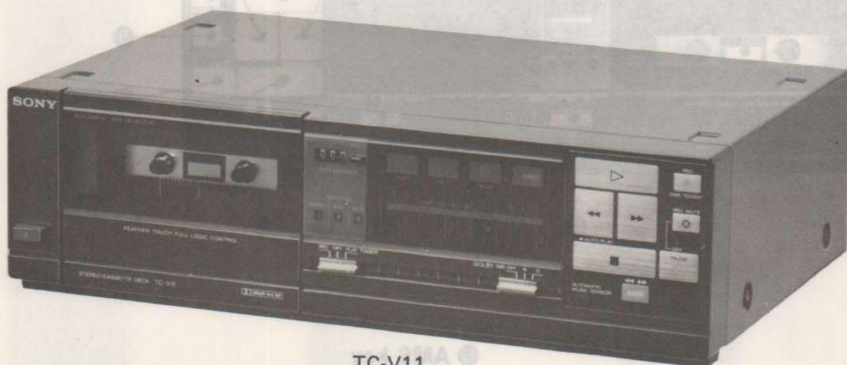


TC-V11/V33

SERVICE MANUAL



TC-V11

TC-V11:
US Model
Canadian Model
AEP Model
UK Model
E Model



TC-V33

TC-V33:
US Model
AEP Model
UK Model
E Model

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SPECIFICATIONS

Recording system	4-track 2-channel stereo
Frequency response	DOLBY NR OFF (DIN) With TYPE IV cassette (Sony METAL-S) 30 - 15,000 Hz (± 3 dB) With TYPE II cassette (Sony UCX) 30 - 15,000 Hz (± 3 dB) With TYPE I cassette (Sony HF-S) 30 - 14,000 Hz (± 3 dB)
Wow and flutter	0.06% WRMS (NAB) $\pm 0.2\%$ (DIN)
Dimensions	Approx. 355 x 105 x 245 mm (w/h/d) (14 x 4 $\frac{1}{8}$ x 9 $\frac{3}{4}$ inches) incl. projecting parts and controls
Weight	Approx. 2.8 kg (6 lb 3 oz) net

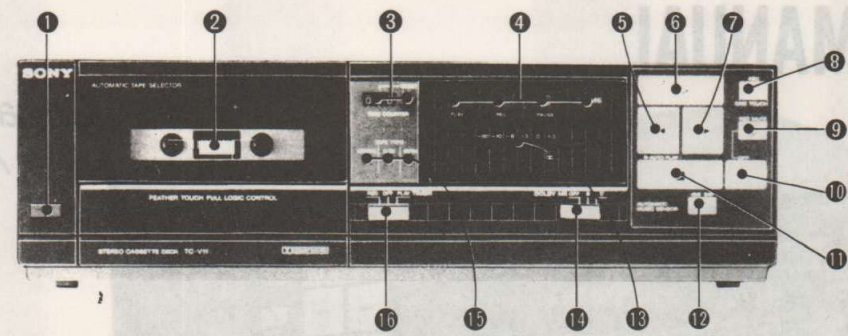
Tape Transport Mechanism Type	TCM-150V1
-------------------------------	-----------

FEATURES

- The B-type and C-type Dolby NR circuit incorporated.
- Automatic tape select system.
- Automatic Music Sensor (AMS).
- Automatic recording level control system.

'Dolby' and the double-D symbol are the trade marks of Dolby Laboratories Licensing Corporation. Noise reduction system manufactured under license from Dolby Laboratories Licensing Corporation.

FUNCTION AND LOCATION OF CONTROLS



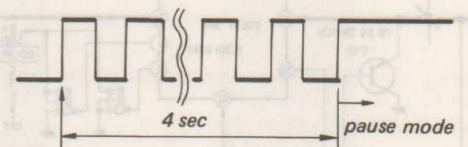
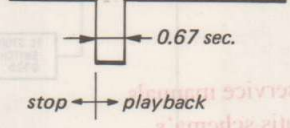
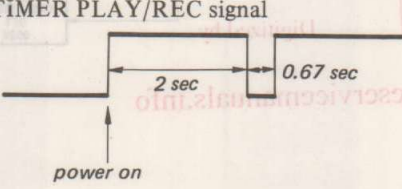
- 1 ▲ (eject) button**
Press to open the cassette holder.
- 2 Cassette holder**
- 3 TAPE COUNTER and RESET button**
The tape counter provides a numerical reference point. To reset to zero, press the RESET button.
- 4 Tape operation mode indicators**
The indicator(s) light(s) to show the engaged tape operation mode.
▷ : During playback, recording, rewinding for auto play and AMS operation.
○ : When the ● REC key is pressed.
◻ : Lights during pause. Blinks just after the power is turned on and during record muting.
AMS: When the AMS key is pressed.
- 5 ◀◀ (rewind) key**
- 6 ▷ (play) key**
- 7 ▶▶ (fast forward) key**
- 8 ● REC (record) key**
Press this key to start recording.
- 9 ○ REC MUTE (record muting) key**
- 10 || PAUSE key**
Press to stop the tape momentarily during recording or playback. To disengage pause mode, press it again.
- 11 ■ (stop) key**

- 12 AMS key**
Press to activate the AMS (Automatic Music Sensor). To deactivate it, press the key again.
- 13 VU meter**
This meter shows the input level during recording, and the recorded levels during playback. The left-most LED lights when the power is turned on.
- 14 DOLBY NR switch**
Select the Dolby NR* (Noise Reduction) system to be used for recording or playback.
OFF: To record or play back without the Dolby NR process.
B: To record or play back with the Dolby B-type NR process.
C: To record or play back with the Dolby C-type NR process.
- 15 TAPE TYPE indicators**
Show the type of tape inserted.
- 16 TIMER switch**
Normally set to OFF. To start recording or playback automatically using an optional timer, set to REC or PLAY.

*Dolby and the double-D symbol are trade marks of the Dolby Laboratories Licensing Corporation. Noise reduction system manufactured under license from Dolby Laboratories Licensing Corporation.

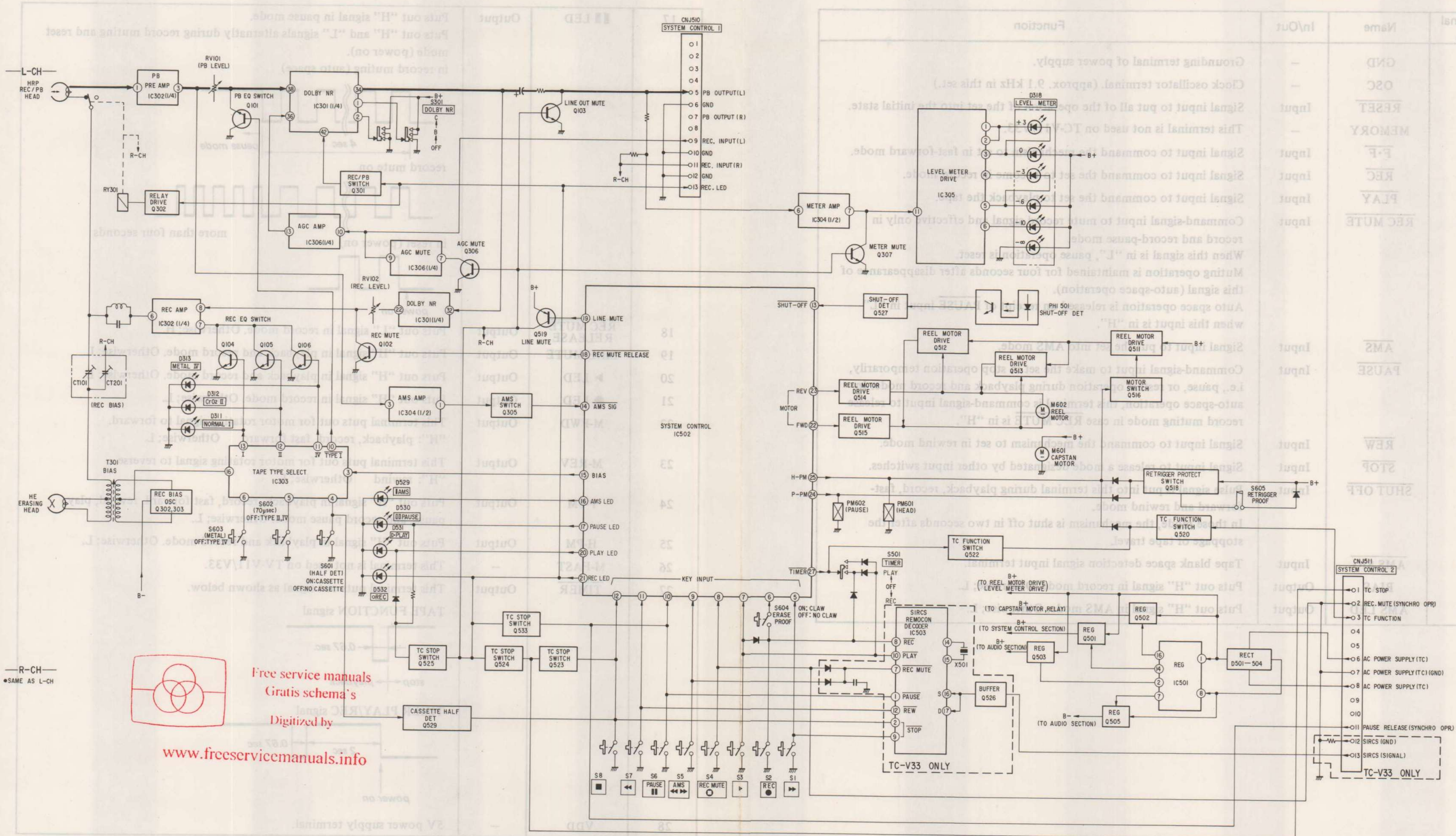
TC-9310N-069 (IC502) FUNCTION OF EACH TERMINAL

Terminal No.	Name	In/Out	Function
1	GND	—	Grounding terminal of power supply.
2	OSC	—	Clock oscillator terminal. (approx. 9.1 kHz in this set.)
3	RESET	Input	Signal input to put all of the operation of the set into the initial state.
4	MEMORY	—	This terminal is not used on TC-V11/V33.
5	F·F	Input	Signal input to command the mechanism to set in fast-forward mode.
6	REC	Input	Signal input to command the set to become in record mode.
7	PLAY	Input	Signal input to command the set to playback the tape.
8	REC MUTE	Input	Command-signal input to mute record signal and effective only in record and record-pause mode. When this signal is in "L", pause operation is reset. Muting operation is maintained for four seconds after disappearance of this signal (auto-space operation). Auto space operation is released on receipt of PAUSE input in "L" when this input is in "H".
9	AMS	Input	Signal input to put the set into AMS mode.
10	PAUSE	Input	Command-signal input to make the set in stop operation temporarily, i.e., pause, or restart operation during playback and record mode. In auto-space operation, this terminal is command-signal input to release record muting mode in case REC MUTE is in "H".
11	REW	Input	Signal input to command the mechanism to set in rewind mode.
12	STOP	Input	Signal input to release a mode designated by other input switches.
13	SHUT OFF	Input	Pulse signal is put into this terminal during playback, record, fast-forward and rewind mode. In those mode, the mechanism is shut off in two seconds after the stoppage of tape travel.
14	AMS SIG	Input	Tape blank space detection signal input terminal.
15	BIAS	Output	Puts out "H" signal in record mode. Otherwise; L.
16	AMS LED	Output	Puts out "H" signal in AMS mode. Otherwise; L.

17	LED	Output	Puts out "H" signal in pause mode. Puts out "H" and "L" signals alternately during record muting and reset mode (power on). in record muting (auto space) 
18	REC MUTE RELEASE	Output	Puts out "L" signal in record mode. Otherwise; H.
19	LINE MUTE	Output	Puts out "H" signal in playback and record mode. Otherwise; L.
20	▶ LED	Output	Puts out "H" signal in playback and record mode. Otherwise; L.
21	● LED	Output	Puts out "H" signal in record mode. Otherwise; L.
22	M-FWD	Output	This terminal puts out for motor rotating signal to forward. "H": playback, record, fast forward Otherwise; L.
23	M-REV	Output	This terminal puts out for motor rotating signal to reverse. "H": rewind Otherwise; L.
24	P-PM	Output	Puts out "H" signal in playback, record, fast forward, rewind, play pause, and record pause mode. Otherwise; L.
25	H-PM	Output	Puts out "H" signal in playback and record mode. Otherwise; L.
26	M-FAST	—	This terminal is not used on TV-V11/V33.
27	TIMER	Output	This terminal puts out signal as shown below. TAPE FUNCTION signal  TIMER PLAY/REC signal 
28	VDD	—	5V power supply terminal.

