

SERVICE MANUAL



CAR STEREO PLAYER

FT 1004

(U.S.A)



SPECIFICATIONS

Tape speed	3-3/4 IPS:
Wow & Flutter	0.3% RMS
Crosstalk	Better than 60 dB (track to track)
Stereo separation	30 dB
Signal to noise ratio	Better than 45 dB
Output power	Maximum 18W (WOOFER) + 3.5W (TWEETER)
Frequency response	60 - 8000 Hz
Speaker output impedance	4 Ω + 4 Ω
Power source	DC 12V
Ground polarity	Negative pole ground
Frequency range	FM: 88 - 108 MHz

NOTE: Specifications are subject to change without notice.

TAPE HEAD ADJUSTMENT

Before adjustment, check that the tape head is clean. If it is dirty, clean its surface with a cotton swab moistened with head cleaner fluid.

Insert a tape cartridge into the player and select a program which contains high frequency sound (piano or strings). Turn the tone and tweeter control knobs fully clockwise (maximum high position).

Insert a screwdriver through the opening on top of the unit. Turn the tape head height adjusting plate nut (see Ref. No. 21 on Mechanism Exploded View) clockwise or counter-clockwise until only one program is clearly heard without crosstalk.

Insert a screwdriver through the opening on the bottom of the unit. Turn the azimuth adjusting screw clockwise or counter-clockwise until the clearest high frequency reproduction is obtained. If this adjustment does not improve the high frequency reproduction, check for:

- A. worn tape head
- B. defective component in the audio circuit
- C. a magnetized tape head

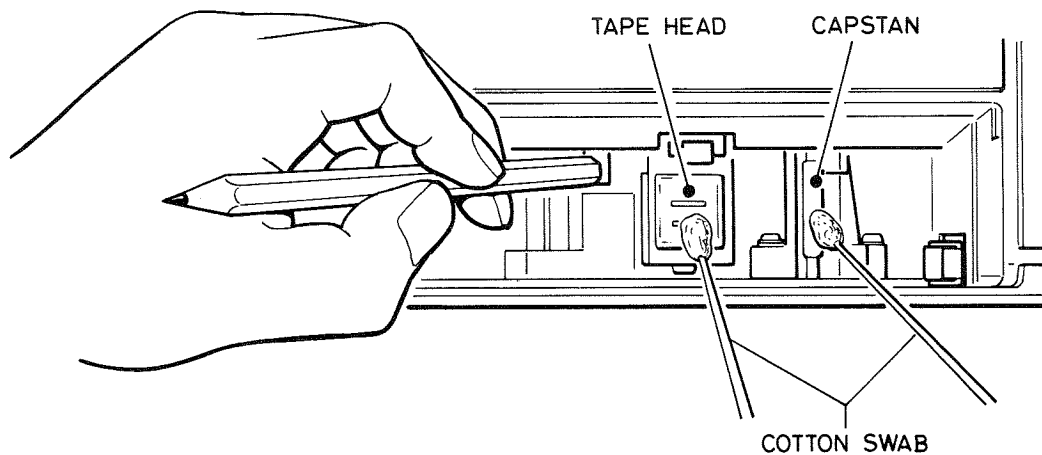
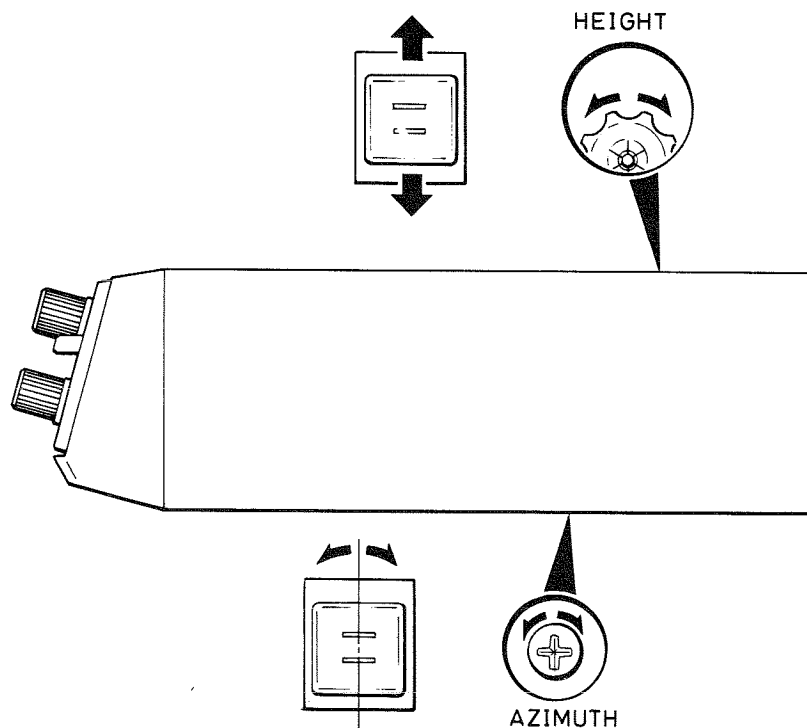




