2.6-5	1
1-107	87-081-098-01	VTT + 3-14	1
1-108	87-081-094-01	VTT + 3-6	2
1-109	87-480-095-01	VS + 3-8	2
1-110	87-081-095-01	YTT + 3-8	3
1-111	87-410-236-01	W7 - 16-0.8	1
1-112	87-410-232-01	W5 - 12-0.8	1

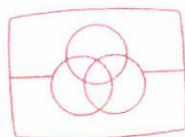
Ref. No.	Part No.	Description	Q'ty
1-113	87-081-205-01	PW2-6-0.4	1
1-114	87-081-225-01	PW4-10-0.8	2
1-115	87-422-306-01	SW-3	1
1-116	87-422-308-01	SW-4	6
1-117	87-431-915-01	WT1-12	1
1-118	87-441-009-01	STE-3	2
1-119	84-182-005-01	CS-2	1
1-120	87-374-168-01	SS-4-5	2
1-121	87-391-017-21	N-3	1
1-122	87-391-034-21	N-4	6
1-123	87-450-404-01	LA-4	1
1-124	87-441-012-01	STE-5	1

Ref. No.	Part No.	Description	Q'ty
2-101	87-261-073-21	V + 2.6-6	2
2-102	87-261-097-21	V + 3-12	1
2-103	87-261-103-21	V + 3-25	1
2-104	87-352-103-21	VT ₂ + 3-25	2
2-105	87-353-094-21	VT ₂ + 3-6	11
2-106	87-081-100-01	YTT + 3-16	2
2-107	87-480-094-01	VS + 3-6	2
2-108	87-410-235-01	W6-13-1	5
2-109	87-410-226-01	W4-10-1	3
2-110	87-410-229-01	W5-10-0.5	5
2-111	87-410-230-01	W5-10-0.8	4
2-112	87-410-232-01	W5-12-0.8	2

Ref. No.	Part No.	Description	Q'ty
2-113	87-410-215-01	W3-8-0.5	1
2-114	87-410-217-01	W3-10-0.8	2
2-115	87-081-230-01	PW5-10-0.8	1
2-116	87-422-306-01	SW-3	10
2-117	87-432-904-01	WTE-3	2
2-118	87-441-009-01	STE-3	14
2-119	87-441-005-01	STE-2	1
2-120	87-441-004-01	STE-4	7
2-121	87-441-013-01	STE-6	1
2-122	84-182-009-01	CS-3	3
2-123	87-450-411-01	LB-4	2
2-124	87-391-017-21	N-3	12

☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆ MEMO ☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆

Lined area for notes, consisting of 20 horizontal lines.



Free service manuals
Gratis schema's

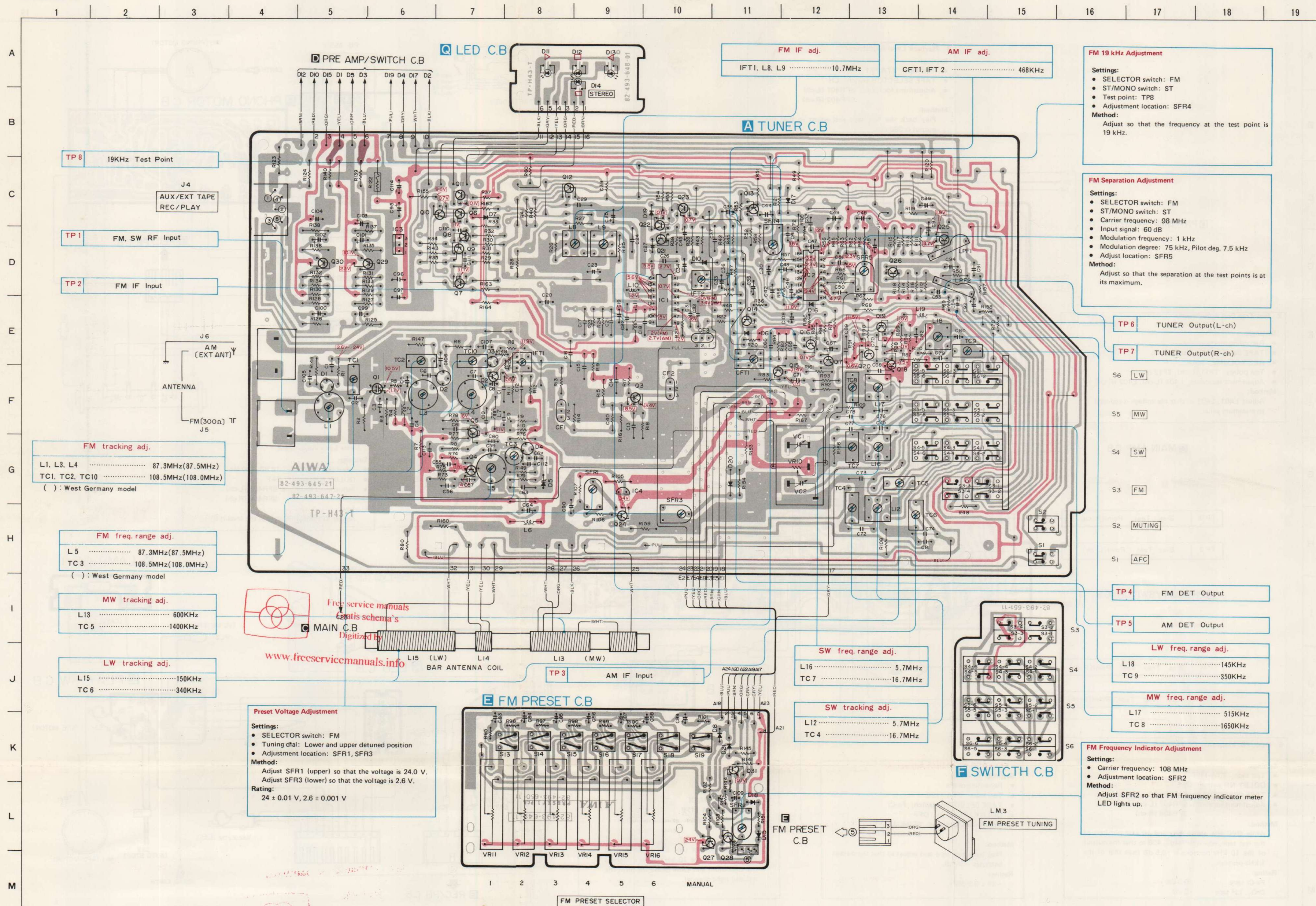
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AIWACO.,LTD.

