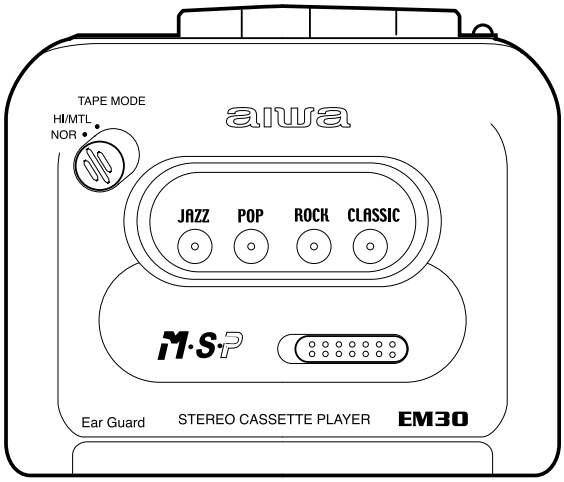
aiwa
SERVICE

HS-EM30 Y



SERVICE MANUAL

STEREO
CASSETTE PLAYER

BASIC TAPE MECHANISM : 8ZM-3 P2N

aiwa

S/M Code No. 09-012-438-9N1

DATA

SPECIFICATIONS

Maximum output: 4 mW + 4 mW (EIAJ 16 ohms)
Load impedance: 16 - 80 ohms
Power source: DC 3V using two R6 (size AA) batteries
AC house current using an optional AC adaptor Aiwa AC-D302
Maximum outside dimensions:
112.8 (W) x 88 (H) x 31.9 (D) mm
($4\ ^1/_2$ x $3\ ^1/_2$ x $1\ ^5/_{16}$ in.)
(excluding projecting parts and controls)
Weight Approx. 130g (4.6 oz) excluding batteries

- 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.

ACCESSORIES / PACKAGE LIST

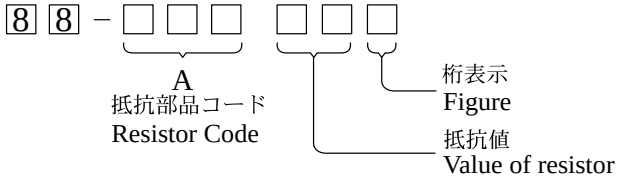
REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	8B-HG6-906-010		IB,(EDPHNC)F EM30
1	8B-HG6-905-010		IB,(EGFSI)F EM30
2	87-B30-255-010		HEADPHONE,HP-M007B(S)
3	8Z-HRB-050-210		CLIP,BELT ASSY

