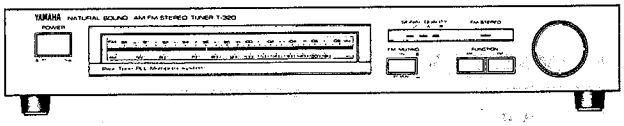
AM/FM STEREO TUNER

T-320/07

SERVICE MANUAL

FRONT PANEL

T-320



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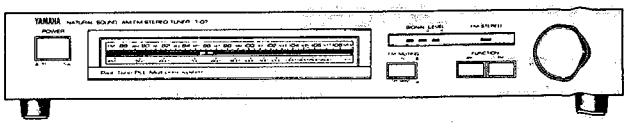
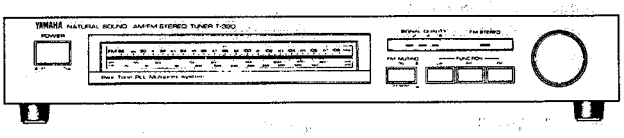
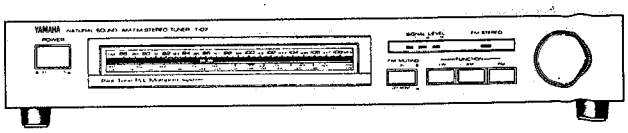


U, C, A, R, M models





G, B models

IMPORTANT NOTICE

This manual has been provided for the use of authorized Yamaha Retailers and their service personnel. It has been assumed that basic service procedures inherant to the industry, and more specifically Yamaha Products, are already known and understood by the users, and have therefore not been restated.

WARNING: Failure to follow appropriate service and safety procedures when servicing this product may result in personal injury, destruction of expensive components and failure of the product to perform as specified. For these reasons, we advise all Yamaha product owners that all service required should be performed by an authorized Yamaha Retailer or the appointed service representative.

IMPORTANT: The presentation or sale of this manual to any individual or firm does not constitute authorization, certification, recognition of any applicable technical capabilitites, or establish a principleagent relationship of any form.

The data provided is believed to be accurate and applicable to the unit/s indicated on the cover. The research, engineering, and service departments of Yamaha are continually striving to improve Yamaha products. Modifications are, therefore, inevitable and changes in specification are subject to change without notice or obligation to retrofit. Should any discrepancy appear to exist, please contact the distributor's Service Division.

WARNING: Static discharges can destroy expensive components. Discharge any static electricity your body may have accumulated by grounding yourself to the ground buss in the unit (heavy gauge black wires connect to this buss).

IMPORTANT: Turn the unit OFF during disassembly and parts replacement. Recheck all work before you apply power to the unit.

CONTENTS

004578

SINCE 1887 YAMAHA

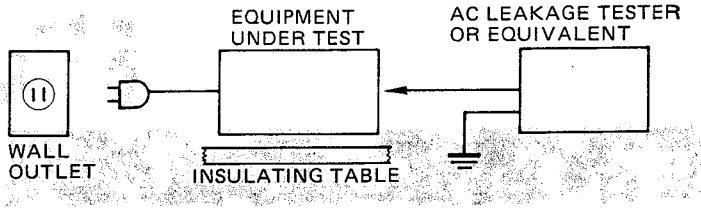
NIPPON GAKKI CO., LTD. HAMAMATSU, JAPAN

2.6K-822 Printed in Japan 84.10

■ TO SERVICE PERSONNEL

1. Critical Components Information.
   Components having special characteristics are marked ⚠ and must be replaced with parts having specifications equal to those originally installed.
2. Leakage Current Measurement (For 120V Model Only).
   When service has been completed, it is imperative that you verify that all exposed conductive surfaces are properly insulated from supply circuits.

- Meter impedance should be equivalent to 1500 ohm shunted by 0.15μF.
- Leakage current must not exceed 0.5mA.
- Be sure to test for leakage with the AC plug in both polarities.



■ SPECIFICATIONS

■ FM SECTION

Tuning Range	87.6 to 108.0 MHz
50 dB Quieting Sensitivity	
Mono	3.1μV (15.1 dBf)
Stereo	42μV (37.7 dBf)
Usable Sensitivity	
IHF Mono 75Ω	0.8μV (9.3 dBf)
300Ω	1.6μV (9.3 dBf)
DIN Mono (S/N 26 dB)	1.2μV (G)
DIN Stereo (S/N 46 dB)	50μV (G)
Image Response Ratio	
(98 MHz)	40 dB
IF Response Ratio	
(98 MHz)	100 dB
Spurious Response Ratio	
(98 MHz)	80 dB
AM Suppression Ratio	
(IHF)	55 dB
Capture Ratio	
(IHF)	1.5 dB
Alternate Channel	85 dB
Selectivity (two signals)	70 dB (G)(A)(B)
Signal to Noise Ratio	
Mono	81 dB
Stereo	76 dB
(DIN-Unweighted)	
Mono	75 dB (G)
Stereo	70 dB (G)
Harmonic Distortion	
Mono 1 kHz	0.15%
Stereo 1 kHz	0.3%
Stereo Separation	
1 kHz	40 dB
Frequency Response	
50 Hz to 10 kHz	0 ± 0.5 dB
Subcarrier Product Ratio	35 dB
Muting Threshold	10μV (25.2 dBf)
Meter Saturation Level	100μV (45.2 dBf)

■ AM SECTION

Tuning Range	525 to 1605 kHz
Usable Sensitivity (IHF)	10μV
Selectivity	24 dB
Signal to Noise Ratio	50 dB
Image Response Ratio	40 dB
Spurious Response Ratio	Better than 50 dB
Distortion	0.5%

■ LW SECTION (G)(B) models only

Tuning Range	150 to 350 kHz
Usable Sensitivity (IHF)	10μV
Selectivity	32 dB
Signal to Noise Ratio	50 dB
Image Response Ratio	30 dB
Spurious Response Ratio	Better than 45 dB
Distortion (400 Hz)	0.5%

■ AUDIO SECTION

Output Level/Impedance	
FM (100% mod. 1 kHz)	500mV/2.0kΩ, 700mV/2.0kΩ(G)
AM (30% mod. 400 Hz)	150mV/2.0kΩ

■ GENERAL

Power Supply	
U.S. & Canadian Models	120V, 60 Hz
General & South African Models	110 – 130V/220 – 240V 50/60 Hz
European Models	220V, 50 Hz
British & Australian Models	240V, 50 Hz
Power Consumption	8 W
Dimensions (W x H x D)	435 x 72 x 229 mm (17-1/8 x 2-7/8 x 11-3/4")
Weight	3.2 kg (7.1 lbs.)

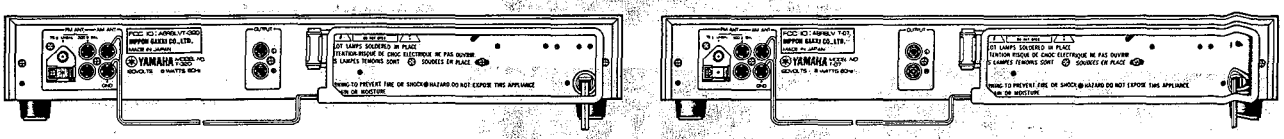
(U) ..... *U.S.A. model*
(C) ..... *Canadian model*
(A) ..... *Australian model*
(G) ..... *European model*
(B) ..... *British model*
(R) ..... *General model*
(M) ..... *South African model*

Specifications subject to change without notice.

