

TC-WR8ES

SERVICE MANUAL

US Model



SPECIFICATIONS

Recording system

4-track 2-channel stereo

Fast winding time

Approx. 90 sec. (with C-60 cassette)

Bias

AC Bias

Signal-to-noise ratio (NAB, at peak level)

Cassette	Dolby NR switch		
	OFF	B-TYPE ON	C-TYPE ON
TYPE IV (Sony METAL-ES)	58 dB	65 dB	71 dB
TYPE II (Sony UX-S)	57 dB	64 dB	70 dB
TYPE I (Sony HF-S)	54 dB	61 dB	67 dB

Total harmonic distortion

1.0 % (with Sony METAL-ES cassettes)

Frequency response (DOLBY NR OFF)

TYPE IV cassette (Sony METAL-ES)	20–20,000 Hz (±3 dB) 30–15,000 Hz (0VU recording)
TYPE II cassette (Sony UX-S)	30–17,000 Hz (±3 dB)
TYPE I cassette (Sony HF-S)	30–15,000 Hz (±3 dB)

Wow and flutter

0.09% WRMS (NAB)

Inputs

Line inputs (phono jacks)	Sensitivity	77.5 mV (–20 dB)
	Input impedance	50k ohms

Model Name Using Similar Mechanism	TC-WR9ES TC-WR800
Tape Transport Mechanism Type	deck A: TCM-170RA4 deck B: TCM-170RB12

Outputs

Line outputs (phono jacks)	Rated output level	0.44 V (–5 dB) at a load impedance 47k ohms
	Load impedance	Over 10k ohms
Headphone output (stereo phone jack)	Output level	–28 dB at 8 ohms

General

Power requirements

120 V AC, 60 Hz

Power consumption

28 W

Dimensions

Approx. 430×118×275 mm (w/h/d)
(17×4³/₄×10⁷/₈ inches)

including projecting parts and controls

Weight

Approx. 4.6 kg (10 lbs 3 oz)

Supplied accessory

Audio connecting cord (2)

Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.

“DOLBY” and the double-D symbol  are trademarks of Dolby Laboratories Licensing Corporation.

STEREO CASSETTE DECK

SONY®



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SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK  OR DOTTED LINE WITH MARK  ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety check before releasing the set to the customer:

Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microamperes). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A)

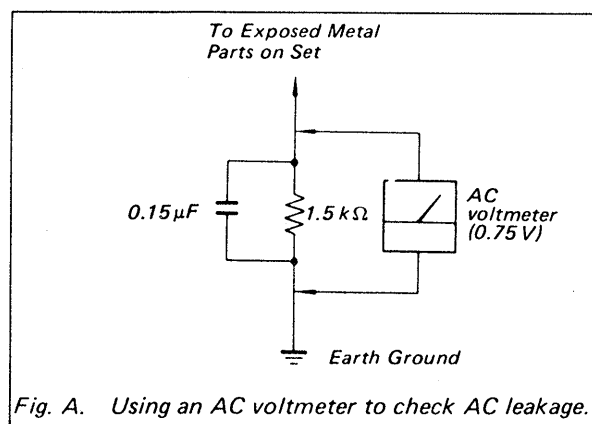
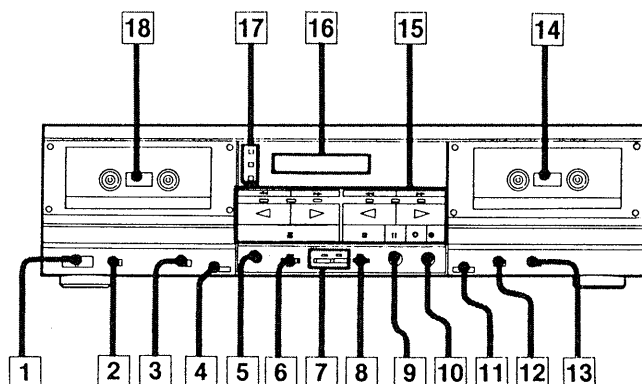


Fig. A. Using an AC voltmeter to check AC leakage.

SECTION 1 GENERAL

Identification of Front Panel Parts



- 1** POWER switch
- 2** TIMER switch (used with deck B)
- 3** DIRECTION MODE selector
- 4** ▲ (eject) button (deck A)
- 5** HEADPHONES jack (stereo phone jack)
- 6** AMS (Automatic music sensor)/BLANK SKIP button and indicator
- 7** SYNCHRO DUBBING buttons and indicators
HIGH SPEED/NORMAL SPEED
- 8** AUTO PAUSE button and indicator

- 9** BALANCE control
Adjusts the balance of right and left channel during recording
- 10** REC LEVEL (recording level) control
- 11** ▲ (eject) button (deck B)
- 12** DOLBY NR switch
- 13** MPX FILTER (Multiplex Filter) switch
- 14** Cassette holder (deck B)
- 15** Tape operation buttons and direction mode indicators
 - ◀◀ (leftward fast winding) button
 - ▶▶ (rightward fast winding) button
 - ▶ (forward play) button
 - ◀ (reverse play) button
 - (stop) button

- (pause) button and indicator (deck B only)
- REC MUTE (record muting) button (deck B only)
- REC (record) button and indicator (deck B only)

- 16** PEAK LEVEL METER and LINEAR counter
- 17** COUNTER buttons
RESET/MEMORY/A/B
- 18** Cassette holder (deck A)

You can control this cassette deck remotely with:

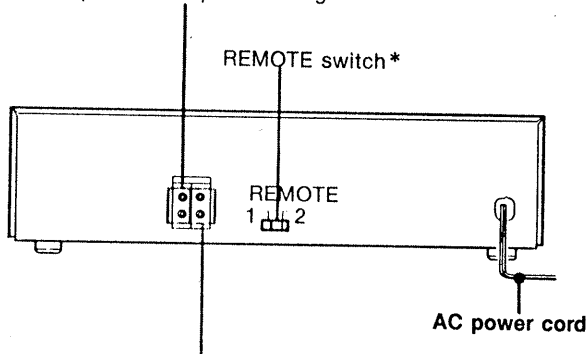
- Any remote commander (supplied with a Sony amplifier or receiver) which is marked with the  logo and has cassette deck control capability.
- An optional Sony remote commander with the  logo.

Connections

Identification of Rear Panel Parts

LINE IN (line input) jacks (phono jacks)

Connect to the tape outputs (recording outputs) of an amplifier for tape recording.

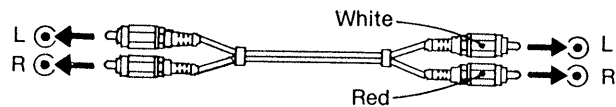


LINE OUT (line output) jacks (phono jacks)

Connect to the tape inputs of an amplifier for playback.

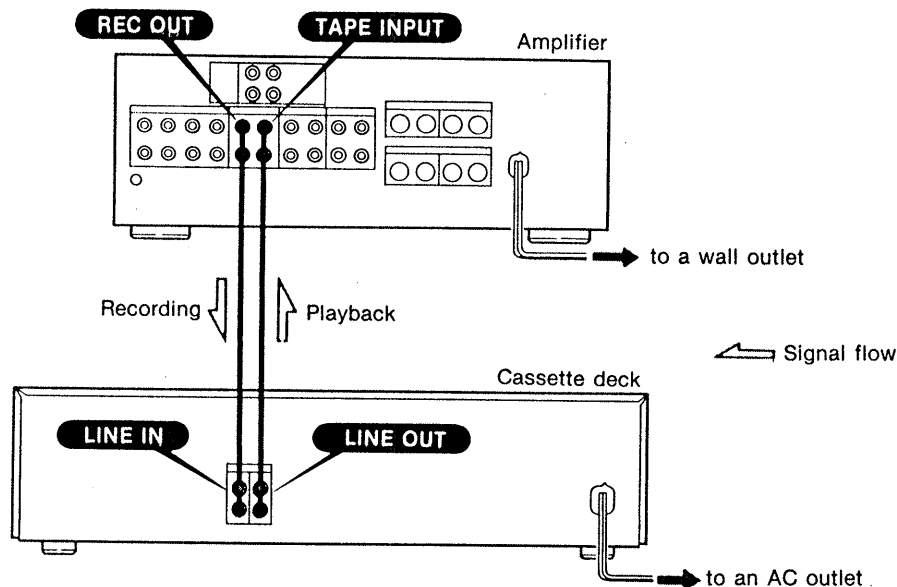
Notes on Connections

- Turn off the power to all equipment before making any connection.
- Note that the red plug of the supplied connecting cord is for right-channel (R) connection and the white plug for left-channel (L) connection.



- The connecting cords should be fully inserted into the jacks. A loose connection may cause hum pick-up.

Basic Connection



* REMOTE switch

If you have a remote commander supplied with a Sony receiver or amplifier, you can control both decks by using the A/B deck selector.

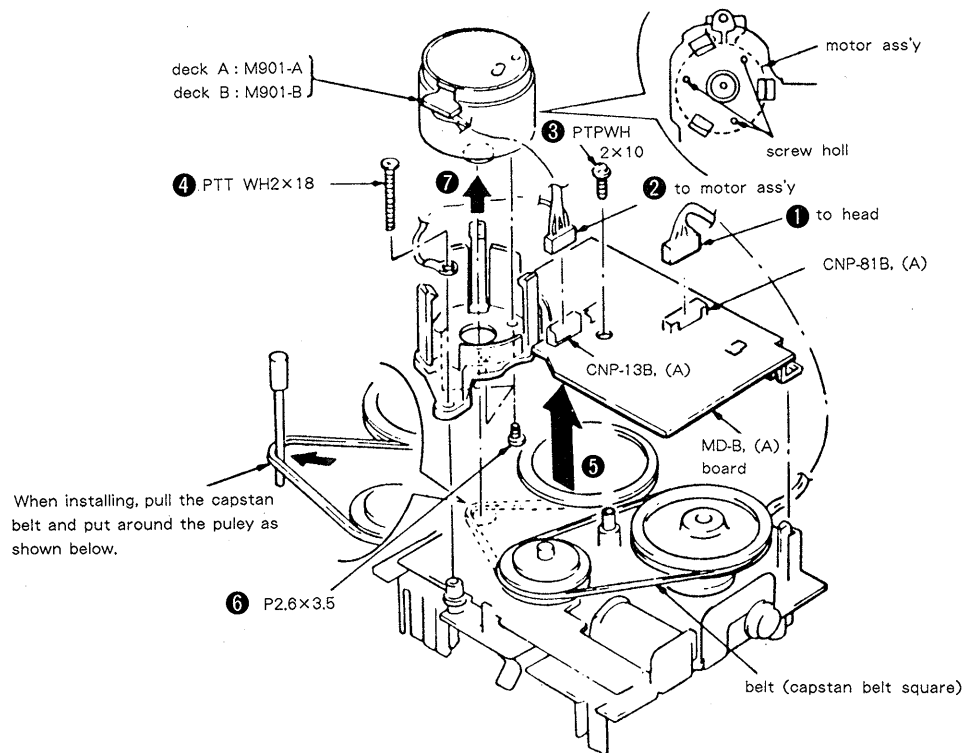
However, if your commander is not equipped with an A/B deck selector and controls only deck A, setting this switch will allow you to control both decks.

To do this, first **turn the power off**, then set the switch to REMOTE 2. Under this setting, the commander controls the deck in which a cassette is loaded. If both decks are loaded, it controls only deck B.

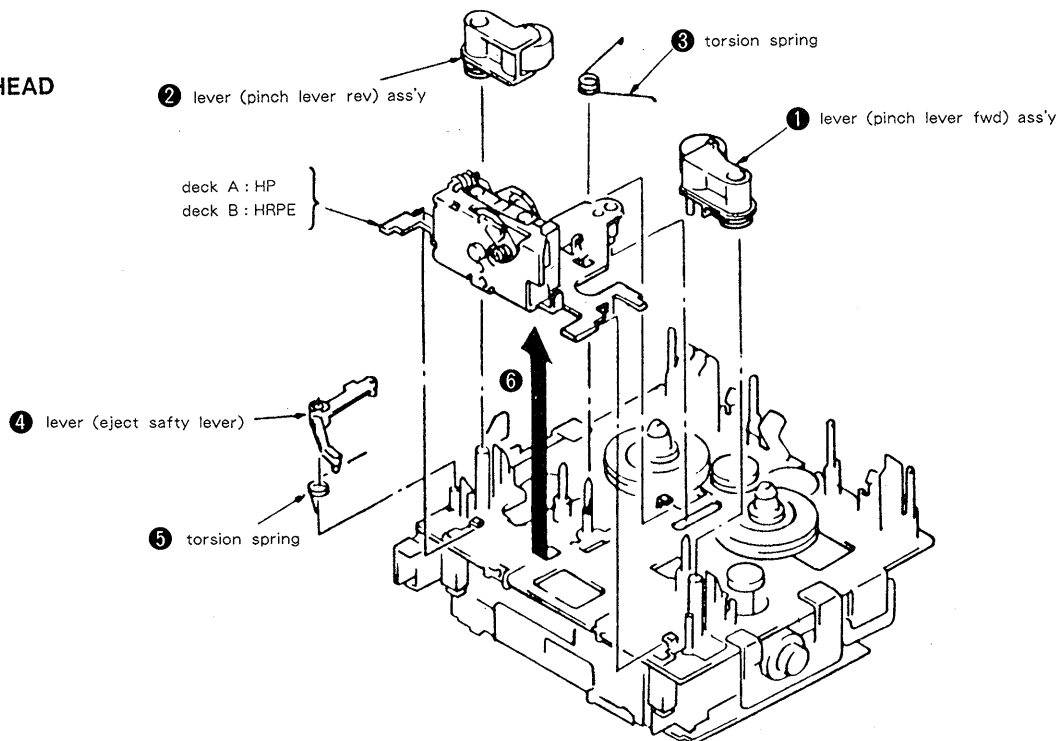
SECTION 2 DISASSEMBLY

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

MOTOR



HEAD



SECTION 3 ADJUSTMENTS

3-1. MECHANICAL ADJUSTMENTS

PRECAUTION

- Clean the following parts with a denatured-alcohol-moistened swab :

record/playback head	pinch roller
erase head	rubber belts
capstan	idler
- Demagnetize the record/playback head with a head demagnetizer.
- Do not use a magnetized screwdriver for the adjustments.
- After the adjustments, apply suitable locking compound to the parts adjusted.

