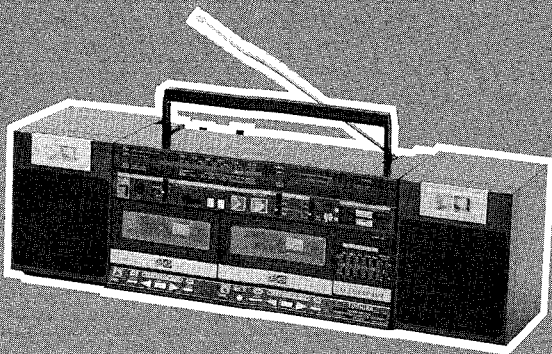


TOSHIBA

STEREO RADIO CASSETTE RECORDER

RT-SX85



SPECIFICATIONS


Cassette tape used:	Normal: C-30, C-60, C-90 Chrome: C-46, C-60, C-90 Metal: C-46, C-60	Speakers:	100 mm (dia.) dynamic x 2 15 mm (dia.) piezo-electric type x 2
Tape speed:	4.8 cm/sec.	Jacks:	[MIC] jack x 2, Impedance 200 ohm to 2K ohm [PHONO/AUX] jack x 2 [LINE OUT] jack x 2 [PHONES] jack x 1 [MIXING MIC] jack x 1
Track system:	Four-track two-channel stereo- phonic	Power supply:	AC 110-127V/230-240V, 50/60 Hz DC 12V IEC R20 ("D" cell) x 8
Recording system:	AC bias	Power consumption:	17W
Erasing system:	AC erasing	Output power:	5W + 5W, 10% Distortion
Frequency response:	Normal: 60 Hz to 14 kHz Chrome: 60 Hz to 15 kHz Metal: 60 Hz to 16 kHz	Dimensions:	600(W) x 233.5(H) x 159.5(D) mm
Receiving frequency:	FM: 88 MHz to 108 MHz, VF FM: 87.5 MHz to 108 MHz, CA SW ₂ : 7.5 MHz to 22 MHz SW ₁ : 2.3 MHz to 7.5 MHz MW: 526.5 kHz to 1606.5 kHz	Weight:	5.3 kg (without batteries)
Intermediate frequency:	FM: 10.7 MHz SW ₂ /SW ₁ /MW: 455 kHz		

Specifications are subject to change without notice.

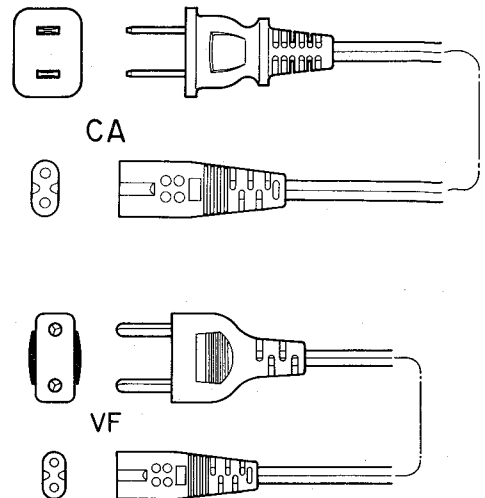
K-VF, W-CA

PRINTED IN JAPAN 22905416 April, 1985 (S)

Nameplate

	TOSHIBA STEREO RADIO CASSETTE RECORDER
MODEL NO. RT-SX85	
POWER SOURCE	
AC	110-127, 220-240V 50/60Hz
	17W
DC	12V IEC R20 ("D" CELL)X8
TOSHIBA CORPORATION	
MADE IN JAPAN	

Power Cord



2. DISASSEMBLY INSTRUCTIONS

SPEAKER BOX REMOVAL

1. Lift up speaker box while pushing joint on back of the speaker box to the direction shown by arrow, and the speaker box will be removed. (Figure 4)

BACK CABINET REMOVAL

Mechanism assembly, P.C. Boards, etc. are mounted on the front panel. To access them follow the procedures shown below.

1. Remove two volume knobs (A) on front cabinet. (Figure 3)
2. Put cabinet with back side up and remove five screws (B) and three screws (C). (Figure 4)
3. Remove rod antenna and battery leads while lifting up cabinet back, and the back cabinet will be removed.

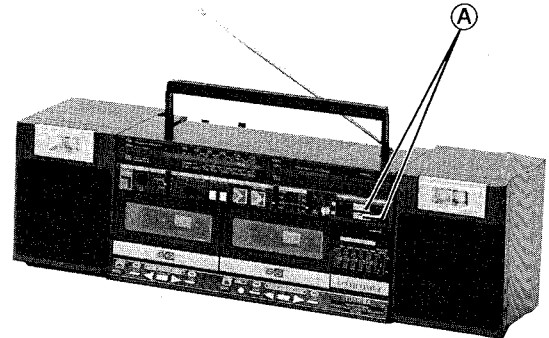


Figure 3

LOGIC P.C. BOARD REMOVAL

1. Untwist hook (D). (Figure 5)
2. While pushing each point of two connects (shown by arrows) on main P.C. Board and four connectors on logic P.C. Board, remove each connector by pulling it. (Figure 5)
3. Pull out connector leads (F), (G), and (H). (Figure 3)
4. Lift up P.C. Board from hook (D) side, remove hook (E) points from holes, and then logic P.C. Board will be removed. (Figure 5)

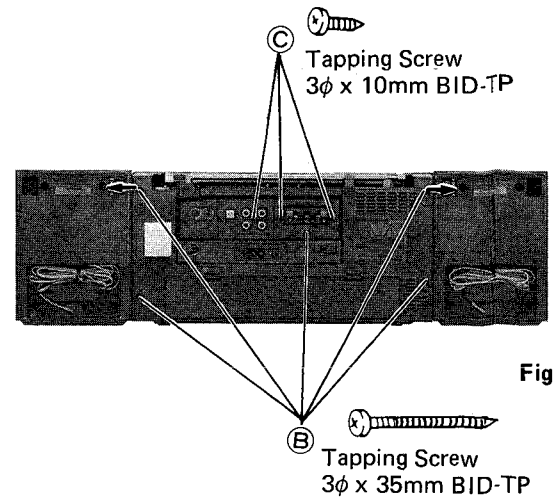


Figure 4

MAIN P.C. BOARD REMOVAL

1. Remove two connectors of mecha P.C. Board connected to main P.C. Board, remove hook installed battery/stereo display P.C. Board while lifting up the connectors, and then the main P.C. Board will be removed.

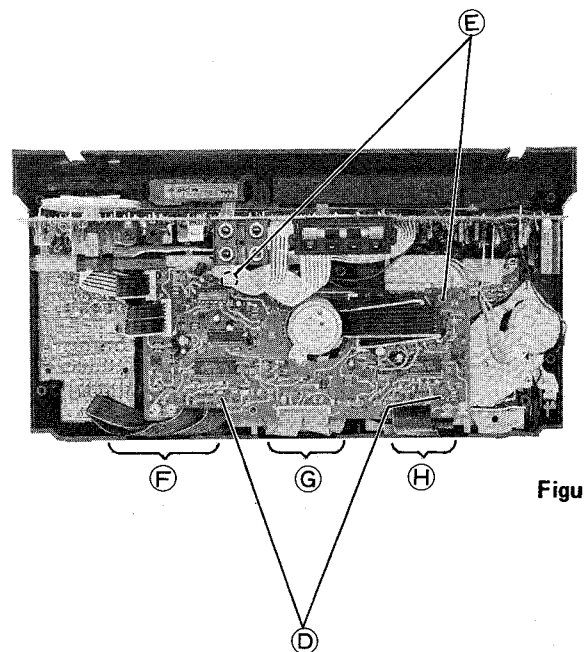


Figure 5

MECHA ASSEMBLY REMOVAL

1. Remove four screws (T) and two screws (I). (Figures 6 and 7)
2. Open cassette lid.
3. Remove hook (K) from front cabinet while pushing mecha assembly to the direction of screw (I), and the mecha assembly will be removed. (Figures 6 and 7)

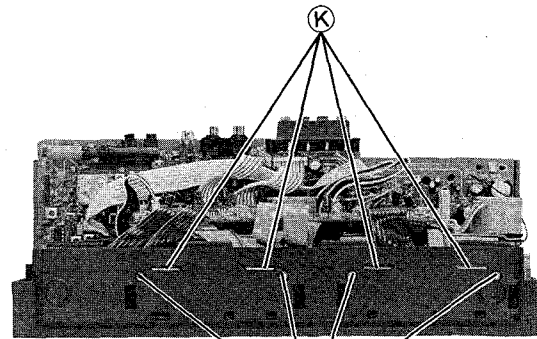


Figure 6

EQUALIZER P.C. BOARD REMOVAL

1. Remove two screws (L), and the equalizer P.C. Board will be removed. (Figure 7)

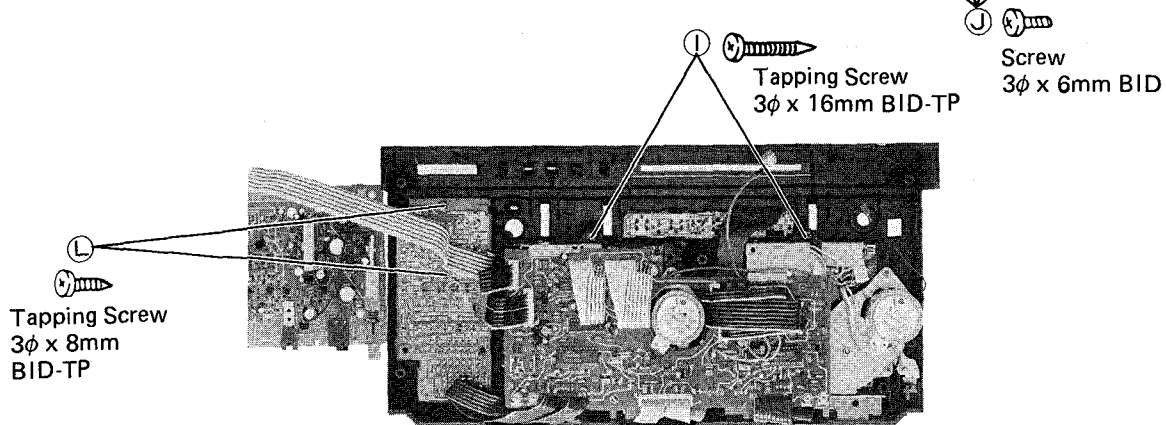


Figure 7

CASSETTE LID OPEN SPEED ADJUSTMENT PROCEDURE

When difference is observed between opening speed of the cassette lid, adjust spring force through the adjusting hole on the bottom side of cabinet with tweezers. The spring force can be adjusted by varying setting height of the spring. Set the spring to the higher position to increase the force and to the lower position to decrease.