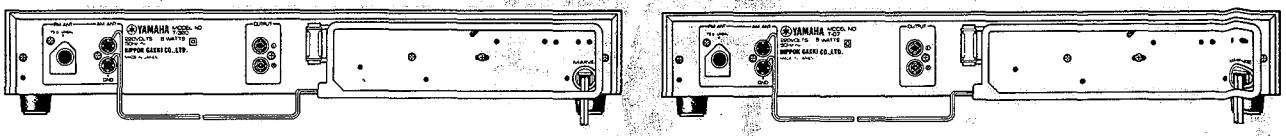
REAR PANEL

T-320 T-07

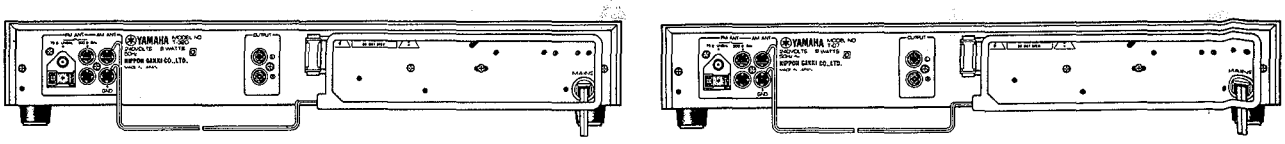
▼ U.S.A. & Canadian models



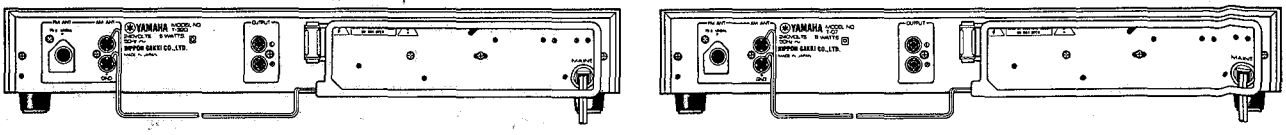
▼ Europian model



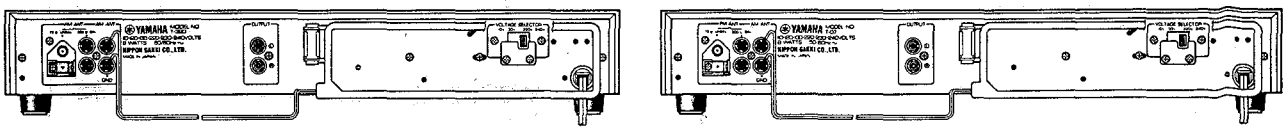
▼ Australian model



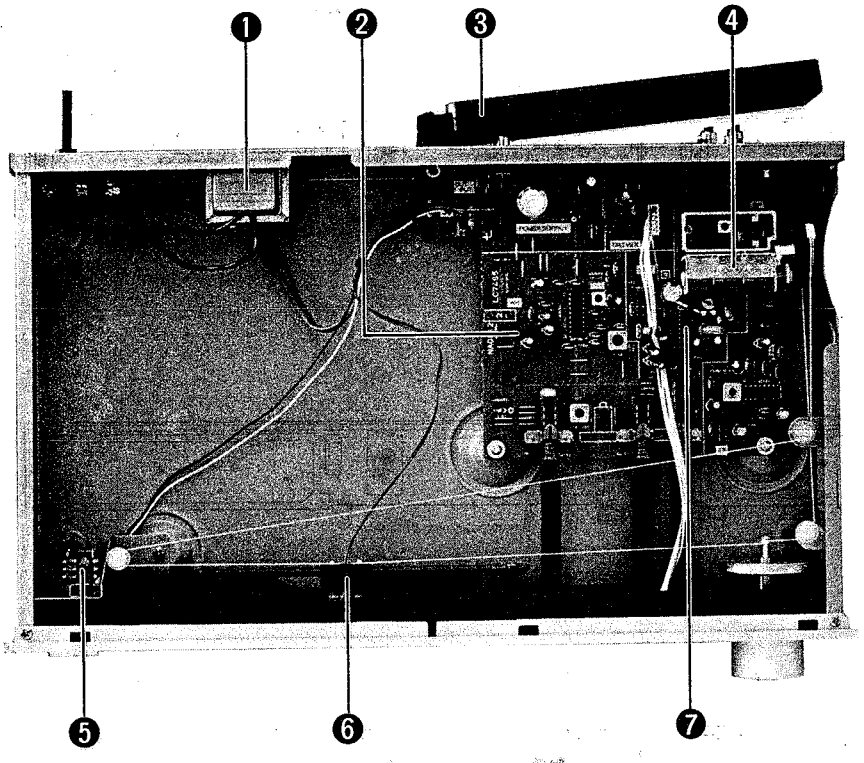
▼ British model



▼ General model



■ INTERNAL VIEW



❶ POWER TRANSFORMER
U.S.A. & Canadian models : GA66280
European model : GA66290
British & Australian models : GA66310
General model : GA66300
❷ TUNER CIRCUIT BOARD
❸ AM LOOP ANTENNA
❹ RF FRONT END
❺ POWER SWITCH
❻ DIAL POINTER UNIT
❼ MPX IC (μPC1235C : iG05420)

■ DISASSEMBLY PROCEDURES

1. Top cover removal

Remove screws ① through ④ in fig. 1 and remove the top cover.

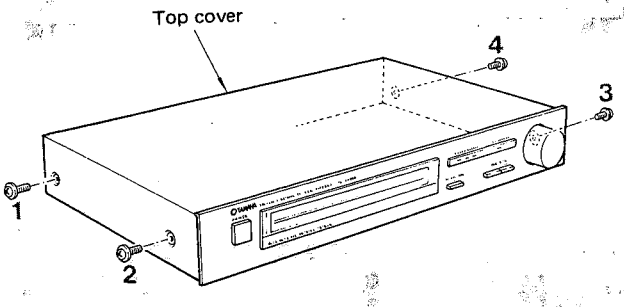


Fig. 1

2. Front panel ass'y removal

a. Remove the top cover.
b. Remove the tuning knob by pulling out.
c. Apply adhesive tape to the place as shown in fig. 2 so that the dial thread doesn't get out of place.
* Because the sub chassis unit is attached to the front panel side, and when the front panel is detached from it, the dial string is loosend.

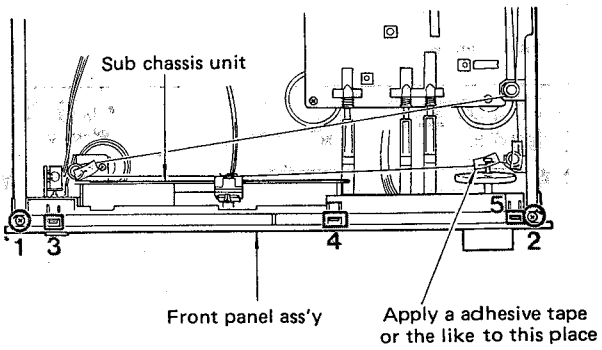


Fig. 2

d. Remove screws ① and ② in both fig. 2 and fig. 3.
*The sub chassis unit is still attached to the panel in this state, so be carefull that the dial thread does not get out of place.
e. Remove hooks ③ through ⑤ in both fig. 2 and fig. 3, and then remove the front panel ass'y.

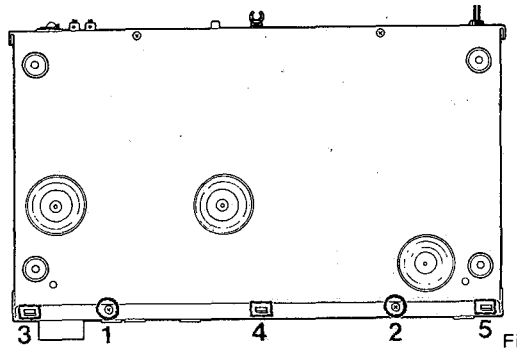


Fig. 3

3. Replacement of parts on the tuner c. board

a. Apply adhesive tape to the pulley as shown in fig. 4 so that the dial string will not slip from the pulley.
b. Remove three rods as shown in fig. 4.
c. Remove screws ① through ③ in fig. 5.
d. Remove screws ① and ② in fig. 4 and turn the tuner c. board upside down, then replace parts.
*At this time, it is necessary detach the string at pulley A as shown in fig. 4.

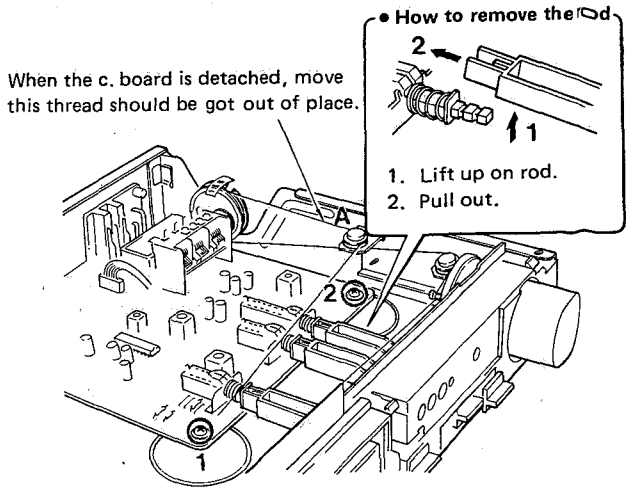


Fig. 4

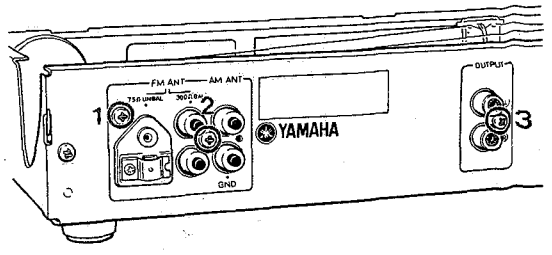
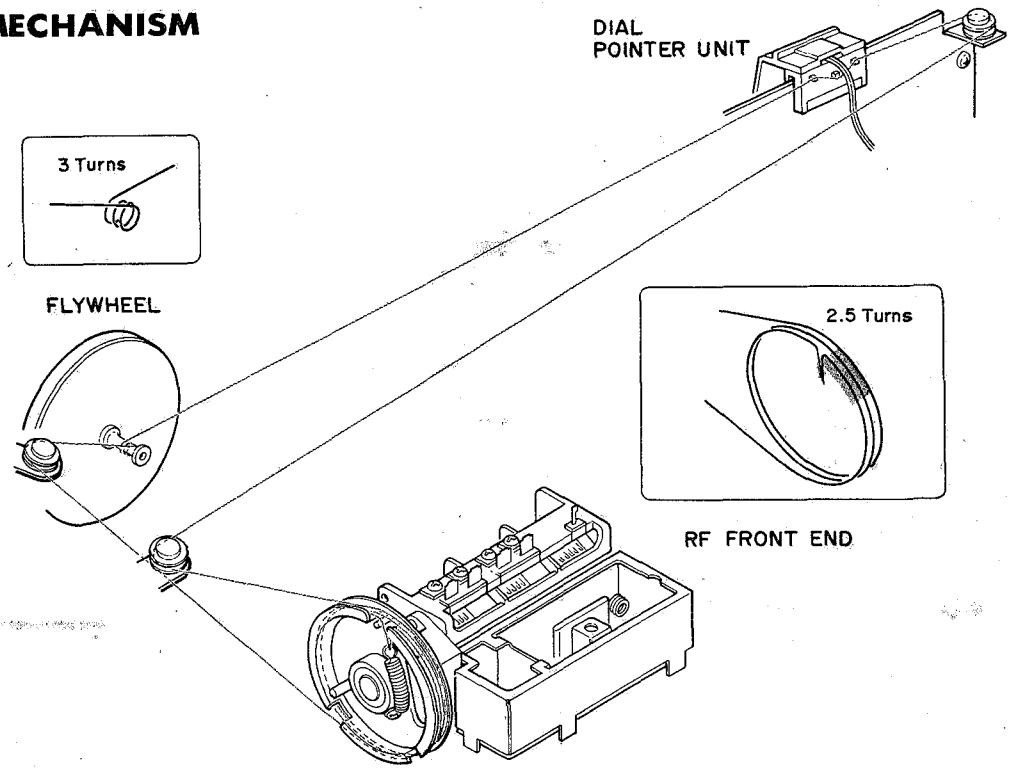


Fig. 5

• After completing service, check the dial pointer operation and tracking.

■DIAL MECHANISM



■ ADJUSTMENTS

Note 1) After the power switch is pushed on, wait for 5 minutes before measuring, to be sure of the most stable operation.

Note 2) Adjust the trimmer tuning it gradually from its loosened state, for adjustments tend to become unstable when the trimmers are tightened up.

Note 3) Adjust the OSC coil and IFT with a nonferrous screw driver.