Torque Measurement

Torque	Torque meter	Meter reading
FWD	CQ-102C	27 to 75g · cm (0.38 to 1.04 oz · inch)
FWD Back tension	CQ-102C	1 to 10g · cm (0.014 to 0.14 oz · inch)
REV	CQ-102RC	27 to 75g · cm (0.38 to 1.04 oz · inch)
REV Back tension	CQ-102RC	1 to 10g · cm (0.014 to 0.14 oz · inch)
FF, REW	CQ-201B	95 to 165g · cm (1.32 to 2.29 oz · inch)

3-2. ELECTRICAL ADJUSTMENTS

Note : The adjustment should be performed in the order given in the service manual.

The adjustments should be performed for both L-CH and R-CH.

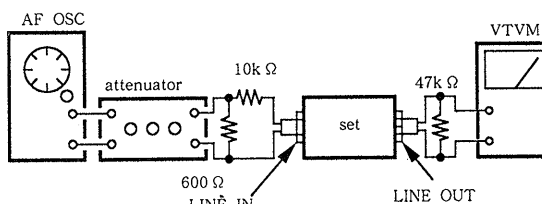
Switches and controls should be set as follows unless otherwise specified.

DOLBY NR switch	: OFF
TAPE SELECT switch	: TYPE I
DIRECTION MODE switch	:
MPX FILTER switch	: OFF

Standard Record :

Deliver the standard input signal level to the input jack and set the REC LEVEL control to obtain the standard output signal level.

—Record Mode—



Standard Input Level

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

Standard Output Level

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

• Test tape

Type	Signal	Used for
P-4-A100	10kHz, −10dB	Azimuth Adjustment
P-4-L300	315Hz, 0dB	PB LEVEL Adjustment
WS-48B	3kHz, 0dB	Tape Speed Adjustment

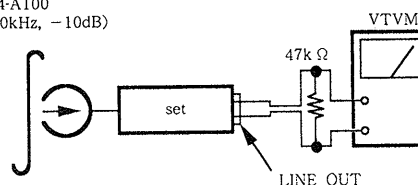
Record/Playback Head Azimuth Adjustment

DECK A DECK B

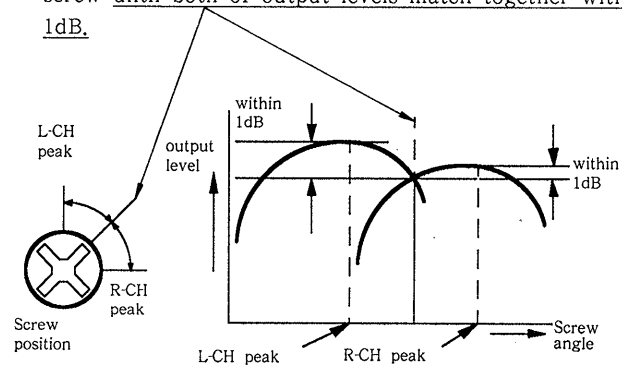
Procedure :

- Mode : FWD playback

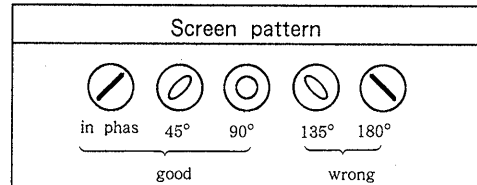
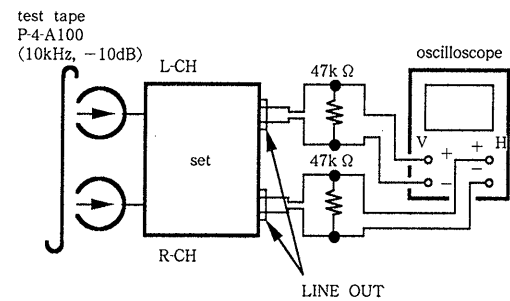
test tape
P-4-A100
(10kHz, −10dB)



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 1dB.

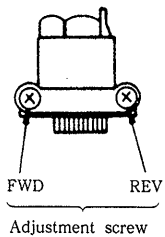


3. Phase Check
Mode : playback



4. Set in the REV mode and repeat the step 1-3.
5. After the adjustment, lock the screws with locking compound.

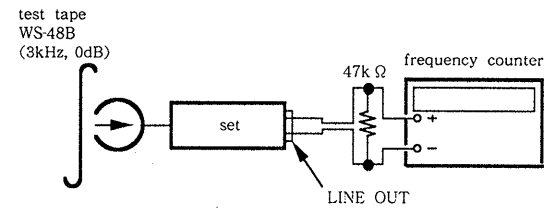
Adjustment Location : Record/Playback head



Tape Speed Adjustment DECK A DECK B

Procedure :

Mode : FWD playback



Perform high speed adjustment before normal speed adjustment.
Play back the test tape WS-48B and adjust to meet the specifications below.

Specifications :

speed	deck	Adjustment part	variable resistor of motor	test pin CN811	frequency counter reading
high	A	M901-A	(H)	short	5,960±20
	B	M901-B	(H)		
normal	A	M901-A	(L)	open	2,980±10
	B	M901-B	(L)		

Frequency difference between the beginning and the end of the tape should be within 3%.
Frequency difference between deck A and deck B the beginning of the tape should be within 1.5%.

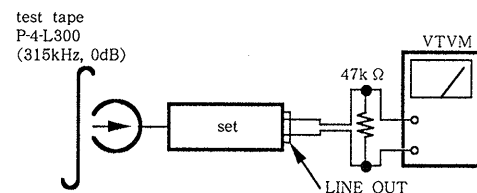
Adjustment Location :

deck A : motor (M901-A) rear side
deck B : motor (M901-B) rear side

Playback Level Adjustment DECK A DECK B

Procedure :

Mode : playback



Adjust deck A : RV41A(L-CH), RV61A(R-CH) and deck B : RV41B(L-CH), RV61B(R-CH) so that the reading on VTVM meets the specification below.

Specification :

LINE OUT level : $-5 \pm 0.5\text{dB}$ (0.42V-0.46V)

Level difference between channels : less than 0.5dB

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 system control board

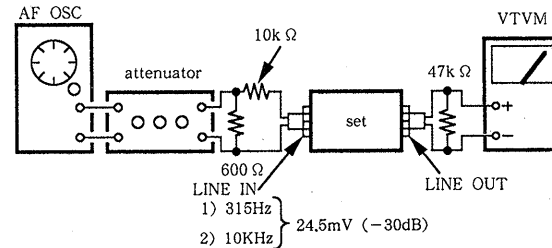
Record Bias Adjustment DECK B

Setting :

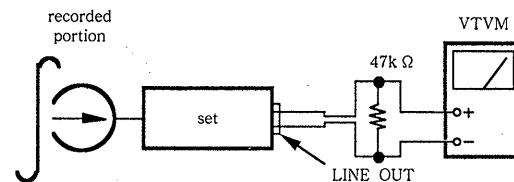
REC LEVEL control : standard record (See page 6.)

Procedure :

1. Mode : record



2. Mode : playback



Confirm that the 10kHz playback output is $0 \pm 0.5\text{dB}$ relative to the 315Hz output. If necessary, adjust RV42 (L-CH), RV62 (R-CH) and repeat the steps given above.

Adjustment Location : HX PRO board

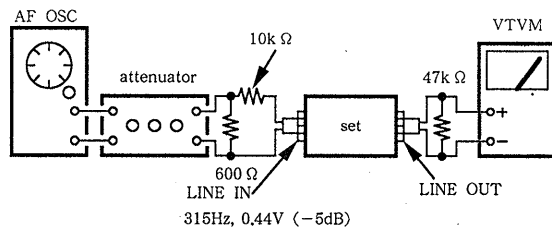
Record Level Adjustment DECK B

Setting :

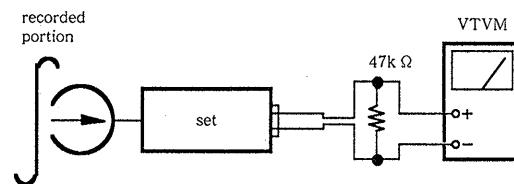
REC LEVEL control : standard record (See page 6.)

Procedure :

1. Mode : record



2. Mode : playback



3. Play back the signal recorded in step 1.
Confirm that the signal level is within the specification below. If necessary, adjust RV102(L-CH), RV202 (R-CH) and repeat the step1-3.

Specification : LINE OUT level : $-5\text{dB} \pm 0.5\text{dB}$ (0.42V-0.46V)

Adjustment Location : audio system control board

Quick Reverse Sensitivity Adjustment DECK B

Conditions :

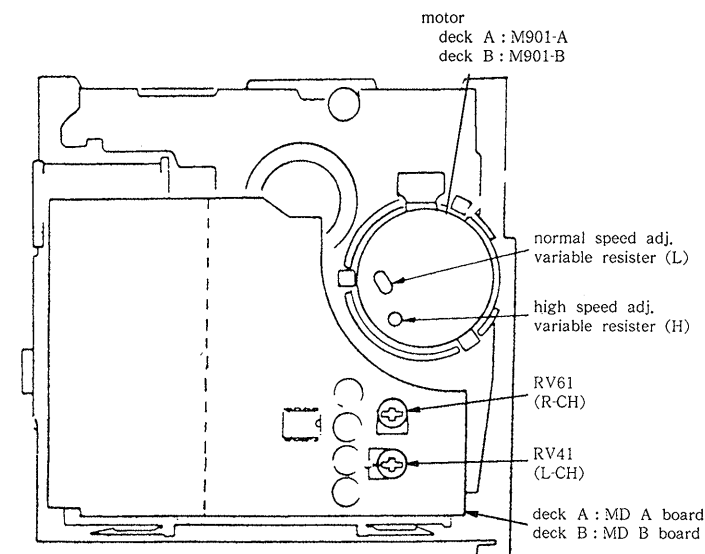
DIRECTION MODE switch : $\Rightarrow$

Adjustment Procedure :

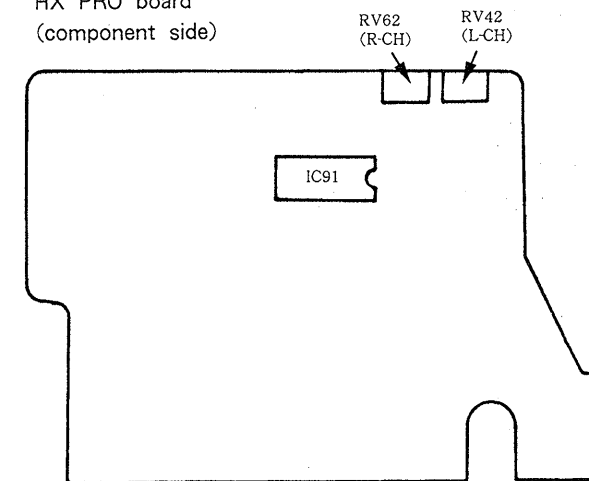
1. Connect the oscilloscope to test point TP802.
2. Load C-120 tape cassette and playback the leading portion in FWD mode.
3. Adjust the RV802 for $4 \pm 0.5\text{V}$ reading on the oscilloscope.
4. Play back C-120 tape cassette in FWD mode again.
5. Confirm that the reading on the oscilloscope is "L" level at the magnetic portion of the tape.
6. Confirm that the tape cassette stops around the tape end (border of the leading and the magnetic portions).