ELECTRICAL MAIN PARTS LIST 1 / 1

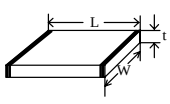
REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
IC			
	87-A21-638-040		C-IC,MM1336CF
	87-017-805-080		IC,AN7375NS
TRANSISTOR			
	87-026-264-080		C-TR,RN1411
	89-327-125-080		CHIP TR,2SC2712GR
DIODE			
	87-A40-630-040		C-DIODE,RB411D
	87-020-027-080		CHIP-DIODE 1SS184
MAIN C.B			
C101	87-010-178-080		CHIP CAP 1000P-50
C102	87-010-178-080		CHIP CAP 1000P-50
C103	87-010-213-080		C-CAP,S 0.015-50 B
C104	87-010-213-080		C-CAP,S 0.015-50 B
C105	87-010-499-040		CAP,E 22-6.3 GAS
C106	87-010-499-040		CAP,E 22-6.3 GAS
C111	87-010-182-080		C-CAP,S 2200P-50 B
C112	87-010-182-080		C-CAP,S 2200P-50 B
C119	87-010-503-040		CAP,E 220-4 GAS
C120	87-016-350-040		CAP,E 470-4 MA GAS
C121	87-010-805-080		CAP, S 1-16
C122	87-010-178-080		CHIP CAP 1000P-50KB
C123	87-010-494-040		CAP,E 1-50 GAS
C124	87-010-596-080		CAP, S 0.047-16
C125	87-010-499-040		CAP,E 22-6.3 GAS
C126	87-010-503-040		CAP,E 220-4 GAS
C127	87-010-197-080		CAP, CHIP 0.01 DM
C128	87-010-196-080		CHIP CAPACITOR,0.1-25
C230	87-010-196-080		CHIP CAPACITOR,0.1-25
C301	87-010-196-080		CHIP CAPACITOR,0.1-25
C302	87-010-196-080		CHIP CAPACITOR,0.1-25
C303	87-016-087-080		C-CAP,S 0.47-16F
C304	87-016-087-080		C-CAP,S 0.47-16F
C305	87-010-186-080		CAP,CHIP 4700P
C306	87-010-186-080		CAP,CHIP 4700P
C307	87-010-186-080		CAP,CHIP 4700P
C308	87-010-186-080		CAP,CHIP 4700P
C309	87-010-193-080		CHIP CAPACITOR,0.033
C310	87-010-193-080		CHIP CAPACITOR,0.033
C311	87-010-805-080		CAP, S 1-16
C312	87-010-805-080		CAP, S 1-16
C313	87-010-805-080		CAP, S 1-16
C314	87-010-805-080		CAP, S 1-16
C321	87-A10-952-080		C-CAP,TN 22-4 M A MCM
C322	87-010-196-080		CHIP CAPACITOR,0.1-25
C403	87-010-197-080		CAP, CHIP 0.01 DM
C404	87-010-197-080		CAP, CHIP 0.01 DM
C405	87-012-141-080		CHIP-CAPACITOR,0.22-16F
C406	87-012-141-080		CHIP-CAPACITOR,0.22-16F
C407	87-010-805-080		CAP, S 1-16
C408	87-010-805-080		CAP, S 1-16
C409	87-010-195-080		C-CAP,S 0.068-25 F
C410	87-010-195-080		C-CAP,S 0.068-25 F
C411	87-010-188-080		CAP,CHIP 6800P
C412	87-010-188-080		CAP,CHIP 6800P
C413	87-010-198-080		CAP, CHIP 0.022
C414	87-010-198-080		CAP, CHIP 0.022
C415	87-010-501-040		E/CAP GAS 47-4
C417	87-010-198-080		CAP, CHIP 0.022
C418	87-010-198-080		CAP, CHIP 0.022
C420	87-010-805-080		CAP, S 1-16
C421	87-010-805-080		CAP, S 1-16
C701	87-012-157-080		C-CAP,S 330P-50 CH
C702	87-012-157-080		C-CAP,S 330P-50 CH
C703	87-010-196-080		CHIP CAPACITOR,0.1-25
C704	87-010-197-080		CAP, CHIP 0.01 DM
C705	87-010-197-080		CAP, CHIP 0.01 DM
C706	87-012-141-080		CHIP-CAPACITOR,0.22-16F
J101	87-A61-124-110		JACK,DC DIA2.75 BLK TC
J102	85-HRL-623-010		JACK,3.5 ST BLK
S101	87-A91-077-010		SW,LEAF
S102	8Z-HRB-607-010		SW,SL 2-2-2 SSZZ-S-502(S)
S103	87-A90-050-010		SW, SL 2-2-2 NS (BLK)
S301	87-A90-917-010		C-SW,SL 1-1-2 SS-350-B12W-C-L
S401	87-A91-285-110		C-SW,SL 1-1-4 SS-350-B14B-C-L
SFR101	87-024-050-010		SFR,1K V VZ066H1
TH101	87-026-256-090		THERMISTOR, HT-100
VR101	87-A90-818-010		VR,RTRY 20KCX2H XV0102G

○チップ抵抗部品コード／CHIP RESISTOR PART CODE

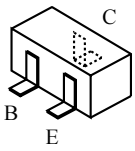
チップ抵抗部品コードの成り立ち
Chip Resistor Part Coding



