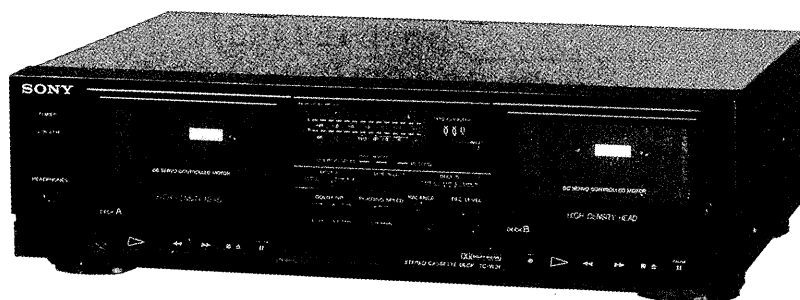


TC-W31

SERVICE MANUAL

US Model
Canadian Model
E Model



- TC-W31 is a model which has been designed based on the TC-W310. The major different points of them are the mechanical parts.
- The electrical specifications of this model are almost identical to those of TC-W310.
This manual contains only the points which differ from TC-W310.
- Refer to the TC-W310 Service Manual for related information not contained in this manual.

SPECIFICATIONS

Recording system

4-track 2-channel stereo

Fast-forward and rewind time

Approx. 120 sec. (with C-60 cassette)

Bias

AC bias

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

Dolby NR switch Cassette	OFF	B-TYPE ON	C-TYPE ON
TYPE IV (Sony METAL-ES)	58 dB	65 dB	71 dB
TYPE II (Sony UX-S)	56 dB	63 dB	69 dB
TYPE I (Sony HF-S)	54 dB	61 dB	67 dB

Total harmonic distortion

1.0% (with Sony METAL-ES cassette)

Frequency response (DOLBY NR OFF)

TYPE IV cassette (Sony METAL-ES)	30 – 15,000 Hz (± 3 dB) 30 – 13,000 Hz (OVU recording)
TYPE II cassette (Sony UX-S)	30 – 14,000 Hz (± 3 dB)
TYPE I cassette (Sony HF-S)	30 – 13,000 Hz (± 3 dB)

Wow and flutter 0.12% WRMS (NAB)

Input

Connector	Type	Sensitivity	Impedance
LINE IN	phono	77.5 mV (-20 dB)	50 k ohms

Model Name Using Similar Mechanism	TC-W301
Tape Transport Mechanism Type	TCM-180VA-H3 TCM-180VB-H3

Output

Connector	Type	Rated output level	Load impedance
LINE OUT	phono	0.44 V (-5 dB) at load impedance 47 k ohms	over 10 k ohms

General

Power requirements

120 V AC, 60 Hz (US Model)

120 V, 220 V or 240 V AC, adjustable 50/60 Hz (E Model)

Power consumption

18 W

Dimensions

Approx. 430 $\times$ 123 $\times$ 280 mm (w/h/d)
(17 $\times$ 4 $\frac{7}{8}$ $\times$ 11 $\frac{1}{8}$ inches)

including projecting parts and controls

Weight

Approx. 3.4 kg (7 lbs 8 oz)

Supplied accessories

Connecting cords (2)

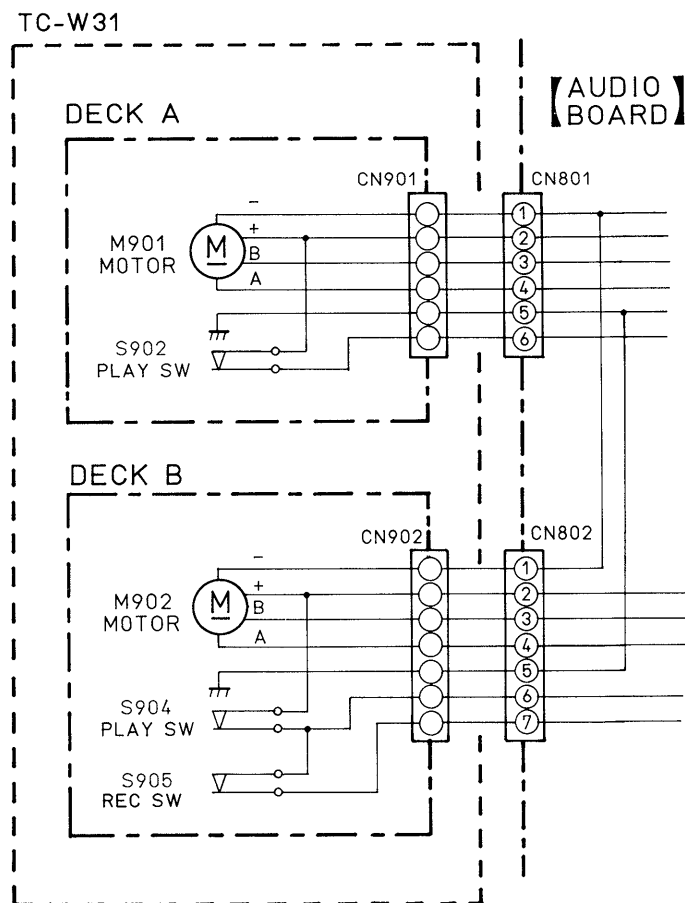
Design and specifications subject to change without notice.