Adjustment Location : audio system control board

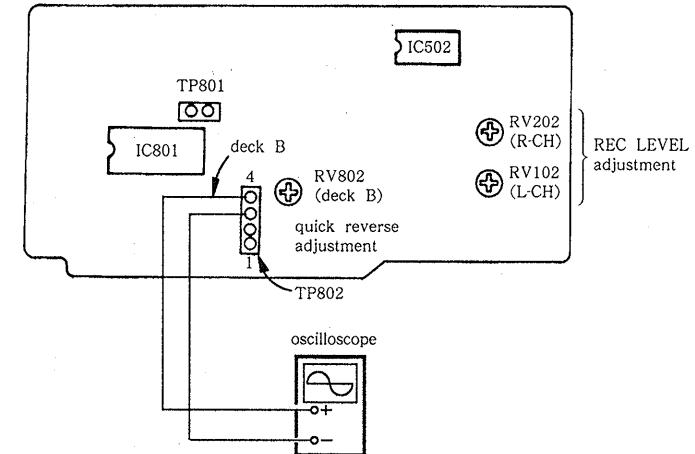
-Adjustment Parts Location Diagrams-



HX PRO board
(component side)

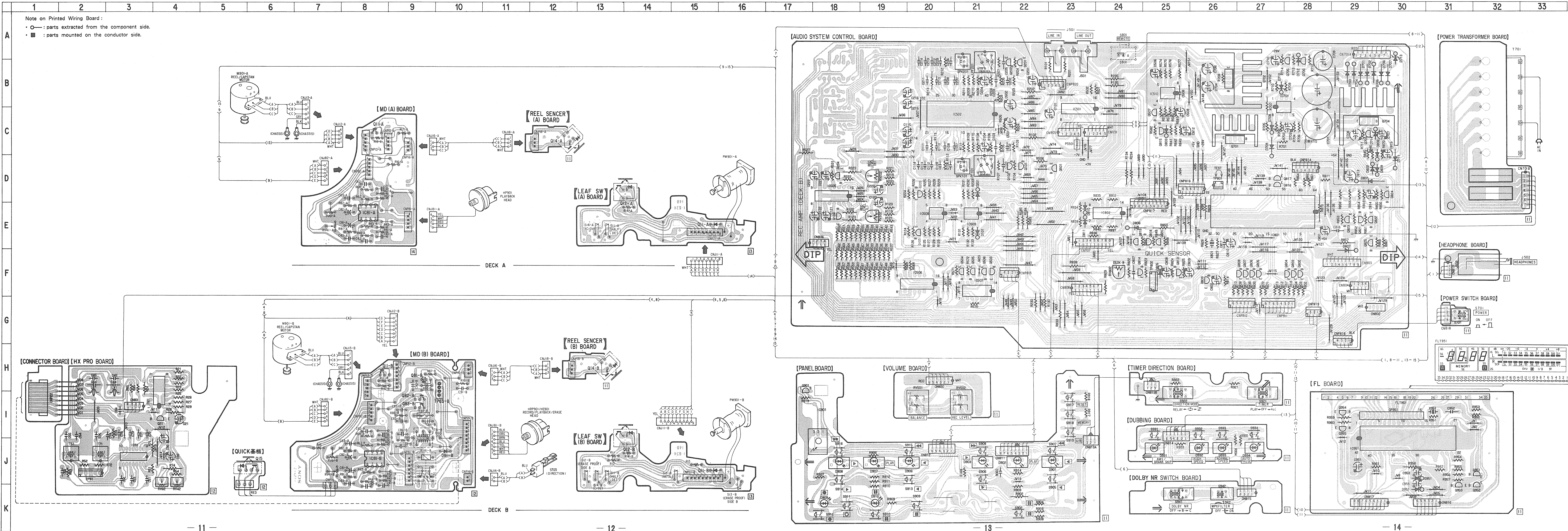


audio system control board (component side)



● SEMICONDUCTOR LOCATION

Ref. No.	Location	Ref. No.	Location
DECK A		IC501	C-23
D11	E-15	IC502	C-21
IC81	E-8	IC503	C-18
		IC504	B-18
		IC505	D-18
Q11	C-8	IC506	F-20
Q12	E-14	IC507	F-21
Q14	C-13	IC508	E-20
		IC509	E-21
DECK B		IC510	B-25
D11	J-15	IC701	C-28
D81	IC801		E-27
	I-3	IC901	I-19
IC81	J-8	IC951	J-30
IC91	J-3		
Q11	H-8	Q101	D-22
Q12	J-14	Q102	D-22
Q14	H-13	Q103	C-18
Q15	J-6	Q104	E-18
Q21	I-4	Q105	E-20
		Q201	B-21
Q81	H-9	Q202	B-21
Q82	I-9	Q203	B-18
Q83	I-9	Q204	D-18
		Q205	D-20
D101	E-21	Q501	D-23
D201	D-21	Q502	A-18
D701	B-29	Q503	F-21
D702	B-29	Q504	F-21
D703	B-29	Q505	F-21
D704	B-29	Q506	F-21
D705	B-29	Q507	C-23
D706	B-30	Q701	C-27
D707	B-30	Q702	B-27
D708	C-27	Q703	C-29
D709	C-27	Q704	C-29
D710	B-28	Q705	B-28
D711	D-30	Q706	B-28
D712	B-28	Q801	F-28
D713	B-30	Q802	F-28
D714	C-30	Q803	F-28
D801	D-29	Q804	F-28
D802	C-29	Q805	F-27
D803	C-25	Q806	F-27
D804	F-25	Q807	F-27
D805	F-25	Q808	F-27
D806	E-24	Q809	F-26
F-9807	F-9810	Q810	E-26
D808	D-30	Q811	F-25
D809	D-30	Q812	F-25
D810	E-23	Q813	F-25
D811	E-23	Q814	F-25
Q901	J-23	Q815	C-25
Q902	J-22	Q816	D-27
Q903	J-21	Q817	D-27
D904	K-21	Q818	E-25
D905	K-22	Q819	E-24
D906	J-20	Q820	E-25
D907	J-19	Q821	E-29
D908	J-18	Q822	E-29
D909	K-18	Q823	E-29
D910	K-19	Q824	D-30
D931	J-25	Q825	E-29
D932	J-26	Q901	H-17
D933	J-26	Q951	J-32
D934	J-27	Q952	K-32
D951	J-31	Q953	K-31
D952	K-30	Q954	I-29
		Q955	I-29





4.3.SEMICONDUCTOR LEAD LAYOUTS

CXA1198AP
MC14053BCP
TC4051BPHB

(Top view)

BA1L4M
2SA1175-HFE
2SC2785

arrow side

2SD1761-E

cathode

CX20187
MB88517B

(Top view)

DTA114ES
DTA144ES
DTC124ES
2SA733
2SD2144S-V

cathode

GL8HD34T
GL8NG34T
GL8HY34T

anode

M4023BP
TC4071BP
μPC339C

(Top view)

GP-2S09-C

cathode

HZS6A1L
HZS6C3L
HZS7C1L
US1060M

anode

M50964-206SP

(Top view)

2SB1013
2SC945-P
2SD1387

cathode

SEL2210R
TLY124

long short

RC4558P
μPC4570C-1

(Top view)

2SB1014

cathode

SEL2510C
SEL4914D

long short

μPC1297CA

(Top view)

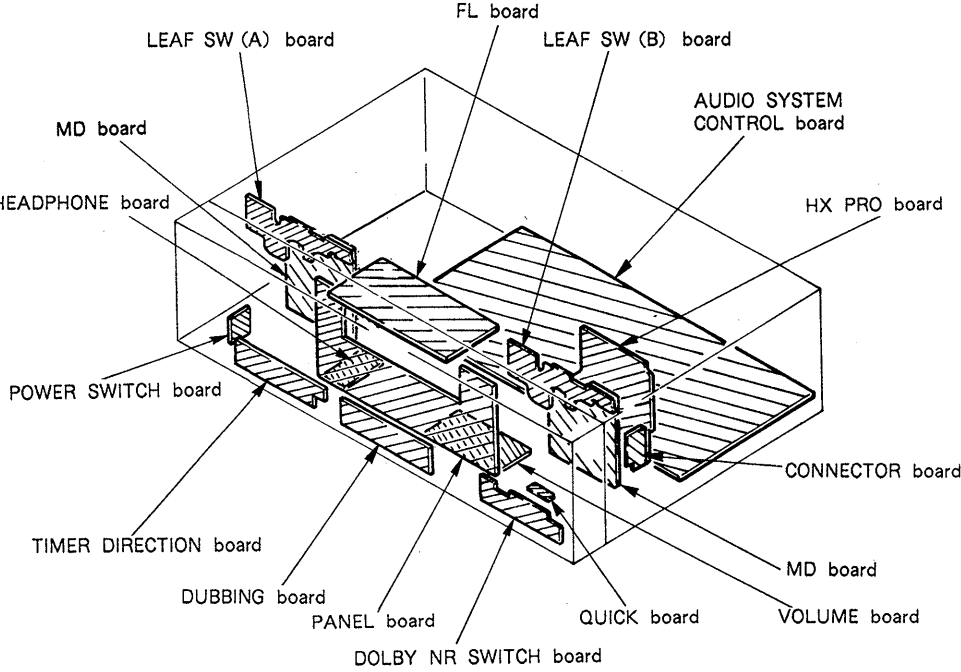
2SB1187-F

cathode

1SS132
10E2N

cathode

4.4.CIRCUIT BOARDS LOCATION



Note :

- All capacitors are in μF unless otherwise noted. $pF : \mu F$ 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{4}W$ or less unless otherwise specified.
- Δ : internal component.
- : fusible resistor.

Note: The components identified by mark or dotted line with mark are critical for safety. Replace only with part number specified.

- **B+** : B+ Line
- **B-** : B- Line
- : adjustment for repair.
- Voltages and waveforms are dc with respect to ground under no-signal conditions.
- no mark: STOP
- **< >** : NORMAL SPEED DUBBING
- **<< >>** : HIGH SPEED DUBBING
- **▶** : FWD **◀** : REV **■** : STOP
- **▶▶** : FF **◀◀** : REW **●** : REC
- Voltages are taken with a VOM (input impedance 10M Ω). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Signal path.
 - : PB (DECK A)
 - : PB (DECK B)
 - : REC (DECK B)

4-5. M50964-206SP (IC801)

No.	PIN NAME	SIGNAL	I/O	FUNCTION
1	Vcc			Power supply pin
2	AVss			Ground pin
3	VREF			Power supply pin
4	D/A	C μ OUT	O	Data output to microcomputer of counter
5	PWM			Not used
6	P63	A	O	Output for LED (L : light on)
7	P62	A	O	Output for LED (L : light on)
8	P61	A	O	Output for LED (L : light on)
9	P60	A PLAY	O	Output for LED (L : light on)
10	AN7	C μ IN	I	Data input from microcomputer of counter
11	AN6	A HALF DET	I	Detect the tab for recording proof on the deck A (L : tab being H : tab removed)
12	AN5	B HALF DET	I	Detect the tab for recording proof on the deck B (L : tab being H : tab removed)
13	AN4	KEY Z	I	Input from operation switches,
14	AN3	KEY Y	I	Input from operation switches,
15	AN2	KEY X	I	Input from operation switches,
16	P41	B	O	Output for LED (L : light on)
17	P40	B	O	Output for LED (L : light on)
18	P37	B PLAY	O	Output for LED (L : light on)
19	P36	B	O	Output for LED (L : light on)
20	P35	B	O	Output for LED (L : light on)
21	P34	A	O	Output for LED (L : light on)
22	P33	PB	O	Output for playback equalizer switching to 70 μS .
23	P32/INT2	SIRCS	I	SIRCS signal is input
24	P31	A QUICK	O	Output for quick reverse to deck A
25	P30	B QUICK	O	Output for quick reverse to deck B
26	INT1	SIRCS	I	SIRCS signal is input
27	CN Vss			Ground pin
28	RESET		I	Reset signal is input
29	X IN		I	4.00MHz oscillation signal is input
30	X OUT		O	4.00MHz oscillation signal is output
31	ϕ			Not used
32	Vss			Ground pin
33	P57	TEST	I	Input for test mode
34	P56	B DIR	I	Input from direction switch of deck B
35	P55	B 70/120	I	Input from 70/120 μS switch of deck B
36	P54	B SHUT	I	Rotation detect of reel table of deck B (the mechanism is shut off after one second from no signal change)
37	P53	A SHUT	I	Rotation detect of reel table of deck A (the mechanism is shut off after one second from no signal change)
38	P52	A 70/120	I	Input from 70/120 μS switch of deck A
39	P51	A DIR	I	Input from direction switch of deck A
40	P50	AMS IN	I	AMS signal is input
41	P17	M MUTE	O	Output for meter muting (L : muting)
42	P16	L MUTE	O	Output for line muting (not used)

No.	PIN NAME	SIGNAL	I/O	FUNCTION
43	P15	PASS	O	Output for switching pass amp (not used)
44	P14	REC/PB	O	Output to switch record/playback (L : record)
45	P13	AMS/BS	O	Output to switch characteristic of AMS/BS amp
46	P12	AMS A/B	O	Output to switch deck A or deck B of AMS/BS amp (L : deck B)
47	P11	SEL A/B	O	Output to switch deck A or deck B of AMS/BS amp (L : deck B)
48	P10	B BIAS	O	Output for switching record bias of deck B
49	P07	A BIAS	O	Output for switching record bias of deck A
50	P06	B PM	O	Output to hold the solenoid of deck B
51	P05	B KICK	O	Output to kick the solenoid of deck B
52	P04	BM H/L	O	Output to switch high speed/normal speed of capstan motor on deck B (H : high speed dubbing or FF/REW)
53	P03	A PM	O	Output to hold the solenoid of deck A
54	P02	A KICK	O	Output to kick the solenoid of deck A
55	P01	AM H/L	O	Output to switch high speed/normal speed of capstan motor on deck A (H : high speed dubbing or FF/REW)
56	P00	M ON/OFF	O	Output for ON/OFF of capstan motor (H : STOP)
57	P27	B R MUTE	O	Output to mute record signal of deck B (H : muting)
58	P26	A R MUTE	O	Output to mute record signal of deck A (H : muting)
59	P25	AMS	O	Output for LED (H : light on)
60	P24	REC A+B	O	Output for LED (H : light on)
61	P23	DUB N	O	Output for LED (H : light on)
62	P22	DUB H	O	Output for LED (H : light on)
63	P21	A.P	O	Not used
64	P20	VER	I	Terminal of Version setting (this set is L)

TEST MODE

This set is into TEST MODE according to make L of 33 pin.

