Service Manual

Portable Stereo CD System	Radio Cassette

MASH*
multi-stage noise shaping

COMPACT disc DIGITAL AUDIO

RX-DS17

Colour

Area

(K) ... Black Type

Suffix for Model No.	Area	Colour
(P)	U.S.A.	(K)
(PC)	Canada	

* MASH is a trademark of NTT.
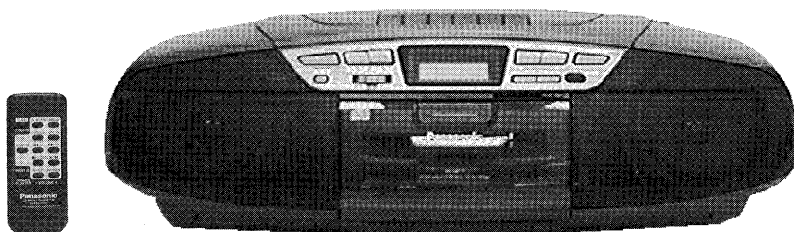
TAPE SECTION : SG20 MECHANISM SERIES
CD SECTION : RAE0150Z TRAVERSE DECK SERIES

■ Specifications

■RADIO

Frequency range
FM   87.5 - 108 MHz(100 kHz steps)
    87.9 - 107.9 MHz(200 kHz steps)
AM   520 - 1710 kHz (10 kHz steps)

Intermediate Frequency
FM   10.7 MHz
AM   450 kHz
Sensitivity
FM   20 dB/100 mW
AM   54 dB/100 mW

■TAPE RECORDER

Track system	4 track, 2 channel, stereo
Recording system	AC bias
Tape speed	4.8cm/s
Erasing system	Magnet (Multi pole)
Monitor system	Variable sound monitor
Frequency range(Normal position)	50 – 12,000 Hz

Notes :
Specifications are subject to change without notice.
Weight and dimensions are approximate.

■CD PLAYER

Sampling frequency	44.1 kHz
Decoding	16-bit linear
Beam source	Semiconductor laser (wavelength; 780 nm)
No. of channels	2 channel, stereo
Frequency Response	20 Hz – 20 kHz(+0, –2 dB)
S/N ratio	60 dB
Wow and flutter	Less than possible measurement data
D/A converter	MASH (1 bit DAC)

■GENERAL

Power requirement
AC   120V, 60 Hz
    Power consumption: 16 W
Battery   12V (Eight "D" size, R20/LR20 batteries)
Memory back-up for
computer   6V (Four "AA" size, R6/LR6 batteries)
Speakers   10 cm (4") x 2
Jacks
    Output   Headphones; 32 Ω
Dimensions (W x H x D)   480 x 156 x 243 mm
    $(18^{11}/_{12}" \times 6^1/_{12}" \times 9^1/_2")$
Weight   3.2 kg(7 lb. 1 oz.) without batteries

Panasonic®

■ Contents

■ Safety Precautions (This "Safety Precaution" is applied only in U.S.A.)

1. Before servicing, unplug the power cord to prevent an electric shock .
2. When replacing parts, use only manufacturer's recommended components for safety .
3. Check the condition of the power cord .Replace if wear or damage is evident .
4. After servicing ,be sure to restore the lead dress, insulation barriers ,insulation papers ,shields ,etc .
5. Before returning the serviced equipment to the customer, be sure to make the following insulation resistance test to prevent the customer from being exposed to a shock hazard .

• Insulation Resistance Test

1. Unplug the power cord and short the two prongs of the plug with a jumper wire .
2. Turn on the power switch .
3. Measure the resistance value with ohmmeter between the jumper AC plug and each exposed metal cabinet part ,such as screwheads, antenna ,control shafts ,handle brackets , etc . Equipment with antenna terminals should read between 3MΩ and 5.2MΩ to all exposed parts* .(Fig. 1) Equipment without antenna terminals should read approximately infinity to all exposed parts . (Fig. 2)
   *Note :Some exposed parts may be isolated from the chassis by design. These will read infinity .
4. If the measurement is outside the specified limits ,there is a possibility of a shock hazard .The equipment should be repaired and rechecked before it is returned to the customer .
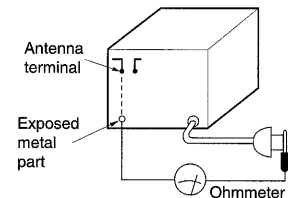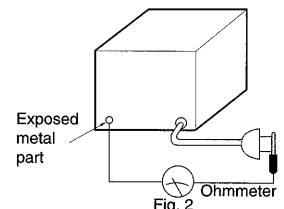

Fig. 1
Resistance = 3MΩ – 5.2MΩ

Fig. 2
Resistance = Approx

■ Precaution of Laser Diode

CAUTION: This unit utilizes a class 1 laser. Invisible laser radiation is emitted from the optical pick up lens. When the unit is turned on :
1. Do not look directly into the pick up lens.
2. Do not use optical insturments to look at the pick up lens.
3. Do not adjust the preset variable resistor on the pick up lens.
4. Do not disassemble the optical pick up unit.
5. If the optical pick up is replaced, use the manufacturer's specified replacement pick up only.
6. Use of control or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

■ Handling Precautions for Traverse Deck

The laser diode in the traverse deck (optical pickup) may break down due to potential difference caused by static electricity of clothes or human body.
So, be careful of electrostatic breakdown during repair of the traverse deck (optical pickup).

• **Handling of traverse deck (optical pickup)**
1. Do not subject the traverse deck (optical pickup) to static electricity as it is extremely sensitive to electrical shock.
2. To prevent the breakdown of the laser diode, an antistatic shorting pin is inserted into the flexible board (FFC board). When removing or connecting the short pin, finish the job in as short time as possible.
3. Take care not to apply excessive stress to the flexible board (FFC board).
4. Do not turn the variable resistor (laser power adjustment). It has already been adjusted.

• **Grounding for electrostatic breakdown prevention**
1. Human body grounding
   Use the anti-static wrist strap to discharge the static electricity from your body.
2. Work table grounding
   Put a conductive material (sheet) or steel sheet on the area where the traverse deck (optical pickup) is placed, and ground the sheet.
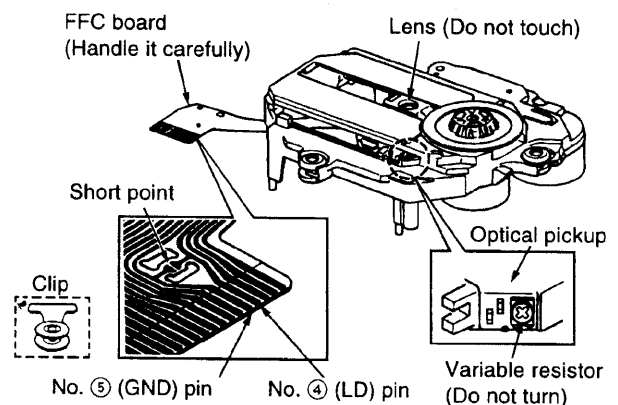
Caution :
The static electricity of your clothes will not be grounded through the wrist strap. So, take care not to let your clothes touch the traverse deck (optical pickup).

Caution when Replacing the Traverse Deck:
The traverse deck has a short point shorted with solder to protect the laser diode against electrostatics breakdown. Be sure to remove the solder from the short point before making connections.

FFC board
(Handle it carefully)

Lens (Do not touch)

Short point

Clip

Optical pickup

No. ⑤ (GND) pin   No. ④ (LD) pin

Variable resistor
(Do not turn)

Wrist strap
(Anti-static bracelet)

1 MΩ

Iron plate or some metals to
conduct electricity
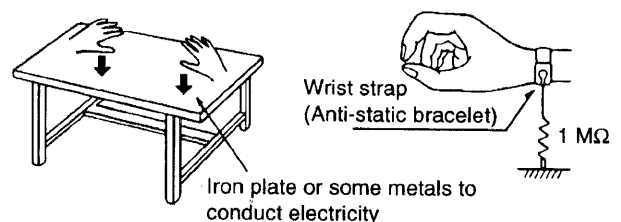
BATTERY SERVICE LIFE	Approx. 20 hours of Tape Recording (EIAJ).
UM-1 (D-size) Batteries	The above battery service life is measured according to the conditions set
Approx. 7.6 hours of CD Playback (EIAJ).	forth by EIAJ (Electronic Industries Association of Japan). As the battery
Approx. 7.4 hours of CD Recording (EIAJ).	service life varies with the method of operation and environmental
Approx. 15 hours of Tape Playback (EIAJ).	conditions, use these values as reference.

