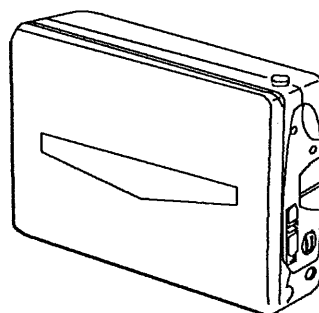


aiwa

HS-PX510 HS-PX310

SERVICE MANUAL



STEREO CASSETTE PLAYER

• BASIC TAPE MECHANISM : OZM - 1

• TYPE. AH, AE, AK, AZ (PX510)
Y, YZ (PX310)

SPECIFICATIONS

HS-PX510

Maximum output

10mW + 10mW (EIAJ/32Ω)
15mW + 15mW (EIAJ/16Ω)

Power source

DC 3V
Dry cell battery: LR-03 (UM-4, AAA, R03 x 2)
Rechargeable battery: PB-4
Household AC power (using AC adaptor)

Battery life (EIAJ, playback 1 mW, using PB-4)

Approx. 2 hours [10 minutes (H model is 15 minutes) recharging]
Approx. 4 hours (60 minutes recharging)

Dimensions

108.5 (W) x 81.6 (H) x 25.7 (D) mm
(4 3/8 x 3 1/4 x 1 1/16 in.)
incl. projecting parts and controls

Weight

Approx. 215 g (7.5 oz)
incl. rechargeable battery

< AC adaptor >

Rated voltage:

AC-207H AC 115V/230V, switchable
AC-207U,C AC 120V
AC-207E,Z AC 220V
AC-207K AC 240V

Rated output

DC 2V 350mA

HS-PX310

Maximum output

10mW + 10mW (EIAJ/32Ω)
15mW + 15mW (EIAJ/16Ω)

Power source

DC 3V
Dry cell battery: LR-03 (UM-4, AAA, R03 x 2)
Rechargeable battery: PB-4
Household AC power (using AC adaptor)

Weight


Approx. 198 g (6.9 oz)

Battery life

Alkaline batteries (AAA, LR03 x 2)
Approx. 8 hours (EIAJ, PB 1mW output)
Manganese batteries (UM-4, AAA, R03 x 2)
Approx. 4 hours (EIAJ, PB 1mW output)
Rechargeable battery (PB-4)
Approx. 2 hours [EIAJ, PB 1mW/10 minutes (H model is 15 minutes) recharging]
Approx. 4 hours (EIAJ, PB 1mW/60 minutes recharging)

Dimensions

108.5(W) x 81.6(H) x 25.7(D) mm
(4 3/8 x 3 1/4 x 1 1/16 in.)
incl. projecting parts and controls

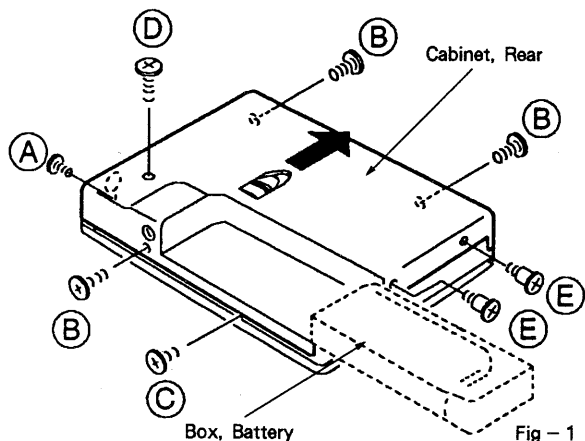
- Design and specifications are subject to change without notice.
- Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
"DOLBY" and the double-D symbol  are trademarks of Dolby Laboratories Licensing Corporation.

DISASSEMBLY INSTRUCTIONS

1. "Box, Battery and Cabinet, Rear" Removal

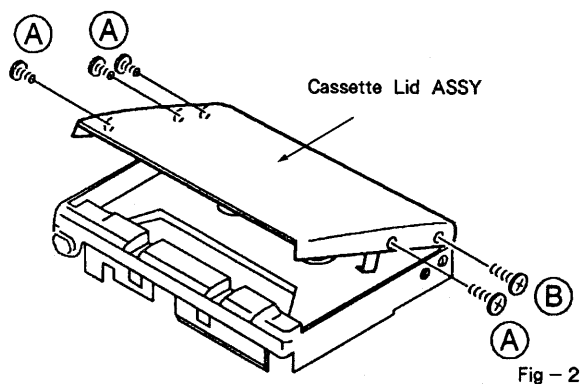
(See Figure - 1)

- 1) Remove the "Box, Battery" in the direction of arrow.
- 2) Remove 8 screws (A×1, B×3, C×1, D×1, E×2) and remove the "Cabinet, Rear".



1-1. "Cassette Lid ASSY" Removal (See Figure - 2)

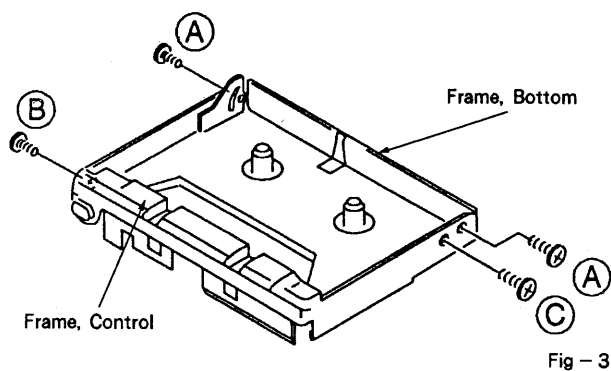
- 1) Remove 5 screws (A×4, B×1) and take out the "Cassette Lid ASSY".



2. "Frame, Control and Frame, Bottom" Removal

(See Figure - 3)

- 1) Remove 4 screws (A×2, B×1, C×1).



2-1. "Frame, Control and Frame, Bottom" Removal

(See Figure - 4)

- 1) Remove the "Frame, Bottom" in the direction of the arrow ①.
- 2) Remove the "Frame, Control" in the direction of the arrow ②.