1. Souce monitor
Cancel the muting of line signal while recording.
2. High speed playback
Keep on pressing HIGH SPEED (DUBBING) button and the set playback in high speed while recording.
3. RECORD MEMORY STOP
In advance, set the DIRECTION MODE switch to and the set playback after goingback to point of starting record by each operation , , keys.
4. LED display of slide switch
Display the switch positions DIRECTION MODE switch and TIMER switch by LED while deck B is in mode.

switch	position	LED
DIRECTION MODE	 RELAY	deck A deck A PLAY deck A
TIMER	REC OFF PLAY	deck B deck B PLAY deck B

5. AGC gain check
AGC gain is maximum in recording with DIRECTION MODE switch to .

EXPLODED VIEWS

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.

- Color Indication of Appearance Parts
Example:

(RED) ... KNOB, BALANCE (WHITE)

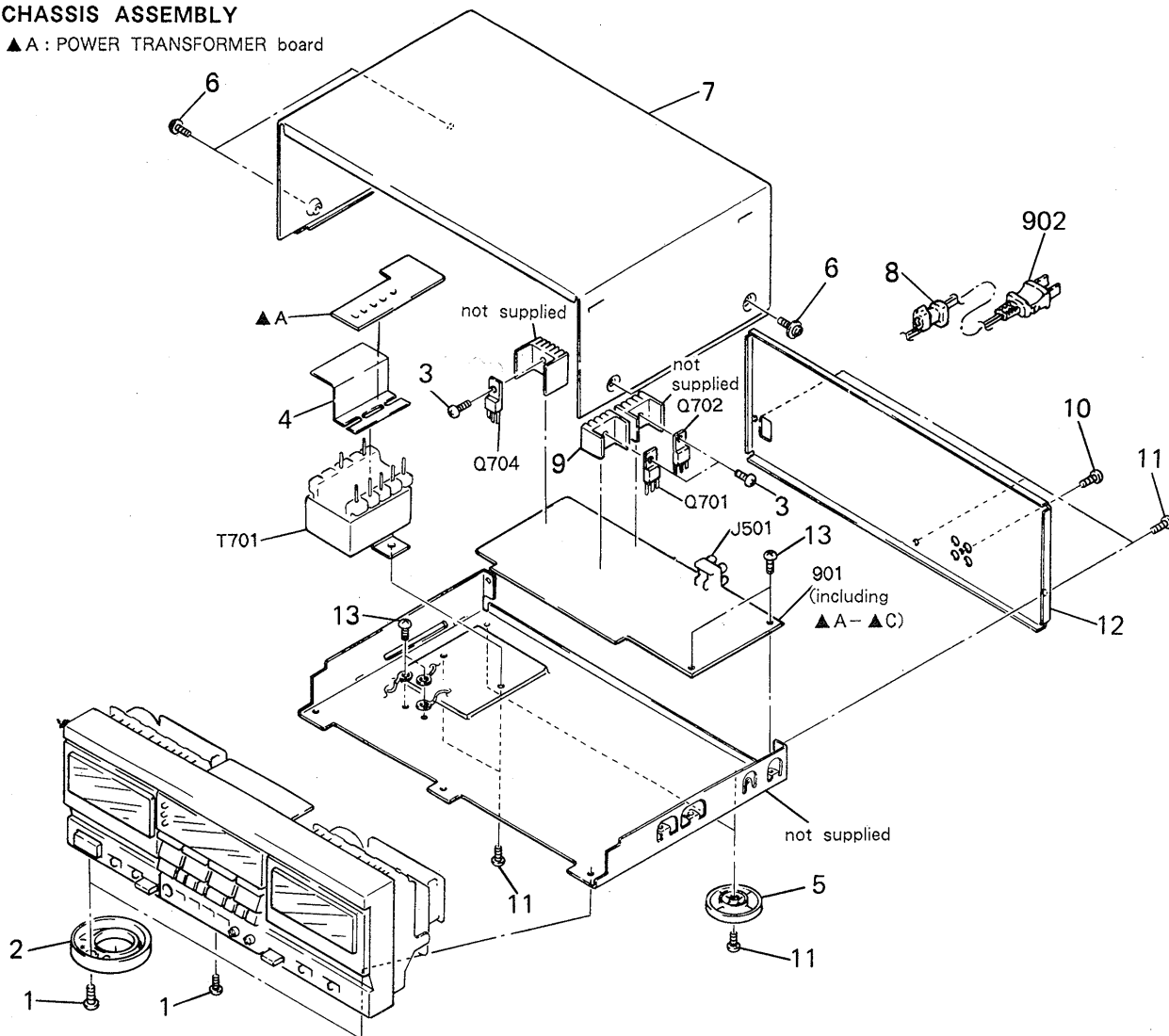
↑
Cabinet's Color

Parts Color

The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.

(1) CHASSIS ASSEMBLY

▲A : POWER TRANSFORMER board

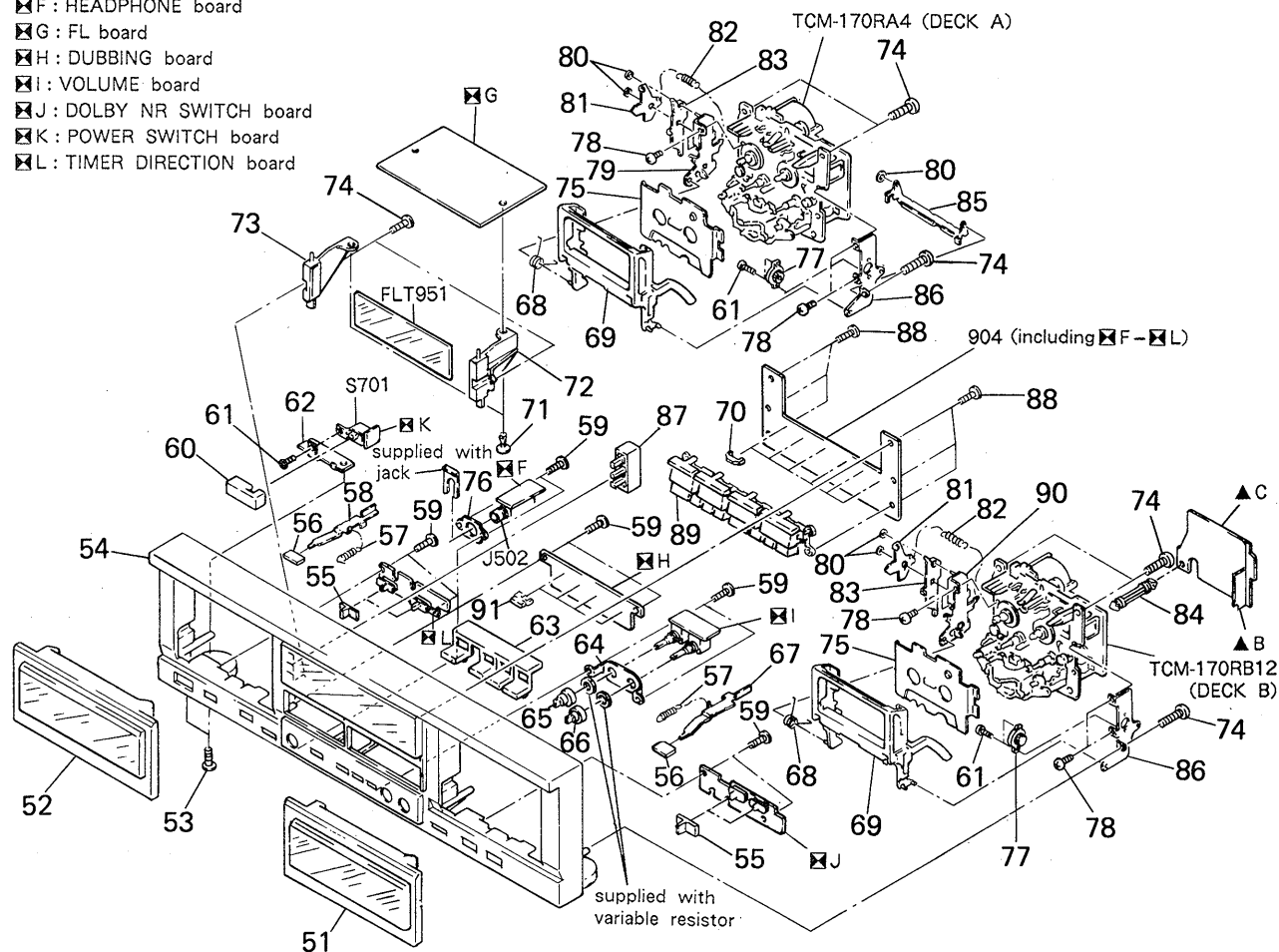


No.	Part No.	Description
1	7-682-549-04	SCREW +BVTT 3X10 (S)
2	3-332-580-01	COVER (FOOT)
3	7-685-645-79	SCREW +BVTP 3X6 TYPE2
4	*3-337-136-11	COVER, TRANSFORMER SAFETY
5	X-4885-935-1	FOOT ASSY
6	3-704-366-01	SCREW (CASE) (M3X8)
7	3-332-578-71	CASE
8	3-703-571-00	BUSHING (S) (4516), CORD
9	*4-363-146-21	HEAT SINK, V.OUT
10	7-621-849-00	SCREW, TAPPING

Remarks	No.	Part No.	Description
	11	7-682-548-04	SCREW +BVTT 3X8 (S)
	12	*3-349-035-51	PANEL, BACK
	13	7-685-871-01	SCREW +BVTP 3X6
	901	*A-2006-101-A	MOUNTED PCB, SYSTEM CONTROL
	902	△ 1-551-506-XX	CORD, POWER
	J501	1-565-258-11	JACK, PIN 4P (LINE IN/OUT)
	Q701	8-729-920-91	TRANSISTOR 2SB1187-F
	Q702	8-729-904-27	TRANSISTOR 2SD1761-E
	Q704	8-729-904-27	TRANSISTOR 2SD1761-E
	T701	△ 1-449-614-11	TRANSFORMER, POWER

(2) FRONT PANEL ASSEMBLY

- ▲B: CONNECTOR board (DECK B)
- ▲C: HX PRO board (DECK B)
- ☒F: HEADPHONE board
- ☒G: FL board
- ☒H: DUBBING board
- ☒I: VOLUME board
- ☒J: DOLBY NR SWITCH board
- ☒K: POWER SWITCH board
- ☒L: TIMER DIRECTION board