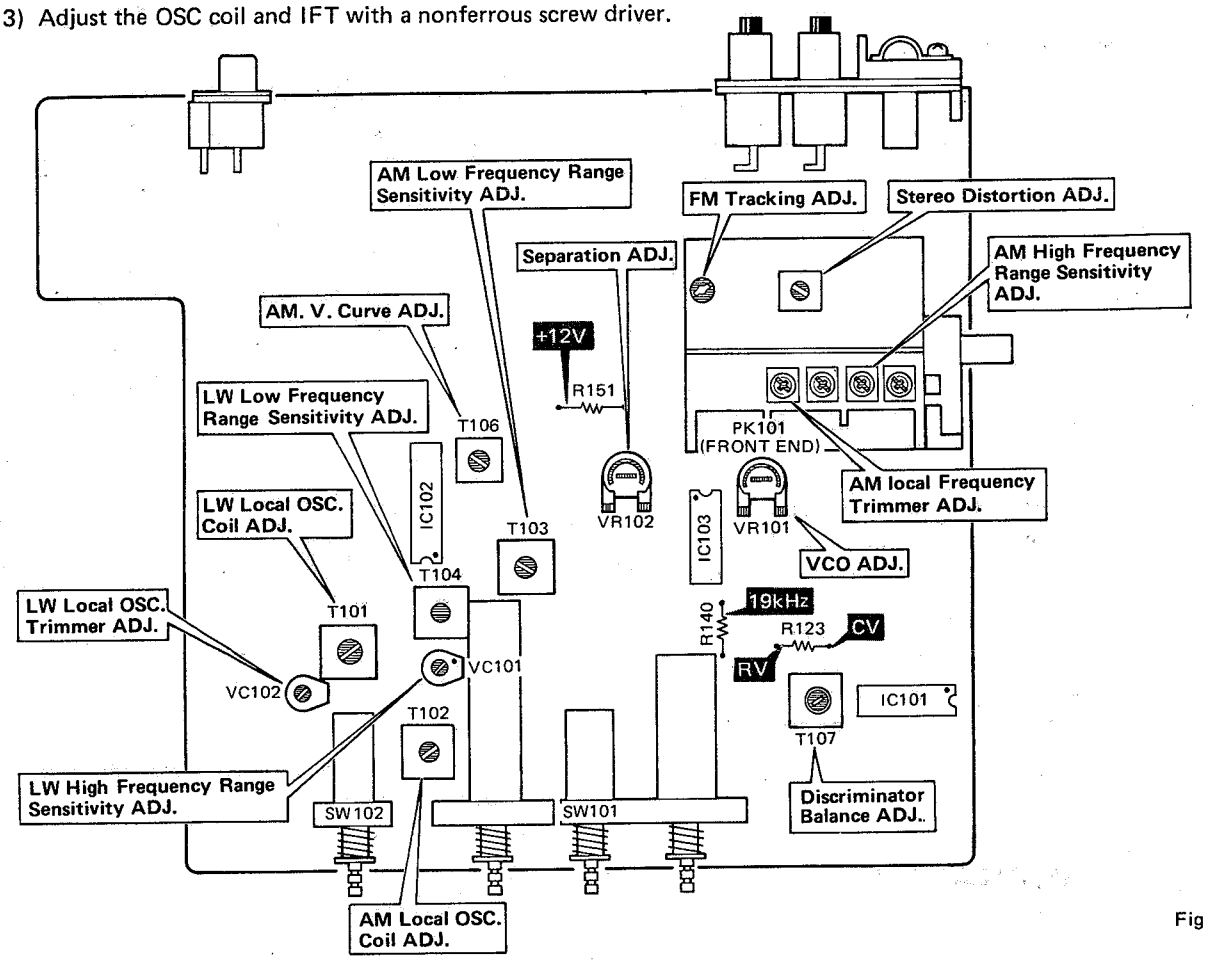


Fig. 6

Step 2, 4 and 6 FM TRACKING, DISCRIMINATOR BALANCE AND VCO ADJUSTMENTS.

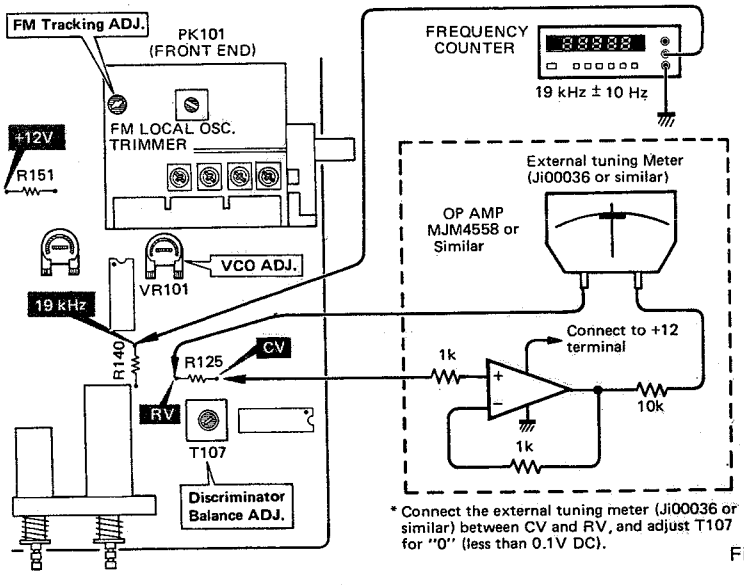


Fig. 7

ALIGNING POINTER

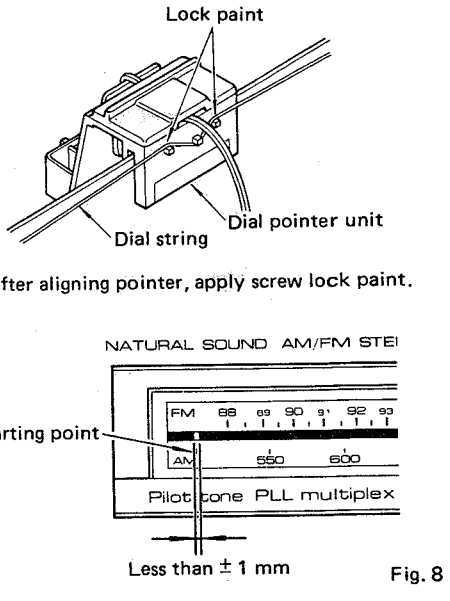


Fig. 8

<FM TUNER SECTION>

(1) Set the switches to the following positions.
FUNCTION . . . . . FM
FM MUTING . . . . ON
(2) During adjustments, use a low pass filter.

●Measuring instrument abbreviations.
FM SG: FM signal generator
OSC: Oscilloscope
DIST. M: Distortion meter
FC: Frequency counter

Step	Adjustment item	Terminal to be connected	Instrument required	Adjustment location	Adjustment method	Rating	Remarks
1	Pointer			Tuning knob pointer	Rotate the tuning knob and align pointer with the starting point of the dial scale.	Less than ± 1 mm.	
2	Tracking 1	FM antenna terminals 300Ω balanced	FM SG 104 MHz ± 1 kHz External tuning meter	Tuning knob Local oscillator trimmer	Rotate the tuning knob and align pointer with 104 MHz on dial scale. Rotate the local oscillator trimmer so that External tuning meter is at center.	Less than ± 1 mm.	Refer to Fig. 7.
3	Tracking 2	Same as step 2	FM SG 92 ~ 104 MHz External tuning meter	Local oscillator trimmer	Adjust so that it comes within specifications on right.	92 ~ 104 MHz less ± 2mm	Adjust only when pointer deviates with step 2.
4	Discriminator balance	Same as step 2.	Same as step 3.	T107 of discriminator coil	Move core until External tuning meter pointer deflects to 0 with noise at detuned point near 98 MHz.		Put out the lights of signal level and stereo indicators.
5	Tuning point setting	Same as step 2.	FM SG 98 MHz ± 1 kHz 70 dBμ (75.2 dBf) External tuning meter	Tuning knob	Adjust knob so that External tuning meter is at center.		All of the signal level indicators light up.
6	VCO	FM antenna terminals 19 kHz T.P.	FM SG 98 MHz ± 1 kHz 70 dBμ (75.2 dBf) Non Modulation CW	VCO VR101	Set to 19 kHz. Refer to Fig. 7 .	19 kHz ± 20 Hz	After adjusting remove the frequency counter.
7	Stereo distortion	FM antenna terminals 300Ω balanced Output Lch only	FM SG 98 MHz ± 1 kHz 70 dBμ (75.2 dBf) Stereo 1kHz 100% MOD. OSC DIST. M	FM IF coil	Reduce distortion to minimum.	Less than −34 dB.	Stereo indicator lights up.
8	Separation	FM antenna terminals 300Ω balanced Output Lch and Rch.	FM SG 98 MHz ± 1 kHz 70 dBμ (75.2 dBf) Stereo L, R 1 kHz 100% MOD. OSC	VR102 (G model only)	R→L L→R	More than 28 dB.	
9	Monaural distortion (Confirmation)	Same as step 7.	FM SG 98 MHz ± 1 kHz 70 dBμ (75.2 dBf) Monaural 1kHz 100% MOD. DIST. M			Less than −44 dB.	

Note: X dBμ = X + 5.2 dBf

*TERMS AND SYMBOLS
CV : Center voltage
RV : Reference voltage

<AM TUNER SECTION>

(1) Proceed with the AM section adjustments after having finished the FM section adjustments.
(2) Connect the AM dumny antenna the AM ANT terminals.

AM ADJUSTMENT
Set the switches to the following positions.
Function . . . . . AM

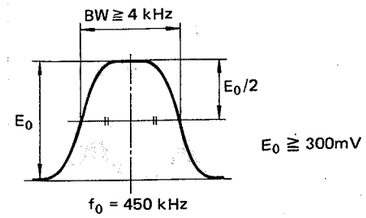


Fig. 9

Step	Adjustment item	Terminals to be connected	Instrument required	Adjustment location	Adjustment method	Remarks
1	Local oscillator coil	Output	AM SG 600 kHz ± 0.1 kHz 60 dBμ	Tuning knob T102	Align pointer with 600 kHz using tuning knob, rotate coil core (T102) and adjust so that detector output is at maximum.	
2	Low frequency range sensitivity	Same as step 1.	Same as step 1 .	T103	Adjust so that detctor output is at maximum at the same tuning point as under step 1.	
3	Local oscillator trimmer	Same as step 1.	AM SG 1450 kHz ± 0.1 kHz 60 dBμ	Tuning knob Front end local oscillator trimmer	Align pointer with 1450 kHz using tuning knob, rotate trimmer, and adjust so that detector output is at maximum.	
4	High frequency range sensitivity	Same as step 1.	Same as step 3.	Front end AM ANT trimmer	Adjust so that detector output is at maximum at the same tuning point as under step 3.	
5	Tracking	Same as step 1.	AM SG 600 kHz / 1450 kHz } 60 dBμ	Repeat steps 1 through 4.		
6	Medium frequency (Confirmation)	Same as step 1.	AM SG 1100 kHz ± 0.1 kHz	Tuning knob		Scale deviation; less than ± 2 mm.
7	V Curve	Same as step 1. Remove dummy Antenna	AM SG 450 kHz ± 0.1 kHz 40 dBμ	T106	Adjust so that when V curve output is maximum, the right and left are nearly the same. Refer to Fig. 9.	Output: More than 300 mV. −6 dB band width: More than 4 kHz. Tuned frequency: 450 kHz ± 10 kHz.