SECTION 1
OUTLINE

1-1. BLOCK DIAGRAM



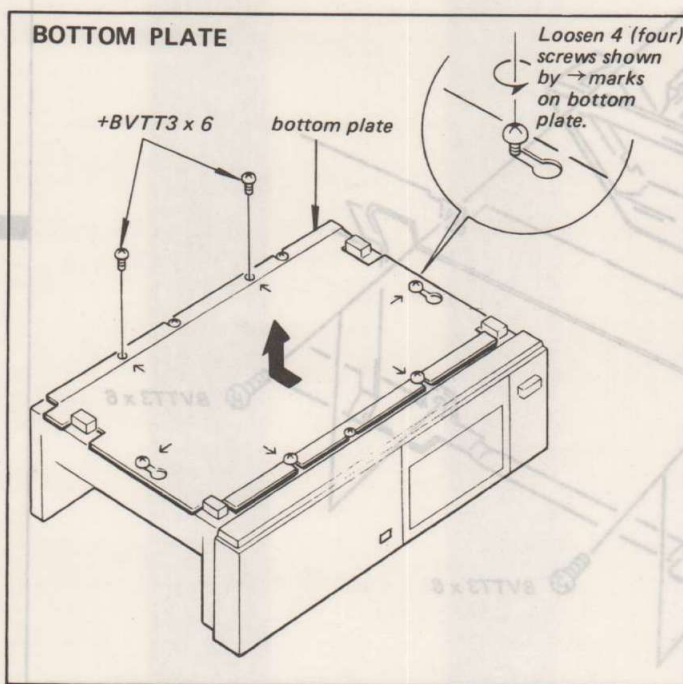
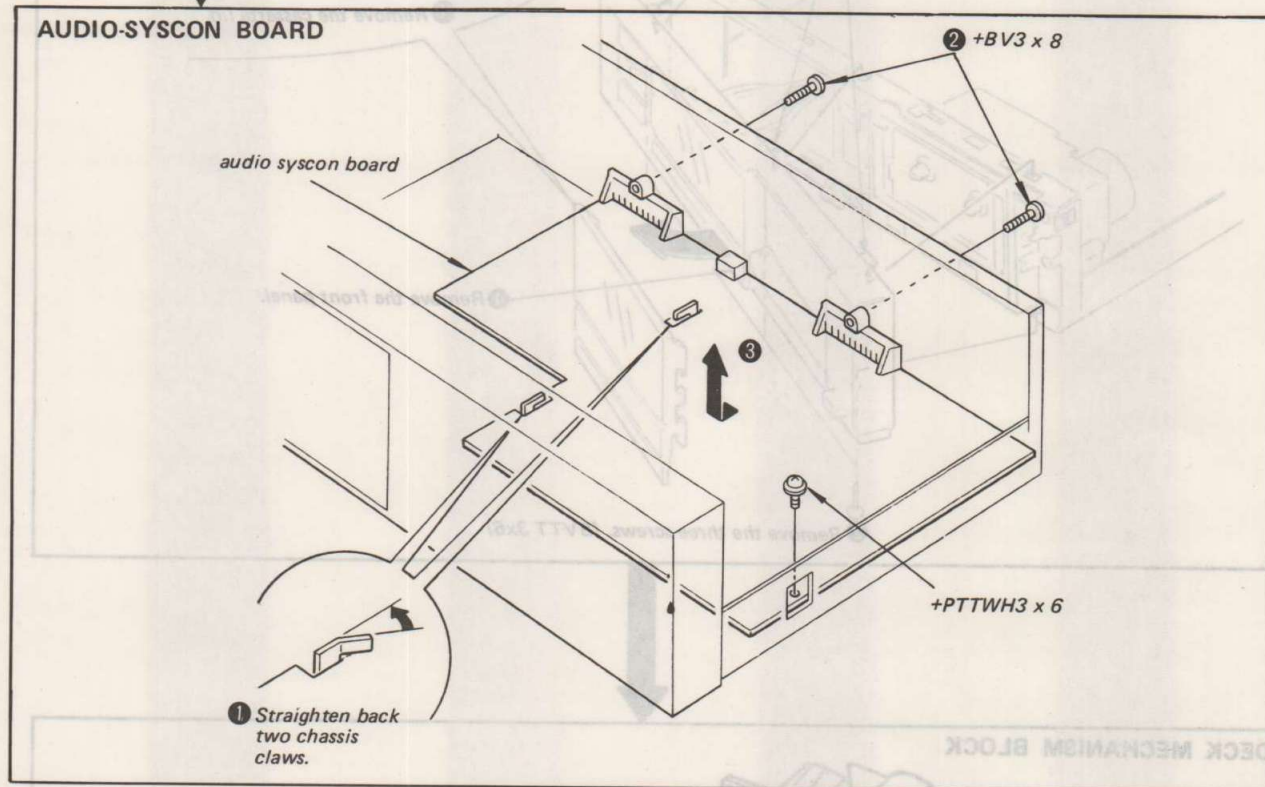
SECTION 2

DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

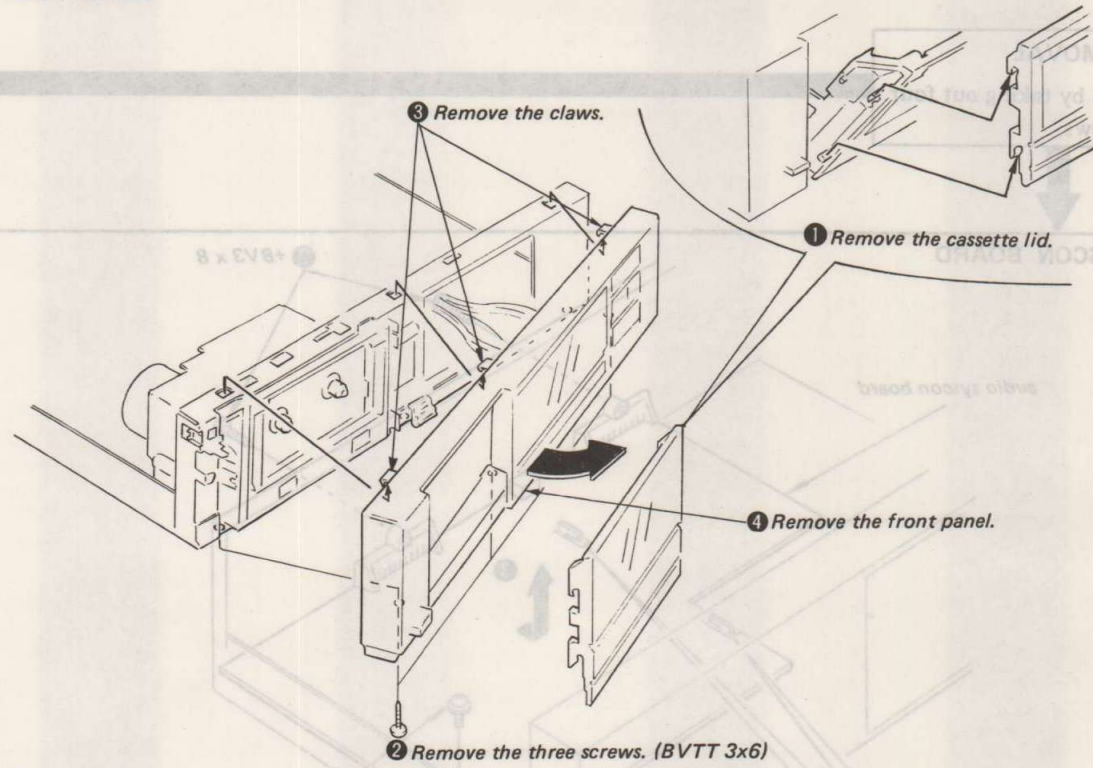
CASE REMOVAL

Remove case by taking out four securing screws.

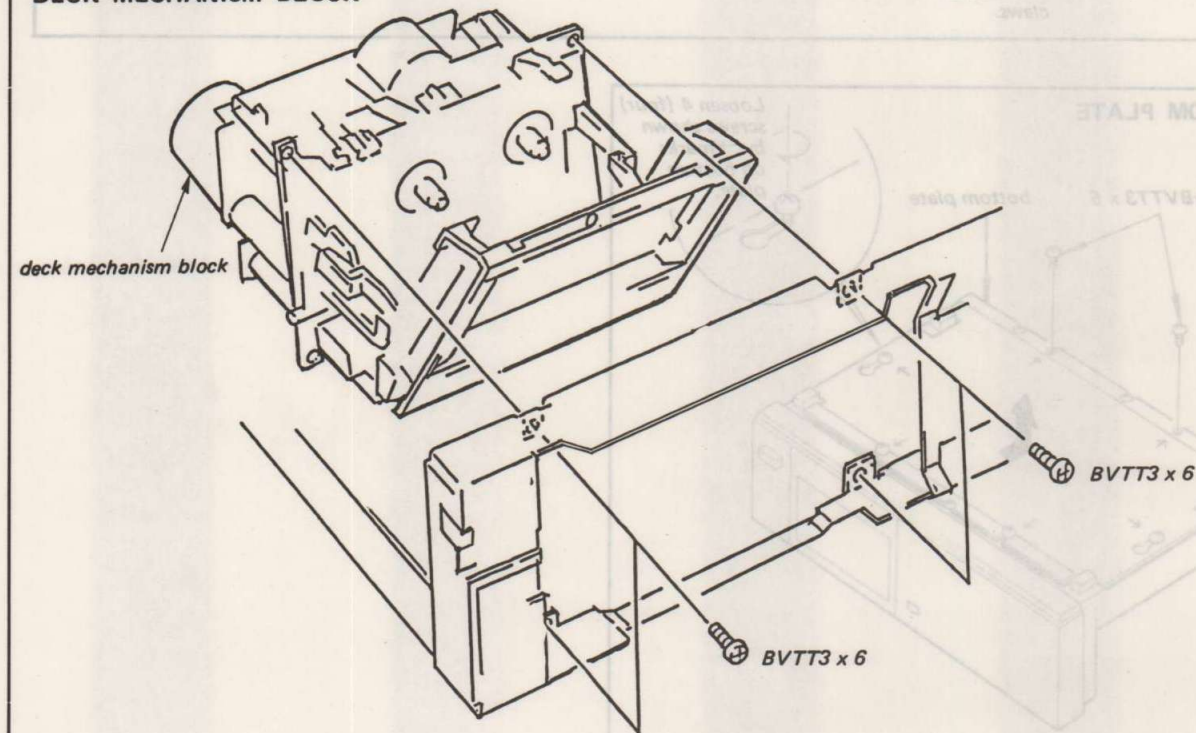


SECTION 2 DISASSEMBLY

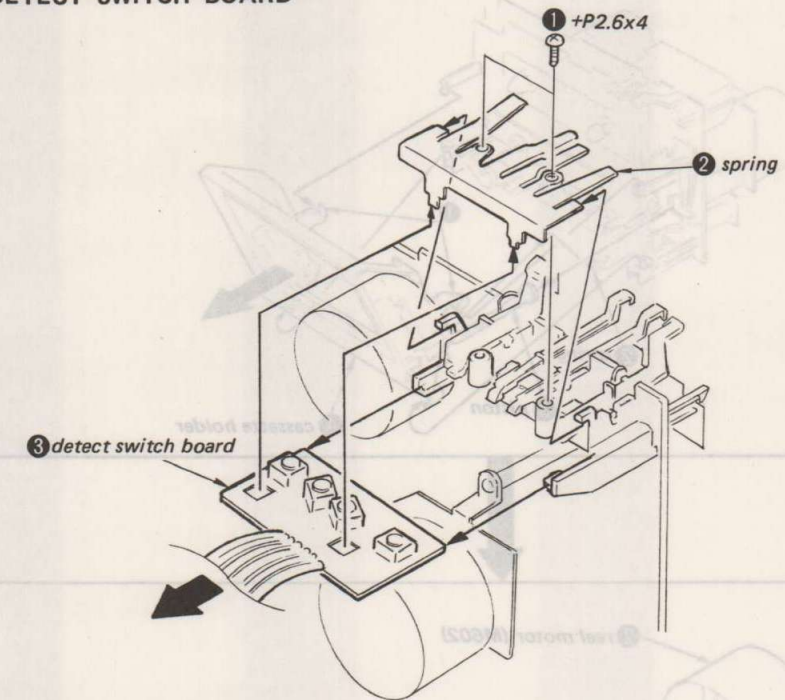
FRONT PANEL



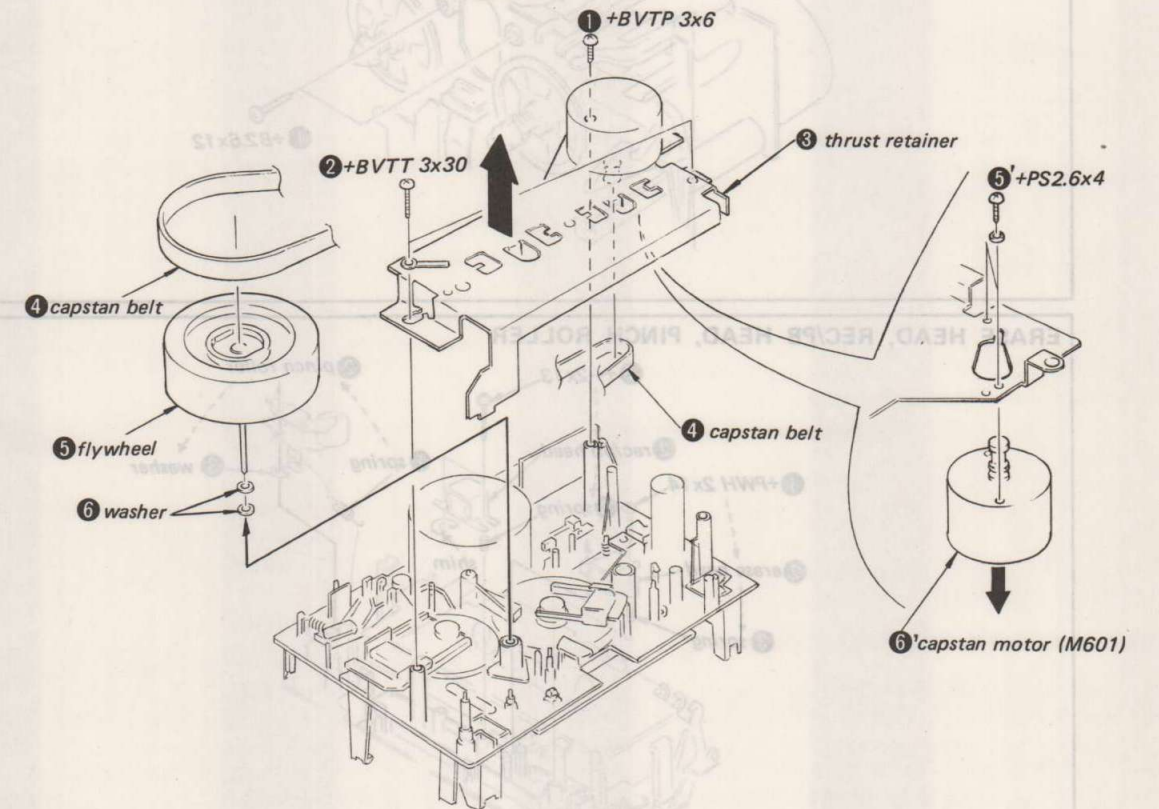
DECK MECHANISM BLOCK



DETECT SWITCH BOARD



FLYWHEEL, CAPSTAN MOTOR



SECTION 3
ADJUSTMENTS

3-1. MECHANICAL ADJUSTMENTS

PRECAUTION

1. Clean the following parts with a denatured-alcohol-moistened swab:
record/playback head
erase head
capstan

pinch roller
rubber belts
idlers
2. Demagnetize the record/playback head with a head demagnetizer.