Printed in Japan

WIRING-1



FM IF adj.
IFT1, L8, L910.7MHz

AM IF adj.
CFT1, IFT 2 468KHz

FM 19 kHz Adjustment
Settings:
• SELECTOR switch: FM
• ST/MONO switch: ST
• Test point: TP8
• Adjustment location: SFR4
Method:
Adjust so that the frequency at the test point is 19 kHz.

FM Separation Adjustment
Settings:
• SELECTOR switch: FM
• ST/MONO switch: ST
• Carrier frequency: 98 MHz
• Input signal: 60 dB
• Modulation frequency: 1 kHz
• Modulation degree: 75 kHz, Pilot deg. 7.5 kHz
• Adjust location: SFR5
Method:
Adjust so that the separation at the test points is at its maximum.

TP6 TUNER Output(L-ch)

TP7 TUNER Output(R-ch)

S6 LW

S5 MW

S4 SW

S3 FM

S2 MUTING

S1 AFC

TP4 FM DET Output

TP5 AM DET Output

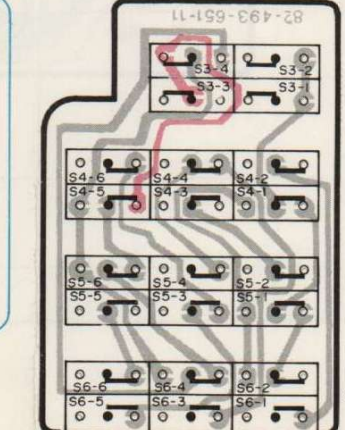
LW freq. range adj.
L18145KHz
TC9350KHz

MW freq. range adj.
L17 515KHz
TC81650KHz

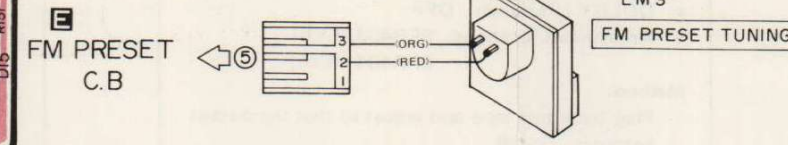
FM Frequency Indicator Adjustment
Settings:
• Carrier frequency: 108 MHz
• Adjustment location: SFR2
Method:
Adjust SFR2 so that FM frequency indicator meter LED lights up.

SW freq. range adj.
L16 5.7MHz
TC716.7MHz

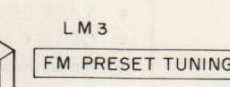
SW tracking adj.
L12 5.7MHz
TC416.7MHz



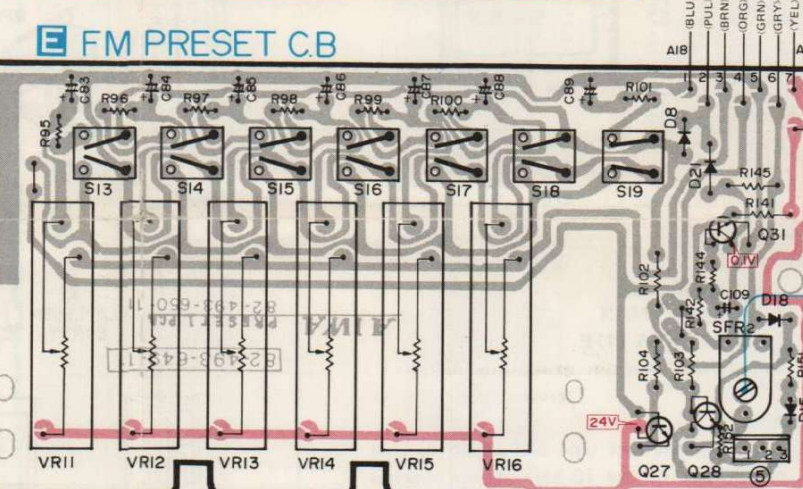
SWITCH C.B.



FM PRESET C.B.



MAIN C.B.



FM PRESET C.B.

FM PRESET SELECTOR

Preset Voltage Adjustment
Settings:
• SELECTOR switch: FM
• Tuning dfal: Lower and upper detuned position
• Adjustment location: SFR1, SFR3
Method:
Adjust SFR1 (upper) so that the voltage is 24.0 V.
Adjust SFR3 (lower) so that the voltage is 2.6 V.
Rating:
24 ± 0.01 V, 2.6 ± 0.001 V

FM tracking adj.
L1, L3, L4 87.3MHz(87.5MHz)
TC1, TC2, TC10 108.5MHz(108.0MHz)
() : West Germany model

FM freq. range adj.
L5 87.3MHz(87.5MHz)
TC3 108.5MHz(108.0MHz)
() : West Germany model

MW tracking adj.
L13 600KHz
TC51400KHz

LW tracking adj.
L15150KHz
TC6340KHz

NOTES (1) B (+) Pattern Others pattern (2) The voltage is reference value measured with a tester (20K ohms/V DC) when there are no signals. An asterisk (*) indicates that the value was measured with a vacuum-tube voltmeter during recording.

