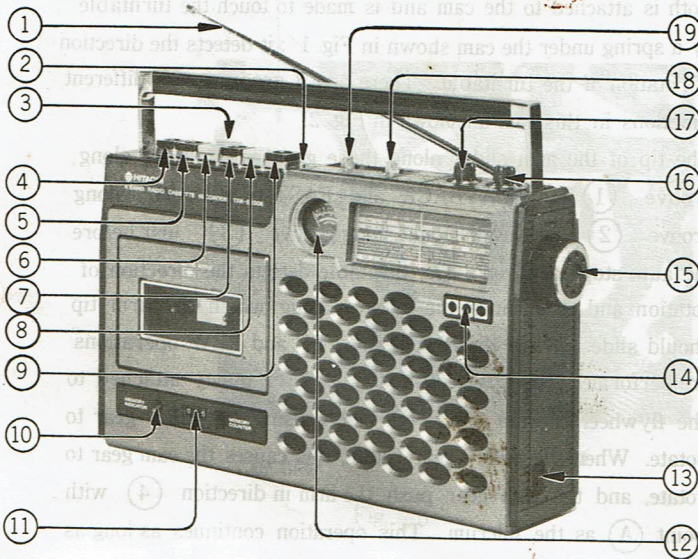


## SERVICE MANUAL

No. 812



- |                      |                       |
|----------------------|-----------------------|
| ① TELESCOPIC ANTENNA | ⑪ MEMORY COUNTER      |
| ② TAPE SELECTOR      | ⑫ LEVEL METER         |
| ③ MEMORY BUTTON      | ⑬ 2P SOCKET           |
| ④ PAUSE BUTTON       | ⑭ BUILT-IN MICROPHONE |
| ⑤ F.F BUTTON         | ⑮ TUNING CONTROL KNOB |
| ⑥ REWIND BUTTON      | ⑯ VOLUME CONTROL KNOB |
| ⑦ PLAY BUTTON        | ⑰ TONE CONTROL KNOB   |
| ⑧ RECORD BUTTON      | ⑱ BAND SELECTOR       |
| ⑨ STOP/EJECT BUTTON  |                       |
| ⑩ MEMORY INDICATOR   |                       |

## SPECIFICATIONS

### TAPE RECORDER

Tape	Compact cassette
Tape Speed	4.75cm/s
Track System	Monaural dual track
Recording System	AC bias, 27±3 kHz
Erasing System	DC erase
Frequency Range	Normal : 80~10000 Hz CrO <sub>2</sub> : 80~12000 Hz
S/N Ratio	AC : -35 dB DC : -40 dB
Cross Talk	-60 dB
Wow & Flutter	0.4% RMS
Motor	DC motor (Mechanical Governor Control)
F.F · Rewind Time	2 minutes
Distortion Rate	Less than 5%
Erase Rate	-60 dB

### RADIO

Circuit System	FM/AM superheterodyne
Tuning Range	FM : 88~108 MHz SW : 6~18 MHz MW : 530~1605 kHz LW : 150~350 kHz
Intermediate Frequency	FM : 10.7 MHz AM : 455 kHz

Sensitivity	FM : 5 dB(max.), 15 dB(pra.) SW : 20 dB(max.), 25 dB(pra.) MW : 35 dB(max.), 48 dB(pra.) LW : 45 dB(max.), 54 dB(pra.)
Antenna	FM, SW : Telescopic antenna MW, LW : Ferrite-core antenna

### GENERAL

Semiconductors	2 IC, 8 transistor, 12 diode, 1 varistor
Power Supply	DC 6V (IEC R20×4) AC 220V 50 Hz [E] AC 240V 50 Hz [E(BS)]
Power Consumption	6W
Speaker	8Ω, P.M., 10cm
Maximum Output	2.8W
Jacks	Microphone jack Remote control jack DIN jack Monitor jack
Dimensions	19.3cm (H) × 32.0cm (W) × 8.8cm (D)
Weight	2.8 kg

TAPE RECORDER WITH FM/AM RADIO

October 1975



# NEW MECHANISM'S OPERATION

## 1. AUTOMATIC STOP

The TRK-5030 is provided with a full-auto-stop mechanism ; when the end of the tape is reached in all modes, (FF, REW, REC and PLAY) operations are stopped automatically.

The operation of this mechanism is controlled by the turntable, cam, arm and flywheels shown in Figs. 1,2 and 3. There is a sliding cloth between the turntable and cam on the rewind side. This cloth is attached to the cam and is made to touch the turntable by a spring under the cam shown in Fig. 1 ; it detects the direction of rotation of the turntable. There are 3 grooves with different functions in this cam as shown in Fig. 2.

The tip of the arm slides along these grooves. It slides along groove ① in PLAYBACK and FAST-FORWARD, along groove ② in REWIND and along groove ③ just before the auto-stop operation. The turntable detects the direction of rotation and determines the groove along which the arm tip should slide. When the PLAY, REC, FF and REW operations are performed, the flywheel rotates and the pulley attached to the flywheel capstan drives the belt. causing the pulley gear to rotate. When the pulley gear rotate, this causes the cam gear to rotate, and the cam gear push the arm in direction ④ with point A as the fulcrum. This operation continues as long as the tape is running. When the cam and its gear are in the position ⑤, the relationship between the arm and cam is as shown by the solid line ; when the cam position is ⑥, the relationship is that shown by the dotted line.

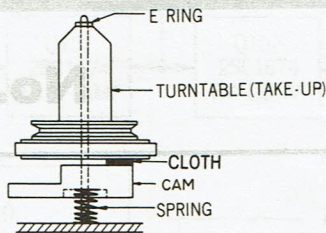


Fig. 1

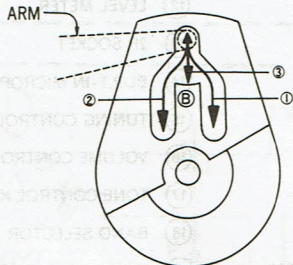


Fig. 2

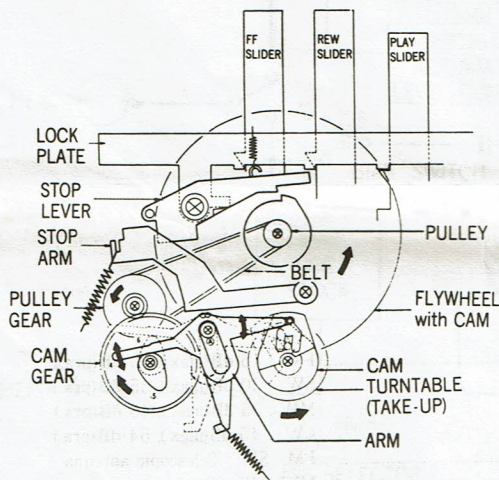


Fig. 3

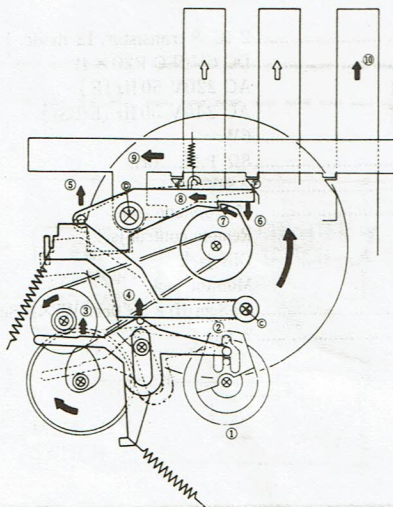


Fig. 4

Operations of parts when the tape comes to a stop are explained below : (See Fig. 4)

- 1) Since the rotation of the turntable stops and the force of this rotation is removed, the cam stops in the condition shown in Fig. 5. (The cam always stops in this position except when the cam section of the cam gear is in the position ⑥ shown in Fig. 3.)
- 2) Tip of the arm slides along groove ③ as shown in Fig. 2. The stroke of the arm when sliding in groove ③ is less than when it is sliding in grooves ① and ② . When the cam gear reaches condition ⑥ as shown in Fig. 3, the cam makes the arm slide in the direction of arrow ③ with point B as fulcrum shown in Fig. 2.
- 3) When the arm slides, its tip causes the stop-arm to slide in the direction of arrow ④ with point C as fulcrum.
- 4) The stop lever slides in the direction of arrow ⑤ with point D as fulcrum.
- 5) In the center of the flywheel there is a convex part which engages with the stop lever when the tape comes to a stop. When the convex part and stop lever engage with each other, the stop lever is slide in the direction of arrow ⑧ by the rotating force of the flywheel.



6) The stop lever presses against the lock-plate which locks when the PLAY, REC, FF or REW buttons are depressed. When the stop lever slides, these buttons are released to enter the stop mode.

