

AIWA®

SERVICE MANUAL

HS-J202 HS-J202M HS-J800

STEREO RADIO CASSETTE RECORDER

• BASIC TAPE MECHANISM : α -1

• TYPE. H, U, C, E, K, Z

SPECIFICATIONS

Frequency range: FM: 87.5-108 (108.1) MHz
AM: 531 (530)-1,611 (1,610) kHz

Maximum output: 15mW+15mW (EIAJ/32 Ω)
[20mW+20mW (EIAJ/16 Ω)]

Power Source: Battery DC 2V, rechargeable lead battery (AIWA) $\times$ 1
Battery DC 3V, LR-03 (UM-4, AAA, R03) $\times$ 2
Domestic AC power (using AC adaptor)

Battery life: Rechargeable lead battery (AIWA)
Approx. 2 hours (EIAJ, PB 1mW/1 hour recharging)
Approx. 1.5 hours (EIAJ, REC/1 hour recharging)
Alkaline batteries (LR-03, AAA)
Approx. 4 hours (EIAJ, PB 1mW)

- Design and specifications are subject to change without notice.
- Noise reduction system manufactured under license from Dolby Laboratories Licensing Corporation.
- Dolby and the $\square$ symbol are trademarks of Dolby Laboratories Licensing Corporation.

AIWA Co., Ltd.

Tokyo Japan

Printed in Japan

DISASSEMBLY INSTRUCTIONS

1. Control Panel, Rear Cabinet and Center Frame Removal

- 1) Remove 3 screws (A) and take out the control panel.
- 2) Remove 3 screws (B) and take out the rear cabinet in the direction of arrow ①.
- 3) Remove 2 screws (C) and release ② hooks, then take out the center frame in the direction of arrow ②. (See Fig. 1)

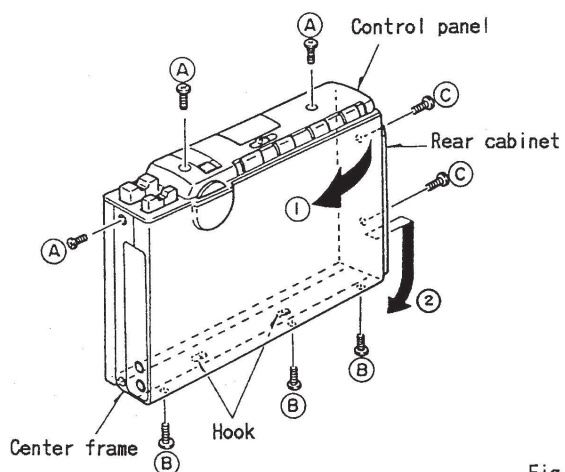


Fig. 1

2. Cassette Lid Removal

- 1) Remove 3 screws and release the cassette holder lock. (See Fig. 2)

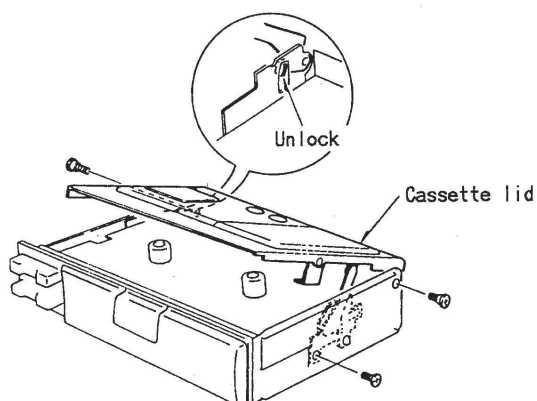


Fig. 2

3. Main Circuit Board Removal

- 1) Remove 2 screws. (See Fig. 3)

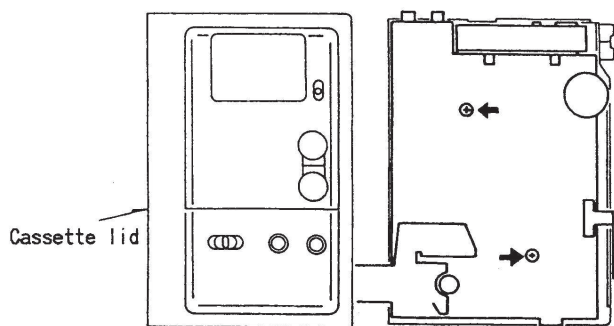


Fig. 3

4. Cassette Holder Removal

- 1) Remove 5 screws. (See Fig. 4)

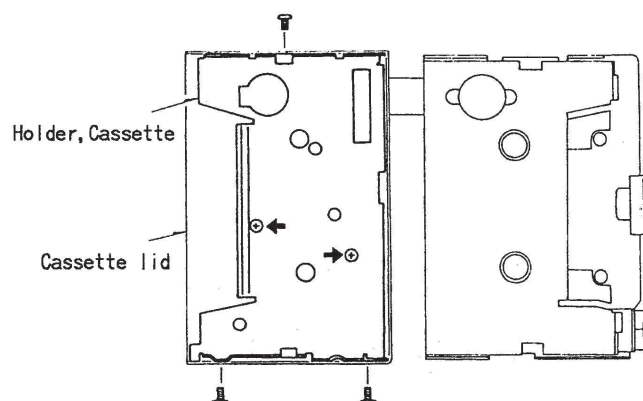


Fig. 4

5. Front Circuit Board Removal

- 1) Remove 2 screws. (See Fig. 5)

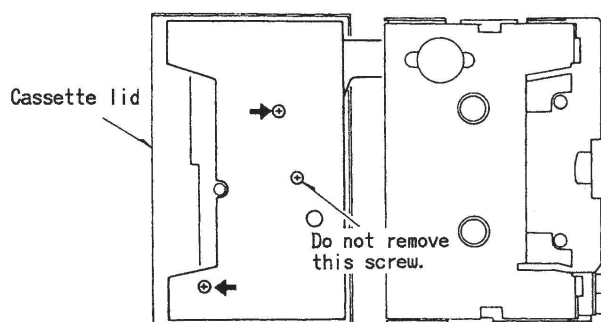


Fig. 5

6. PLAY Button Removal

- 1) Remove the control panel and rear cabinet.
- 2) Move the PLAY button in the direction of arrow A by 1.5mm to release the lock and pull it up in the direction of arrow B to remove it. (See Fig. 6)