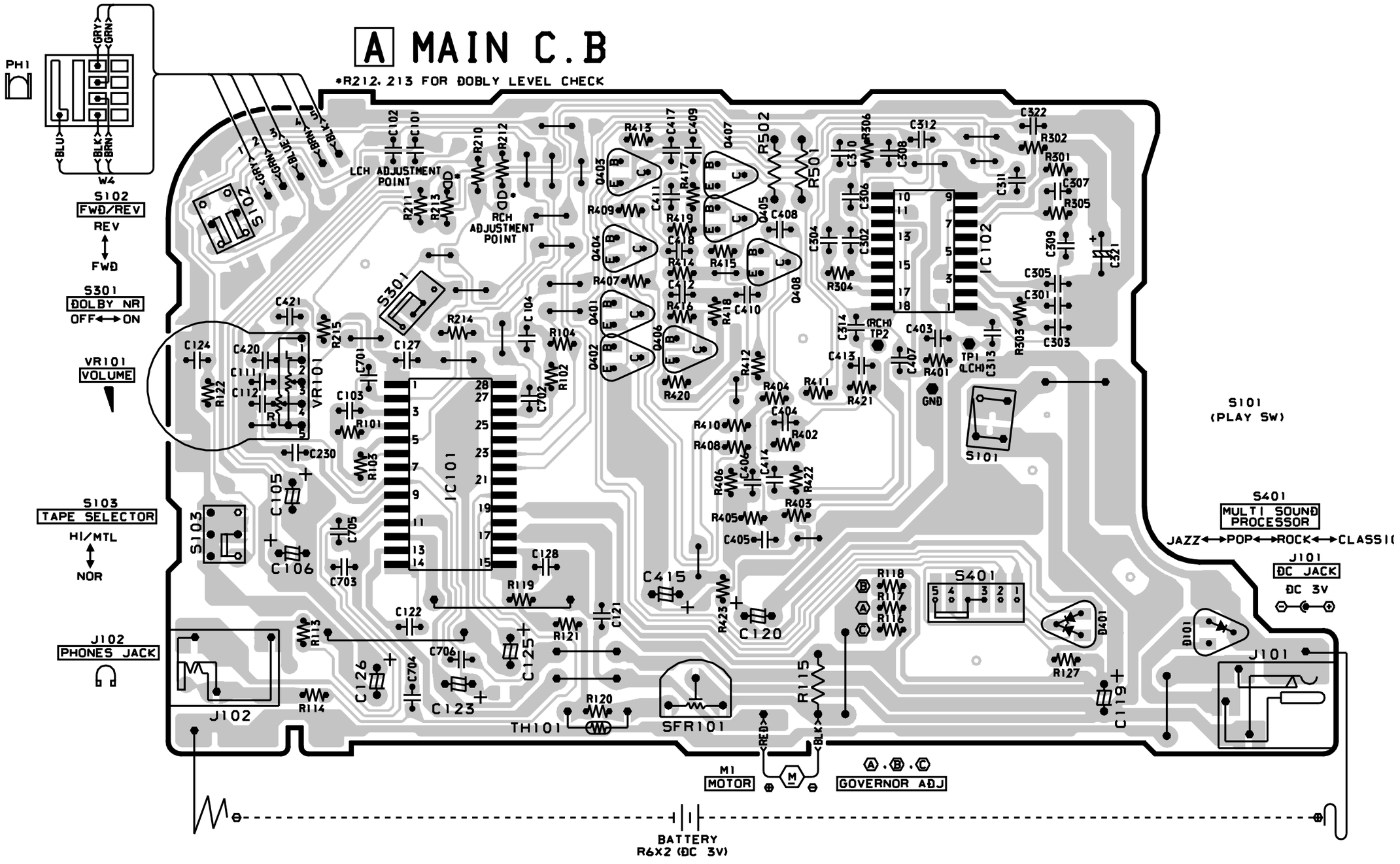
チップ抵抗
Chip resistor

容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法／Dimensions (mm) 外形／Form	L	W	t	抵抗コード : A Resistor Code : A
1/16W	1005	± 5%	CJ		1.0	0.5	0.35	104
1/16W	1608	± 5%	CJ		1.6	0.8	0.45	108
1/10W	2125	± 5%	CJ		2	1.25	0.45	118
1/8W	3216	± 5%	CJ		3.2	1.6	0.55	128