使用時は添付資料も参照のこと
Refer to the additional documents.

STEREO CASSETTE DECK
SONY®

1. SCHEMATIC DIAGRAM



2. ELECTRICAL PARTS LIST (The difference between TC-W310 and TC-W31.)

PAGE	TC-W310			TC-W31		
	Ref. No.	Part No.	Description	Part No.	Description	
18	902	*A-2006-114-A	MOUNTED PCB, AUDIO	*A-2006-264-A	MOUNTED PCB, AUDIO	
	C503	1-124-903-11	ELECT 1MF 50V	1-124-925-11	ELECT 2.2MF 20% 50V	
	C707	1-124-443-00	ELECT 100MF 10V	1-124-473-11	ELECT 1000MF 20% 10V	
19	D101-104	8-719-304-37	SEL4414E-C	8-719-312-75	LED SEL4814A-CD	
	D105-107	8-719-304-32	SEL4214S	8-719-312-75	LED SEL4814A-CD	
	D201-204	8-719-304-37	SEL4414E-C	8-719-312-75	LED SEL4814A-CD	
	D205-207	8-719-304-32	SEL4214S	8-719-312-75	LED SEL4814A-CD	
	D301-305	8-719-912-20	1SS120	8-719-107-94	DIODE 1SS202-1	
	D501-507	8-719-912-20	1SS120	8-719-107-94	DIODE 1SS202-1	
	HE	1-543-261-11	(DECK B) HEAD, ERASE	1-543-673-11	(DECK B) HEAD, MAGNETIC (ERASE)	
	HP	1-543-424-11	(DECK A) HEAD, MAGNETIC	1-543-319-11	(DECK A) HEAD, MAGNETIC (PB)	
	HRP	1-543-424-11	(DECK B) HEAD, MAGNETIC	1-543-319-11	(DECK B) HEAD, MAGNETIC (REC/PB)	
	IC303	8-759-601-43	M4066BP	8-759-000-49	IC MC14066BCP	
	IC306	8-759-600-02	M5218L	8-759-634-50	IC M5218AL	
	IC501	8-759-601-06	M4001BP	8-759-040-01	IC MC14001BCP	
	IC502	8-759-601-10	M4011BP	8-759-040-11	IC MC14011BCP	
	M901, 902	X-3390-801-1	MOTOR ASSY	X-3358-212-1	MOTOR (B) ASSY	
	Q102, 103	8-729-119-78	2SC2785-HFE	8-729-620-05	TRANSISTOR 2SC2603	
	Q202, 203	8-729-119-78	2SC2785-HFE	8-729-620-05	TRANSISTOR 2SC2603	
	Q305	8-729-194-57	2SC945-P	8-729-620-05	TRANSISTOR 2SC2603	
	Q507	8-729-119-78	2SC2785-HFE	8-729-620-05	TRANSISTOR 2SC2603	
	Q701, 702	8-729-119-78	2SC2785-HFE	8-729-620-05	TRANSISTOR 2SC2603	
	Q704, 705	8-729-119-76	2SA1175-HFE	8-729-821-04	TRANSISTOR 2SA1317-STU	
	R153	1-249-425-11	4.7K	1-247-840-00	CARBON 2.4K 5% 1/4W	
	R154	1-249-425-11	4.7K			
	R253	1-249-425-11	4.7K	1-247-840-00	CARBON 2.4K 5% 1/4W	
	R254	1-249-425-11	4.7K			
	R314	1-249-441-11	100K	1-249-440-11	CARBON 82K 5% 1/4W	
	R320	1-249-440-11	82K	1-247-881-00	CARBON 120K 5% 1/4W	
	R332, 344	1-249-434-11	27K	1-249-432-11	CARBON 18K 5% 1/4W	
	R361	1-249-404-00	82	1-249-407-11	CARBON 150 5% 1/4W	
	S901	1-570-715-11	(DECK A) SWITCH, LEAF			
	S902	1-570-430-11	(DECK A) SWITCH, LEAF	1-571-736-11	(DECK A) SWITCH, LEAF	
	S903	1-570-715-11	(DECK B) SWITCH, LEAF			
	S904	1-570-716-11	(DECK B) SWITCH, LEAF	1-571-736-11	(DECK B) SWITCH, LEAF	
	S905	1-570-714-11	(DECK B) SWITCH, LEAF	1-571-736-11	(DECK B) SWITCH, LEAF	