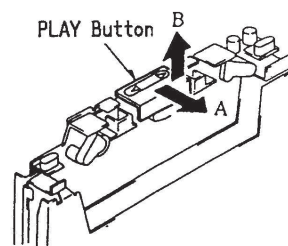


Fig. 6

ELECTRICAL MAIN PARTS LIST

REF.NO.	PART NO.	DESCRIPTION	REF.NO.	PART NO.	DESCRIPTION
=== IC ===			C25	★87-010-243-010	CAP,CHIP TANTALUM 10/4
	87-001-351-010	IC,AN6612S	C26	★87-012-195-010	CAP,CHIP SS 100P,CH,J
	87-001-147-010	IC,BA1102FS	C27	★87-012-286-010	CAP,CHIP S 0.01,B,K
	87-001-146-010	IC,BA1362FS	C28	★87-012-270-010	CAP,CHIP SS 470P, B,K
	87-001-148-010	IC,BA4230FS	C29	★87-010-198-010	CAP,CHIP 0.022
	87-001-373-010	IC,CXA1278N	C30	★87-010-243-010	CAP,CHIP TANTALUM 10/4
	87-001-189-010	IC,IR9393N	C31	★87-010-667-010	CAP,CHIP ELECT 100-4V,MV
	87-020-234-010	IC,TA7688F(S)	C32	★87-010-594-010	CAP,CHIP S 0.033-16VRK
	87-001-145-010	IC,TA8126F	C33	★87-012-270-010	CAP,CHIP SS 470P BK
	87-001-149-010	IC,TA8158F	C34	★87-012-197-010	CAP,CHIP SS 150P,CH
	87-001-152-010	IC,TC9308-009	C36	★87-012-274-010	CAP,CHIP SS 1000P,B,K
	87-001-151-010	IC,TD6134AF1	C37	★87-010-198-010	CAP,CHIP 0.022
=== TRANSISTOR ===			C38	★87-010-198-010	CAP,CHIP 0.022
	89-502-094-010	FET,2SK209Y	C39	★87-012-286-010	CAP,CHIP S 1000P,B,K
	89-508-824-010	FET,2SK882Y	C40	★87-010-187-010	CAP,CHIP SS 5600P
	89-508-805-010	FET,2SK880 GR	C41	★87-012-168-010	CAP,CHIP SS 6P.CH,D
	89-112-134-010	TRANSISTOR,2SA1213Y	C42	★87-012-198-010	CAP,CHIP SS 180P,CH,J
	89-115-864-010	TRANSISTOR,2SA1586Y	C43	★87-012-286-010	CAP,CHIP S 0.01,B,K
	89-115-884-010	TRANSISTOR,2SA1588Y	C44	★87-012-273-010	CAP,CHIP SS,820P,B,K
	89-341-165-010	TRANSISTOR,2SC4116GR	C45	★87-010-243-010	CAP,CHIP TANTALUM 10/4
	89-342-132-010	TRANSISTOR,2SC4213B	C46	★87-012-286-010	CAP,CHIP S 0.01,B,K
	89-342-153-010	TRANSISTOR,2SC4215 O	C47	★87-012-286-010	CAP,CHIP S 0.01,B,K
	87-026-356-010	TRANSISTOR,FMC1	C48	★87-012-286-010	CAP,CHIP S 0.01,B,K
	87-026-299-010	TRANSISTOR,FMG4	C49	★87-010-668-010	CAP,CHIP ELECT 220-4V,MV
	87-026-298-010	TRANSISTOR,FMW1	C50	★87-012-274-010	CAP,CHIP SS 1000P,B,K
	87-026-437-010	TRANSISTOR,IMB3	C51	★87-012-176-010	CAP,CHIP SS 15P,CH,J
	87-026-436-010	TRANSISTOR,IMB6	C52	★87-012-274-010	CAP,CHIP SS 1000P,B,K
	87-026-407-010	TRANSISTOR,IMX2	C53	★87-012-286-010	CAP,CHIP S 0.01,B,K
	87-026-417-010	TRANSISTOR,RN1310	C54	★87-010-191-010	CAP,CHIP S 0.015(U,C ONLY)
	87-026-429-010	TRANSISTOR,RN2311	C54	★87-012-286-010	CAP,CHIP S 0.01,B,K(EXCEPT U,C)
			C55	★87-010-191-010	CAP,CHIP S 0.015(U,C ONLY)
			C55	★87-012-286-010	CAP,CHIP S 0.01,B,K(EXCEPT U,C)
=== DIODE ===			C56	★87-012-140-010	CAP,CHIP S 470P CH
	87-001-142-010	DIODE CHIP 1SS294	C57	★87-012-140-010	CAP,CHIP S 470P CH
	87-001-165-010	DIODE CHIP 1SS300	C58	★87-010-450-010	CAP,CHIP 0.47U
	87-001-166-010	DIODE CHIP 1SS301	C59	★87-012-141-010	CAP,CHIP S 0.22
	87-001-167-010	DIODE CHIP 1SS302	C60	★87-012-141-010	CAP,CHIP S 0.22
=== MAIN CIRCUIT BOARD SECTION ===			C61	★87-010-450-010	CAP,CHIP 0.47U
PCB-A	*	MAIN CIRCUIT BOARD	C62	★87-012-274-010	CAP,CHIP SS 1000P,B,K
BPF1	★87-030-151-141	FILTER BPF GEWE1	C63	★87-012-141-010	CAP,CHIP S 0.22
C1	★87-012-274-010	CAP,CHIP SS 1000P,B,K	C64	★87-010-452-010	CAP,CHIP 1U
C2	★87-010-317-010	CAP,CHIP S 39P,CH	C67	★87-010-452-010	CAP,CHIP 1U
			C68	★87-010-452-010	CAP,CHIP 1U
C3	87-010-154-010	CAP,CHIP 10P	C75	★87-010-664-010	CAP,CHIP ELECT 47-4V,MV
C4	★87-012-286-010	CAP,CHIP S 0.01,B,K	C76	★87-012-286-010	CAP,CHIP S 0.01,B,K
C6	★87-010-125-010	CAP,CHIP SS 330P	C101	★87-012-272-010	CAP,CHIP SS 680P,B,K
C7	★87-012-174-010	CAP,CHIP SS 12P	C102	★87-012-272-010	CAP,CHIP SS 680P,B,K
			C103	★87-010-215-010	CAP,CHIP TANTALUM 0.047-35
C8	★87-012-231-010	CAP,CHIP SS 100P,RH,J	C104	★87-010-215-010	CAP,CHIP TANTALUM 0.047-35
C9	★87-012-176-010	CAP,CHIP SS 15P,CH,J	C105	★87-012-284-010	CAP,CHIP SS 6800P,B,K
C10	★87-012-165-010	CAP,CHIP SS 3P,CH,J	C106	★87-012-284-010	CAP,CHIP SS 6800P,B,K
C11	★87-012-286-010	CAP,CHIP S 0.01,B,K	C107	★87-010-426-010	CAP,CHIP S 0.012
C13	★87-012-274-010	CAP,CHIP SS 1000P,B,K	C108	★87-010-426-010	CAP,CHIP S 0.012
C14	★87-012-168-010	CAP,CHIP SS 6P.CH,D	C109	★87-012-278-010	CAP,CHIP SS 2200P,B,K
C15	★87-012-195-010	CAP,CHIP SS 100P,CH,J	C110	★87-012-278-010	CAP,CHIP SS 2200P,B,K
C16	★87-010-224-010	CAP,CHIP TANTALUM 100-4V	C111	★87-010-243-010	CAP,CHIP TANTALUM 10/4
C17	★87-012-286-010	CAP,CHIP S 0.01,B,K	C112	★87-010-243-010	CAP,CHIP TANTALUM 10/4
C18	★87-012-286-010	CAP,CHIP S 0.01,B,K	C113	★87-010-452-010	CAP,CHIP 1U
C19	★87-012-286-010	CAP,CHIP S 0.01,B,K	C114	★87-010-452-010	CAP,CHIP 1U
C20	★87-010-196-010	CAP,CHIP 0.1	C115	★87-012-276-010	CAP,CHIP SS 1500P BK
C21	★87-012-286-010	CAP,CHIP S 0.01,B,K	C116	★87-012-276-010	CAP,CHIP SS 1500P BK
C22	★87-010-668-010	CAP,CHIP ELECT 220-4V,MV	C117	★87-012-274-010	CAP,CHIP SS 1000P,B,K
C23	★87-012-199-010	CAP,CHIP SS 220P	C118	★87-012-274-010	CAP,CHIP SS 1000P,B,K
C24	★87-012-286-010	CAP,CHIP S 0.01,B,K	C119	★87-012-274-010	CAP,CHIP SS 1000P,B,K