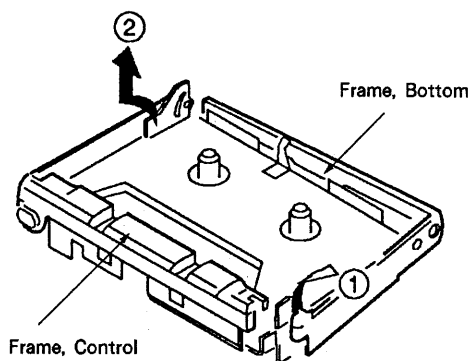


Fig - 4

3. "Main C.B" Removal (See Figure - 5)

- 1) Remove 4 screws (A×1, B×3) unsolder the soldered points and remove the "Main C.B"

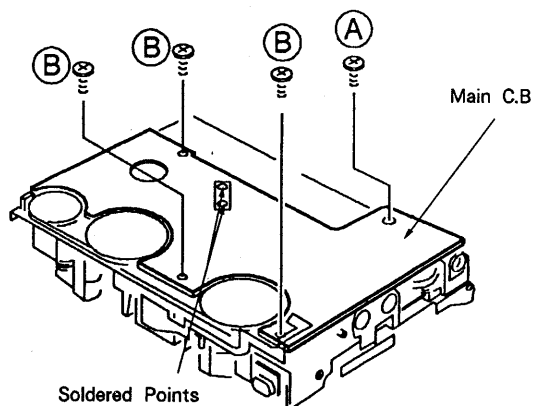


Fig - 5

4. Caution When Servicing

The operation check with the "Main Circuit Board" removed cannot be performed because the rotary switch of the "Cam, Main" is separated from the mechanism. Use the following JIG (OZM-1 CHECK KIT) to perform operation check while the "Main Circuit Board".

① How to assemble the JIG (See Figure - 6)

1) Assemble the JIG as shown in the figure.

OZM-1 JIG PARTS NO

PARTS NO	DISCRIPTION
09-021-052-010	OZM-1 CHECK KIT

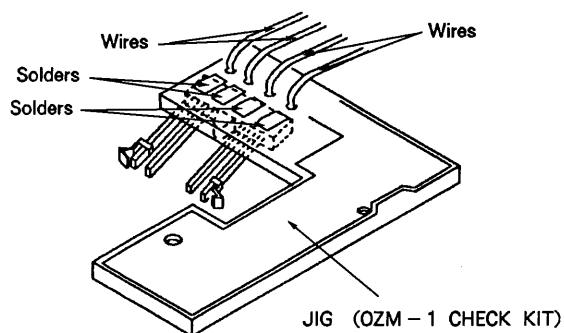


Fig - 6

② How to attach the JIG (See Figure - 7)

1) Tighten the JIG with screw.

Caution : Be careful that the "Cam, Main" and "Arm, Motor SW" do not ride over the switch when attaching the JIG.

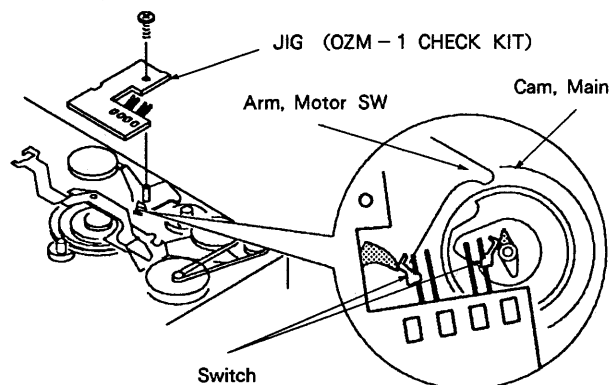


Fig - 7

2) Connect the JIG and MD Plunger to the "Main Circuit Board" using the wires as shown in the figure. (See Figure - 8)

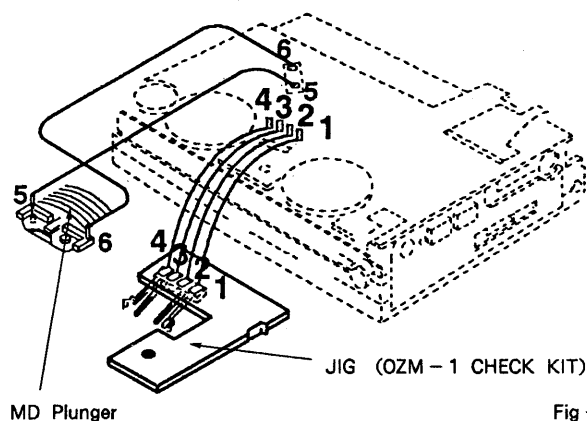


Fig - 8

ELECTRICAL MAIN PARTS LIST

REF. NO. PART NO. DESCRIPTION

===IC===

87-001-351-019 IC, AN6612S
87-001-875-019 IC, BA1106FS
87-001-876-019 IC, BA3513AFS

===TRANSISTOR===

89-112-134-019 TRANSISTOR, 2SA1213Y
89-341-165-019 TRANSISTOR, 2SC4116GR
87-026-472-010 TRANSISTOR, HN1A01F(Y)
87-026-467-019 TRANSISTOR, HN1C01F(GR)

87-026-470-019 TRANSISTOR, HN1C03 FB
87-026-417-019 TRANSISTOR, RN1310
87-026-428-019 TRANSISTOR, RN2310
87-026-480-010 TRANSISTOR, RN4605

87-026-481-010 TRANSISTOR, RN4607
87-026-482-019 TRANSISTOR, RN4610

===DIODE===

87-001-166-019 DIODE, CHIP 1SS301
87-001-167-019 DIODE, CHIP 1SS302

===MAIN CIRCUIT BOARD SECTION===

C301 ★87-012-271-019 CAP, CHIP SS 560P-50 B
C302 ★87-012-271-019 CAP, CHIP SS 560P-50 B
C303 ★87-012-271-019 CAP, CHIP SS 560P-50 B
C304 ★87-012-271-019 CAP, CHIP SS 560P-50 B

C305 ★87-010-673-019 CAP, CHIP ELECT 100-2
C306 ★87-010-673-019 CAP, CHIP ELECT 100-2
C307 ★87-010-786-019 CAP, CHIP SS 0.018-25
C308 ★87-010-786-019 CAP, CHIP SS 0.018-25

C309 ★87-012-286-019 CAP, CHIP SS 0.01-25 B(PX310)
C309 ★87-016-114-019 CAP, CHIP SS 0.01-25 BJ(PX310)
C310 ★87-012-286-019 CAP, CHIP SS 0.01-25 B(PX310)
C310 ★87-016-114-019 CAP, CHIP SS 0.01-25 BJ(PX310)

C311 ★87-010-805-019 CAP, CHIP S 1-16F
C312 ★87-010-805-019 CAP, CHIP S 1-16F
C313 ★87-012-270-019 CAP, CHIP SS 470P-50 B
C314 ★87-012-270-019 CAP, CHIP SS 470P-50 B

C315 ★87-010-805-019 CAP, CHIP S 1-16F
C316 ★87-010-805-019 CAP, CHIP S 1-16F
C317 ★87-010-674-019 CAP, CHIP ELECT 220-2 MV
C318 ★87-010-674-019 CAP, CHIP ELECT 220-2 MV

C319 ★87-012-282-019 CAP, CHIP SS 4700P-50
C320 ★87-012-282-019 CAP, CHIP SS 4700P-50
C321 ★87-010-828-019 CAP, CHIP SS 0.033-16
C322 ★87-010-828-019 CAP, CHIP SS 0.033-16