3. ACCESSORY & PACKING MATERIALS

• CND : Canadian model

- 1-559-533-11 CORD, CONNECTION
- *3-354-979-01 INDIVIDUAL CARTON
- *3-349-037-01 CUSHION
- 3-703-450-01 (US, CND)..INSTRUCTION
- 3-751-753-21 (US, CND)..MANUAL, INSTRUCTION
- 3-751-753-41 (E).....MANUAL, INSTRUCTION

4. EXPLODED VIEWS

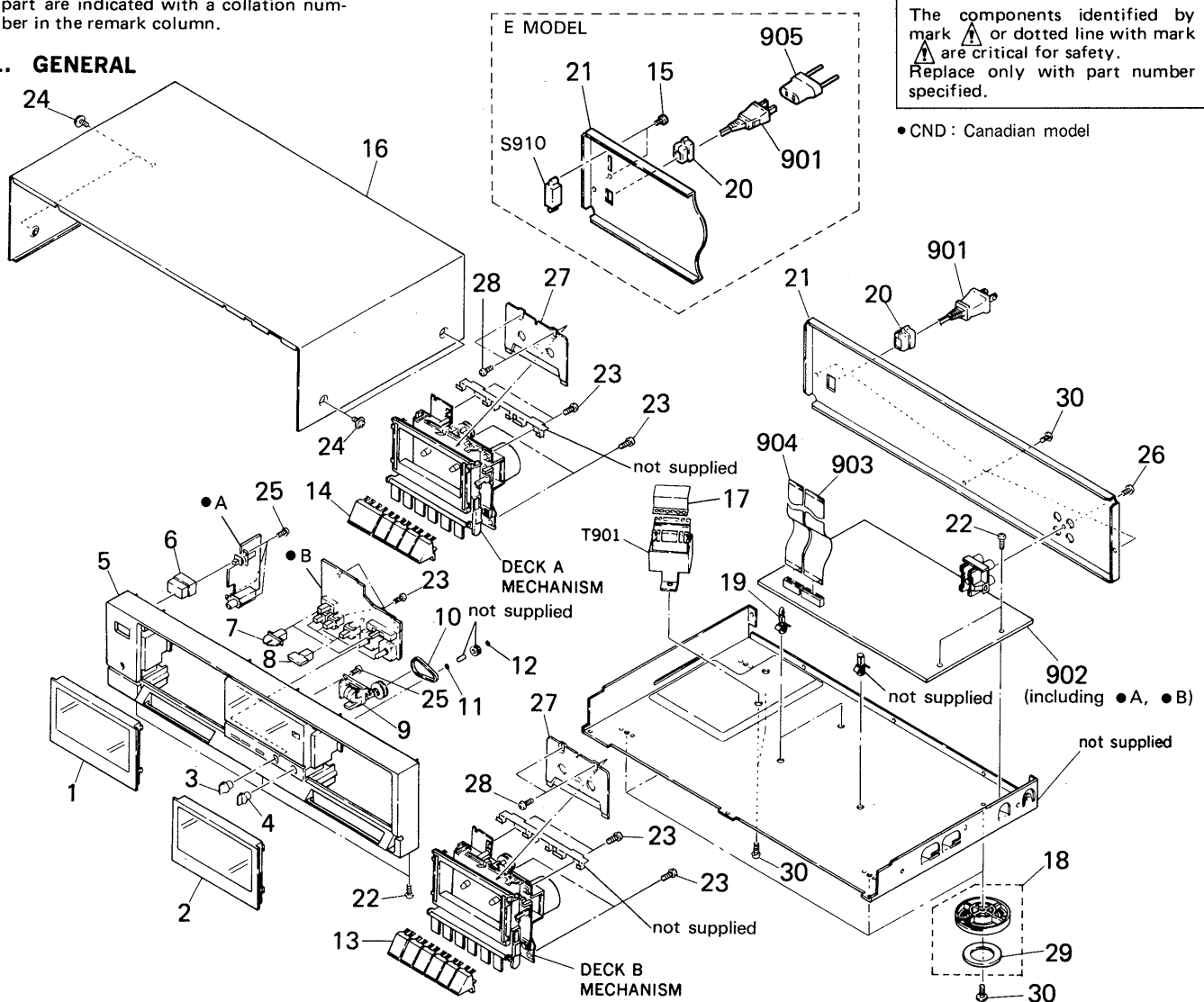
NOTE:

- 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.

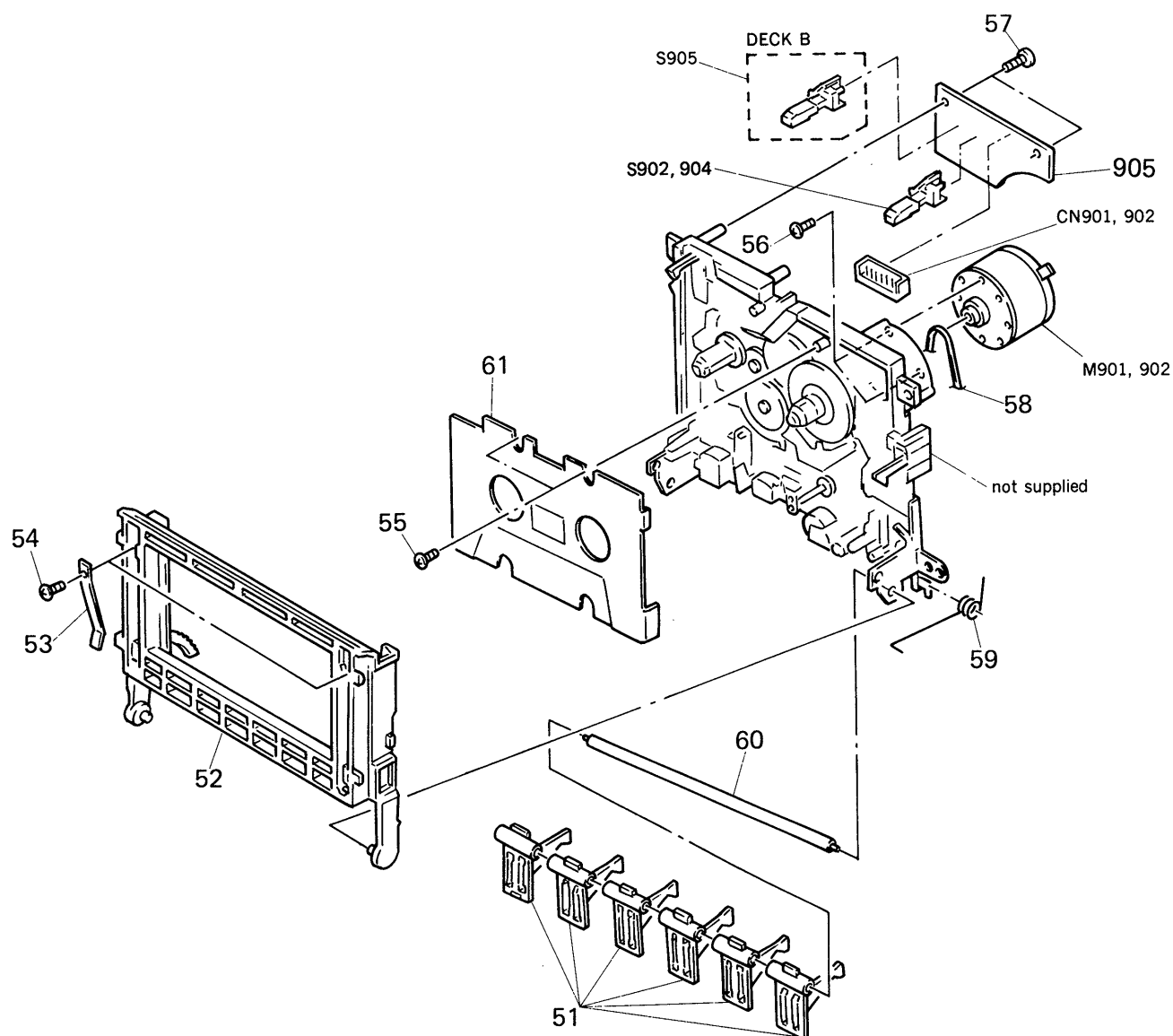
4-1. GENERAL



No.	Part No.	Description	Remark
1	X-3346-303-1	LID (A) ASSY, CASSETTE	
2	X-3346-304-1	LID (B) ASSY, CASSETTE	
3	3-346-380-01	KNOB (VOL.) (BALANCE)	
4	3-346-380-21	KNOB (VOL.) (REC LEVEL)	
5	X-3346-305-1	(US, CND)..PANEL ASSY, FRONT	9,11,12,25
5	A-2003-819-A	(E).....PANEL ASSY, FRONT	9,11,12,25
6	3-354-912-01	KNOB, POWER	
7	3-346-379-01	KNOB, (SLIDE) (TAPE SELECT)	
8	3-346-381-01	BUTTON (DOLBY/DUBBING SPEED)	
9	1-548-596-61	COUNTER, TAPE (MIDDLE TYPE)	
10	3-499-042-XX	BELT, COUNTER	
11	3-701-437-11	WASHER	
12	3-558-708-11	WASHER, STOPPER	
13	3-349-043-11	BUTTON (BLOCK B)	
14	3-349-042-11	BUTTON (BLOCK A)	
15	7-685-534-19	(E).....SCREW +BTP 2.6×8 TYPE2 N-S	
16	3-332-578-42	CASE	
17	*3-327-855-01	COVER (TRANSFORMER)	
18	X-4885-950-1	(US, CND)..FOOT ASSY	29
18	X-3304-938-2	(E).....FOOT ASSY	29
19	*3-346-265-11	HOLDER, PC BOARD	