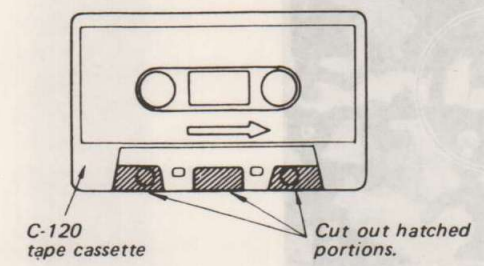
3. Do not use a magnetized screwdriver for the adjustments.

4. After the adjustments, apply suitable locking compound to the parts adjusted.

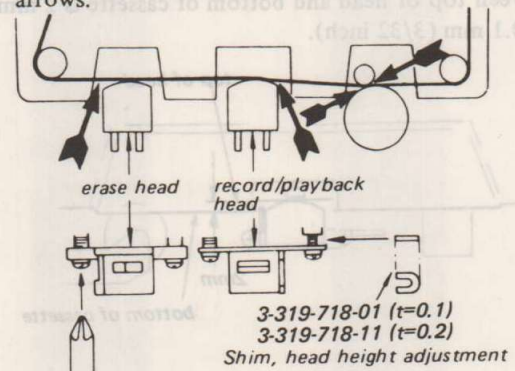
5. The adjustments should be performed with the rated power supply voltage unless otherwise noted.

Head Height Adjustment

1. Prepare an adjustment cassette as shown below.



2. In playback mode and viewing from the front, adjust the head heights to eliminate tape curl and tape twist at the portions shown by the arrows.



3-319-718-01 (t=0.1)
3-319-718-11 (t=0.2)
Shim, head height adjustment

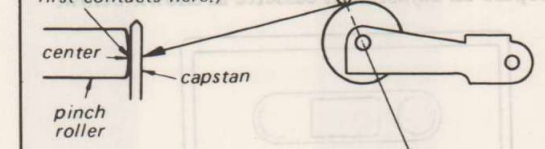
Torque Measurement

Torque	Torque meter	Meter reading
Forward	CQ-102C	28~60g·cm (0.39~0.83 oz·inch)
Back Tension	CQ-102C	2.5~6 g·cm 0.03~0.08 oz·inch
Fast Forward and Rewind	CQ-201B	80~150 g·cm 1.1~2.07 oz·inch

Pinch Roller Pressure Measurement

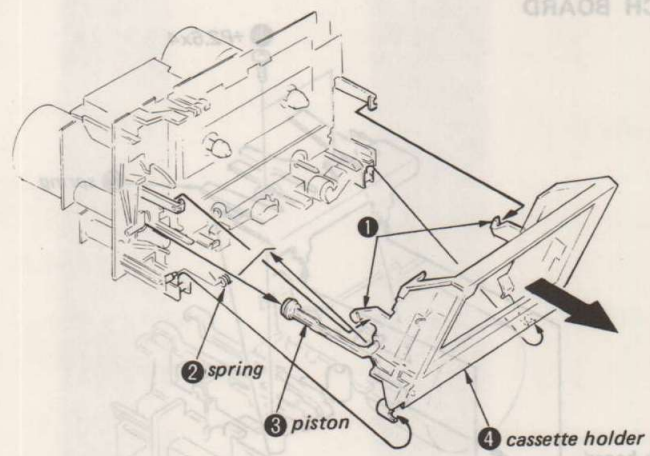
— Playback Mode —

2. Slowly return the pinch roller and read the spring scale just when the pinch roller starts rotating. (The capstan should first contacts here.)

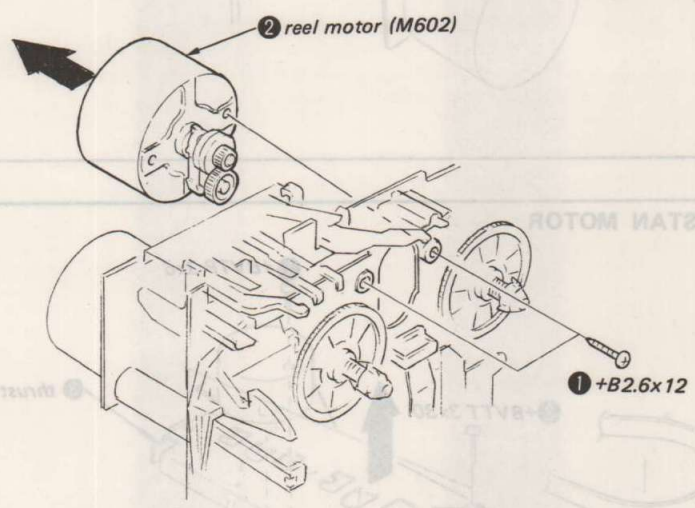


1 tension gauge
220~350 g
7.8~12.3 oz

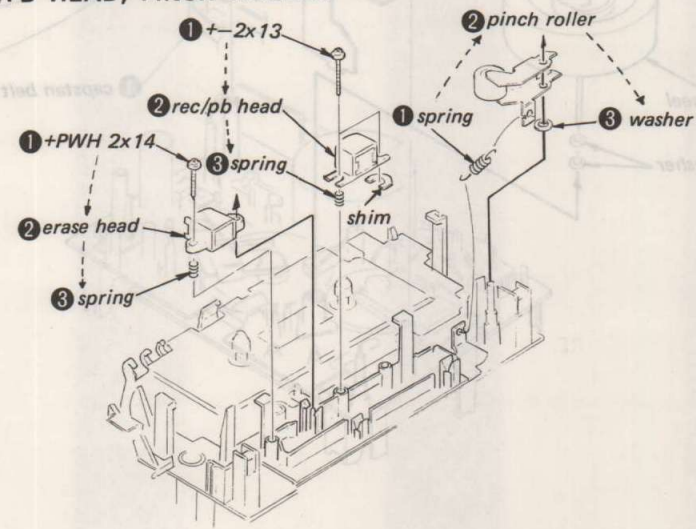
CASSETTE HOLDER



REEL MOTOR



ERASE HEAD, REC/PB HEAD, PINCH ROLLER



SECTION 3 ADJUSTMENTS

Back Tension Adjustment

Forward Playback Mode

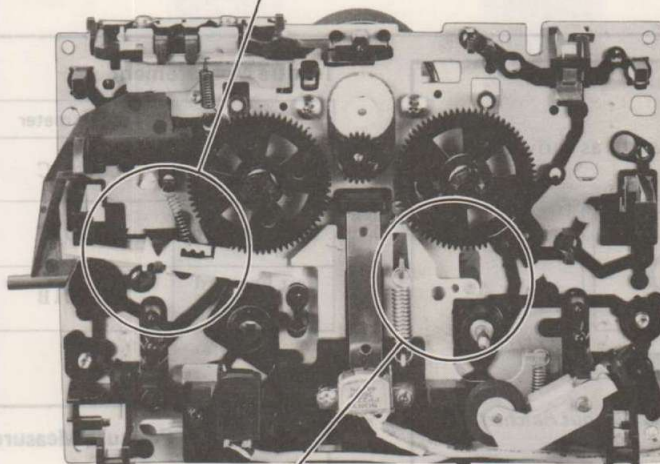
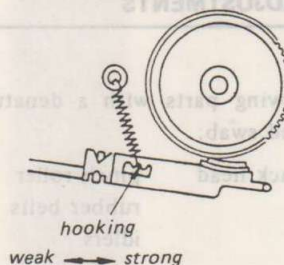
Torque meter: CQ-102C

Torque: 28~60 g·cm

(0.39~0.83 oz·inch)

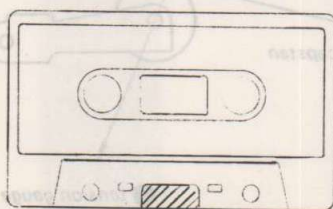
Back Tension: 2.5~6 g·cm

(0.03~0.08 oz·inch)



Head Position Adjustment in AMS mode

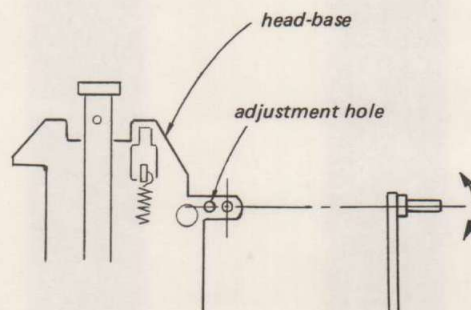
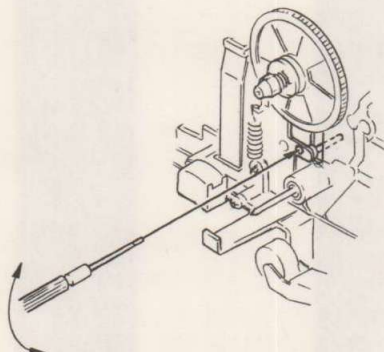
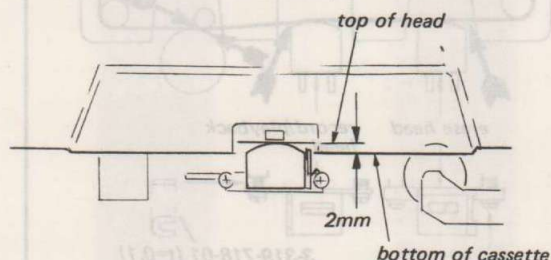
1. Prepare an adjustment cassette as shown below.



cut out hatched portion.

If it is not, insert a small screwdriver to the adjustment hole and adjust the head position by bending a head-base so that the distance between top of head and bottom of cassette is 2 mm±0.1 mm.

2. In AMS mode, confirm that the the distance between top of head and bottom of cassette is 2 mm ±0.1 mm (3/32 inch).



3-2. ELECTRICAL ADJUSTMENTS

Note: The adjustment should be performed in the order given in this service manual.
The adjustments should be performed for both L-CH and R-CH.

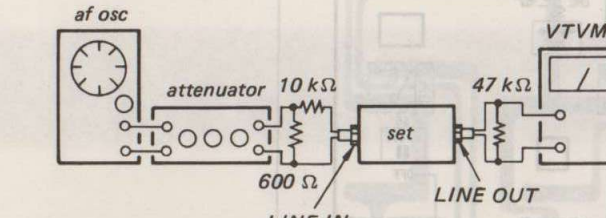
- Tape switches are automatically switched according to the tape used.

Tape	TAPE TYPE indicator
CS-15	TYPE I
CS-26	TYPE II
CS-40	TYPE IV

- Switches and controls should be set as follows unless otherwise specified.

DOLBY NR switch:	OFF
TIMER switch:	OFF

— Record Mode —



Standard Input Level

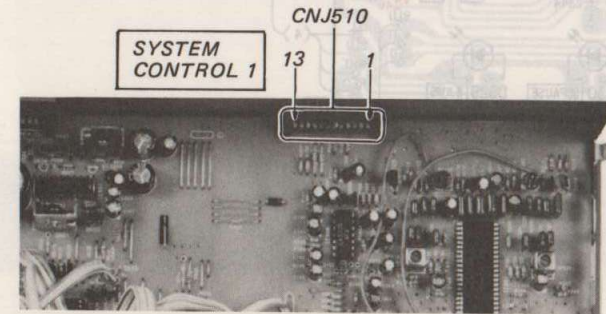
	LINE IN
source impedance	10 kΩ
input level	0.25 V (−10 dB)

Standard Output Level

	LINE OUT
load impedance	47 kΩ
output level	0.44 V (−5 dB)

Location of LINE IN and LINE OUT

	CN510 terminal No.		
	L-CH	R-CH	GND
LINE IN	9	11	10
LINE OUT	5	7	6



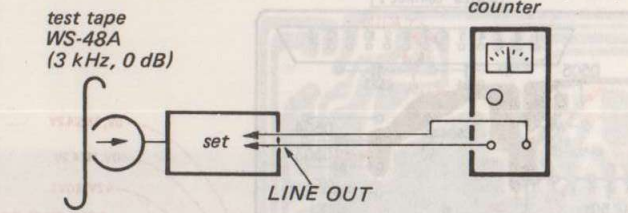
Tape Speed Adjustment

Setting:

DOLBY NR: OFF

Procedure:

1. Mode: playback



Play back the tape in forward mode, and adjust the adjustable resistor built in motor.