C323 ★87-012-286-019 CAP, CHIP SS 0.01-25 B
C324 ★87-012-286-019 CAP, CHIP SS 0.01-25 B
C325 ★87-010-828-019 CAP, CHIP SS 0.033-16
C326 ★87-010-828-019 CAP, CHIP SS 0.033-16

C327 ★87-010-831-019 CAP, CHIP SS 0.1-16F
C328 ★87-010-831-019 CAP, CHIP SS 0.1-16F
C329 ★87-010-805-019 CAP, CHIP S 1-16F
C330 ★87-010-805-019 CAP, CHIP S 1-16F

C331 ★87-010-805-019 CAP, CHIP S 1-16F
C332 ★87-010-805-019 CAP, CHIP S 1-16F
C333 ★87-010-829-019 CAP, CHIP SS 0.047-16F
C334 ★87-010-829-019 CAP, CHIP SS 0.047-16F

C335 ★87-010-829-019 CAP, CHIP SS 0.047-16F
C336 ★87-010-829-019 CAP, CHIP SS 0.047-16F
C337 ★87-012-270-019 CAP, CHIP SS 470P-50 B
C338 ★87-012-270-019 CAP, CHIP SS 470P-50 B

C339 ★87-010-787-019 CAP, CHIP SS 0.022-25B
C340 ★87-010-787-019 CAP, CHIP SS 0.022-25B
C341 ★87-010-805-019 CAP, CHIP S 1-16F
C342 ★87-010-805-019 CAP, CHIP S 1-16F

C401 ★87-010-673-019 CAP, CHIP ELECT 100-2

REF. NO. PART NO. DESCRIPTION

C402 ★87-010-668-019 CAP, CHIP ELECT 220-4 MV
C403 ★87-010-668-019 CAP, CHIP ELECT 220-4 MV
C405 ★87-010-082-019 CAP, ELECT 220-4 5L
C406 ★87-010-640-019 CAP, CHIP TANTALUM 22-4

C407 ★87-010-082-019 CAP, ELECT 220-4 5L
C408 ★87-010-805-019 CAP, CHIP S 1-16F
C409 ★87-010-805-019 CAP, CHIP S 1-16F
C410 ★87-010-424-019 CAP, CHIP TANTALUM 4.7-4

C411 ★87-010-746-019 CAP, CHIP TANTALUM 10-4
C412 ★87-010-746-019 CAP, CHIP TANTALUM 10-4
C413 ★87-010-196-019 CAP, CHIP S 0.1-25 F
C414 ★87-010-196-019 CAP, CHIP S 0.1-25 F

C415 ★87-015-933-019 CAP, CHIP TANTALUM 1-10
C416 ★87-015-934-019 CAP, CHIP TANTALUM 2.2-4
J1 87-049-549-019 JACK, DC(DC 2V)
LED1 87-001-573-019 LED, SLC22 VR(OPE/BATT)

R351 87-022-281-019 RES, CHIP 680 F(PX310)
R352 87-022-281-019 RES, CHIP 680 F(PX310)
R428 87-022-042-019 RES, CHIP M/F 0.51-1/8W
R429 87-022-043-019 RES, CHIP M/F 8.2K-1/8W

R439 87-022-229-019 RES, CHIP 3.9K F(PX310)
R440 87-022-229-019 RES, CHIP 3.9K F(PX310)
SFR301 ★87-024-076-019 SFR, 1K
SOL1 87-045-310-010 SOLENOID(PLAY)

SW1 87-036-201-019 SLIDE SW(FWD/REV)
SW2 87-036-123-019 SLIDE SW(TAPE)
SW3 87-036-123-019 SLIDE SW(DOLBY NR)
SW4 87-036-123-019 SLIDE SW(DSL)

SW5 87-036-145-019 SLIDE SW(REMOTE)
SW6 87-036-073-019 TACT SW(STOP)
SW7 87-036-073-019 TACT SW(PLAY/DIR)
SW8 87-036-199-010 LEAF SW(POWER) (LATCH)

SW9 87-036-144-019 PUSH SW(CASSETTE)
SW10 87-036-203-019 SLIDE SW(FF/REW)
SW11 87-036-083-019 PUSH SW(HP SW)
VR1 87-024-361-019 VR, 20KX2(VOLUME)

===HEAD FLEX. CIRCUIT BOARD SECTION===

PH 87-046-381-010 HEAD ASSY(W/PCB-C)

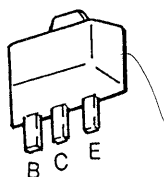
===JACK FLEX. CIRCUIT BOARD SECTION===

J2 87-009-218-019 JACK, 3.5 BK(PHONES)
PCB-D ★80-HK4-604-010 FLEXIBLE CIRCUIT BOARD 4P

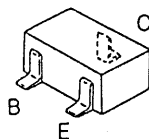
===MISCELLANEOUS===

M1 87-045-309-010 MOTOR ASSY
TM1 ★82-HR4-204-010 BATTERY CONTACT

TRANSISTOR ILLUSTRATION



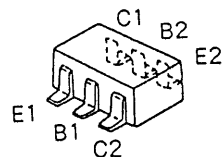
2SA1213



2SC4116

RN1310

RN2310



HN1A01F

HN1C01F

HN1C03FB

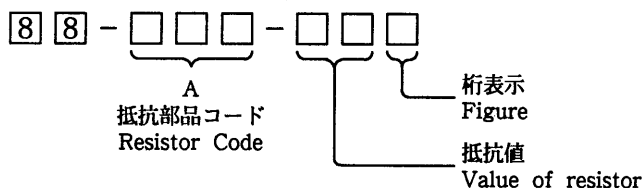
RN4605

RN4607

RN4610

○ チップ抵抗部品コード／CHIP RESISTOR PART CODE

チップ抵抗部品コードの成り立ち
Chip Resistor Part Coding



チップ抵抗
Chip resistor

Wattage 容量	Type 種類	Tolerance 許容誤差	Symbol 記号	Dimensions/寸法 (mm)				Resistor Code : A 抵抗コード : A
				Form/外形	L	W	t	
1/32W	1608	± 5 %	CJ		1.6	0.8	0.35	108
1/10W	2125	± 5 %	CJ		2	1.25	1.45	118
1/8W	3126	± 5 %	CJ		3.2	1.6	0.5 ~ 0.7	128