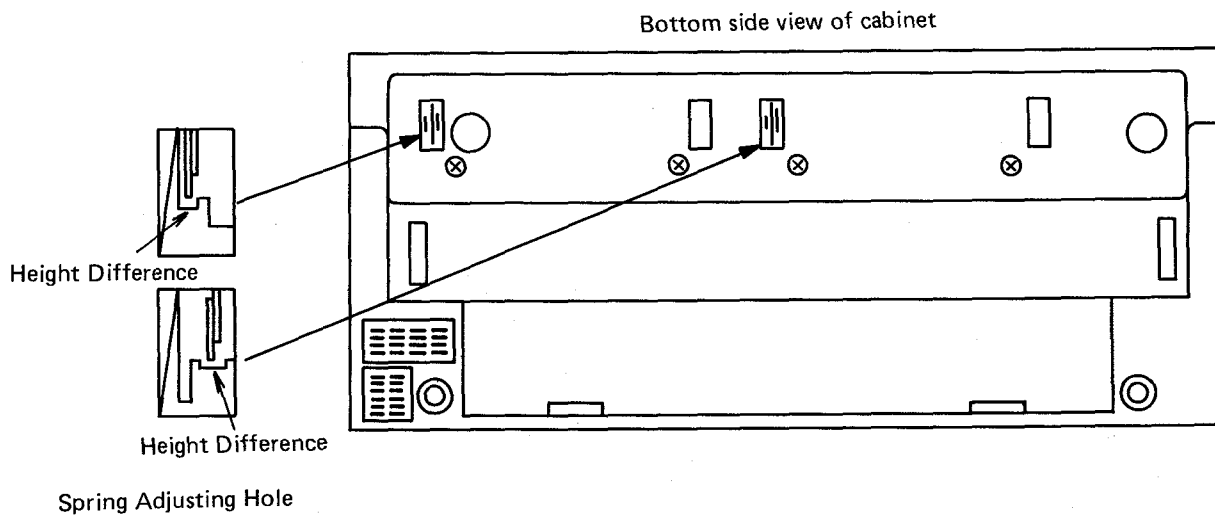


Figure 8

3. DIAL CORD RESTRINGING

1. Thread both ends of dial cord through eyelet so that specified length is obtained, and then squeeze the eyelet. Tie rest of dial cord ends two times and apply adhesive to the knots.
 2. Hook dial cord prepared in step 1 as illustrated. Then thread the dial cord into an opening on dial drum from inside the drum.
 3. Turn tuning capacitor shaft counterclockwise fully and proceed stringing in steps ① to ⑨.
- Note:** When wrapping dial cord around the shaft, take care the cord does not overlap each other.
4. Turn the tuning capacitor fully counterclockwise and put pointer on rail. Move the pointer until its center matches to the inscribed line on frame, then the pointer will match to 0 on the dial scale. The inscribed line is provided on rear of the frame, so the pointer can be adjusted from rear side.

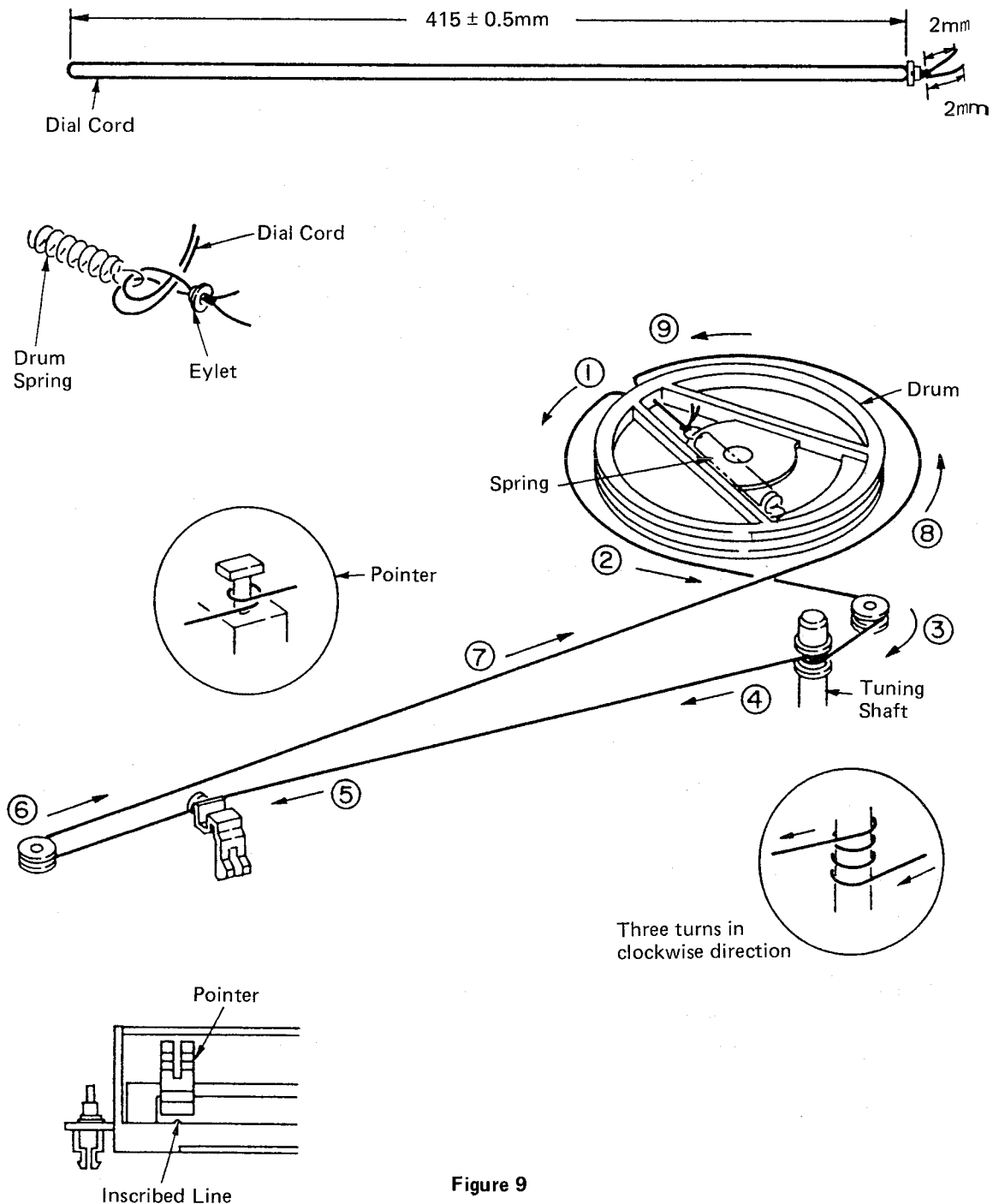
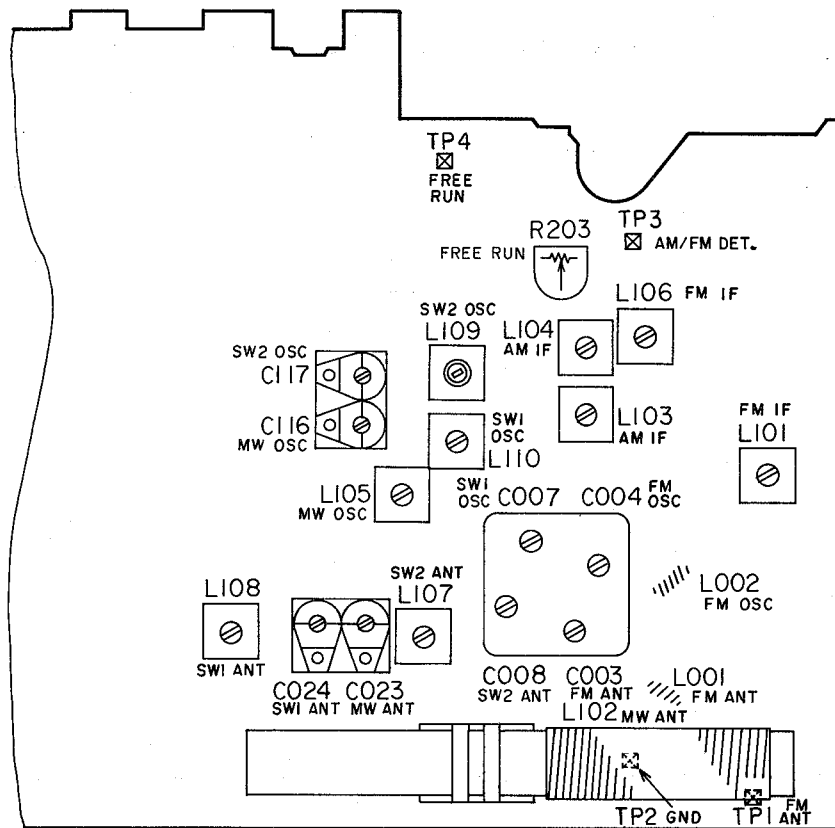


Figure 9



TEST EQUIPMENT

1. Signal generator with a frequency range of at least from 450 kHz to 23 MHz AM.
2. Oscilloscope with a side range amplifier of approximately 100 kHz.
3. Test loop – a coil of any size wire, one turn or more. (MW)
4. A 30 ohm dummy antenna. (SW1, SW2)
5. VTVM

AM ALIGNMENT

1. Turn on the AM signal generator and the VTVM allowing a fifteen-minute warm-up period.
2. Using the test loop across the output of the signal generator, inductively connect the signal generator to the radio.
3. Connect the VTVM across the voice coil or the headphone jack.
4. Set signal generator frequency as listed in ALIGNMENT CHART and maintain a sufficient output level to provide an indication on VTVM.
5. Set volume control at mid-position.
6. Proceed as outlined in the IF-MW, SW1 and SW2 ALIGNMENT CHART.