■ Operation Checks and Main Component Replacement Procedures

1. **This section describes procedures for checking the operation of the major printed circuit boards and replacing the main components.**
2. **For reassembly after operation checks or replacement, reverse the respective procedures.**
   Special reassembly procedures are described only when required.
3. **Select items from the following index when checks or replacement are required.**

• Contents   page

• **Checking Procedure for each major P.C.B.**

Warning   :   This product uses a laser diode. Refer to caution statements on page 2.

■ Checking Procedure for each major P.C.B.

1. Checking of the Tuner P.C.B.

Step 3
Press the CD Eject button and open the CD Lid.
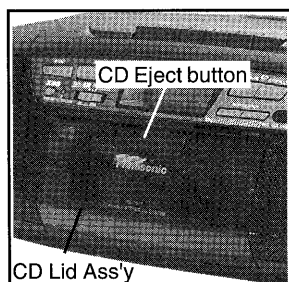
Step 2
ⓐ X 6

Step 1
Remove the battery cover.

CD Eject button

CD Lid Ass'y

Step 4
Remove the front cabinet in the direction of arrow.

Tuner P.C.B.

Step 7
Check the Tuner P.C.B. as shown above.

Step 6
Pull out the Tuner P.C.B.

Step 5
ⓑ X 1
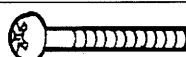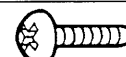
ⓐ XTV3 + 20G	ⓑ XTV3 + 12G

2. Checking of the Servo P.C.B.

Step 1 Follow the procedures in 'Checking of the Tuner P.C.B.' (**Step 1** ~ **Step 4**).

SW602

Test Disc

Traverse Unit
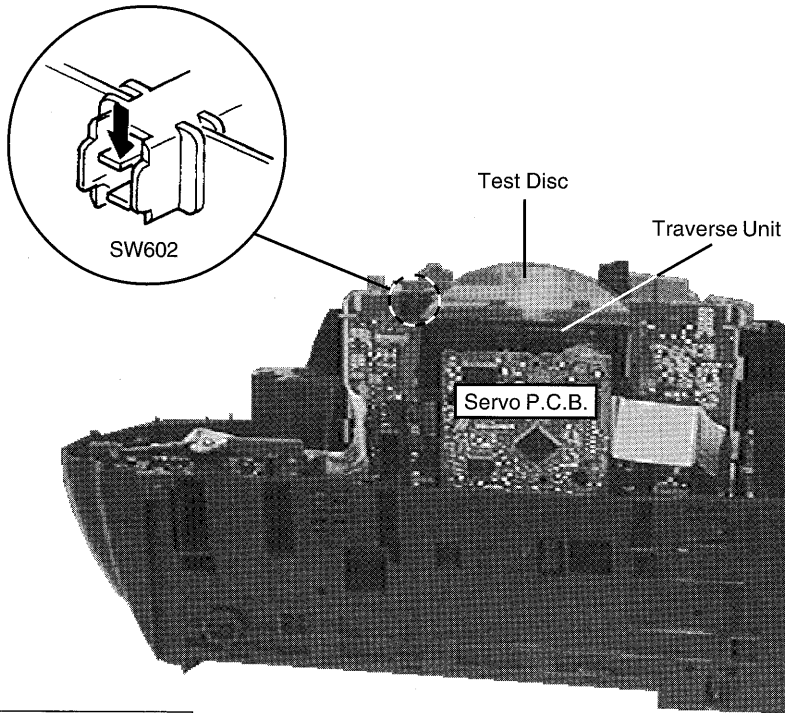
Servo P.C.B.

Step 3

Place the set and attach the test disc to the traverse unit as shown below, then check the Servo P.C.B.

Note :

Before perform checking, make sure the CD Lid detection switch SW602 is switched on.
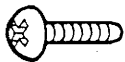
ⓒ XTV3 + 12G

3. Checking of the Mechanism P.C.B. and Main P.C.B.

Step 1 Follow the procedures in 'Checking of the Tuner P.C.B.' (**Step 1** ~ **Step 4**).

Step 2

ⓓ X 5

ⓓ **ⓓ** **ⓓ** **ⓓ** **ⓓ**

Step 3

Place the set as shown below and open up the Top Cabinet in the direction of arrow. Then check the Mechanism P.C.B.

Top Cabinet

Mechanism P.C.B.
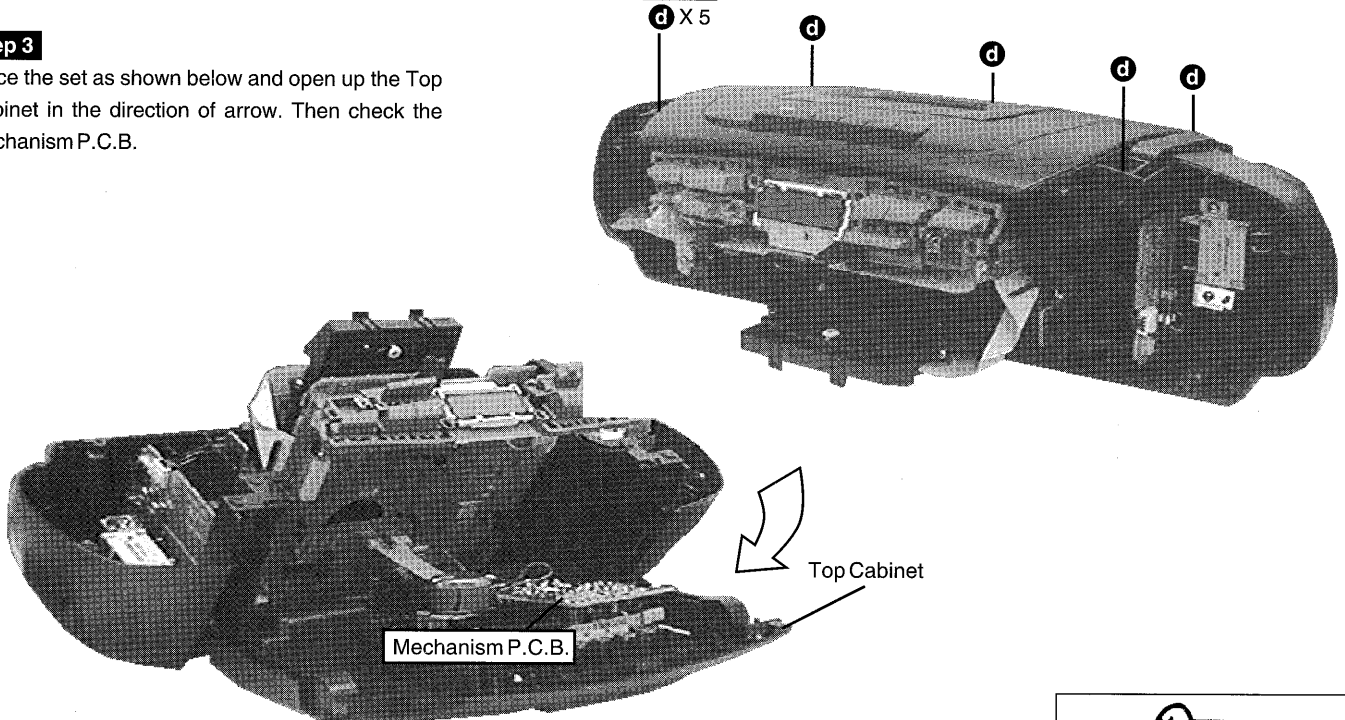
ⓓ XTN3 + 10CFZ

Step 4

Disconnect the Top Cabinet from connector CM303 on the Main P.C.B. in the direction of arrow ①.

Step 5

Release the catches at both sides. Pull out the Main P.C.B. in the direction of arrow ②.

Top Cabinet

Main P.C.B.