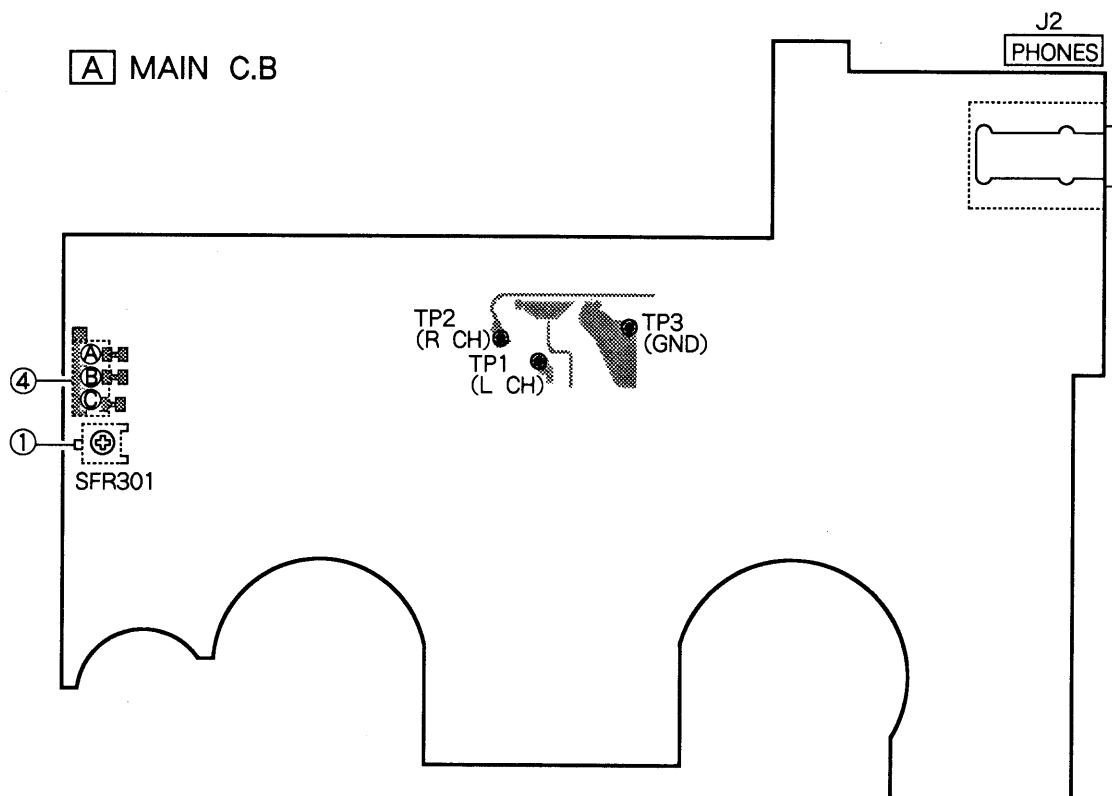
■ ACCESSORIES/PACKAGE LIST HS - PX510

PART NO. CHANGED TO	REF. NO.	PART NO.	DESCRIPTION	COMMON MODEL	Q.TY
	1	★82-HK5-901-019	INSTRUCTION BOOKLET. EX	※	1
	2	★82-HKB-951-019	CARRYING CASE (AHJ1.AZ1)		1
	3	★87-042-094-119	AC - 207HA (AHJ1.AZ1)		1
	4	★87-042-095-119	AC - 207EA (AE1.AE.AZ1)		1
	5	★87-042-096-119	AC - 207KA (AK1)		1
	6	★87-047-116-010	PB - 4 NA Y		1
	7	★87-048-229-019	HP - MR30 (AE)		1
	8	★87-048-242-019	HP - R36NA (AHJ1.AK1.AE1.AZ1)		1

■ ACCESSORIES/PACKAGE LIST HS - PX310

PART NO. CHANGED TO	REF. NO.	PART NO.	DESCRIPTION	COMMON MODEL	Q.TY
	1	★82-HKB-901-019	INSTRUCTION BOOKLET. Y	※	1
	2	★82-HKB-951-019	CARRYING CASE (YJ1.YZ1)		1
	3	★87-048-230-019	HP - A270 A (YB)		1
	4	★87-048-238-019	HP - 23NA (Y1.YJ1.YZ1)		1

ADJUSTMENT



< TAPE PLAYER SECTION >

PRACTICAL SERVICE FIGURE

1. Tape Speed Adjustment

- Settings : • Test tape : TTA-100
 • Test point : PHONES JACK
 • Adjustment location : SFR301

Method : Play back the test tape, adjust for $3000 \pm 10\text{Hz}$, -5Hz at FWD and less than 45Hz at REV.

Tape speed : $3000 \pm 30\text{Hz}$

Wow & flutter : Less than 0.45% (JIS)

Take-up torque : $20\text{g-cm} \sim 37\text{g-cm}$ (FWD, REV)

F.F & Rew torque : $110 \pm 40\text{g-cm}$

Back tension : $3 \pm 1.5\text{g-cm}$ (FWD, REV)

S/N ratio : More than 45dB

Distortion : Less than 3.0%

Noise level : Less than 3.0mV (VOL MAX)

Frequency response : $63\text{Hz} \sim 8\text{kHz} \pm 5.0\text{dB}$ (NORMAL)

2. Dolby Level Check

- Settings : • Test tape : TTA-200
 • Test point : TP1 (L ch), TP2 (R ch), TP3 (GND)
 • DOLBY SW : OFF
 • TAPE SELECTOR : NORM
 • DIRECTION : FWD
 • VOLUME : MIN "0"

Method : Connect at electrolytic capacitor ($10\mu\text{F}/16\text{V}$) to measured equipment and TP1 (2), check the voltage for $100\text{mV} + 1.5\text{dB}$, -0.5dB .

3. Azimuth Adjustment

- Settings : • Test tape : TTA-320
 • Test point : PHONES JACK
 • Adjustment location : Azimuth adjustment screw