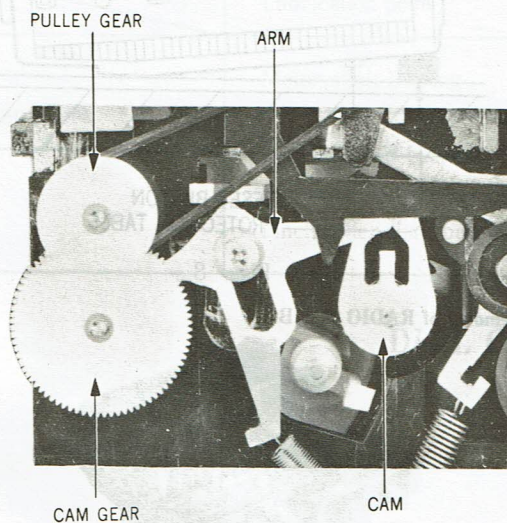


Fig. 5

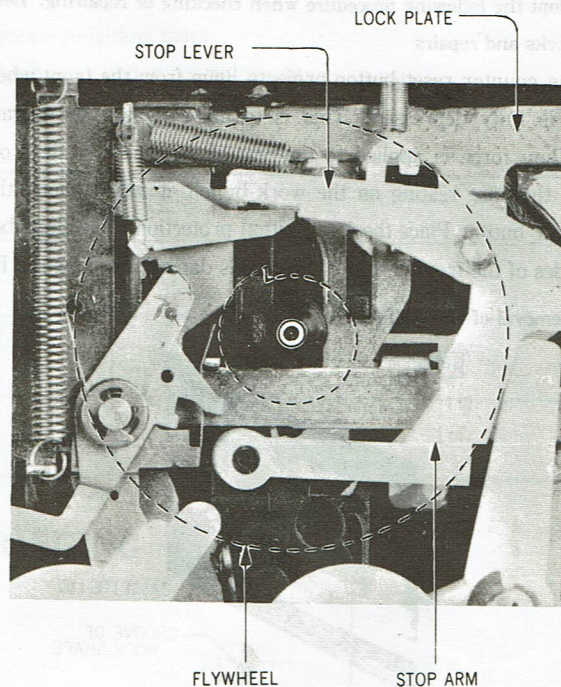


Fig. 6

2. MEMORY COUNTER

The memory counter mechanism is very convenient for listening to a desired part of the recorded tape over and over again or for locating the beginning of a recording so it can be played back. Fig. 7 shows the electric circuit of the memory counter mechanism.

S<sub>1</sub> is the switch in the counter and when the counter reading reaches '999' it is turned ON. S<sub>2</sub> and S<sub>2</sub>' are slide switches interlocked with the memory button; when the memory button is depressed, they are turned ON. S<sub>3</sub> is a switch inside the relay; when the relay is operated, this switch is turned OFF.

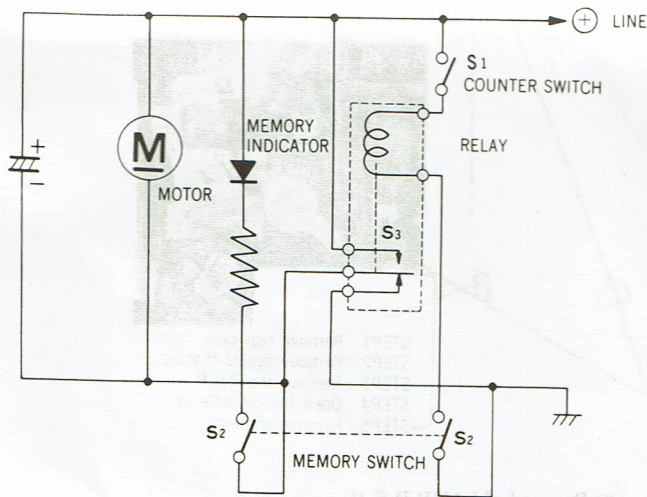


Fig. 7

- 1) Set the memory counter to '000' before playback or recording.
- 2) Depress both the REW and memory buttons at the end of playback or recording.
- 3) S<sub>2</sub> and S<sub>2</sub>' are turned ON when the memory button is depressed, the indicator lamp light as and it enters the REW mode.
- 4) S<sub>1</sub> turns on, the relay operates and S<sub>3</sub> is turned OFF.
- 5) When S<sub>3</sub> is turned OFF, the power supply to the motor is switched off and the memory indicator is turned off. At this point, the operation of the memory counter is complete.

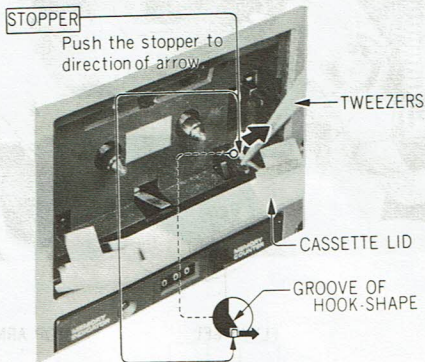


# DISASSEMBLY

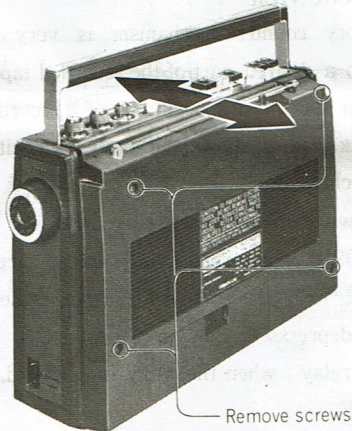
Adopt the following procedure when checking or repairing. Before checks and repairs

The counter reset button projects 3mm from the front when it is fully depressed. This is to make it easy to operate. When force is applied to the rear of the case with the front of the case resting on the work-bench, it may damage the reset button. Place the reset button protection table along both sides of the front case to prevent this damage as shown in Fig. 8.

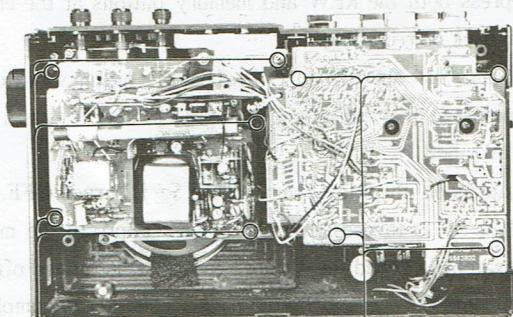
## 1. Removal of CASSETTE LID



## 2. Removal of REAR CASE



## 3. Removal of RADIO CHASSIS, TAPE RECORDER P.C.B



STEP1 : Remove rear case.  
STEP2 : Pull out the four knobs.  
(TUNER, VOL, TONE, FINE TUNER)  
STEP3 : Remove screws.

STEP1 : Remove rear case.  
STEP2 : Remove mould chassis.  
STEP3 : Remove screws.

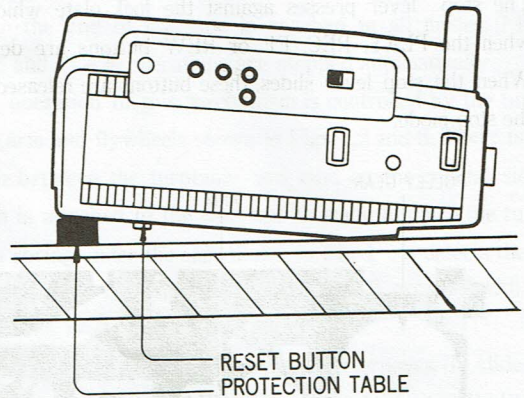
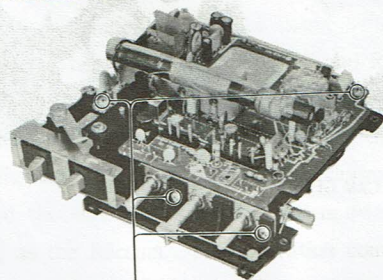


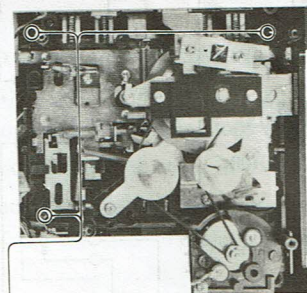
Fig. 8

## 4. Removal of RADIO P.C.B



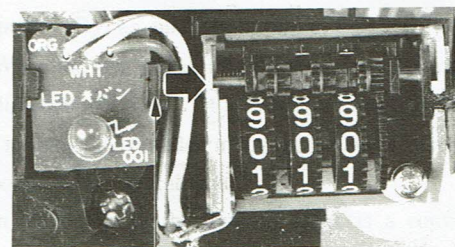
STEP 1 : Remove rear case.  
STEP 2 : Remove mould chassis.  
STEP 3 : Remove screws.

## 5. Removal of DECK CHASSIS



STEP1 : Remove rear case.  
STEP2 : Remove mould chassis.  
STEP3 : Remove the P.C.B.  
STEP4 : Open the cassette lid.  
STEP5 : Remove screws.