①

CM303

catches

②
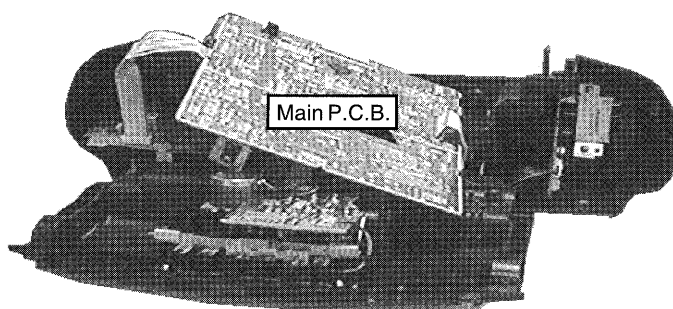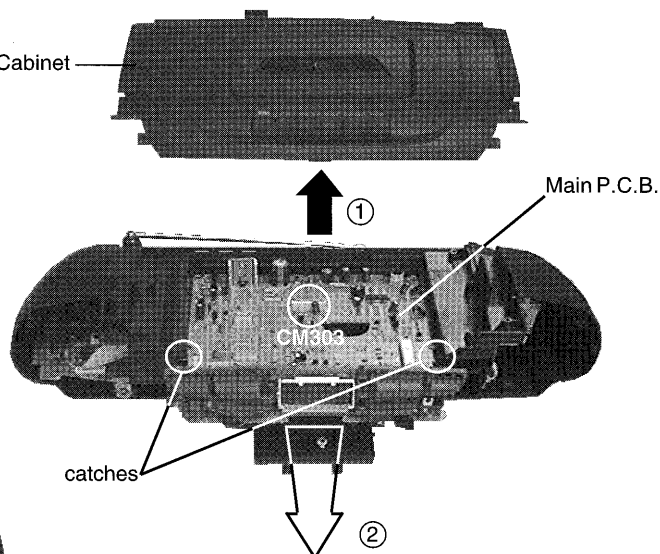
Main P.C.B.

Step 6

Connect the Top Cabinet back to the connector CM303.
Place the Main P.C.B. as shown on the left and then check the Main P.C.B.

■ Main Component Replacement Procedures

1. Replacement of the Traverse Deck

Step 1 Follow the procedures in 'Checking of the Servo P.C.B.' (**Step 1** ~ **Step 2**).

Step 2
ⓐ X 2
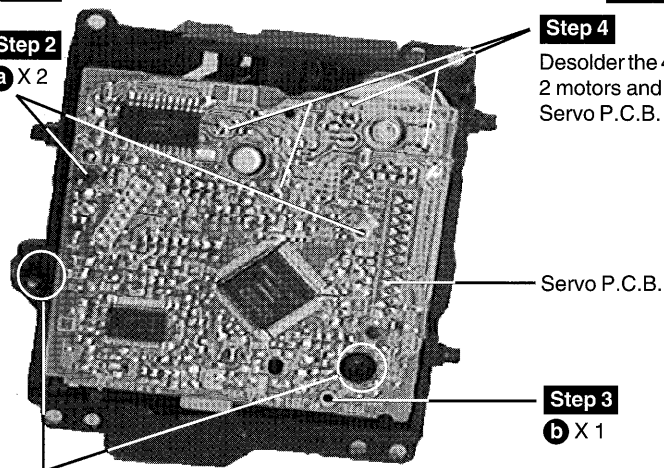
Step 4

Desolder the 4 legs of the 2 motors and pull out the Servo P.C.B.

Traverse Deck   Servo P.C.B.

Servo P.C.B.

Step 3
ⓑ X 1

Step 6 Remove the flexible cable CN701.

Step 5 Widen the 2 bosses with a flat screwdriver and pull out the 2 pins. Then remove the Traverse Deck.

• Removal of the flexible cable
Push the top of the connector in the direction of the arrow①, and then pull out the flexible cable in the direction of the arrow②.

Top   Flexible cable

①   ①   ②

screw-driver

boss

pin

Note :
Insert a short pin into the flexible cable for traverse unit.

Flexible cable

Short pin

ⓐ
[XTV2+6G] (Brass)
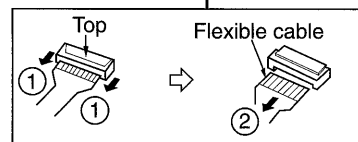
ⓑ
[XTN2+6G] (Brass)

■ Self-Diagnostic Display Function

■ Self-diagnostic display

This unit is equipped with a self-diagnostic display function which, if a problem occurs, will display an error code corresponding to the problem. Use this function when performing maintenance on the unit.

■ Preparation

Normal blank tape with recording prevention tab on one side.

■ How to enter the Self-Diagnostic Display Function mode

1. Turn the power on.
2. Set the Operation Selector to CD. (with no CD loading condition)
3. Press and hold the "STOP/CLEAR" button for at least 2 seconds.
   While pressing the "STOP/CLEAR" button, press the "SKIP/SEARCH" button for 2 seconds. "T" will appear on the FL display.
   (The set is in the Self-Diagnostic Function Mode)
4. Open the CD door.
5. Close the CD door.
6. Load the normal blank tape to DECK.
7. Press the "REC" button.
8. Press the "TAPE STOP/EJECT" button.

Press the "CD STOP/CLEAR (■) to check the result. If there is problem, the error code shall be displayed. (If no problem, display shows 'T' indication). In case several problems exist, error code will change each time you press the "CD STOP/CLEAR" button.

■ How to get out from the Self-Diagnostic Display Function

Select Operation Selector to other mode except CD.

Tape STOP/EJECT button
Rec button   CD STOP/CLEAR

Operation   Display   CD door button SKIP/SEARCH
Selector
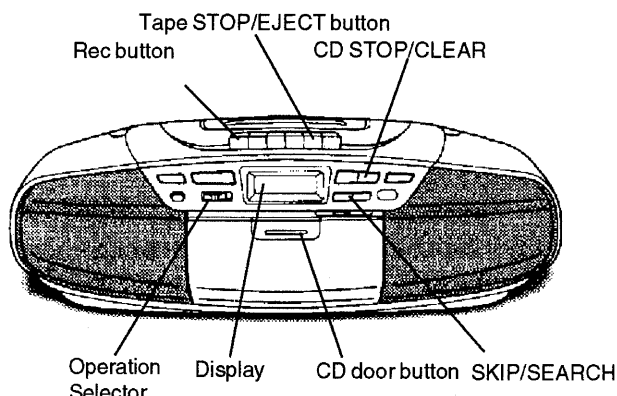
This means that the set is in the Self-Diagnostic Display Function mode

T

(Example of Error Code)

H09

■ Interpretation of Error Codes

(Note : * means error code will be displayed automatically)

Error Code	Problem condition	Correction procedure
*U01	When the unit is operating on batteries, power supply ceases soon after the power is turn on.	It is due to consumption of batteries. Replace the batteries with new ones.
*U02	Turn the power on causes no supply of power.	Check the power plug (AC) or insert batteries (DC).
H09	Tape does not play even pressing PLAY button.	Faulty Leaf switch (SW302). Faulty operation Q616.
H16	CD does not operate and indicate 「 NO DISC 」.	Faulty contact or short circuit of CD tray close switch. (SW602)
F15	Relatively long time (about 5 sec) is required to begin play when the CD play button is pressed from the power-off state or from a function other than CD player.	Faulty contact on CD mechanism optical pick-up rest switch (S701).
F26	CD does not operate and LCD shows 「 F26 」.	Faulty data communication of servo processor IC and microprocessor.
F69	CD does not start to play at syncro-recording function mode.	Faulty contact or short circuit of recording switch (SW301).
*F75	「 NO DISC 」 indication show in the FL display even CD is loaded.	Faulty power circuit of CD. Faulty servo processor IC.

■ Measurements and Adjustments

< TUNER SECTION >

■ ALIGNMENT INSTRUCTIONS

READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT
Measuring Condition 1. Set volume control to maximum. 2. Set power source voltage to 12V DC. 3. Output of signal generator should be no higher than necessary to obtain an output reading. Note : No AM IF and FM STEREO alignment are required.