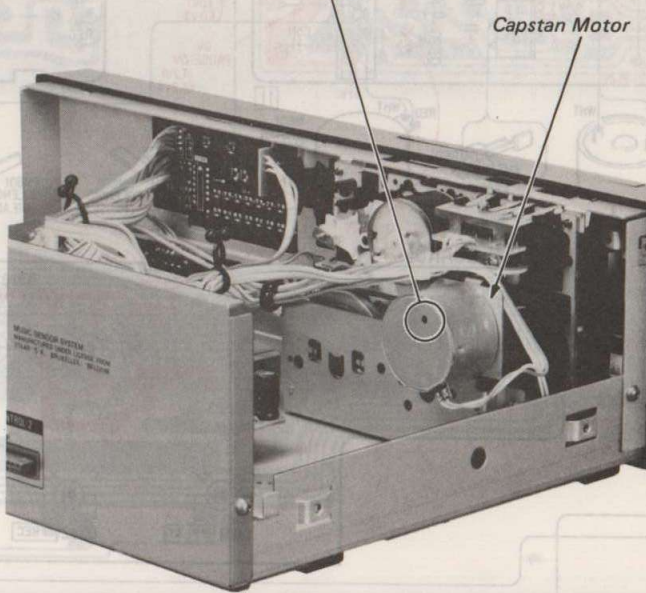
Specification:

Speed checker	Frequency counter
±1%	2,970 — 3,030 Hz

Level difference between tape start and tape end: 25 Hz

Adjustment Location: Motor

Built-in adjustable resistor
(Adjust the speed by using screwdriver.)
When turning the screw clockwise,
speed is faster.

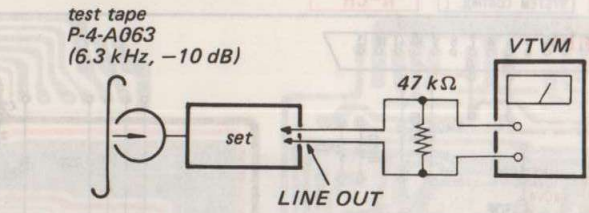


Record/Playback Head Azimuth Adjustment

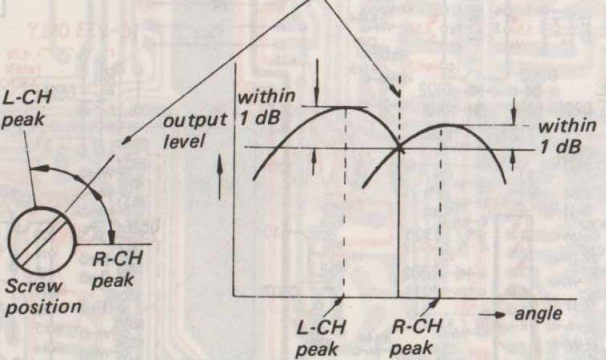
See page 13 for locations of
LIEN IN and LINE OUT.

Procedure:

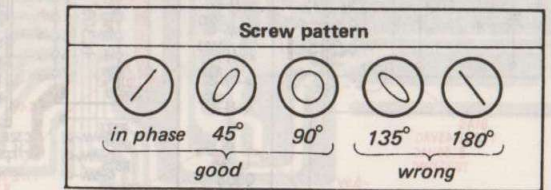
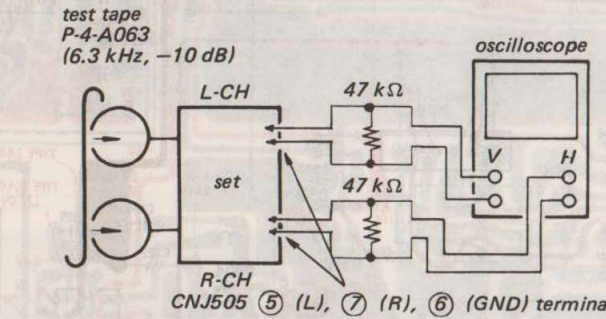
1. Mode: Playback



2. Turn the adjustment screw for the maximum output levels. If these levels do not match, turn the adjustment screw until both of output levels match together within 1 dB.



3. Mode: playback



4. After the adjustment, lock the screws with locking compound.

Adjustment Location:

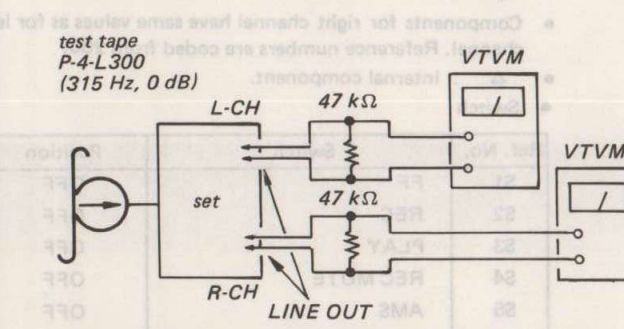


Playback Level Adjustment

See page 13 for locations of
LINE IN and LINE OUT.

Procedure:

- Mode: playback



Adjust RV101 (L-CH) and RV201 (R-CH) so that the specification is met.

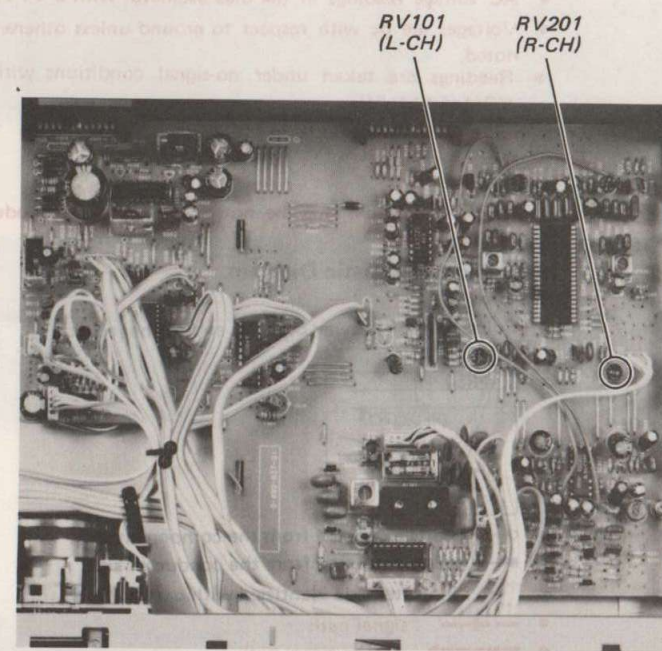
Specification:

LINE OUT level: 0.41 to 0.46 V
(−5.5 to −4.5 dB)

Level difference between channels:
less than 0.5 dB

Check that the LINE OUT level does not change in playback mode while changing the mode from playback to stop several times.

Adjustment Location: audio syscon board

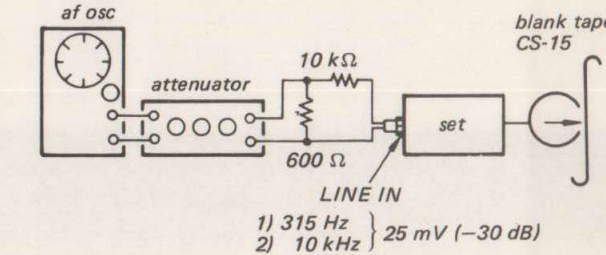


Record Bias Adjustment

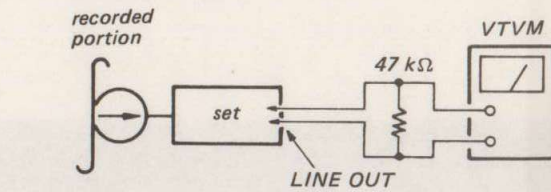
See page 13 for locations of
LINE IN and LINE OUT.

Procedure:

1. Mode: record

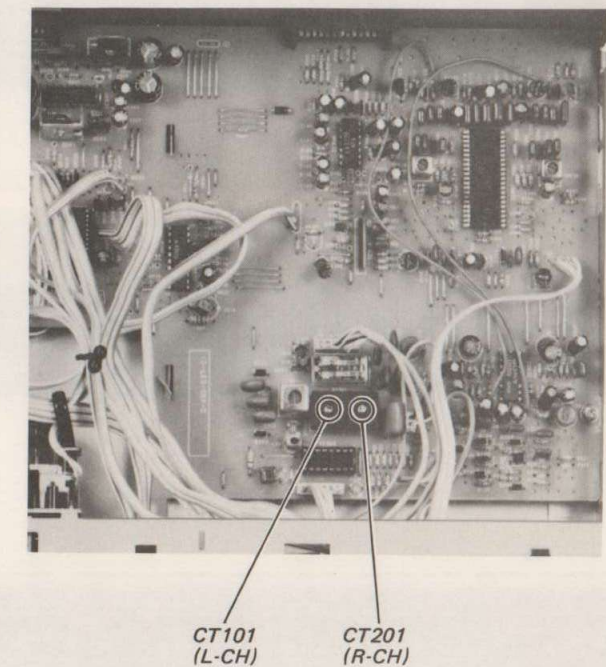


2. Mode: playback



Confirm that the 10 kHz playback output is 0 dB relative to the 315 Hz output. If necessary, adjust CT101 (L-CH), CT201 (R-CH) and repeat the steps given above until the specification is met.

Adjustment Location: audio syscon board

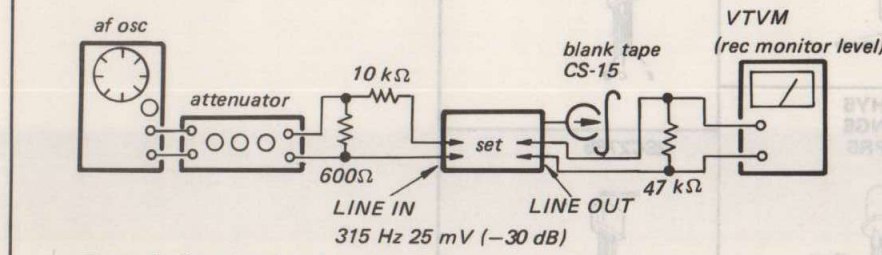


Record Level Adjustment

See page 13 for locations of
LINE IN and LINE OUT.

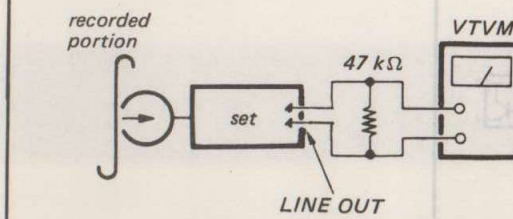
Procedure:

1. Mode: record



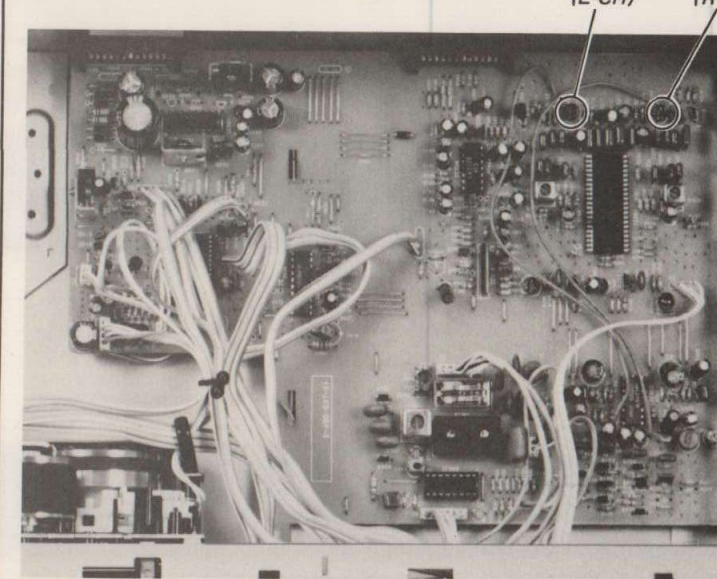
Record the signal and measure the rec monitor level.

2. Mode: playback



Play back the signal recorded in step 1.
Confirm that the playback level is 0dB relative to the rec monitor level. If necessary, adjust RV102 (L-CH), RV202 (R-CH) and repeat the steps given above until the specification is met.