WIRING-2

12345678910111213141516171819

A

B

C

D

E

F

G

H

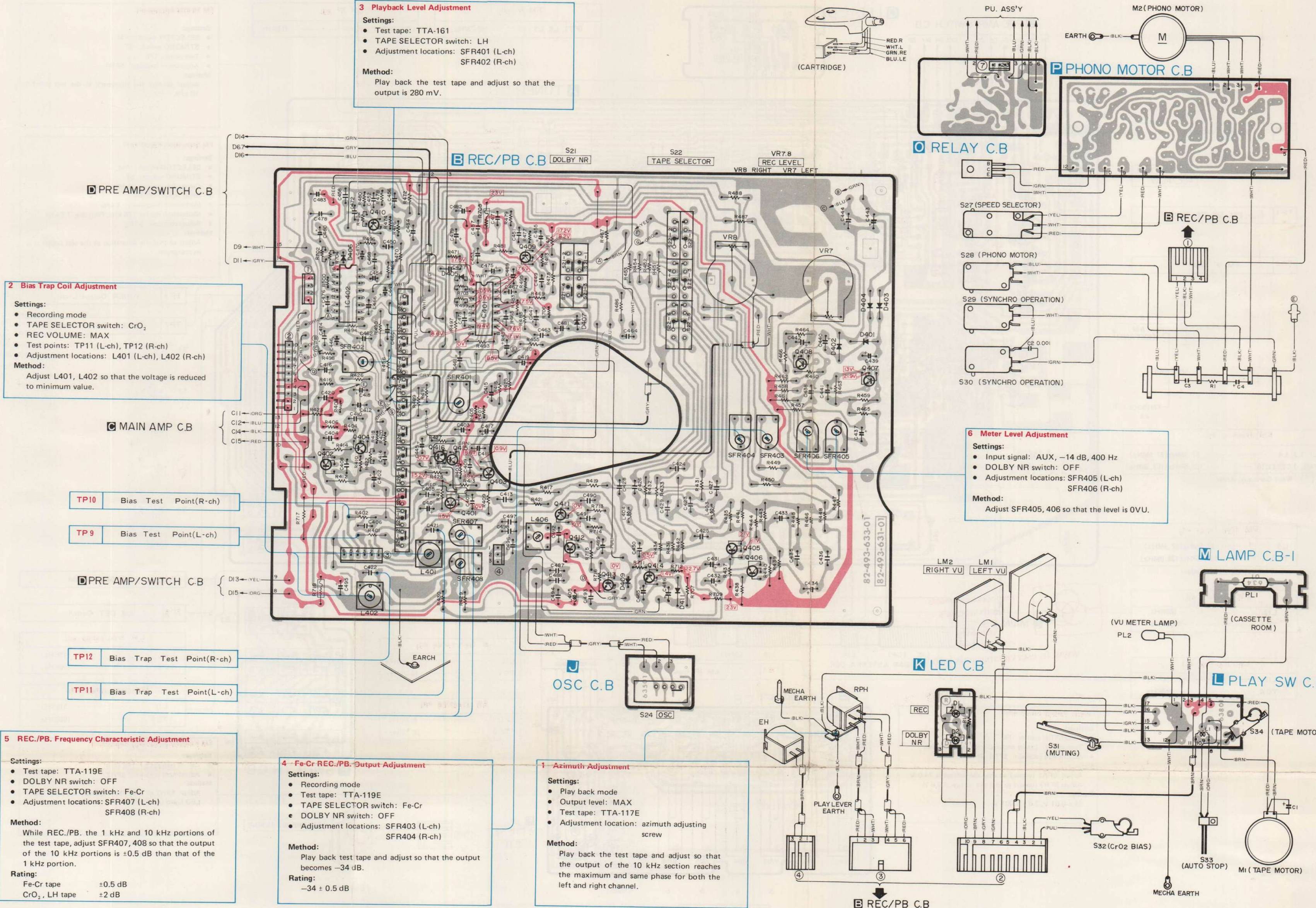
I

J

K

L

M



2 Bias Trap Coil Adjustment

Settings:

- Recording mode
- TAPE SELECTOR switch: CrO₂
- REC VOLUME: MAX
- Test points: TP11 (L-ch), TP12 (R-ch)
- Adjustment locations: L401 (L-ch), L402 (R-ch)

Method:

Adjust L401, L402 so that the voltage is reduced to minimum value.

3 Playback Level Adjustment

Settings:

- Test tape: TTA-161
- TAPE SELECTOR switch: LH
- Adjustment locations: SFR401 (L-ch), SFR402 (R-ch)

Method:

Play back the test tape and adjust so that the output is 280 mV.

5 REC./PB. Frequency Characteristic Adjustment

Settings:

- Test tape: TTA-119E
- DOLBY NR switch: OFF
- TAPE SELECTOR switch: Fe-Cr
- Adjustment locations: SFR407 (L-ch), SFR408 (R-ch)

Method:

While REC./PB. the 1 kHz and 10 kHz portions of the test tape, adjust SFR407, 408 so that the output of the 10 kHz portions is ±0.5 dB than that of the 1 kHz portion.

Rating:

Fe-Cr tape	±0.5 dB
CrO ₂ , LH tape	±2 dB

4 Fe-Cr REC./PB. Output Adjustment

Settings:

- Recording mode
- Test tape: TTA-119E
- TAPE SELECTOR switch: Fe-Cr
- DOLBY NR switch: OFF
- Adjustment locations: SFR403 (L-ch), SFR404 (R-ch)

Method:

Play back test tape and adjust so that the output becomes -34 dB.

Rating:

-34 ± 0.5 dB

1 Azimuth Adjustment

Settings:

- Play back mode
- Output level: MAX
- Test tape: TTA-117E
- Adjustment location: azimuth adjusting screw

Method:

Play back the test tape and adjust so that the output of the 10 kHz section reaches the maximum and same phase for both the left and right channel.

6 Meter Level Adjustment

Settings:

- Input signal: AUX, -14 dB, 400 Hz
- DOLBY NR switch: OFF
- Adjustment locations: SFR405 (L-ch), SFR406 (R-ch)

Method:

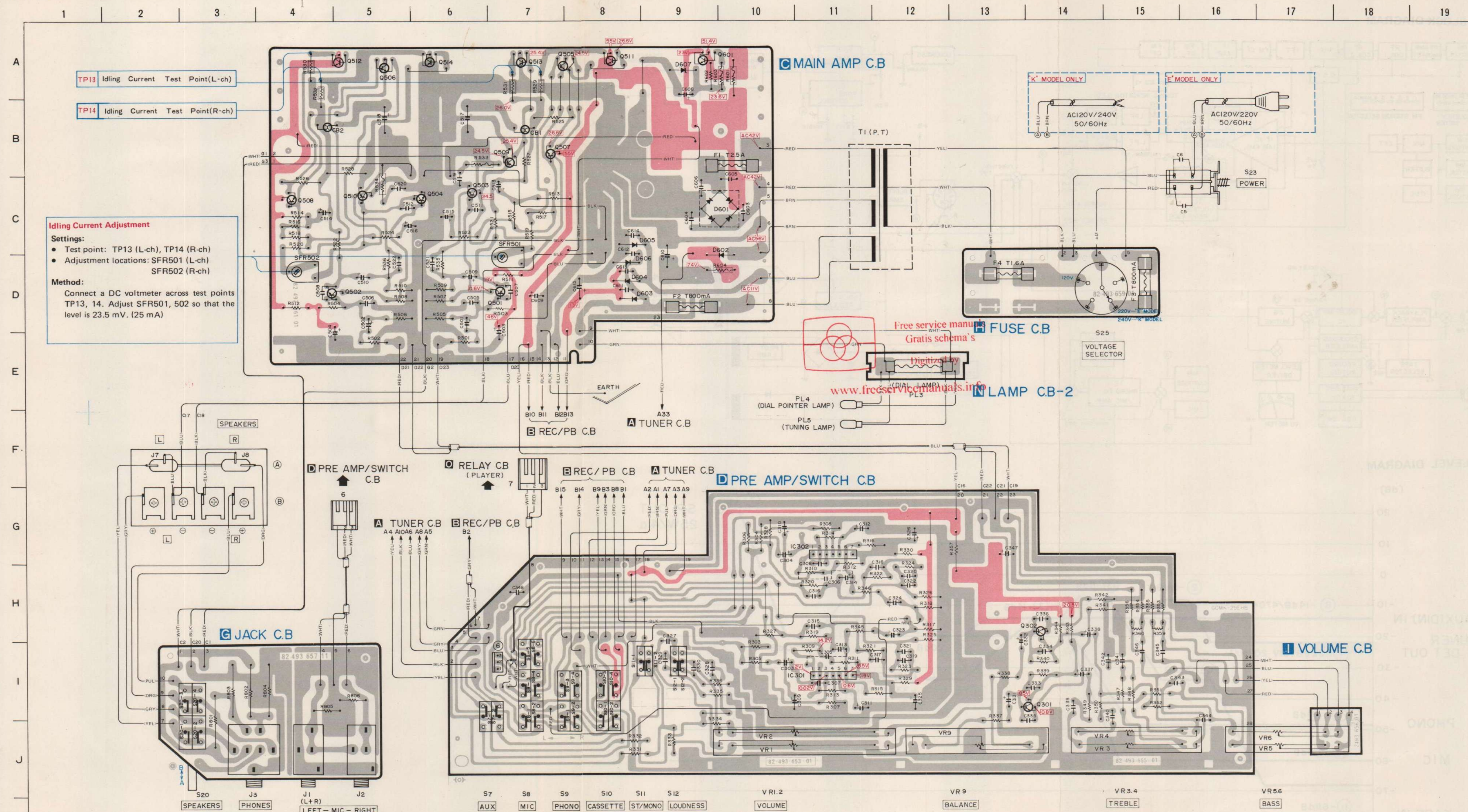
Adjust SFR405, 406 so that the level is 0VU.

NOTES

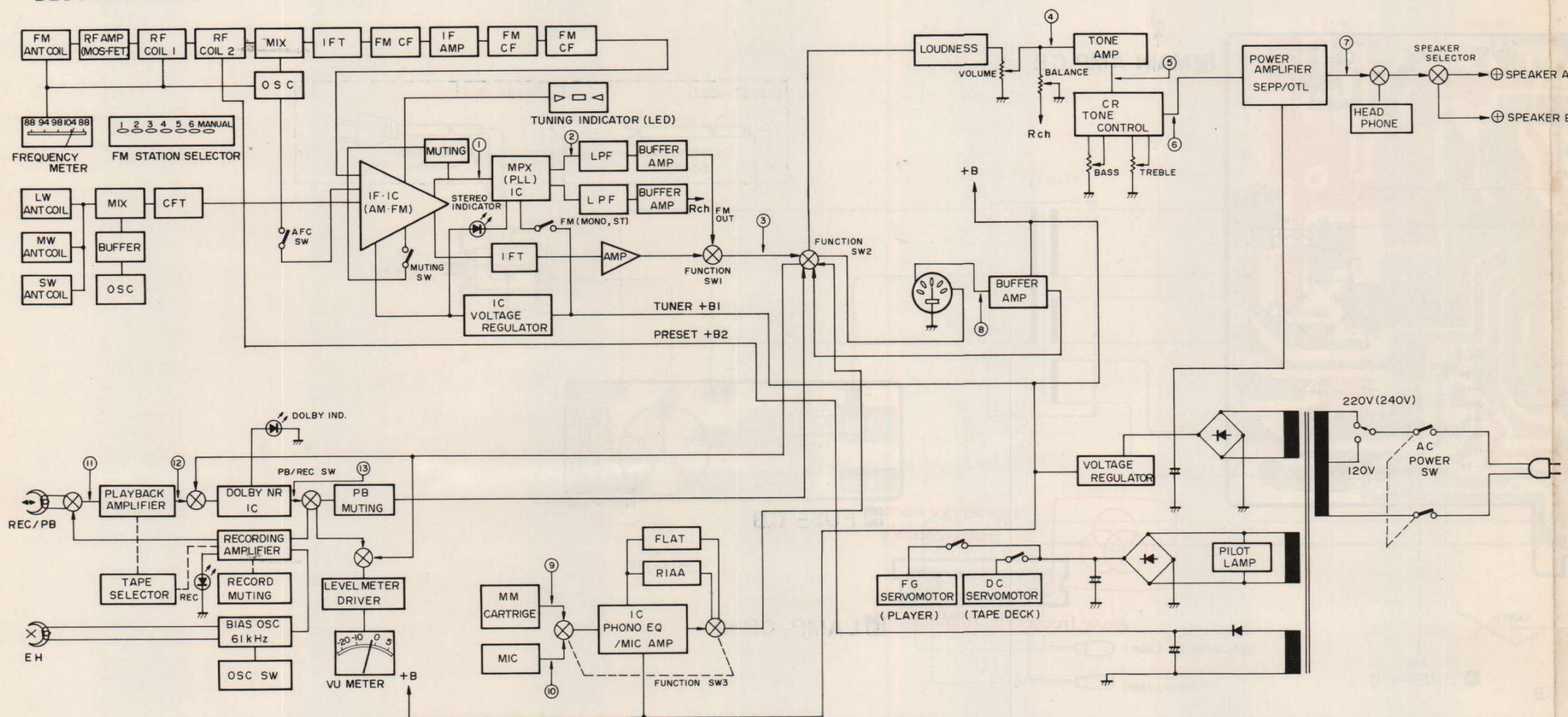
(1) B (+) Pattern Others pattern

(2) The voltage is reference value measured with a tester (20K ohms/V DC) when there are no signals. An asterisk (*) indicates that the value was measured with a vacuum-tube voltmeter during recording.