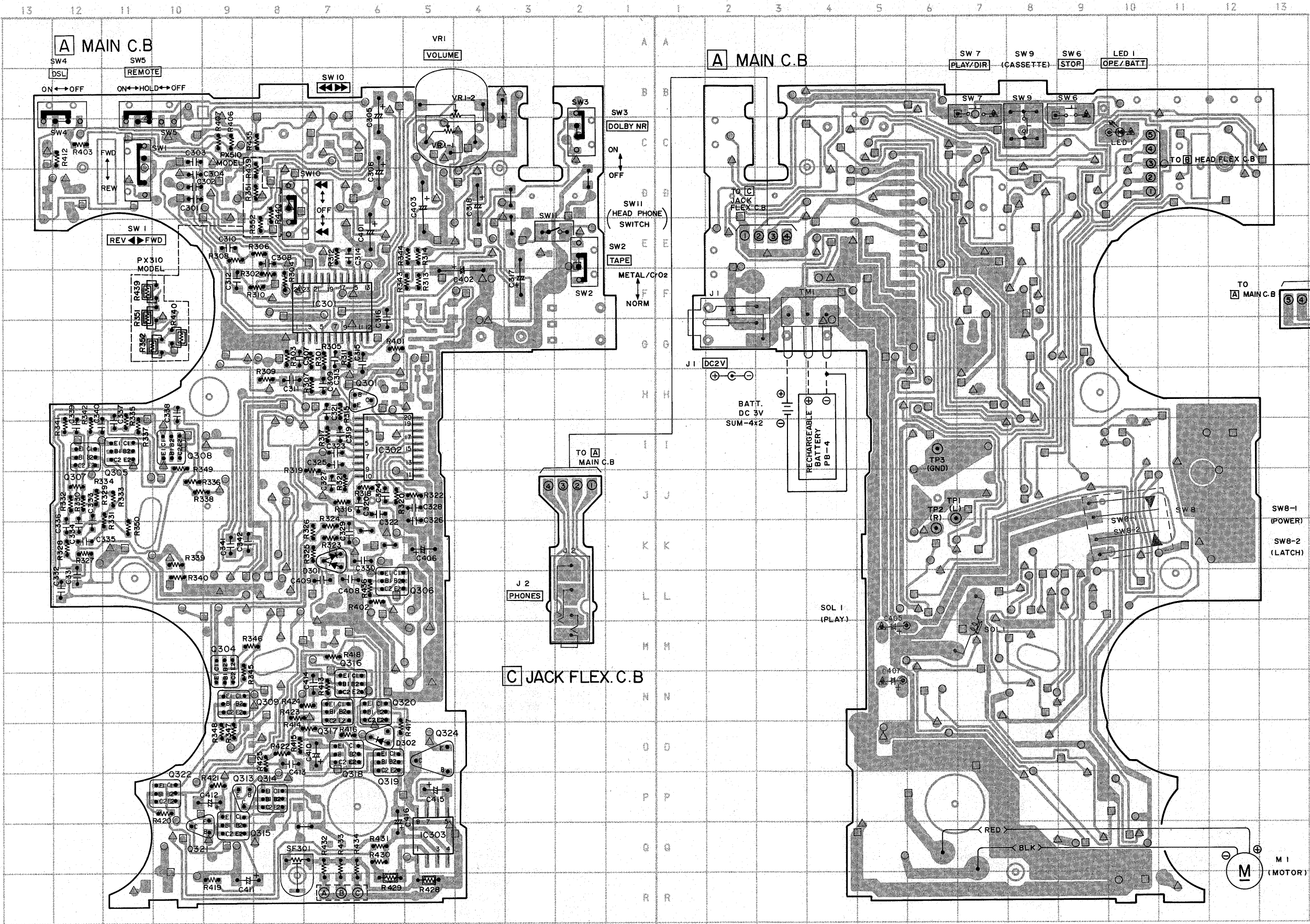
Method : Play the 8kHz signal of the test tape and adjust so the output is maximum and the waveforms in the Lissajours' figure are in phase.

4. Motor load Adjustment

Refer to the REF No. SI-88-037-OP of service technical information.

7

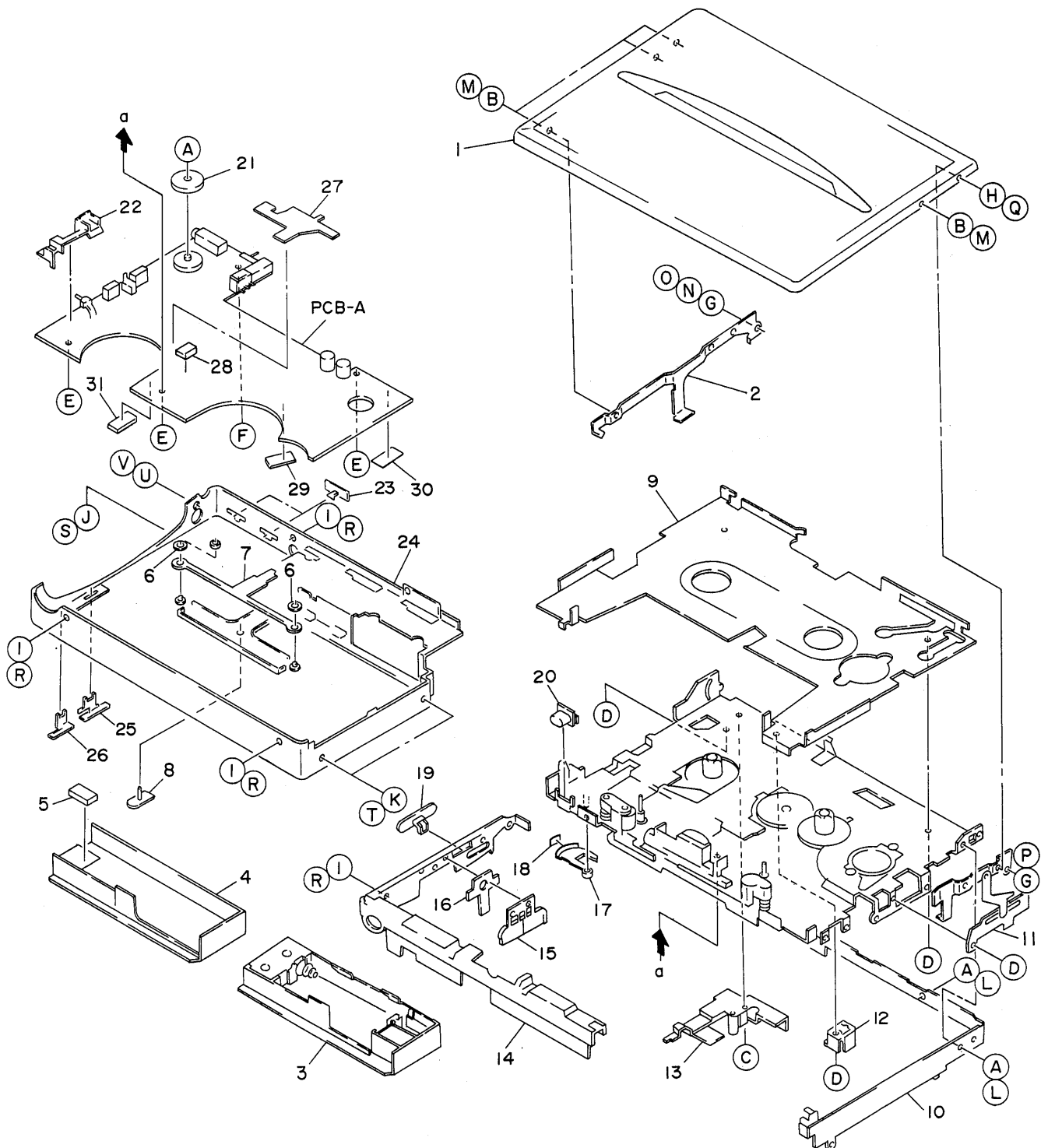




B HEAD FLEX C.B.