LW ADJUSTMENT . . . . . (G) (B) models only

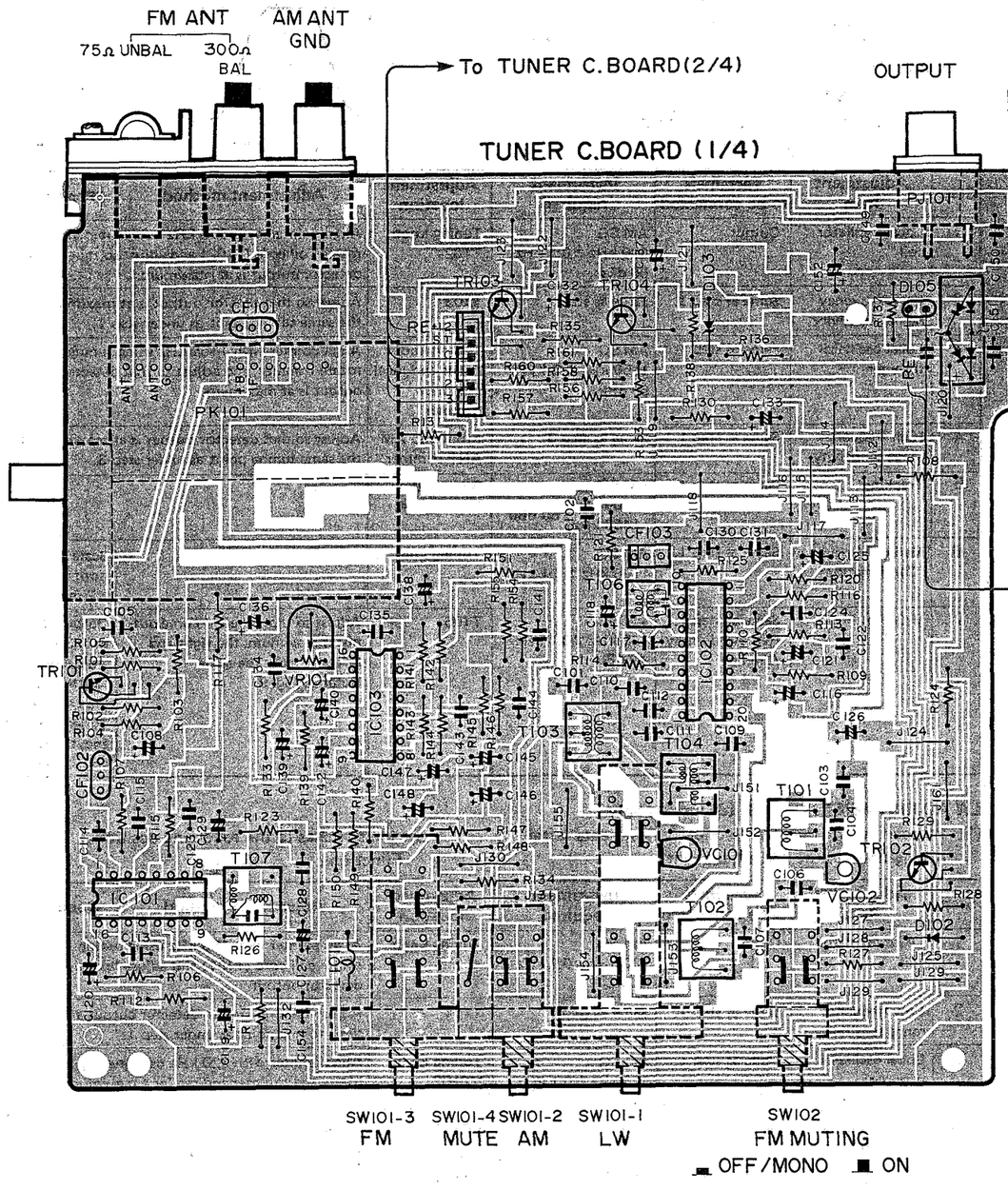
(1) Proceed with the LW section adjustments after having finished the AM adjustment.

Set the switches to the following positions.
Function . . . . . LW

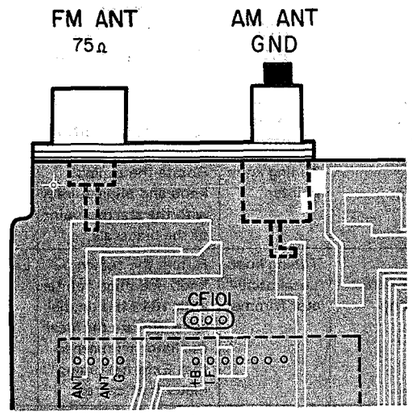
Step	Adjustment item	Terminals to be connected	Instrument required	Adjustment location	Adjustment method	Remarks
1	Local oscillator coil	Output	AM SG 160 kHz ± 0.1 kHz 60 dBμ	Tuning knob	Align pointer with 160 kHz using tuning knob, rotate coil core (T101) and adjust for a maximum detector output.	
2	Low frequency range sensitivity	Same as step 1.	Same as step 1.	T104	Adjust for a maximum detector output at the same tuning point as under step 1.	
3	Local oscillator trimmer	Same as step 1.	AM SG 320 kHz ± 0.1 kHz 60 dBμ	Tuning knob VC102	Align pointer with 320 kHz using tuning knob, rotate the trimmer and set for a maximum detector output.	
4	High frequency sensitivity	Same as step 1.	Same as step 3.	VC101	Adjust for a maximum detector output at the same tuning point as under step 3.	
5	Tracking	Same as step 1.	AM SG 160 kHz / 320 kHz } 60 dBμ	Repeat steps 1 through 4.		
6	Medium frequency (Confirmation)	Same as step 1.	AM SG 240 kHz ± 0.1 kHz	Tuning knob		Scale deviation; less than 2 mm.

■ PRINTED CIRCUIT BOARD (Pattern side)

• R, U, C, A, B, M models



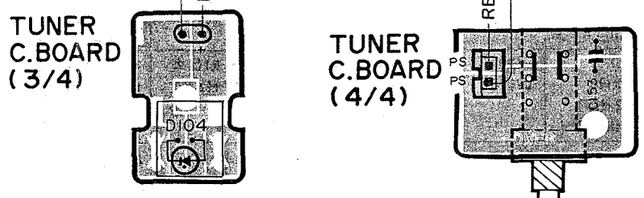
B model only

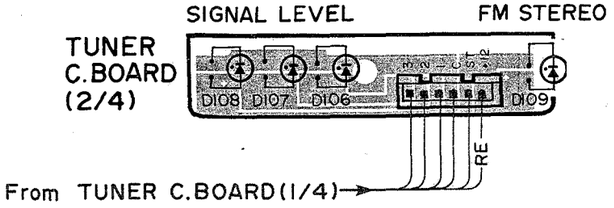


	R,U,C,M	B	A
C102	2P		2P
C103		180P	
C104		56P/500	
C133		4.7/50	
R129		100k	
R130		100	
R131		47k	
T101		GE10063	
T104		GE90091 or GE90093	
Tr102		Set	
VC101,102		20P	
J151~155	Set		Set
J161		Set	

●WIRE COLOR ABBREVIATIONS

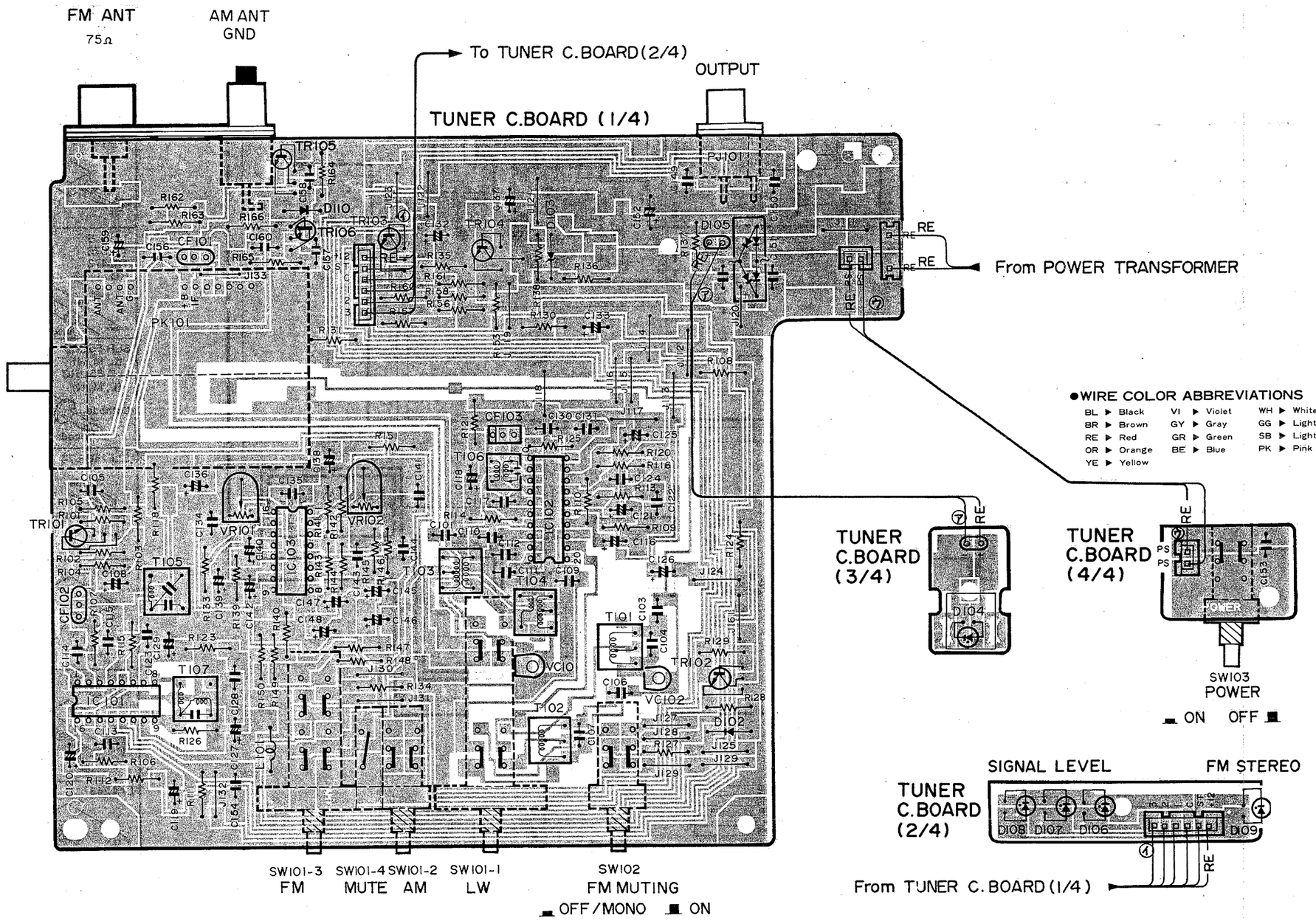
BL ▶ Black	VI ▶ Violet	WH ▶ White
BR ▶ Brown	GY ▶ Gray	GG ▶ Light Green
RE ▶ Red	GR ▶ Green	SB ▶ Light Blue
OR ▶ Orange	BE ▶ Blue	PK ▶ Pink
YE ▶ Yellow		