## 6. Removal of LAMP P.C.B





## LUBRICATION

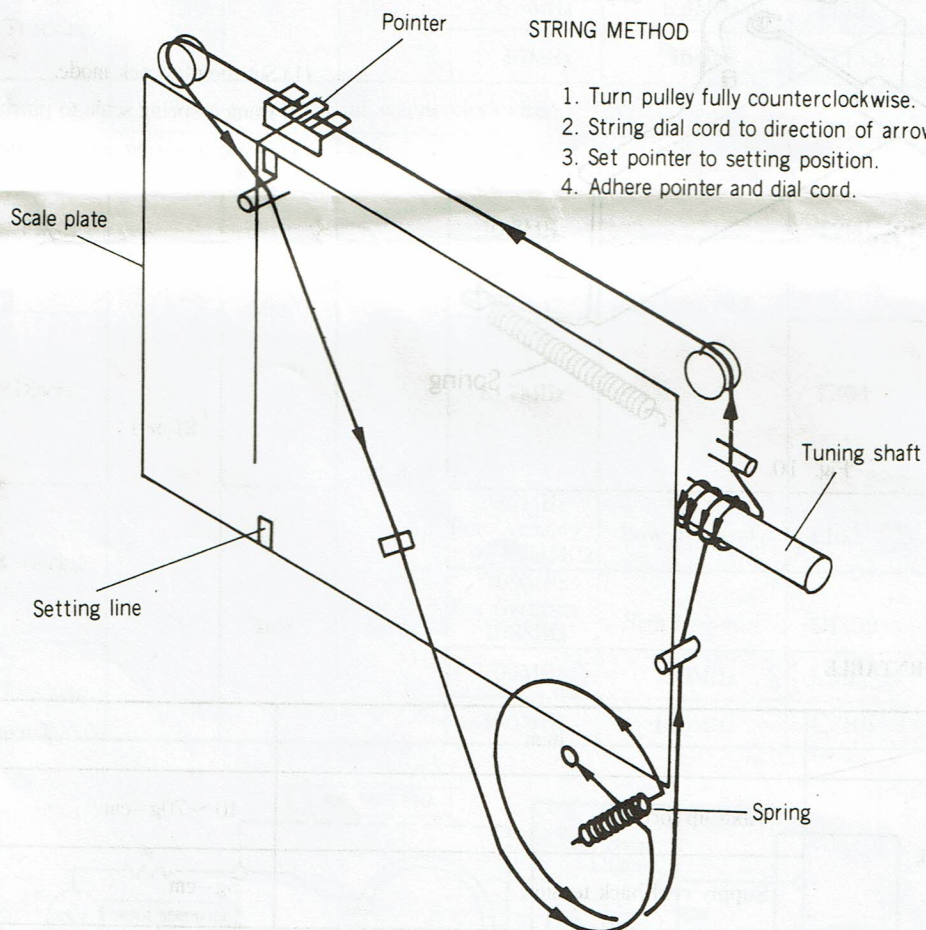
Lubricate one or two drops of machine oil to rotating point or lubricate grease to sliding point.

Lubricate the respective parts listed below once every 1000 hours or once a year under normal conditions of use.

Avoid oiling then excessively, or rotation may become irregular because of oil splashes.

	Lubrication point	Oil or grease
Cassette deck	Motor shaft bearing	Oil
	Capstan shaft bearing	Oil
	Pinch roller shaft bearing	Oil

## DIAL CORD STRINGING



1. Turn pulley fully counterclockwise.
2. String dial cord to direction of arrow.
3. Set pointer to setting position.
4. Adhere pointer and dial cord.



## ADJUSTMENT

## 1. HEAD AZIMUTH



Fig. 9

- (1) Connect a voltmeter to speaker terminal.
- (2) Load instrument with standard tape for head azimuth adjustment.
- (3) Push the playback button, play the standard tape for head azimuth adjustment.
- (4) Adjust the head azimuth adjustment screw for maximum output shown in Fig. 9.

## 2. PRESSURE OF PINCH ROLLER

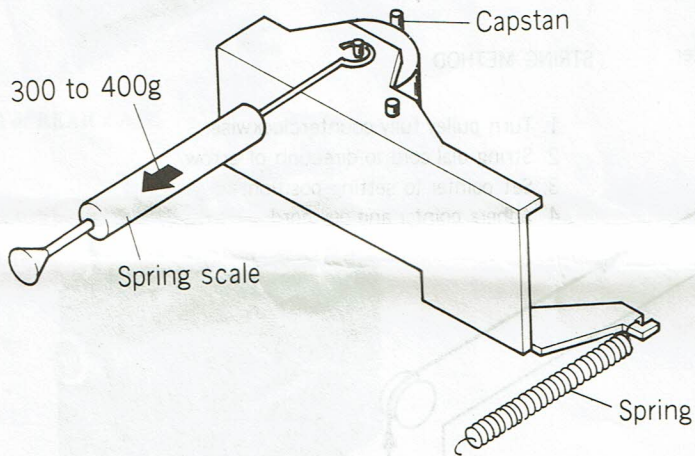


Fig. 10

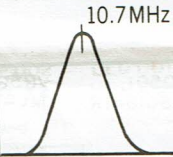
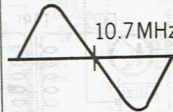
- (1) Set the playback mode.
- (2) Hang a spring scale to pinch roller shaft.
- (3) Draw a spring scale to direction of arrow as shown in Fig. 10.

## 3. TORQUE OF TURNTABLE

	Item	Torque
In playback	Take-up torque	40~70g-cm
	Supply reel back tension	5g-cm
In rewind	Rewind torque	55~85g-cm
In fast forward	Fast forward torque	55~85g-cm



4. TUNER

Step	Band selector	Circuit	Connection	Control knobs		Signal	Pointer	Adjustment parts(See Fig. 13)	Indication
				VOLUME	TONE				
①	Except FM	AM-IF	Fig. 11	Max.	High	465kHz	High freq. end	T205, 202, 201	Maximum output
②	MW	Covering				515kHz	Low freq. end	T155	Maximum output
		Tracking				1650kHz	High freq. end	CT155	
						600kHz	600kHz	T152	
		1400kHz				1400kHz	CT152		
③	LW	Covering				145kHz	Low freq. end	T154	Maximum output
		Tracking				360kHz	High freq. end	CT154	
						160kHz	160kHz	T151	
		330kHz				330kHz	CT151		
④	SW	Covering				5.8MHz	Low freq. end	T156	Maximum output
		Tracking	18.5MHz	High freq. end	CT156				
			6.5MHz	6.5MHz	T153				
		16MHz	16MHz	CT153					
Turn core(T204)full counterclockwise.									
⑤		FM-IF	Fig. 12	Min.	High	10.7MHz	High freq. end	T203, 101	
⑥	FM	Discri.				10.7MHz	T204		
⑦		Covering				87MHz For Germany : 87.5MHz	Low freq. end	L103	Maximum output
		Tracking				109MHz For Germany : 108MHz	High freq. end	CT102	
						90MHz	90MHz	L101	
		106MHz				106MHz	CT101		