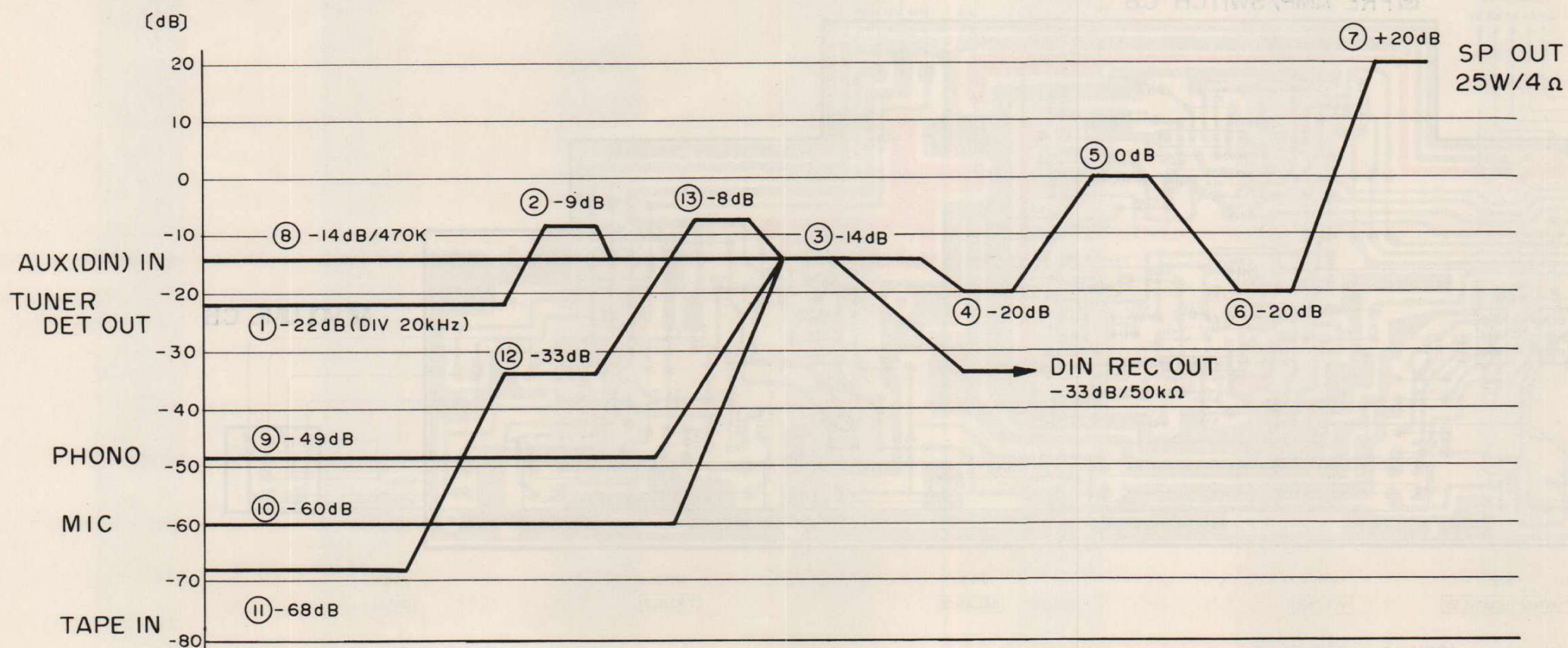
WIRING-3



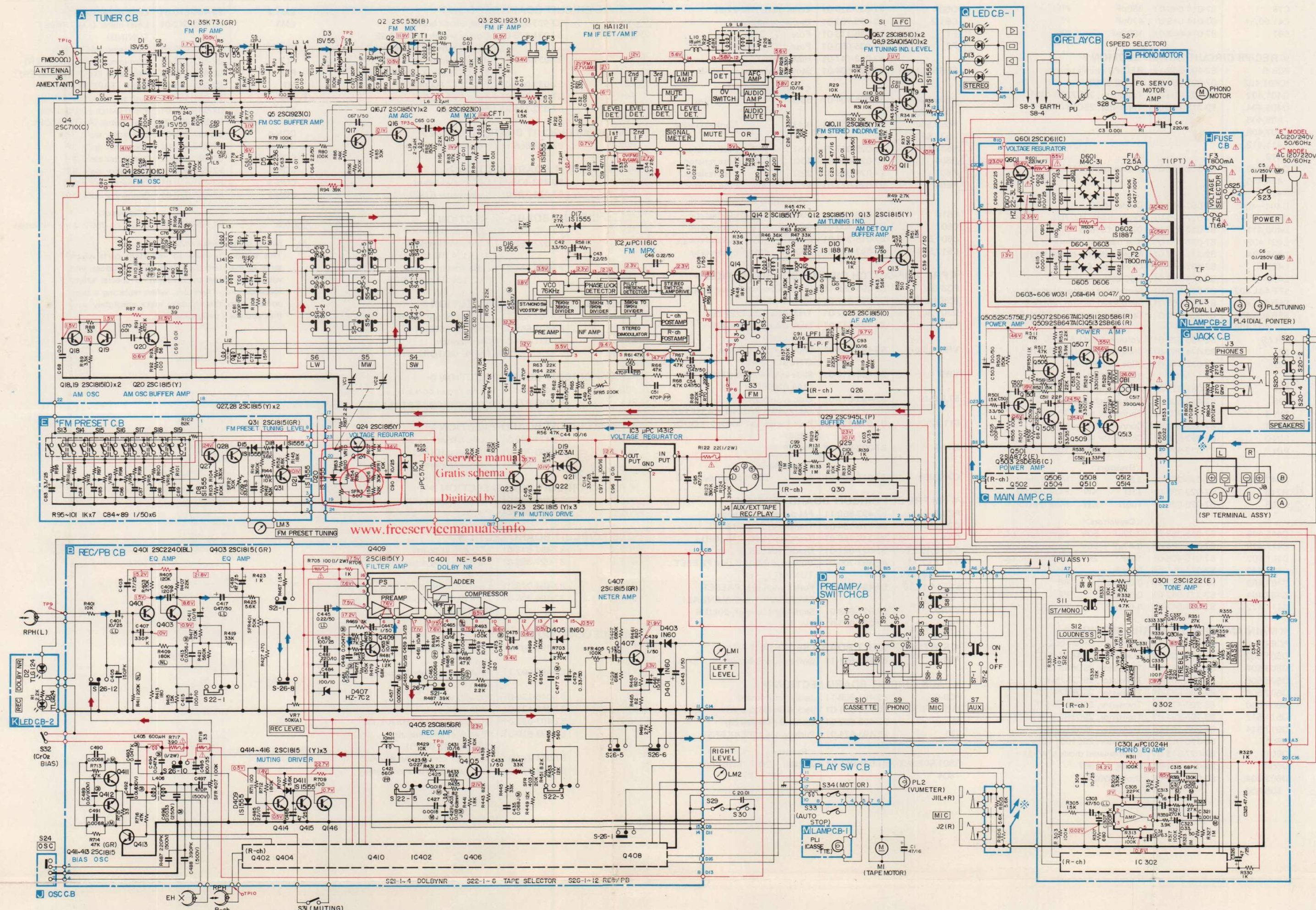
BLOCK DIAGRAM



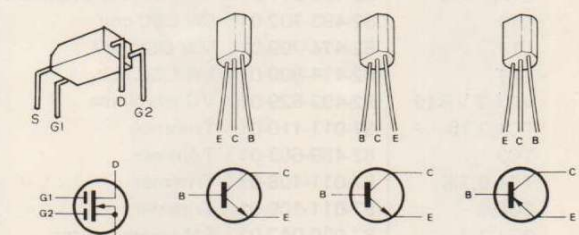
LEVEL DIAGRAM



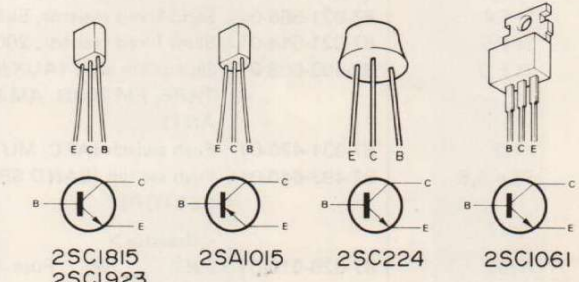
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----



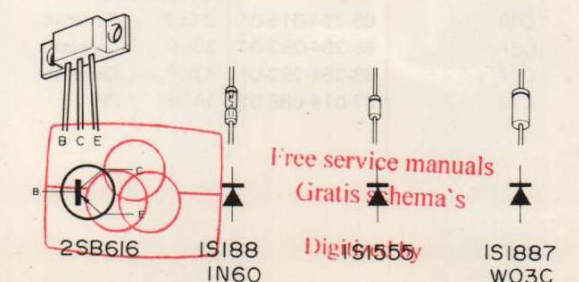
- 1) B (+) power supply
- 2) Signal path
- 3) Rec path, AM signal path.
- 3) The voltage is the reference value measured with a tester (20 k-ohms/V DC) when there are no signals.
But () is with AM reception or recording.
An asterisk (*) indicates that the value was measured with a vacuum-tube voltmeter during recording.
- 4) Resistors with no designation have a rated power of 1/4W and a tolerance of $\pm 5\%$.
- 5) Capacitors with no designation have a dielectric strength of less than 50WV.
- 6) The only capacitor tolerances indicated are $\pm 5\%$ (J) and $\pm 10\%$ (K).
- 7) Ceramic capacitor symbols:
 For temperature compensation (SL)
 High dielectric constant system (YY)
 High dielectric constant system (YW, YP, YZ)
 For temperature compensation (SH)
- 8) Explanation of symbols:
 Mylar capacitor
 Low-leakage capacitor
 Polypropylene film capacitor
 Fuse resistor
 Safety component symbol
This symbol is given to important parts which serve to maintain the safety of the product, and which are made to conform to special safety specifications. Therefore, when replacing a component with this symbol, make absolutely sure that you use a designated part.
- This schematic diagram is subject to change without notice in the interests of improved performance.