■ PRINTED CIRCUIT BOARD (Pattern side)

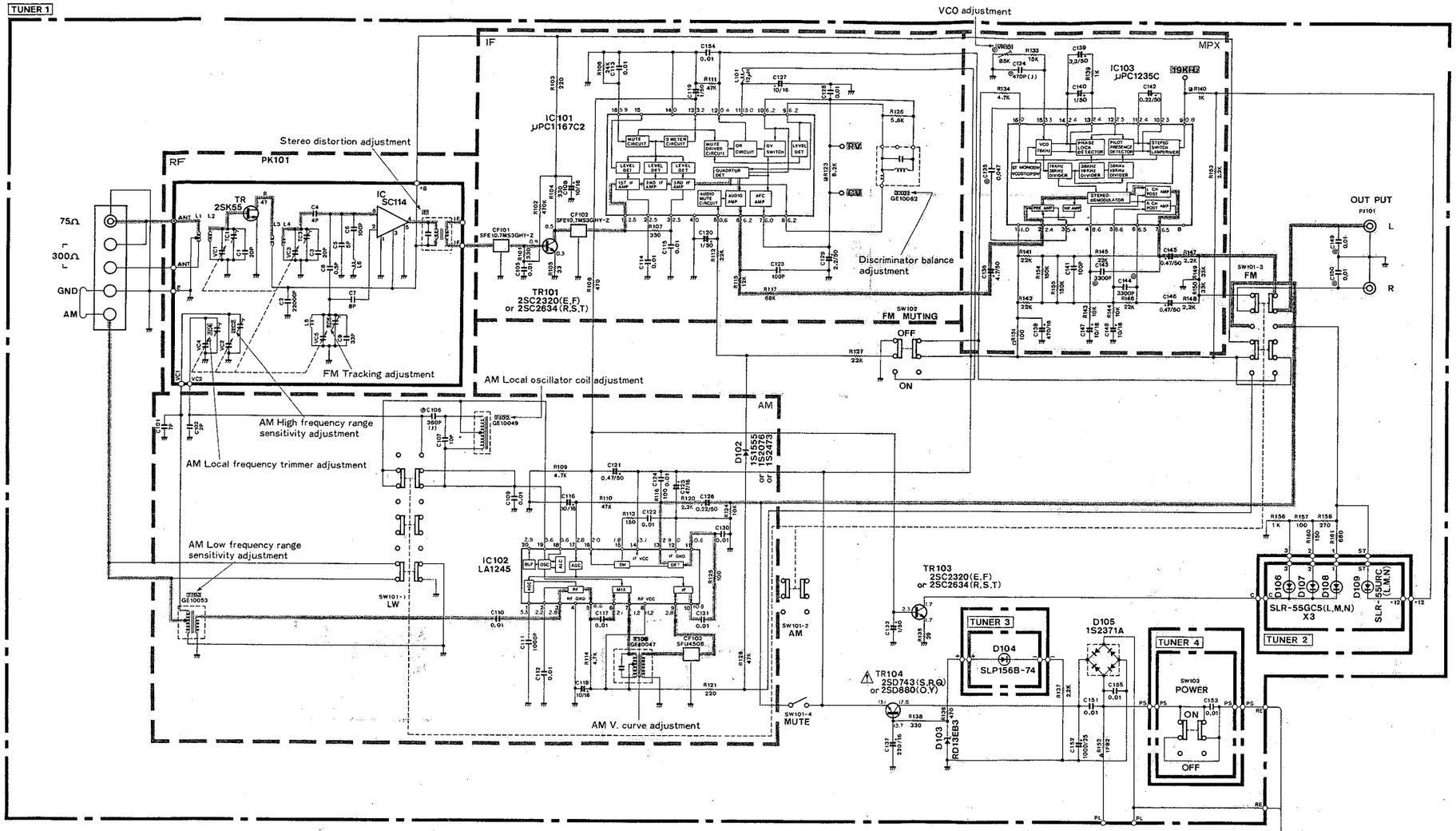
• G model



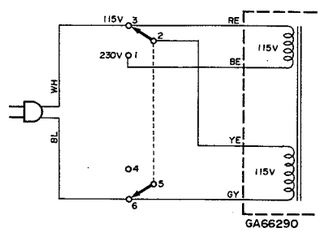
●WIRE COLOR ABBREVIATIONS

BL ▶ Black	VI ▶ Violet	WH ▶ White
BR ▶ Brown	GY ▶ Gray	GG ▶ Light Green
RE ▶ Red	GR ▶ Green	SB ▶ Light Blue
OR ▶ Orange	BE ▶ Blue	PK ▶ Pink
YE ▶ Yellow		

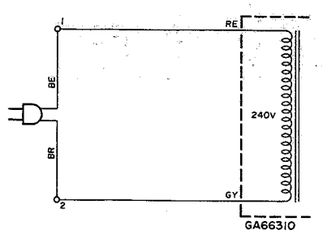
■ SCHEMATIC DIAGRAM • U, C, A, R, M models



General & South African models



Australian model



This schematic diagram is for U.S. and Canadian models. The following parts and values differ from each model, so refer to the corresponding column.

	M, R, U, C	A
C143, 144	3300p	2200p
C149, 150	0.01	8200p

RESISTOR

REMARKS	PARTS NAME
NO MARK	CARBON FILM RESISTOR
△	METAL OXIDE FILM RESISTOR
▲	METAL FILM RESISTOR
▪	METAL PLATE RESISTOR
◘	FIAME PROOF CARBON FILM RESISTOR
◎	SEMI VARIABLE RESISTOR

CAPACITOR

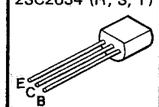
REMARKS	PARTS NAME	
NO MARK	ELECTROLYTIC CAPACITOR	⇕
NO MARK	CERAMIC CAPACITOR	⇕
◎	POLYESTEL FILM CAPACITOR	⇕
◉	POLYPROPYLENE CAPACITOR	⇕

■WARNING

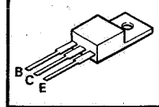
UL Standard 1270 requires that components marked ⚠ be replaced with parts having specifications equal to those originally installed.

PIN CONNECTION DIAGRAM OF TRANSISTORS, DIODES AND ICS.

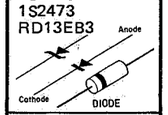
2SC2320 (E, F)
2SC2634 (R, S, T)



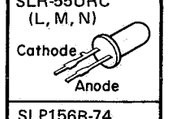
2SD743 (S, R, Q)
2SD880 (O, Y)



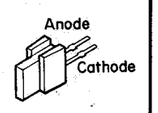
1S1555
1S2076
1S2473
RD13EB3



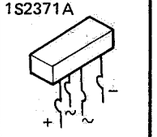
SLR-55GC5 (L, M, N)
SLR-55URC (L, M, N)