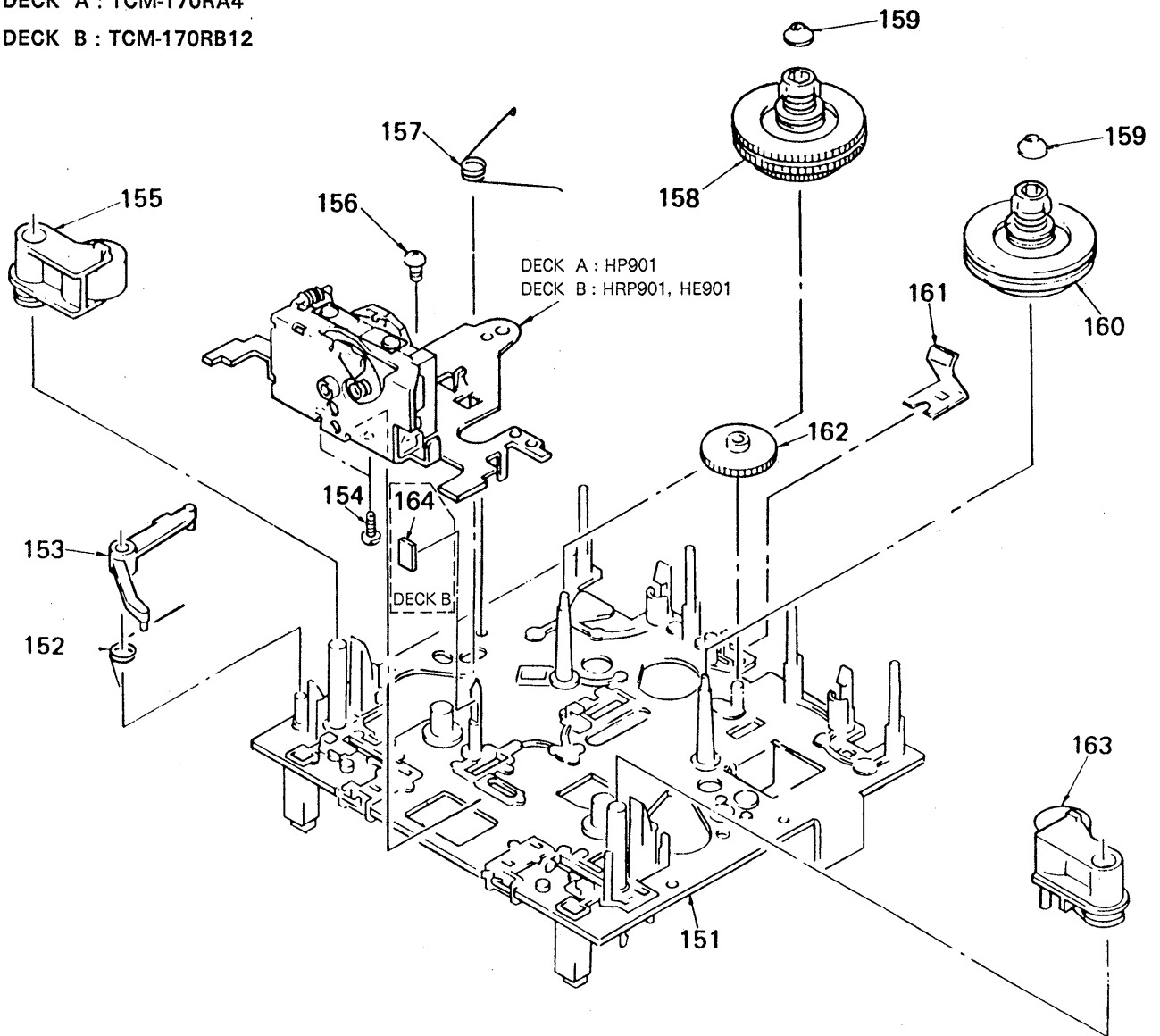
No.	Part No.	Description	Remarks
51	X-3340-144-1	LID (B) ASSY, CASSETTE	
52	X-3340-158-1	LID (A) ASSY, CASSETTE	
53	7-621-775-10	SCREW +B 2.6X4	
54	X-3340-159-1	PANEL ASSY, FRONT	
55	3-323-415-41	KNOB, SWITCH TIMER	
56	3-340-188-01	BUTTON (EJECT)	
57	4-885-182-11	SPRING, TENSION	
58	*3-340-193-01	SLIDER (EJECT LEFT)	
59	7-685-133-19	SCREW +BTP 2.6X6 TYPE2 N-S	
60	3-340-168-01	BUTTON (POWER SW)	
61	7-621-255-15	SCREW +P 2X3	
62	*3-340-178-01	BRACKET (POWER SW)	
63	*3-346-308-01	BUTTON (DUBBING)	
64	*3-340-196-01	BRACKET (VOLUME)	
65	3-304-929-11	KNOB, HEADPHONE	
66	3-304-929-21	KNOB, HEADPHONE	
67	*3-340-194-01	SLIDER (EJECT RIGHT)	
68	3-346-336-01	SPRING, TORSION	
69	X-3332-482-1	HOLDER ASSY, CASSETTE	
70	*3-346-339-01	HOLDER	
71	4-812-134-00	RIVET NYLON, 3.5	
72	*3-343-607-01	HOLDER (RIGHT), FL TUBE	
73	*3-343-608-01	HOLDER (LEFT), FL TUBE	

No.	Part No.	Description	Remarks
74	7-685-534-19	SCREW +BTP 2.6X8 TYPE2 N-S	
75	*3-340-123-01	RETAINER, CASSETTE	
76	*3-346-303-01	BRACKET (HEADPHONE)	
77	3-319-224-31	DAMPER, SMALL	
78	7-621-770-87	SCREW +BVTT 2.6X5 (S)	
79	*X-3332-486-1	BRACKET ASSY (A)	
80	3-558-708-21	WASHER, STOPPER	
81	*3-343-449-01	LEVER (LOCK LEVER)	
82	3-312-432-00	SPRING, TENSION	
83	*3-346-306-01	LEVER (EJECT)	
84	*3-682-419-21	HOLDER, P.C.B	
85	*3-346-307-01	JOINT	
86	*3-346-305-01	BRACKET (DAMPER)	
87	3-346-309-01	BUTTON (COUNTER)	
88	7-685-135-19	SCREW +BTP 2.6X10 TYPE2 N-S	
89	X-3332-481-1	BUTTON ASSY, CONTROL	
90	*X-3332-487-1	BRACKET ASSY (B)	
91	*3-337-108-01	HOLDER, LED	
904	*1-630-291-11	PC BOARD, PANEL	
FLT951	1-519-447-11	INDICATOR TUBE, FLUORESCENT	
J502	1-507-796-71	JACK (HEADPHONES)	
S701	1-553-336-21	SWITCH, PUSH (POWER)	

(3) MD ASSEMBLY 1

DECK A : TCM-170RA4

DECK B : TCM-170RB12



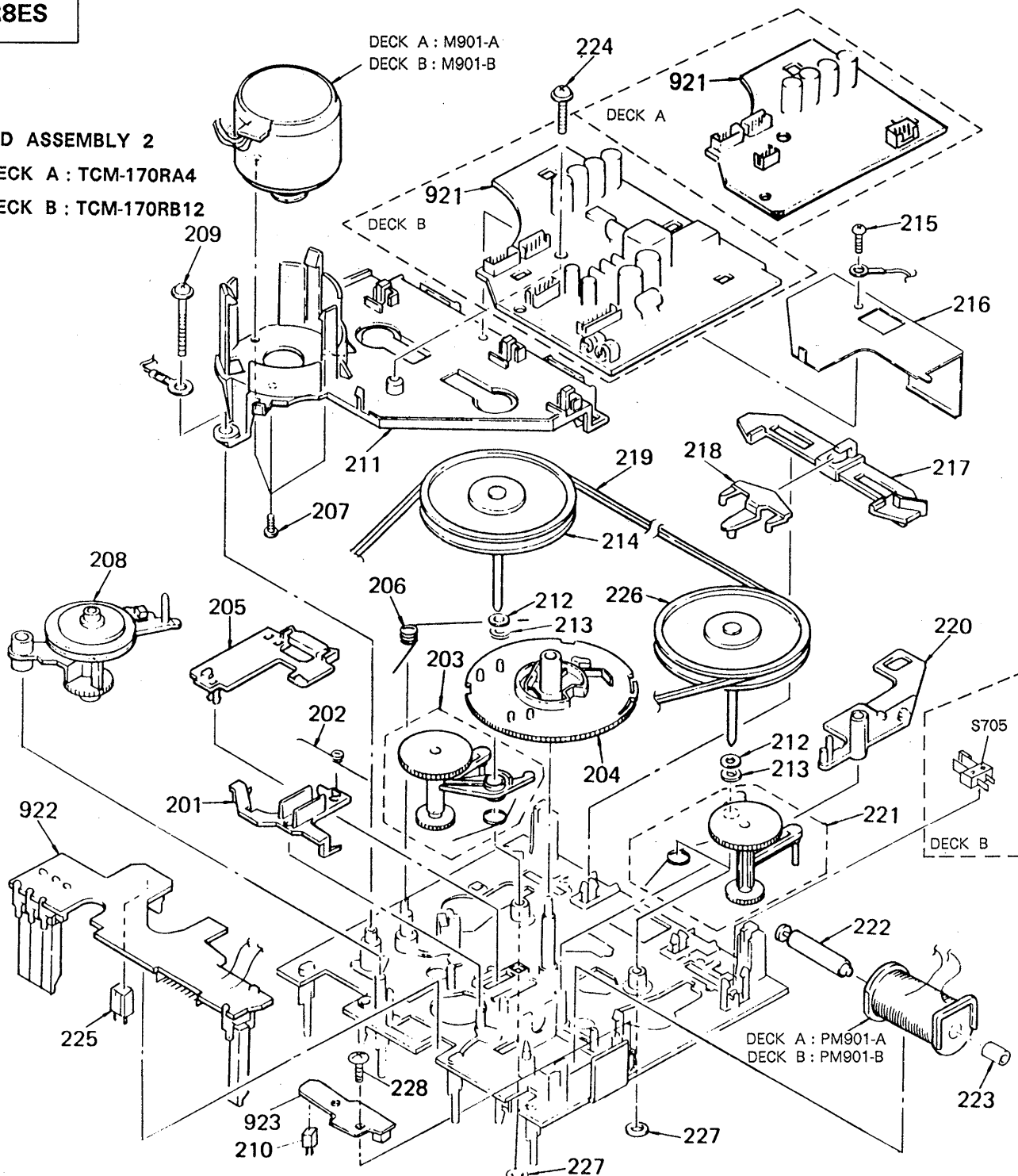
No.	Part No.	Description	Remarks
151	*X-3343-418-1	CHASSIS ASSY, MECHANICAL	
152	3-343-477-01	SPRING, TORSION (EJECT SAFETY)	
153	*3-343-476-01	LEVER (EJECT SAFETY LEVER)	
154	7-685-102-19	SCREW +P 2X4 NON-SLIT TYPE 2	
155	X-3343-403-1	LEVER (PINCH LEVER REV) ASSY	
156	7-621-773-86	SCREW +BVTT 2.6X4 (S)	
157	3-343-401-01	SPRING, TORSION	
158	X-3343-415-1	TABEL (REV) ASSY, REEL	
159	3-343-439-01	CAP (REEL TABLE)	

No.	Part No.	Description	Remarks
160	X-3343-401-1	TABEL ASSY, REEL	
161	3-343-420-01	SPRING, LEAF	
162	3-343-411-01	GEAR (FF GEAR)	
163	X-3343-402-1	LEVER (PINCH LEVER FWD) ASSY	
164	*3-343-481-01	(DECK B)...SHEET (REFLECTOR)	
HP901	A-2108-122-C	(DECK A)...CHASSIS ASSY, HEAD	
HE901	A-2108-043-C	(DECK B)...CHASSIS ASSY, HEAD	
HRP901			

(4) MD ASSEMBLY 2

DECK A : TCM-170RA4

DECK B : TCM-170RB12



No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
201	3-343-453-01	SLIDER (BRAKE PLATE)		221	X-3343-405-1	LEVER (TU ARM FWD) ASSY	
202	3-343-429-01	SPRING, TORSION		222	*3-343-425-01	ARBOR(MOVABLE IRON ARBOR), IRON	
203	X-3343-406-1	LEVER (TU ARM REV) ASSY		223	*3-343-424-01	ARBOR (FIXED IRON ARBOR), IRON	
204	3-343-470-01	GEAR (CAM GEAR)		224	3-343-404-01	SCREW (PTPHW 2X10)	
205	*3-343-461-01	SLIDER		225	*3-343-419-01	HOLDER (S SENSOR A)	
206	3-343-430-01	SPRING, TORSION		226	X-3343-431-1	FLYWHEEL (REV) COMPLETE ASSY	
207	7-627-556-28	SCREW +P 2.6X3.5		227	3-343-473-01	WASHER, NYLON	
208	X-3343-414-1	LAVER (FR ARM) ASSY		228	7-685-103-19	SCREW + PTPHW (2X5)	
209	3-343-403-01	SCREW (PTTWH 2X18)		921	*1-624-147-11	(DECK A)...PC BOARD, MD-(A)	
210	*3-343-491-01	HOLDER (S SENSOR B)			*1-629-211-11	(DECK B)...PC BOARD, MD-(B)	
211	*X-3343-407-1	BASE (THRUST RETAINER) ASSY		922	*1-624-148-11	PC BOARD, LEAF SW	
212	4-605-835-11	WASHER (2.6), POLYSLIDER		923	*1-628-656-11	PC BOARD, REEL SENSOR	
213	3-307-482-00	WASHER, LUMILER		M901-A	X-3343-408-1	(DECK A)...MOTOR ASSY	
214	X-3343-429-1	FLYWHEEL COMPLETE ASSY		M901-B	X-3343-408-1	(DECK B)...MOTOR ASSY	
215	7-685-104-19	SCREW +P 2X6 TYPE2 NON-SLIT		PM901-A1	454-456-11	(DECK A)...SOLENOID, PLUNGER	
216	3-343-480-01	PLATE, SHIELD		PM901-B1	454-456-11	(DECK B)...SOLENOID, PLUNGER	
217	*3-343-457-01	SLIDER (REVERSE SLIDER)		S705	1-571-028-11	(DECK B)...SWITCH, LEAF (REC SW)	
218	3-343-462-01	LEVER					
219	3-343-426-02	BELT (CAPSTAN BELT SQUARE)					
220	3-343-493-01	LEVER (PM LEVER)					