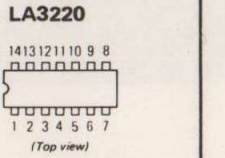
Adjustment Location: audio syscon board



SECTION 4
DIAGRAMS

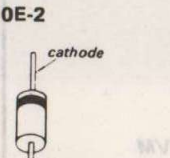
Semiconductor Lead Layouts

LA3220



1413121110 9 8
1 2 3 4 5 6 7
(Top view)

10E-2



cathode
anode

**2SB731
2SD809-K**



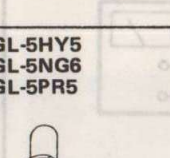
letter side
E C B

**BA3816
CX10032A
CX10035
IR2E02**



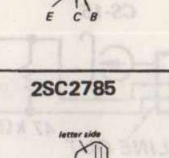
16151413121110 9
1 2 3 4 5 6 7 8
(Top view)

**GL-5HY5
GL-5NG6
GL-5PR5**



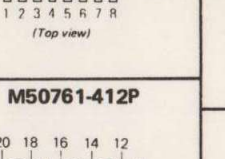
long short
anode cathode

2SC2785



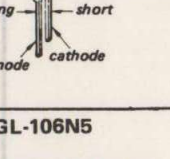
anode
E C B

M50761-412P



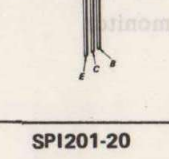
20 18 16 14 12
19 17 15 13 11
1 2 3 4 5 6 7 8 9 10
(Top view)

GL-106N5



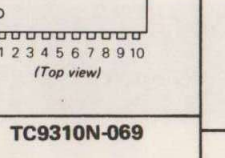
anode cathode

SPI201-20



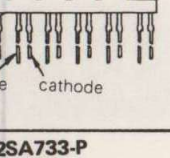
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

TC9310N-069



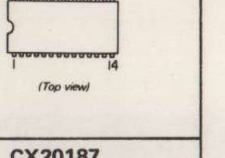
28
(Top view)

**2SA733-P
2SA952
2SC2001**



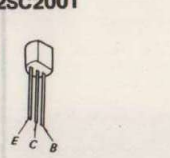
E C B

CX20187



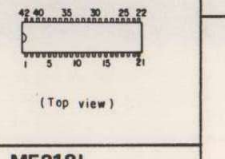
(Top view)

**DTA114ES
DTC114ES
DTC124ES
DTC144ES**



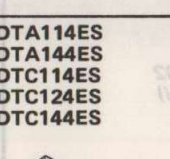
E C B

M5218L



1 2 3 4 5 6 7 8

2SD774



cathode
E C B

Note on Mounting Diagram.

Note:

- All capacitors are in μF unless otherwise noted. pF : μF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{4}\text{W}$ or less unless otherwise specified.
- : signal path. (playback)
- Components for right channel have same values as for left channel. Reference numbers are coded from 200.
- Δ : internal component.
- Switch

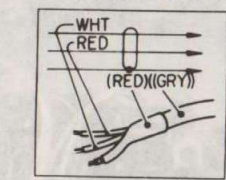
Ref. No.	Switch	Position
S1	FF	OFF
S2	REC	OFF
S3	PLAY	OFF
S4	REC MUTE	OFF
S5	AMS	OFF
S6	PAUSE	OFF
S7	REW	OFF
S8	STOP	OFF
S301	DOLBY NR	OFF
S501	TIMER	OFF
S601	CASSETTE DET.	NO CASSETTE
S602	70 μsec .	TYPE I
S603	METAL	TYPE I, II
S604	ERASE PROOF	NO TAB
S605	RETRIGGER PROTECT	OFF

- : B+ bus.
- : B- bus.
- : adjustment for repair.
- AC voltage readings in the bias oscillator with a VTVM.
- Voltagess are dc with respect to ground unless otherwise noted.
- Readings are taken under no-signal conditions with a VOM (50 $\text{k}\Omega/\text{V}$).
- no mark: STOP
- () : PLAY
- (()) : REC
- Voltage variations may be noted due to normal production tolerances.

Note on Schematic Diagram.

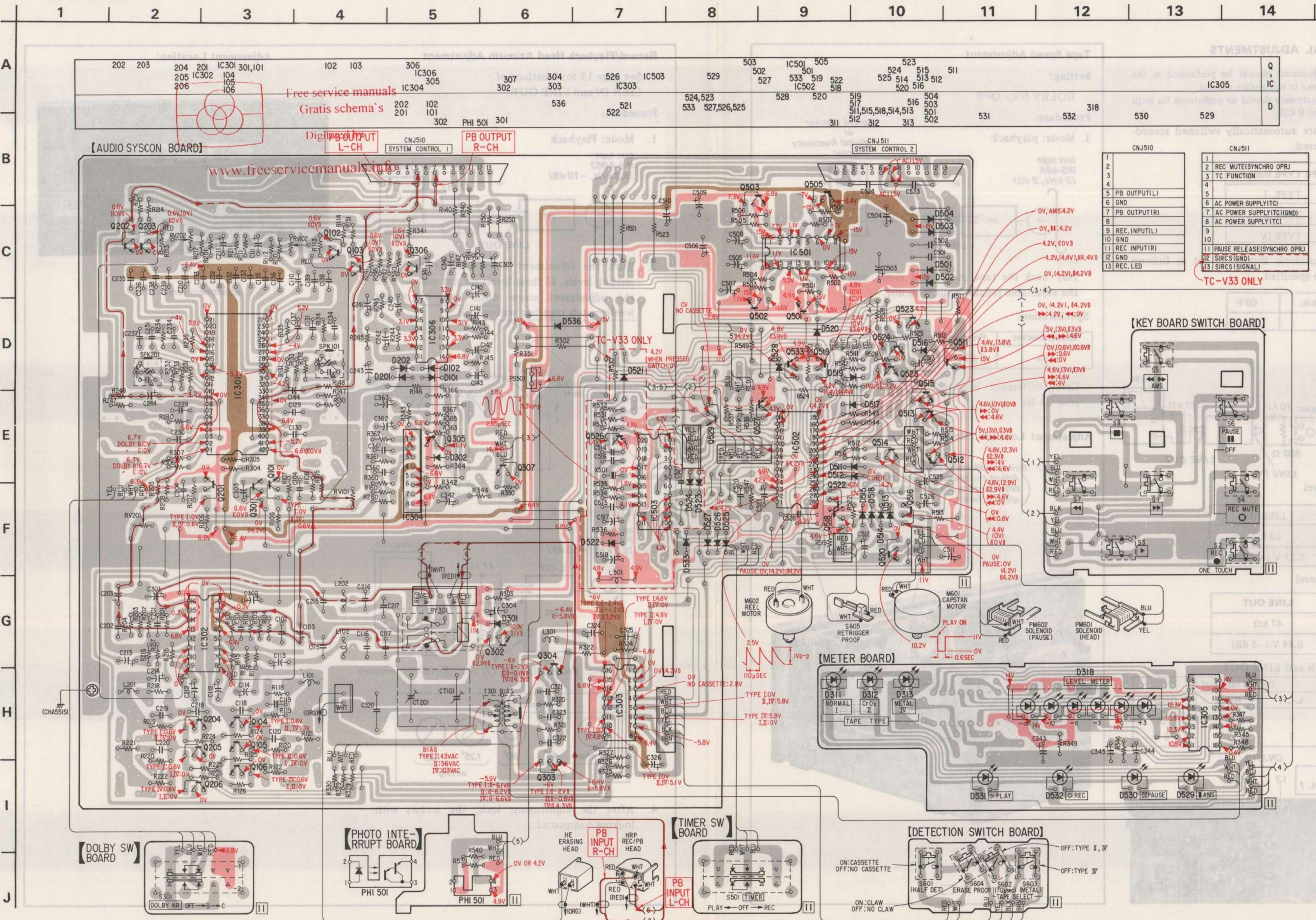
Note:

- Color code of sleeving over the end of the jacket.



- : parts extracted from the component side.
- : parts extracted from the conductor side.
- : indicates side identified with part number.
- : signal path
- : L-CH signal path
- : R-CH signal path
- : B+ pattern
- : B- pattern

4-1. MOUNTING DIAGRAM
— Conductor Side —



8 19 20 21 22 23

SECTION 5 EXPLODED VIEWS AND PARTS LIST

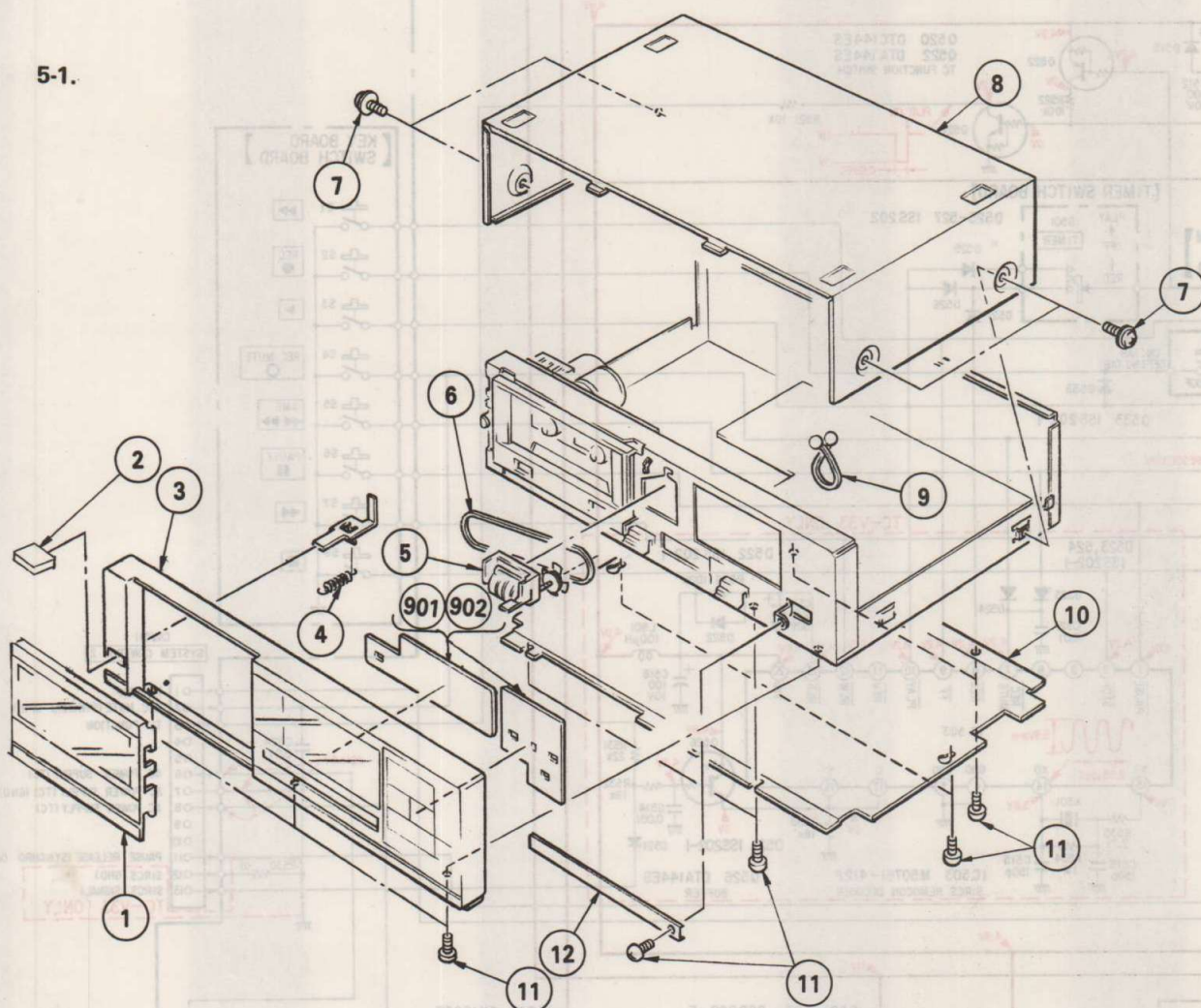
NOTE:

The mechanical parts with no reference number in the exploded views are not supplied.

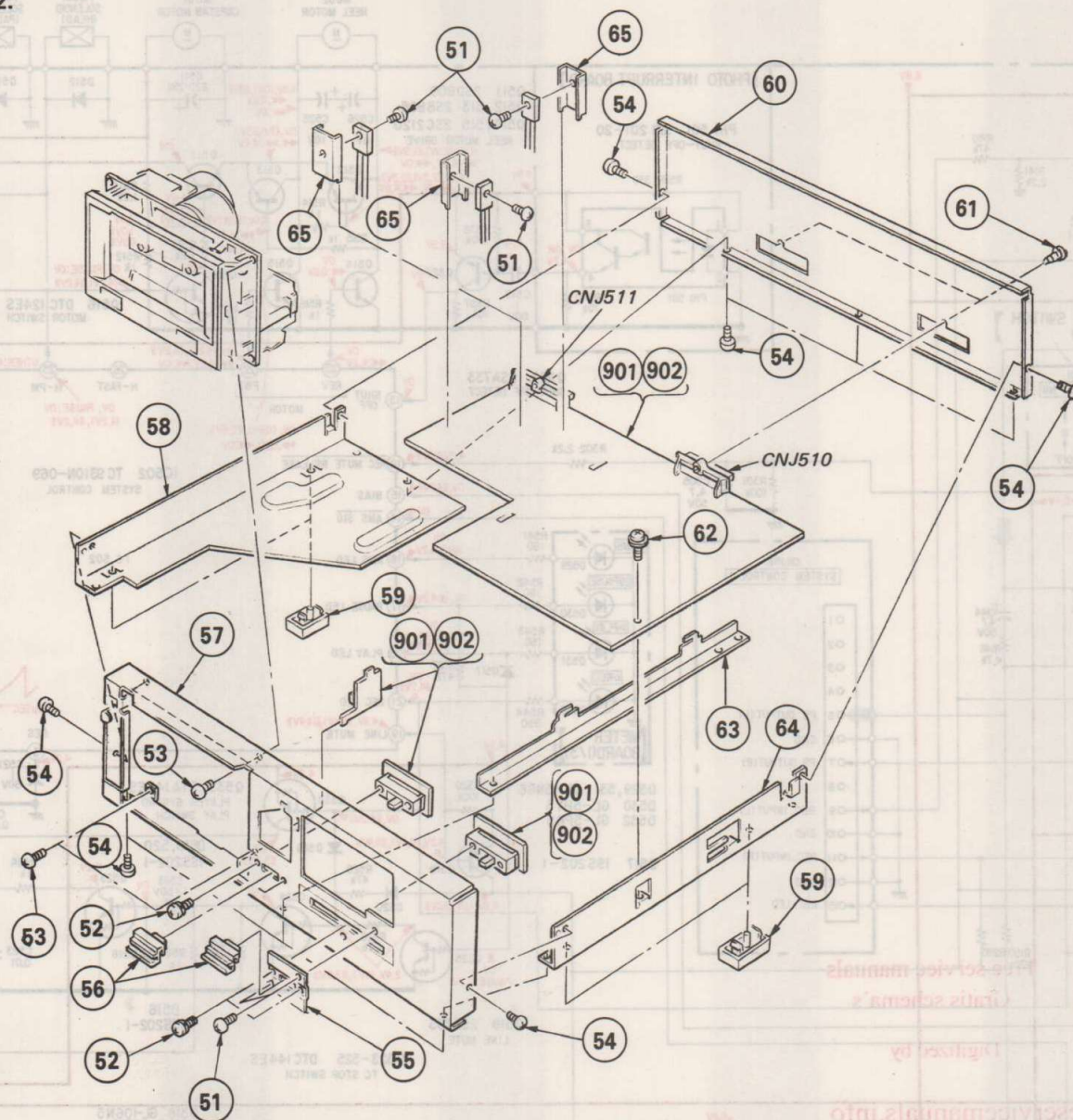
Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The construction parts of an assembled part are indicated with a collation number in the remark column.