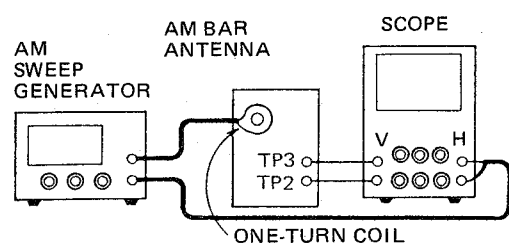


Figure 13
AM 455 kHz

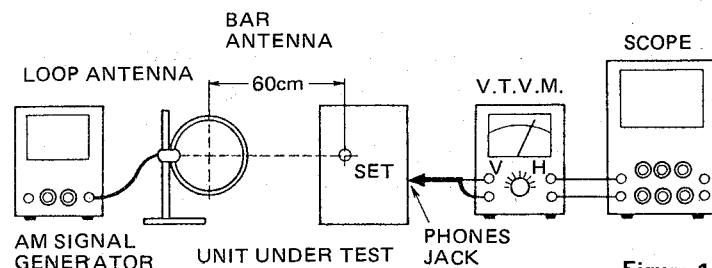


Figure 14

- Note:**
1. Use a screwdriver with plastic grip for all adjustments.
 2. Standard test frequency 400 Hz and modulation 30% for AM.
 3. Standard test frequency 400 Hz and deviation 22.5 kHz for FM.

MW ALIGNMENT CHART

Band	Step	Signal Generator Frequency	Radio Dial Setting	Adjustment	Remarks
IF	1	455 kHz	Tuning Gang Fully Counter-clockwise (Lowest Frequency)	L103, L104	Adjust for maximum indication.
MW	2	510 kHz	Tuning Gang Fully Counter-clockwise (Lowest Frequency)	OSC. Coil L105 (MW)	Adjust for maximum indication.
	3	1650 kHz	Tuning Gang Fully Clockwise (Highest Frequency)	OSC. Trim C116	Adjust for maximum indication.
	4	Repeat steps 2 and 3 as required.			
	5	600 kHz	Tune to Signal.	Ant. Coil L102 (MW)	Adjust for maximum indication.
	6	1400 kHz	Tune to Signal.	Ant. Trim. C023	Adjust for maximum indication.
	7	Repeat steps 5 and 6 as required.			

SW ALIGNMENT CHART

Band	Step	Signal Generator Frequency	Radio Dial Setting	Adjustment	Remarks
SW1	1	2.25 MHz	Tuning Gang Fully Counter-clockwise (Lowest Frequency)	OSC. Coil L110 (SW1)	Adjust for maximum indication.
	2	7.7 MHz	Tuning Gang Fully Clockwise (Highest Frequency)	OSC. Trim. C007	Adjust for maximum indication.
	3	Repeat steps 1 and 2 as required.			
	4	3 MHz	Tune to Signal.	Ant. Coil L108 (SW1)	Adjust for maximum indication.
	5	7 MHz	Tune to Signal.	Ant. Trim. C024	Adjust for maximum indication.
	6	Repeat steps 4 and 5 as required.			
SW2	1	7.35 MHz	Tuning Gang Fully Counter-clockwise (Lowest Frequency)	OSC. Coil L109 (SW2)	Adjust for maximum indication.
	2	22.5 MHz	Tuning Gang Fully Clockwise (Highest Frequency)	OSC. Trim. C117	Adjust for maximum indication.
	3	Repeat steps 1 and 2 as required.			
	4	9 MHz	Tune to Signal.	Ant. Coil L107 (SW2)	Adjust for maximum indication.
	5	20 MHz	Tune to Signal.	Ant. Trim. C008	Adjust for maximum indication.
	6	Repeat steps 4 and 5 as required.			

4. BLOCK DIAGRAM

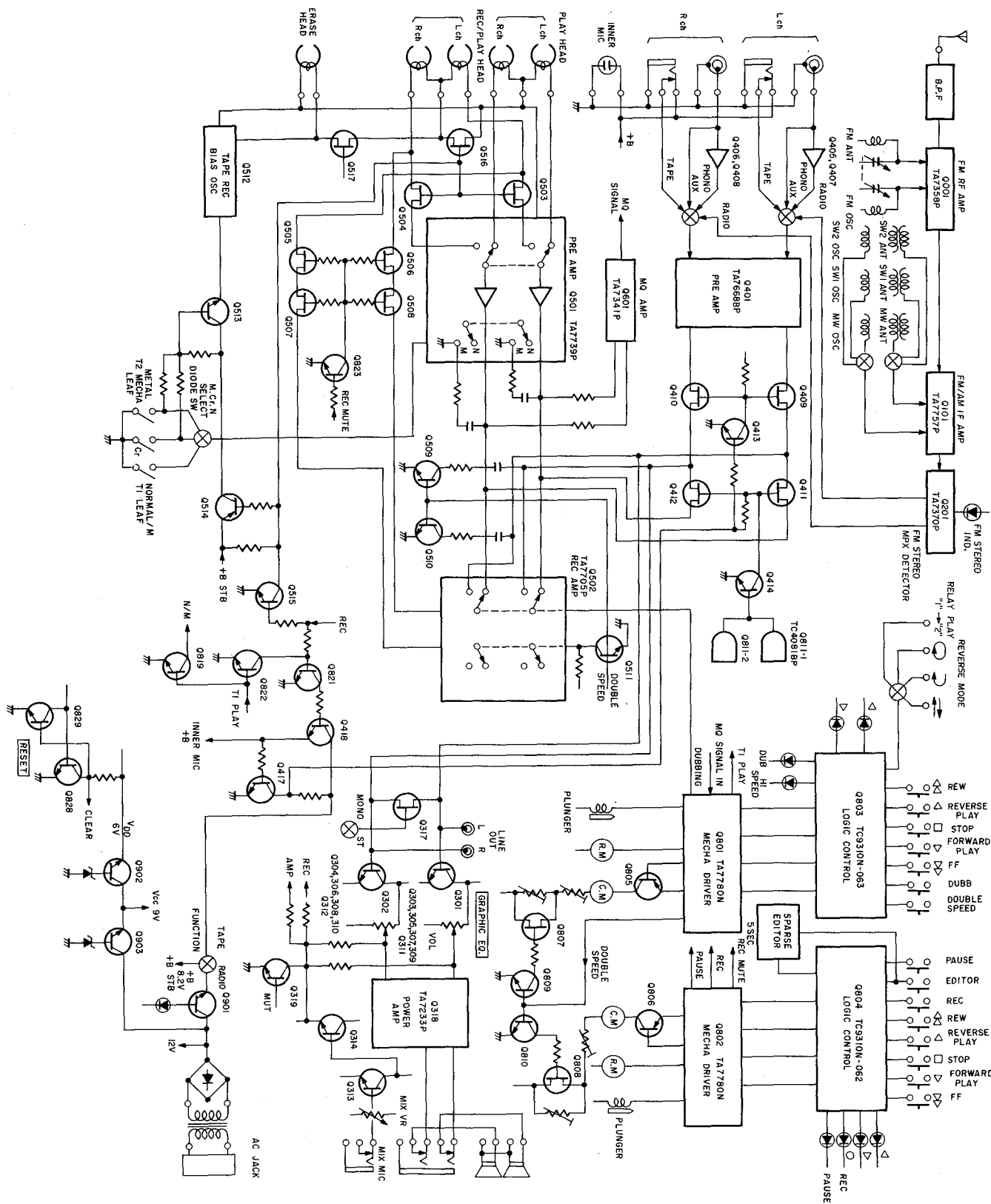


Figure 10

5. ADJUSTMENTS

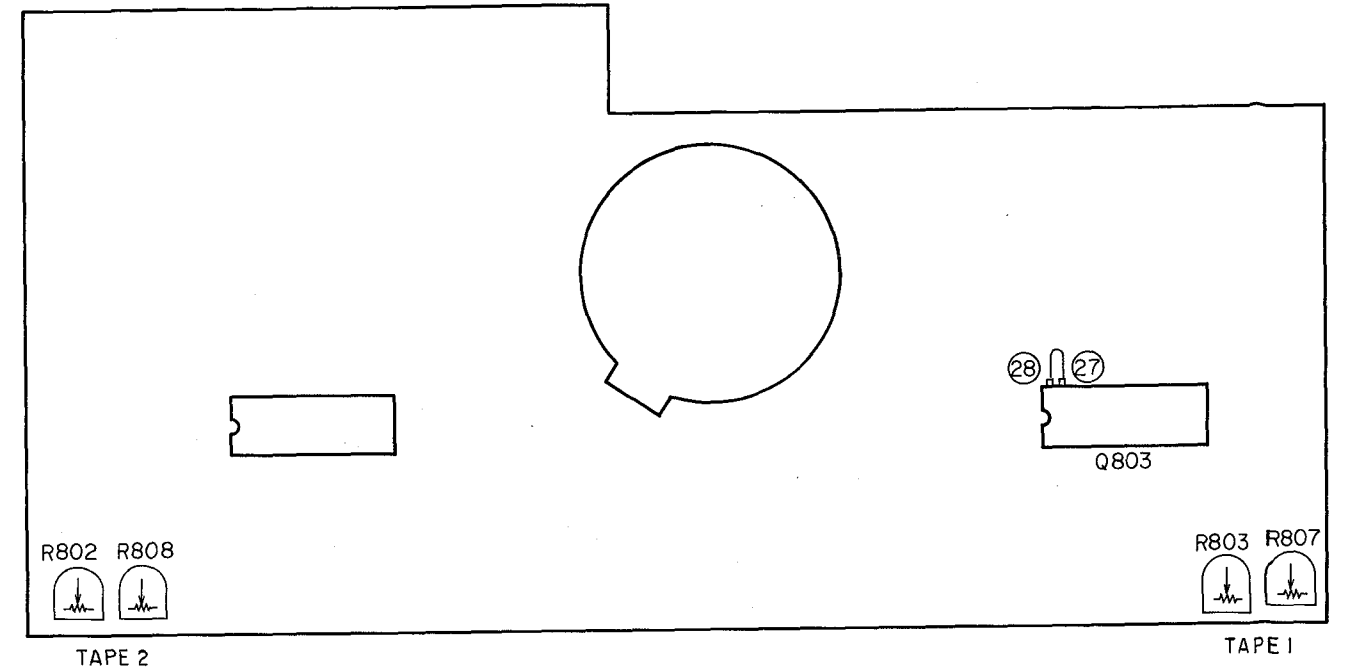


Figure 11

TAPE SPEED ADJUSTMENT TEST TAPE ATT-111

1. PRELIMINARY WORK

- 1-1. Turn the power switch ON.
- 1-2. Place the select switch in TAPE position.
- 1-3. Connect the output from the headphone jack to the frequency counter.
- 1-4. Load the decks TAPE 1 and 2 with ATT-111s. (Use A side only.)