REF.NO.	PART NO.	DESCRIPTION	REF.NO.	PART NO.	DESCRIPTION
C120	★87-012-274-010	CAP,CHIP SS 1000P,B,K	CF3	★87-008-377-010	CF 450KHZ,UM
C121	★87-010-452-010	CAP,CHIP 1U	J1	87-049-725-010	JACK DIA3.5(RED)(MIC)
C122	★87-010-452-010	CAP,CHIP 1U	J2	87-049-724-010	JACK 3.5(BLACK)(PHONES)
C123	★87-010-594-010	CAP,CHIP S 0.033-16VRK	J3	87-049-859-010	JACK DC(DC2V)
C124	★87-010-594-010	CAP,CHIP S 0.033-16VRK	L1	★84-462-618-010	COIL CHIP
C125	★87-012-282-010	CAP,CHIP SS 4700P,B,K	L2	★84-462-626-010	COIL CHIP FM RF
C126	★87-012-282-010	CAP,CHIP SS 4700P,B,K	L3	★84-462-627-010	COIL CHIP FM OSC
C127	★87-010-424-010	CAP,CHIP TANTALUM 4.7-4V	L6	★87-005-258-010	COIL CHIP 2.2UH
C128	★87-010-424-010	CAP,CHIP TANTALUM 4.7-4V	L7	★87-005-260-010	COIL CHIP 4.7UH
C129	★87-012-286-010	CAP,CHIP S 0.01,B,K	L9	★87-006-151-010	COIL CHIP OSC AM
C130	★87-012-286-010	CAP,CHIP S 0.01,B,K	L10	★87-006-152-010	COIL CHIP IFT AM
C131	★87-010-594-010	CAP,CHIP S 0.033-16VRK	L11	★87-006-150-010	COIL CHIP DET,FM
C132	★87-010-594-010	CAP,CHIP S 0.033-16VRK	L14	★87-003-218-010	COIL,CHOKE CHIP 1U
C133	★87-010-196-010	CAP,CHIP 0.1	L15	★87-007-246-010	COIL CHIP BIAS OSC
C134	★87-010-196-010	CAP,CHIP 0.1	Q110	87-026-248-010	PHOTO SENSOR ON2270Q2
C135	★87-012-270-010	CAP,CHIP SS 470P, B,K	R160	★87-022-043-010	RES,CHIP M,M/F 8.2K-1/8
C136	★87-012-270-010	CAP,CHIP SS 470P, B,K	R163	★87-022-042-010	RES,M,M/F 0.51-1/8
C137	★87-012-274-010	CAP,CHIP SS 1000P,B,K	S1	87-036-123-010	SLIDE SW(TAPE)
C138	★87-012-274-010	CAP,CHIP SS 1000P,B,K	S2	87-036-123-010	SLIDE SW(DOLBY NR,FM ST)
C139	★87-010-452-010	CAP,CHIP 1U	S3	87-036-123-010	SLIDE SW(PAUSE)
C140	★87-010-452-010	CAP,CHIP 1U	S4	87-036-124-010	SLIDE SW(RADIO/TAPE)
C141	★87-010-674-010	CAP,CHIP ELECT 220-2V,MV	S5	87-036-083-010	PUSH SW(POWER)
C142	★87-010-674-010	CAP,CHIP ELECT 220-2V,MV	S6	87-036-082-010	SLIDE SW(REC/PB)
C143	★87-010-664-010	CAP,CHIP ELECT 47-4V,MV	SFR1	★87-024-092-010	SFR 10KRVG4
C144	★87-010-640-010	CAP,CHIP TANTALUM 22-4F95	SFR101	★87-024-080-010	SFR 10K
C145	★87-010-243-010	CAP,CHIP TANTALUM 10/4	SFR102	★87-024-080-010	SFR 10K
C146	★87-010-243-010	CAP,CHIP TANTALUM 10/4	SFR103	★87-024-076-010	SFR 1K
C147	★87-010-243-010	CAP,CHIP TANTALUM 10/4	TC1	★87-011-192-010	TRIMMER CHIP 30P
C148	★87-010-243-010	CAP,CHIP TANTALUM 10/4	TC3	★87-011-189-010	TRIMMER CHIP 10P
C149	★87-012-270-010	CAP,CHIP SS 470P, B,K	TH101	★87-026-244-010	THERMISTOR NTH1021A
C150	★87-012-286-010	CAP,CHIP S 0.01,B,K	VC1	87-026-359-010	DIODE,VAR CHIP KV1410
C151	★87-010-180-010	CAP,CHIP SS 1500P,B,K	VC2	87-026-359-010	DIODE,VAR CHIP KV1410
C152	★87-012-286-010	CAP,CHIP S 0.01,B,K	VC3	87-011-209-010	DIODE,VAR SVC341
C153	★87-012-280-010	CAP,CHIP SS 3300P,B,K	VR1	87-024-142-010	VOLUME 20K-C(VOLUME)
C154	★87-012-286-010	CAP,CHIP S 0.01,B,K	--- CONTROL CIRCUIT BOARD SECTION ---		
C155	★87-010-424-010	CAP,CHIP TANTALUM 4.7-4V	PCB-B	★84-462-624-010	CONTROL CIRCUIT BOARD
C156	★87-010-668-010	CAP,CHIP ELECT 220-4V,MV	BAT1	★84-462-614-010	CL BATT
C157	★87-010-673-010	CAP,CHIP ELECT 100-2	C77	★87-010-424-010	CAP,CHIP TANTALUM 4.7-4V
C158	★87-010-668-010	CAP,CHIP ELECT 220-4V,MV	C78	★87-010-424-010	CAP,CHIP TANTALUM 4.7-4V
C159	★87-010-668-010	CAP,CHIP ELECT 220-4V,MV	C80	★87-010-452-010	CAP,CHIP 1U
C160	★87-010-664-010	CAP,CHIP ELECT 47-4V,MV	C81	★87-012-286-010	CAP,CHIP S 0.01,B,K
C161	★87-010-662-010	CAP,CHIP ELECT 22-6.3MV	C82	★87-012-276-010	CAP,CHIP SS 1500P BK
C162	★87-012-286-010	CAP,CHIP S 0.01,B,K	C83	★87-012-199-010	CAP,CHIP SS 220P
C163	★87-010-452-010	CAP,CHIP 1U	C84	★87-010-452-010	CAP,CHIP 1U
C164	★87-010-452-010	CAP,CHIP 1U	C85	★87-010-196-010	CAP,CHIP 0.1
C165	★87-015-934-010	CAP,CHIP TANTALUM 2.2-4	C86	★87-010-424-010	CAP,CHIP TANTALUM 4.7-4V
C166	★87-010-594-010	CAP,CHIP S 0.033-16VRK	C87	★87-012-172-010	CAP,CHIP SS 10P,CH,D
C167	★87-010-452-010	CAP,CHIP 1U	C88	★87-012-286-010	CAP,CHIP S 0.01,B,K
C168	★87-010-424-010	CAP,CHIP TANTALUM 4.7-4V	C89	★87-012-286-010	CAP,CHIP S 0.01,B,K
C169	★87-010-668-010	CAP,CHIP ELECT 220-4V,MV	C90	★87-010-196-010	CAP,CHIP 0.1
C170	★87-015-934-010	CAP,CHIP TANTALUM 2.2-4	C91	★87-010-196-010	CAP,CHIP 0.1
C171	★87-010-198-010	CAP,CHIP 0.022	C92	★87-012-286-010	CAP,CHIP S 0.01,B,K
C172	★87-010-198-010	CAP,CHIP 0.022	C93	★87-010-196-010	CAP,CHIP 0.1
C173	★87-012-286-010	CAP,CHIP S 0.01,B,K	C94	★87-012-184-010	CAP,CHIP 33P,CH,J
C174	★87-010-452-010	CAP,CHIP 1U	C95	★87-012-195-010	CAP,CHIP SS 100P,CH,J
C175	★87-010-452-010	CAP,CHIP 1U	C96	★87-012-286-010	CAP,CHIP S 0.01,B,K
C201	★87-012-286-010	CAP,CHIP S 0.01,B,K	C97	★87-010-505-010	CAP,CHIP TANTALUM 1-16V
C202	★87-010-668-010	CAP,CHIP ELECT 220-4V,MV	C98	★87-012-286-010	CAP,CHIP S 0.01,B,K
C203	★87-012-141-010	CAP,CHIP S 0.22	C99	★87-010-424-010	CAP,CHIP TANTALUM 4.7-4V
C204	★87-012-141-010	CAP,CHIP S 0.22	C205	★87-012-188-010	CAP,CHIP SS 47P,CH
C206	★87-010-317-010	CAP,CHIP 39P,CH	D7	87-020-508-010	LED(OPE/BATT)
C207	★87-010-184-010	CAP,CHIP S 3300P	L12	★87-007-233-010	COIL CHIP DD CP-4LBM
CF1	★87-008-389-010	CF SFE 10.7MS3W,A	L13	★87-005-262-010	COIL CHIP 10UH
CF2	★87-008-379-010	CF SFE 10.7MS5,A			

REF.NO.	PART NO.	DESCRIPTION
LCD1	84-462-604-010	LCD HS ASSY
S7	87-036-123-010	SLIDE SW(HOLD)
S8	87-036-048-010	SLIDE SW(BAND)
S9	87-030-152-010	TACT SW(UP/HOUR)
S10	87-030-152-010	TACT SW(DOWN/MIN)
S11	87-036-079-010	TACT SW(MEMORY)
S12	87-036-079-010	TACT SW(STORE/SET)
TC4	★87-011-192-010	TRIMMER CHIP CTZ30C
X1	★87-030-121-010	CRYSTAL DT-38 75K

=== TERMINAL CIRCUIT BOARD SECTION ===

PCB-C	*	TERMINAL CIRCUIT BOARD
TM1	★84-435-246-010	CONNECTOR ASSY 1.4

=== HEAD CIRCUIT BOARD SECTION ===

PCB-D	*	HEAD CIRCUIT BOARD
RPH	84-462-610-010	RPH ASSY(W/PCB-D)
S13	84-541-602-010	SLIDE SW(FWD/REW)

=== CONNECT CIRCUIT BOARD SECTION ===

PCB-E	★84-462-603-010	CONNECT CIRCUIT BOARD
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=== REGULATOR CIRCUIT BOARD SECTION ===

PCB-F	★84-464-604-110	REGULATOR CIRCUIT BOARD
C1	★84-439-620-010	CAP,ELECT 470-4V
TM2	★84-435-246-010	CONNECTOR ASSY 1.4(BATT.TERMINAL)

=== MISCELLANEOUS ===

EH	86-541-601-010	EH
L8	84-462-617-010	BAR ANT COIL
M1	87-045-283-010	MOTOR

Combination Circuit Board 84-462-621-010

PCB-A 84-462-622-010

PCB-C 84-462-623-010

PRACTICAL SERVICE FIGURE

<Radio Block>

Sensitivity:

(THD, 3%)

(S/N 10dB)

Intermediate frequency: FM 10.7MHz

AM 450kHz

FM stereo separation: 20±4dB (1kHz)

FM 13±4dB (98MHz) (EXCEPT U,C,MH)

FM 13±4dB (98.1MHz) (U,C,MH ONLY)

AM 53±4dB (999kHz) (EXCEPT U,C,MH)

AM 53±4dB (1,000kHz) (U,C,MH ONLY)

<Tape Recorder Block>

S/N ratio:

Distortion:

Noise level:

Bias frequency:

Erasing ratio:

Wow & flutter:

Pinch roller press:

Forward torque:

FF/Rewind torque:

50±3dB (PB)

Less than 30dB (REC/PB)

Less than 3% (PB)

Less than 10% (REC/PB)

Less than 3.0mV (AC VOL max.)

54kHz

More than 50dB (1kHz)

Less than 0.45% (FWD) RMS

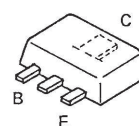
Less than 0.48% (REV) RMS

155±15g (FWD)

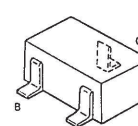
135±15g (REV)

30⁺¹⁰/₋₅ g-cm (FWD, REV)

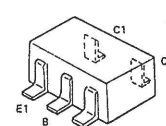
100⁺³⁰/₋₂₀ g-cm



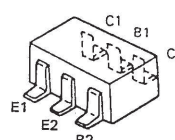
2SA1213



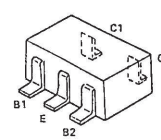
2SA1586
2SA1588
2SC4116
2SC4213
2SC4215
RN1310
RN2311