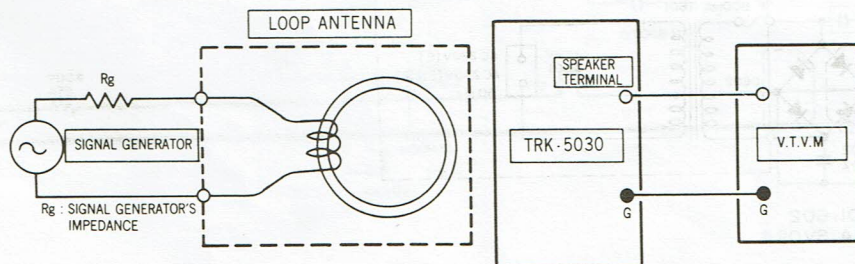


Fig. 11



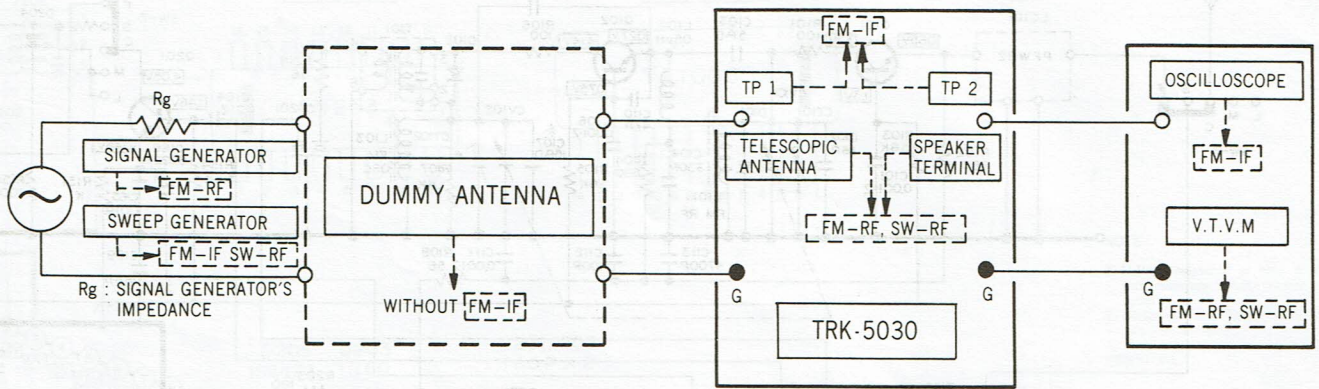


Fig. 12

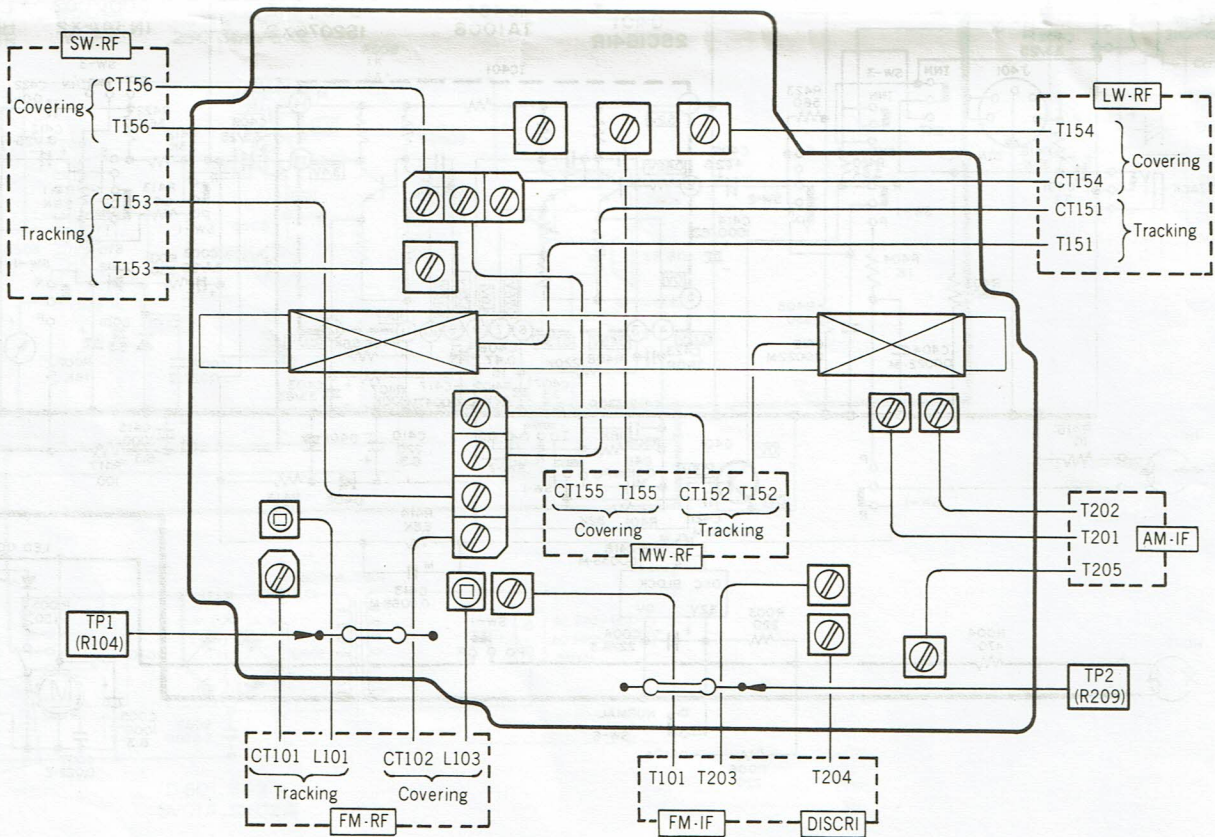
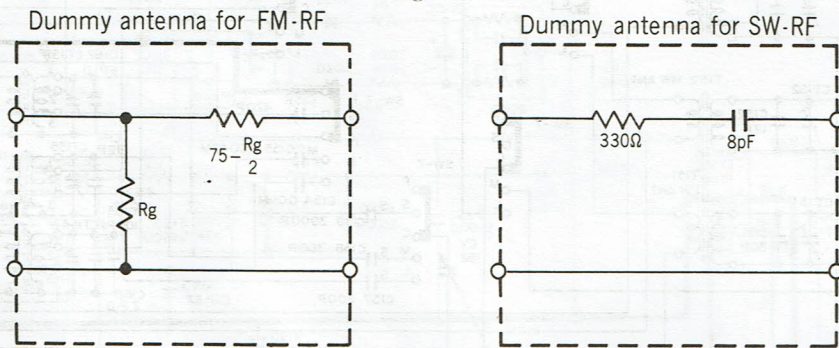
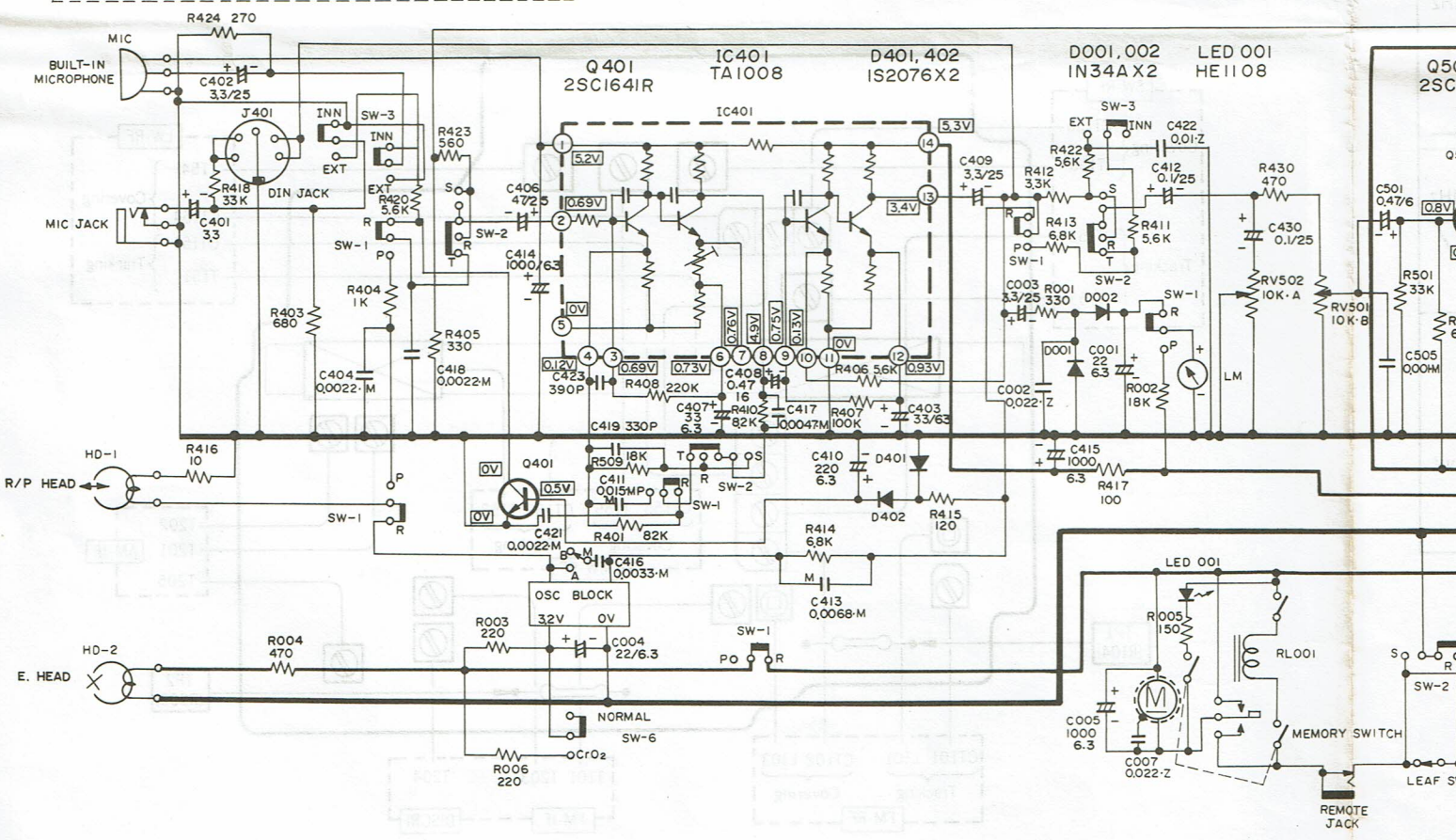
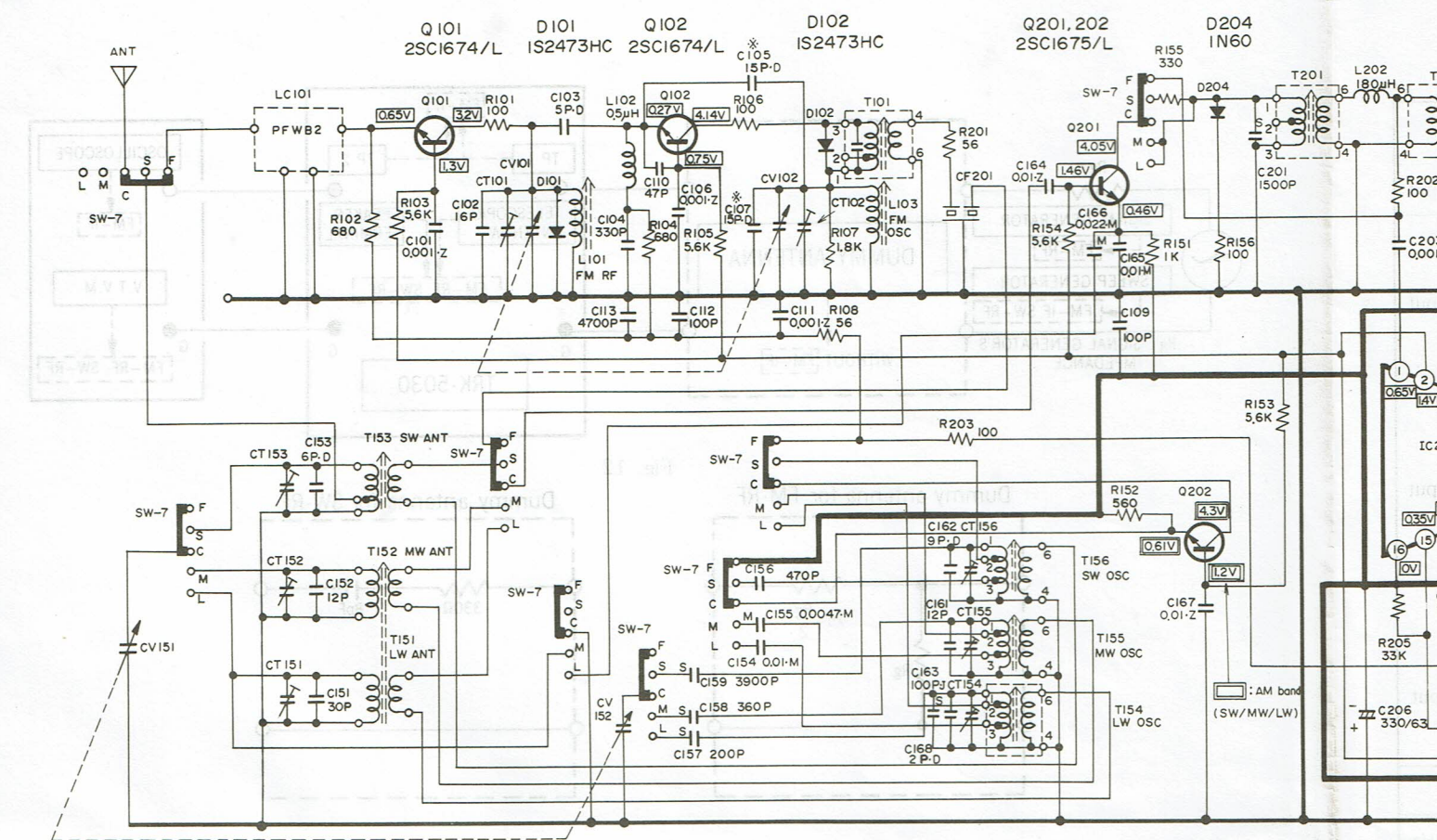
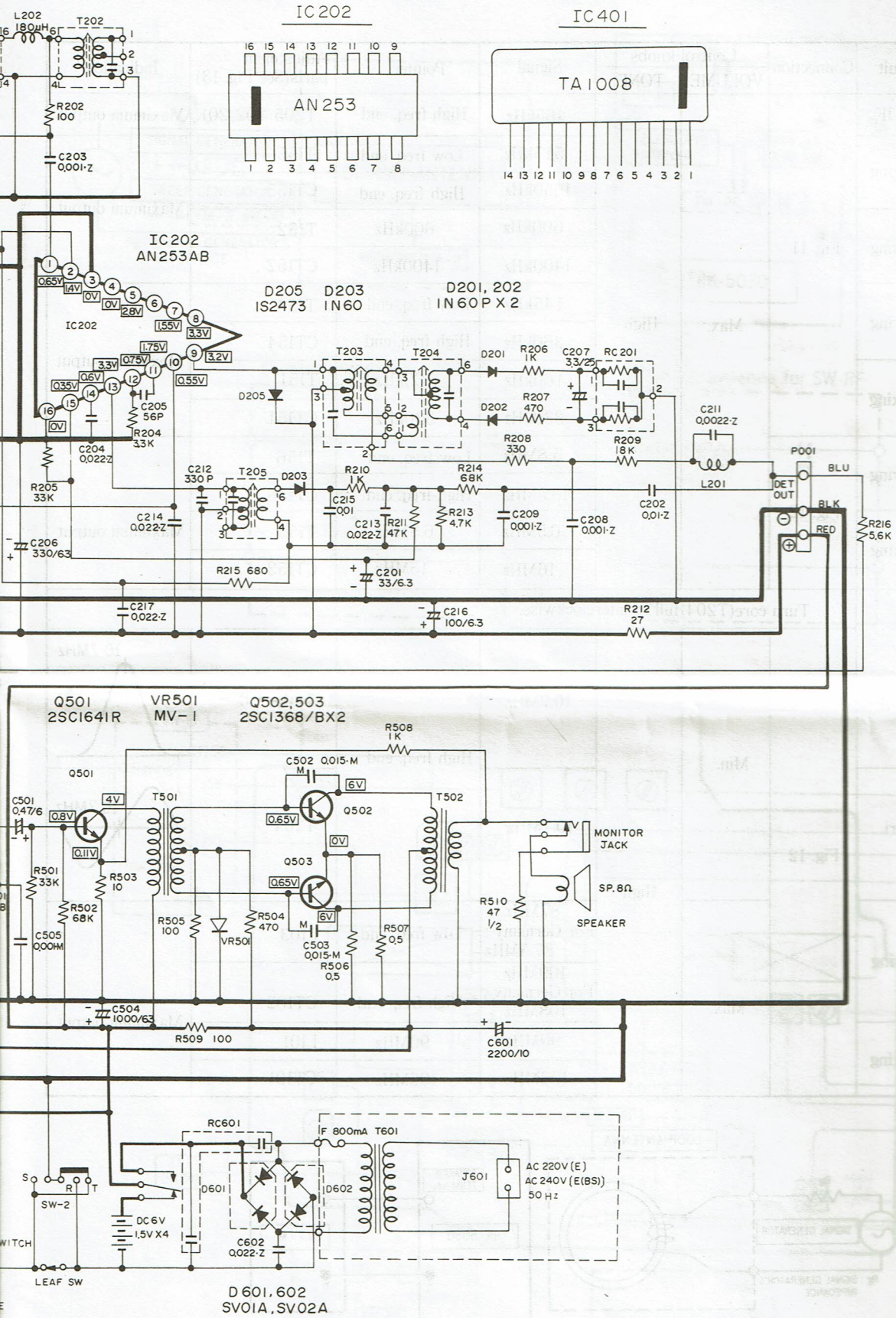