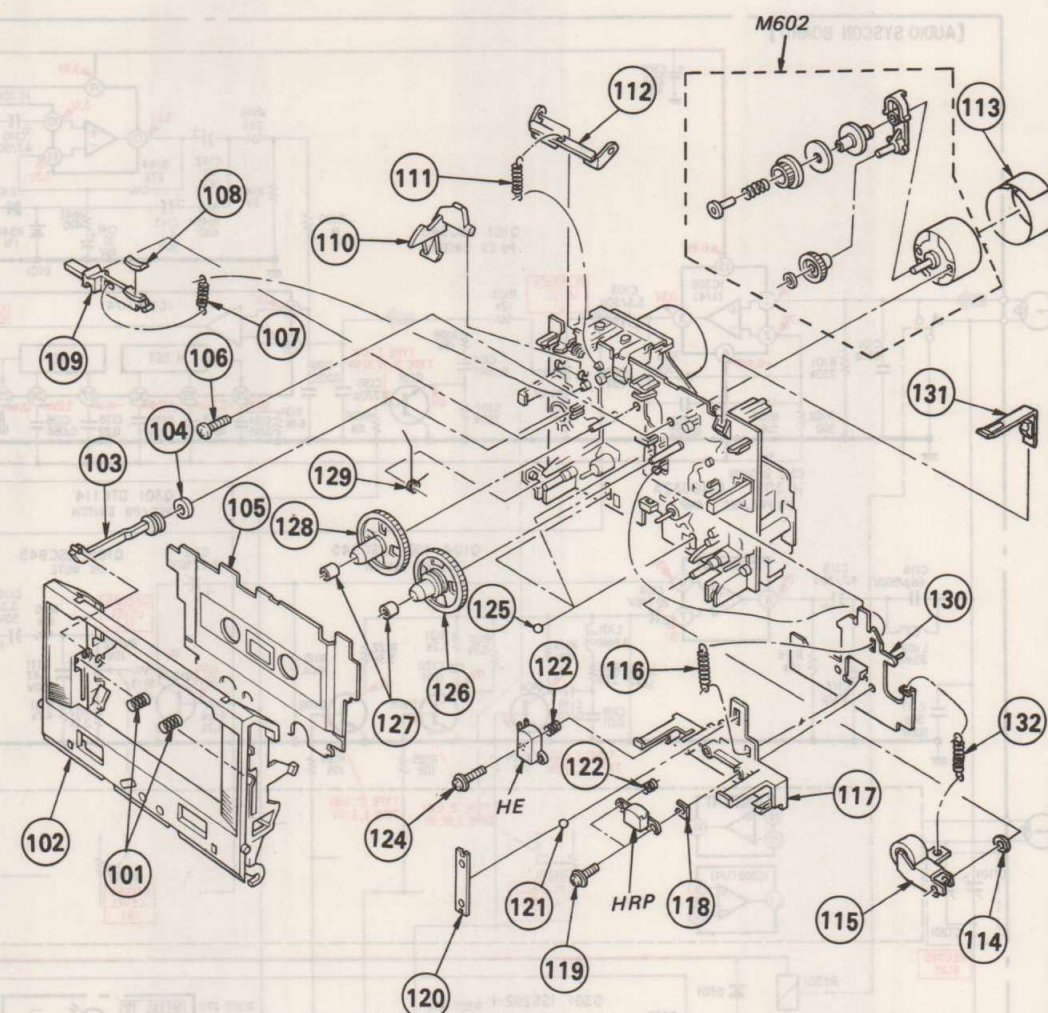
5-1.



5-2.



5-3.

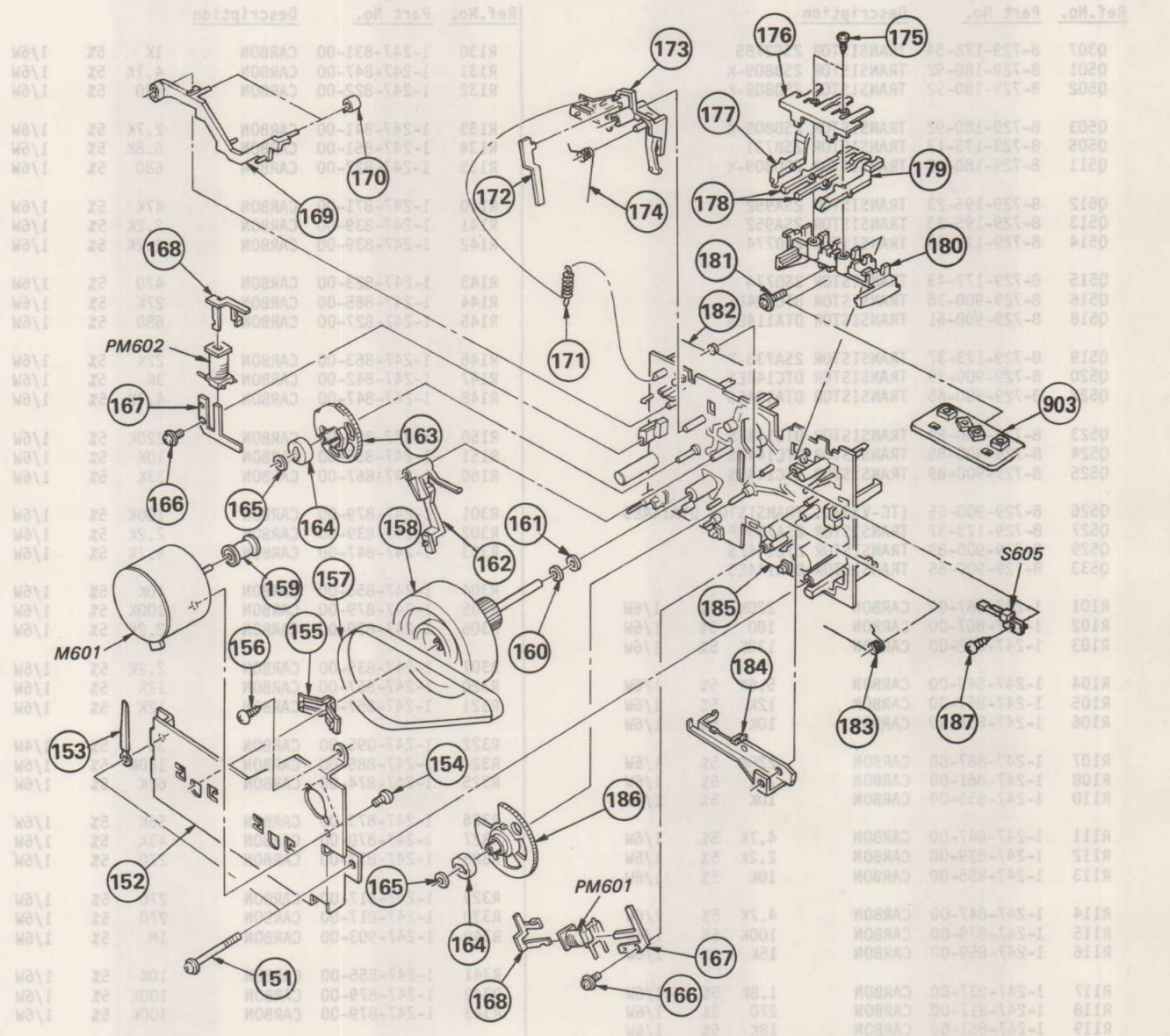


No.	Part No.	Description	REMARKS	No.	Part No.	Description	REMARKS
1	X-3313-221-1	(TC-V11)...LID ASSY, CASSETTE (SILVER)		7	4-886-821-01	SCREW, M3 CASE	
	X-3313-222-1	(TC-V11)...LID ASSY, CASSETTE (BLACK)		8	3-313-223-41	CASE	
	A-2169-091-A	(TC-V33)...LID ASSY, CASSETTE		9	*3-701-417-00	PURSE LOCK (11 DIA.)	
2	3-323-410-01	BUTTON, EJECT		10	*3-313-293-01	PLATE, BOTTOM	
3	X-3313-223-1	(TC-V11)...PANEL ASSY, FRONT (SILVER)		11	7-685-871-01	SCREW +BVTT 3X6 (S)	
	X-3313-224-1	(TC-V11)...PANEL ASSY, FRONT (BLACK)		12	3-313-290-01	PLATE, ORNAMENTAL, KNOB	
	A-2310-280-A	(TC-V33)...PANEL ASSY, FRONT	2,4	901	*A-2056-248-A	(TC-V11)...PC BOARD ASSY, SYSTEM CONTROL	
4	3-540-244-00	SPRING, TENSION			*A-2056-249-A	(TC-V33)...PC BOARD ASSY, SYSTEM CONTROL	
5	1-548-589-11	COUNTER, TAPE (MIDDLE TYPE)		902	*1-614-842-11	PC BOARD, AUDIO SYSTEM CONTROL	
6	3-578-512-00	BELT, TAKE-UP					

No.	Part No.	Description	REMARKS	No.	Part No.	Description	REMARKS
51	7-685-871-01	SCREW +BVTT 3X6 (S)		60	*3-313-280-11	(TC-V33)...PLATE, JACK	
52	7-628-254-05	SCREW +PS 2.6X5			*3-313-280-21	(TC-V11)...PLATE, JACK	
53	7-685-751-09	SCREW +BVTT 3X6 (S)		61	7-685-646-71	SCREW +BVTP 3X8 TYPE2 N-S	
54	7-685-752-04	SCREW +BVTT 3X8 (S)		62	3-703-249-01	SCREW, S TIGHT, +PTTWH 3X6	
55	*3-313-281-01	BRACKET, SWITCH		63	*3-313-209-00	PLATE, RELAY	
56	3-313-300-01	KNOB (D/T)		64	*3-313-210-00	PLATE, SIDE, RIGHT	
57	*3-325-003-01	CHASSIS, AMPLIFIER		65	*3-312-615-31	HEAT SINK	
58	*3-313-217-00	PLATE, SIDE, LEFT		901	*A-2056-248-A	(TC-V11)...PC BOARD ASSY, SYSTEM CONTROL	
59	X-4907-603-1	FOOT ASSY			*A-2056-249-A	(TC-V33)...PC BOARD ASSY, SYSTEM CONTROL	
				902	*1-614-842-11	PC BOARD, AUDIO SYSTEM CONTROL	

No.	Part No.	Description	REMARKS	No.	Part No.	Description	REMARKS
101	3-610-808-00	SPRING (1)		117	3-319-715-01	BRACKET, HEAD	
102	3-319-682-01	HOLDER, CASSETTE		118	3-319-718-01	SHIM, ADJUSTMENT, HEAD (t=0.1)	
103	3-319-613-01	PISTON (B)			3-319-718-11	SHIM, ADJUSTMENT, HEAD (t=0.2)	
104	3-312-441-00	RING, PISTON		119	3-319-719-01	SCREW, TOOTHED LOCK (+- 2X13)	
105	3-313-292-01	RETAINER, CASSETTE		120	*3-319-601-11	SPRING	
106	7-621-775-60	SCREW +B 2.6X12		121	7-671-112-11	BALL, STEEL	
107	3-319-694-01	SPRING, TENSION		122	3-319-712-01	SPRING, COMPRESSION	
108	3-575-346-01	FELT, BREKE		123	*X-3319-624-1	CHASSIS (S) ASSY, HEAD	
109	*3-319-611-01	LEVER (LEFT), BACK TENSION		124	3-703-496-00	SCREW + PWH2X14	
110	3-319-669-01	LEVER, EJECT		125	7-671-112-01	STEEL, BALL	
111	3-312-432-00	SPRING, TENSION		126	X-3319-626-1	TABLE (TAKE-UP) ASSY, REEL	
112	*3-319-709-01	LEVER (B), LIFT, SWITCH		127	3-319-607-01	BUSHING, REEL TABLE	
113	3-575-457-00	PLATE (B), SHIELD, MOTOR		128	X-3319-627-1	TABLE (SUPPLY) ASSY, REEL	
114	7-623-924-11	WASHER 3.0, NYLON		129	3-319-614-01	SPRING	
115	X-3319-625-1	PINCH LEVER ASSY		131	3-319-717-01	SPRING	
116	3-319-713-01	SPRING, TENSION		132	3-319-711-01	SPRING, TENSION	

5-4.