Ref.No.	Part No.	Description					Ref.No.	Part No.	Description
C501	1-126-176-11	ELECT	220MF	20%	10V		CNP814*1-564-340-61	PIN, CONNECTOR 6P	
C502	1-126-176-11	ELECT	220MF	20%	10V		CNP815*1-564-338-00	PIN, CONNECTOR 4P	
C506	1-124-925-11	ELECT	2.2MF	20%	50V		CNP816*1-564-340-71	PIN, CONNECTOR 6P	
							CNP817*1-506-503-71	PIN, CONNECTOR 9P	
C508	1-161-494-00	CERAMIC	0.022MF		25V		CNP818*1-564-338-61	PIN, CONNECTOR 4P	
C509	1-124-925-11	ELECT	2.2MF	20%	50V		CNP819*1-564-337-00	PIN, CONNECTOR 3P	
C701	1-124-887-00	ELECT	3300MF	20%	16V		CNP820*1-564-708-11	PIN, CONNECTOR (SMALL TYPE) 6P	
C702	1-124-887-00	ELECT	3300MF	20%	16V		CP951	1-233-167-11 COMPOSITION CIRCUIT BLOCK	
C703	1-124-477-11	ELECT	47MF	20%	16V				
C704	1-126-176-11	ELECT	220MF	20%	10V	D11A	8-719-107-94	DIODE 1SS132	
						D11B	8-719-107-94	DIODE 1SS132	
C706	1-126-176-11	ELECT	220MF	20%	10V	D81	8-719-107-94	DIODE 1SS132	
C707	1-124-925-11	ELECT	2.2MF	20%	50V	D101	8-719-000-26	DIODE US1060M	
C708	1-124-443-00	ELECT	100MF	20%	10V	D201	8-719-000-26	DIODE US1060M	
C709	1-124-911-11	ELECT	220MF	20%	50V	D701	8-719-200-77	DIODE 10E2N	
C710	1-124-925-11	ELECT	2.2MF	20%	50V	D702	8-719-200-77	DIODE 10E2N	
C801	1-124-443-00	ELECT	100MF	20%	10V	D703	8-719-200-77	DIODE 10E2N	
C802	1-124-925-11	ELECT	2.2MF	20%	50V	D704	8-719-200-77	DIODE 10E2N	
C807	1-161-377-00	CERAMIC	0.0047MF	30%	16V	D705	8-719-200-77	DIODE 10E2N	
C808	1-124-477-11	ELECT	47MF	20%	16V	D706	8-719-200-77	DIODE 10E2N	
C809	1-124-927-11	ELECT	4.7MF	20%	50V	D707	8-719-200-77	DIODE 10E2N	
C810	1-123-875-11	ELECT	10MF	20%	50V	D708	8-719-933-33	DIODE HZS6A1L	
C811	1-161-494-00	CERAMIC	0.022MF		25V	D709	8-719-000-26	DIODE US1060M	
C812	1-124-925-11	ELECT	2.2MF	20%	50V	D710	8-719-933-33	DIODE HZS6A1L	
C813	1-126-176-11	ELECT	220MF	20%	10V	D711	8-719-000-26	DIODE US1060M	
C814	1-124-927-11	ELECT	4.7MF	20%	50V	D712	8-719-000-26	DIODE US1060M	
C815	1-124-927-11	ELECT	4.7MF	20%	50V	D713	8-719-933-49	DIODE HZS7C1L	
C816	1-161-494-00	CERAMIC	0.022MF		25V	D714	8-719-933-41	DIODE HZS6C3L	
C951	1-124-443-00	ELECT	100MF	20%	10V	D801	8-719-200-77	DIODE 10E2N	
C952	1-161-494-00	CERAMIC	0.022MF		25V	D802	8-719-000-26	DIODE US1060M	
C953	1-124-925-11	ELECT	2.2MF	20%	50V	D803	8-719-000-26	DIODE US1060M	
C954	1-124-925-11	ELECT	2.2MF	20%	50V	D805	8-719-000-26	DIODE US1060M	
CNP11A*1-564-501-11		PIN, CONNECTOR 8P				D806	8-719-200-77	DIODE 10E2N	
CNP11B*1-506-615-11		PIN, CONNECTOR 9P				D807	8-719-200-77	DIODE 10E2N	
						D808	8-719-000-26	DIODE US1060M	
CNP12A*1-564-338-00		PIN, CONNECTOR 4P							
CNP12B*1-564-341-11		PIN, CONNECTOR 7P				D809	8-719-000-26	DIODE US1060M	
						D810	8-719-000-26	DIODE US1060M	
CNP13A*1-564-707-11		PIN, CONNECTOR (SMALL TYPE) 5P				D811	8-719-000-26	DIODE US1060M	
CNP13B*1-564-707-11		PIN, CONNECTOR (SMALL TYPE) 5P							
CNP14 *1-564-704-11		PIN, CONNECTOR (SMALL TYPE) 2P				D901	8-719-812-42	DIODE TLY124	
CNP15 *1-564-506-11		PLUG, CONNECTOR 3P				D902	8-719-303-00	DIODE SEL2510C	
						D903	8-719-812-42	DIODE TLY124	
CNP16A*1-564-337-00		PIN, CONNECTOR 3P							
CNP16B*1-564-337-00		PIN, CONNECTOR 3P				D906	8-719-812-42	DIODE TLY124	
						D907	8-719-303-00	DIODE SEL2510C	
CNP18A*1-564-496-11		PIN, CONNECTOR 3P				D908	8-719-812-42	DIODE TLY124	
CNP18B*1-564-496-11		PIN, CONNECTOR 3P							
CNP21 *1-565-344-11		PIN, CONNECTOR (PC BOARD) 8P				D909	8-719-300-71	DIODE SEL2210R	
CNP22 *1-565-347-11		SOCKET, CONNECTOR (PC BOARD) 8P				D910	8-719-303-84	DIODE SEL4914D	
						D931	8-719-948-81	DIODE GL8NG34T	
CNP81A*1-564-706-11		PIN, CONNECTOR (SMALL TYPE) 4P				D932	8-719-948-79	DIODE GL8HD34T	
CNP81B*1-564-709-11		PIN, CONNECTOR (SMALL TYPE) 7P				D933	8-719-948-79	DIODE GL8HD34T	
						D934	8-719-948-80	DIODE GL8HY34T	
CNP82A*1-564-339-00		PIN, CONNECTOR 5P							
CNP82B*1-564-339-00		PIN, CONNECTOR 5P				D951	8-719-000-26	DIODE US1060M	
						D952	8-719-000-26	DIODE US1060M	
CNP83 *1-564-338-00		PIN, CONNECTOR 4P							
CNP811*1-564-342-11		PIN, CONNECTOR 8P				FLT951	1-519-447-11	INDICATOR TUBE, FLUORESCENT	
CNP812*1-564-340-00		PIN, CONNECTOR 6P							

Ref.No.	Part No.	Description
HE901	A-2108-043-C	CHASSIS ASSY, HEAD
HP901	A-2108-122-C	CHASSIS ASSY, HEAD
HRP901	A-2108-043-C	CHASSIS ASSY, HEAD
IC21	8-759-133-90	IC UPC339C
IC81A	8-759-111-44	IC UPC4570C-1
IC81B	8-759-111-44	IC UPC4570C-1
IC91	8-759-106-56	IC UPC1297CA
IC501	8-759-040-53	IC MC14053BCP
IC502	8-752-018-70	IC CX20187
IC505	8-752-033-61	IC CXA1198AP
IC506	8-759-208-06	IC TC4051BPHB
IC507	8-759-601-23	IC M4023BP
IC508	8-759-945-58	IC RC4558P
IC509	8-759-945-58	IC RC4558P
IC510	8-759-945-58	IC RC4558P
IC701	8-759-945-58	IC RC4558P
IC801	8-759-632-56	IC M50964-206SP
IC802	8-759-240-71	IC TC4071BP
IC901	8-741-161-00	IC SBX1610-51
IC951	8-759-983-68	IC MB88517B
J501	1-565-258-11	JACK, PIN 4P (LINE IN/OUT)
J502	1-507-796-71	JACK (HEADPHONES)
L41	1-410-780-11	INDUCTOR 27MMH
L61	1-410-780-11	INDUCTOR 27MMH
LPF101	1-236-475-11	FILTER, LOW PASS
LPF201	1-236-475-11	FILTER, LOW PASS
M901-A	X-3343-408-1	(DECK A)...MOTOR ASSY
M901-B	X-3343-408-1	(DECK B)...MOTOR ASSY
PM901-A	1-454-456-11	(DECK A)...SOLENOID, PLUNGER
PM901-B	1-454-456-11	(DECK B)...SOLENOID, PLUNGER
PS501	1-532-685-00	LINK, IC (ICP-N20)
Q11A	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q11B	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q12A	8-719-939-23	TRANSISTOR GP2S09-C
Q12B	8-719-939-23	TRANSISTOR GP2S09-C
Q14A	8-719-939-23	TRANSISTOR GP2S09-C
Q14B	8-719-939-23	TRANSISTOR GP2S09-C
Q21	8-729-900-65	TRANSISTOR DTA144ES
Q81	8-729-116-57	TRANSISTOR 2SB1013
Q82	8-729-194-57	TRANSISTOR 2SC945-P
Q83	8-729-194-57	TRANSISTOR 2SC945-P
Q101	8-729-115-77	TRANSISTOR BAI14M
Q102	8-729-115-77	TRANSISTOR BAI14M
Q104	8-729-922-37	TRANSISTOR 2SD2144S
Q105	8-729-922-37	TRANSISTOR 2SD2144S
Q201	8-729-115-77	TRANSISTOR BAI14M
Q202	8-729-115-77	TRANSISTOR BAI14M
Q204	8-729-922-37	TRANSISTOR 2SD2144S
Q205	8-729-922-37	TRANSISTOR 2SD2144S
Q501	8-729-900-65	TRANSISTOR DTA144ES
Q503	8-729-900-65	TRANSISTOR DTA144ES
Q504	8-729-900-65	TRANSISTOR DTA144ES
Q505	8-729-900-65	TRANSISTOR DTA144ES

Ref.No.	Part No.	Description
Q506	8-729-900-65	TRANSISTOR DTA144ES
Q507	8-729-115-77	TRANSISTOR BAI14M
Q701	8-729-920-91	TRANSISTOR 2SB1187-F
Q702	8-729-904-27	TRANSISTOR 2SD1761-E
Q703	8-729-119-78	TRANSISTOR 2SC2785
Q704	8-729-904-27	TRANSISTOR 2SD1761-E
Q705	8-729-173-38	TRANSISTOR 2SA733
Q706	8-729-802-22	TRANSISTOR 2SB1014
Q802	8-729-173-38	TRANSISTOR 2SA733
Q803	8-729-173-38	TRANSISTOR 2SA733
Q804	8-729-173-38	TRANSISTOR 2SA733
Q805	8-729-173-38	TRANSISTOR 2SA733
Q806	8-729-173-38	TRANSISTOR 2SA733
Q807	8-729-173-38	TRANSISTOR 2SA733
Q808	8-729-173-38	TRANSISTOR 2SA733
Q809	8-729-900-61	TRANSISTOR DTA114ES
Q813	8-729-900-36	TRANSISTOR DTC124ES
Q814	8-729-119-78	TRANSISTOR 2SC2785
Q815	8-729-173-38	TRANSISTOR 2SA733
Q816	8-729-900-65	TRANSISTOR DTA144ES
Q817	8-729-900-65	TRANSISTOR DTA144ES
Q818	8-729-900-65	TRANSISTOR DTA144ES
Q819	8-729-801-93	TRANSISTOR 2SD1387
Q820	8-729-801-83	TRANSISTOR 2SB1013
Q821	8-729-900-65	TRANSISTOR DTA144ES
Q822	8-729-801-93	TRANSISTOR 2SD1387
Q823	8-729-801-83	TRANSISTOR 2SB1013
Q824	8-729-173-38	TRANSISTOR 2SA733
Q825	8-729-801-93	TRANSISTOR 2SD1387
Q901	8-729-900-65	TRANSISTOR DTA144ES
Q951	8-729-900-65	TRANSISTOR DTA144ES
Q952	8-729-900-65	TRANSISTOR DTA144ES
Q953	8-729-900-65	TRANSISTOR DTA144ES
Q954	8-729-119-78	TRANSISTOR 2SC2785
Q955	8-729-119-78	TRANSISTOR 2SC2785
R11	1-247-834-11	CARBON 1.3K 5% 1/4W
R12	1-249-414-11	CARBON 560 5% 1/4W
R13	1-247-818-11	CARBON 300 5% 1/4W
R14A	1-249-408-11	CARBON 180 5% 1/4W
R14B	1-249-408-11	CARBON 180 5% 1/4W
R15	1-249-413-11	CARBON 470 5% 1/4W
R16A	1-249-410-11	CARBON 270 5% 1/4W
R16B	1-249-410-11	CARBON 270 5% 1/4W
R17A	1-249-437-11	CARBON 47K 5% 1/4W
R17B	1-249-437-11	CARBON 47K 5% 1/4W
R18A	1-249-437-11	CARBON 47K 5% 1/4W
R18B	1-249-437-11	CARBON 47K 5% 1/4W
R21	1-249-425-11	CARBON 4.7K 5% 1/4W
R22	1-249-421-11	CARBON 2.2K 5% 1/4W
R23	1-249-421-11	CARBON 2.2K 5% 1/4W
R24	1-249-423-11	CARBON 3.3K 5% 1/4W
R25	1-249-429-11	CARBON 10K 5% 1/4W
R26	1-249-431-11	CARBON 15K 5% 1/4W
R27	1-249-425-11	CARBON 4.7K 5% 1/4W
R28	1-249-425-11	CARBON 4.7K 5% 1/4W
R29	1-249-420-11	CARBON 1.8K 5% 1/4W