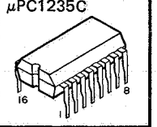
SLP156B-74



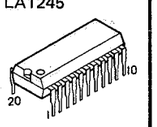
1S2371A



μPC1167C2
μPC1235C



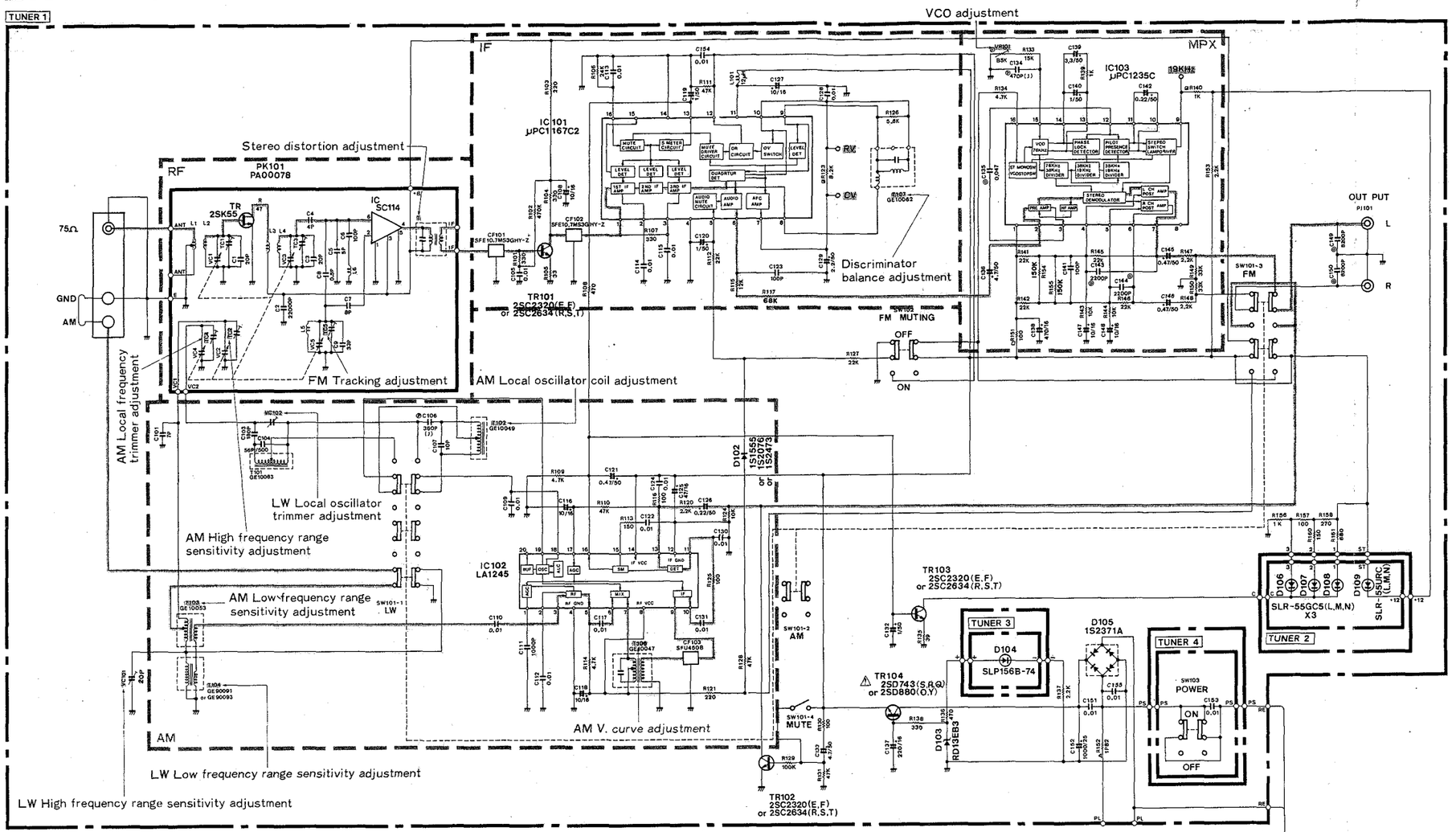
LA1245



** All voltages measured with a 10MΩ/V DC electric volt meter, under no-signal condition.*
FUNCTION → FM
FM MUTING → ON
The voltages are measured in FM reception mode. Only the voltage at IC102 are in AM receiption mode.
** Schematic Diagram is subject to change without notice.*

SCHEMATIC DIAGRAM

• B model



RESISTOR

REMARKS	PARTS NAME
NO MARK	CARBON FILM RESISTOR
△	METAL OXIDE FILM RESISTOR
▲	METAL FILM RESISTOR
●	METAL PLATE RESISTOR
◘	FLAME PROOF CARBON FILM RESISTOR
⊘	SEMI VARIABLE RESISTOR

CAPACITOR

REMARKS	PARTS NAME	
NO MARK	ELECTROLYTIC CAPACITOR	#
NO MARK	CERAMIC CAPACITOR	
◎	POLYESTEL FILM CAPACITOR	##
⊕	POLYPROPYLENE CAPACITOR	

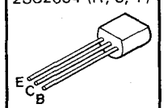
■ WARNING

UL Standard 1270 requires that components marked ⚠ be replaced with parts having specifications equal to those originally installed.

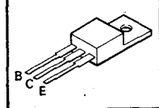
** Schematic diagram is subject to change without notice.*

PIN CONNECTION DIAGRAM OF TRANSISTORS, DIODES AND ICS.

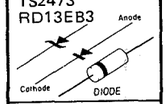
2SC2320 (E, F)
2SC2634 (R, S, T)



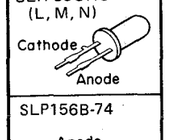
2SD743 (S, R, Q)
2SD880 (O, Y)



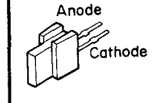
1S1555
1S2076
1S2473
RD13EB3



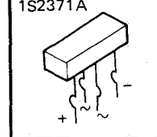
SLR-55GC5
(L, M, N)
SLR-55URC
(L, M, N)



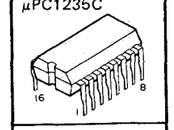
SLP156B-74



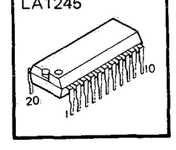
1S2371A



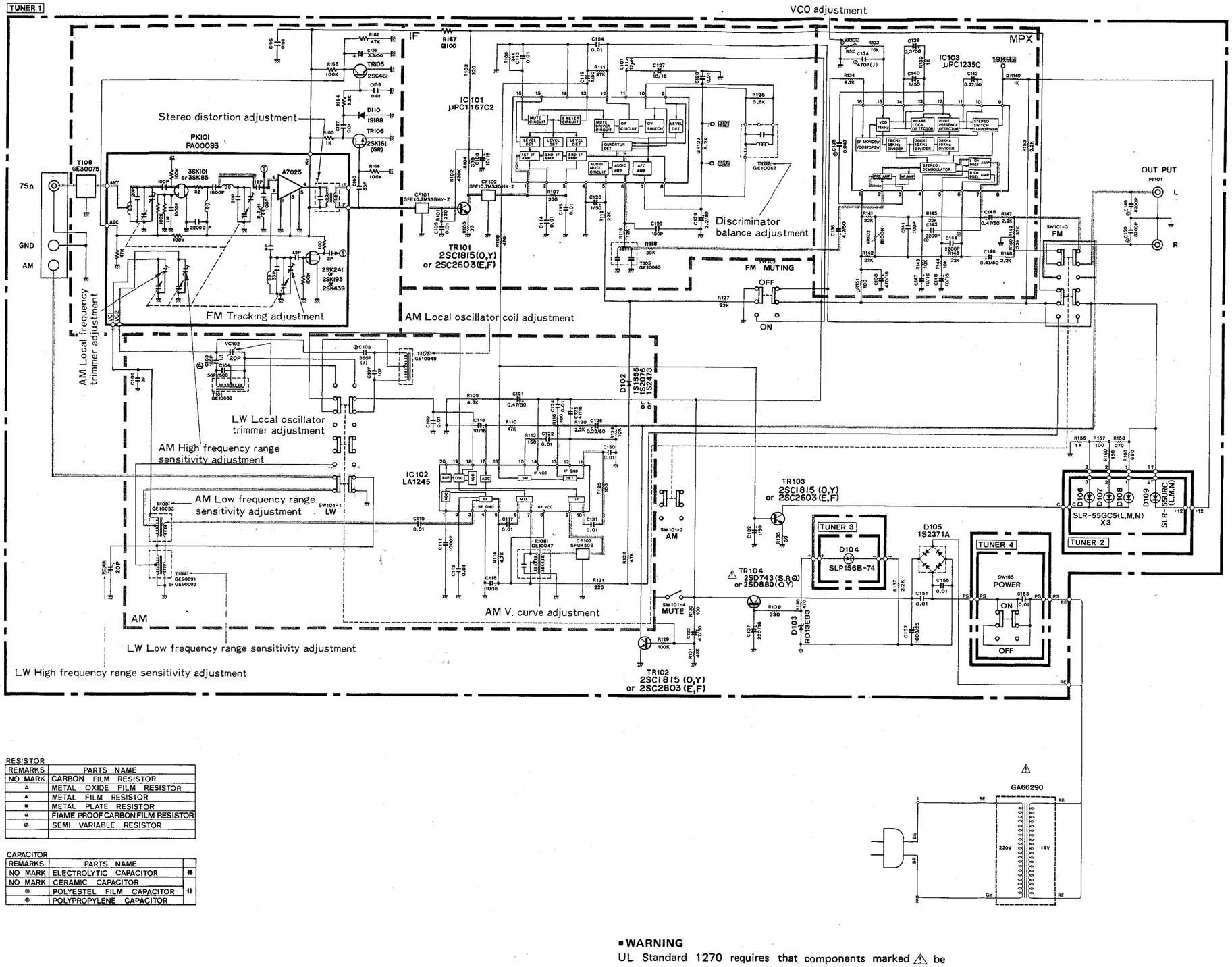
μPC1167C2
μPC1235C



LA1245

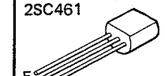


■SCHEMATIC DIAGRAM • G model

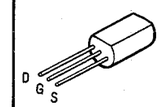


PIN CONNECTION DIAGRAM OF TRANSISTORS, DIODES AND ICS

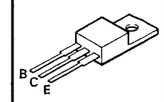
2SC1815 (O, Y)
2SC2603 (E, F)
2SC461



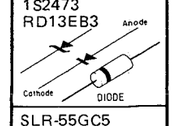
2SK161 (G, K)



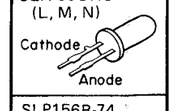
2SD743 (S, R, Q)
2SD880 (O, Y)



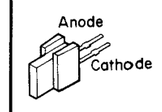
1S1555
1S2076
1S2473
RD13EB3



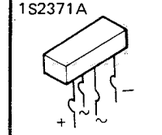
SLR-55GC5 (L, M, N)
SLR-55URC (L, M, N)



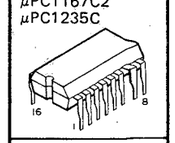
SLP156B-74



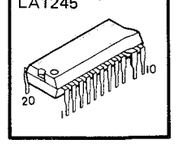
1S2371A



μPC1167C2
μPC1235C



LA1245



RESISTOR

REMARKS	PARTS NAME
NO MARK	CARBON FILM RESISTOR
△	METAL OXIDE FILM RESISTOR
▲	METAL FILM RESISTOR
■	METAL PLATE RESISTOR
◪	FIAME PROOF CARBON FILM RESISTOR
⊘	SEMI VARIABLE RESISTOR

CAPACITOR

REMARKS	PARTS NAME	
NO MARK	ELECTROLYTIC CAPACITOR	⋕
NO MARK	CERAMIC CAPACITOR	
◎	POLYESTEL FILM CAPACITOR	⫴
⊘	POLYPROPYLENE CAPACITOR	

■ **WARNING**

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** Schematic diagram is subject to change without notice.*