Fig. 2



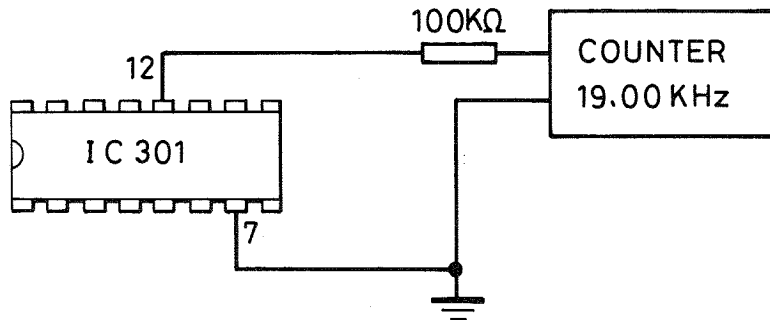
TUNER ADJUSTMENT

FM IF & RF ALIGNMENT

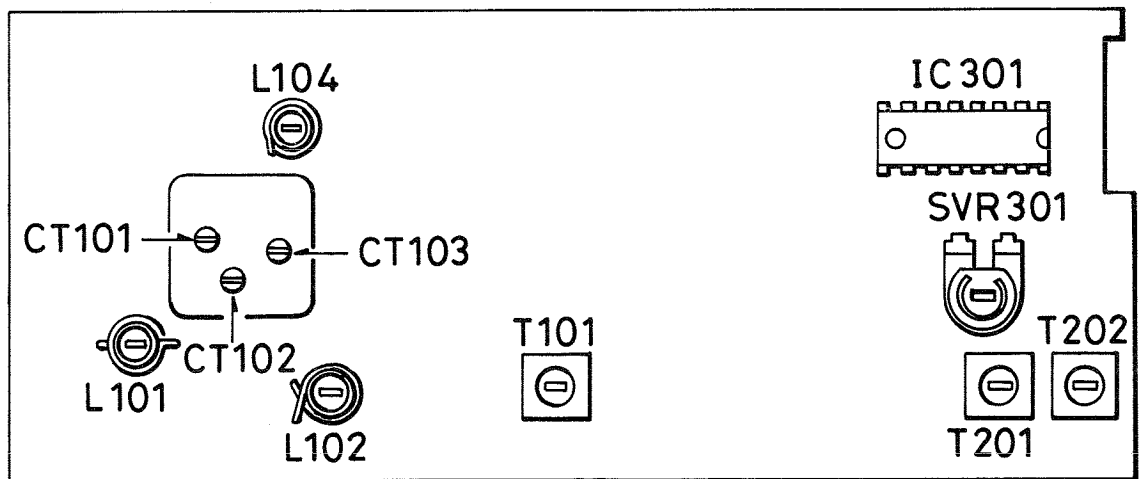
Step	Adjusting circuit	Connections		Frequency	Position of tuning dial	Adjustment	VTVM and Scope
		Input	Output				
1	IF	Connect sweep marker generator output to FM Antenna Terminals.	Connect SMG input to R207, Ground	10.7 MHz	Near maximum under no signal	T101, 201	10.7 MHz 
2	Detector		Connect SMG input to R210, Ground	87MHz	Low End	T202	10.7 MHz 
3	Tuning Coverage	Connect FM SG to FM Antenna Terminals.	Connect VTVM to Speaker Terminals.	87 MHz	Low End	L104	Maximum reading on VTVM
				109 MHz	High End	CT103	
4	Tracking			90 MHz	90 MHz	L101, 102	Maximum reading on VTVM
				106 MHz	106 MHz	CT101, 102	

FM MPX ALIGNMENT

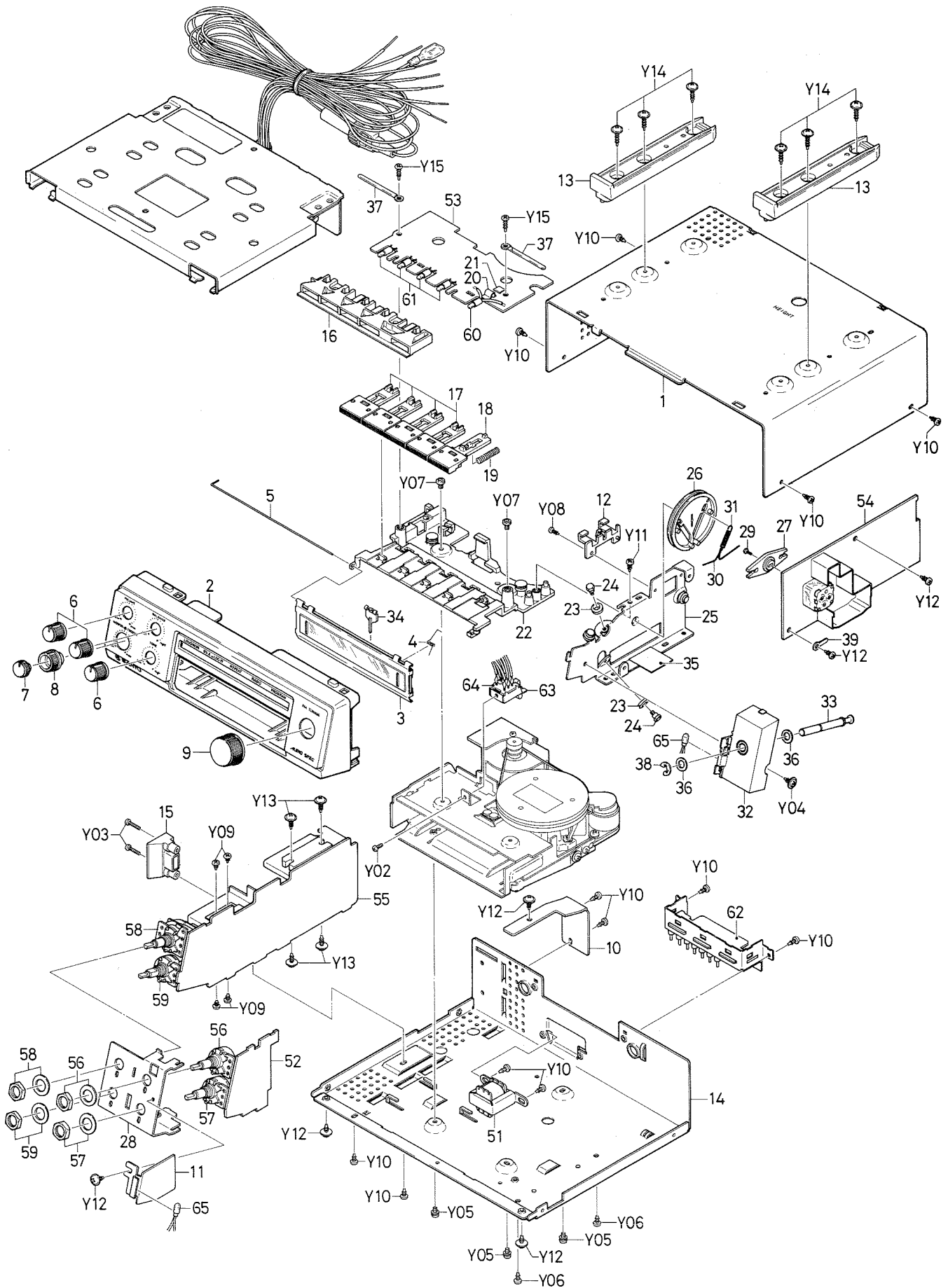
Adjust the SVR301 until the counter frequency reading become within 19.00 kHz.



PARTS LOCATION



EXPLODED VIEW (CABINET CHASSIS)