■ AM-RF ALIGNMENT

SIGNAL GENERATOR or SWEEP GENERATOR		RADIO DIAL SETTING	INDICATOR (ELECTRONIC VOLTMETER or OSCILLOSCOPE)	ADJUSTMENT (Shown in **Fig. 1**)	REMARKS
CONNECTIONS	FREQUENCY				
Fashion a loop of several turns of wire and radiate a signal into the loop ant. of receiver.	600 kHz	Tune to signal	Headphones Jack (32Ω) Fabricate the plug as shown in Fig. 2 and then connect the lead wires of the plug to the measuring instrument.	(*1) L3(AM ANT Coil)	Adjust for maximum output. Adjust L3 by moving coil along the ferrite core.
"	1500 kHz	"	"	CT1 (AM ANT Trimmer)	Adjust for maximum output.

(*1) Fix antenna coil with wax after completing alignment.

< CASSETTE DECK SECTION >

■ ALIGNMENT INSTRUCTIONS

READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT	
Measuring Instruments • Digital frequency counter **Test tape** • Tape speed adjustment (3kHz, – 10 dB) : QZZCWAT	**Measuring condition** • Make sure the heads are clean. • Make sure the capstan and pressure roller are clean. • Tape-to-tape recording speed selector : NORMAL
Note : No Azimuth Head Alignment is required due to Aztec Head is used in the cassette mechanism.	

■ TAPE SPEED ALIGNMENT

TEST TAPE	EQUIPMENT CONNECTION ELECTRONIC COUNTER	ADJUSTMENT	SPECIFICATION	REMARKS
QZZCWAT (3 kHz, –10dB)	Headphone Jack (32Ω) (Fabricate the plug as shown in **Fig.2** and then connect the lead wires of the plug to the measuring instrument.)	————	3000 ± 90 Hz	Playback mode

■ RECORD BIAS VOLTAGE & FREQUENCY CHECK

TEST TAPE	EQUIPMENT CONNECTION ELECTRONIC COUNTER	ADJUSTMENT	SPECIFICATION	REMARKS
Use Normal tape	**TPA** ... (+) **TPB** ... (–) Refer to **Fig.3,4**	————	18 ± 5 mV	Record mode
Use Normal tape	**TPA** ... (+) **TPB** ... (–) Refer to **Fig.4,5**	————	100 ± 10 kHz	1. Set to Record mode 2. Confirm sine-wave appears without distortion /abnormal oscillation.

■ BEATPROOF CHECK

TEST TAPE	EQUIPMENT CONNECTION ELECTRONIC COUNTER	ADJUSTMENT	SPECIFICATION	REMARKS
Use Normal tape	**TPA** ... (+) **TPB** ... (–) Refer to **Fig.4,6**	————	5 ± 1 kHz	1. Set the Selector to Tuner position. 2. Confirm sine-wave appears without distortion /abnormal oscillation.

■ ALIGNMENT POINTS

Fig. 1

Fig. 2

Fig. 3

Fig. 4 DECK P.C.B.

Fig. 5

Fig. 6
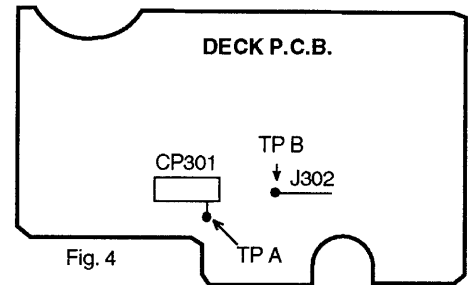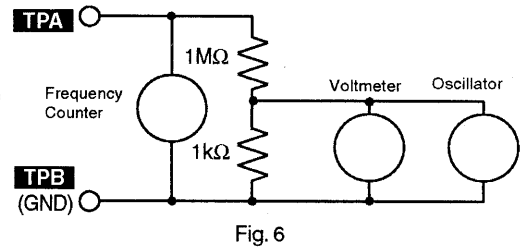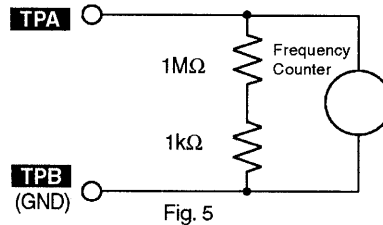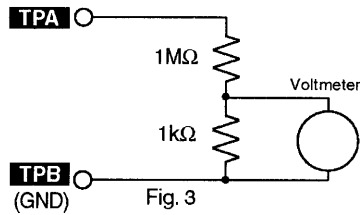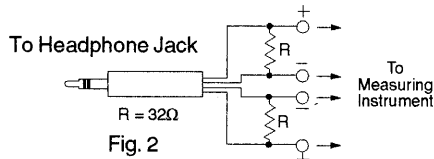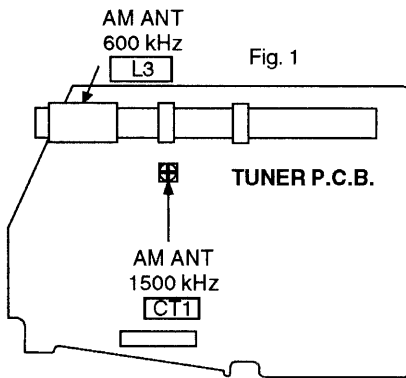
■ Terminal Function of IC's

• IC2 (BU2616F-E2)

Pin No.	Mark	I/O	Function	Pin No.	Mark	I/O	Function
1	XOUT	O	X'tal oscillator connection (7.2 MHz)	10	P0	O	Phase detection signal output
2	XIN	I		11	P1	O	Tuner power supply control output
3	CE	I	Tuner PLL strobe input (H=ENABLE)	12	P2	I	AM OSC signal input
4	DA	I	Tuner PLL data input	13	AMIN	I	AM OSC signal input
5	CL	I	Tuner PLL clock input	14	FMIN	I	FM OSC signal input
6	TUN	O	Tuner receiving condition detection output	15	VDD	I	Power supply
7	SD	I	SD signal input	16	PD1	O	FM/AM/Vcap control signal output
8	IFIN	I	IF detection signal input	17	PD2	—	Open
9	P3	O	Pilot signal detection output	18	GND	—	GND

• IC703 (AN8389SE1) Focus coil / Tracking coil / Traverse motor / Spindle motor driver

Pin No.	Mark	I/O	Function	Pin No.	Mark	I/O	Function
1	VCC	I	Power supply terminal	13	PVCC1	I	Power supply (1) for driver
2	VREF	I	Reference voltage input	14	PGND1	—	Ground connection (1) for driver
3	IN4	I	Motor driver (4) input	15	D1–	O	Motor driver (1) reverse-action output
4	IN3	I	Motor driver (3) input	16	D1+	O	Motor driver (1) forward-action output
5	GND	—	Ground connection	17	D2–	O	Motor driver (2) reverse-action output
6	NC	—	Ground connection	18	D2+	O	Motor driver (2) forward-action output
7	NRESET	I	Reset input	19	D3–	O	Motor driver (3) reverse-action output
8	GND	—	Ground connection	20	D3+	O	Motor driver (3) forward-action output
9	IN2	I	Motor driver (2) input	21	D4–	O	Motor driver (4) reverse-action output
10	PC2	I	PC2 (power cut) input	22	D4+	O	Motor driver (4) forward-action output
11	IN1	I	Motor driver (1) input	23	PGND2	—	Ground connection (2) for driver
12	PC1	I	PC1 (power cut) input (Not used, open)	24	PVCC2	I	Power supply (2) for driver

• IC702 (MN662741RPA) Servo processor / Digital signal processor / Digital filter / D/A converter