Fig. 13









NOTE

1. Voltage measured at base of chassis with minimum volume control and no signal.
2. Nomenclature of Resistors and Capacitors.

RESISTORS

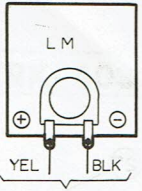
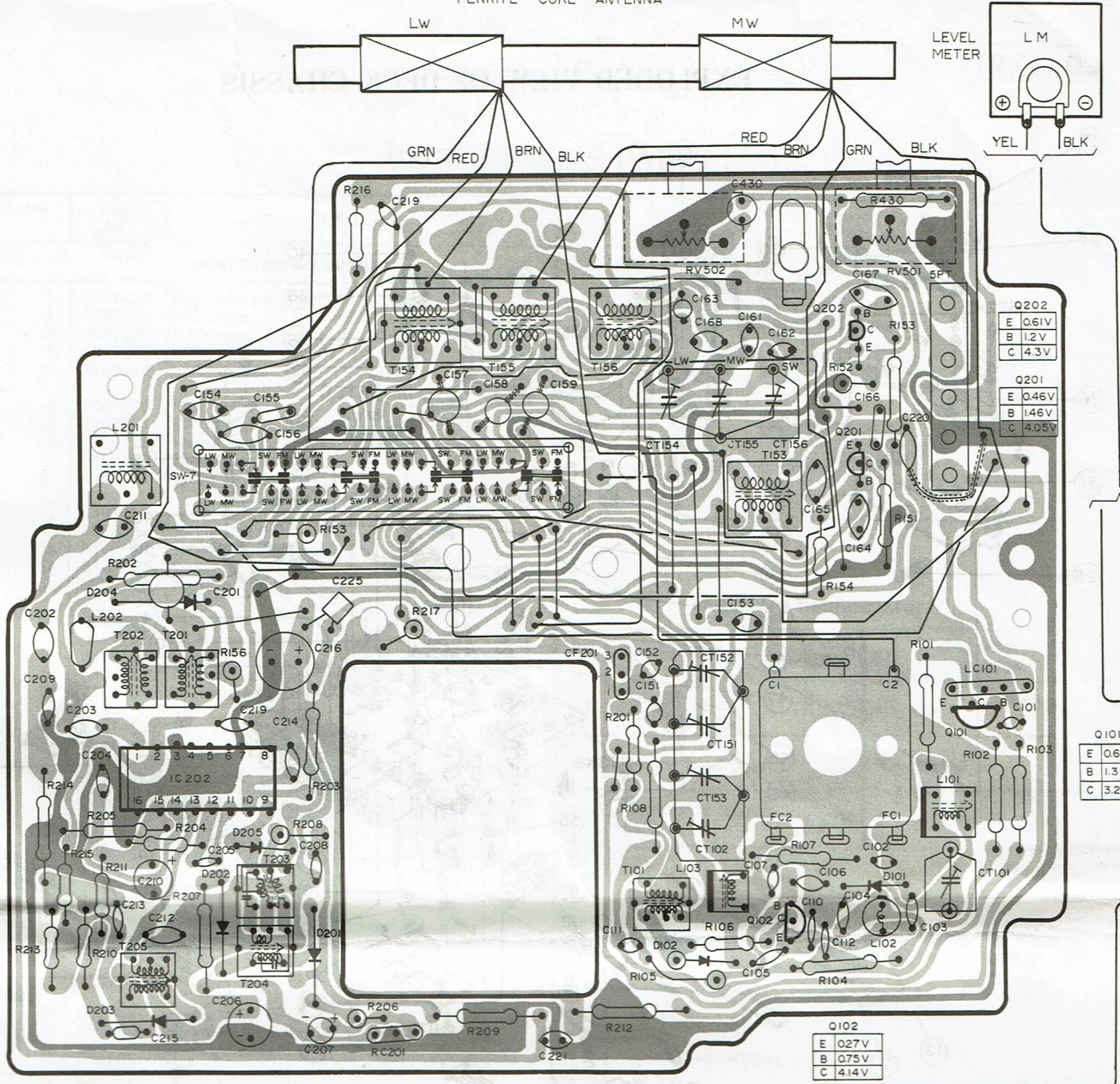
Value	No indicated : Ω K : 1000Ω
Wattage	No indicated : 1/4W.
Tolerance	No indicated : ± 5% K : ± 10%
Sort	No indicated : Carbon film RC : Composition RS : Metal oxide
Example	R101.....Circuit No. 150.....Value RS · I · K.....Sort · Wattage · Tolerance

CAPACITORS

Value	No indicated : μF P : pF
Voltage	No indicated : 50WV
Tolerance	No indicated : ± 10% J : ± 5% M : ± 20% Z : +80, -20% D : ± 0.5pF C : ± 0.25pF
Sort	⎓ Ceramic ⎓ Electrolytic M Mylar S Styrol
Example	C101.....Circuit No. 10/25.....Value/voltage .....Sort

3. Be sure to make your orders of resistors and capacitors with value, Voltage, tolerance and sort.
4. When replacing capacitors marked with ⎓. Use specified ones stated on parts list since required temperature characteristics.