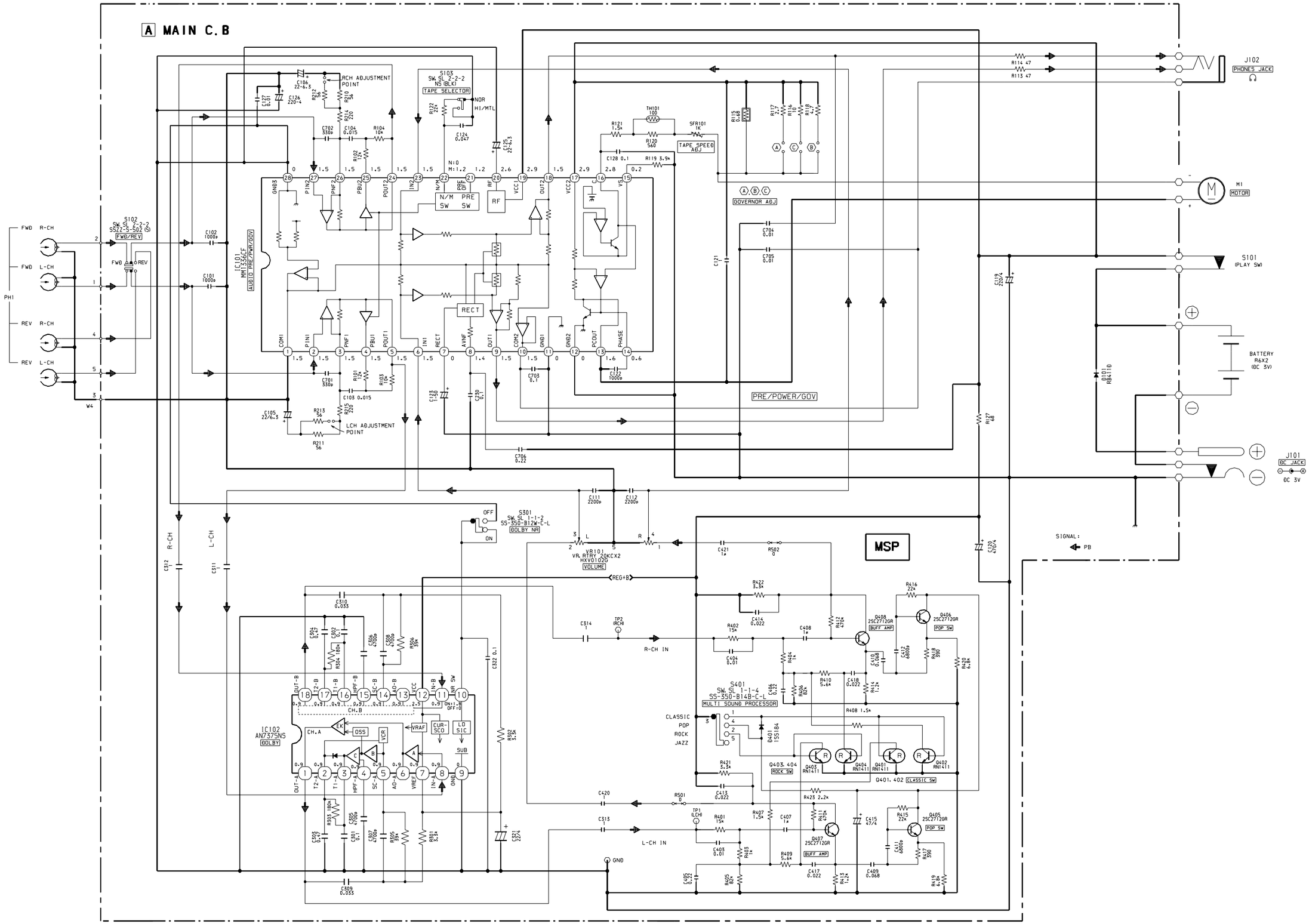
TRANSISTOR ILLUSTRATION



2SC2712
RN1411


A MAIN C.B
*R212. 213 FOR DOBLY LEVEL CHECK
PH1
GRY
GRN
BLU
BLK
BRN
W4
S102
FWD/REV
REV
FWD
S301
DOLBY NR
OFF ON
VR101
VOLUME
LCH ADJUSTMENT POINT
RCH ADJUSTMENT POINT
IC101
IC102
S101
(PLAY SW)
S103
TAPE SELECTOR
HI/MTL
NOR
J102
PHONES JACK
S401
MULTI SOUND PROCESSOR
JAZZ POP ROCK CLASSIC
J101
DC JACK
DC 3V
TH101
SFR101
M1
MOTOR
GOVERNOR ADJ
BATTERY
R6X2 (DC 3V)
(RCH) TP2
TP1 (LCH)
GND