No.	Part No.	Description	REMARKS	No.	Part No.	Description	REMARKS
151	7-685-879-01	SCREW +BVTT 3X30 (S)		170	3-319-662-01	RUBBER, BRAKE	
152	*3-319-665-01	RETAINER, THRUST		171	3-555-124-00	SPRING, TENSION	
153	3-703-150-11	CLAMP		172	3-319-612-01	SPRING	
154	7-628-253-95	SCREW +PS 2.6X4		173	*X-3319-614-1	LEVER ASSY, PAUSE	
155	3-319-608-01	RETAINER, THRUST		174	3-319-606-01	SPRING	
156	7-685-645-11	SCREW +BVTP 3X6 TYPE2 N-S		175	7-685-131-21	SCREW +P 2.6X4 TYPE2 SLIT	
157	3-319-710-01	BELT (R), CAPSTAN		176	3-319-602-01	SPRING	
158	X-3319-606-1	FLYWHEEL (T) ASSY		177	3-319-605-01	LEVER, METAL DETECTION	
159	X-3319-617-1	PULLEY ASSY		178	3-319-603-01	LEVER, REC DETECTION	
160	3-701-438-21	WASHER		179	3-319-604-01	LEVER, HALF DETECTION	
161	3-307-482-00	WASHER, LUMILER		180	3-319-670-01	HOLDER, SWITCH, DETECTION	
162	*X-3319-615-1	LEVER ASSY, FWD LOCK		181	7-685-865-01	SCREW +BVTT 2.6X12 (S)	
163	3-319-688-01	GEAR, PAUSE CAM		182	3-319-649-01	SPRING	
164	1-452-202-00	MAGNET		183	3-319-633-01	SPRING	
165	3-307-394-00	RETAINER (B), THRUST		184	*3-319-676-11	LEVER, FWD	
166	7-687-204-21	TOTSU PTPWH 2X6 NON-SLIT, TYPE2		185	X-3319-628-1	CHASSIS ASSY, MECHANICAL	
167	3-307-332-00	ARBOR, FIXED		186	3-319-689-01	GEAR, FWD CAM	
168	3-307-333-00	ARBOR, TRIGGER		187	7-685-132-21	SCREW +P 2.6X5 TYPE2 SLIT	
169	*3-319-668-01	PLATE, BRAKE		903	*1-614-839-11	PC BOARD, DETECT SWITCH	

NOTE:

Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:

MF:μF, PF:μF.

RESISTORS

All resistors are in ohms.
F : nonflammable

COILS

MMH : mH, UH : μH

SEMICONDUCTORS

In each case, U : μ, for example:

UA... : μA..., UPA... : μPA..., UPC... : μPC,
UPD... : μPD...

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
901	*A-2056-248-A	(TC-V11)...PC BOARD ASSY, SYSTEM CONTROL			
901	*A-2056-249-A	(TC-V33)...PC BOARD ASSY, SYSTEM CONTROL			
902	*1-614-842-11	PC BOARD, AUDIO SYSTEM CONTROL			
903	*1-614-839-11	PC BOARD, DETECT SWITCH			
C101	1-162-292-31	CERAMIC	680PF	10%	50V
C102	1-136-157-00	FILM	0.022MF	5%	50V
C103	1-123-382-00	ELECT	3.3MF	20%	50V
C104	1-110-203-00	MYLAR	0.0047MF	5%	50V
C110	1-123-382-00	ELECT	3.3MF	20%	50V
C111	1-123-379-00	ELECT	0.47MF	20%	50V
C112	1-123-381-00	ELECT	2.2MF	20%	50V
C113	1-123-369-00	ELECT	4.7MF	20%	50V
C114	1-123-330-00	ELECT	22MF	20%	16V
C115	1-162-289-31	CERAMIC	390PF	10%	50V
C116	1-107-036-00	MICA	68PF	5%	500V
C117	1-107-165-00	MICA	56PF	5%	500V
C118	1-136-153-00	FILM	0.01MF	5%	50V
C119	1-110-199-00	MYLAR	0.0022MF	5%	50V
C120	1-136-153-00	FILM	0.01MF	5%	50V
C129	1-110-199-00	MYLAR	0.0022MF	5%	50V
C130	1-162-287-31	CERAMIC	270PF	10%	50V
C131	1-110-203-00	MYLAR	0.0047MF	5%	50V
C132	1-136-173-00	FILM	0.47MF	5%	50V
C133	1-136-167-00	FILM	0.15MF	5%	50V
C134	1-136-155-00	FILM	0.015MF	5%	50V
C135	1-136-169-00	FILM	0.22MF	5%	50V
C136	1-136-163-00	FILM	0.068MF	5%	50V
C137	1-136-161-00	FILM	0.047MF	5%	50V
C138	1-110-205-00	MYLAR	0.0068MF	5%	50V
C139	1-136-153-00	FILM	0.01MF	5%	50V
C140	1-123-369-00	ELECT	4.7MF	20%	50V
C141	1-123-356-00	ELECT	10MF	20%	16V
C142	1-123-356-00	ELECT	10MF	20%	16V
C143	1-123-369-00	ELECT	4.7MF	20%	50V
C144	1-123-369-00	ELECT	4.7MF	20%	50V
C301	1-123-308-00	ELECT	220MF	20%	10V
C302	1-123-308-00	ELECT	220MF	20%	10V
C303	1-123-382-00	ELECT	3.3MF	20%	50V
C304	1-123-382-00	ELECT	3.3MF	20%	50V
C305	1-123-369-00	ELECT	4.7MF	20%	50V
C320	1-129-708-00	FILM	0.0033MF	10%	630V
C321	1-130-293-00	FILM	0.0068MF	5%	100V
C322	1-130-293-00	FILM	0.0068MF	5%	100V

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C323	1-130-287-00	FILM	0.0039MF	5%	100V
C324	1-123-381-00	ELECT	2.2MF	20%	50V
C325	1-136-157-00	FILM	0.022MF	5%	50V
C326	1-123-356-00	ELECT	10MF	20%	16V
C340	1-123-356-00	ELECT	10MF	20%	16V
C341	1-123-306-00	ELECT	47MF	20%	10V
C342	1-123-380-00	ELECT	1MF	20%	50V
C343	1-123-819-11	ELECT	33MF	20%	25V
C344	1-123-617-00	ELECT	10MF	20%	16V
C345	1-123-611-00	ELECT	1MF	20%	50V
C360	1-136-161-00	FILM	0.047MF	5%	50V
C361	1-136-166-00	FILM	0.12MF	5%	50V
C362	1-123-380-00	ELECT	1MF	20%	50V
C363	1-123-380-00	ELECT	1MF	20%	50V
C501	1-162-306-31	CERAMIC	0.01MF	30%	16V
C502	1-162-306-31	CERAMIC	0.01MF	30%	16V
C503	1-123-338-00	ELECT	2200MF	20%	25V
C504	1-123-335-00	ELECT	330MF	20%	25V
C505	1-123-306-00	ELECT	47MF	20%	10V
C506	1-123-309-00	ELECT	330MF	20%	10V
C507	1-123-332-00	ELECT	47MF	20%	16V
C508	1-123-306-00	ELECT	47MF	20%	10V
C509	1-123-309-00	ELECT	330MF	20%	10V
C510	1-123-307-00	ELECT	100MF	20%	10V
C511	1-123-334-00	ELECT	220MF	20%	25V
C512	1-123-307-00	ELECT	100MF	20%	10V
C513	1-123-380-00	ELECT	1MF	20%	50V
C514	1-162-294-31	(TC-V33)...CERAMIC	0.001MF	10%	50V
C515	1-162-284-31	(TC-V33)...CERAMIC	150PF	10%	50V
C516	1-162-284-31	(TC-V33)...CERAMIC	150PF	10%	50V
C517	1-123-381-00	(TC-V33)...ELECT	2.2MF	20%	50V
C518	1-123-307-00	(TC-V33)...ELECT	100MF	20%	10V
C519	1-123-380-00	ELECT	1MF	20%	50V
C520	1-110-203-00	MYLAR	0.0047MF	5%	50V
C521	1-123-380-00	ELECT	1MF	20%	50V
C523	1-162-306-31	CERAMIC	0.01MF	30%	16V
C524	1-162-306-31	CERAMIC	0.01MF	30%	16V
C525	1-123-356-00	ELECT	10MF	20%	16V
C526	1-123-356-00	ELECT	10MF	20%	16V
C527	1-162-306-31	(TC-V33)...CERAMIC	0.01MF	30%	16V
C528	1-161-494-00	CERAMIC	0.022MF	30%	25V
CNJ510	1-562-068-00	SOCKET, CONNECTOR 13P			
CNJ511	1-562-068-00	SOCKET, CONNECTOR 13P			

ELECTRICAL PARTS

Ref.No.	Part No.	Description
CNP301*1-564-509-11	PLUG, CONNECTOR 6P	
CNP302*1-564-509-11	PLUG, CONNECTOR 6P	
CNP303*1-564-505-11	PLUG, CONNECTOR 2P	
CNP501*1-564-507-31	PLUG, CONNECTOR 4P	

CNP502*1-564-508-11	PLUG, CONNECTOR 5P	
CNP503*1-564-507-11	PLUG, CONNECTOR 4P	
CNP504*1-564-505-31	PLUG, CONNECTOR 2P	
CNP505*1-564-507-21	PLUG, CONNECTOR 4P	

CT101	1-141-225-00	CAP, TUNING, TRIMMER
CT201	1-141-225-00	CAP, TUNING, TRIMMER

D101	8-719-107-94	DIODE 1SS202-1
D102	8-719-107-94	DIODE 1SS202-1
D201	8-719-107-94	DIODE 1SS202-1

D202	8-719-107-94	DIODE 1SS202-1
D301	8-719-107-94	DIODE 1SS202-1
D302	8-719-107-94	DIODE 1SS202-1

D311	8-719-905-06	DIODE GL-5NG6
D312	8-719-905-06	DIODE GL-5NG6
D313	8-719-905-06	DIODE GL-5NG6

D318	8-719-911-65	DIODE GL-106N5
D501	8-719-200-02	DIODE 10E-2
D502	8-719-200-02	DIODE 10E-2

D503	8-719-200-02	DIODE 10E-2
D504	8-719-200-02	DIODE 10E-2
D511	8-719-107-94	DIODE 1SS202-1

D512	8-719-107-94	DIODE 1SS202-1
D513	8-719-107-94	DIODE 1SS202-1
D514	8-719-107-94	DIODE 1SS202-1

D515	8-719-107-94	DIODE 1SS202-1
D516	8-719-107-94	DIODE 1SS202-1
D517	8-719-107-94	DIODE 1SS202-1

D518	8-719-107-94	DIODE 1SS202-1
D519	8-719-107-94	DIODE 1SS202-1
D520	8-719-107-94	DIODE 1SS202-1

D521	8-719-107-94	(TC-V33)...DIODE 1SS202-1
D522	8-719-107-94	(TC-V33)...DIODE 1SS202-1
D523	8-719-107-94	(TC-V33)...DIODE 1SS202-1

D524	8-719-107-94	(TC-V33)...DIODE 1SS202-1
D525	8-719-107-94	DIODE 1SS202-1
D526	8-719-107-94	DIODE 1SS202-1

D527	8-719-107-94	DIODE 1SS202-1
D528	8-719-107-49	DIODE 1SS202-1
D529	8-719-905-06	DIODE GL-5NG6

D530	8-719-900-57	DIODE GL-5HY5
D531	8-719-905-06	DIODE GL-5NG6
D532	8-719-900-56	DIODE GL-5PR5
D533	8-719-107-94	DIODE 1SS202-1
D536	8-719-200-02	DIODE 10E-2

ELECTRICAL PARTS

Ref.No.	Part No.	Description
HE	8-825-724-00	HEAD, ERASE EF-201-36
HRP	8-825-507-80	HEAD (PP227-3602F)

IC301	8-752-018-70	IC CX20187
IC302	8-759-101-55	IC CX10032A
IC303	8-759-915-80	IC BA3816

IC304	8-759-600-02	IC M5218L
IC305	8-759-912-79	IC IR2E02
IC306	8-759-800-92	IC LA3220

IC501	8-759-700-47	IC CX10035
IC502	8-759-204-32	IC TC9310N-069
IC503	8-759-602-14	(TC-V33)...IC M50761-412P

L101	1-408-923-00	MICRO INDUCTOR 8.2MMH
L102	1-408-930-00	MICRO INDUCTOR 33MMH
L201	1-408-923-00	MICRO INDUCTOR 8.2MMH

L202	1-408-930-00	MICRO INDUCTOR 33MMH
L301	1-407-177-XX	MICRO INDUCTOR 470UH
L501	1-408-575-00	(TC-V33)...MICRO INDUCTOR 100UH

M601	1-541-239-00	MOTOR (CAPSTAN)
M602	X-3319-612-1	MOTOR ASSY, REEL

PHI501	8-719-902-90	PHOTO INTERRUPTOR SPI201-20
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PM601	1-454-316-00	SOLENOID
PM602	1-454-316-00	SOLENOID

PS501	1-532-605-00	LINK, IC
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Q101	8-729-178-54	TRANSISTOR 2SC2785
Q102	8-729-178-54	TRANSISTOR 2SC2785
Q103	8-729-100-13	TRANSISTOR 2SC2001