No.	Part No.	Description	Remark
20	*3-703-571-11	BUSHING (S) (4516), CORD	
21	*3-359-903-11	(US, CND)..PANEL, BACK	
21	*3-359-903-41	(E).....PANEL, BACK	
22	7-682-548-04	SCREW +BVTT 3×8 (S)	
23	4-928-635-21	SCREW, +BV (2.6×10) TAPPING	
24	3-704-366-01	SCREW (CASE) (M3×8)	
25	4-928-635-01	SCREW, +BV (2.6×8) TAPPING	
26	7-621-849-00	SCREW, TAPPING	
27	X-3358-214-1	PLATE ASSY, ORNAMENTAL	
28	7-685-133-19	SCREW +BTP 2.6×6 TYPE2 N-S	
29	4-923-836-11	CUSHION	
30	7-682-548-09	SCREW +BVTT 3×8 (S)	
901 Δ	1-551-506-XX	(US, CND)..CORD, POWER	
901 Δ	1-551-188-XX	(E).....CORD, POWER	
902	*A-2006-264-A	AUDIO BOARD, COMPLETE	
903	*1-574-725-11	WIRE, FLAT TYPE (17 CORE)	
904	*1-574-727-11	WIRE, FLAT TYPE (9 CORE)	
905 Δ	1-569-007-11	(E).....ADAPTER, CONVERSION	
S910 Δ	1-570-307-11	(E).....SWITCH, VOLTAGE CHANGE	
T901 Δ	1-449-683-11	(US, CND)..TRANSFORMER, POWER	
T901 Δ	1-449-682-11	(E).....TRANSFORMER, POWER	

4-2. MECHANISM SECTION-1
(A Deck : TCM-180VA-H3)
(B Deck : TCM-180VB-H3)