2. ADJUSTMENT PROCEDURES (Adjust in the steps below.)

- 2-1. Push FWD play switch of TAPE 1 and adjust R803 to obtain 3000 ± 20 Hz.
- 2-2. After adjustment is completed, stop the deck.
- 2-3. Push FWD play switch of TAPE 2 and adjust R802 for the counter to read within +0 Hz and -30 Hz from the value obtained in the adjustment (2-1).
- 2-4. After adjustment is completed, stop the deck.
- 2-5. Short-circuit pin 27 and 28 of Q803.
- 2-6. Push FWD play switch of TAPE 1 and adjust R807 to obtain 6000 ± 40 Hz.
- 2-7. After adjustment is completed, stop the deck.
- 2-8. Push FWD play switch of TAPE 2 and adjust R808 for the counter to read within +0 Hz and -60 Hz from the value obtained in the adjustment (2-1).
- 2-9. After adjustment is completed, stop the deck.

CAUTION:

1. The test should be performed with the test tapes wound at the same position (diameter).
2. Proceed the adjustments with the set positioned vertically. If not, tape speed will lowers.
3. Stabilized power source DC 12V should be used.
4. Before the adjustments, temporarily turn four semi-fixed resistors twice from minimum to maximum and vice versa to prevent the speed deviation due to instability of the semi-fixed resistors.
5. When making measurement, use the same tape to prevent speed difference (between different cassettes if used).

6-1. ELECTRICAL PARTS LOCATIONS

MECHANISM SECTION

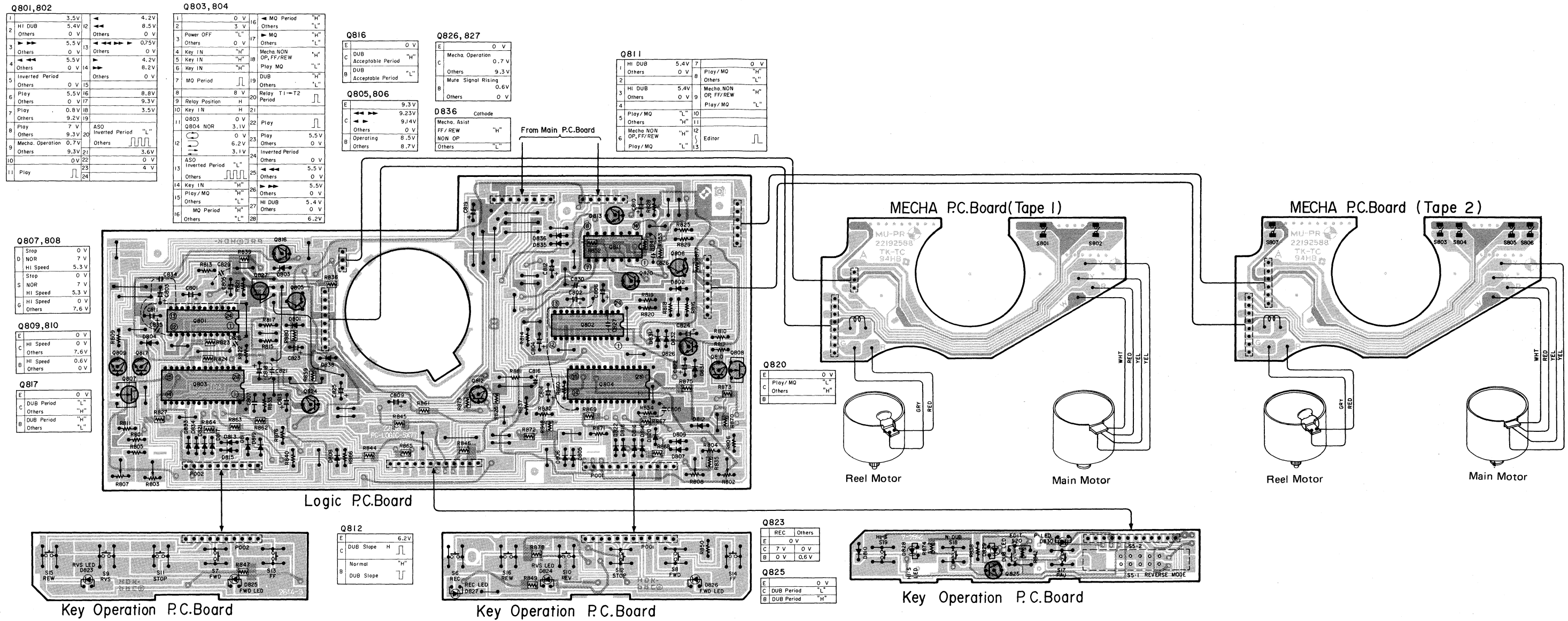


Figure 22

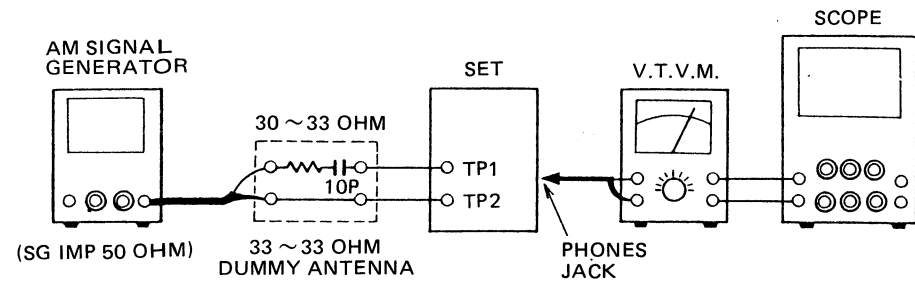


Figure 15

FM-IF ALIGNMENT

1. Set the select switch to FM position.
2. Turn on both sweep generator and oscilloscope, and allow a fifteen-minute warm-up period.
3. Connect the RF SWEEP SIGNAL OUTPUT from the signal generator through the loop antenna to the receiver.
4. Connect the oscilloscope vertical input directly to the test point TURN OUT H and connect the shielded lead to the test point E or chassis ground.
5. Connect the SWEEP VOLTAGE OUTPUT of the sweep generator to the oscilloscope.
6. Proceed as outlined in the FM-IF ALIGNMENT CHART.

FM-IF ALIGNMENT CHART

Step	Signal coupling	Equip.	Tuning	Connection	Adjust. point	Pattern
1	Connect sweep generator output to a three-turn loop antenna of 10 cm diameter.	Sweep generator of 10.7 MHz center freq. with 10.7 MHz marker.	Tuning Knob fully counterclockwise (Lowest Frequency.)	Set scope for connecting output signal from TUN OUT to vertical axis of scope "V" and sweep generator output to horizontal axis "H".	L101 L106	Turn the IF Transformer L106 fully counterclockwise to obtain a single peak. Adjust coil L101 in order until the best single peak is obtained. Figure 17. Finally turn the coil L106 to obtain S curve. See Figure 18.

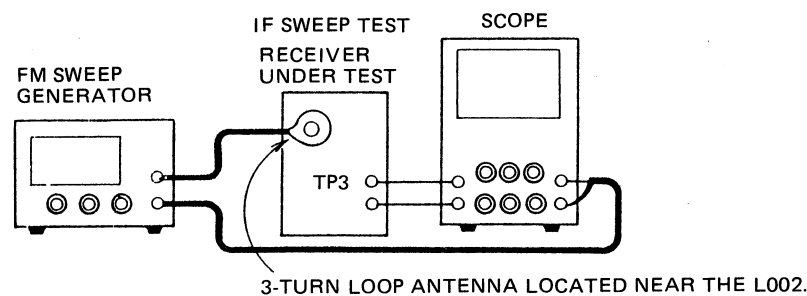


Figure 16

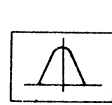


Figure 17

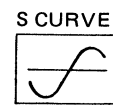


Figure 18

FM-RF ALIGNMENT

1. Turn on the signal generator and the VTVM, and allow a fifteen-minute warm-up period.
2. Connect the signal generator output through a 75 ohm dummy antenna across FM ANT.
3. Connect the VTVM across the voice coil.
4. Set the volume control to mid-position.
5. Adjust the signal generator frequency as indicated in FM-RF ALIGNMENT CHART, and maintain a sufficient signal output level to provide a measurable indication.
6. Proceed as outlined in the FM-RF ALIGNMENT CHART.

FM-RF ALIGNMENT CHART

Step	Signal Generator	Radio Dial Setting	Adjustment	Remarks
1	87.3 MHz (VF) 87.0 MHz (CA)	Tuning Knob Fully Counterclockwise (Lowest Frequency)	OSC. Coil L002	Adjust for maximum output indication.
2	109 MHz	Tuning Knob Fully Clockwise (Highest Frequency)	OSC. Trim. C004	Adjust for maximum output indication.
3	Repeat steps 1 and 2 as required.			
4	90 MHz	Tune to signal	Ant. Coil L001	Adjust for maximum output indication.
5	106 MHz		Ant. Trim. C003	
6	Repeat steps 4 and 5 as required.			

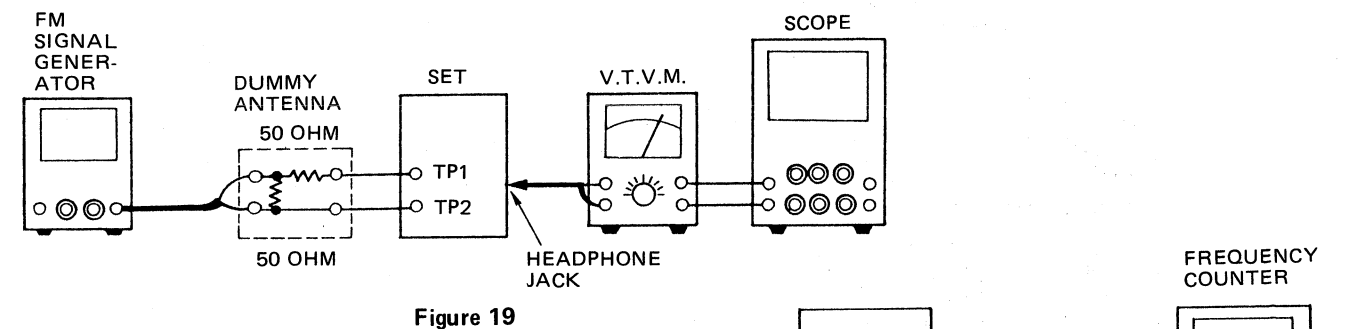


Figure 19

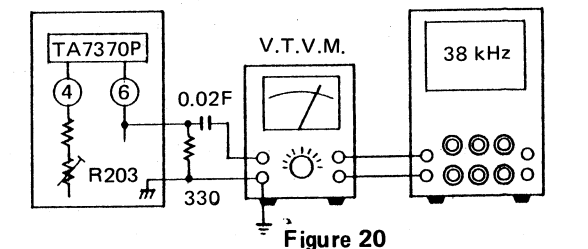


Figure 20

FREE RUN FREQUENCY ALIGNMENT

Adjust R203 under no signal condition so as to obtain 38 kHz ± 75 Hz.