SCHEMATIC DIAGRAM



ADJUSTMENT

1. Tape Speed Adjustment
   Settings : • Test tape : TTA – 100
   (Tape center)
   • Test point : Phones Jack (J102)
   • Adjustment location : SFR101
   • Tape selector : NORM
   • Volume : Non – clip
   (MAX – 10 dB down)
   Method : Play back the test tape and adjust SFR101 so that the frequency becomes 3000 Hz ± 10 Hz. Then confirm WOW is less than 0.50%.

2. Dolby Level Check
   Settings : • Test tape : TTA – 200
   • Test point : TP1 (L – CH)
   TP2 (R – CH)
   Method : Play back the test tape and check that the test point is within the specification of 100 mV ± 1 dB.
   * If the test point is out of the specification, solder the LCH Adjustment point (R213) and RCH Adjustment point (R212). This will increase the level by 1.2dB.

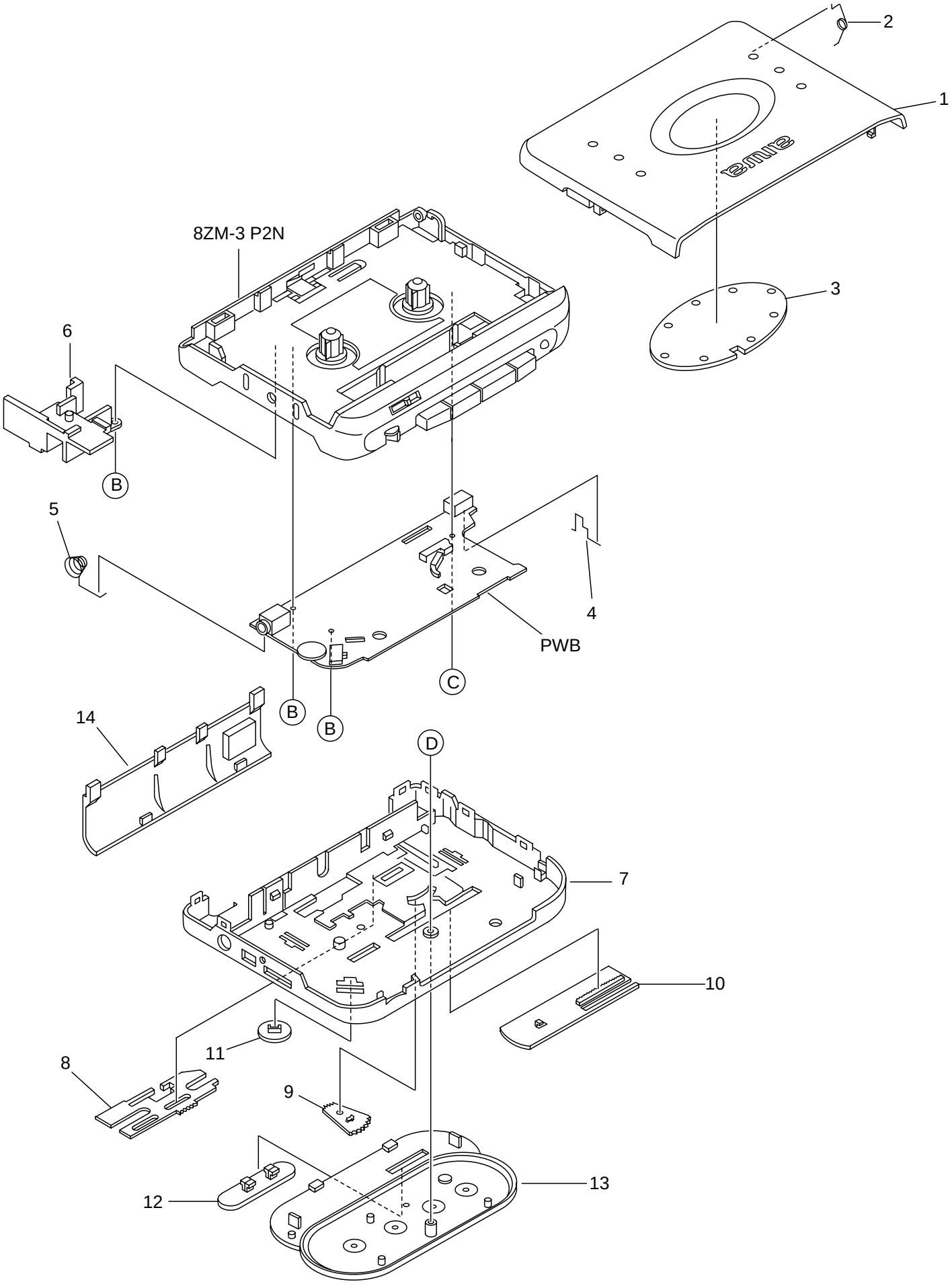
3. GOVERNER Check
   Perform the STOP —> PLAY and REVERSE operations (or PAUSE ON —> OFF) after the motor is replaced. When the tape starts running smooth, this adjustment is not necessary. If wow is conspicuous at the beginning of the tape-run, perform this adjustment following the procedures below.
   1) Solder resistor pattern (C) of the MOTOR AND GOVERNOR MATCHING ADJ. resistor group.
   2) Set the tape speed (using speed adjustment SFR101).
   3) Restrict the motor rotation by hand (or turn PAUSE ON).
   4) Remove your hand and listen to the beginning of the tape-run.
   5) When the rise of tape running is smooth, no more adjustment is necessary.
      If wow continues for 1 to 2 seconds at the rise time, change the combined resistance according to procedure 3 and check that the tape starts running smooth.
   6) Solder the resistor pattern according to the table below