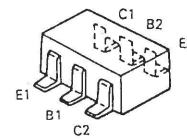
FMC1



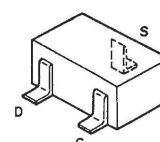
IMX2
IMB6



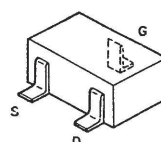
FMG4
FMW1



IMB3

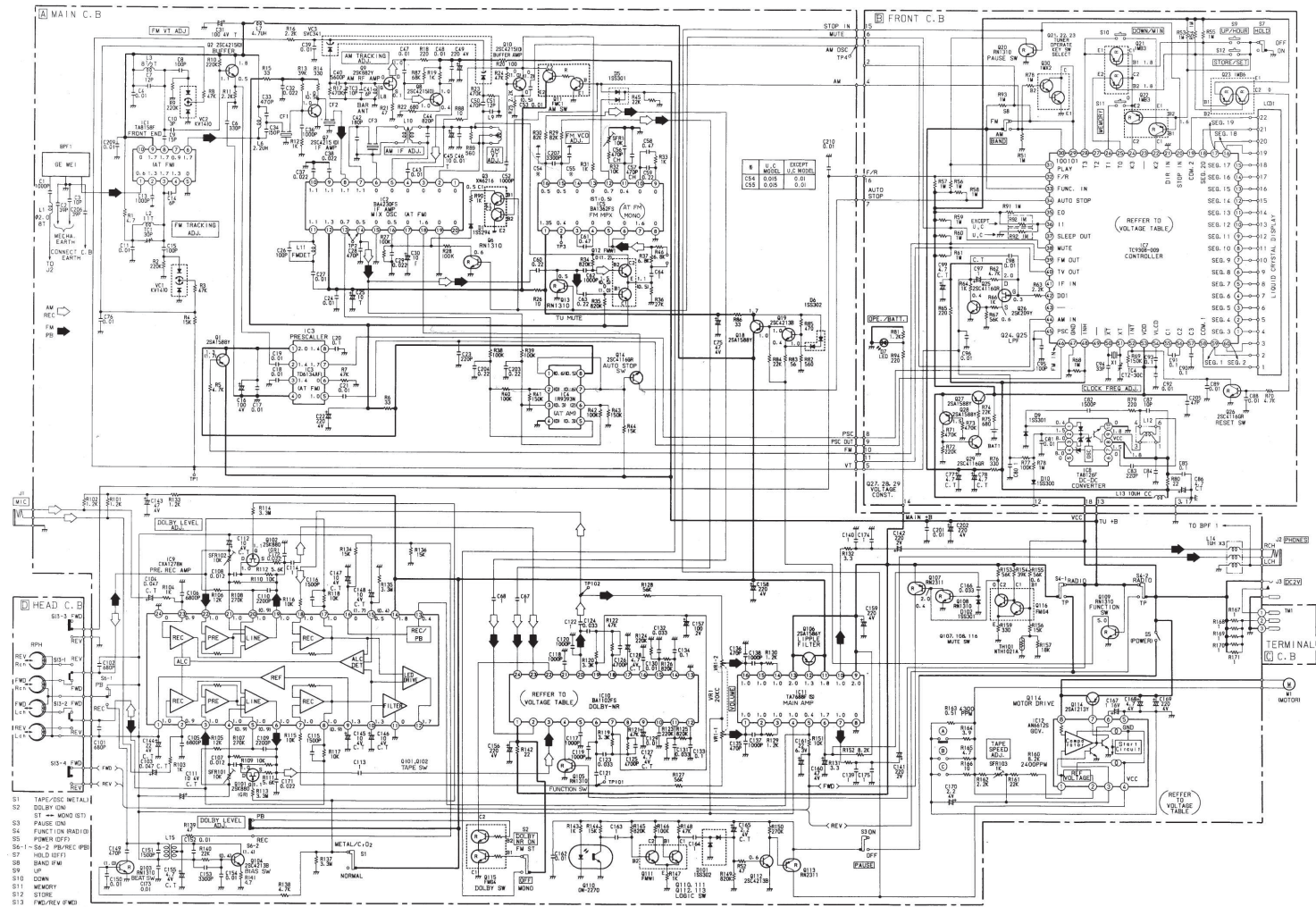


2SK882



2SK209
2SK880

SCHEMATIC DIAGRAM



IC TC9308-009

PIN NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
AN	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.0
FN	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.0
PIN NO.	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
AN	0.0	0.0	2.0	0.0	2.0	2.0	2.0	0.5	1.8	1.8	1.8	1.9	1.8	1.8	0.0	0.0	1.9	1.8		
FN	0.0	0.0	2.0	0.0	2.0	2.0	2.0	0.0	1.8	1.8	1.9	1.7	0.0	0.0	0.0	0.0	0.1	1.8		
PIN NO.	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
AN	0.2	0.3	0.6	1.1	0.0	0.0	0.0	2.0	0.0	1.2	0.9	2.0	2.0	1.0	1.3	0.0	0.5	0.5	0.5	0.5
FN	0.2	0.3	0.2	0.0	1.7	1.0	0.0	2.0	0.0	1.0	1.0	2.0	2.0	1.0	1.3	0.0	0.5	0.5	0.5	0.5

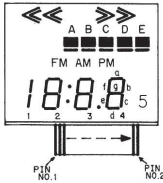
IC BA1102 FS

PIN NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
DOLBY IN	1.0	1.1	1.1	0.7	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	0.8	1.1	1.1	1.1
DOLBY OFF	1.0	1.1	1.1	0.7	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	0.8	1.1	1.1	1.1
TUNER	1.0	1.1	1.1	0.0	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	0.8	1.1	1.1	1.1
BSC	1.0	1.1	1.1	0.8	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	0.8	1.1	1.1	1.1

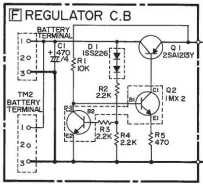
IC AN5612S

PIN NO.	1	2	3	4	5	6	7	8
PLAY	0.0	1.3	0.2	2.0	0.0	0.7	1.4	1.5
STOP	0.0	0.0	0.0	0.0	0.0	0.0	1.8	0.0
PAUSE	0.0	0.0	0.0	0.0	0.0	0.0	1.9	0.0

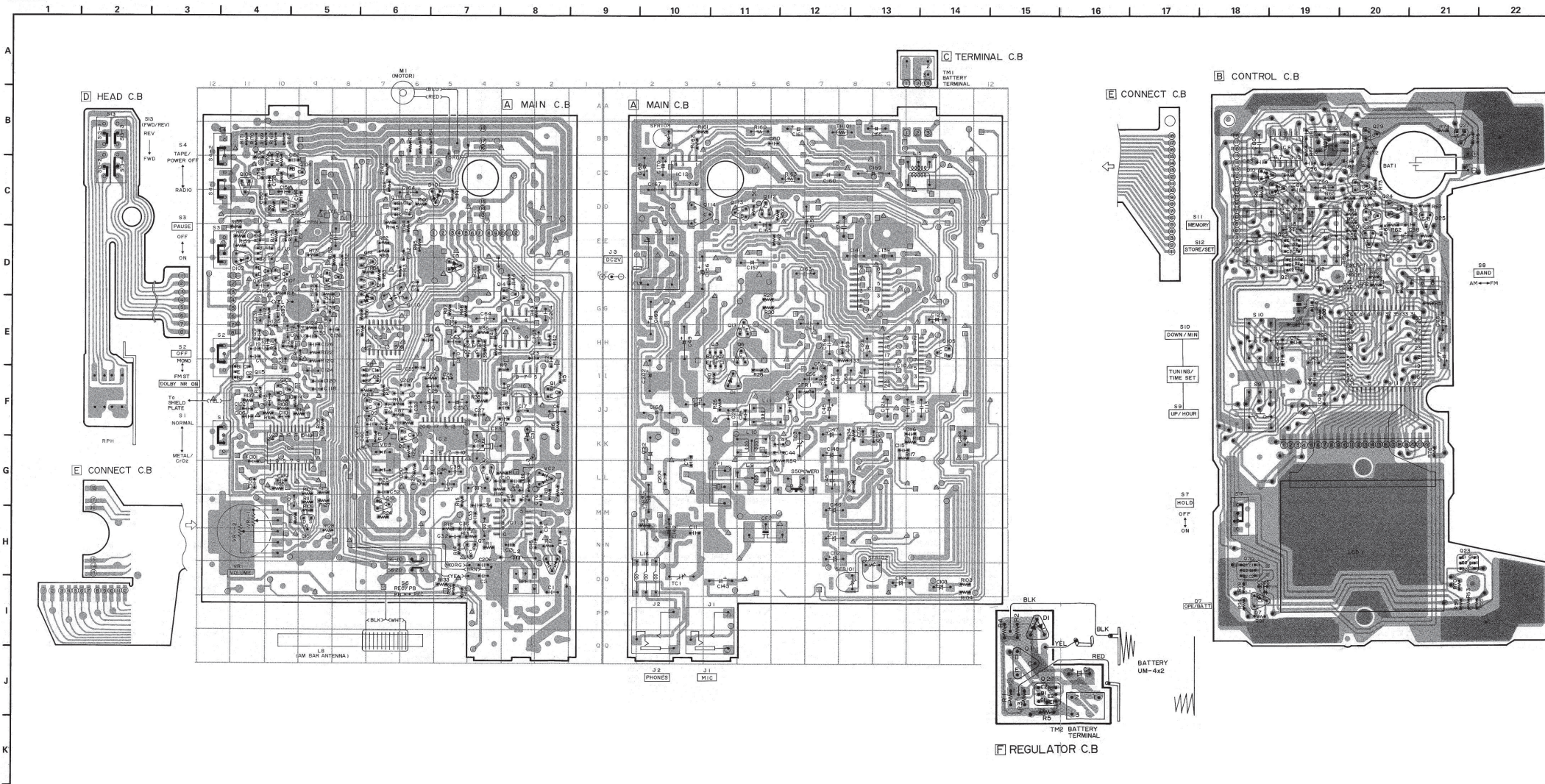
LCD 1
LCD
DISPLAY



PIN NO.	COM.1	COM.2
1		
2	B	A
3	D	C
4		E
5	FM	1
6	2b	2f
7	2g	2c
8	2c	2d
9	2a	3f
10	3d	3f
11	3g	3e
12	3c	3d
13	3a	*
14	4b	4f
15	4g	4e
16	4c	4d
17	4a	PM
18		5
19	*	RIGHT SIDE
20	LEFT SIDE	
21	RIGHT SIDE	LEFT SIDE
22	COM 1	