PARTS LIST

Ref. No.	Part No.	Description	Q'ty	Ref. No.	Part No.	Description	Q'ty
PACKING & ACCESSORIES				CABINET & CHASSIS			
	141-6-132T-89200	Individual Carton	1	Y10		Tapping screw, Pan Hd., 3 x 6 mm	12
	141-6-144T-44400	Pad, Left	1	Y11		Tapping Screw, Pan Hd., 3 x 8 mm	1
	141-6-144T-44500	Pad, Right	1	Y12		Tapping Screw, Pan Hd. with Washer, 3 x 6 mm	5
	141-6-231T-30402	Polyethylene Bag, Set	1	Y13		Tapping Screw, Pan Hd. with Washer, 3 x 8 mm	5
	141-6-410T-12300	Instruction Book	1	Y14		Tapping Screw, Pan Hd. with Washer, 3 x 12 mm	6
	141-0-871T-02800	Mounting Parts Assembly	1	Y15		Tapping Screw, Bind Hd., 3 x 8 mm	2
	141-0-351T-43621	Bracket Mounting Assembly	1			Tapping Screw, Pan Hd., 3 x 6 mm	4
	141-2-569T-02100	Guide Shaft	2			Tapping Tight Screw, 3 x 10 mm	2
	147-2-464T-03100	Fixer, Lead mtg.	1			Tapping Tight Screw, 3 x 20 mm	2
CABINET & CHASSIS				ELECTRICAL PARTS			
1	141-0-111T-36600	Cabinet Assembly	1	51 L901	4-252T-07800	Choke Coil	1
2	141-0-122T-25200	Front Panel Assembly	1	63 S1	4-231T-51300	Switch, Radio/Tape	1
3	141-0-133T-13600	Compartment Lid	1	64	4-230T-22200	P.C.B., Radio/Tape Switch	1
4	141-2-851T-82201	Spring Coil	1	65 PL301, 302	4-612T-09172	Lamp, 5V 60mA	2
5	141-2-751T-96000	Shaft	1		4-235T-47002	Socket Assembly	1
6	141-0-163T-48400	Rotary Knob Assembly, VOLUME/BALANCE/TONE	3		4-234T-01300	Fuse, 5A	1
7	141-0-163T-48500	Rotary Knob, Assembly, TWEETER	1		4-235T-09800	Antenna Socket	2
8	141-0-163T-48600	Rotary Knob Assembly, WOOFER	1		4-243T-12501	Antenna Cable Assembly	1
9	141-0-163T-53500	Rotary Knob Assembly, TUNING	1	L951	4-235T-05800	Choke Coil, Antenna	1
10	141-2-368T-14700	Heat Sink	1	C904		Ceramic, 0.1μF, +80 -20%, 50V	1
11	141-2-374T-14500	Bracket Pilot Lamp	1	TUNER PCB ASSY			
12	141-2-464T-30900	Fixer	1	54	141-4-230T-65201	P.C.B. Assembly, Tuner	1
13	141-2-731T-58100	Slide, Cabinet mtg.	2	IC201, 202		IC, BA402	2
14	141-0-125T-15000	Bottom Lid Assembly	1	IC301	141-2-322T-45400	IC, BA1320	1
15	141-2-135T-53700	Cover, BI-AMP Switch	1			Shield Plate	1
16	141-2-374T-13700	Bracket, Pilot Lamp	1	Q101		Transistor, 3SK40 (FET)	1
17	141-0-161T-55300	Push Button Assembly, LOUDNESS/DX-LOC, FF/ REPEAT/RADIO	4	Q102		Transistor, 2SC1674M	1
18	141-0-161T-55320	Push Button Assembly, PROGRAM	1	Q103		Transistor, 2SC1675L	1
19	141-2-855T-27400	Spring Coil, Program	1	Q371,381		Transistor, 2SC536AUD G	2
20	141-2-853T-58600	Spring Plate, Program Switch	1	D101,102		Diode, DS442	2
21	141-2-853T-57100	Spring Plate, Program Switch	1	D103		Diode, 1S553	1
22	141-0-311T-29400	Chassis Assembly	1	D921		Diode, BZ090	1
23	141-2-661T-21400	Pulley, Dial Rope	2	D201,202		Diode, 1S188FM	2
24	141-2-753T-50700	Shaft, Pulley mtg.	2	C922	4-223T-06300 } or 4-223T-06310	Capacitor, 470μF, 16V	1
25	141-0-377T-23900	Bracket P.C.B. Assembly	1	CR301,302	4-227T-02300	CR Pack	2
26	141-2-538T-09600	Drum	1	CR201	4-227R-11600	CR Pack	1
27	141-2-742T-22400	Lever	1	VC, CT	4-224T-06800	Variable Capacitor	1
28	141-2-163T-13800	Bracket Resistor	1	SVR301	4-222T-39575	Semi Variable Resistor	1
29	141-2-421T-26300	Specail Screw, Lever mtg.	1	T101	4-256R-20831	IF Transformer, FM	1
30	141-2-340T-00300	Dial Rope, 760 mm	1	T201	4-256R-15131	IF Transformer, FM	1
31	141-2-851T-98000	Spring Coil, Dial Rope	1	T202	4-256R-02331	IF Transformer, FM	1
32	141-0-351T-45500	Bracket Mounting Assembly	1	L101	4-265T-04530	VHF Coil	1
33	141-2-753T-46700	Shaft, Tuning	1	L102	4-265T-05300	VHF Coil	1
34	141-2-511T-14100	Pointer	1	L103	4-265R-05000	VHF Coil	1
35	141-2-246T-34600	Sheet, Fiber, 20 x 20 x 0.3 mm	1	L104	4-265T-02800	VHF Coil	1
36	141-2-453T-30700	Washer, Tuning Shaft	2		4-256T-80400		
37	141-2-472T-01001	Lug	2	CF201,202	4-256T-80471 } or 4-256T-80472 } 4-256T-80473 } 4-256T-80474 }	IF Filter, FM (a pair)	2
38	141-2-457T-23200	Special Washer, Tuning Shaft	1				
	141-2-246T-29500	Sheet, 20 x 80 x 0.05 mm	1				
	141-2-447T-00800	Cushion, 5 x 15 mm	1				
	141-2-464T-08700	Fixer, Lead mtg.	3				
	141-2-464T-20671	Fixer, Lead mtg.	2				
39	123-2-472R-00401	Lug	1				
Y01		Screw, Pan Hd., 1.7 x 3.5 mm	2				
Y02		Screw, Pan Hd., 2.6 x 4 mm	1				
Y03		Screw, Pan Hd., 2.6 x 10 mm	2				
Y04		Screw, Pan Hd. with Washer, 3 x 6 mm	1				
Y05		Screw, Pan Hd. with Spring Washer, 3 x 4 mm	3				
Y06		Screw, Pan Hd. with Spring Washer, 3 x 6 mm	2				
Y07		Screw, Bind Hd., 3 x 4 mm	2				
Y08		Tapping Screw, Pan Hd., 2.6 x 6 mm	1				
Y09		Tapping Screw, Pan Hd., 3 x 4 mm	4				