Pin No.	Mark	I/O	Function
1	BCLK	O	Serial bit clock terminal (Not used, open)
2	LRCK	O	L/R discriminating signal (Not used, open)
3	SRDATA	O	Serial data (Not used, open)
4	DVDD1	I	Power supply (digital circuit) terminal
5	DVSS1	—	GND (digital circuit) terminal
6	TX	O	Digital audio interface signal
7	MCLK	I	Microprocessor command clock signal
8	MDATA	I	Microprocessor command data signal
9	MLD	I	Microprocessor command load signal
10	SENSE	O	Sense signal output (OFT,FESL,MAGEND,NAJEND,POSAD,SFG)
11	/FLOCK	O	Optical servo condition(focus)("L" : lead-in)
12	/TLOCK	O	Optical servo condition(tracking)("L" : lead-in)
13	BLKCK	O	Sub-code block clock (f=75Hz)
14	SQCK	I	External clock signal input for sub-code Q register.
15	SUBQ	O	Sub-code Q code output
16	DMUTE	I	Muting input ("H" : mute)
17	STAT	O	Status signal output (CRC,CUE,CLVS,TTSTVP,FCLV,SQCK)
18	/RST	I	Reset input
19	SMCK	O	1/2-divided clock signal of crystal oscillating at MSEL = "H" (fSMCK=8.4672MHz) 1/4-divided clock signal of crystal oscillating at MSEL="L" (fSMCK=4.2336MHz)
20	PMCK	O	1/192-divided clock signal of crystal oscillating (fPMCK=88.2kHz) (Not used, open)
21	TRV	O	Traverse servo control output
22	TVD	O	Traverse drive signal output
23	PC	O	Spindle motor ON signal output ("L" : ON)
24	ECM	O	Spindle motor drive signal output (forced mode output)
25	ECS	O	Spindle motor drive signal output (servo error signal output)
26	KICK	O	Kick pulse output
27	TRD	O	Tracking drive output
28	FOD	O	Focus drive output
29	VREF	I	D/A (drive) output (TVD,ECS,TRD,FOD, FBAL,TBAL) Reference voltage input.
30	FBAL	O	Focus balance adjustment output (Not used,open)
31	TBAL	O	Tracking balance adjustment output
32	FE	I	Focus error signal input (analog input)
33	TE	I	Tracking error signal input (analog input)
34	RFENV	I	RF envelope signal input
35	VDET	I	Vibration detection signal input ("H" : detection)
36	OFT	I	Off-track signal input ("H" : off track)
37	TRCRS	I	Track cross signal input
38	/RFDET	I	RF detection signal input ("L" : detection)
39	BDO	I	Dropout signal input ("H" : Dropout)
40	LDON	O	Laser on signal output ("H" : ON)
41	TES	O	Tracking error shunt signal output ("H" : shunt)
42	PLAY	O	Play signal out ("H" : PLAY)
43	WVEL	O	Double speed status signal output ("H" : DS)
44	ARF	I	RF signal input
45	IREF	I	Reference current input
46	DRF	I	DSL bias (Not used, open)
47	DSLF	I/O	DSL loop filter
48	PLLF	I/O	PLL loop filter
49	VCOF	I/O	VCO loop filter (Not used, open)
50	AVDD2	I	Power supply input (for analog circuit)
51	AVSS2	—	GND (for analog circuit)
52	EFM	O	EFM signal output (Not used, open)
53	PCK	O	PLL extraction clock ouput (Not used, open) (fPCK=4.321 MHz during normal playback)
54	PDO	O	Phase comparison signal of EFM and PCK signals (Not used, open)
55	SUBC	O	Sub-code serial data output (Not used, open)
56	SBCK	I	Sub-code frame clock signal output (fCLDCK=7.35kHz during normal playback)
57	VSS	—	GND
58	X1	I	Crystal oscillating circuit input (f=16.9344MHz)
59	X2	O	Crystal oscillating circuit output (f=16.9344MHz)
60	VDD	I	Power supply input (for oscillating circuit)
61	BYTCK	O	Byte clock output (Not used, open)
62	/CLDCK	O	Clock input for sub-code serial data (Not used, open)
63	FCLK	O	Crystal frame clock signal output (fCLK=7.35kHz, double=14.7kHz)
64	PFLAG	O	Interpolation flag output ("H" : interpolation) (Not used, open)
65	FLAG	O	Flag output (Not used, open)
66	CLVS	O	Spindle servo phase synchronizing signal output ("H" : CLV, "L" : rough servo) (Not used, open)
67	CRC	O	Sub-code CRC checked output ("H" : OK, "L" : NG) (Not used, open)
68	DEMPH	O	De-emphasis ON signal output ("H" : ON) (Not used, open)
69	RESY	O	Frame resynchronizing signal output (Not used, open)
70	/RST2	I	Reset input through MASH circuit ("L" : Reset)
71	/TEST	I	Test input

Pin No.	Mark	I/O	Function
72	AVDD1	I	Power supply input (for analog circuit)
73	OUTL	O	Left channel audio signal output
74	AVSS1	—	GND
75	OUTR	O	Right channel audio signal output
76	RSEL	I	RF signal polarity assignment input
			(at "H" level, RSEL="H", at "L" level, RESL="L")
77	CSEL	I	Crystal oscillating frequency designation input

Pin No.	Mark	I/O	Function
			"L" : 16.9344MHz "H" : 33.8688MHz
78	PSEL	I	Test input (normally "L") (Not used, open)
79	MSEL	I	Output mode switching of SUBQ terminal
			("H" : Q code buffer mode)
80	SSEL	I	Output frequency switching for SMCK terminal
			"H" : SMCK=8.4672MHz
			"L" : MCK=4.2336MHz (Not used, open)

• IC601 (SC440422CFU) System Microprocessor

Pin No.	Mark	I/O	Function
1	VDD	—	+5V power supply
2	BP2	O	Recording beat proof
3	CD L	I/O	CD power supply control
4	TMUTE	I/O	Tuner muting output
5	R CTL	I/O	Remote control power supply output
6	PLL CE	I/O	TUNER PLL IC CE output
7	PLL CK	I/O	When TUNER, PLL IC CLK output
	/MCLK		When CD, CD LSI CLK output
8	PLL DATA	I/O	When TUNER, PLL IC DATA output
	/MDATA		When CD, CD LSI DATA output
9	TUNED	I	When TUNER, Reception Condition input
	/FLOCK		When CD, Focus lock signal input
10	TLOCK	I	CD tracking clock signal input
11	MLD	O	CD LSI LOAD output
12	REC H	I	Recording condition detection input
13~15	VLCD 3~1	—	LCD driving bias voltage input
16	VSS	—	GND
17	VDD(NDLY)	—	TEST terminal
18	XOSC IN	I	X'tal connection terminal (32 kHz)
19	XOSC OUT	O	
20	RESET	I	Micro Processor reset input
21	OSC1	I	Ceramic Oscillator connection (4.19 MHz)
22	OSC2	O	
23	MBP1	O	Mirco Processor beat proof control output 1
24	MBP2	O	Mirco Processor beat proof control output 2
25	TONE/ASPCK	O	Tone control, ASP IC CLK output
26	BPI/ASPDA	O	AM Rec. beat proof, ASP IC data output
27	ASPLT	O	ASP IC latch output
28	HSTAT	I/O	HAMP MUTE control output, HAMP condition
			detection input
29	PCNT	O	Power control output
30	REST SW	I	CD traverse REST SW input
31	AC DET	I	AC power coding detection input
32	MOT LOW	I	Deck motor control detection input
33	S CD	I	Function SW CD input
34	S TAPE	I	Function SW TAPE input

Pin No.	Mark	I/O	Function
35	S TUNER	I	Function SW TUNER input
36	KEY WK	I	KEY 1 WAKE UP input
37	CLOSE SW	I	CD Lid CLOSE detection SW input
38	CD RESET	I/O	CD RST output
39	SUBQ	I	CD SUB code Q data input
40	FSEL	I/O	When reset start, CD mode setting input
41	SQCK	O	CD SUB code reading clock output
42	SENSE	I	CD SENSE input
43	STAT	I	CD STATUS input
44	MUTE A	O	Audio mute output
45	BLKCK	I	CD SUB code block clock input
46	REM IN	I	Remote control receive pulse input
47	VDD	—	+5V power supply
48~51	COM 3~0	O	LCD remote control output
52	V REF H	—	AD converter reference voltage (VDD)
53	V REF L	—	AD converter reference voltage (VSS)
54	P DET	I	SWVCC voltage detection input
55	KEY 1	I	Key input (KW1 coupling)
56	KEY 2	I	Key input
57	REG 1	I	Area setting input 1
58	REG 2	I	Area setting input 2
59	SEG 2	O	LCD segment output
60	VSS	—	GND
61~80	SEG 3~22	O	LCD segment output