PARTS LIST

■ELECTRICAL PARTS

■WARNING
Components having special characteristics are marked ⚠ and must be replaced with parts having specifications equal to those originally installed.
●*Carbon resistors of this stereo tuner are 1/6W. There is no discription about them in this parts list. Use the "Part No." HF85○○○○ or equivalent.*

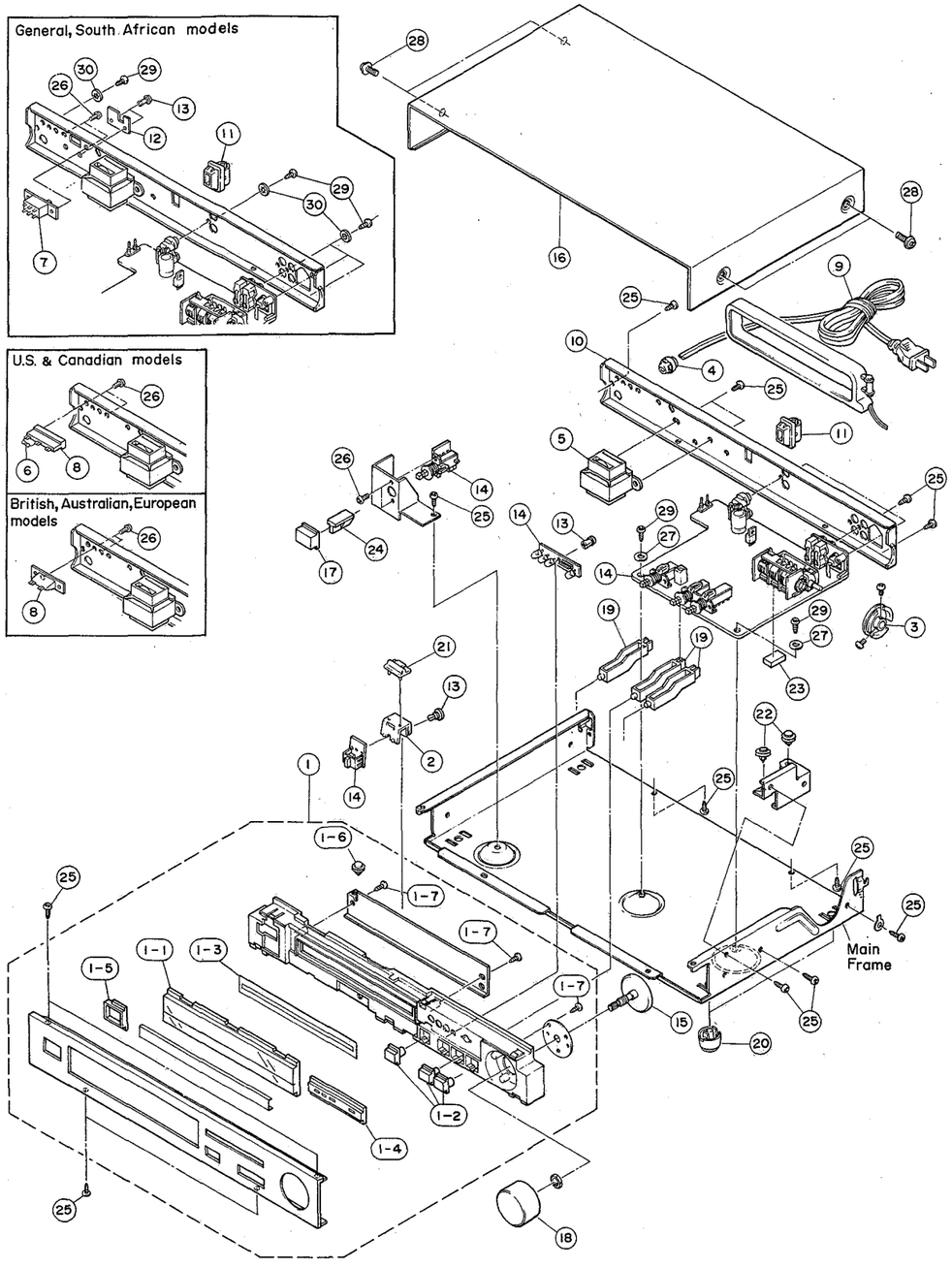
Ref. No.	Part No.	Description		部品名	Remarks	Common Model	Markets	ランク
	NA 08 12 00	Tuner Circuit Board		チューナーシート		T-300	J	
	NA 08 12 20	〃		〃		T-300	R,U,C	
	NA 08 12 30	〃		〃		T-300	A	
	NA 08 11 70	〃		〃		T-300	B	
	NA 08 21 40	〃		〃		T-300	M	
※	NA 08 64 60	〃		〃			G	
	FG 41 07 00	Ceramic Cap	7pF 50V	セラコン	C101			
	FG 40 02 00	〃	2pF 50V	〃	C102		J,R,U,A, C,M	
	FG 41 13 30	〃	33pF 50V	〃	C160		G	
	FG 41 21 00	〃	100pF 50V	〃	C123,141			
	FG 41 31 00	〃	1000pF 50V	〃	C111			
	FG 44 41 00	〃	0.01μF 50V	〃	C105,109,110,112~115,117,122 124,128,130,131,151,153~155			
	FG 44 41 00	〃	0.01μF 50V	〃	C156~158		G	
	FT 55 21 80	Plypropylen Film Cap	180pF 50V	ポリプロコン	C103		B,G	
	FT 55 23 60	〃	360pF 50V	〃	C106			
	FT 65 24 70	〃	470pF 100V	〃	C134			
	FU 35 15 60	Mica Cap	56pF 500V	マイカコン	C104		G,B	
	FZ 00 39 60	Ceramic Cap	10pF 50V	セラコン	C107			
	UA 25 32 20	Mylar Cap	2200pF 50V	マイラーコン	C143,144		J,A,G,B	
	UA 25 33 30	〃	3300pF 50V	〃	〃		R,U,C,M	
	UA 25 38 20	〃	8200pF 50V	〃	C149,150		J,A,G,B	
	UA 25 41 00	〃	0.01μF 50V	〃	〃		R,U,C,M	
	UA 25 44 70	〃	0.047μF 50V	〃	C135			
	UW 56 52 20	Electrolytic Cap	0.22μF 50V	ケミコン	C126,142			
	UW 93 71 00	〃	10μF 16V	〃	C108,116,118,127, 147,148			
	UW 93 74 70	〃	47μF 16V	〃	C125			
	UW 93 82 20	〃	220μF 16V	〃	C137			
	UW 93 84 70	〃	470μF 16V	〃	C138			
	UW 94 91 00	〃	1000μF 25V	〃	C152			
	UW 96 54 70	〃	0.47μF 50V	〃	C121,145,146			
	UW 96 61 00	〃	1μF 50V	〃	C119,120,132,140			
	UW 96 62 20	〃	2.2μF 50V	〃	C129			
	UW 96 63 30	〃	3.3μF 50V	〃	C139			
	UW 96 64 70	〃	4.7μF 50V	〃	C136			
	UW 96 64 70	〃	4.7μF 50V	〃	C133		G,B	
	GE 10 05 30	AM ANT Coil		AM ANT コイル	T103			
	GE 10 04 70	AM IF Coil	GE10047	AM IF コイル	T106			
	GE 10 04 90	AM OSC Coil		AM OSC コイル	T102			
	GE 10 06 20	Quadratua Coil,FM		FMクオドレチャーコイル	T107			
	GE 10 06 30	LW OSC Coil	GE10067	LW OSC コイル	T101		G,B	
	GE 20 04 00	Anti Birdie Filter	GE20040	アンチバーディーフィルター	T105		G	
※	GE 30 07 50	RF Bandpass Filter	GE30075	RF バンドパスフィルター	T108		G	
	GE 90 09 10	LW ANT Coil	GE90091	LW ANT コイル	T104	T-500	G,B	
	GE 90 09 30	〃	GE90093	〃	〃 (Interchangeable)	T-500	G,B	
	GE 30 05 00	Indactor	12μH	インダクター	L101			
	GG 00 05 90	Ceramic Filter,AM	SFU450B	AMセラミックフィルター	CF103			
	GG 00 06 20	Ceramic Filter,FM	SFE10.7MS3GHY-M	FMセラミックフィルター	CF101,102			
	FY 00 01 50	Variable Cap	20P	トリマーコン	VC101,102		G	
	HL 71 48 20	Metal Oxide Film Resistor	82Ω 1P	酸金抵抗	R152		J,R,U,C, A,B,M	

※New Parts（新規部品）

Ref. No.	Part No.	Description		部品名	Remarks	Common Model	Markets	ランク
	HV 45 51 00	Flame Proof Carbon Resistor	100Ω RDF25S	不燃化カーボン抵抗	R151			
	HV 45 61 00	〃	1kΩ	〃	R140			
	HV 45 68 20	〃	8.2kΩ	〃	R123			
	HT 37 00 50	Pre-Set Potentiometer	B5kΩ	半固定抵抗	VR101			
	HT 37 04 20	〃	B100kΩ	〃	VR102		G	
	iC 04 61 00	Transistor	2SC461	トランジスタ	TR105		G	
	iC 23 20 10	〃	2SC2320 (O,Y)	〃	TR101,103		R,U,C,A, B,M,J	
		〃	2SC2634 (E,F)	〃	Replaced by 2SC2663		R,U,C,A, B,M,J	
	iC 18 15 70	〃	2SC1815 (O,Y)	〃	TR101~103		G	
		〃	2SC2603 (E,F)	〃	Replaced by 2SC1815		G	
	iC 23 20 10	〃	2SC2320 (E,F)	〃	TR102		B	
		〃	2SC2634 (R,S,T)	〃	Replaced by 2SC2320		B	
	iD 07 43 20	〃	2SD743 (Q,R,S)	〃	TR104			
		〃	2SD880 (O,Y)	〃	Replaced by 2SD743			
	iE 10 41 00	FET	2SK161 (GR)	FET	TR106		G	
	iF 00 00 40	Diode	IS1555	ダイオード	D102			
	iF 00 00 50	〃	IS2076	〃	〃 (Interchangeable)			
	iF 00 06 70	〃	IS2473	〃	〃 (Interchangeable)			
	iF 00 21 70	Zener Diode	RD13EB3	ツェナーダイオード	D103			
	iF 00 19 90	LED (Green)	SLR-55GC5	LED	D106~108			
	iF 00 33 30	〃 (Red)	SLR-55URC	〃	D109			
	iF 00 37 00	〃 (Red)	SLR-55VRC	〃	D104			
	iF 00 03 30	Diode	IS188	ダイオード	D110		G	
	iH 00 09 70	Diode Bridge	IS2371A	ダイオードブリッジ	D105			
	KA 80 24 10	Push Switch		プッシュスイッチ	SW102,103			⚠
	KA 80 35 30	〃		〃	SW101		J,R,U,A, C,M	
	KA 80 35 50	〃		〃	〃		G,B	
	LB 20 23 50	Pin Jack	2P	ピンジャック	PJ101			
	PA 00 07 70	Front End Pack		フロントエンドパック	PK101	T-300	J	
	PA 00 07 80	〃		〃	〃	T-300	R,U,C,A,B	
	PA 00 07 90	〃		〃	〃	T-300	M	
※	PA 00 08 30	〃		〃	〃		G	
	LA 00 20 00	Lapping Terminal	2P P=7.5 i-Type	i型ラッピング端子板				
	LA 00 39 90	Antenna Terminal	5P	アンテナ端子板			J,R,U,A, C,M	
	LA 00 54 30	〃	3P	〃			G,B	
	AA 61 48 50	Holder,LED		LEDホルダー		T-300		