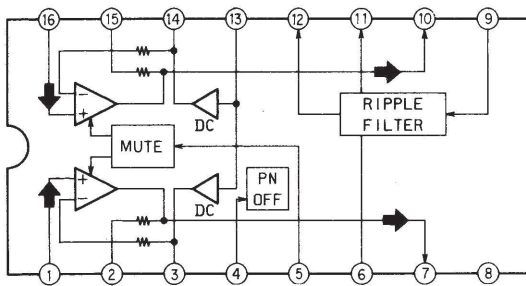


WIRING

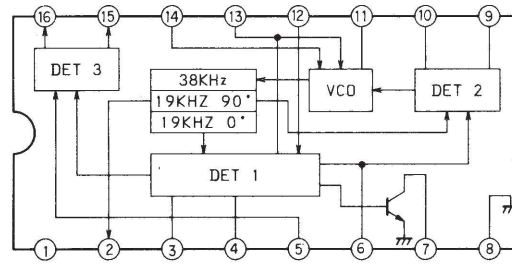


IC BLOCK DIAGRAM

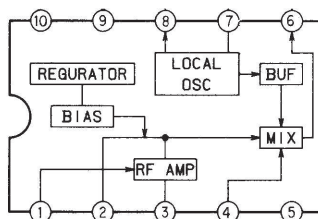
TA7688FS



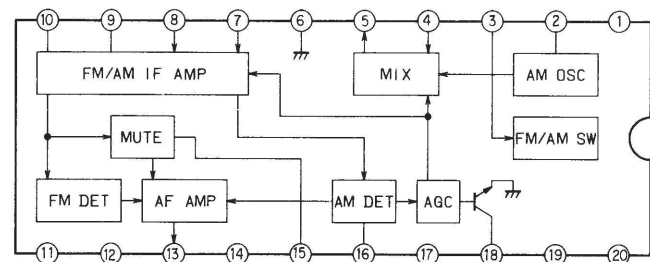
BA 1362FS



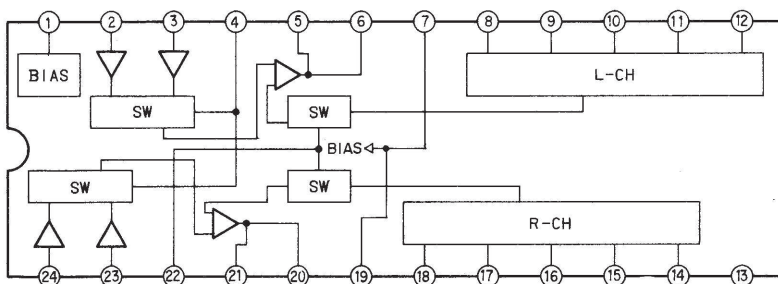
TA8158F



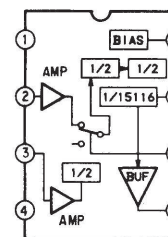
BA4230FS



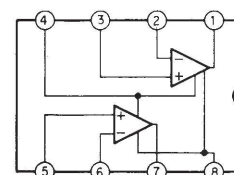
BA1102FS



TD6134AF1



IR9393N

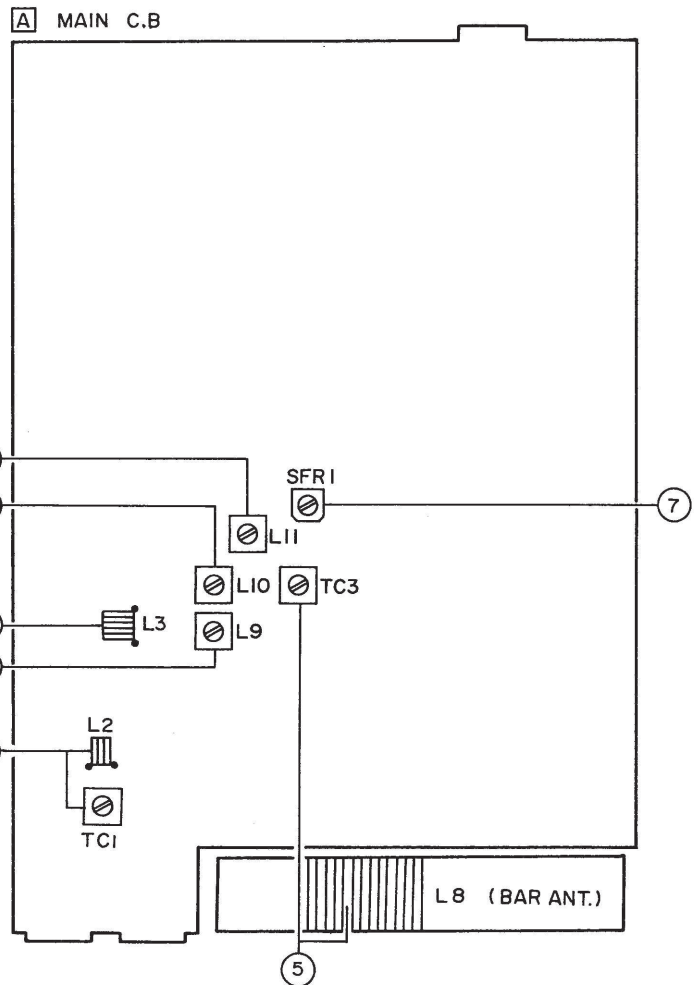
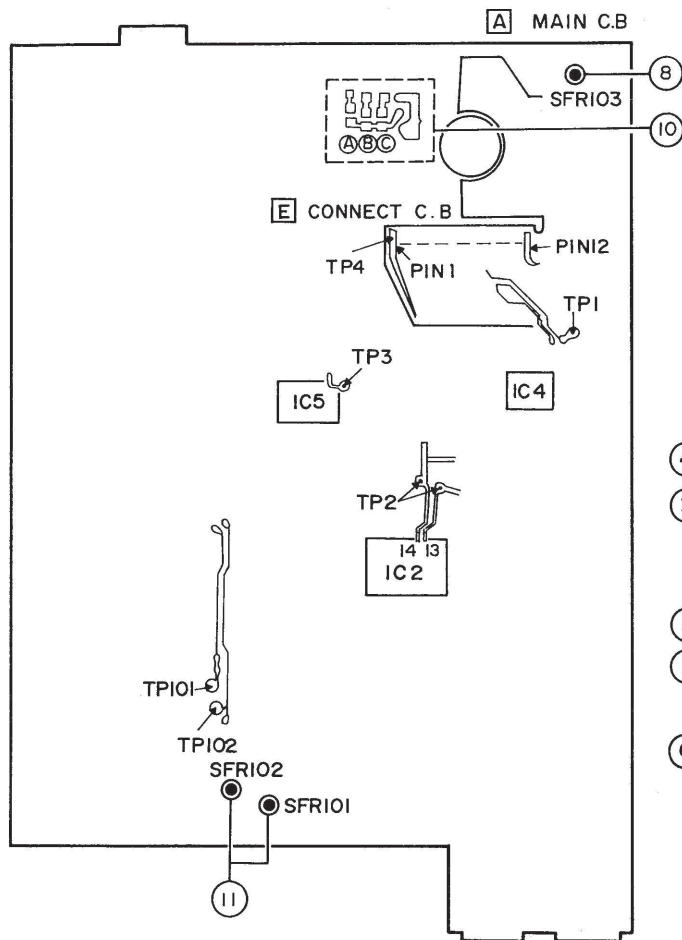


IC Description

IC, AN6612S

Pin No.	Pin Name	Description
1	VRN	Input terminal for motor current detection
2	VRP	Output terminal for reference voltage
3	VIN	Output terminal for reference voltage control
4	VCC	Power supply terminal
5	GND	GND terminal
6	VB	Terminal for prevention of oscillation
7	VBO	Output terminal for the motor speed of control
8	VM	Input terminal for the motor speed of detection

ADJUSTMENT



1. AM VT Adjustment

Settings: • Test point : TP1
• Adjustment location : L9

Method : Tune to AM 1610kHz(U,C model), AM 1611kHz (Except U,C model) and adjust L9 so the voltage at TP1 is $8.0 \pm 0.05V$. After adjustment is completed, check that it is 0.5V or more at TP1 with the AM 530kHz(U,C model), AM 531kHz(Except U,C model) signal.

2. FM VT Adjustment

Settings: • Test point : TP1
• Adjustment location : L3

Method : Tune to FM 108.1MHz(U,C model), FM 108MHz (Except U,C model) and adjust L3 so the voltage at TP1 is $9.0 \pm 0.05V$. After adjustment is completed, check that it is 1.0V or more at TP1 with the FM 87.5MHz signal.

3. AM IF Adjustment

L10 450kHz

4. FM IF Offset Adjustment

Settings: • Input signal : 98.1MHz(U,C model), 54dB
98.0MHz(Except U,C model), 54dB

• Test point : TP2
• Adjustment location : L11

Method : Adjust L11 so the voltage at TP2 is $0 \pm 25mV$.