Pattern	Low resistance Ⓐ	Medium resistance Ⓑ	High resistance Ⓒ
Step (1)	Open	Open	Open
Step (2)	Open	Open	Solder
Step (3)	Open	Solder	Open

(NOTE : Ⓐ = 2.7 ohm, Ⓑ = 4.7 ohm, Ⓒ = 10 ohm)

   7) Finally re-check the tape speed.
      Caution : Cool the patterns down to normal temperature after soldering. If the pattern remains heated, the gorvernor circuit does not operate normally.

MECHANICAL EXPLODED VIEW 1 / 1



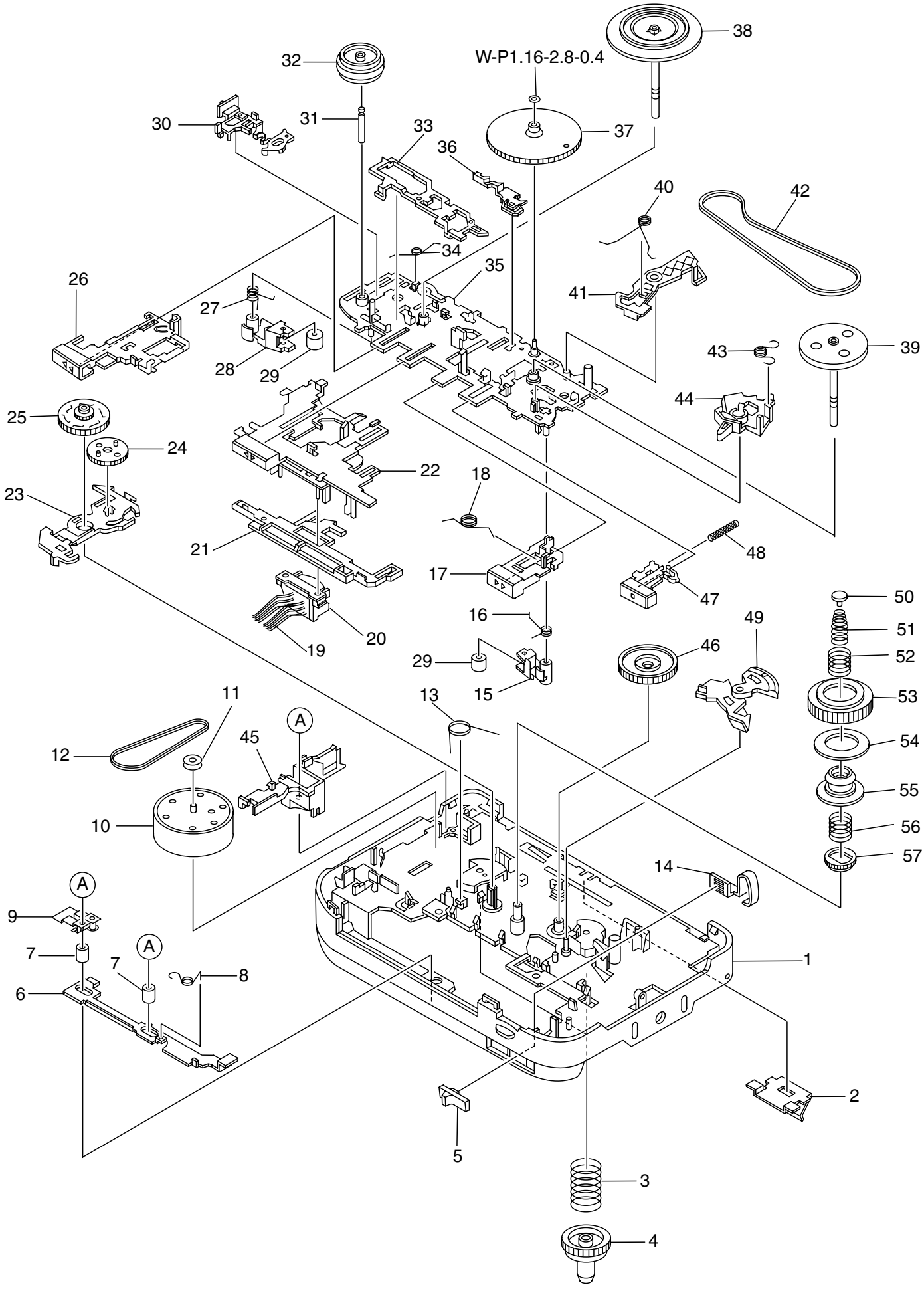
MECHANICAL PARTS LIST 1 / 1

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	8B-HG6-007-010		LID,CASS P EG<[S]Y>
1	8B-HG6-012-010		LID,CASS EG L-BLU<[L]Y>
2	8Z-HRB-217-110		SPR-T,CASS
3	8Z-HRB-002-010		WINDOW,CASS
4	8Z-HRB-208-010		BAT-CONTACT,P
5	8B-HRC-203-010		BAT-CONTACT,M
6	8Z-HG9-201-110		HLDR,HP JACK
7	8B-HG6-001-010		CABI,REAR<[S]Y>
7	8B-HG6-008-010		CABI,REAR L-BLU<[L]Y>
8	8B-HG6-201-010		RACK,MSP
9	8B-HG6-202-010		GEAR,MSP