AUTO REVERSE SYSTEM

A 6.3 kHz standard tape must be used for this adjustment. Connect a VTVM or an oscilloscope to the PHONES jack and adjust the forward azimuth and the reverse one by using a phillips screwdriver to maintain the maximum output voltage.

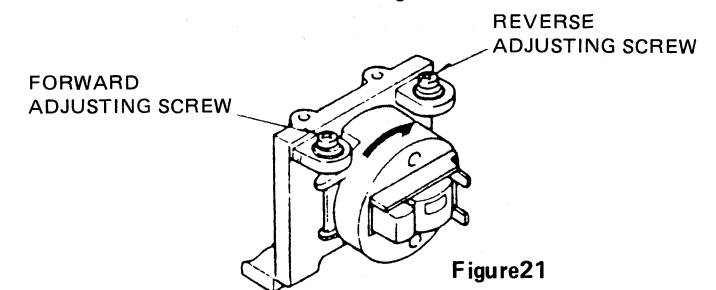
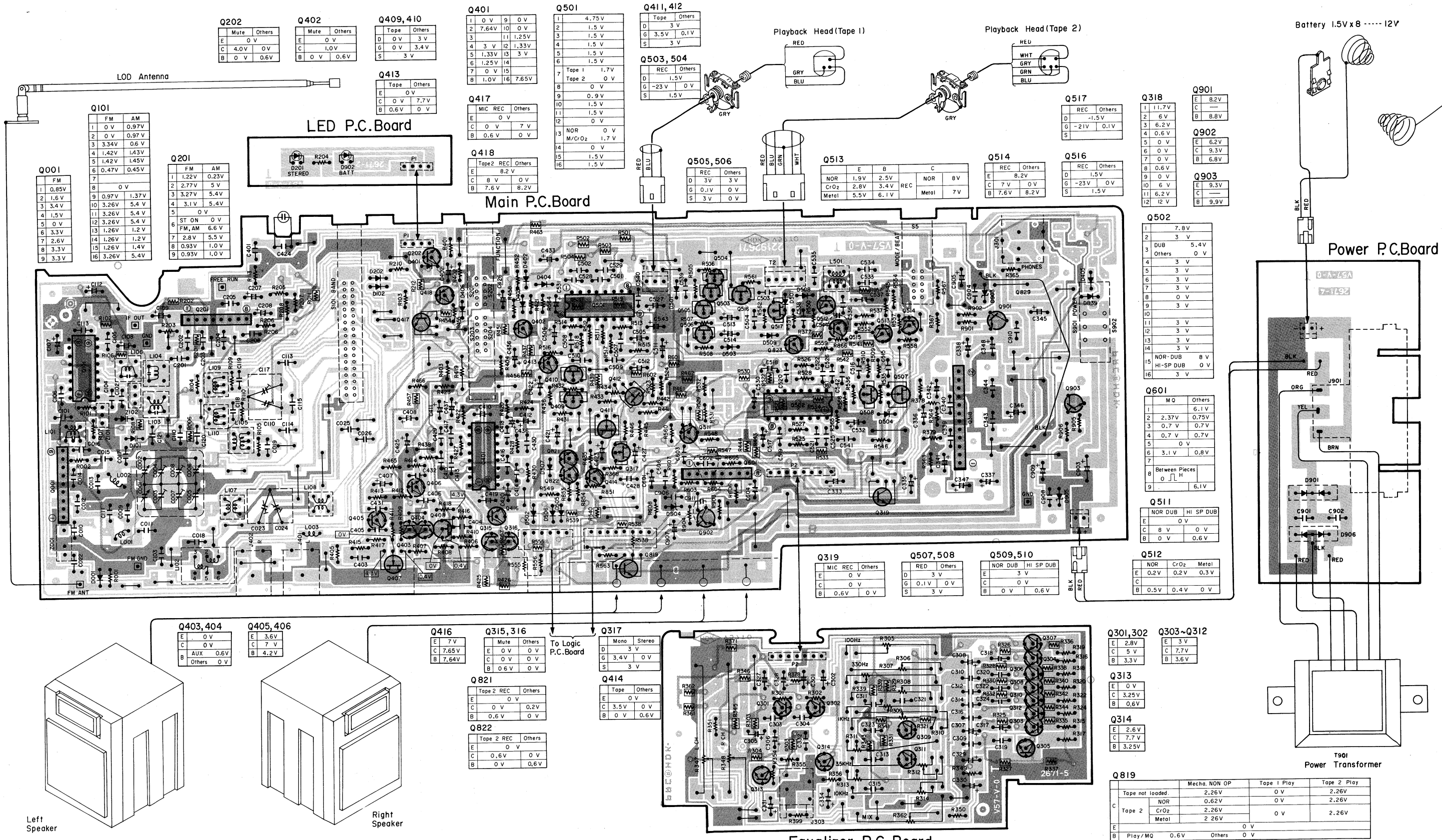


Figure 21

TAKE-UP/SUPPLY REEL TENSION

1. Insert cassette torque meter.
2. Press PLAY button and read torque meter. Torque should be 35g-cm.

6-2. ELECTRICAL PARTS LOCATIONS



Q202

Mute	Others
E	0 V
C	4.0V
B	0 V

Q402

Mute	Others
E	0 V
C	1.0V
B	0 V

Q409, 410

Tape	Others
B	0 V
G	0 V
S	3.4V

Q401

1	0 V	9	0 V
2	7.64V	10	0 V
3	1.5 V	11	1.25V
4	3 V	12	1.33V
5	1.33V	13	3 V
6	1.25V	14	1.5 V
7	0 V	15	1.5 V
8	1.0V	16	7.65V

Q501

1	4.75 V
2	1.5 V
3	1.5 V
4	1.5 V
5	1.5 V
6	1.5 V
7	Tape 1 1.7V
8	Tape 2 0 V
9	0 V
10	0.9 V
11	1.5 V
12	0 V
13	NOR 0 V
14	M/CrO2 1.7 V
15	0 V
16	1.5 V

Q411, 412

Tape	Others
D	3 V
G	3.5V
S	0.1V
S	3 V

Q503, 504

REC	Others
D	1.5V
G	-23V
S	0 V
S	1.5V

Q505, 506

REC	Others
D	3V
G	0.1V
S	0 V
S	3V

Q513

E	B	C
NOR	1.9V	2.5V
CrO2	2.8V	3.4V
Metal	5.5V	6.1V
REC	NOR	8V
REC	Metal	7V

Q514

REC	Others
E	8.2V
C	7 V
B	7.6V
S	8.2V

Q517

REC	Others
D	-1.5V
G	-21V
S	0.1V

Q516

REC	Others
D	8.2V
G	-23V
S	0 V
S	1.5V

Q318

1	11.7V
2	6 V
3	6.2V
4	0.6V
5	0 V
6	0 V
7	0 V
8	0.6V
9	0 V
10	6 V
11	6.2V
12	12 V

Q901

E	8.2V
C	—
B	8.8V

Q902

E	6.2V
C	9.3V
B	6.8V

Q903

E	9.3V
C	—
B	9.9V

Q502

1	7.8V
2	3 V
3	DUB 5.4V
4	Others 0 V
5	3 V
6	3 V
7	3 V
8	0 V
9	3 V
10	3 V
11	3 V
12	3 V
13	3 V
14	3 V
15	NOR-DUB 8 V
16	HI-SP DUB 0 V
16	3 V

Q601

MQ	Others
1	6.1V
2	2.37V
3	0.7 V
4	0.7 V
5	0 V
6	3.1 V
7	0.8V
8	Between Pieces
9	6.1V

Q511

NOR DUB	HI SP DUB
E	0 V
C	8 V
B	0 V

Q512

NOR	CrO2	Metal
E	0.2V	0.2V
C	0.2V	0.3V
B	0.5V	0.4V

Q301, 302

E	2.8V
C	5 V
B	3.3V

Q303-Q312

E	3 V
C	7.7V
B	3.6V

Q313

E	0 V
C	3.25V
B	0.6V

Q314

E	2.6 V
C	7.7 V
B	3.25V

Q819

Tape not loaded.	Mecha. NON OP	Tape 1 Play	Tape 2 Play
C	2.26V	0 V	2.26V
C	0.62V	0 V	2.26V
C	2.26V	0 V	2.26V
E	2.26V	0 V	2.26V
B	2.26V	0 V	2.26V
B	0.6V	Others	0 V