Q202

E	0.61V
B	1.2V
C	4.3V

Q201

E	0.46V
B	1.46V
C	4.05V

Q101

E	0.65V
B	1.3V
C	3.2V

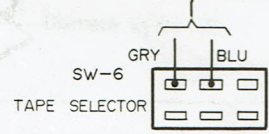
Q102

E	0.27V
B	0.75V
C	4.14V

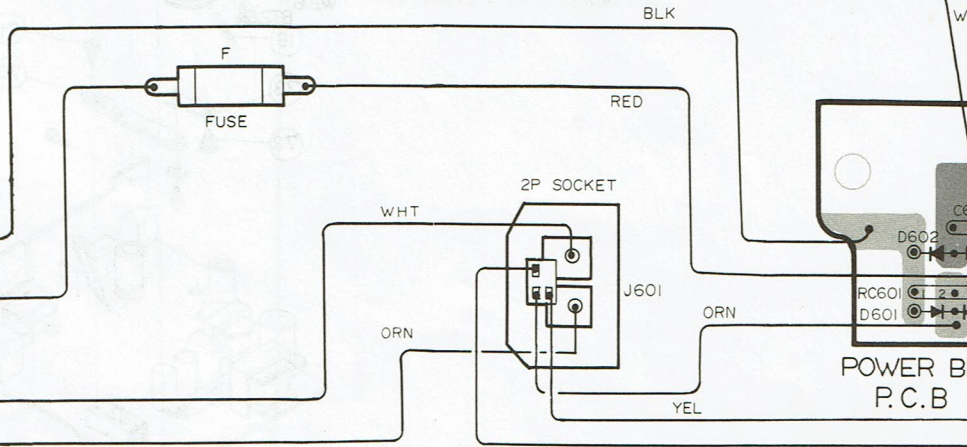
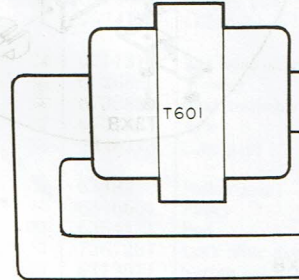
IC 202

1	0.65V	9	3.2V
2	1.4V	10	0.55V
3	0V	11	1.75V
4	0V	12	0.75V
5	2.8V	13	3.3V
6	—	14	0.6V
7	1.55V	15	0.35V
8	3.3V	16	0V

RADIO P.C.B



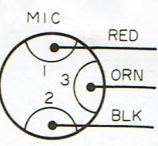
POWER TRANSFORMER





Q401		
E	0V	
B	0.5V	
C	0V	

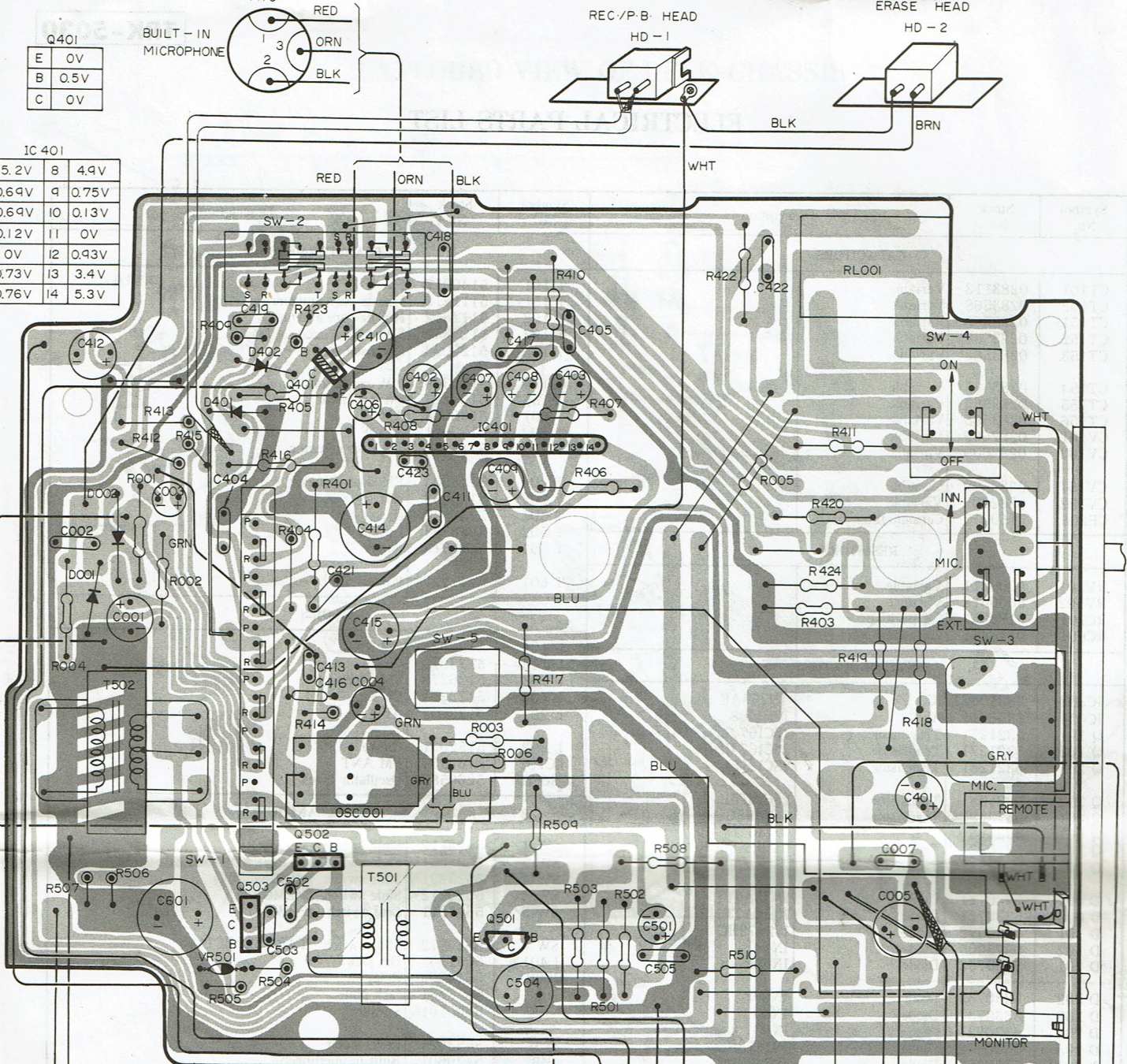
BUILT-IN MICROPHONE



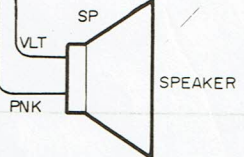
REC/P-B HEAD  
HD-1

ERASE HEAD  
HD-2

IC 401			
5.2V	8	4.9V	
0.69V	9	0.75V	
0.69V	10	0.13V	
0.12V	11	0V	
0V	12	0.93V	
0.73V	13	3.4V	
0.76V	14	5.3V	



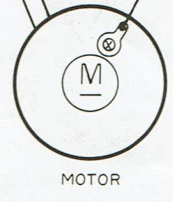
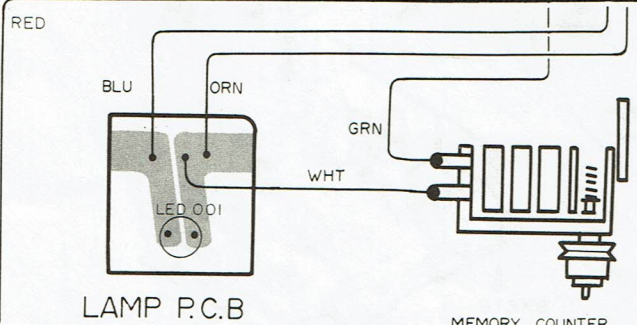
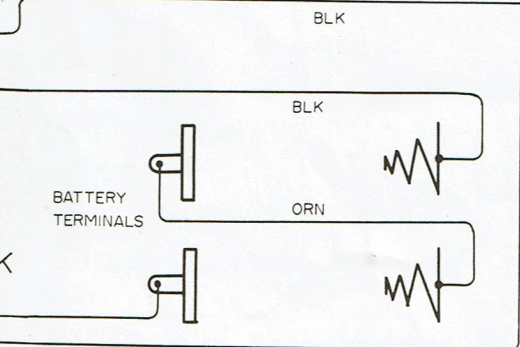
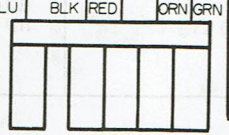
TAPE RECORDER P.C.B