5. AM Tracking Adjustment

L8 600kHz(U,C model)
603kHz(Except U,C model)
TC3 1400kHz(U,C model)
1395kHz(Except U,C model)

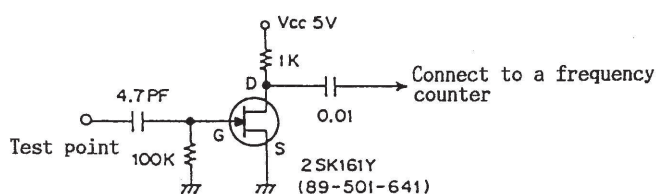
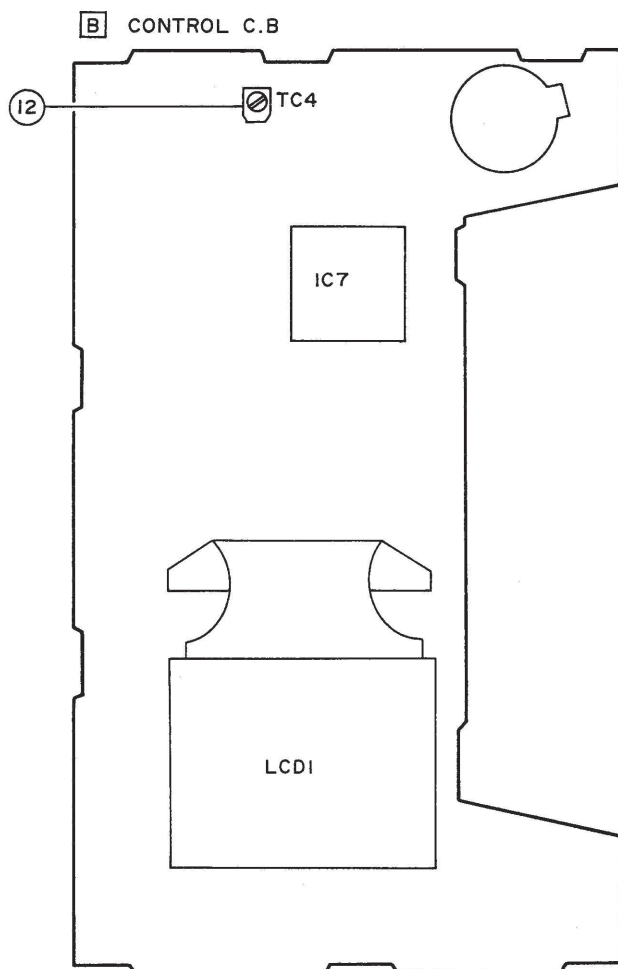
6. FM Tracking Adjustment .

L2 87.5MHz
TC1 108.1MHz(U,C model)
108.0MHz(Except U,C model)

7. FM VCO Adjustment

Settings: • Test point : TP3
• Adjustment location : SFR1

Method : Connect a buffer to TP3. Adjust SFR1 so the frequency at TP3 is $19kHz \pm 20Hz$.



8. Tape Speed Adjustment

Settings : • Test tape : TTA-100(TTA-111S)

• Adjustment location : SFR103

Method : Play back the test tape, adjust for 3000Hz.

9. Azimuth Adjustment

Settings : • Test tape : TTS-310(TTA-317E)

• Adjustment location : Azimuth adjustment screw

Method : Play back the 10kHz signal of the test tape, and adjust so that the output becomes maximum.

10. Motor Load Adjustment

Refer to the service manual of HS-T23.T230/HS-T26.T260.

11. Dolby Level Adjustment

Settings : • Test tape : TTS-200(TTA-161,TCC-130)

• Test point : TP101(Lch), TP102(Rch)

• Adjustment location : SFR101(Lch)

SFR102(Rch)

Method : Adjust SFR101(102) so the voltage at TP101 (102) is $100\text{mV} \pm 5\text{mV}$.

12. Clock Adjustment

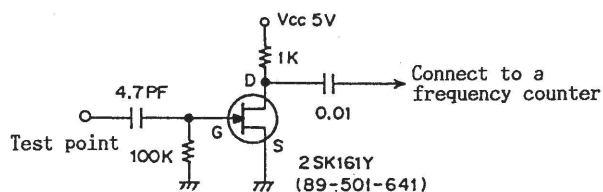
Settings : • Test point : TP4

• BAND SW : AM 1611kHz(Except U,C model)

1610kHz(U,C model)

• Adjustment location : TC4

Method : • Connect a buffer to TP4. Adjust TC4 so the frequency at TP4 is $2061\text{kHz} \pm 10\text{Hz}$ (Except U,C model), $2060\text{kHz} \pm 10\text{Hz}$ (U,C model).



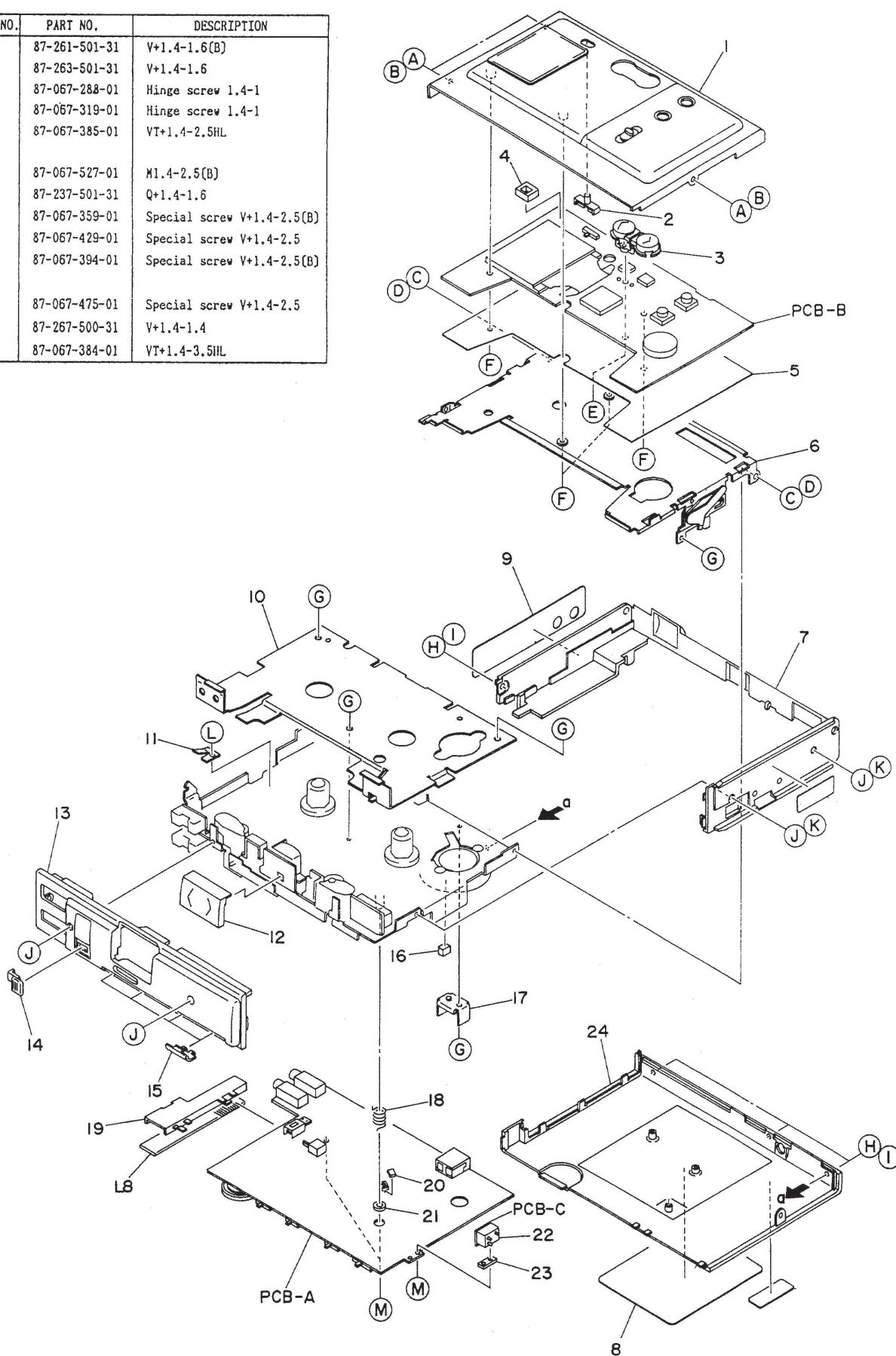
IC DESCRIPTION

1. IC, TC9308F-009

Pin No.	Pin Name	Description														
58	COM 1	Common output terminal														
19	COM 2	Common output terminal														
59, 60 1~18	S ₁ ~S ₂₀	Segment output terminal														
20	STOP IN	Goes high during motor rotation. Goes low when motor stops.														
21	DIR IN	Goes high in FWD/FF and REV/REW modes. Goes low otherwise.														
31	PLAY IN	Mechanism head-up operation. Goes low when motor is turned on.														
32	F/R-IN	Goes high in FWD mode. Goes low in REV mode.														
22	K ₂	——	——	——	DOWN											
24	K ₃	STOP	MEMORY	REC	UP											
25	T ₀	H	L	L	L											
26	T ₁	L	H	L	L											
27	T ₂	L	L	H	L											
28	T ₃	L	L	L	H											
29, 30	I ₀₁ I ₀₀	<table><tr><td>I₀₁</td><td>I₀₀</td><td>Mode</td></tr><tr><td>H</td><td>L</td><td>AM</td></tr><tr><td>L</td><td>H</td><td>FM</td></tr></table>				I ₀₁	I ₀₀	Mode	H	L	AM	L	H	FM	Band select terminal.	
I ₀₁	I ₀₀	Mode														
H	L	AM														
L	H	FM														
33	FUNC IN	Goes high in RADIO mode.														
34	AUTO STOP	Goes low when a signal is received during AM/FM AUTO tuning.														
35 36	E ₀ E ₁	Bandwidth/tuning step select terminal.														
37	——	Not used.														
38	Mute	Mute output terminal. Muted in high level.														
39	FM OUT	Outputs a high signal when the band switch is set to FM.														
40	——	Not used.														
41	——	Not used.														
42, 43	D ₀₁ , D ₀₂	Phase detector's error output terminal. A pulse is output to LPF.														
44	AM IN	AM OSC input terminal														
45	PSC	PSC output terminal														
46	FM IN	Prescaler OUT input terminal														
48	INH	PLL is activated when high. PLL is stopped when low (backup mode).														
50, 51	X _T , XT	Used to connect crystal oscillator.														
52	INT	Initialize terminal. Initialized and set to the initial value when low. Memory is then cleared.														
53	V _{DD}	Power supply connection terminal														
54	V _{LCD}	LCD step-up power supply														
55~57	C ₁ ~C ₃	Capacitor connection terminal for LCD step-up power supply														