10	8B-HG6-005-010		PLATE,IND MSP
11	8B-HG6-004-010		KNOB,SL DOLBY<[S]Y>
11	8B-HG6-010-010		KNOB,SL DOLBY L-BLU<[L]Y>
12	8B-HG6-003-010		KNOB,SL MSP
13	8B-HG6-002-010		PANEL,MSP
14	8Z-HRB-005-110		LID,BAT SIL<[S]Y>
14	8B-HG6-011-010		LID,BAT L-BLU<[L]Y>
A	87-B10-048-010		VT2+1.4-3 (3) CR HL
B	87-B10-196-010		VT2+1.4-4 BLK (3) HL
C	87-264-527-310		V 1.7-3 SCREW
D	87-067-384-010		SCREWVT1.4-3.5HL

COLOR NAME TABLE

Basic color symbol	Color	Basic color symbol	Color	Basic color symbol	Color
B	Black	C	Cream	D	Orange
G	Green	H	Gray	L	Blue
LT	Transparent Blue	N	Gold	P	Pink
R	Red	S	Silver	ST	Titan Silver
T	Brown	V	Violet	W	White
WT	Transparent White	Y	Yellow	YT	Transparent Yellow
LM	Metallic Blue	LL	Light Blue	GT	Transparent Green
LD	Dark Blue	DT	Transparent Orange	GM	Metallic Green
YM	Metallic Yellow	DM	Metallic Orange	PT	Transparent Pink
LA	Aqua Blue	GL	Light Green	HT	Transparent Gray