Q502,503	
E	0V
B	0.65V
C	6V

Q501	
E	0.11V
B	0.8V
C	4V

5P SOCKET





## ELECTRICAL PARTS LIST

Symbol No.	Stock No.	Description	Symbol No.	Stock No.	Description
<b>CAPACITORS</b>			<b>TRANSFORMERS</b>		
CT101	0283113	Variable	T 101	5140017	FM IF
CT102	0283568	Variable	T 151	5112812	Ferrite-core antenna
CT151	0283568	Variable	T 152	5112812	Ferrite-core antenna
CT152	0283568	Variable	T 153	5123341	SW ANT
CT153	0283568	Variable	T 154	5120063	LW oscillator
CT154	0283565	Variable	T 155	5120319	MW oscillator
CT155	0283565	Variable	T 156	5123423	SW oscillator
CT156	0283565	Variable	T 201	5130034	AM IF
CV101	0282609	Variable	T 202	5130031	AM IF
CV102	0282609	Variable	T 203	5148033	FM discriminator
CV151	0282609	Variable	T 204	5148034	FM discriminator
CV152	0282609	Variable	T 205	5130033	AM IF
CF201	5160213	Ceramic filter	T 501	5240142	Driver
<b>RESISTORS</b>			T 502	5250784	Output
RV501	5000011	Variable	T 601	5211718	Power [E]
RV502	5000012	Variable	T 601	5211717	Power [BS]
RC201	0186357	CR pack	<b>COILS</b>		
RC601	0186451	CR pack	L 101	5126006	FM RF
<b>SEMICONDUCTORS</b>			L 102	5123271	Choke
IC202	5351062	IC	L 103	5126278	FM oscillator
IC401	5356211	IC	L 104	5123271	Choke
Q 101	5321271	Transistor	L 201	5120302	AFC
Q 102	5321271	Transistor	L 202	5152031	Choke
Q 201	5321281	Transistor	LC101	5161551	FM ANT
Q 202	5321281	Transistor	OSC001	5260581	Oscillator block
Q 401	0573481	Transistor	<b>MISCELLANEOUS</b>		
Q 501	5321261	Transistor	SW-1	5623112	Slide switch (REC./P.B.)
Q 502	5320921	Transistor	SW-2	5624051	Slide switch (TAPE/RADIO/SLEEP)
Q 503	5320921	Transistor	SW-3	5623221	Slide switch (MIXING, MIC)
D 001	5330721	Diode	SW-4	5621212	Slide switch (MEMORY)
D 002	5330721	Diode	SW-5	5603011	Leaf switch (POWER)
D 101	5330572	Diode	SW-6	5620872	Slide switch (TAPE SELECTOR)
D 102	0575005	Diode	J 401	5651141	Din jack
D 201	5330732	Diode	RL001	5640303	Relay
D 202	5330732	Diode	J	5679281	Jack plate
D 203	5330731	Diode	SP	5405101	Speaker
D 204	5330731	Diode	LM	5553031	Level meter
D 205	5330572	Diode	MIC	5420601	Built-in microphone
D 401	5330572	Diode	J 601	5650041	2P Socket
D 402	5330572	Diode	F	5720175	Fuse
D 601	5330371	Diode	HD-1	5441511	Record/playback head
D 602	5330372	Diode	HD-2	5445051	Erase head
LED001	5380031	Radiation diode			
VR501	5340121	Varistor			















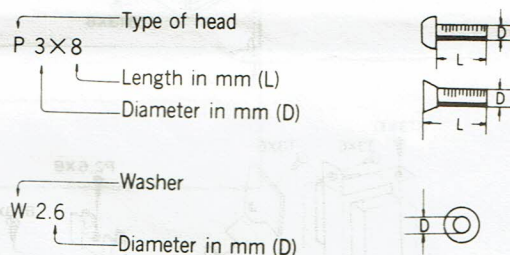
EXPLODED VIEW OF CASE  
DECK CHASSIS PARTS LIST

Symbol No.	Stock No.	Description	Symbol No.	Stock No.	Description
<b>CASSETTE DECK ASSEMBLY</b>					
①	7267437	Play slider assembly	65	6306982	Spring
②	7267114	REC slider	66	5559003	Counter
③	7267206	F.F slider	67	6354311	Counter belt
④	7267217	REW slider	68	7272192	Memory holder assembly
⑤	7267132	STOP slider	69	6258993	Memory button
⑥	7267183	EJECT slider	70	6734191	Change-over plate
⑦	7267353	SWITCH plate	71	7777593	Special screw
⑧	6300721	Spring for pause plate	72	7537411	Column B
⑨	6300552	Spring for play slider	73	7272171	Change-over plate
⑩	6303613	Spring for FF, STOP slider	74	7281401	Head plate holder
⑪	6303615	Spring for REW, REC slider	75	6255533	Button
⑫	6318921	Spring for EJECT slider			
⑬	6300143	Spring for switch plate			
⑭	6325261	Spring for lock plate			
⑮	6725701	Pause lock piece			
⑯	0626833	Felt			
17	6412162	REW arm assembly			
18	6319481	Spring for REW arm			
19	6306991	Spring for R slider			
20	7778183	Polyester washer			
21	6411493	Take up arm assembly			
22	6300171	Spring for take up arm			
23	7189543	Washer			
24	7277691	Head setting base assembly			
25	6324432	Spring for head stand			
26	7767371	Spacer for head			
27	7780555	Screw			
28	7277481	Cassette guide			
29	6321734	Spring			
30	7267483	Pressure arm assembly			
31	7230902	Ering for head setting base assembly			
32	6300761	Spring for pressure arm assembly			
33	6372222	Flywheel assembly			
34	6255532	Button (REC)			
35	6322501	Spring for FF lever			
36	7267225	F.F lever assembly			
37	6258921	Button			
38	6411754	Turntable assembly			
39	7786023	Washer for turntable			
40	7786115	Polyester washer for turntable mounting			
41	6320733	Spring for SUP turntable assembly			
42	6303933	Spring for TU turntable assembly			
43	7778856	Washer			
44	6732872	Recording prevention lever			
45	6732942	Eject arm			
46	6307291	Spring for eject			
47	6327781	Holder for cassette			
48	7270783	Brake piece			
49	6586002	Brake rubber			
50	6354211	Belt-1.2 <sup>□</sup>			
51	5572204	Micro motor			
52	6576082	Rubber plate			
53	7574172	Collar			
54	0711312	Pan head screw - 2.6 × 12 mm			
55	0626580	Washer			
56	6732804	Cam assembly			
57	6732833	Arm			
58	6348273	Cam gear			
59	6348282	Pulley gear			
60	6346601	Pulley			
61	6354121	Belt			
62	7267237	Lock plate assembly			
63	6318611	Spring			
64	6732891	S arm			

**Hardware nomenclature**

P	Pan head screw		BT	Binding head Tapping screw	
F	Flat countersunk head screw		BL	Bolt	
B	Binding head screw		W	Washer	
T	Round head tapping screw		E	"E" ring	