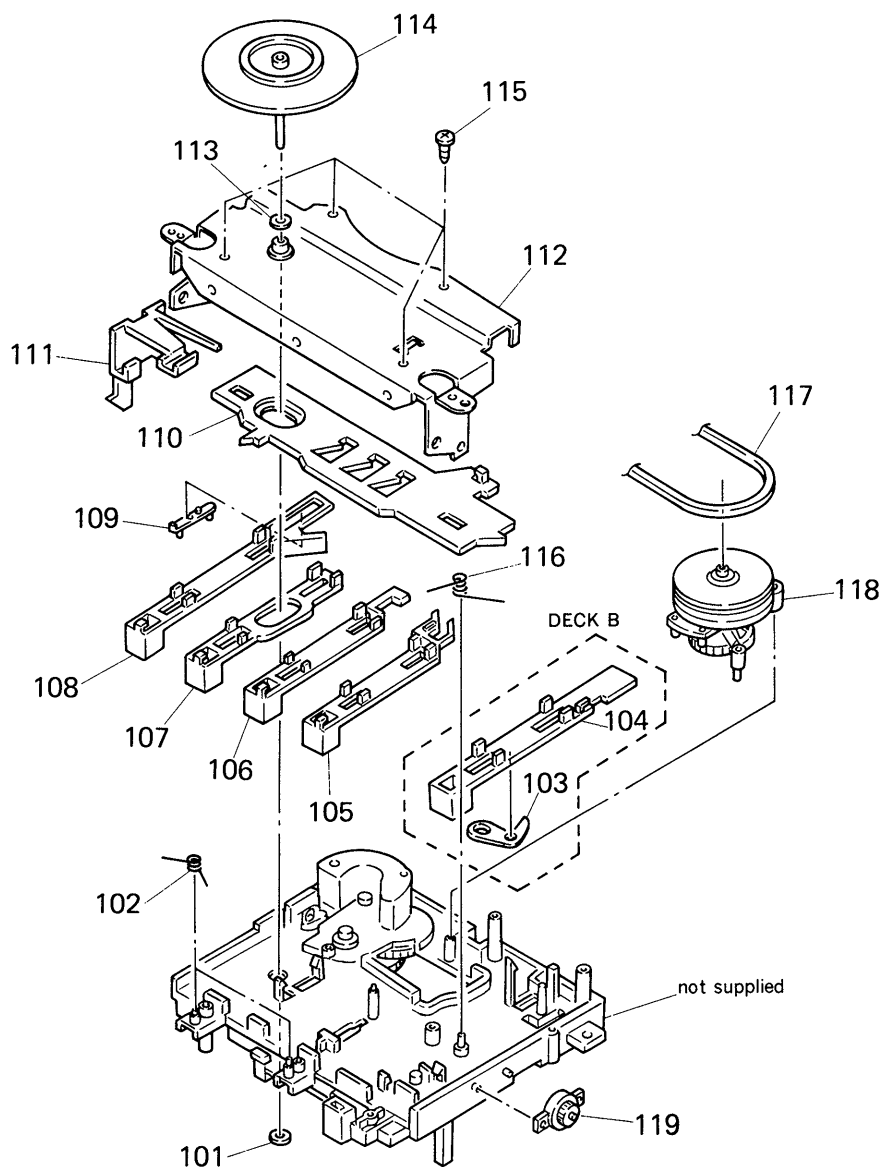


NO.	Part NO.	Description
51	3-358-271-01	LEVER (BUTTON BASE A)
52	3-358-266-01	HOLDER, CASSETTE
53	3-358-209-01	SPRING (CASSETTE HOLDER), LEAF
54	7-685-103-19	SCREW +P 2×5 TYPE2 NON-SLIT
55	7-685-133-19	SCREW +BTP 2.6×6 TYPE2 N-S
56	7-621-775-20	SCREW +B 2.6×5
57	7-685-133-19	SCREW +BTP 2.6×6 TYPE2 N-S
58	3-358-272-01	BELT (A2)
59	3-358-287-01	SPRING (LOADING A), TORSION
60	3-358-242-01	SHAFT (BUTTON SHAFT)
61	X-3358-214-1	PLATE ASSY, ORNAMENTAL