EXPLODED VIEW-1

REF.NO.	PART NO.	DESCRIPTION
A	87-261-501-31	V+1.4-1.6(B)
B	87-263-501-31	V+1.4-1.6
C	87-067-288-01	Hinge screw 1.4-1
D	87-067-319-01	Hinge screw 1.4-1
E	87-067-385-01	VT+1.4-2.5HL
F	87-067-527-01	M1.4-2.5(B)
G	87-237-501-31	Q+1.4-1.6
H	87-067-359-01	Special screw V+1.4-2.5(B)
I	87-067-429-01	Special screw V+1.4-2.5
J	87-067-394-01	Special screw V+1.4-2.5(B)
K	87-067-475-01	Special screw V+1.4-2.5
L	87-267-500-31	V+1.4-1.4
M	87-067-384-01	VT+1.4-3.5HL

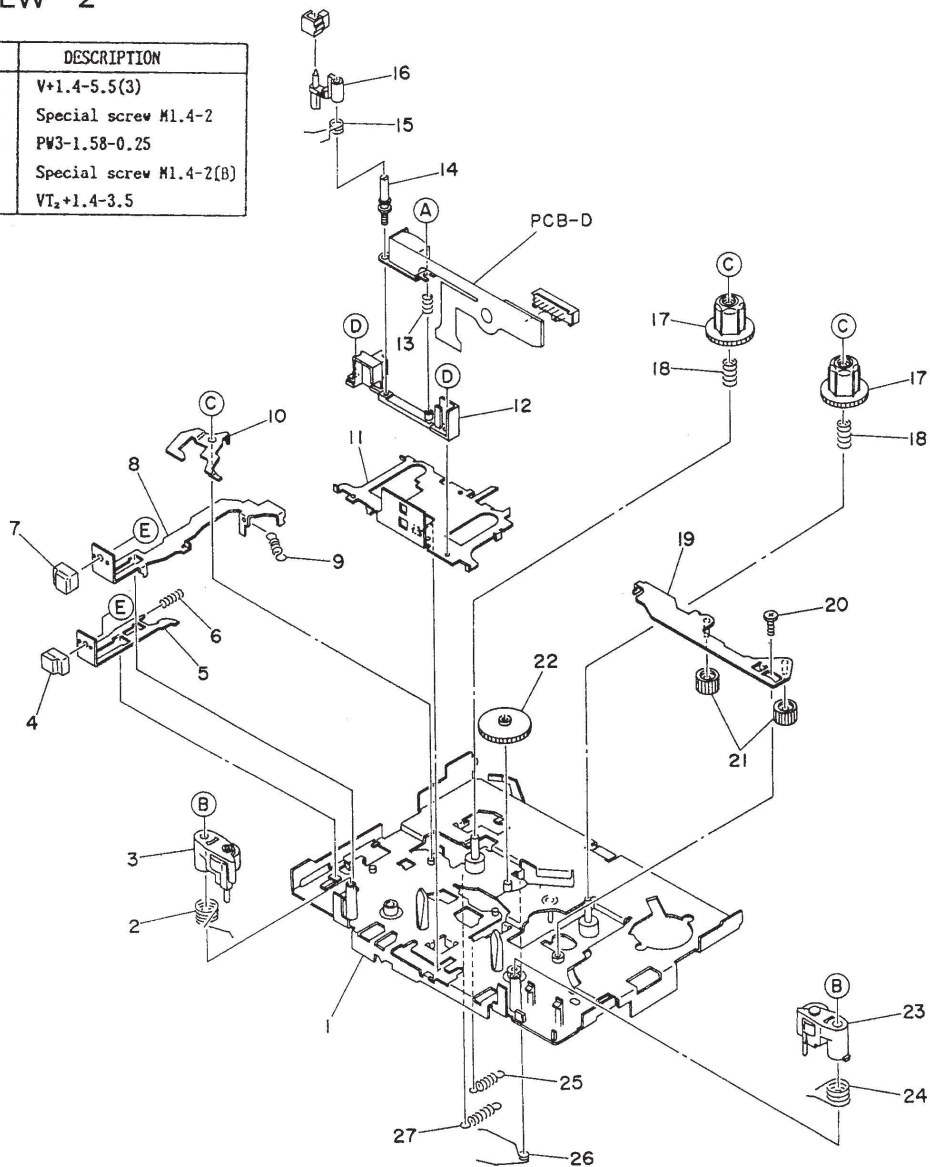


MECHANICAL PARTS LIST

PART NO. CHANGED TO	REF. NO.	PART NO.	DESCRIPTION	COMMON MODEL	Q, TY
	1-1	09-027-624-010	CASSETTE LID ASSY(B)	*	1
	1-1	09-027-628-010	CASSETTE LID ASSY(S)	*	1
	1-2	*84-462-021-010	KNOB,SLIDE C	*	1
	1-3	84-462-017-010	PUSH-KEY,TU	*	1
	1-4	*84-462-215-010	M CUSHION 1.3-16-2.5	*	1
	1-5	*84-462-205-010	INSULATION SHEET	*	1
	1-6	*84-462-211-010	HOLDER CASSETTE J ASSY	*	1
	1-7	*84-462-004-010	FRAME CENTER	*	1
	1-8	*84-462-048-010	PLATE SPEC.(B) (EXCEPT J202M,J800)	*	1
	1-8	*84-462-051-010	PLATE SPEC.(B) (J202M ONLY)	*	1
	1-8	*84-462-050-010	PLATE SPEC.(B) (J800 ONLY)	*	1
	1-8	*84-462-049-010	PLATE SPEC.(S)	*	1
	1-9	*84-462-044-010	PLATE,SIDE Y	*	1
	1-10	*84-463-012-110	DECORATE SHEET		1
	1-11	84-463-209-010	P-SPRING,POP UP		1
	1-12	84-462-008-010	PUSH-BUTTON,PLAY	*	1
	1-13	*84-462-002-010	PANEL,CONTROL	*	1
	1-14	*84-462-014-010	KNOB,DIRECTION	*	1
	1-15	*84-462-015-010	KNOB,SLIDE A	*	4
	1-16	*84-462-220-010	G CUSHION,6-6-2.7	*	1
	1-17	*84-462-204-010	HOLDER,JACK DC	*	1
	1-18	*84-462-218-010	C-SPRING,MECHANISM EARTH A	*	1
	1-19	*84-462-210-010	HOLDER,BAR ANT	*	1
	1-20	*84-462-207-010	SHEET,SENSOR	*	1
	1-21	*84-462-212-010	SHEET,BOSS	*	1
	1-22	*84-435-246-110	TERMINAL ASSY	HS-J101	1
	1-23	*84-462-206-010	SPACER,CONTACT	*	1
	1-24	*84-462-041-010	CABINET REAR Y(B)	*	1
	1-24	*84-465-039-010	CABINET REAR R(S)	HS-T202	1

EXPLODED VIEW-2

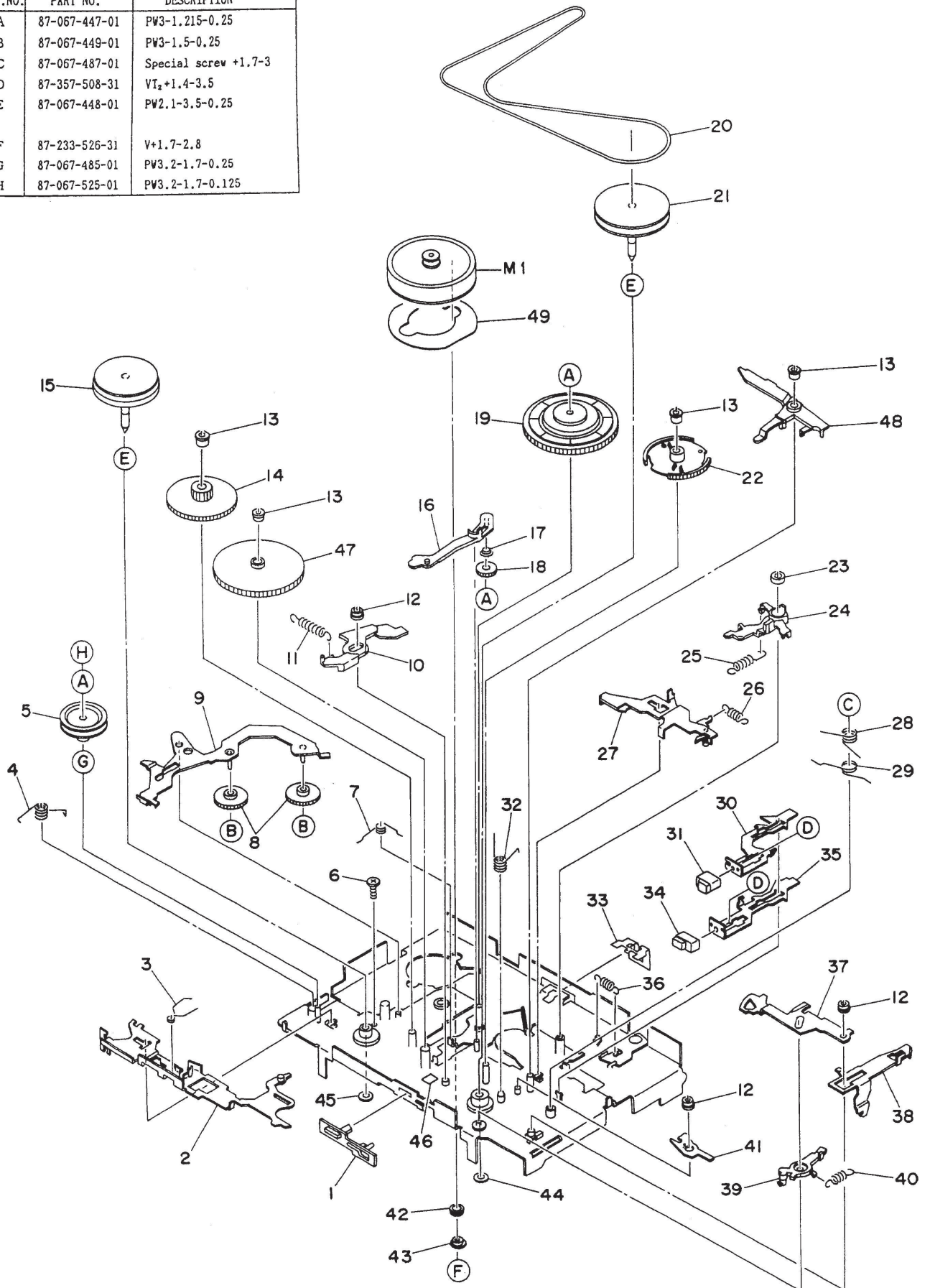
REF.NO.	PART NO.	DESCRIPTION
A	87-268-512-31	V+1.4-5.5(3)
B	87-067-517-01	Special screw M1.4-2
C	87-067-516-01	PW3-1.58-0.25
D	87-067-511-01	Special screw M1.4-2(B)
E	87-357-508-31	VI ₂ +1.4-3.5