3SK73

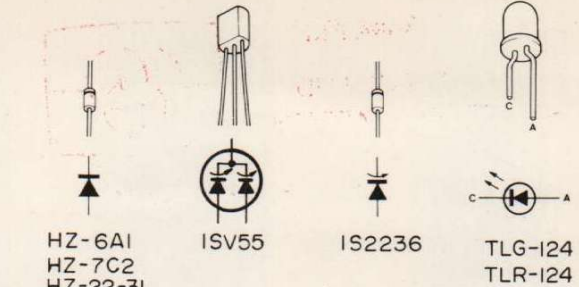


2SC1815
2SC1923



2SB616

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HZ-6A1
HZ-7C2
HZ-22-31

TLR-124

ELECTRICAL MAIN PARTS LIST

Symbol No.	Part No.	Description	Symbol No.	Part No.	Description	Symbol No.	Part No.	Description	Symbol No.	Part No.	Description	Symbol No.	Part No.	Description
≪ TUNER CIRCUIT BOARD SECTION ≫			≪ REC/PB CIRCUIT BOARD SECTION ≫			≪ FUSE CIRCUIT BOARD SECTION ≫			≪ VOLUME CIRCUIT BOARD SECTION ≫			≪ OSC CIRCUIT BOARD SECTION ≫		
PCB-A	82-493-647-21	Tuner circuit board	C76	87-014-046-01	360pF PP	PCB-H	82-493-659-01	Fuse circuit board	PCB-I	82-493-656-11	Volume circuit board	PCB-J	82-493-635-11	OSC circuit board
IC1	82-494-791-01	IC, HA-11211	C41,50,51	87-014-049-01	470pF PP	S25	87-031-475-01	Rotary switch (VOLTAGE SELECTOR) (E model only)	PCB-K	82-493-637-11	LED circuit board-2	PCB-L	82-493-638-11	Play SW circuit board
IC2	82-494-792-01	IC, μPC-1161C	C81	87-014-063-01	1800pF PP	S25	87-031-476-01	Rotary switch (VOLTAGE SELECTOR) (K model only)	D1	87-027-262-01	Light emitting diode, TLR-124 (REC)	L1	82-401-661-01	Chok coil, 600μH
IC3	87-027-348-01	IC, μPC-14312	≪ PRE AMP/SWITCH CIRCUIT BOARD SECTION ≫			≪ LED CIRCUIT BOARD-2 SECTION ≫			D2	87-026-164-01	Light emitting diode, TLG-124 (DOLBY NR)	S34	87-031-421-01	Micro switch (TAPE MOTOR)
IC4	87-027-327-01	IC, μPC-574J	PCB-B	82-493-633-11	REC/PB circuit board	≪ PLAY SW CIRCUIT BOARD SECTION ≫			PCB-M	82-493-634-11	Lamp circuit board-1	PCB-N	82-474-609-01	Lamp circuit board-2
Q1	87-026-165-01	FET, 3SK73 (GR)	IC401,402	87-027-151-01	IC, NE-545B	≪ LAMP CIRCUIT BOARD-1 SECTION ≫			PL1	82-493-627-01	Pilot lamp (CASSETTE)	PL3	82-493-706-01	Pilot lamp (DIAL)
Q2	89-305-352-01	Transistor, 2SC535 (B)	Q401,402	89-322-406-01	Transistor, 2SC2240 (BL)	≪ LAMP CIRCUIT BOARD-2 SECTION ≫			≪ RELAY CIRCUIT BOARD SECTION ≫			PCB-O	82-493-708-01	Relay circuit board
Q3,5,15	89-319-233-01	Transistor, 2SC1923 (O)	Q403,404,405,406,407,408,411,412,413	89-318-155-01	Transistor, 2SC1815 (GR)	≪ LED CIRCUIT BOARD SECTION ≫			PIN-7	87-032-903-01	Pin, 3P	PIN-7	87-032-903-01	Pin, 3P
Q4	89-307-103-01	Transistor, 2SC710 (C)	≪ MAIN AMP CIRCUIT BOARD SECTION ≫			≪ JACK CIRCUIT BOARD SECTION ≫			≪ MISCELLANEOUS ≫			RPH	87-046-130-01	REC/PB head
Q6,7,18,19,25,26	89-318-153-01	Transistor, 2SC1815 (O)	PCB-C	82-493-661-11	Main amp. circuit board	PCB-G	82-493-658-11	Jack circuit board	EH	87-046-127-01	Erase head	J7,8	82-493-623-01	DIN jack (SPEAKERS A-L,R)
Q8,9	89-110-153-01	Transistor, 2SA1015 (O)	IC401,402	87-027-151-01	IC, NE-545B	J1,2	82-493-621-01	Jack 6.3φ (MIC-L,R)	Safety component symbol			This symbol is given to important parts which serve to maintain the safety of the product, and which are made to conform to special safety specifications. Therefore, when replacing a component with this symbol, make absolutely sure that you use a designated part.		
Q10,11,12,13,16,17,20,21,22,23,24	89-318-154-01	Transistor, 2SC1815 (Y)	Q403,404,405,406,407,408,411,412,413	89-318-155-01	Transistor, 2SC1815 (GR)	J3	82-493-622-01	Jack 6.3φ (PHONES)	≪ Capacitor ≫			0.1μF 250V Line capacitor		
Q29,30	89-309-456-01	Transistor, 2SC945L (P)	Q409,410,414,415,416	89-318-154-01	Transistor, 2SC1815 (Y)	S20	82-493-624-01	Push switch (SPEAKERS)	≪ Resistor ≫			270Ω 2W Metal film		
D1,2,3,4	87-027-325-01	Diode, 1SV55	D401~406	88-051-060-01	Diode, IN60	R801,802,803,804	87-025-055-01	270Ω 2W Metal film	≪ Resistor ≫			270Ω 2W Metal film		
D5	87-027-326-01	Diode, 1S2236	D407	87-027-320-01	Zener diode, HZ-7C2	≪ Resistor ≫			≪ Resistor ≫			270Ω 2W Metal film		
D6,7,16,17,20	87-027-097-01	Diode, 1S1555	D409,411	87-027-097-01	Diode, 1S1555	≪ Resistor ≫			≪ Resistor ≫			270Ω 2W Metal film		
D10	88-052-188-11	Diode, 1S188 (FM)	L401,402	87-008-173-01	Bias trap coil, 10mH	≪ Resistor ≫			≪ Resistor ≫			270Ω 2W Metal film		
D19	87-027-301-01	Zener diode, HZ3A1	L403,404	82-371-648-01	Micro inductor coil, 6.8mH	≪ Resistor ≫			≪ Resistor ≫			270Ω 2W Metal film		