• IC701 (AN8835SBE1) Servo Amplifier

Pin No.	Mark	I/O	Function
1	PDA	I	PD signal input
2	PDB	I	PD signal input
3	VCC	I	Power supply connection
4	LPD	I	Laser PD connection
5	LD	O	Power out for LD driving
6	RF	O	RF signal output
7	RFIN	I	RF signal input
8	CAGC	I	AGC loop filter connection
9	ARF	O	RF-AGC output
10	CSBRT	I	Capacitor for detection connection
11	CEA	I	Capacitor connection for HPF amplifier
12	BDO	O	BDO output ("H" : drop out)
13	LDON	I	LD APC input ("H" : ON, "L" : OFF)
14	GND	—	Ground connection
15	/RFDET	O	NRFDET output ("L" : detection)
16	CROSS	O	CROSS output (Track cross signal output)
17	OFTR	O	Off-track output("L" : ON track, "H" : OFF track)
18	VDET	O	VDET output("H" : Vibration detected)
19	ENV	O	RF envelope detection
20	TEBPF	I	Vibration detection signal input
21	CCRS	I	Capacitor for LPF connection
22	TE	O	Tracking error signal output
23	FE	O	Focus error signal output
24	TBAL	I	Tracking balance signal input
25	FBAL	I	Focus balance signal input
26	VREF	O	Reference voltage output
27	PDE	I	PD signal input
28	PDF	I	PD signal input

■ Terminal Guide of IC's, Transistors and Diodes

AN7317 · S81250PG-T · TA7358FMATEL KV1583BMTL · AN8389SE1 · AN8835SBE1(28P) BU2616F-E2(18P) LA1832MLSTEL(24P) · TA8227P

MN662741RPA(80P) · SC440422CFU(80P) · 2SC2785FTA 2SC2786LTA 2SC3313BTA · 2SA952LTA 2SC1684STA · 2SC1740SRTA RVTDTA114EST RVTDTA143XST RVTDTC143XST RVTDTC144EST

2SB1566E · 2SB709S · RL203M11 1SR35400V · 1SS254TA RVD1SS135TA · MTZJ15BTA MTZJ5R6CTA MTZJ8R2CTA · KV1360NT KV1520NT

■ Wiring Connection Diagram

A SERVO P.C.B.
COMPONENT SIDE

OPTICAL PICKUP

CN701

M702 (SPINDLE MOTOR)

M701 (TRAVERSE MOTOR)

Red Mark

CN702

MOTOR

W302

C DECK P.C.B.
COMPONENT SIDE

CW303

CP301

TELESCOPIC ANTENNA

B TUNER P.C.B.

CM605
COMPONENT SIDE

NOTE:
COLOUR WIRE

BLU	BLUE
GRY	GREY
RED	RED
SLD	SHIELD
WHT	WHITE
YEL	YELLOW
BRN	BROWN

REC/PLAY HEAD

YEL
WHT
RED
SLD
GRY
SLD
RED

PHONES

JK601

CM303

PW604

AC IN

G POWER P.C.B.
COMPONENT SIDE

JK901

T901

D MAIN P.C.B.

PW605/H605

CN702

WHT — W602
BLU — PW601/H601

COMPONENT SIDE

CP603
WHT –
RED –
BRN –

CP604
PW901 (H901A)

E OPERATION P.C.B.
COMPONENT SIDE

W601

H BATTERY P.C.B.
COMPONENT SIDE

PW901(H901B)

F SWITCH P.C.B.

WHT
BLU

W602B
COMPONENT SIDE

(Rch)
PM DYNAMIC SPEAKER
10cm, 6 Ω

WHT
RED

(Lch)
PM DYNAMIC SPEAKER
10cm, 6 Ω

BRN
GRY

WHT
RED
BRN

BATTERY
8 R20/LR20 (D SIZE)
BATTERIES 12V

BATTERY
4 R6/LR6 (AA SIZE)
BATTERIES 6V

■ Printed Circuit Board

A SERVO P.C.B. (REPX0109)
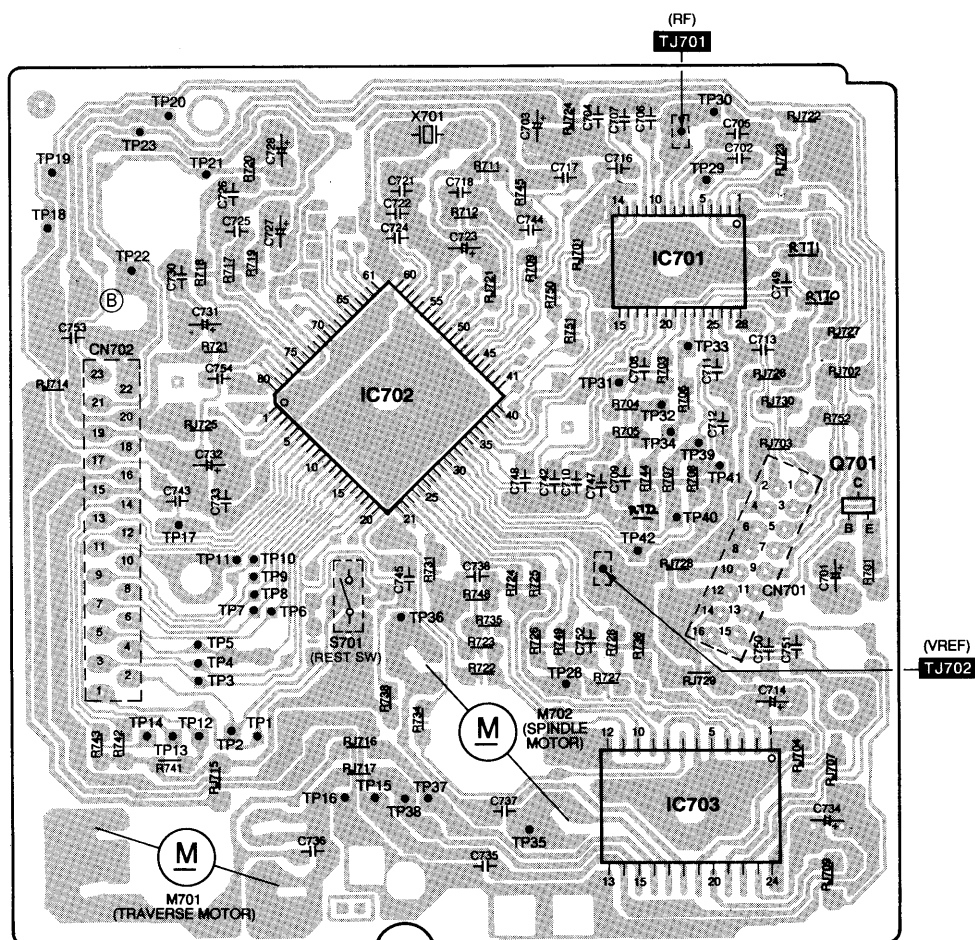
F SWITCH P.C.B. (REPX0115A)
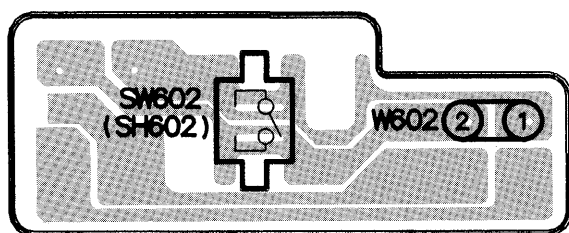
D MAIN P.C.B. (REPX0115A)
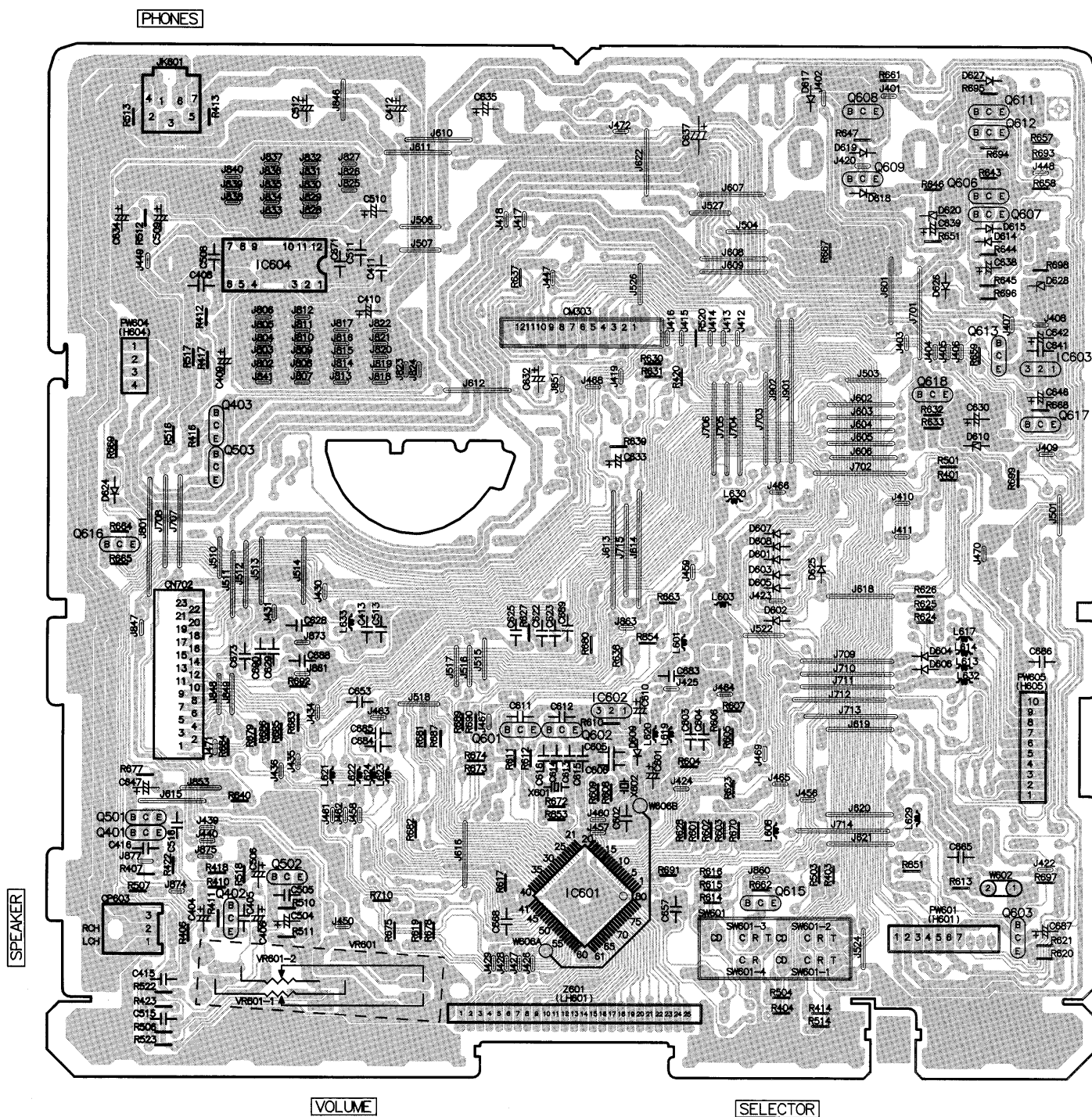
E OPERATION P.C.B.
(REPX0115A)