Q104	8-729-178-54	TRANSISTOR 2SC2785
Q105	8-729-178-54	TRANSISTOR 2SC2785
Q106	8-729-178-54	TRANSISTOR 2SC2785

Q201	8-729-178-54	TRANSISTOR 2SC2785
Q202	8-729-178-54	TRANSISTOR 2SC2785
Q203	8-729-100-13	TRANSISTOR 2SC2001

Q204	8-729-178-54	TRANSISTOR 2SC2785
Q205	8-729-178-54	TRANSISTOR 2SC2785
Q206	8-729-178-54	TRANSISTOR 2SC2785

Q301	8-729-900-80	TRANSISTOR DTC114ES
Q302	8-729-900-80	TRANSISTOR DTC114ES
Q303	8-729-178-54	TRANSISTOR 2SC2785

Q304	8-729-178-54	TRANSISTOR 2SC2785
Q305	8-729-173-37	TRANSISTOR 2SA733-P
Q306	8-729-178-54	TRANSISTOR 2SC2785

ELECTRICAL PARTS

Ref.No.	Part No.	Description
Q307	8-729-178-54	TRANSISTOR 2SC2785
Q501	8-729-180-92	TRANSISTOR 2SD809-K
Q502	8-729-180-92	TRANSISTOR 2SD809-K

Q503	8-729-180-92	TRANSISTOR 2SD809-K
Q505	8-729-173-13	TRANSISTOR 2SB731
Q511	8-729-180-92	TRANSISTOR 2SD809-K

Q512	8-729-195-23	TRANSISTOR 2SA952
Q513	8-729-195-23	TRANSISTOR 2SA952
Q514	8-729-177-43	TRANSISTOR 2SD774

Q515	8-729-177-43	TRANSISTOR 2SD774
Q516	8-729-900-36	TRANSISTOR DTC124ES
Q518	8-729-900-61	TRANSISTOR DTA114ES

Q519	8-729-173-37	TRANSISTOR 2SA733-P
Q520	8-729-900-89	TRANSISTOR DTC144ES
Q522	8-729-900-65	TRANSISTOR DTA144ES

Q523	8-729-900-89	TRANSISTOR DTC144ES
Q524	8-729-900-89	TRANSISTOR DTC144ES
Q525	8-729-900-89	TRANSISTOR DTC144ES

Q526	8-729-900-65	(TC-V33)...TRANSISTOR DTA144ES
Q527	8-729-173-37	TRANSISTOR 2SA733-P
Q529	8-729-900-89	TRANSISTOR DTC144ES
Q533	8-729-900-65	TRANSISTOR DTA144ES

R101	1-247-887-00	CARBON 220K 5% 1/6W
R102	1-247-807-00	CARBON 100 5% 1/6W
R103	1-247-882-00	CARBON 130K 5% 1/6W

R104	1-247-849-00	CARBON 5.6K 5% 1/6W
R105	1-247-857-00	CARBON 12K 5% 1/6W
R106	1-247-855-00	CARBON 10K 5% 1/6W

R107	1-247-887-00	CARBON 220K 5% 1/6W
R108	1-247-861-00	CARBON 18K 5% 1/6W
R110	1-247-855-00	CARBON 10K 5% 1/6W

R111	1-247-847-00	CARBON 4.7K 5% 1/6W
R112	1-247-839-00	CARBON 2.2K 5% 1/6W
R113	1-247-855-00	CARBON 10K 5% 1/6W

R114	1-247-847-00	CARBON 4.7K 5% 1/6W
R115	1-247-879-00	CARBON 100K 5% 1/6W
R116	1-247-859-00	CARBON 15K 5% 1/6W

R117	1-247-837-00	CARBON 1.8K 5% 1/6W
R118	1-247-817-00	CARBON 270 5% 1/6W
R119	1-247-861-00	CARBON 18K 5% 1/6W

R120	1-247-851-00	CARBON 6.8K 5% 1/6W
R121	1-247-833-00	CARBON 1.2K 5% 1/6W
R122	1-247-843-00	CARBON 3.3K 5% 1/6W

R124	1-247-855-00	CARBON 10K 5% 1/6W
R125	1-247-855-00	CARBON 10K 5% 1/6W
R126	1-247-855-00	CARBON 10K 5% 1/6W

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R130	1-247-831-00	CARBON	1K	5%	1/6W
R131	1-247-847-00	CARBON	4.7K	5%	1/6W
R132	1-247-822-00	CARBON	430	5%	1/6W

R133	1-247-841-00	CARBON	2.7K	5%	1/6W
R134	1-247-851-00	CARBON	6.8K	5%	1/6W
R135	1-247-827-00	CARBON	680	5%	1/6W

R140	1-247-871-00	CARBON	47K	5%	1/6W
R141	1-247-839-00	CARBON	2.2K	5%	1/6W
R142	1-247-839-00	CARBON	2.2K	5%	1/6W

R143	1-247-823-00	CARBON	470	5%	1/6W
R144	1-247-865-00	CARBON	27K	5%	1/6W
R145	1-247-827-00	CARBON	680	5%	1/6W

R146	1-247-863-00	CARBON	22K	5%	1/6W
R147	1-247-842-00	CARBON	3K	5%	1/6W
R148	1-247-847-00	CARBON	4.7K	5%	1/6W

R150	1-247-887-00	CARBON	220K	5%	1/6W
R151	1-247-855-00	CARBON	10K	5%	1/6W
R160	1-247-867-00	CARBON	33K	5%	1/6W

R301	1-247-879-00	CARBON	100K	5%	1/6W
R302	1-247-839-00	CARBON	2.2K	5%	1/6W
R303	1-247-847-00	CARBON	4.7K	5%	1/6W

R304	1-247-855-00	CARBON	10K	5%	1/6W
R305	1-247-879-00	CARBON	100K	5%	1/6W
R306	1-247-839-00	CARBON	2.2K	5%	1/6W

R307	1-247-839-00	CARBON	2.2K	5%	1/6W
R320	1-247-857-00	CARBON	12K	5%	1/6W
R321	1-247-857-00	CARBON	12K	5%	1/6W

R322	1-247-095-00	CARBON	33	5%	1/4W
R324	1-247-885-00	CARBON	180K	5%	1/6W
R325	1-247-874-00	CARBON	62K	5%	1/6W

R326	1-247-873-00	CARBON	56K	5%	1/6W
R327	1-247-870-00	CARBON	43K	5%	1/6W
R328	1-247-817-00	CARBON	270	5%	1/6W

R329	1-247-817-00	CARBON	270	5%	1/6W
R330	1-247-817-00	CARBON	270	5%	1/6W
R340	1-247-903-00	CARBON	1M	5%	1/6W

R341	1-247-855-00	CARBON	10K	5%	1/6W
R342	1-247-879-00	CARBON	100K	5%	1/6W
R343	1-247-879-00	CARBON	100K	5%	1/6W

R344	1-247-875-00	CARBON	68K	5%	1/6W
R345	1-247-855-00	CARBON	10K	5%	1/6W
R346	1-247-855-00	CARBON	10K	5%	1/6W

R347	1-247-879-00	CARBON	100K	5%	1/6W
R348	1-247-839-00	CARBON	2.2K	5%	1/6W
R349	1-247-827-00	CARBON	680	5%	1/6W

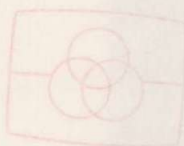
ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R350	1-247-863-00	CARBON	22K	5%	1/6W
R351	1-247-855-00	CARBON	10K	5%	1/6W
R360	1-247-855-00	CARBON	10K	5%	1/6W
R361	1-247-839-00	CARBON	2.2K	5%	1/6W
R362	1-247-895-00	CARBON	470K	5%	1/6W
R363	1-247-863-00	CARBON	22K	5%	1/6W
R364	1-247-887-00	CARBON	220K	5%	1/6W
R365	1-247-839-00	CARBON	2.2K	5%	1/6W
R366	1-247-879-00	CARBON	100K	5%	1/6W
R367	1-247-867-00	CARBON	33K	5%	1/6W
R501	1-247-839-00	CARBON	2.2K	5%	1/6W
R502	1-247-826-00	CARBON	620	5%	1/6W
R503	1-247-847-00	CARBON	4.7K	5%	1/6W
R504	1-247-825-00	CARBON	560	5%	1/6W
R505	1-247-840-00	CARBON	2.4K	5%	1/6W
R506	1-247-857-00	CARBON	12K	5%	1/6W
R507	1-247-839-00	CARBON	2.2K	5%	1/6W
R508	1-247-858-00	CARBON	13K	5%	1/6W
R511	1-247-833-00	CARBON	1.2K	5%	1/6W
R512	1-247-831-00	CARBON	1K	5%	1/6W
R513	1-247-833-00	CARBON	1.2K	5%	1/6W
R514	1-247-831-00	CARBON	1K	5%	1/6W
R515	1-247-831-00	CARBON	1K	5%	1/6W
R516	1-247-831-00	CARBON	1K	5%	1/6W
R517	1-247-831-00	CARBON	1K	5%	1/6W
R519	1-247-859-00	CARBON	15K	5%	1/6W
R520	1-247-879-00	CARBON	100K	5%	1/6W
R521	1-247-855-00	CARBON	10K	5%	1/6W
R522	1-247-879-00	CARBON	100K	5%	1/6W
R523	1-247-831-00	CARBON	1K	5%	1/6W
R524	1-247-831-00	CARBON	1K	5%	1/6W
R525	1-247-855-00	CARBON	10K	5%	1/6W
R526	1-247-847-00	CARBON	4.7K	5%	1/6W
R527	1-247-871-00	CARBON	47K	5%	1/6W
R528	1-247-871-00	CARBON	47K	5%	1/6W
R530	1-247-783-00	(TC-V33)...CARBON	10	5%	1/6W
R531	1-247-863-00	(TC-V33)...CARBON	22K	5%	1/6W
R532	1-247-861-00	(TC-V33)...CARBON	18K	5%	1/6W
R533	1-247-861-00	(TC-V33)...CARBON	18K	5%	1/6W
R534	1-247-903-00	(TC-V33)...CARBON	1M	5%	1/6W
R535	1-247-841-00	(TC-V33)...CARBON	2.7K	5%	1/6W
R536	1-247-879-00	(TC-V33)...CARBON	100K	5%	1/6W
R537	1-247-855-00	CARBON	10K	5%	1/6W
R538	1-247-879-00	CARBON	100K	5%	1/6W
R539	1-247-819-00	CARBON	330	5%	1/6W

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R540	1-247-855-00	CARBON	10K	5%	1/6W
R541	1-247-813-00	CARBON	180	5%	1/6W
R542	1-247-813-00	CARBON	180	5%	1/6W
R543	1-247-811-00	CARBON	150	5%	1/6W
R544	1-247-821-00	CARBON	390	5%	1/6W
R547	1-247-872-00	CARBON	51K	5%	1/6W
R549	1-247-847-00	CARBON	4.7K	5%	1/6W
RV101	1-230-630-11	RES, ADJ, CARBON 10K			
RV102	1-230-630-11	RES, ADJ, CARBON 10K			
RV201	1-230-630-11	RES, ADJ, CARBON 10K			
RV202	1-230-630-11	RES, ADJ, CARBON 10K			
RY301	1-515-473-00	RELAY			
S1	1-554-303-00	SWITCH, KEY BOARD (FF)			
S2	1-554-303-00	SWITCH, KEY BOARD (REC)			
S3	1-554-303-00	SWITCH, KEY BOARD (PLAY)			
S4	1-554-303-00	SWITCH, KEY BOARD (REC MUTE)			
S5	1-554-303-00	SWITCH, KEY BOARD (AMS)			
S6	1-554-303-00	SWITCH, KEY BOARD (PAUSE)			
S7	1-554-303-00	SWITCH, KEY BOARD (REW)			
S8	1-554-303-00	SWITCH, KEY BOARD (STOP)			
S301	1-554-691-00	SWITCH, SLIDE (DOLBY NR)			
S501	1-554-691-00	SWITCH, SLIDE (TIMER)			
S601	1-553-856-00	SWITCH, KEY BOARD (CASSETTE DET.)			
S602	1-553-856-00	SWITCH, KEY BOARD (TYPE 2 DET.)			
S603	1-553-856-00	SWITCH, KEY BOARD (TYPE 4 DET.)			
S604	1-553-856-00	SWITCH, KEY BOARD (ERASE PROOF)			
S605	1-554-410-00	SWITCH, LEAF (RETRIGGER)			
SPK101	1-235-186-00	ENCAPSULATED COMPONENT			
SPK201	1-235-186-00	ENCAPSULATED COMPONENT			
T301	1-433-267-00	TRANSFORMER, OSCILLATOR			
X501	1-527-532-00	(TC-V33)...OSCILLATOR, CERAMIC			

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TC-V11/V33

SERVICE MANUAL

SUPPLEMENT

File this supplement with the service manual.

Subject: Part No. Change

Color description was incorrect in TC-V11/V33
Supplement No. 1 previously issued.

Applicable Model: TC-V11

Former	New
A-2169-090-A LID ASSY, CASSETTE	X-3313-221-1 LID ASSY (SILVER), CASSETTE X-3313-222-1 LID ASSY (BLACK), CASSETTE
A-2310-279-A PANEL ASSY, FRONT	X-3313-223-1 PANEL ASSY (SILVER), FRONT X-3313-224-1 PANEL ASSY (BLACK), FRONT

US Model
Canadian Model
AEP Model
UK Model
E Model

TC-V11:

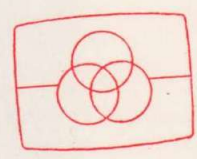
US Model
AEP Model
UK Model
E Model

TC-V33:

No. 1

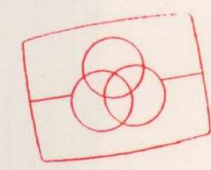
REVISED

Discard TC-V11/V33
Supplement No. 1
(No. 9-951-652-81)
previously issued.



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