TAPE MECHANISM EXPLODED VIEW 1 / 1



TAPE MECHANISM PARTS LIST 1 / 1

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	8Z-HRB-003-210		FRAME,CENTER GRY
2	8Z-HRB-207-110		SPR-P,CASS
3	88-ZM3-253-210		SPR-C,BT L
4	88-ZM3-274-010		GEAR,REEL A
5	8Z-HRB-014-110		KNOB,SL OPEN
6	8Z-HRB-204-110		LEVER,EJECT
7	8Z-HRB-216-110		CAP, EJECT
8	8Z-HRB-205-110		SPR-T,EJECT
9	8Z-HRB-215-010		SHAFT,ASSY
10	87-A91-379-010		MOT,BCY3B-13
11	88-ZM3-236-010		PULLEY,MOT S
12	88-ZM3-263-210		BELT,S
13	88-ZM3-243-010		SPR-T,PLAY BACK
14	8Z-HRB-206-010		PLATE,EJECT
15	88-ZM3-217-210		ARM,PINCH L
16	88-ZM3-241-110		SPR-T,PINCH L
17	88-ZM3-003-110		LEVER,REW
18	88-ZM3-246-110		SPR-T,FF REW
19	87-A80-115-010		F-CABLE,5P P2
20	87-A91-019-010		HEAD ASSY,PH 8ZM-3
21	88-ZM3-211-010		LEVER,DIR
22	88-ZM3-001-110		LEVER,PLAY
23	88-ZM3-213-310		LEVER,T-UP
24	88-ZM3-225-110		GEAR,PLAY
25	88-ZM3-224-210		GEAR,TRANSMIT
26	88-ZM3-002-110		LEVER,FF
27	88-ZM3-242-210		SPR-T,PINCH R
28	88-ZM3-242-210		ARM,PINCH R
29	88-ZM3-271-010		ROLLER ASSY,PINCH
30	88-ZM3-220-110		BTN,MODE SEL
31	88-ZM3-267-010		SHAFT,PULLEY TWIN
32	88-ZM3-234-010		PULLEY,BELT TWIN
33	88-ZM3-212-110		LEVER,LOCK
34	88-ZM3-245-110		SPR-T,LOCK
35	88-ZM3-201-410		CHAS ASSY,OUTSERT P
36	88-ZM3-216-110		LEVER,SW
37	88-ZM3-221-110		GEAR,AUTO
38	09-001-453-010		FLY-WHL ASSY,R S
39	88-ZM3-280-010		FLY-WHL ASSY,L2
40	88-ZM3-248-010		SPR-T,AUTO CHOOSE
41	88-ZM3-215-110		LEVER,AUTO KICK
42	88-ZM3-262-010		BELT,L
43	88-ZM3-244-010		SPR-T,DIR
44	88-ZM3-219-010		BTN,DIR KNOB
45	8A-HRH-203-010		HLDR,DC JACK
46	88-ZM3-226-010		GEAR,IDLE
47	88-ZM3-004-210		LEVER,STOP
48	88-ZM3-255-210		SPR-C,STOP
49	88-ZM3-214-110		LEVER,AUTO FIND
50	88-ZM3-238-010		CAP,SLIP
51	88-ZM3-252-010		SPR-C,SHIFT
52	88-ZM3-251-310		SPR-C,SLIP
53	88-ZM3-222-110		GEAR,SLIP FAST
54	88-ZM3-269-110		FELT,SLIP
55	88-ZM3-237-110		CLR,SLIP
56	88-ZM3-247-010		SPR-T,AUTO FIND
57	88-ZM3-223-010		GEAR,SLIP SLOW
58	8A-HRH-203-010		HLDR,DC JACK
A	87-067-384-010		SCREWVT1.4-3.5HL

アイワ株式会社 〒110-8710 東京都台東区池之端1-2-11 ☎03(3827)3111 (代表)
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