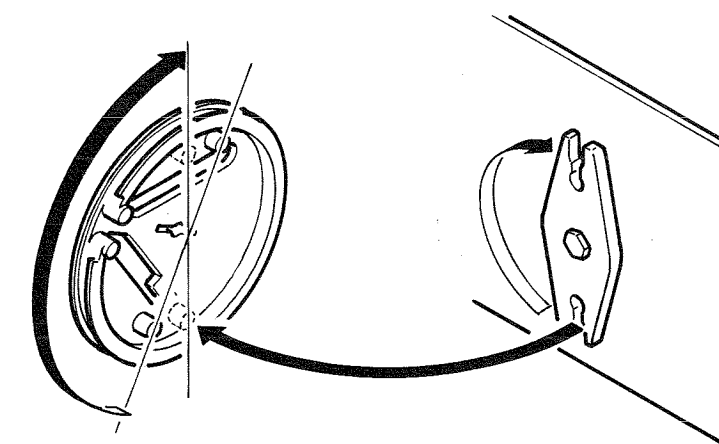
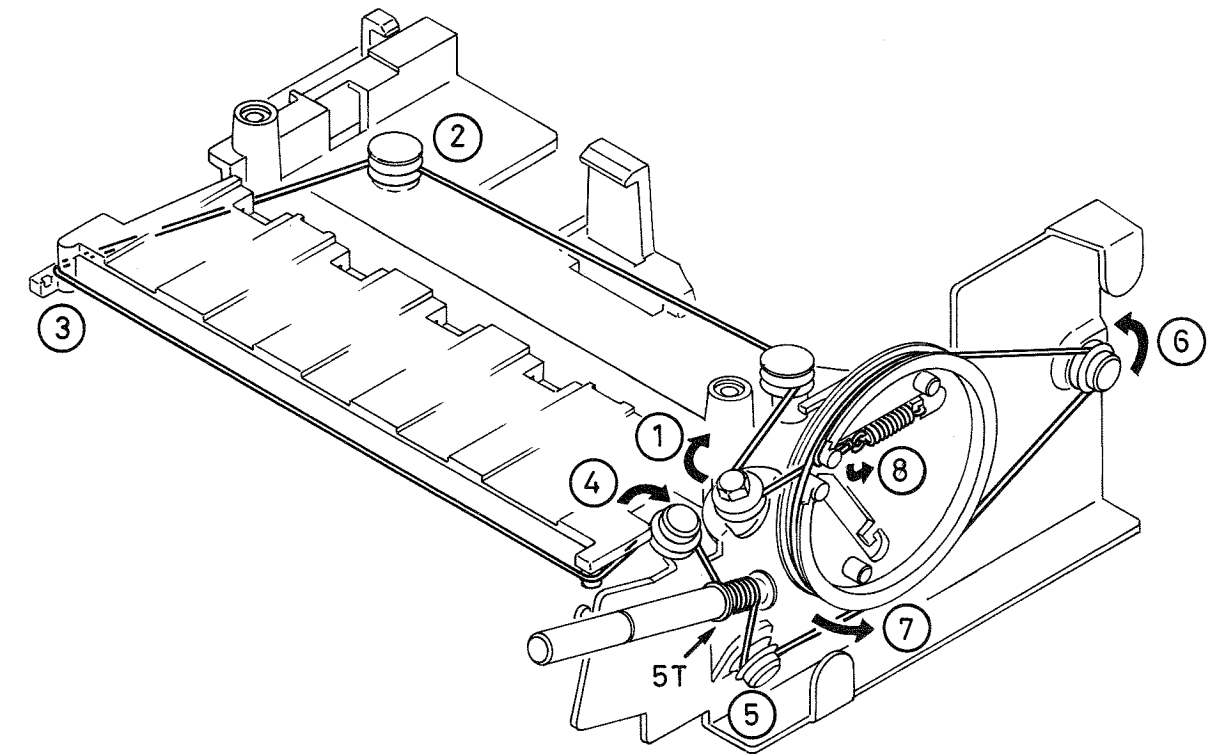
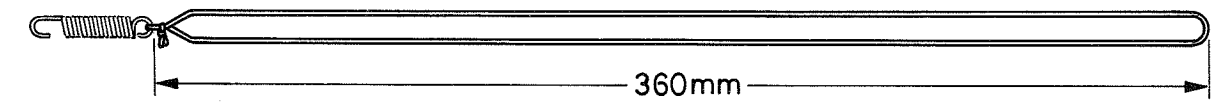
PARTS LIST

Ref. No.	Part No.	Description	Q'ty	Ref. No.	Part No.	Description	Q'ty
TUNER PCB ASSY				AUDIO PCB ASSY			
(RESISTORS)				(RESISTORS)			
All Resistors are Carbon P-type 1/4W, ±10% unless otherwise noted.				All Resistors are Carbon P-type 1/4W, ±10% unless otherwise noted.			
R112, 113		68 ohm	2	55	140-4-230T-47202 4-237T-00100 141-2-368T-13600	P.C.B. Assembly, Audio Terminal Heat Sink	1 7 1
R104, 924		82 ohm	2	IC702, 802		IC, M51515L, WOOFER	2
R107		100 ohm	1	58 VR703, 803	4-222T-61300	IC, LA4220, TWEETER	2
R202, 204 205		220 ohm	3	59 VR704, 804, 705, 805	4-222T-61400	Variable Resistor, VOLUME	1
R207		270 ohm	1	S2	4-231T-72600	Variable Resistor, WOOFER/ TWEETER	1
R206		330 ohm	1	C905	4-223T-06600, or 4-223T-06610	Switch, Speaker Capacitor	1 1
R305		680 ohm	1	(RESISTORS)			
R106, 201, 208, 209, 210, 373, 383		1K ohm	7	All Resistors are Carbon P-type 1/4W, ±10% unless otherwise noted.			
R306		2.2K ohm	1	R712, 812, 714, 814, 715, 815		220 ohm	6
R108, 301		3.3K ohm	2	R901		1.8K ohm	1
R302, 303		1.5K ohm	2	R707, 807		4.7K ohm	2
R374, 384		6.8K ohm	2	R708, 808		5.6K ohm	2
R110		8.2K ohm	1	R709, 809		22K ohm	2
R109		10K ohm	1	R710, 810		39K ohm	2
R372, 382		12K ohm	2	R711, 811, 713, 813		100K ohm	4
R304		15K ohm	1	R903		Solid, 5.6 ohm, ±10%, 1/2W	1
R102		33K ohm	1	R908		Metal, 2.2 ohm, ±10%, 1W	1
R103		56K ohm	1	(CAPACITORS)			
R371, 381		68K ohm	2	C729, 829		Ceramic, 22pF, ±10%, 50V	2
R101, 111		100K ohm	2	C903, 906		Ceramic, 0.1μF, +80 -20%, 50V	2
R105		680K ohm	1	C714, 814, 719, 819, 728, 828		Ceramic, 0.5μF, +80 -20%, 12V	6
R211		1M ohm	1	C711, 811		Mylar, 0.001μF, ±20%, 50V	2
R212		1.5M ohm	1	C723, 823		Mylar, 0.0047μF, ±20%, 50V	2
R921, 922		Solid, 47 ohm, ±10%, 1/2W	2	C707, 807		Mylar, 0.0027μF, ±20%, 50V	2
R307		Solid, 33 ohm, ±10%, 1/2W	1	C730, 830		Mylar, 0.022μF, ±20%, 50V	2
(CAPACITORS)				C708, 808		Mylar, 0.047μF, ±20%, 50V	2
C213		Ceramic, 100pF, ±10%, 50V	1	C713, 813		Mylar, 0.0012μF, ±20%, 50V	2
C112		Ceramic, 330pF, ±10%, 50V	1	C727, 827		Electrolytic, 1μF, 10V	2
C206, 208, 209, 106		Ceramic, 0.01μF, +80 -20%, 50V	4	C720, 820		Electrolytic 4.7, F, 10V	2
C107, 111, 112		Ceramic, 0.022μF, +80 -20%, 50V	3	C726, 826		Electrolytic, 22μF, 10V	2
C202, 207, 210		Ceramic, 0.022μF, +80 -20%, 50V	3	C715, 815, 718, 818, 731, 831, 712, 812, 721, 821		Electrolytic, 47μF, 10V	10
C116		Ceramic, 0.047μF, +80 -20%, 50V	1	C725, 825, 732, 832		Electrolytic, 100μF, 10V	4
C109, 121		Ceramic, 5pF, ±0.5pF, 50V	2	C716, 816, 717, 817		Electrolytic, 1000μF, 10V	4
C110		Ceramic, 3pF, ±0.5pF, 50V	1	C724, 824		Electrolytic, 0.47μF, 16V	2
C117		Ceramic, 10pF, ±10%, 50V	1	C902		Electrolytic, 470μF, 16V	1
C119		Ceramic, 12pF, ±10%, 50V	1	C710, 810		Electrolytic, 10μF, 16V	2
C108, 114		Ceramic, 15pF, ±10%, 50V	2	C722		Electrolytic, 22μF, 16V	1
C104		Ceramic, 12pF, ±10%, 50V	1	EQ PCB ASSY			
C103		Ceramic, 20pF, ±10%, 50V	1	52	141-4-230T-47402	P.C.B. Assembly, EQ	1
C118		Ceramic, 30pF, ±10%, 50V	1	IC701		IC, M51521L	1
C211		Ceramic, 30pF, ±10%, 50V	1	56 VR701	4-222T-61500	Variable Resistor, BALANCE	1
C102		Ceramic, 20pF, ±10%, 50V	1	57 VR702, 802	4-222T-61600	Variable Resistor, TONE	1
C120		Ceramic, 18pF, ±10%, 50V	1	(RESISTORS)			
C105		Ceramic, 4pF, ±0.5pF, 50V	1	R703, 803		Carbon, 100Ω, ±10%, 1/4W	2
C101		Ceramic, 10pF, ±10%, 50V	1	R706, 806		Carbon, 2.7KΩ, ±10%, 1/4W	2
C305, 306		Mylar, 0.015μF, ±20%, 50V	2	R704, 804		Carbon, 6.8KΩ, ±10%, 1/4W	2
C201		Mylar, 0.022μF, ±20%, 50V	1	R701, 801		Carbon, 33KΩ, ±10%, 1/4W	2
C203		Mylar, 0.01μF, ±20%, 50V	1	R705, 805		Carbon, 120KΩ, ±10%, 1/4W	2
C204		Mylar, 0.01μF, ±20%, 50V	1				
C205, 115		Mylar, 0.022μF, ±20%, 50V	2				
C309		Mylar, 0.047μF, ±20%, 50V	1				
C307		Styrol, 470pF, ±5%, 125V	1				
C303		Electrolytic, 0.22μF, 10V	1				
C214		Electrolytic, 0.47μF, 10V	1				
C304		Electrolytic, 0.47μF, 10V	1				
C310, 311		Electrolytic, 0.1μF, 10V	2				
C301		Electrolytic, 1μF, 10V	1				
C302		Electrolytic, 1μF, 10V	1				
C921		Electrolytic, 220μF, 10V	1				
C923		Electrolytic, 100μF, 16V	1				
C212		Electrolytic, 4.7μF, 25V	1				
C371, 381 372, 382		Electrolytic, 4.7μF, 25V	4				