Figure 24

RT-SX85 RT-SX85

7-1. SCHEMATIC DIAGRAM

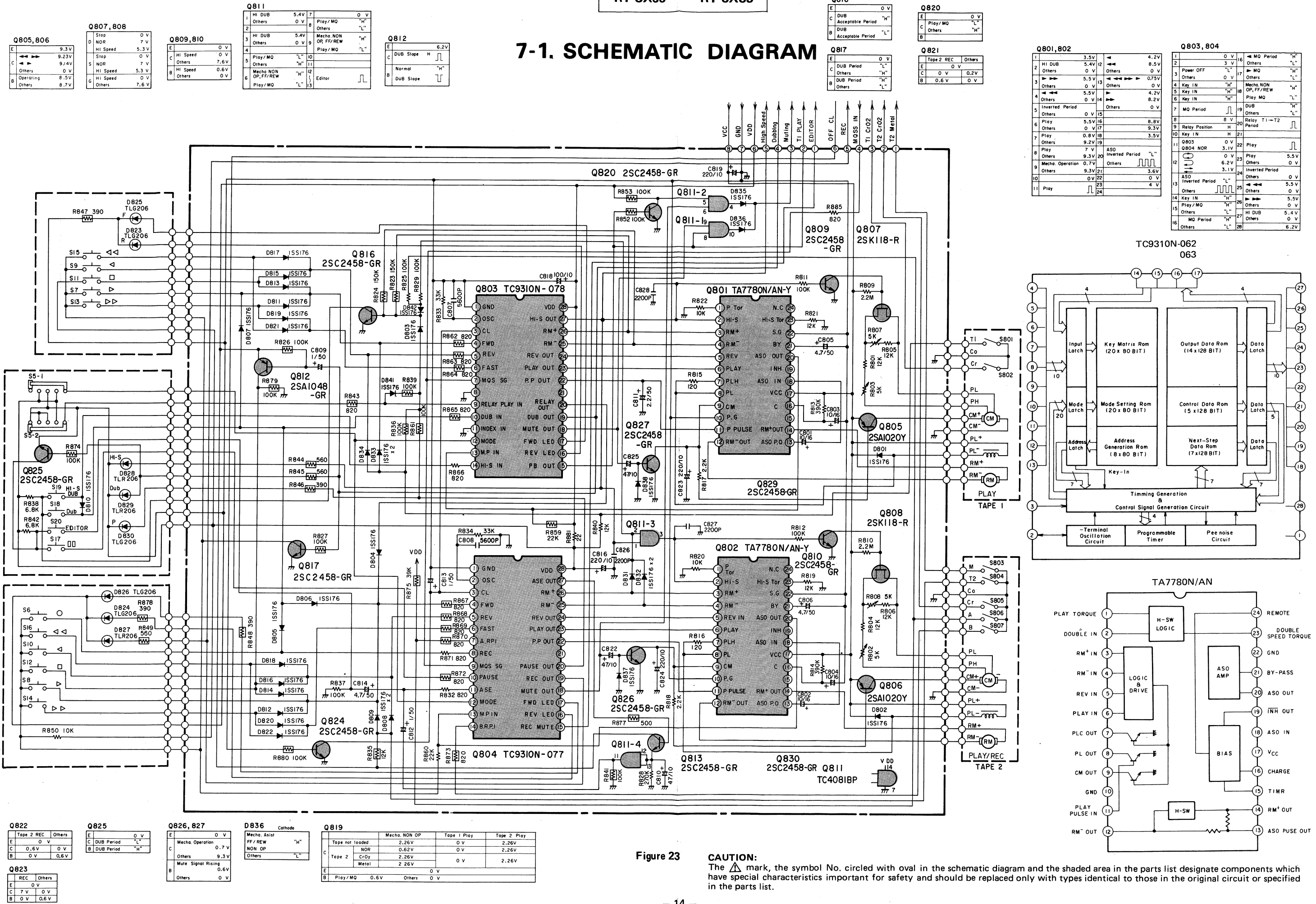


Figure 23

CAUTION: The Δ mark, the symbol No. circled with oval in the schematic diagram and the shaded area in the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list.

9. MECHANISM PARTS LIST

Symbol No.	Part No.	Description	Symbol No.	Part No.	Description
1A	25791824	Motor Ass'y, Main	58	25784208	Lever, Play Lock
1B	25791902	Motor Ass'y, Reel	59	25784209	Lever, Play
3	25759037	Belt, Drive	62	22707350	Screw, BID Hd. 2.6d x 5mml
4	22217461	Head, Record/Playback Tape 1	63	22707825	Screw, PAN Hd. 2.6d x 6mml with Washer
4	22217450	Head, Record/Playback/Erase Tape 2	64	22707429	Screw, Special, 2.6d x 4.9mml Motor
6A	25717600	Pressure Roller, Right	65	22702173	Screw, PAN Hd. 2.4d x 6mml, BLK
6B	25797022	Pressure Roller, Left	66	22708040	Screw, BID Hd. Tapping 2d x 5mml
7	25754483	Reel Drum	67	22707278	Screw, BID Hd. 2d x 3mml
9A	25797047	Flywheel Ass'y, Right	68	22707475	Screw, BID Hd. 2.6d x 4mml
9B	25797048	Flywheel Ass'y, Left	69	22707473	Screw, BID Hd. 2.6d x 6mml
10	25725456	Holder, Flywheel	71	22701354	Screw, FLT Hd. 2d x 6mml
12	25761238	Cushion	72	22703269	Washer, 3mmd
13	25761450	Cushion, Motor	74	22707301	Screw, BID Hd. Tapping 2.6d x 8mml
14	25761481	Cushion	75	25726746	Spacer
15	25764486	Washer	76	25766043	Washer, 2.5d x 6d x 0.5t
16	25791780	Chassis Ass'y, Mechanism	78	25726665	Spacer
17	25777424	Spring	80	25726753	Stop Spacer
18	25778190	Spring, Pressure Roller, Left	83	25734532	Stopper, Take-up Lever
19	25778198	Spring, Pressure Roller, Right			
20	25783226	Bushing			
23	25756486	Gear Kit, Transfer			
24	25754436	Collar, Reel			
26	25766050	Washer, 1.6d x 4d x 1.5t			
27	25766223	Washer			
28	25777418	Spring			
30	25757132	Steel Ball, 1.5mmd			
31	25776721	Spring			
32	25777404	Spring, Tape Guide			
33	25778211	Spring, Player Lever			
34	25779427	Spring			
35	25783258	Nut, Adjusting			
36	25783391	Guide, Tape			
37	25797037	Head Slider Ass'y			
39	25776770	Spring, Eject			
40	25778199	Spring			
41	25784206	Lever			
42	25784207	Slider			
44	20798033	Ring			
45	22147278	Solenoid			
48	25756454	Cam Gear Ass'y			
49	25776769	Spring, MQS			
50	25776771	Spring, Reverse Lever			
51	25776772	Spring, Reverse			
52	25776773	Spring, Shift			
53	25776793	Spring, Cam Lock			
54	25778192	Spring, Play Lock			
55	25783239	Bushing			
56	25791835	Lever Ass'y, Cam Lock			
57	25784192	Lever, Reverse			

11. CABINET PARTS LIST

K = Black, W = White

Symbol No.	Part No.	Description	Symbol No.	Part No.	Description
301	25883890	Front Cabinet Ass'y, K-VF	334	25776780	Spring, Dial Drum
301	25885106	Front Cabinet Ass'y, W-CA	335	25809022	Tweeter Grill
302	25883878	Back Cabinet Ass'y, K-VF	336	25857292	Washer, Tweeter
302	25885105	Back Cabinet Ass'y, W-CA	337	25883769	Front Speaker Cabinet Ass'y Right, K-VF
303	25783195	Bushing	337	25883727	Front Speaker Cabinet Ass'y Right, W-CA
304	25831378	Cover, Volume	339	25857322	Cover, Speaker Box, K-VF
305	25857278	Cover, Mode Switch	339	25857321	Cover, Speaker Box, W-CA
306	25857281	Cover, Select Switch, K-VF	340	25883771	Front Speaker Cabinet Ass'y Left, K-VF
306	25857317	Cover, Select Switch, W-CA	340	25883726	Front Speaker Cabinet Ass'y Left, W-CA
307	25886439	Knob, Mode Switch, Slide	341	25884113	Back Speaker Cabinet, K-VF
308	25886440	Knob, Volume	341	25884068	Back Speaker Cabinet, W-CA
309	25837993	Knob, Select	342	22707801	Screw, BID Hd. Tapping 3d x 12mml, Chrome
310	25886442	Knob, Mode Switch	343	22708033	Screw, BID Hd. Tapping 3d x 10mml, BLK
311	25886443	Knob, Power	344	22707843	Screw, BID Hd. Tapping 3d x 16mml, RED
312	25886447	Knob, Tuning	345	22708007	Screw, BID Hd. Tapping 4d x 10mml
313	25777124	Spring, Battery	346	22707913	Screw, BID Hd. Tapping 2.6d x 6mml
314	25777417	Spring, Battery	347	22708337	Screw, BID Hd. Tapping
315	25825250	Bushing, Handle	350	22707473	Screw, BID Hd. 2.6d x 6mml
316	25864166	Contact, Battery	351	22707826	Screw, BID Hd. Tapping 3d x 8mml
317	25815262	Handle Ass'y, K-VF	352	22707910	Screw, BID Hd. Tapping 3d x 6mml
317	25883725	Handle Ass'y, W-CA	353	22701457	Screw, BID Hd. 3d x 6mml
318	25775284	Spring, Cassette Up	354	22707798	Screw, PAN Hd. Tapping with Washer, 3d x 10mml
319	25858498	Cushion, Built-in Microphone	355	22743357	Speaker Box Joint, Right
320	25886552	Knob, Eject, K-VF	356	22743358	Speaker Box Joint, Left
320	25886445	Knob, Eject, W-CA	357	22742316	Dial Drum
321	25883722	Damper Ass'y	358	22900492	Reflector, Front Cabinet No used for W-CA
322	25885031	Cassette Holder Ass'y, Left, K-VF	361	25886203	Knob, Mixing Volume
322	25885107	Cassette Holder Ass'y, Left, W-CA	363	25857318	Cover, Select Switch, Function
323	25885032	Cassette Holder Ass'y, Right, K-VF			
323	25885108	Cassette Holder Ass'y, Right, W-CA			
324	25779272	Spring, Cassette Holder			
325	25883873	Mode Knob Ass'y, Low Speed, K-VF			
325	25883720	Mode Knob Ass'y, Low Speed, W-CA			
326	25883874	Mode Knob Ass'y, High Speed, K-VF			
326	25883721	Mode Knob Ass'y, High Speed, W-CA			
327	22714381	Frame, Tuner			
328	22714382	Frame, Tuning Shaft			
329	22741476	Pointer			
330	22742162	Pulley			
331	22743337	Tuning Shaft			
332	25884109	Cover, Battery, K-VF			
332	25884094	Cover, Battery, W-CA			
333	22999222	Dial Cord, 0.5mmd			

12. PARTS LIST

CAUTION:

The Δ mark, the symbol No. circled with oval in the schematic diagram and the shaded area in the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list.