EXPLODED VIEW – 1

REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION
A	87-067-511-019	S-SCREW +1.4-2 (B)	I	87-067-359-019	S-SCREW +1.4-2.5 (B)	Q	87-067-592-019	Q+1.4-2
B	87-067-753-019	V+1.4-1.6 (B)	J	87-067-405-019	VT(C)1.4-6 HL	R	87-067-429-019	S-SCREW +1.4-2.5
C	87-232-508-319	Q +1.4-3.5 (B)	K	87-067-595-019	SCREW HINGE M1.4 (B)	S	87-067-949-019	VT(C)1.4-6
D	87-261-501-319	V+1.4-1.6	L	87-067-950-019	S-SCREW+1.4-2	T	87-067-594-019	S-SCREW HM 1.4
E	87-067-732-019	VT 1.4-3 HL	M	87-067-754-019	V+1.4-1.6	U	87-067-384-019	VT1.4-3.5 HL
F	87-067-437-019	S-SCREW M1.4-2	N	82-690-231-019	PANEL SCREW M1.4-2.6 (B)	V	87-067-535-019	VT1.4-3.5
G	87-067-738-019	S-SCREW HINGE 1.4-1 (B)	O	82-690-224-019	PANEL SCREW M1.4-2.6			
H	87-067-593-019	Q+1.4-2 (B)	P	87-067-739-019	S-SCREW HINGE 1.4-1			