NO.	Part NO.	Description
905	*1-635-161-11	SWITCH BOARD
CN901	1-564-499-11	(DECK A) PIN, CONNECTOR 6P
CN902	1-564-500-11	(DECK B) PIN, CONNECTOR 7P
M901	X-3358-212-1	(DECK A) MOTOR (B) ASSY
M902	X-3358-212-1	(DECK B) MOTOR (B) ASSY
S902	1-571-736-11	(DECK A) SWITCH, LEAF
S904	1-571-736-11	(DECK B) SWITCH, LEAF
S905	1-571-736-11	(DECK B) SWITCH, LEAF

4-3. MECHANISM SECTION-2

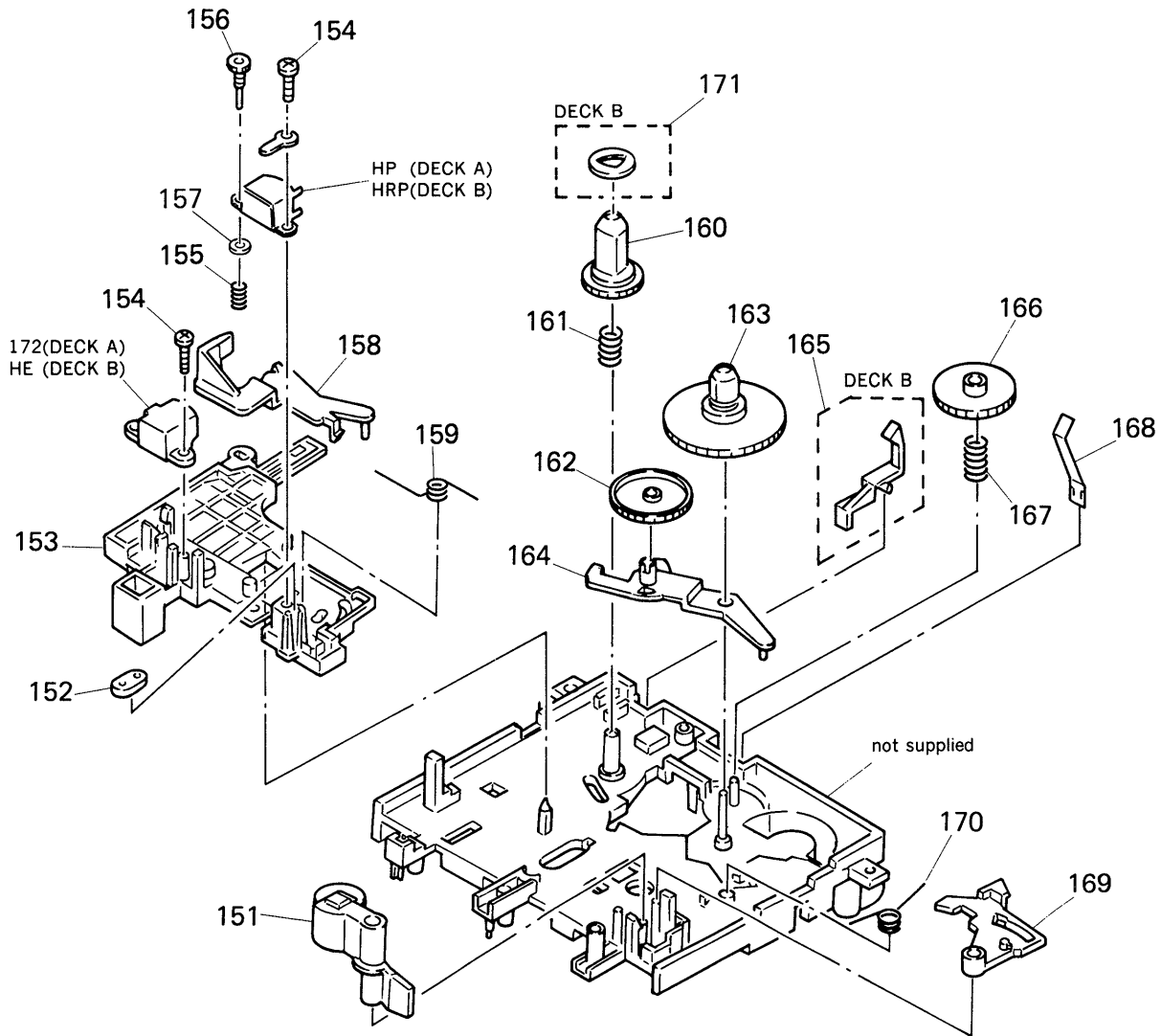
(A Deck: TCM-180VA-H3)
(B Deck: TCM-180VB-H3)