Symbol No.	Part No.	Description	Symbol No.	Part No.	Description
TRANSISTORS, IC'S & DIODES					
Q001	B0325502	IC, TA7358AP	D001, 202, 402 ~ 406, 501 ~ 510, 803 ~ 822, 831 ~ 839, 841, 842	A7160570	Diode, 1SS176
Q101	B0358070	IC, TA7757P	D101, 102	A7289000	Diode, 1S2236
Q201	B0325620	IC, TA7370P	D201, 902	A8603140	Diode, LED, TLR208, RED
Q301 ~ 310, 313, 314, 319, 402 ~ 404, 413, 414, 417, 509, 510, 511, 515, 809, 810, 813, 816, 817, 819 ~ 827,	A6332440	Transistor, 2SC2458-GR	D823, 824, 825, 826 830	A8606640	Diode, LED, TLG206, GRN
Q315, 316	A6342210	Transistor, 2SC2878-B	D827, 828, D829	A8603120	Diode, LED, TLR206, RED
Q317, 407 ~ 412, 503 ~ 508, 708, 808	A6041970	Transistor, 2SK118NEW-R	Δ D901	A7682012	Diode, 1B2C1 (T)
Q318	B0319970	IC, TA7233P	D903, 904	A7110131	Diode, Zener, 05Z6.8Y (LB10)
Q401	B0356695	IC, TA7668BP	D905	A7110312	Diode, Zener, 05Z10-Y
Q405, 406	A6733120	Transistor, 2SC732TM NEW-GR	Δ D906	A7682052	Diode, 1B2Z1 (T)
Q418, 514, 812	A6534440	Transistor, 2SA1048-GR	COILS & TRANSFORMERS		
Q501	B0357890	IC, TA7739P	L001	22294566	Coil, FM Antenna
Q502	B0357320	IC, TA7705P	L002	22294590	Coil, FM Oscillator
Q512, 513	A6321240	Transistor, 2SC2120-Y	L003	22291188	Coil, Choke
Q516, 517	A6041880	Transistor, 2SK117-BL	L101	22265821	IF Transformer, FM
Q601	B0325320	IC, TA7341P	L102	22242985	Coil, Bar Antenna, MW
Q801, 802	22117631	IC, TA7780AN	L103	22264837	IF Transformer, AM
Q803	22117643	IC, TC9310N-077	L104	22264838	IF Transformer, AM
Q804	22117644	IC, TC9310N-078	L105	22245385	Coil, Oscillator, MW
Q805, 806	A6534125	Transistor, 2SA1020-Y	L106	22265886	IF Transformer, FM
Q811	B0470813	IC, TC4081BP	L107	22282250	Coil, SW ₂ Antenna
Q901, 902	A6330425	Transistor, 2SC2500-B, Z	L108	22282255	Coil, SW ₁ Antenna
Q903	A6848520	Transistor, 2SD880-Y	L109	22285320	Coil, SW ₂ Oscillator
			L110	22285319	Coil, SW ₁ Oscillator
			L501	22235257	Coil, Bias Oscillator, Tape
			Δ T901	22224470	Power Transformer

Symbol No.	Part No.	Description
ELECTRICAL PARTS		
S101 S201 ~ 204	22196430 22196573	Switch, Lever, Band Select Switch, Lever, Phono-AUX- Radio-Tape
S301/302	22196293	Switch, Lever, Stereo Wide- Stereo-Mono
S5-1/5-2	22196568	Switch, Slide, Reverse Mode
S6	22196601	Switch, Key, Record, Tape 2
S7	22196601	Switch, Key, Forward Tape 1
S8	22196601	Switch, Key, Forward Tape 2
S9	22196601	Switch, Key, Reverse Tape 1
S10	22196601	Switch, Key, Reverse Tape 2
S11	22196601	Switch, Key, Stop Tape 1
S12	22196601	Switch, Key, Stop Tape 2
S13	22196601	Switch, Key, FF Tape 1
S14	22196601	Switch, Key, FF Tape 2
S15	22196601	Switch, Key, REW Tape 1
S16	22196601	Switch, Key, REW Tape 2
S17	22196492	Switch, Key, Pause
S18	22196492	Switch, Key, Dubbing
S19	22196492	Switch, Key, High Speed
S20	22196492	Switch, Key, Editor
S801, 802	22196538	Switch, Leaf, CrO ₂ , Tape 1
S803	22196539	Switch, Leaf, Metal
S804 ~ 807	22196538	Switch, Leaf, CrO ₂ , Erasure Prevention A Side and B
S901/902	22196569	Switch, Push, Power ON/OFF
J301	22198015	Jack, 3.5mmd, Headphone
J302	22162546	Speaker Terminal, 4P
J303	22198153	Jack, 3.5mmd
J401, 402	22198016	Jack, 3.5mmd, Ext. Microphone
J403/404/ 405/406	22163887	Jack, Pin, US-4P, Phone/AUX
J901	22167990	AC Socket, 3P
A001	22124710	Rod Antenna
W301, 302	22152539	Speaker, 100mmd, Woofer
W303, 304	22152496	Speaker, 20mmd, Tweeter
G401	22154233	Microphone, Built-in
Z001	22153354	Filter, Bypass, FM
Z101	22153299	Filter, Ceramic, FM
Z102	22153070	Filter, Ceramic, AM
EP01	22170575	Speaker Cord
PL	22147282	Solenoid

Symbol No.	Part No.	Description
CAPACITORS		
D = ±0.5pF, J = ±5%, K = ±10%, M = ±20%, Z = -20+80%		
ABBREVIATIONS: CD = Ceramic Disk, PF = Plastic Film,		
EL = Electrolytic		
C001/002/ 003/004/ 005/006/ 007/008	22308235	Variable Capacitor
C009	22361200	CD, 20pF, 50V, J
C010	22349102	CD, 1000pF, 50V, K
C011	22342223	CD, 0.022mfd, 50V, Z
C012	22361509	CD, 5pF, 50V, D
C013	22361200	CD, 20pF, 50V, J (RH)
C014	22349471	CD, 470pF, 50V, K
C015	22360134	CD, 22pF, 50V, J, CH
C016	22362391	CD, 390pF, 50V, K
C017	22361409	CD, 4pF, 50V, D
C018	22361100	CD, 10pF, 50V, D
C019	22360313	CD, 12pF, 50V, J, CH
C022	22360821	CD, 18pF, 50V, J
C023/024	22309183	Trimmer Capacitor MW/SW ₁ Ant.
C025	22361470	CD, 47pF, 50V, J
C026	22361330	CD, 33pF, 50V, J
C101, 102	22342223	CD, 0.022mfd, 50V, Z
C103, 104	22342223	CD, 0.022mfd, 50V, Z
C105	22349102	CD, 1000pF, 50V, K
C106	22342223	CD, 0.022mfd, 50V, Z
C107	22483470	EL, 47mfd, 10V
C108	22483221	EL, 220mfd, 10V
C109	22488479	EL, 4.7mfd, 50V
C110	22342223	CD, 0.022mfd, 50V, Z
C111	22349391	CD, 390pF, 50V, K
C112	22488478	EL, 0.47mfd, 50V
C113	22342223	CD, 0.022mfd, 50V, Z
C114	22321058	PF, 1200pF, 50V, J
C115	22321016	PF, 360pF, 50V, J
C116/117	22309183	Trimmer Capacitor MW/SW ₂ Osc.
C118	22361309	CD, 3pF, 50V, D
C120	22361509	CD, 5pF, 50V, D
C121	22342223	CD, 0.022mfd, 50V, Z
C122	22321065	PF, 4700pF, 50V, J
C201	22360333	PF, 0.1mfd, 25V, M
C202	22360331	PF, 0.047mfd, 25V, M
C203	22321051	PF, 390pF, 50V, J
C204	22360484	PF, 0.047mfd, 50V, Z
C205	22360327	PF, 0.01mfd, 25V, M
C206	22360327	PF, 0.01mfd, 25V, M
C207	22488479	EL, 4.7mfd, 50V
C208	22488479	EL, 4.7mfd, 50V

Symbol No.	Part No.	Description
C301, 302	22488109	EL, 1mfd, 50V
C303, 304	22349331	CD, 330pF, 50V, K
C305, 306	22485100	EL, 10mfd, 16V
C307, 308	22488208	EL, 0.22mfd, 50V
C309, 310	22360332	PF, 0.068mfd, 25V, M
C311, 312	22360329	PF, 0.022mfd, 25V, M
C313, 314	22360543	PF, 8200pF, 25V, K
C315, 316	22360324	PF, 3300pF, 25V, M
C317, 318	22488228	EL, 0.22mfd, 50V
C319, 320	22360332	PF, 0.068mfd, 25V, M
C321, 322	22360329	PF, 0.022mfd, 25V, M
C323, 324	22360542	PF, 6800pF, 25V, K
C326	22360536	CD, 2200pF, 25V, K
C327, 328	22488109	EL, 1mfd, 50V
C329	22483470	EL, 47mfd, 10V
C330	22483221	EL, 220mfd, 10V
C331	22488478	EL, 0.47mfd, 50V
C332	22349472	CD, 4700pF, 50V, K
C333, 334	22488478	EL, 0.47mfd, 50V
C335, 336	22488339	EL, 3.3mfd, 50V
C337, 338	22483470	EL, 47mfd, 10V
C339, 340	22349102	CD, 1000pF, 50V, K
C341, 342	22483470	EL, 47mfd, 10V
C343, 344	22370324	PF, 0.15mfd, 50V, J
C345, 346	22483102	EL, 1000mfd, 10V
C347	22483470	EL, 47mfd, 10V
C348	22485221	EL, 220mfd, 16V
C349, 350	22342473	CD, 0.047mfd, 50V, Z
C401	22360333	PF, 0.1mfd, 25V, M
C402	22488479	EL, 4.7mfd, 50V
C403, 404	22349472	CD, 4700pF, 50V, K
C405, 406	22372473	PF, 0.047mfd, 50V, K
C407, 408	22488478	EL, 0.47mfd, 50V
C410	22483470	EL, 47mfd, 10V
C411, 412	22488109	EL, 1mfd, 50V
C413, 414	22360327	PF, 0.01mfd, 25V, M
C415, 416	22360327	PF, 0.01mfd, 25V, M
C417, 418	22349102	PF, 1000pF, 50V, K
C419	22483470	EL, 47mfd, 10V
C420	22483101	EL, 100mfd, 10V
C421, 422	22488339	EL, 3.3mfd, 50V
C423	22488108	EL, 0.1mfd, 50V
C424	22342223	PF, 0.022mfd, 50V, Z
C425	22483101	EL, 100mfd, 10V
C426	22488479	EL, 4.7mfd, 50V
C427, 428	22488109	EL, 1mfd, 50V
C429, 430	22361100	CD, 10pF, 50V, D
C431, 432	22362101	CD, 100pF, 50V, K
C433	22488109	EL, 1mfd, 50V
C436, 437	22488109	EL, 1mfd, 50V
C501, 502	22349471	CD, 470pF, 50V, K