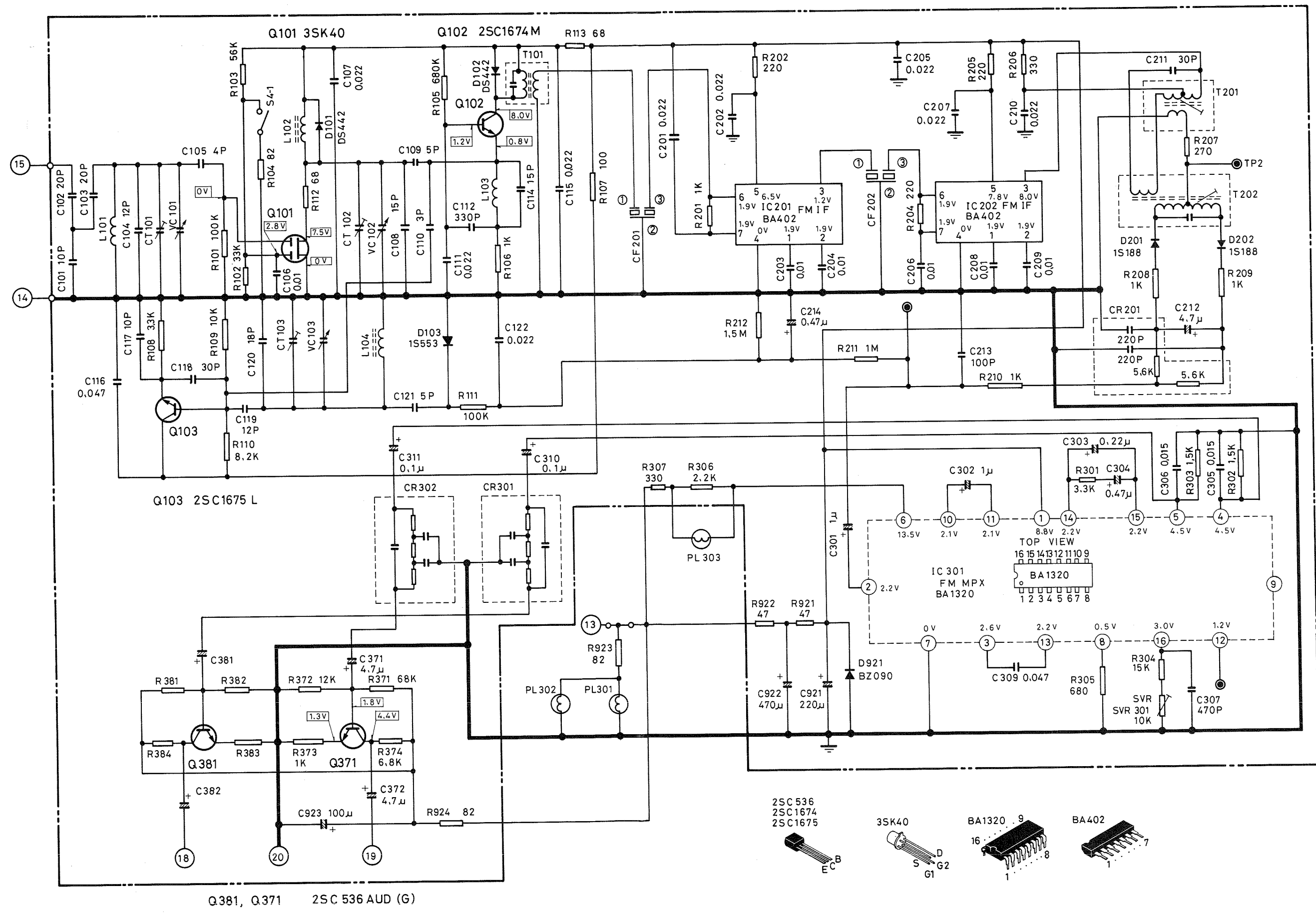
PARTS LIST

Ref. No.	Part No.	Description	Q'ty
EQ PCB ASSY			
(CAPACITORS)			
C701, 801		Mylar, 470pF, ±20%, 50V	2
C704, 804		Mylar, 0.015μF, ±20%, 50V	2
C706, 806		Electrolytic, 0.1μF, 10V	2
C705, 805		Electrolytic, 4.7μF, 25V	2
C702, 802		Electrolytic, 4.7μF, 6.3V	2
C703, 803		Electrolytic, 4.7μF, 6.3V	2
C901		Electrolytic, 220μF, 10V	1
OUTPUT PCB ASSY			
62	140-4-230T-47500	P.C.B. Assembly, Output	1
C733, 734, 735, 736, 737, 738, 907	4-223T-03800, 4-223T-03810 ^{or}	Capacitor, 1000pF	7
C904		Ceramic, 0.1μF, +80 -20%, 50V	1
	141-2-363T-07100	Bracket, Capacitor	1
SWITCH PCB ASSY			
53	141-4-230T-65600	P.C.B. Assembly, Switch	1
D902, 903, 904, 905		Diode, 1N4001	4
60 PL303	4-612T-06501	Lamp, 5V 30mA, Stereo	1
61 PL901, 902, 903, 904	4-612T-06403	Lamp, 5V 60mA, Channel	4
Q901		Transistor, 2SC537G or 2SC536G	1
S3, 4, 5, 7	4-231T-72700	Switch	4
R923		Metal, 82Ω, ±10%, 1W	1
R904, 905, 906, 907		Metal, 150Ω, ±10%, 1W	4
R902		Carbon, 47KΩ, ±10%, 1/4W	1