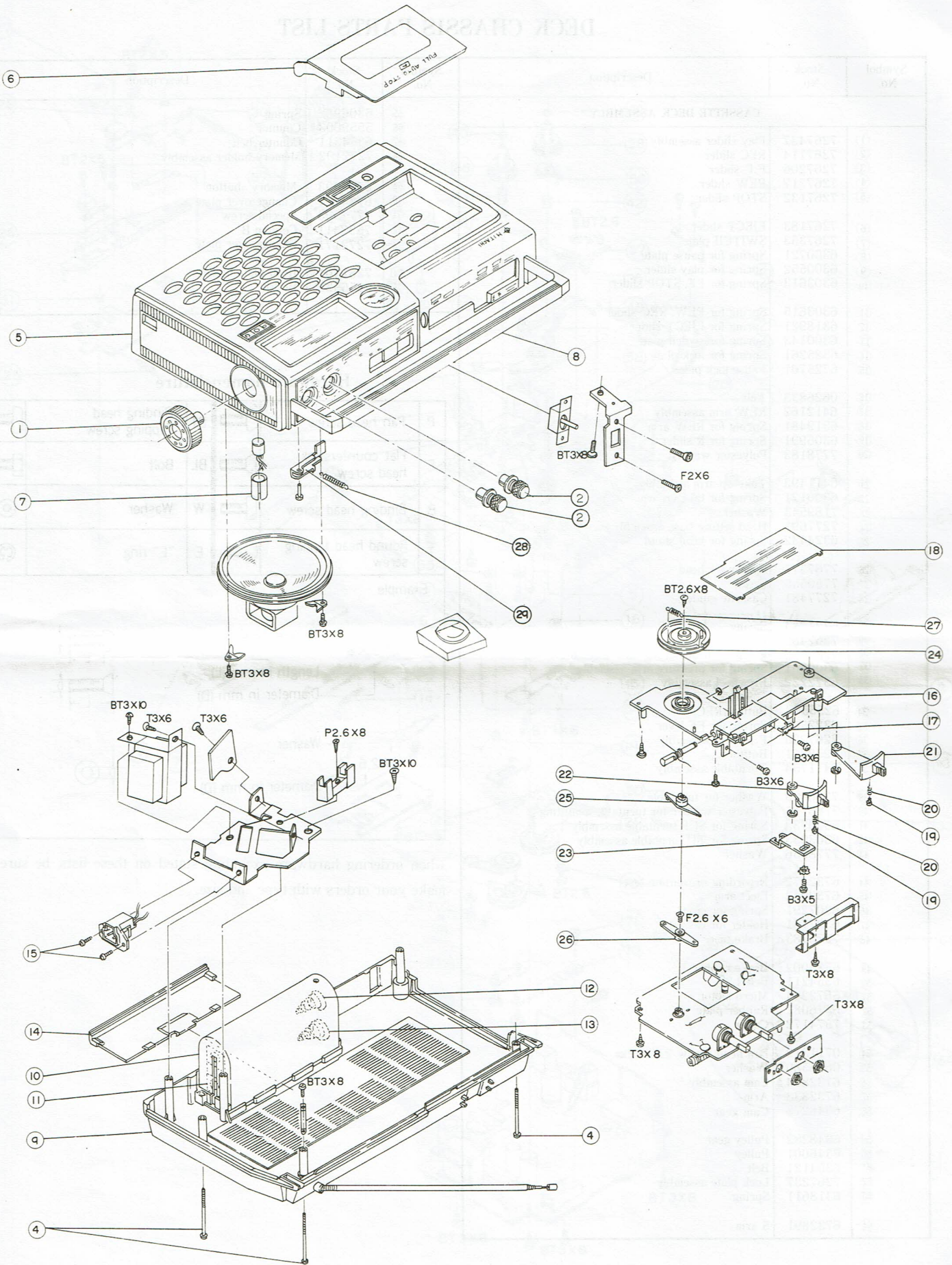
Example



when ordering hardware excluding stated on these lists, be sure to make your orders with type and size.



# EXPLODED VIEW OF CASE





## CASE PARTS LIST

Symbol No.	Stock No.	Description
<b>MISCELLANEOUS</b>		
①	6280581	Knob assembly (TUNNING)
②	6280991	Knob assembly (VOLUME, TONE)
④	7777945	Bind screw for rear case mounting
⑤	6134475	Front case assembly
⑥	6090362	Cassette lid assembly
⑦	7668391	Microphone cover
⑧	6333113	Handle assembly
⑨	6134495	Rear case assembly (E)
⑨	6134496	Rear case assembly (BS)
⑩	7450341	Terminal
⑪	7450342	Terminal
⑫	6325541	Spring
⑬	6325542	Spring
⑭	6171813	Battery cover assembly
⑯	6734162	Chassis assembly
⑰	6395213	Pointer
⑱	6478486	Scale plate
⑳	6298133	Change-over arm
㉑	6298134	Change-over arm
㉒	6730742	Change-over lever
㉓	6340311	Pulley
㉔	6723472	Arm A
㉕	6723481	Arm B
㉖	6316231	Spring M
㉗	6325061	Spring
㉘	7272112	Push arm
<b>ACCESSORIES</b>		
	5731011	Earphone
	5743898	Power cord
	5746341	Power cord



Head Office : 5-1, 1-chome, Marunouchi, Chiyoda-ku, Tokyo

Tel. Tokyo (212) 1111 (80 lines)

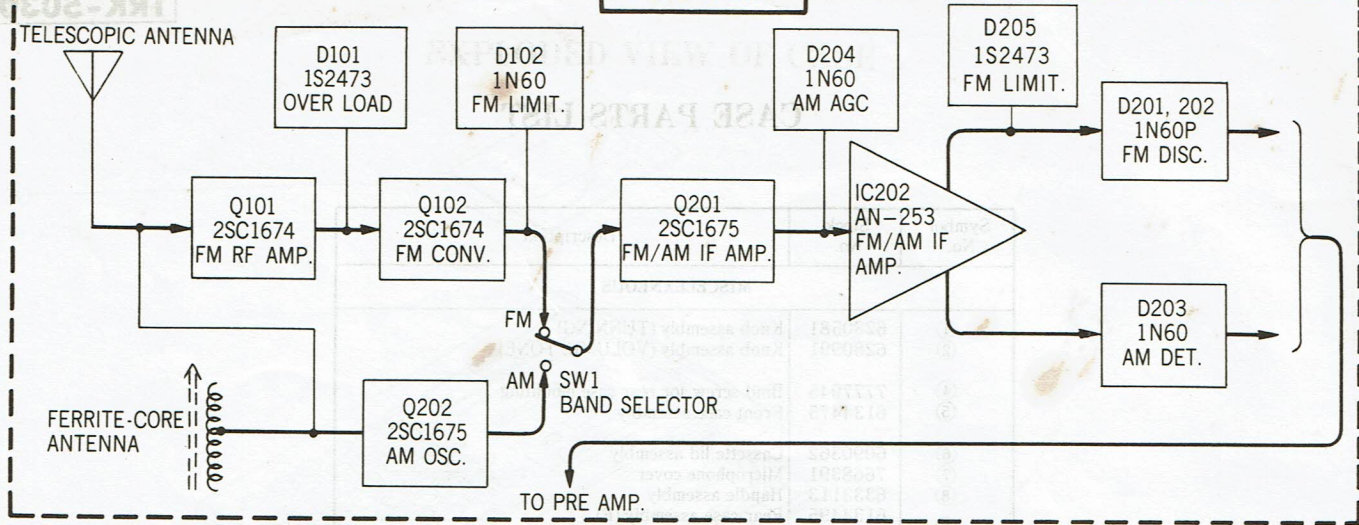
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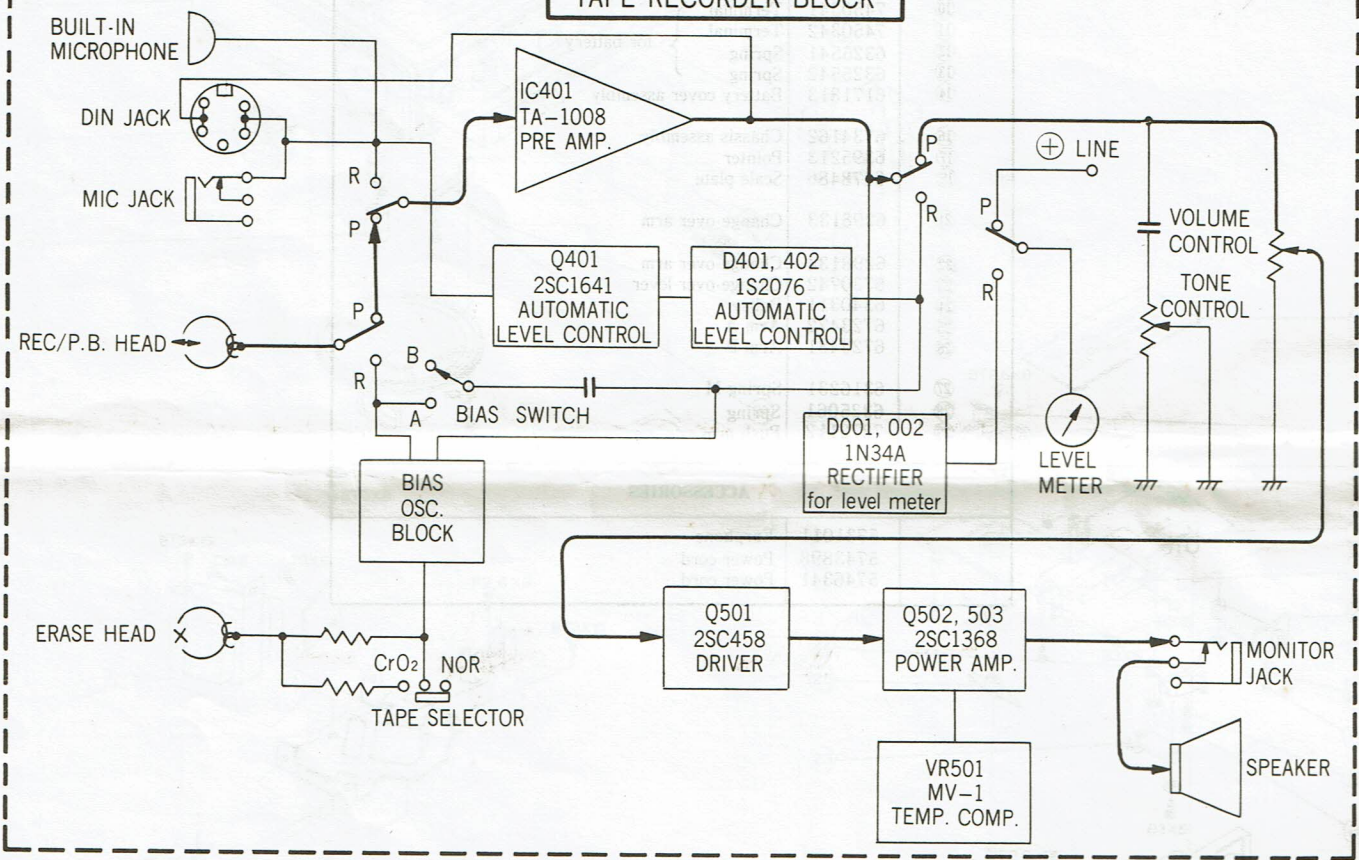
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**RADIO BLOCK**



**TAPE RECORDER BLOCK**



**POWER BLOCK**