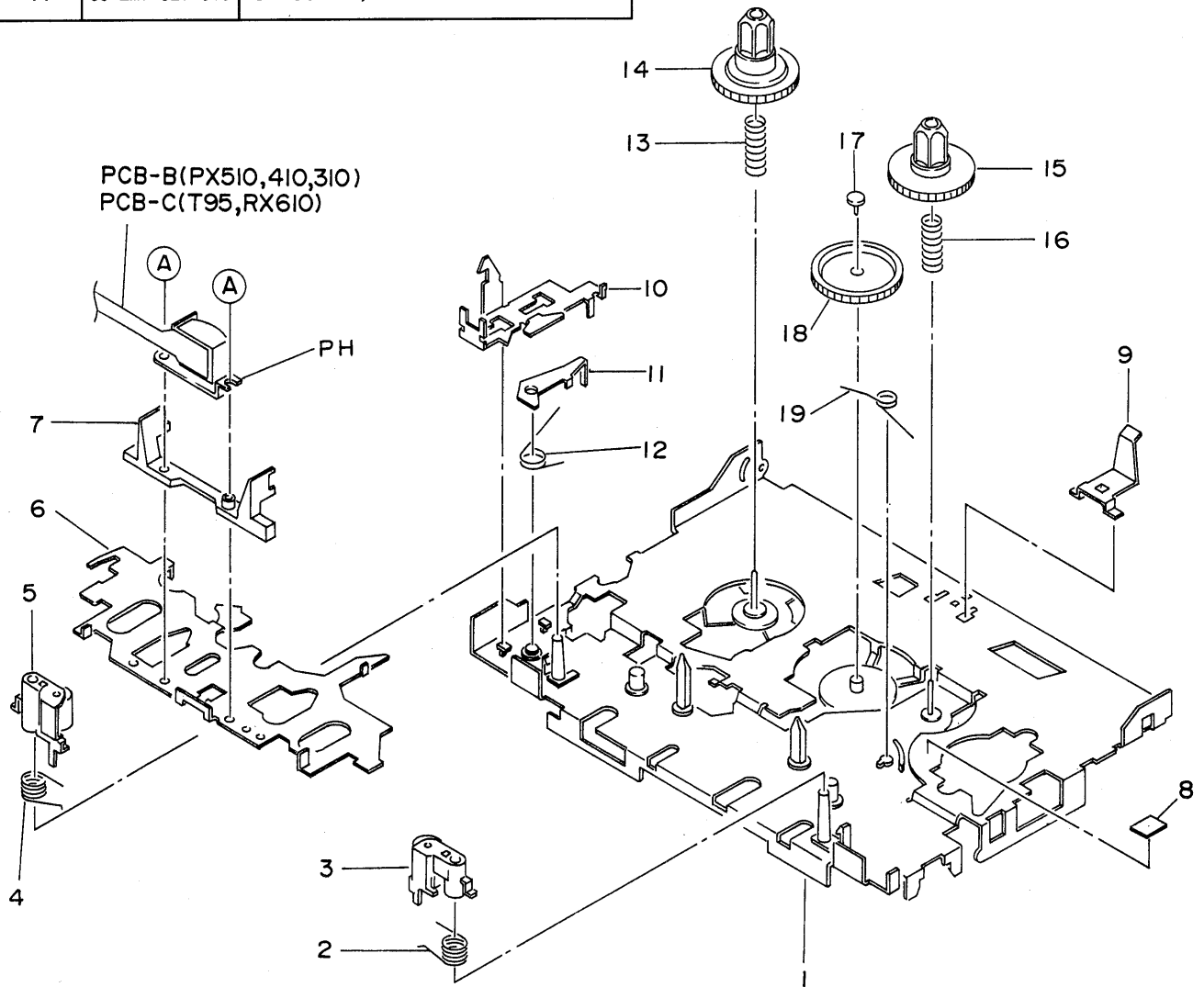


MECHANICAL PARTS LIST

PART NO. CHANGED TO	REF. NO.	PART NO.	DESCRIPTION	COMMON MODEL	Q'TY
	1-1	★09-027-981-010	CASSETTE LID ASSY (B) (PX510)	※	1
	1-1	★09-027-980-010	CASSETTE LID ASSY (B) (PX310)	※	1
	1-1	★09-027-993-010	CASSETTE LID ASSY (G) (PX310)	※	1
	1-1	★09-027-992-010	CASSETTE LID ASSY (ST) (PX310)	※	1
	1-2	★82-HKB-201-019	HOLDER, CASSETTE R	※	1
	1-3	★09-027-979-010	BATTERY BOX ASSY (B)	※	1
	1-3	★09-027-994-010	BATTERY BOX ASSY (G)	※	1
	1-3	★09-027-995-010	BATTERY BOX ASSY (ST)	※	1
	1-4	★82-HKB-007-119	BOX, BATTERY (B)	※	1
	1-4	★82-HKB-020-019	BOX, BATTERY (G)	※	1
	1-4	★82-HR4-035-019	BOX, BATTERY (ST)	※	1
	1-5	★82-HR4-218-119	CUSHION, S BATTERY		1
	1-6	★82-HR4-215-019	SHEET, DIA 2.4 - 6 - 0.3		2
	1-7	★82-HR4-211-119	LEVER, LOCK		1
	1-8	★82-HR4-018-019	KNOB, SLIDE BOX (B)		1
	1-8	★82-HKB-010-019	KNOB, SLIDE BOX (G)	※	1
	1-8	★82-HR4-051-019	KNOB, SLIDE BOX (ST)		1
	1-9	★82-HR4-209-019	HOLDER, CHASSIS		1
	1-10	★82-HR4-004-119	FRAME BOTTOM (B)		1
	1-10	★82-HR4-034-019	FRAME BOTTOM (G, ST)		1
	1-11	★82-HKB-204-010	SLIDE ARM ASSY	※	1
	1-12	★82-HR4-203-019	HOLDER, JACK DC		1
	1-13	★82-HR4-202-119	HOLDER, JACK HP		1
	1-14	★82-HR4-003-119	FRAME, CONTROL (B)		1
	1-14	★82-HR4-033-119	FRAME, CONTROL (G, ST)		1
	1-15	★82-HR4-010-019	KEY, CONTROL (B)		1
	1-15	★82-HR4-058-019	KEY, CONTROL (G, ST)		1
	1-16	★82-HR4-214-019	SHEET, KEY		1
	1-17	★80-HK4-213-110	ARM, DR MONITOR		1
	1-18	★80-HK4-234-019	SHEET, DIRECTION		1
	1-19	★82-HR4-011-119	KNOB, SLIDE FR (B)		1
	1-19	★82-HR4-059-019	KNOB, SLIDE FR (G, ST)		1
	1-20	★82-HR4-012-019	BUTTON, EJECT (B)		1
	1-20	★82-HR4-060-019	BUTTON, EJECT (G, ST)		1
	1-21	★84-438-009-210	KNOB, VOLUME (B)		1
	1-21	★84-438-027-210	KNOB, VOLUME (G, ST)		1
	1-22	★82-HR4-210-010	HOLDER, LED		1
	1-23	★82-HR4-007-010	KNOB, SLIDE TAPE (B)		2
	1-23	★82-HR4-055-019	KNOB, SLIDE TAPE (G, ST)		2
	1-24	★82-HK5-001-010	CABINET, REAR (B) (PX510 H)	※	1
	1-24	★82-HK5-003-010	CABINET, REAR (B) (PX510 EXCEPT H)	※	1
	1-24	★82-HKB-004-119	CABINET, REAR (B) (PX310 EXCEPT YJ1)	※	1
	1-24	★82-HKB-005-119	CABINET, REAR (B) (PX310 YJ1)	※	1
	1-24	★82-HKB-018-019	CABINET, REAR (G) (PX310)	※	1
	1-24	★82-HKB-009-019	CABINET, REAR (ST) (PX310)	※	1
	1-25	★82-HR4-009-119	KNOB, SLIDE RMT (B)		1
	1-25	★82-HR4-057-019	KNOB, SLIDE RMT (G, ST)		1
	1-26	★82-HR4-008-119	KNOB, SLIDE DSL (B)		1
	1-26	★82-HR4-056-019	KNOB, SLIDE DSL (G, ST)		1
	1-27	★82-HR4-216-019	SHEET, AF		1
	1-28	★82-HR4-597-019	CLOTH 6 - 8		1
	1-29	★82-HK9-213-019	CLOTH 15 - 10		1
	1-30	★82-HR4-217-019	SHEET 15 - 10		1
	1-31	★82-HR4-222-019	CUSHION, S 12 - 5 - 2		1
		★09-027-975-010	APPEARANCE SCREW KIT (B, G)	※	1
		★09-028-008-010	APPEARANCE SCREW KIT (ST)	※	1

EXPLODED VIEW - 2

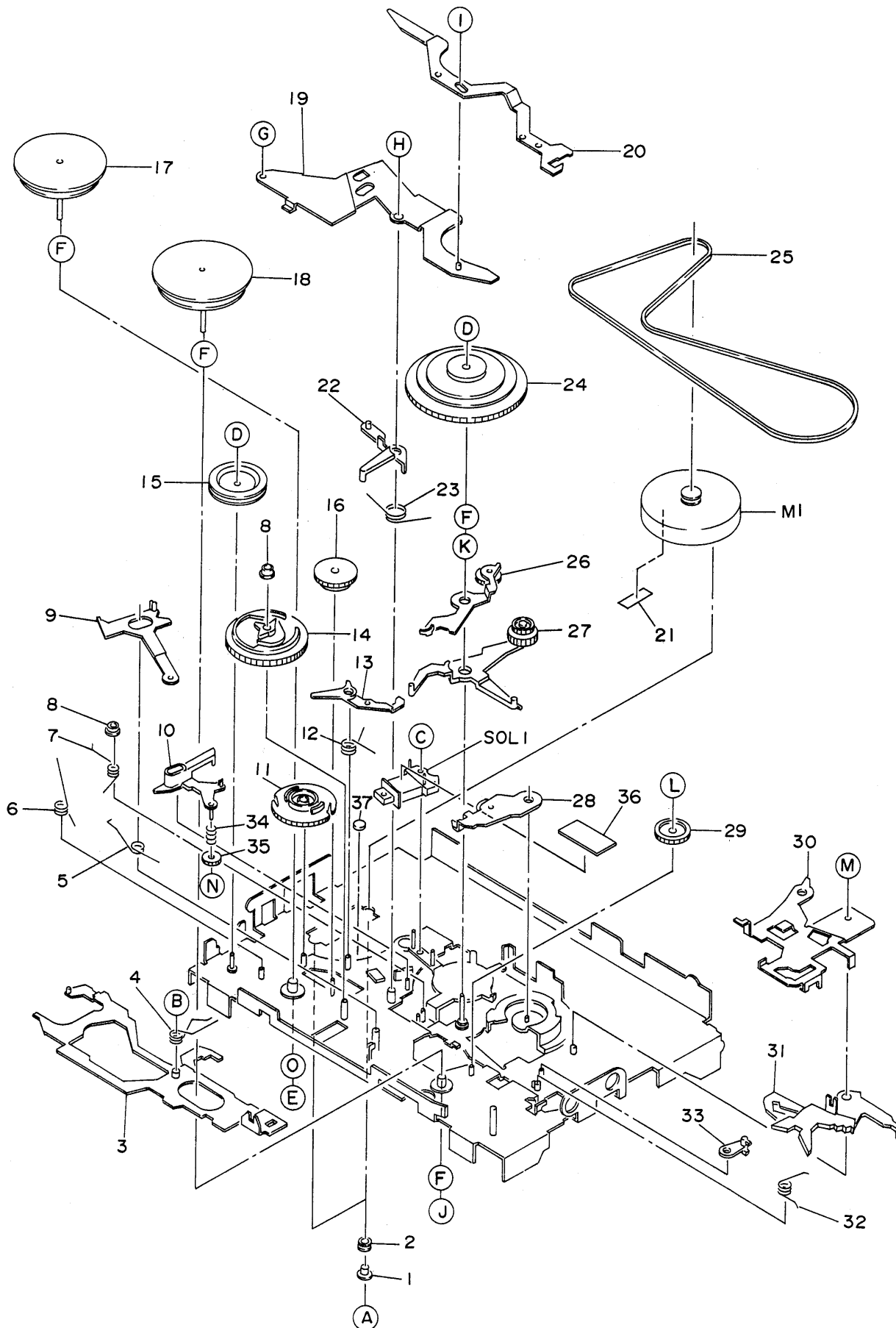
REF. NO.	PART NO.	DESCRIPTION
A	80-ZM1-327-010	S - SCREW, 1.4 - 5.5