C DECK P.C.B. (REPX0116)

SENSOR
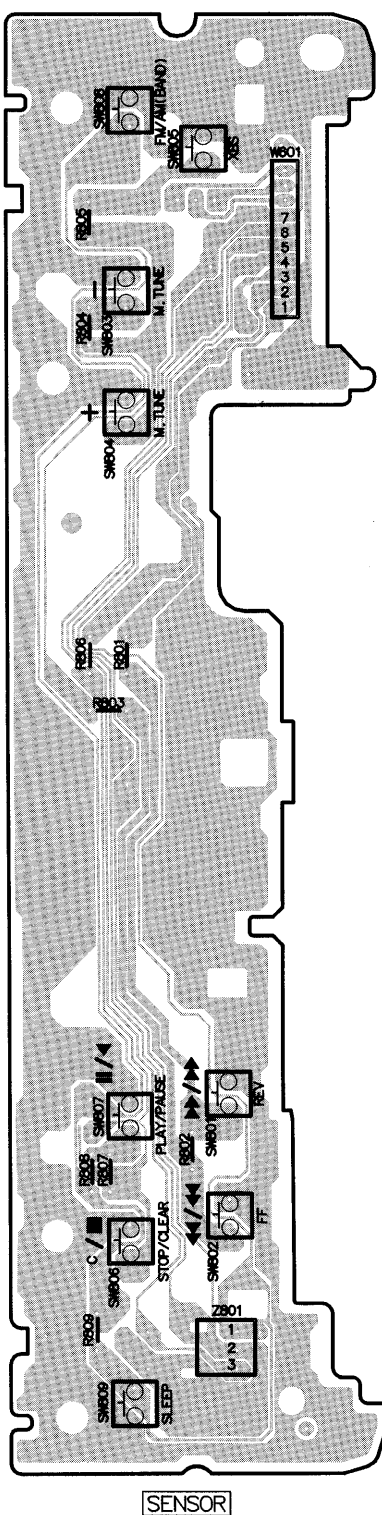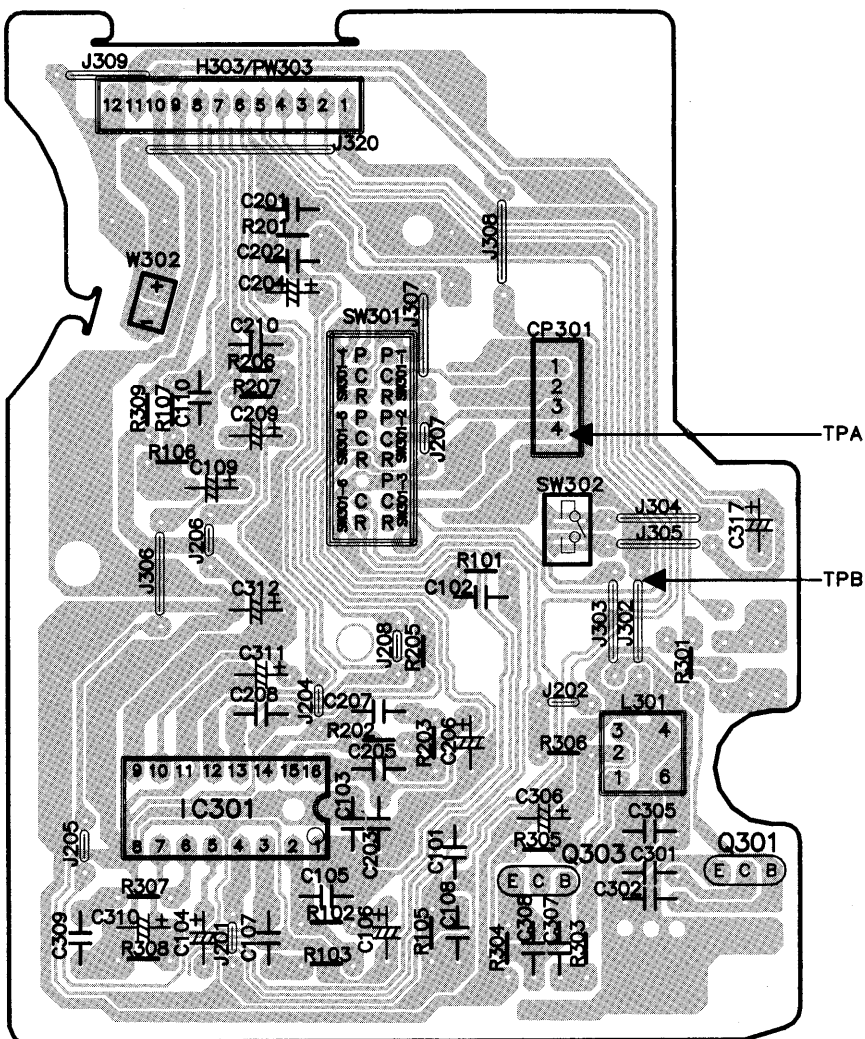
B TUNER P.C.B. (REP2470B)