Ref.No.	Part No.	Description			
R41A	1-247-881-00	CARBON	120K	5%	1/4W
R41B	1-249-435-11	CARBON	33K	5%	1/4W
R42A	1-249-405-11	CARBON	100	5%	1/4W
R42B	1-249-404-00	CARBON	82	5%	1/4W
R43A	1-247-882-11	CARBON	130K	5%	1/4W
R43B	1-247-882-11	CARBON	130K	5%	1/4W
R44A	1-249-426-11	CARBON	5.6K	5%	1/4W
R44B	1-249-426-11	CARBON	5.6K	5%	1/4W
R45	1-249-428-11	CARBON	8.2K	5%	1/4W
R51	1-249-435-11	CARBON	33K	5%	1/4W
R52	1-249-393-11	CARBON	10	5%	1/4W
R53	1-247-883-00	CARBON	150K	5%	1/4W
R54	1-249-429-11	CARBON	10K	5%	1/4W
R61A	1-247-881-00	CARBON	120K	5%	1/4W
R61B	1-249-435-11	CARBON	33K	5%	1/4W
R62A	1-249-405-11	CARBON	100	5%	1/4W
R62B	1-249-404-00	CARBON	82	5%	1/4W
R63A	1-247-882-11	CARBON	130K	5%	1/4W
R63B	1-247-882-11	CARBON	130K	5%	1/4W
R64A	1-249-426-11	CARBON	5.6K	5%	1/4W
R64B	1-249-426-11	CARBON	5.6K	5%	1/4W
R65	1-249-428-11	CARBON	8.2K	5%	1/4W
R71	1-249-435-11	CARBON	33K	5%	1/4W
R72	1-249-393-11	CARBON	10	5%	1/4W
R73	1-247-883-00	CARBON	150K	5%	1/4W
R74	1-249-429-11	CARBON	10K	5%	1/4W
R81A	1-249-409-11	CARBON	220	5%	1/4W
R81B	1-249-409-11	CARBON	220	5%	1/4W
R82A	1-249-409-11	CARBON	220	5%	1/4W
R82B	1-249-409-11	CARBON	220	5%	1/4W
R84	△ 1-212-849-00	FUSIBLE	4.7	5%	1/4W
R85	1-249-437-11	CARBON	47K	5%	1/4W
R86	1-249-437-11	CARBON	47K	5%	1/4W
R87	1-249-429-11	CARBON	10K	5%	1/4W
R88	1-249-429-11	CARBON	10K	5%	1/4W
R101	1-249-433-11	CARBON	22K	5%	1/4W
R102	1-249-423-11	CARBON	3.3K	5%	1/4W
R103	1-249-423-11	CARBON	3.3K	5%	1/4W
R104	1-247-887-00	CARBON	220K	5%	1/4W
R105	1-249-430-11	CARBON	12K	5%	1/4W
R106	1-249-423-11	CARBON	3.3K	5%	1/4W
R107	1-249-441-11	CARBON	100K	5%	1/4W
R108	1-249-428-11	CARBON	8.2K	5%	1/4W
R109	1-249-422-11	CARBON	2.7K	5%	1/4W
R110	1-249-425-11	CARBON	4.7K	5%	1/4W
R111	1-247-822-11	CARBON	430	5%	1/4W
R112	1-249-427-11	CARBON	6.8K	5%	1/4W
R113	1-249-415-11	CARBON	680	5%	1/4W
R119	1-249-429-11	CARBON	10K	5%	1/4W
R120	1-249-427-11	CARBON	6.8K	5%	1/4W
R121	1-249-425-11	CARBON	4.7K	5%	1/4W
R122	1-249-425-11	CARBON	4.7K	5%	1/4W
R123	1-249-425-11	CARBON	4.7K	5%	1/4W
R124	1-249-421-11	CARBON	2.2K	5%	1/4W

Ref.No.	Part No.	Description			
R125	1-249-436-11	CARBON	39K	5%	1/4W
R126	1-249-421-11	CARBON	2.2K	5%	1/4W
R127	1-249-417-11	CARBON	1K	5%	1/4W
R128	1-249-421-11	CARBON	2.2K	5%	1/4W
R129	1-249-419-11	CARBON	1.5K	5%	1/4W
R130	1-249-409-11	CARBON	220	5%	1/4W
R131	1-249-429-11	CARBON	10K	5%	1/4W
R132	1-249-437-11	CARBON	47K	5%	1/4W
R133	1-249-429-11	CARBON	10K	5%	1/4W
R134	1-249-401-11	CARBON	47	5%	1/4W
R135	1-249-417-11	CARBON	1K	5%	1/4W
R201	1-249-433-11	CARBON	22K	5%	1/4W
R202	1-249-423-11	CARBON	3.3K	5%	1/4W
R203	1-249-423-11	CARBON	3.3K	5%	1/4W
R204	1-247-887-00	CARBON	220K	5%	1/4W
R205	1-249-430-11	CARBON	12K	5%	1/4W
R206	1-249-423-11	CARBON	3.3K	5%	1/4W
R207	1-249-441-11	CARBON	100K	5%	1/4W
R208	1-249-428-11	CARBON	8.2K	5%	1/4W
R209	1-249-422-11	CARBON	2.7K	5%	1/4W
R210	1-249-425-11	CARBON	4.7K	5%	1/4W
R211	1-247-822-11	CARBON	430	5%	1/4W
R212	1-249-427-11	CARBON	6.8K	5%	1/4W
R213	1-249-415-11	CARBON	680	5%	1/4W
R219	1-249-429-11	CARBON	10K	5%	1/4W
R220	1-249-427-11	CARBON	6.8K	5%	1/4W
R221	1-249-425-11	CARBON	4.7K	5%	1/4W
R222	1-249-425-11	CARBON	4.7K	5%	1/4W
R223	1-249-425-11	CARBON	4.7K	5%	1/4W
R224	1-249-421-11	CARBON	2.2K	5%	1/4W
R225	1-249-436-11	CARBON	39K	5%	1/4W
R226	1-249-421-11	CARBON	2.2K	5%	1/4W
R227	1-249-417-11	CARBON	1K	5%	1/4W
R228	1-249-421-11	CARBON	2.2K	5%	1/4W
R229	1-249-419-11	CARBON	1.5K	5%	1/4W
R230	1-249-409-11	CARBON	220	5%	1/4W
R231	1-249-429-11	CARBON	10K	5%	1/4W
R232	1-249-437-11	CARBON	47K	5%	1/4W
R233	1-249-429-11	CARBON	10K	5%	1/4W
R234	1-249-401-11	CARBON	47	5%	1/4W
R235	1-249-417-11	CARBON	1K	5%	1/4W
R501	1-249-433-11	CARBON	22K	5%	1/4W
R502	1-249-433-11	CARBON	22K	5%	1/4W
R503	1-215-469-00	METAL	100K	1%	1/6W
R504	1-249-433-11	CARBON	22K	5%	1/4W
R505	1-249-433-11	CARBON	22K	5%	1/4W
R506	1-249-433-11	CARBON	22K	5%	1/4W
R527	1-249-433-11	CARBON	22K	5%	1/4W
R531	1-247-864-11	CARBON	24K	5%	1/4W
R532	1-249-440-11	CARBON	82K	5%	1/4W
R533	1-249-437-11	CARBON	47K	5%	1/4W
R534	1-247-883-00	CARBON	150K	5%	1/4W
R535	1-247-876-11	CARBON	75K	5%	1/4W
R536	1-249-436-11	CARBON	39K	5%	1/4W
R537	1-247-868-11	CARBON	36K	5%	1/4W
R538	1-247-891-00	CARBON	330K	5%	1/4W
R539	1-249-438-11	CARBON	56K	5%	1/4W

Note: The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.