PART NO. CHANGED TO	REF. NO.	PART NO.	DESCRIPTION	COMMON MODEL	Q'TY
	2-1	★80-ZM1-316-110	OUT - SERT ASSY		1
	2-2	★80-ZM1-329-010	T - SPRING, PINCH F		1
	2-3	★80-ZM1-221-110	LEVER PINCH F ASSY		1
	2-4	★80-ZM1-330-010	T - SPRING, PINCH R		1
	2-5	★80-ZM1-227-110	LEVER PINCH R ASSY		1
	2-6	★80-ZM1-319-010	CHASSIS SLIDE ASSY		1
	2-7	★80-ZM1-321-010	GUIDE, TAPE		1
	2-8	★87-067-790-010	SHEET 3 - 3 - 0.2		1
	2-9	★84-530-213-010	P - SPRING, PUSH A		1
	2-10	★80-ZM1-251-010	PLATE, EJECT		1
	2-11	★80-ZM1-252-010	LEVER, CONNECT		1
	2-12	★80-ZM1-287-010	T - SPRING, LOCK OFF		1
	2-13	★80-ZM1-283-010	C - SPRING, REVERSE REEL		1
	2-14	★80-ZM1-260-110	REEL, TABLE R		1
	2-15	★80-ZM1-259-010	REEL, TABLE F		1
	2-16	★80-ZM1-284-110	C - SPRING, FORWARD REEL		1
	2-17	---	CAP, CONNECT		1
	2-18	★80-ZM1-258-010	GEAR, CONNECT		1
	2-19	★80-ZM1-276-010	T - SPRING, PLAY		1

EXPLODED VIEW – 3

REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION
A	87-237-525-310	Q+1. 7-2. 5	F	80-ZM1-308-010	SHEET 1. 85-3. 45-0. 05	K	87-067-136-010	STE 1. 3-3. 7-0. 25
B	87-067-742-010	PW 2. 13-3. 5-0. 25(SLT)	G	87-232-508-310	Q+1. 4-3. 5(3)	L	87-067-516-010	PW 3-1. 58-0. 25(SLT)
C	87-067-246-010	V+1. 4-3. 7	H	87-268-505-310	V+1. 4-2. 5	M	80-ZM1-294-010	SPECIAL SCREW M1. 7-3-0. 2
D	87-544-440-010	PW 1. 2-4-0. 25(SLT)	I	87-067-895-010	PW 1. 5-4-0. 2 SLT	N	87-067-367-010	PW 0. 95-2. 6-0. 25C
E	87-067-788-010	SHEET 1. 15-3. 5-0. 3(CUT)	J	87-067-741-010	SHEET 1. 37-3-0. 5(CUT)	O	87-067-789-010	PW 1. 6-3. 45-0. 25



PART NO. CHANGED TO	REF. NO.	PART NO.	DESCRIPTION	COMMON MODEL	Q'TY
	3-1	★86-541-449-010	COLLAR, MOTOR B		2
	3-2	★86-511-445-010	G CUSHION, MOTOR		2
	3-3	★80-ZM1-244-110	LEVER DIRECTION ASSY		1
	3-4	★80-ZM1-282-310	T - SPRING, TAKE - UP		1
	3-5	★80-ZM1-273-010	T - SPRING, MAIN CAM		1
	3-6	★80-ZM1-275-010	T - SPRING, DIRECTION		1
	3-7	★80-ZM1-274-010	T - SPRING, AUTO		1
	3-8	---	COLLAR, PWB P		2
	3-9	★80-ZM1-263-110	ARM, MOTOR SW		1
	3-10	★80-ZM1-239-110	ARM, AUTO		1
	3-11	★80-ZM1-255-010	CAM, DIRECTION		1
	3-12	★80-ZM1-277-110	T - SPRING, CHANNEL LOCK		1
	3-13	★80-ZM1-261-110	ARM, DIRECTION LOCK		1
	3-14	★80-ZM1-253-010	CAM, MAIN		1
	3-15	★86-541-235-110	PULLEY, RELAY B		1
	3-16	★80-ZM1-257-010	GEAR, B		1
	3-17	80-ZM1-214-110	FLYWHEEL F ASSY		1
	3-18	80-ZM1-218-010	FLYWHEEL R ASSY		1
	3-19	★80-ZM1-265-210	PLATE HOLDER ASSY		1
	3-20	★80-ZM1-270-310	LEVER, LOCK OFF		1
	3-21	★80-ZM1-296-010	SHEET, MOTOR 16 - 5		1
	3-22	★80-ZM1-266-010	ARM, LOCK MD		1
	3-23	★80-ZM1-278-010	T - SPRING, PLUNGER ARM		1
	3-24	★80-ZM1-209-410	GEAR MAIN ASSY		1
	3-25	80-ZM1-291-010	BELT, SQ 72.9		1
	3-26	★80-ZM1-230-210	ARM TAKE - UP F ASSY		1
	3-27	★80-ZM1-241-110	ARM FF REW ASSY		1
	3-28	★80-ZM1-234-010	ARM TAKE - UP R ASSY		1
	3-29	★80-ZM1-256-110	GEAR, A		1
	3-30	★80-ZM1-269-110	PLATE, HOLDER LEFT		1
	3-31	★80-ZM1-264-310	LEVER, FF REW		1
	3-32	★80-ZM1-281-010	T - SPRING, FF REW		1
	3-33	★80-ZM1-262-010	LEVER, FR STOP		1
	3-34	★80-ZM1-272-010	C - SPRING, AUTO		1
	3-35	★80-ZM1-240-010	GEAR, AUTO		1
	3-36	★80-ZM1-306-010	SHEET 5 - 20 - 0.05		1
	3-37	★80-ZM1-309-010	G - CUSHION 3 - 0.5		1

SPRING APPLICATION POSITION