Symbol No.	Part No.	Description
C503, 504	22361100	CD, 10pF, 50V, D
C505, 506	22483470	EL, 47mfd, 10V
C507, 508	22360327	PF, 0.01mfd, 25V, M
C509, 510	22372104	PF, 0.1mf, 50V, M
C511, 512	22488339	EL, 3.3mfd, 50V
C513, 514	22488339	EL, 3.3mfd, 50V
C515, 516	22349681	CD, 680pF, 50V, K
C517, 518	22485100	EL, 10mfd, 16V
C519, 520	22360537	PF, 2700pF, 25V, K
C521, 522	22349222	CD, 2200pF, 50V, K
C523, 524	22349222	CD, 2200pF, 50V, K
C525, 526	22349391	CD, 390pF, 50V, K
C527	22483331	EL, 330mfd, 10V
C528, 529	22349471	CD, 470pF, 50V, K
C530, 531	22483101	EL, 100mfd, 10V
C532	22483101	EL, 100mfd, 10V
C533	22349102	CD, 1000pF, 50V, K
C534	22349222	CD, 2200pF, 50V, K
C535	22321198	PF, 0.015mfd, 100V, J
C536	22372333	PF, 0.033mfd, 50V, K
C537	22483101	EL, 100mfd, 10V
C538	22372103	PF, 0.01mfd, 50V, K
C539	22361100	CD, 10pF, 50V, D
C540	22360331	PF, 0.047mfd, 25V, M
C541, 542	22349472	CD, 4700pF, 50V, K
C543	22483470	EL, 47mfd, 10V
C544	22488109	EL, 1mfd, 50V
C601	22485100	EL, 10mfd, 16V
C602	22360328	CD, 0.015mfd, 50V, M
C603	22342223	CD, 0.022mfd, 50V, Z
C604	22483470	EL, 47mfd, 10V
C605	22360328	PF, 0.015mfd, 25V, M
C606	22342223	CD, 0.022mfd, 50V, Z
C801, 802	22485100	EL, 10mfd, 16V
C803, 804	22485100	EL, 10mfd, 16V
C805, 806	22488479	EL, 4.7mfd, 50V
C807, 808	22371562	PF, 5600pF, 50V, J
C809	22488109	EL, 1mfd, 50V
C810	22483470	EL, 47mfd, 10V
C811	22488229	EL, 2.2mfd, 50V
C812	22488109	EL, 1mfd, 50V
C813, 814	22440441	EL, 1mfd, 50V
C815	22488479	EL, 4.7mfd, 50V
C816	22483221	EL, 220mfd, 10V
C818	22483101	EL, 100mfd, 10V
C819	22483221	EL, 220mfd, 10V
C822	22483470	EL, 47mfd, 10V
C823, 824	22483221	EL, 220mfd, 10V
C825	22483470	EL, 47mfd, 10V
C826, 827	22349222	CD, 2200pF, 50V, K
C828	22349222	CD, 2200pF, 50V, K

Symbol No.	Part No.	Description
C901, 902	22342223	CD, 0.022mfd, 50V, Z
△ C903	22440729	EL, 4700mfd, 16V
C904	22342223	CD, 0.022mfd, 50V, Z
C905	22483331	EL, 330mfd, 10V
C906	22342223	CD, 0.022mfd, 50V, Z
C907	22483331	EL, 330mfd, 10V
C908	22342223	CD, 0.022mfd, 50V, Z
C909	22483331	EL, 330mfd, 10V
C910	22342223	CD, 0.022mfd, 50V, Z
RESISTORS		
<p>1. Resistors are Fixed Carbon Film 1/6W, ±5% unless otherwise noted.</p> <p>2. PR is short for the printed resistor circuit. If replacement of the resistor in PR is required, please use the substitutional fixed carbon film resistor of 1/6W, ±5% according to the following list.</p> <p>K = 1000, M = 1000000</p>		
R001	22584103	10K ohm
R002	22584330	33 ohm
R101	22584471	470 ohm
R102	22584104	100K ohm, PR
R103	22584101	100 ohm
R104	22584470	47 ohm
R105	22584473	47K ohm
R106	22584333	33K ohm, PR
R107	22584151	150 ohm
R108	22584104	100K ohm, PR
R109	22584223	22K ohm
R110	22584682	6.8K ohm
R111	22584473	47K ohm, PR
R112	22651664	50K ohm, B, Variable Resistor Fine Tuning
R113	22584102	1K ohm
R114	22584473	47K ohm, PR
R201	22584123	12K ohm, PR
R202	22584273	27K ohm, PR
R203	22658761	10K ohm, B, Semi-fixed Variable, Free Run
R204	22584821	820 ohm
R205, 206	22584223	22K ohm
R207, 208	22584471	470 ohm
R210	22584271	270 ohm
R301, 302	22584105	1M ohm

Symbol No.	Part No.	Description
R303, 304	22584562	5.6K ohm, PR
R305/306, 307/308, 309/310, 311/312, 313/314	22657344	100K ohm, W, Variable Resistor, Equalizer
R315, 316, 317, 318	22584104	100K ohm
R319	22584104	100K ohm, PR
R320	22584104	100K ohm
R321	22584104	100K ohm, PR
R322	22584104	100K ohm
R325, 326	22584471	470 ohm
R327, 328	22584391	390 ohm
R329, 330	22584471	470 ohm
R331, 332	22584391	390 ohm
R335, 336, 337, 338, 339, 340, 341, 342, 343, 344	22584103	10K ohm, PR
R345, 346	22584562	5.6K ohm
R347/348	22657346	20K ohm, A, Variable Resistor, Volume
R349, 350	22584223	22K ohm
R351	22584820	82 ohm
R353	22584563	56K ohm
R354	22584184	180K ohm
R355, 356	22584472	4.7K ohm
R361, 362	22584223	22K ohm
R363, 364	22584181	180 ohm
R365, 366	22584820	82 ohm
R367	22584104	100K ohm
R368	22584225	2.2M ohm
R371	22584223	22K ohm
R372	22584222	2.2K ohm
R377	22584472	4.7K ohm
R378	22555102	1K ohm, 1/4W
R379	22584102	1K ohm
R401	22584272	2.7K ohm
R402	22584332	3.3K ohm
R403, 404	22584471	470 ohm
R405, 406	22584473	47K ohm
R407, 408	22584103	10K ohm
R409, 410	22584222	2.2K ohm
R411, 412	22584682	6.8K ohm
R413, 414	22584103	10K ohm
R415, 416	22584153	15K ohm
R417, 418	22584473	47K ohm
R419, 420	22584102	1K ohm
R421	22584104	100K ohm
R422	22584225	2.2M ohm

Symbol No.	Part No.	Description
R423, 424	22584332	3.3K ohm
R427, 428	22584334	330K ohm
R430	22584680	68 ohm
R431, 432	22584225	2.2M ohm
R433, 434	22584225	2.2M ohm
R435	22584223	22K ohm
R436	22584104	100K ohm
R437	22584224	220K ohm
R438	22584470	47 ohm
R439	22584224	220K ohm
R440	22584332	3.3K ohm
R441, 442	22584473	47K ohm
R443, 444	22584223	22K ohm, PR
R445, 446	22584562	5.6K ohm
R451	22584152	1.5K ohm
R452	22584222	2.2K ohm
R454	22584104	100K ohm, PR
R455	22584223	22K ohm
R456	22584333	33K ohm
R457	22584104	100K ohm
R458	22584102	1K ohm
R461, 462	22584103	10K ohm, PR
R466	22584473	47K ohm
R467	22584104	100K ohm, PR
R501, 502, 503, 504	22584104	100K ohm, PR
R505, 506, 507, 508	22584225	2.2M ohm
R509	22584103	10K ohm
R511, 512	22584681	680 ohm
R513, 514	22584334	330K ohm
R517, 518	22584471	470 ohm
R520	22584470	47 ohm, PR
R521, 522	22584472	5K ohm, PR
R523, 524	22584823	82K ohm
R525, 526	22584821	820 ohm
R527, 528	22584473	47K ohm
R529, 530	22584333	33K ohm, PR
R531, 532	22584104	100K ohm
R533, 534	22584391	390 ohm, PR
R535, 536	22584225	2.2M ohm
R538, 539, R540	22584104	100K ohm, PR
R541, 542	22584103	10K ohm, PR
R543, 544	22584223	22K ohm
R545	22584682	6.8K ohm
R546	22584820	82 ohm
R547, 548, 549	22584104	100K ohm
R550	22555229	2.2 ohm, 1/4W
R551	22584331	330 ohm
R552	22584152	1.5K ohm
R554	22584821	820 ohm

Symbol No.	Part No.	Description
R556	22584821	820 ohm
R557	22584472	4.7K ohm
R558	22584223	22K ohm
R559, 560	22584104	100K ohm
R561, 562	22584225	2.2M ohm
R563	22584104	100K ohm
R564	22584152	1.5K ohm
R565, 566	22584101	100 ohm
R567	22584104	100K ohm
R601, 602	22584103	10K ohm, PR
R603, 604	22584104	100K ohm
R605	22584333	33K ohm
R606	22584103	10K ohm
R607	22584153	15K ohm
R608	22584330	33 ohm
R801	22584123	12K ohm
R802, 803	22658760	5K ohm, B, Semi-fixed Variable, Speed Control
R804, 805, 806	22584123	12K ohm
R807, 808	22658760	5K ohm, B, Semi-fixed Variable, Speed Control
R809, 810	22584225	2.2M ohm
R811, 812	22584104	100K ohm
R813, 814	22584394	390K ohm
R815, 816	22555121	120 ohm, 1/4W
R817, 818	22584222	2.2K ohm
R819	22584223	22K ohm
R820	22584183	18K ohm
R821	22584223	22K ohm
R822	22584183	18K ohm
R823, 824	22584154	150K ohm, PR
R825	22584104	100K ohm
R826, 827	22584104	100K ohm, PR
R828	22584224	220K ohm
R829	22584104	100K ohm
R832	22584821	820 ohm
R833, 834	22584333	33K ohm
R835	22584123	12K ohm, PR
R836, 837	22584104	100K ohm
R838	22584682	6.8K ohm
R839	22584104	100K ohm, PR
R840	22584123	12K ohm
R841	22584104	100K ohm, PR
R842	22584682	6.8K ohm, PR
R843	22584821	820 ohm, PR
R844, 845	22584561	560 ohm, PR
R846, 847, 848	22584391	390 ohm, PR
R849	22584561	560 ohm, PR
R850	22584103	10K ohm
R851, 852	22584104	100K ohm