Ref.No.	Part No.	Description					Ref.No.	Part No.	Description				
R540	1-247-881-00	CARBON	120K	5%	1/4W		R713	1-249-429-11	CARBON	10K	5%	1/4W	
R541	1-249-440-11	CARBON	82K	5%	1/4W		R714	1-249-430-11	CARBON	12K	5%	1/4W	
R542	1-247-872-11	CARBON	51K	5%	1/4W		R715	1-249-417-11	CARBON	1K	5%	1/4W	
R543	1-247-874-11	CARBON	62K	5%	1/4W		R802	1-249-407-11	CARBON	150	5%	1/4W	
R544	1-249-435-11	CARBON	33K	5%	1/4W		R803	1-249-407-11	CARBON	150	5%	1/4W	
R545	1-249-441-11	CARBON	100K	5%	1/4W		R804	1-249-407-11	CARBON	150	5%	1/4W	
R546	1-249-438-11	CARBON	56K	5%	1/4W		R805	1-249-407-11	CARBON	150	5%	1/4W	
R547	1-249-434-11	CARBON	27K	5%	1/4W		R806	1-249-407-11	CARBON	150	5%	1/4W	
R548	1-249-438-11	CARBON	56K	5%	1/4W		R807	1-249-407-11	CARBON	150	5%	1/4W	
R549	1-247-876-11	CARBON	75K	5%	1/4W		R808	1-249-409-11	CARBON	220	5%	1/4W	
R550	1-247-881-00	CARBON	120K	5%	1/4W		R810	1-249-410-11	CARBON	270	5%	1/4W	
R551	1-249-435-11	CARBON	33K	5%	1/4W		R811	1-249-421-11	CARBON	2.2K	5%	1/4W	
R552	1-249-435-11	CARBON	33K	5%	1/4W		R812	1-249-421-11	CARBON	2.2K	5%	1/4W	
R553	1-249-435-11	CARBON	33K	5%	1/4W		R813	1-249-421-11	CARBON	2.2K	5%	1/4W	
R554	1-247-870-11	CARBON	43K	5%	1/4W		R814	1-249-425-11	CARBON	4.7K	5%	1/4W	
R555	1-249-432-11	CARBON	18K	5%	1/4W		R816	1-249-417-11	CARBON	1K	5%	1/4W	
R556	1-247-881-00	CARBON	120K	5%	1/4W		R817	1-249-417-11	CARBON	1K	5%	1/4W	
R557	1-249-435-11	CARBON	33K	5%	1/4W		R822	1-249-417-11	CARBON	1K	5%	1/4W	
R558	1-249-435-11	CARBON	33K	5%	1/4W		R823	1-249-429-11	CARBON	10K	5%	1/4W	
R559	1-249-437-11	CARBON	47K	5%	1/4W		R824	1-249-429-11	CARBON	10K	5%	1/4W	
R560	1-247-874-11	CARBON	62K	5%	1/4W		R825	1-249-421-11	CARBON	2.2K	5%	1/4W	
R561	1-249-435-11	CARBON	33K	5%	1/4W		R826	1-249-417-11	CARBON	1K	5%	1/4W	
R562	1-247-881-00	CARBON	120K	5%	1/4W		R827	1-247-903-00	CARBON	1M	5%	1/4W	
R563	1-249-436-11	CARBON	39K	5%	1/4W		R828	1-249-433-11	CARBON	22K	5%	1/4W	
R564	1-249-433-11	CARBON	22K	5%	1/4W		R829	1-249-433-11	CARBON	22K	5%	1/4W	
R565	1-249-434-11	CARBON	27K	5%	1/4W		R831	1-249-436-11	CARBON	39K	5%	1/4W	
R566	1-249-439-11	CARBON	68K	5%	1/4W		R832	1-247-895-00	CARBON	470K	5%	1/4W	
R567	1-249-435-11	CARBON	33K	5%	1/4W		R833	1-249-433-11	CARBON	22K	5%	1/4W	
R568	1-249-433-11	CARBON	22K	5%	1/4W		R834	1-249-436-11	CARBON	39K	5%	1/4W	
R569	1-249-433-11	CARBON	22K	5%	1/4W		R835	1-247-895-00	CARBON	470K	5%	1/4W	
R570	1-249-433-11	CARBON	22K	5%	1/4W		R836	1-249-436-11	CARBON	39K	5%	1/4W	
R571	1-249-429-11	CARBON	10K	5%	1/4W		R837	1-247-895-00	CARBON	470K	5%	1/4W	
R572	1-249-425-11	CARBON	4.7K	5%	1/4W		R838	1-249-433-11	CARBON	22K	5%	1/4W	
R574	1-247-887-00	CARBON	220K	5%	1/4W		R839	1-249-436-11	CARBON	39K	5%	1/4W	
R575	1-249-425-11	CARBON	4.7K	5%	1/4W		R840	1-247-895-00	CARBON	470K	5%	1/4W	
R576	1-249-441-11	CARBON	100K	5%	1/4W		R841	1-249-441-11	CARBON	100K	5%	1/4W	
R577	1-249-428-11	CARBON	8.2K	5%	1/4W		R842	1-249-417-11	CARBON	1K	5%	1/4W	
R578	1-249-423-11	CARBON	3.3K	5%	1/4W		R843	1-249-439-11	CARBON	68K	5%	1/4W	
R579	1-249-441-11	CARBON	100K	5%	1/4W		R845	1-249-433-11	CARBON	22K	5%	1/4W	
R580	1-249-421-11	CARBON	2.2K	5%	1/4W		R846	1-249-417-11	CARBON	1K	5%	1/4W	
R581	1-249-441-11	CARBON	100K	5%	1/4W		R847	1-249-421-11	CARBON	2.2K	5%	1/4W	
R582	1-249-429-11	CARBON	10K	5%	1/4W		R848	1-249-417-11	CARBON	1K	5%	1/4W	
R583	1-249-429-11	CARBON	10K	5%	1/4W		R849	1-249-433-11	CARBON	22K	5%	1/4W	
R584	1-249-429-11	CARBON	10K	5%	1/4W		R850	1-247-731-11	CARBON	22	5%	1/2W	
R585	1-249-429-11	CARBON	10K	5%	1/4W		R851	1-249-421-11	CARBON	2.2K	5%	1/4W	
R701	1-249-413-11	CARBON	470	5%	1/4W		R852	1-249-417-11	CARBON	1K	5%	1/4W	
R702	1-249-417-11	CARBON	1K	5%	1/4W		R853	1-249-433-11	CARBON	22K	5%	1/4W	
R703	1-249-427-11	CARBON	6.8K	5%	1/4W		R854	1-249-425-11	CARBON	4.7K	5%	1/4W	
R704	1-249-419-11	CARBON	1.5K	5%	1/4W		R855	1-249-417-11	CARBON	1K	5%	1/4W	
R705	1-247-854-11	CARBON	9.1K	5%	1/4W		R856	1-249-433-11	CARBON	22K	5%	1/4W	
R706	1-249-419-11	CARBON	1.5K	5%	1/4W		R857	1-247-731-11	CARBON	22	5%	1/2W	
R707	1-249-425-11	CARBON	4.7K	5%	1/4W		R858	1-249-425-11	CARBON	4.7K	5%	1/4W	
R708	1-249-413-11	CARBON	470	5%	1/4W		R860	1-249-413-11	CARBON	470	5%	1/4W	
R709	1-249-417-11	CARBON	1K	5%	1/4W		R861	1-249-415-11	CARBON	680	5%	1/4W	
R710	1-249-425-11	CARBON	4.7K	5%	1/4W		R862	1-249-415-11	CARBON	680	5%	1/4W	
R711	1-249-417-11	CARBON	1K	5%	1/4W		R864	1-249-413-11	CARBON	470	5%	1/4W	
R712	1-249-421-11	CARBON	2.2K	5%	1/4W		R866	1-249-433-11	CARBON	22K	5%	1/4W	

Ref.No.	Part No.	Description
R867	1-249-417-11	CARBON 1K 5% 1/4W
R868	1-249-433-11	CARBON 22K 5% 1/4W
R869	1-249-433-11	CARBON 22K 5% 1/4W
R870	1-249-417-11	CARBON 1K 5% 1/4W
R871	1-249-429-11	CARBON 10K 5% 1/4W
R872	1-249-429-11	CARBON 10K 5% 1/4W
R873	1-249-429-11	CARBON 10K 5% 1/4W
R902	1-249-412-11	CARBON 390 5% 1/4W
R903	1-249-411-11	CARBON 330 5% 1/4W
R904	1-249-418-11	CARBON 1.2K 5% 1/4W
R906	1-249-417-11	CARBON 1K 5% 1/4W
R907	1-249-420-11	CARBON 1.8K 5% 1/4W
R908	1-249-424-11	CARBON 3.9K 5% 1/4W
R909	1-249-407-11	CARBON 150 5% 1/4W
R910	1-249-409-11	CARBON 220 5% 1/4W
R911	1-249-411-11	CARBON 330 5% 1/4W
R912	1-249-413-11	CARBON 470 5% 1/4W
R913	1-249-415-11	CARBON 680 5% 1/4W
R914	1-249-417-11	CARBON 1K 5% 1/4W
R916	1-249-426-11	CARBON 5.6K 5% 1/4W
R917	1-249-416-11	CARBON 820 5% 1/4W
R918	1-249-419-11	CARBON 1.5K 5% 1/4W
R919	1-249-433-11	CARBON 22K 5% 1/4W
R921	1-249-430-11	CARBON 12K 5% 1/4W
R922	1-249-430-11	CARBON 12K 5% 1/4W
R933	1-249-412-11	CARBON 390 5% 1/4W
R934	1-249-411-11	CARBON 330 5% 1/4W
R935	1-249-418-11	CARBON 1.2K 5% 1/4W
R951	1-247-903-00	CARBON 1M 5% 1/4W
R952	1-249-441-11	CARBON 100K 5% 1/4W
R953	1-249-441-11	CARBON 100K 5% 1/4W
R954	1-249-430-11	CARBON 12K 5% 1/4W
R955	1-249-422-11	CARBON 2.7K 5% 1/4W
R956	1-249-427-11	CARBON 6.8K 5% 1/4W
R957	1-249-429-11	CARBON 10K 5% 1/4W
R958	1-249-425-11	CARBON 4.7K 5% 1/4W
R959	1-249-441-11	CARBON 100K 5% 1/4W
R960	1-249-441-11	CARBON 100K 5% 1/4W
R961	1-249-433-11	CARBON 22K 5% 1/4W
R962	1-249-433-11	CARBON 22K 5% 1/4W
RV41A	1-228-989-00	RES, ADJ, CARBON 470 (PB LEVEL L)
RV41B	1-228-990-00	RES, ADJ, CARBON 1K (PB LEVEL L)
RV42	1-230-497-11	RES, ADJ, CARBON 22K (REC BIAS L)
RV61A	1-228-989-00	RES, ADJ, CARBON 470 (PB LEVEL R)
RV61B	1-228-990-00	RES, ADJ, CARBON 1K (PB LEVEL R)
RV62	1-230-497-11	RES, ADJ, CARBON 22K (REC BIAS R)
RV102	1-228-994-00	RES, ADJ, CARBON 10K (REC LEVEL L)
RV202	1-228-994-00	RES, ADJ, CARBON 10K (REC LEVEL R)
RV501	1-238-138-11	RES, VAR, CARBON 50K/50K (BALANCE)
RV502	1-238-139-11	RES, VAR, CARBON 20K/20K (REC LEVEL)
RV802	1-228-996-00	RES, ADJ, CARBON 47K (QUICK REVERS)
RY81	1-515-614-11	RELAY
S11A	1-571-281-21	SWITCH, LEAF (HALF DET)
S11B	1-571-281-21	SWITCH, LEAF (HALF DET)
S12	1-571-281-21	SWITCH, LEAF (ERASE PROOF:SIDE A)
S13	1-571-281-21	SWITCH, LEAF (ERASE PROOF:SIDE B)

Ref.No.	Part No.	Description
S14A	1-571-281-21	SWITCH, LEAF (CrO2)
S14B	1-571-281-21	SWITCH, LEAF (CrO2)
S15	1-571-281-21	SWITCH, LEAF (METAL)
S701	1-553-336-21	SWITCH, PUSH (POWER)
S705	1-571-028-11	(DECK B)...SWITCH, LEAF (REC SW)
S801	1-571-918-11	SWITCH, SLIDE (REMOTE)
S902	1-554-303-21	SWITCH, KEY BOARD (PAUSE:A)
S905	1-554-303-21	SWITCH, KEY BOARD (REV:A)
S906	1-554-303-21	SWITCH, KEY BOARD (FWD:A)
S907	1-554-303-21	SWITCH, KEY BOARD (REW:A)
S908	1-554-303-21	SWITCH, KEY BOARD (FF:A)
S909	1-554-303-21	SWITCH, KEY BOARD (STOP:B)
S910	1-554-303-21	SWITCH, KEY BOARD (PAUSE:B)
S911	1-554-303-21	SWITCH, KEY BOARD (REC MUTE:B)
S912	1-554-303-21	SWITCH, KEY BOARD (REC:B)
S913	1-554-303-21	SWITCH, KEY BOARD (REV:B)
S914	1-554-303-21	SWITCH, KEY BOARD (FWD:B)
S915	1-554-303-21	SWITCH, KEY BOARD (REW:B)
S916	1-554-303-21	SWITCH, KEY BOARD (FF:B)
S917	1-554-303-21	SWITCH, KEY BOARD (RESET)
S918	1-554-303-21	SWITCH, KEY BOARD (MEMORY)
S919	1-554-303-21	SWITCH, KEY BOARD (A/B)
S921	1-570-837-11	SWITCH, SLIDE (TIMER)
S922	1-570-837-11	SWITCH, SLIDE (DIRECTION MODE)
S931	1-554-303-21	SWITCH, KEY BOARD (AMS/BLANK SKIP)
S932	1-554-303-21	SWITCH, KEY BOARD (HIGH SPEED)
S933	1-554-303-21	SWITCH, KEY BOARD (NORMAL SPEED)
S934	1-554-303-21	SWITCH, KEY BOARD (AUTO PAUSE)
S941	1-570-837-11	SWITCH, SLIDE (DOLBY NR)
S942	1-570-849-11	SWITCH, SLIDE (MPX FILTER)
SPK101	1-235-186-00	ENCAPSULATED COMPONENT
SPK201	1-235-186-00	ENCAPSULATED COMPONENT
T51	1-433-335-11	TRANSFORMER, BIAS OSCILLATION
T71	1-433-335-11	TRANSFORMER, BIAS OSCILLATION
T81	1-433-336-11	TRANSFORMER, BIAS OSCILLATION
T701	1-449-614-11	TRANSFORMER, POWER
TP83	*1-564-338-00	PIN, CONNECTOR 4P
TP91	*1-564-508-11	PLUG, CONNECTOR 5P
TP801	*1-564-505-11	PLUG, CONNECTOR 2P (TEST)
TP802	*1-564-507-11	PLUG, CONNECTOR 4P (QUICK)
X801	1-567-686-11	OSCILLATOR, CERAMIC (4MHz)
X951	1-567-771-11	VIBRATOR, CERAMIC (6MHz)

ACCESSORY & PACKING MATERIAL

1-559-533-11	CORD, CONNECTION
*3-349-028-01	INDIVIDUAL CARTON
*3-349-029-01	CUSHION
3-701-630-00	BAG, POLYETHYLENE
3-703-450-01	INSTRUCTION
3-750-209-21	MANUAL, INSTRUCTION

Note: The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

TC-WR8ES

SONY SERVICE MANUAL

US Model

CORRECTION-1

Correct your service manual as shown below.

 : indicates corrected portion.

Page	INCORRECT					CORRECT				
7	Tape Speed Adjustment					Tape Speed Adjustment				
	Specifications :					Specifications :				
	speed	deck	Adjustment part	variable resistor of motor	test pin CN811	speed	deck	Adjustment part	variable resistor of motor	test pin TP801 
	high	A	M901-A	(H)	short	high	A	M901-A	(H)	short
		B	M901-B	(H)			B	M901-B	(H)	
	normal	A	M901-A	(L)	open	normal	A	M901-A	(L)	open
		B	M901-B	(L)			B	M901-B	(L)	