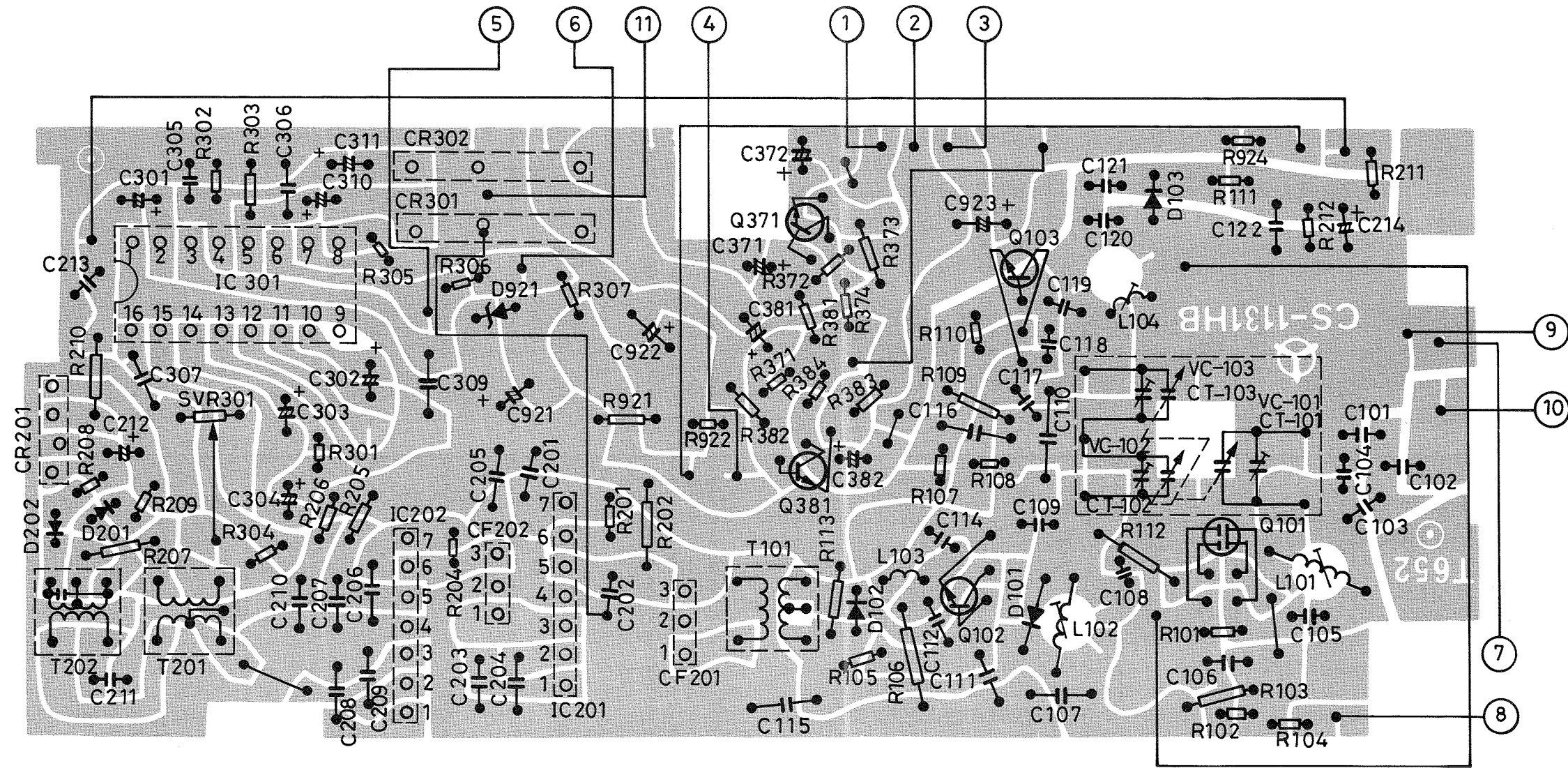
DIAL CORD STRINGING



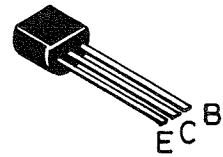
SCHEMATIC DIAGRAM (TUNER)



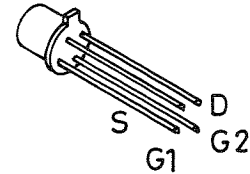
WIRING DIAGRAM (TUNER)



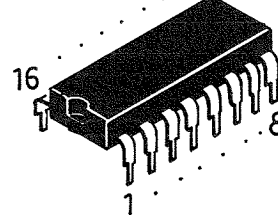
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2SC1675