L1	82-493-639-01	FM antenna coil	L405	82-401-661-01	Choke coil, 600μH	≪ Resistor ≫			≪ Resistor ≫			270Ω 2W Metal film		
L2,7	82-470-604-01	FM choke coil, 2.2μH	L406	82-474-787-01	OSC coil	≪ Resistor ≫			≪ Resistor ≫			270Ω 2W Metal film		
L3	82-494-671-01	FM RF1 coil	SFR401,402	87-021-569-01	Semi-fixed resistor, 50kΩ-B	≪ Resistor ≫			≪ Resistor ≫			270Ω 2W Metal film		
L4	82-494-672-01	FM RF2 coil	SFR403,404	87-021-568-01	Semi-fixed resistor, 20kΩ-B	≪ Resistor ≫			≪ Resistor ≫			270Ω 2W Metal film		
L5	82-494-673-01	FM OSC coil	SFR405,406,407,408	87-021-570-01	Semi-fixed resistor, 100kΩ-B	≪ Resistor ≫			≪ Resistor ≫			270Ω 2W Metal film		
L6,11,19	87-005-121-01	Coil, 2.2μH	VR7,8	82-493-626-01	Volume, 50kΩ-A (REC LEVEL)	≪ Resistor ≫			≪ Resistor ≫			270Ω 2W Metal film		
L8	82-494-783-01	Coil (Quad-2)	S21	82-474-761-01	Slide switch (DOLBY NR)	≪ Resistor ≫			≪ Resistor ≫			270Ω 2W Metal film		
L9	82-494-782-01	Coil (Quad-1)	S22	87-031-348-01	Slide switch (TAPE SELECTOR)	≪ Resistor ≫			≪ Resistor ≫			270Ω 2W Metal film		
L10	82-494-781-01	Coil, 18μH	S24	87-031-326-01	Slide switch (OSC)	≪ Resistor ≫			≪ Resistor ≫			270Ω 2W Metal film		
L12	82-494-793-01	SW antenna coil	S26	82-493-625-01	Push switch (REC/PB)	≪ Resistor ≫			≪ Resistor ≫			270Ω 2W Metal film		
L13,14,15	82-493-641-01	MW, LW bar antenna coil	PIN-4	87-032-903-01	Connector ass'y, 3P	≪ Resistor ≫			≪ Resistor ≫			270Ω 2W Metal film		
L16	82-493-702-01	SW OSC coil	PIN-1	87-032-904-01	Connector ass'y, 4P	≪ Resistor ≫			≪ Resistor ≫			270Ω 2W Metal film		
L17	82-474-799-01	MW OSC coil	PIN-3	87-032-906-01	Connector ass'y, 6P	≪ Resistor ≫			≪ Resistor ≫			270Ω 2W Metal film		
L18	82-474-800-01	LW OSC coil	PIN-2	87-032-920-01	Connector ass'y, 10P	≪ Resistor ≫			≪ Resistor ≫			270Ω 2W Metal film		
VC1,2 VR10	82-493-629-01	VC w/volume	≪ Resistor ≫			≪ Resistor ≫			≪ Resistor ≫			270Ω 2W Metal film		
TC1,2,10	87-011-110-01	Trimmer	≪ Resistor ≫			≪ Resistor ≫			≪ Resistor ≫			270Ω 2W Metal film		
TC3	82-489-603-01	Trimmer	≪ Resistor ≫			≪ Resistor ≫			≪ Resistor ≫			270Ω 2W Metal film		
TC4,5,7,8	87-011-108-01	Trimmer	≪ Resistor ≫			≪ Resistor ≫			≪ Resistor ≫			270Ω 2W Metal film		
TC6,9	87-011-109-01	Trimmer	≪ Resistor ≫			≪ Resistor ≫			≪ Resistor ≫			270Ω 2W Metal film		
CF1,2,3	87-030-047-01	FM ceramic filter	≪ Resistor ≫			≪ Resistor ≫			≪ Resistor ≫			270Ω 2W Metal film		
CFT1	82-494-786-01	Ceramic filter transformer	≪ Resistor ≫			≪ Resistor ≫			≪ Resistor ≫			270Ω 2W Metal film		
LPF1,2	87-028-011-01	Low-pass filter	≪ Resistor ≫			≪ Resistor ≫			≪ Resistor ≫			270Ω 2W Metal film		
IFT1	82-494-674-01	FM IFT	≪ Resistor ≫			≪ Resistor ≫			≪ Resistor ≫			270Ω 2W Metal film		
IFT2	87-008-160-01	AM IFT (DET)	≪ Resistor ≫			≪ Resistor ≫			≪ Resistor ≫			270Ω 2W Metal film		
SFR1	87-021-567-01	Semi-fixed resistor, 10kΩ-B	≪ Resistor ≫			≪ Resistor ≫			≪ Resistor ≫			270Ω 2W Metal film		
SFR3	87-021-563-01	Semi-fixed resistor, 500Ω-B	≪ Resistor ≫			≪ Resistor ≫			≪ Resistor ≫			270Ω 2W Metal film		
SFR4	87-021-566-01	Semi-fixed resistor, 5kΩ-B	≪ Resistor ≫			≪ Resistor ≫			≪ Resistor ≫			270Ω 2W Metal film		
SFR5	87-021-514-01	Semi-fixed resistor, 200kΩ-B	≪ Resistor ≫			≪ Resistor ≫			≪ Resistor ≫			270Ω 2W Metal film		
J4,5,6	82-493-608-01	Jack plate ass'y (AUX/EXT TAPE, FM 300Ω, AM EXT ANT)	≪ Resistor ≫			≪ Resistor ≫			≪ Resistor ≫			270Ω 2W Metal film		
S1,2	87-031-470-01	Push switch (AFC, MUTING)	≪ Resistor ≫			≪ Resistor ≫			≪ Resistor ≫			270Ω 2W Metal film		
S3,4,5,6	82-493-640-01	Push switch (BAND SELECTOR)	≪ Resistor ≫			≪ Resistor ≫			≪ Resistor ≫			270Ω 2W Metal film		
R122	87-029-016-01	22Ω ½W Fuse resistor	≪ Resistor ≫			≪ Resistor ≫			≪ Resistor ≫			270Ω 2W Metal film		
C60	88-254-015-01	0.5pF Ceramic	≪ Resistor ≫			≪ Resistor ≫			≪ Resistor ≫			270Ω 2W Metal film		
C56	88-254-252-01	33pF Ceramic	≪ Resistor ≫			≪ Resistor ≫			≪ Resistor ≫			270Ω 2W Metal film		
C57	88-254-292-01	47pF Ceramic	≪ Resistor ≫			≪ Resistor ≫			≪ Resistor ≫			270Ω 2W Metal film		
C79	87-014-088-01	140pF PP	≪ Resistor ≫			≪ Resistor ≫			≪ Resistor ≫			270Ω 2W Metal film		