PART NO. CHANGED TO	REF. NO.	PART NO.	DESCRIPTION	COMMON MODEL	Q, TY
	2-1	*86-541-210-210	OUTSERT CHASSIS ASSY		1
	2-2	*86-541-338-010	T-SPRING,PINCH R P		1
	2-3	86-541-218-010	PINCH LEVER R ASSY		1
	2-4	*84-462-009-010	PUSH-BUTTON,STOP	*	1
	2-5	*86-541-261-110	PLATE,BUTTON STOP		1
	2-6	*86-541-329-010	C-SPRING,STOP		1
	2-7	*84-462-010-110	PUSH-BUTTON,REC		1
	2-8	*86-541-274-010	PLATE,BUTTON REC B		1
	2-9	*86-541-312-010	E-SPRING,REC LOCK		1
	2-10	*86-541-277-010	LEVER,REC LOCK		1
	2-11	*86-541-260-210	CHASSIS,ACTUATING		1
	2-12	*86-541-283-010	TAPE GUIDE		1
	2-13	*86-541-318-010	C-SPRING,AZIMUTH		1
	2-14	*86-541-369-010	SCREW EH M1.4		1
	2-15	*86-541-344-010	T-SPRING,EH LEVER		1
	2-16	*86-541-287-010	LEVER EH		1
	2-17	*86-541-236-010	GEAR,REEL PLATFORM		2
	2-18	*86-541-328-010	C-SPRING,REEL PLATFORM		2
	2-19	*86-541-221-110	PLATE FR ASSY		1
	2-20	*86-541-383-010	SCREW FR		1
	2-21	*86-541-244-010	GEAR FR		2
	2-22	*86-541-239-010	GEAR REW		1
	2-23	86-541-216-010	PINCH LEVER F ASSY		1
	2-24	*86-541-314-010	T-SPRING,PINCH F R		1
	2-25	*86-541-331-010	E-SPRING,ACTUATING		1
	2-26	*86-541-347-110	T-SPRING,FR LEVER		1
	2-27	*86-541-336-010	E-SPRING,REC		1

EXPLODED VIEW-3

REF.NO.	PART NO.	DESCRIPTION
A	87-067-447-01	PW3-1.215-0.25
B	87-067-449-01	PW3-1.5-0.25
C	87-067-487-01	Special screw +1.7-3
D	87-357-508-31	VI ₂ +1.4-3.5
E	87-067-448-01	PW2.1-3.5-0.25
F	87-233-526-31	V+1.7-2.8
G	87-067-485-01	PW3.2-1.7-0.25
H	87-067-525-01	PW3.2-1.7-0.125



PART NO. CHANGED TO	REF. NO.	PART NO.	DESCRIPTION	COMMON MODEL	Q, TY
3-1		*84-462-013-010	KNOB,DIRECTION MODE	*	1
3-2		*86-541-222-110	PLATE,PINCH SELECT ASSY		1
3-3		*86-541-320-310	T-SPRING,PLAY LEVER		1
3-4		*86-541-313-010	T-SPRING,PINCH SELECT		1
3-5		86-541-235-010	PULLEY RELAY B		1
3-6		*86-541-383-010	SCREW FR		1
3-7		*86-541-334-110	T-SPRING,AUTO LEVER		1
3-8		*86-541-242-210	GEAR,PLAY		2
3-9		*86-541-219-310	LEVER,PLAY ASSY		1
3-10		*86-541-288-110	LEVER,MODE SELECT		1
3-11		*86-541-341-010	E-SPRING,MODE SELECT		1
3-12		86-541-376-010	COLLAR,PW-BOARD P		3
3-13		86-541-367-010	COLLAR,PW-BOARD J		4
3-14		86-541-240-010	GEAR,SLOW-DOWN		1
3-15		86-541-213-010	FLYWHEEL ASSY FB		1
3-16		*86-541-285-010	LEVER,AUTO		1
3-17		*86-541-325-010	C-SPRING,AUTO GEAR		1
3-18		*86-541-241-010	GEAR,AUTO		1
3-19		86-541-206-010	GEAR CLUTCH ASSY		1
3-20		86-541-371-010	BELT B1		1
3-21		86-541-214-010	FLYWHEEL ASSY RB		1
3-22		*86-541-238-110	GEAR,SELECT CAM R		1
3-23		*84-462-208-010	SPACER,BOSS	*	1
3-24		*86-541-291-010	LEVER,REC EJECT BR		1
3-25		*86-541-297-010	E-SPRING,REC EJECT		1
3-26		*86-541-332-010	E-SPRING,PLATE LOCK		1
3-27		*86-541-223-110	PLATE EJECT ASSY A		1
3-28		*86-541-349-010	T-SPRING,FR BUTTON		1
3-29		*86-541-339-010	T-SPRING,TRIGGER		1
3-30		*86-541-264-010	PLATE,BUTTON REW		1
3-31		*84-463-011-010	PUSH-BUTTON,REW	HS-PC202	1
3-32		*86-541-345-110	T-SPRING,SELECT CAM		1
3-33		*86-541-323-010	P-SPRING,CASSETTE SUPPORT		1
3-34		*84-463-010-010	PUSH-BUTTON,FF	HS-PC202	1
3-35		*86-541-262-010	PLATE,BUTTON FF		1
3-36		*86-541-330-010	E-SPRING,REC BLOCKING		1
3-37		*86-541-278-110	LEVER,EH RESET		1
3-38		*86-541-263-010	PLATE,EJECT		1
3-39		*86-541-286-010	LEVER,DIRECTION		1
3-40		*86-541-343-010	E-SPRING,DIRECTION		1
3-41		*86-541-273-010	LEVER,TRIGGER LOCK		1
3-42		*86-511-445-110	G CUSHION,MOTOR		1
3-43		*86-511-441-110	COLLAR,MOTOR		1
3-44		*87-067-484-010	SOMA SHEET 3.5-1.64-0.25		1
3-45		*87-067-521-010	SOMA SHEET 3.5-1.45-0.25		1
3-46		*86-541-397-010	SHEET 3-5		1
3-47		*86-541-237-010	GEAR,AUTO CAM		1
3-48		*86-541-284-110	LEVER,TRIGGER		1
3-49		*86-541-394-010	SHIELD PLATE		1
		*09-027-568-010	COLLAR PW-BOARD (PJ) KIT		1

ACCESSORIES/PACKAGE LIST

PART NO. CHANGED TO	REF. NO.	PART NO.	DESCRIPTION	COMMON MODEL	Q, TY
1		*84-462-904-010	INSTRUCTION BOOKLET Y	*	1
2		*84-462-905-010	INSTRUCTION BOOKLET Y(M) (EXCEPT AUB,AK1B)	*	1
3		*84-465-041-010	BATT.BOX(PB-2Y)A(S) (AHS,AES,AZS,AH1S ONLY)	HS-T202	1
4		*84-465-042-010	BATT.BOX(PB-2Y)B(S) (AHS,AES,AZS,AH1S ONLY)	HS-T202	1
5		*84-462-018-010	BATT.BOX(PB-2Y)A (EXCEPT AHS,AES,AZS,AH1S)	*	1
6		*84-462-019-010	BATT.BOX(PB-2Y)B (EXCEPT AHS,AES,AZS,AH1S)	*	1
7		*84-435-241-010	CUSHION 5-6-3		1
8		*09-027-626-010	BATT.BOX ASSY(S) (AHS,AES,AZS,AH1S ONLY)		1
9		*09-027-627-010	BATT.BOX ASSY(S) (EXCEPT AHS,AES,AZS,AH1S)		1
10		*84-462-952-010	CARRYING CASE Y	*	1
11		87-041-056-010	MIC CM-S20		1
12		87-042-046-010	AC-205H(AHS,AHB,MAHB,AH1S,AH1B ONLY)		1
13		87-042-047-010	AC-205U(AUB ONLY)		1
14		87-042-040-110	AC-205C(ACB ONLY)		1
15		87-042-048-010	AC-205E(AES,AEB,AZB,AZS ONLY)		1
16		87-042-042-110	AC-205K(AK1B ONLY)		1
17		*87-047-095-010	PB-2Y		1
18		87-048-134-010	HP-M13(EXCEPT AK1B,AH1S,AH1B)		1
19		87-048-148-010	HP-08K(AK1B,AH1S,AH1B ONLY)		1