NO.	Part NO.	Description
101	7-623-921-01	WASHER 1.7,NYLONE
102	3-358-232-01	SPRING (S-P F-R),TORTION
103	*3-358-204-01	(DECK B) LEVER (REC SAFETY)
104	3-358-259-01	(DECK B) SLIDER (REC)
105	3-358-258-01	SLIDER (REW)
106	3-358-257-01	SLIDER (FF)
107	3-358-256-01	SLIDER (STOP/EJECT)
108	3-358-260-01	SLIDER (PAUSE)
109	*3-358-226-01	LEVER (PAUSE LEVER)
110	*3-358-249-01	SLIDER (LOCK PLATE)

NO.	Part NO.	Description
111	*3-358-261-01	SLIDER (HOLDER LOCK)
112	*X-3358-213-1	BRACKET (A) ASSY
113	3-701-437-01	WASHER
114	X-3358-205-1	FLYWHEEL (A) ASSY
115	7-685-133-19	SCREW +P 2.6×6 TYPE2
116	3-358-214-01	(DECK A) SPRING (LOCK),TORTION
	3-358-233-01	(DECK B) SPRING (REC-LOCK),TORTION
117	3-358-230-01	BELT (A1)
118	X-3358-202-1	LEVER (FR ARM) ASSY
119	3-319-224-31	DAMPER,SMALL

4-4. MECHANISM SECTION-3
(A Deck : TCM-180VA-H3)
(B Deck : TCM-180VB-H3)



NO.	Part NO.	Description
151	X-3358-204-1	LEVER (PINCH LEVER) ASSY
152	*3-358-215-01	BUSHING (WIRE KIT RETAINER)
153	3-358-265-01	SLIDER (HEAD PC BOARD A)
154	3-358-288-11	SCREW (T), AZIMUTH
155	3-358-234-01	SPRING (AZIMUTH), COMPRESSION
156	3-358-288-01	SCREW (T), AZIMUTH
157	7-688-001-01	W2, SMALL
158	*3-358-251-01	LEVER (TENSION DETECTION ARM)
159	3-358-228-01	SPRING, TORSION
160	3-358-248-01	GEAR (SUPPLY REEL)
161	3-358-208-01	SPRING (SUPPLY), COMPRESSION
162	*3-358-284-01	GEAR (TU GEAR)
163	X-3358-203-1	TABLE (T) ASSY, REEL
164	*3-358-252-01	LEVER (TU ARM)
165	*3-358-255-01	(DECK B) LEVER (GB LEVER)

NO.	Part NO.	Description
166	*3-358-224-01	GEAR (FF GEAR)
167	3-358-207-01	SPRING (FF GEAR), COMPRESSION
168	3-358-227-01	SPRING, LEAF
169	*3-358-253-01	LEVER (SHUT-OFF LEVER)
170	3-358-243-01	SPRING (TU-SHUT), TORSION
171	*3-358-270-01	(DECK B) PULLEY (COUNTER PULLEY)
172	3-358-285-01	(DECK A) GUIDE, TAPE
HE	1-543-673-11	(DECK B) HEAD, MAGNETIC (ERASE)
HP	1-543-319-11	(DECK A) HEAD, MAGNETIC (PB)
HRP	1-543-319-11	(DECK B) HEAD, MAGNETIC (REC/PB)

SONY SERVICE MANUAL

*US Model
Canadian Model
E Model*

CORRECTION-1

Correct your service manual as shown below.

 : indicates corrected portion.

Page	INCORRECT			CORRECT	
5	<u>No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Part No.</u>	<u>Description</u>
	M901	X-3335-212-1	MOTOR (B) ASSY	X-3358-212-1	MOTOR (B) ASSY
	M902	X-3335-212-1	MOTOR (B) ASSY	 X-3358-212-1  X-3358-212-1	MOTOR (B) ASSY