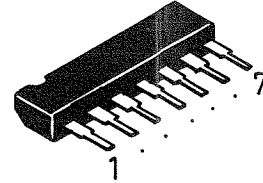
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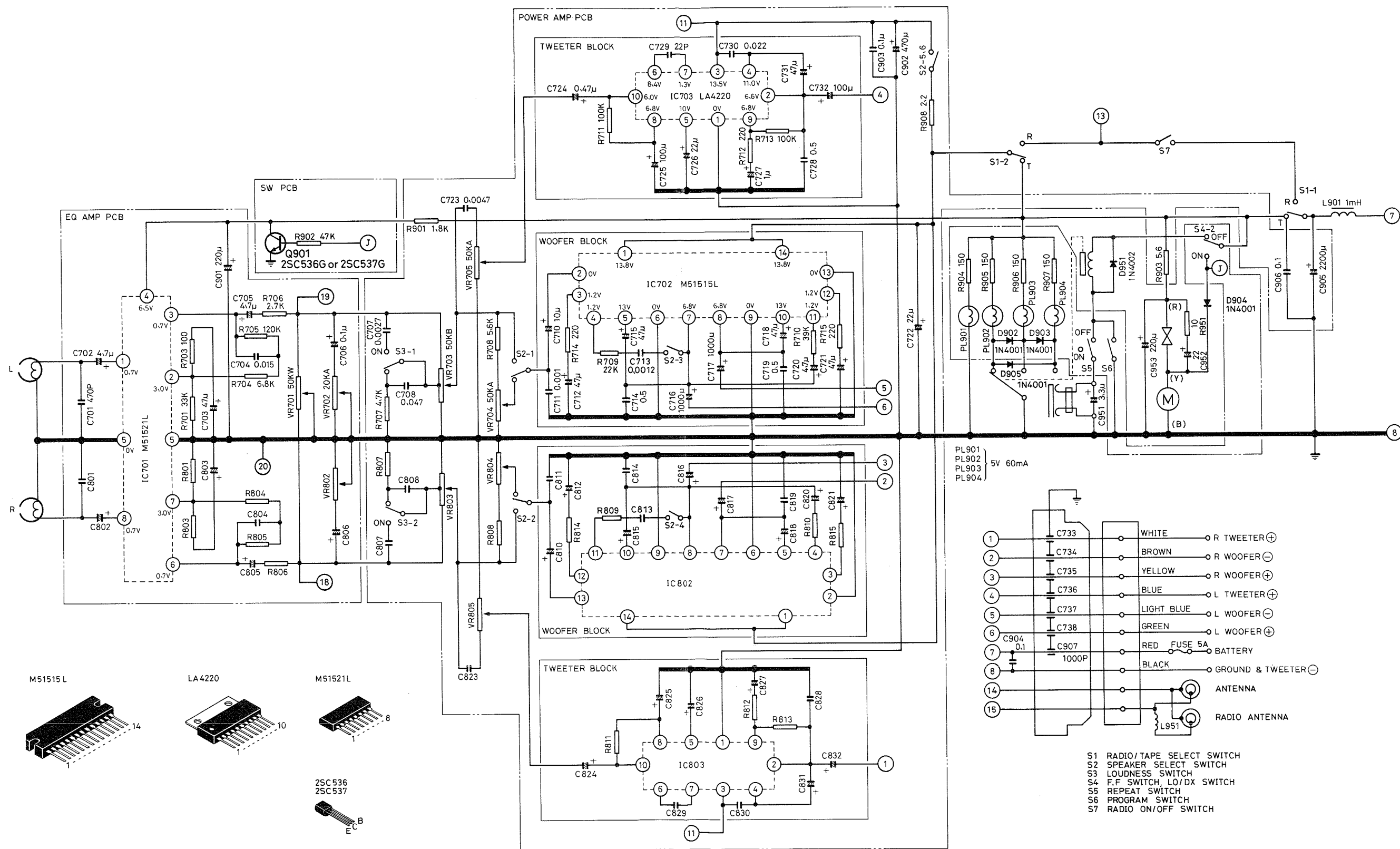
BA1320 9