※New Parts（新規部品）

■EXPLODED VIEW



■MECHANISM PARTS

	Ref. No.	Part No.	Description		部品名	Remarks	Common Model	Markets	ランク	
※	1	NB 62 21 00	Front Panel Unit		パネルユニット	T-320 Silver		J		
※	〃	NB 62 21 10	〃		〃	〃 〃		R,U,A,C		
※	〃	NB 62 21 20	〃		〃	〃 〃		G,B		
※	〃	NB 62 21 30	〃		〃	〃 〃		M		
※	〃	NB 62 21 40	〃		〃	〃 Black		J		
※	〃	NB 62 21 50	〃		〃	〃 〃		R,U,A,C		
※	〃	NB 62 21 60	〃		〃	〃 〃		G,B		
※	〃	NB 62 21 70	〃		〃	〃 〃		M		
※	〃	NB 62 22 40	〃		〃	T-07 Silver		J		
※	〃	NB 62 22 50	〃		〃	〃 〃		R,U,A,C		
※	〃	NB 62 22 60	〃		〃	〃 〃		G,B		
※	〃	NB 62 22 70	〃		〃	〃 〃		M		
※	〃	NB 62 22 80	〃		〃	〃 Black		J		
※	〃	NB 62 22 90	〃		〃	〃 〃		R,U,A,C		
※	〃	NB 62 23 00	〃		〃	〃 〃		G,B		
※	〃	NB 62 23 10	〃		〃	〃 〃		M		
※	1-1	CB 63 49 80	Dial Scale		ダイアルスケール	T-320 Silver		R,U,A,C		
※	〃	CB 63 50 00	〃		〃	〃 〃		G,B		
※	〃	CB 63 50 20	〃		〃	〃 〃		M		
※	〃	CB 63 49 90	〃		〃	〃 Black		R,U,A,C		
※	〃	CB 63 50 10	〃		〃	〃 〃		G,B		
※	〃	CB 63 50 30	〃		〃	〃 〃		M		
※	〃	CB 63 32 80	〃		〃	T-07		R,U,A,C		
※	〃	CB 63 32 90	〃		〃	〃		G,B		
※	〃	CB 63 33 40	〃		〃	〃		M		
	1-2	CB 62 42 90	Button (L)		ボタン(L)	Silver				
	〃	CB 61 61 70	〃		〃	Black	T-05B			
※	1-3	CB 63 30 90	Filter		フィルター	T-320 Silver				
※	〃	CB 63 50 40	〃		〃	〃 Black				
※	〃	CB 63 31 00	〃		〃	T-07				
※	1-4	CB 63 30 70	Cover		カバー	T-320 Silver				
※	〃	CB 63 50 50	〃		〃	〃 Black				
※	〃	CB 63 30 80	〃		〃	T-07				
※	1-5	CB 63 29 50	Button Frame (P)		ボタン枠(P)	Silver				
※	〃	CB 63 33 00	〃		〃	Black				
	1-6	CB 09 58 50	Pully Ass'y		滑車Ass'y					
	1-7	Ei 03 00 86	Binding Head Tapping Screw	3×8 ZMC2-Y	バインドタッピングネジ	PACK				
	2	NB 61 03 60	Dial Pointer Unit		指針ユニット		T-300			
	3	NB 61 03 70	Dial Pully Ass'y		ダイアルプーリーAss'y		T-300			
	4	CB 07 27 50	Cord Stopper	SR-4N-4	コードストッパー			R,A,G,B,M		
	〃	CB 61 68 10	〃	CM-22A	〃			J,U,C		
	5	GA 66 28 00	Power Transformer		電源トランス		T-300	U,C		⚠
	〃	GA 66 29 00	〃		〃		T-300	G		⚠
	〃	GA 66 30 00	〃		〃		T-300	R,M		⚠
	〃	GA 66 31 00	〃		〃		T-300	A,B		⚠
	〃	GA 66 27 00	〃		〃		T-300	J		⚠
	6	HG 30 92 20	Carbon Resistor	2.2MΩ Y2P	カーボン抵抗			U,C		⚠
	7	KA 40 03 50	Slide Switch		スライドスイッチ			R,M		⚠
	8	LA 00 10 00	Terminal		ラグ端子板			U,C		⚠
	〃	LA 00 29 50	〃	2P	中継端子台			A,G,B		⚠
	9	MG 00 07 80	Power Coard	6A 250V 2m	電源コード			R,M		⚠
	〃	MG 00 08 40	〃	10A 125V 2m	〃	Inter-changeable		U,C		⚠
	〃	MG 00 12 40	〃	10A 125V 2m	〃	Inter-changeable		U,C		⚠

※New Parts (新規部品)

	Ref. No.	Part No.	Description		部品名	Remarks	Common Model	Markets	ランク	
	9	MG 00 09 20	Power Coard	7.5A 250A 2.5m	電源コード			A		⚠
	〃	MG 00 09 60	〃	2.5A 250V 2m	〃			G		⚠
	〃	MG 00 10 00	〃	6A 300/500V 2m	〃			B		⚠
	〃	MG 00 12 50	〃	7A 125V 0.8m	〃			J		⚠
※	10	AA 62 29 50	Rear Panel		リアパネル	T-320		R,M		
※	〃	AA 62 29 60	〃		〃	〃		U,C		
※	〃	AA 62 29 70	〃		〃	〃		A		
※	〃	AA 62 29 80	〃		〃	〃		G		
※	〃	AA 62 29 90	〃		〃	〃		B		
※	〃	AA 62 30 00	〃		〃	T-07		R,M		
※	〃	AA 62 30 10	〃		〃	〃		U,C		
※	〃	AA 62 30 20	〃		〃	〃		A		
※	〃	AA 62 30 30	〃		〃	〃		G		
※	〃	AA 62 30 40	〃		〃			B		
	11	CB 61 44 00	Holder,Antenna		アンテナホルダー		T-300			
	12	CB 08 63 90	VS Stopper		VSストッパー		T-1	R,M		
	13	CB 06 88 80	Plastic Rivet		プラスチックリベット					
	14	NA 08 12 00	Tuner Circuit Board		チューナーシート		T-300	J		
	14	NA 08 12 20	〃		〃		T-300	R,U,C		
	〃	NA 08 12 30	〃		〃		T-300	A		
	〃	NA 08 11 70	〃		〃		T-300	B		
	〃	NA 08 21 40	〃		〃		T-300	M		
※	〃	NA 08 64 60	〃		〃			G		
	15	NB 61 08 10	Tuning Unite		チューニングユニット		T-300			
	16	AA 61 37 60	Top Cover		トップカバー	Silver	T-300			
	〃	AA 61 38 60	〃		〃	Black	T-300			
	17	CB 62 51 70	Power Button		パワーボタン	Silver	K-320			
	〃	CB 62 51 80	〃		〃	Black	K-320			
	18	BA 08 21 00	Knob		ツマミ	T-320 Silver	T-10			
	〃	BA 08 51 20	〃		〃	〃 Black	T-300			
	〃	BA 08 79 10	〃		〃	T-07 Silver				
	〃	BA 08 94 80	〃		〃	〃 Black	T-05			
	19	CB 61 65 10	Shaft, Extension		延長シャフト		T-300			
	20	CB 61 03 90	Leg		脚		T-300			
	21	CB 60 19 10	Bridge Clip		ブリッジクリップ		T-300			
	22	CB 09 58 50	Pully Ass'y		滑車Ass'y		T-300			
	23	CB 61 59 90	Spacer		スペーサー					
	24	CB 63 29 40	Rod		Pボタンロッド		A-320			
	25	Ei 03 00 86	Binding Head Tapping Screw	3×8 ZMC2-Y	バインドタッピングネジ	PACK				
	26	ED 03 00 66	Binding Head Screw	3×6 ZMC2-Y	バインド小ネジ	PACK				
	27	EV 20 00 36	Plain Washer	φ3 ZMC2-Y	平座金	PACK				
	28	EK 13 50 20	B.W Head Tapping Screw	4×8 FNM3-3g	BWヘッドタッピングネジ	Silver				
	〃	EK 36 50 40	〃	4×8 FCM3-BI	〃	Black				
	29	Ei 33 00 86	Binding Head Tapping Screw	3×8 FCRM3-BI	バインドタッピングネジ	PACK		R,M		
	30	EV 41 30 36	Toothed Lock Washer	φ3 FCRM3-BI	歯付座金	PACK		R,M		
		CB 06 92 50	Binding Tie	BK-1	インシュロックタイ					
			Accessories		付属品					
		Mi 08 28 40	Antenna	FM	FMQマッチアンテナ			J		
		Mi 08 28 50	〃	〃	〃			U,C,R,A G,B,M		
		Mi 06 62 10	Cord	1.2m	出力コード					
		Mi 08 21 00	Loop Antenna	AM	ループアンテナ					
		LB 60 59 30	300Ω,75Ω Adapter		整合器			G,B		

※New Parts (新規部品)

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YAMAHA

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