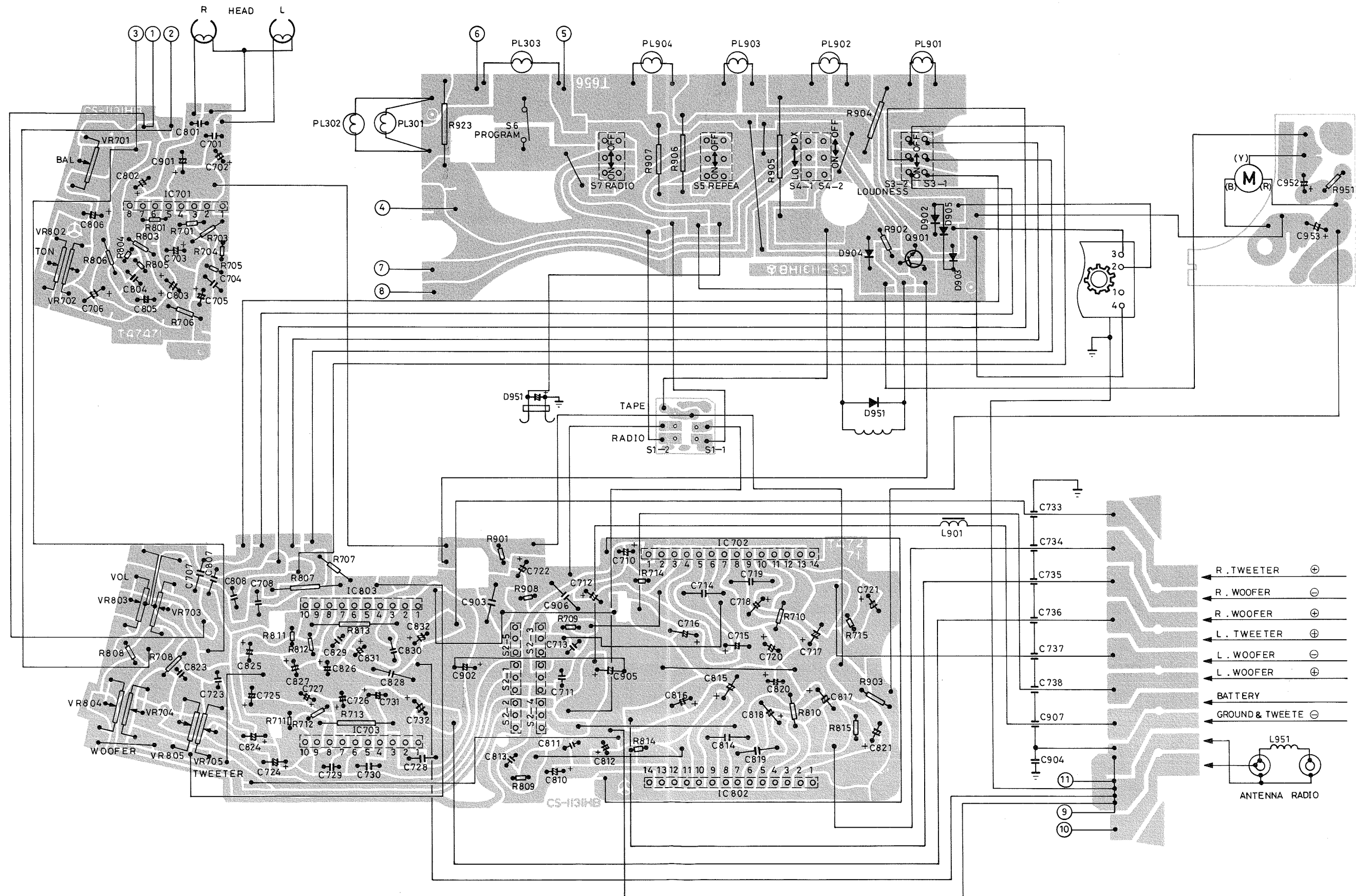
BA402



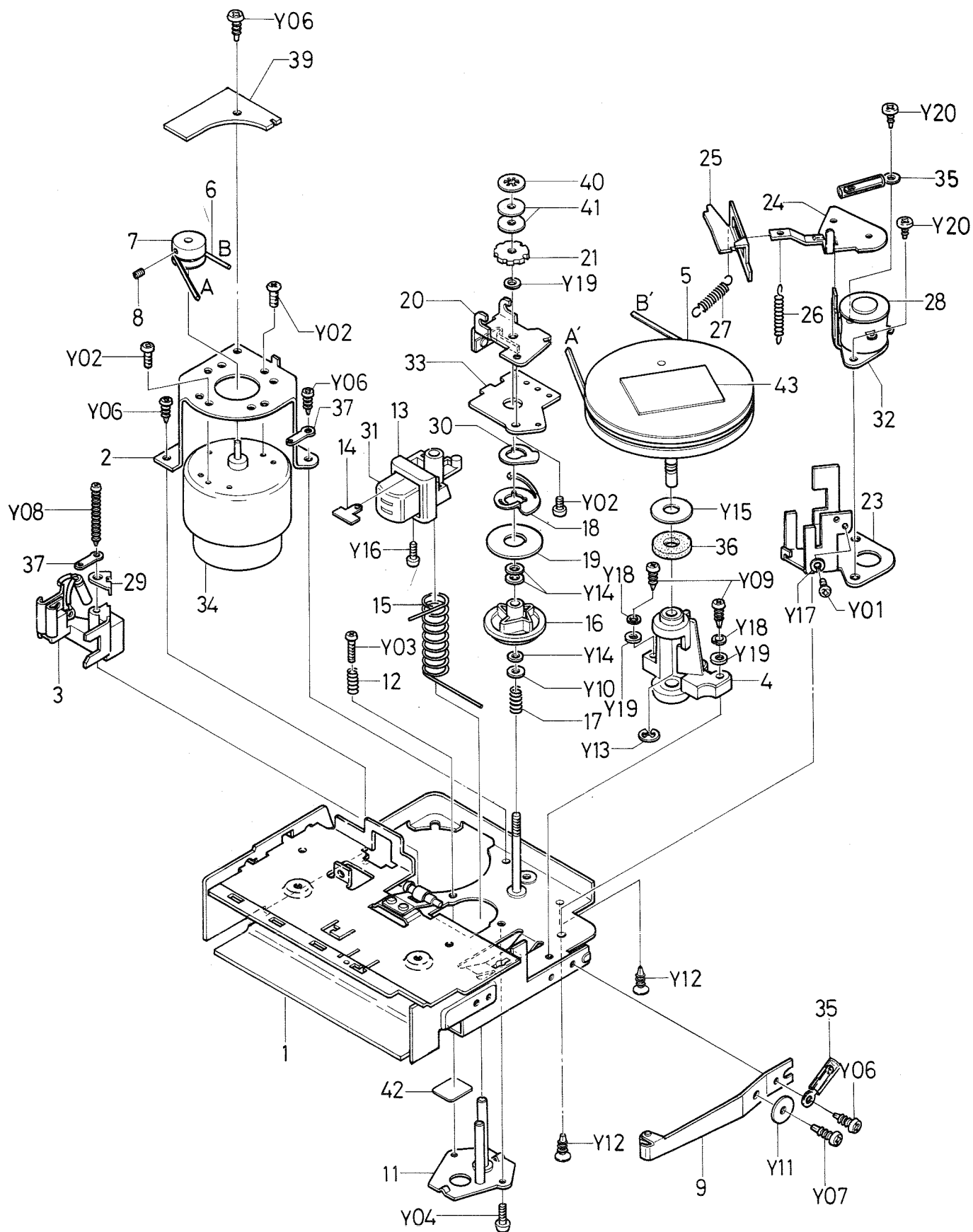
SCHEMATIC DIAGRAM (AUDIO)



WIRING DIAGRAM (AUDIO)



EXPLODED VIEW (MECHANISM)



PARTS LIST

Ref. No.	Part No.	Description	Q'ty
MECHANISM			
1	141-0-311T-204911	Chassis Assembly	1
2	141-2-378T-07500	Bracket Motor	1
3	141-0-821T-00200	Tape Guide Assembly	1
4	141-0-571T-00700	Bearing Axis Assembly	1
5	141-0-521T-05600	Flywheel Assembly	1
6	141-2-564T-16300	Belt	1
7	141-2-661T-69101, 141-2-661T-69102 or 141-2-661T-69103	Pulley, Motor	1
8		Screw, Headless, 2.6 x 5mm	1
9	141-0-853T-417910	Spring Plate Assembly, Side Pressure	1
11	141-0-375T-063910	Bracket, Head Assembly	1
12	147-2-851T-00900	Spring Coil, Azimuth	1
13	141-2-375T-06200	Bracket, Head	1
14	141-2-352T-13901	Spacer, Head Earth	1
15	141-2-855T-00700	Spring Coil	1
16	141-2-671T-05000	Cam	1
17	141-2-851T-89500	Spring Coil	1
18	141-2-764T-01400	Brush, Channel	1
19	141-2-352T-14400	Spacer, Brush	1
20	141-0-351T-334910	Bracket Mounting Assembly	1
21	141-2-411T-07400	Plate Nut	1
23	141-2-351T-33202	Bracket Mounting	1
24	141-2-741T-92301	Lever	1
25	141-2-741T-81101	Lever	1
26	141-2-851T-92600	Spring Coil, Bracket Mounting	1
27	141-2-855T-10200	Spring Coil, Lever mtg.	1
28	141-2-352T-16500	Spacer, Magnetic Coil mtg.	1
29	141-2-853T-50900	Spring Plate	1
30	141-2-352T-16700	Spacer, Cam	1
31	4-242T-19100	Magnetic Head	1
32	4-264T-06300	Magnetic Coil	1
33	4-230T-09600	P.C.B., Channel	1
34	4-527T-09000	Motor	1
35	141-2-472T-05801	Lug	2
36		Felt Washer, 9 x 13 x 2mm	1
37	123-2-472R-00400	Lug, Earth	2
39	4-230T-11711	P.C.B., Motor	1
40		Push Nut, 2.5 x 10 x 0.15mm, Gear	1
41	141-2-457T-09200	Special Washer, 4.5 x 9 x 1mm	2
42	141-2-352T-20000	Spacer	1
43	141-6-474T-02600	Identification Label	1
D951		Diode, 1N4002 or 10D-1	1
R951		Solid, 10 ohm, 1/2W	1
C951		Electrolytic, 3.3μF, 16V	1
C952		Electrolytic, 22μF, 16V	1
C953		Electrolytic, 220μF, 16V	1
Y01		Screw, Pan Hd., 2.6 x 6mm	1
Y02		Screw, Pan Hd., 2.6 x 4mm	3
Y03		Screw, Pan Hd., 2.6 x 10mm	1
Y04		Screw, Pan Hd., 3 x 8mm	1
Y06		Tapping Screw, Pan Hd., 3 x 6mm	4
Y07		Tapping Screw, Pan Hd., 3 x 8mm	1
Y08		Tapping Screw, Pan Hd., 3 x 20mm	1
Y09		Screw, Pan Hd., 3 x 12mm	2
Y10		Washer, 3 x 6 x 0.5mm	1
Y11		Washer, 3 x 8 x 0.5mm	1
Y12		Screw, Flat Hd., 3 x 6mm	2
Y13		"E" Ring, 4mm	1
Y14		Graphite Nylon Washer, 3 x 5.4 x 0.25mm	3
Y15		Graphite Nylon Washer, 6.5 x 13 x 1mm	1
Y16		Tapping Tight Screw, 2.6 x 5mm	1
Y17		Spring Washer, 2.6mm	1
Y18		Spring Washer, 3mm	2
Y19		Washer, 3 x 6 x 1mm	3
Y20		Tapping Screw, Bind Hd., 3 x 6mm	2

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