TELESCOPIC
ANTENNA
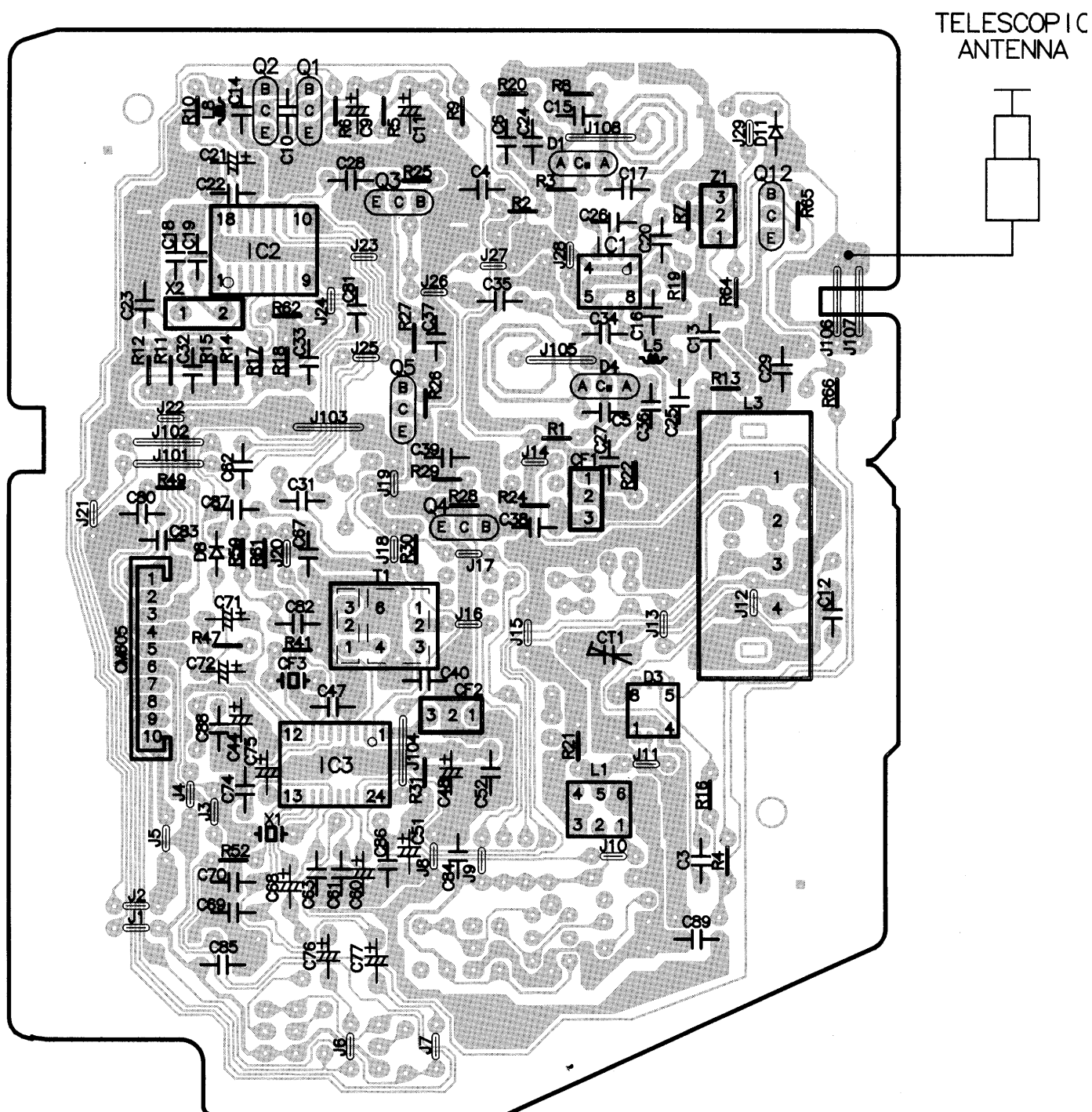
G POWER P.C.B. (REPX0129 ... P)(REPX0129A ... PC)

CAUTION
RISK OF ELECTRIC SHOCK
AC voltage line. Please do not touch this portion.

AC IN ∿
120V
60Hz
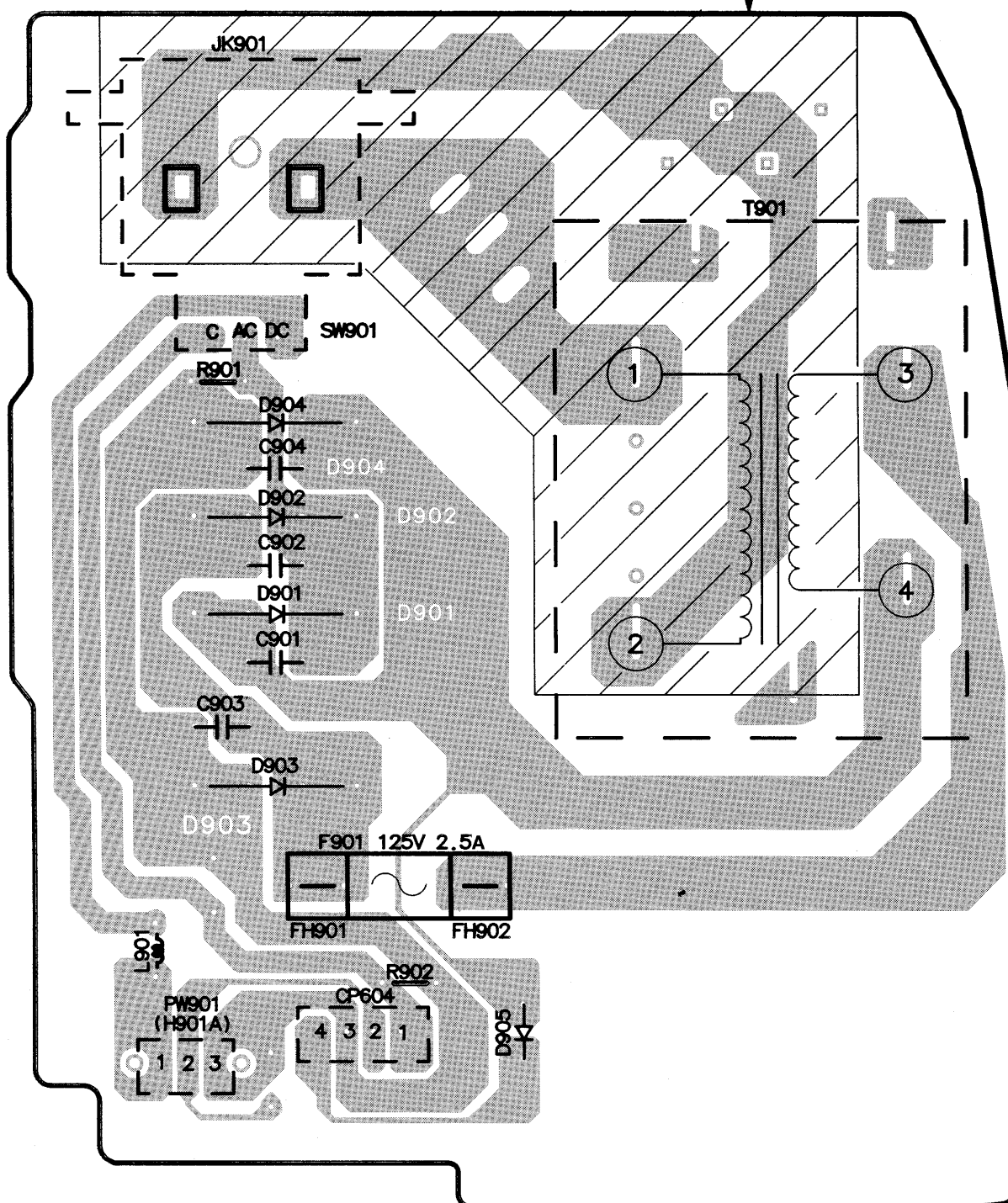
H BATTERY P.C.B. (REPX0129 ... P)
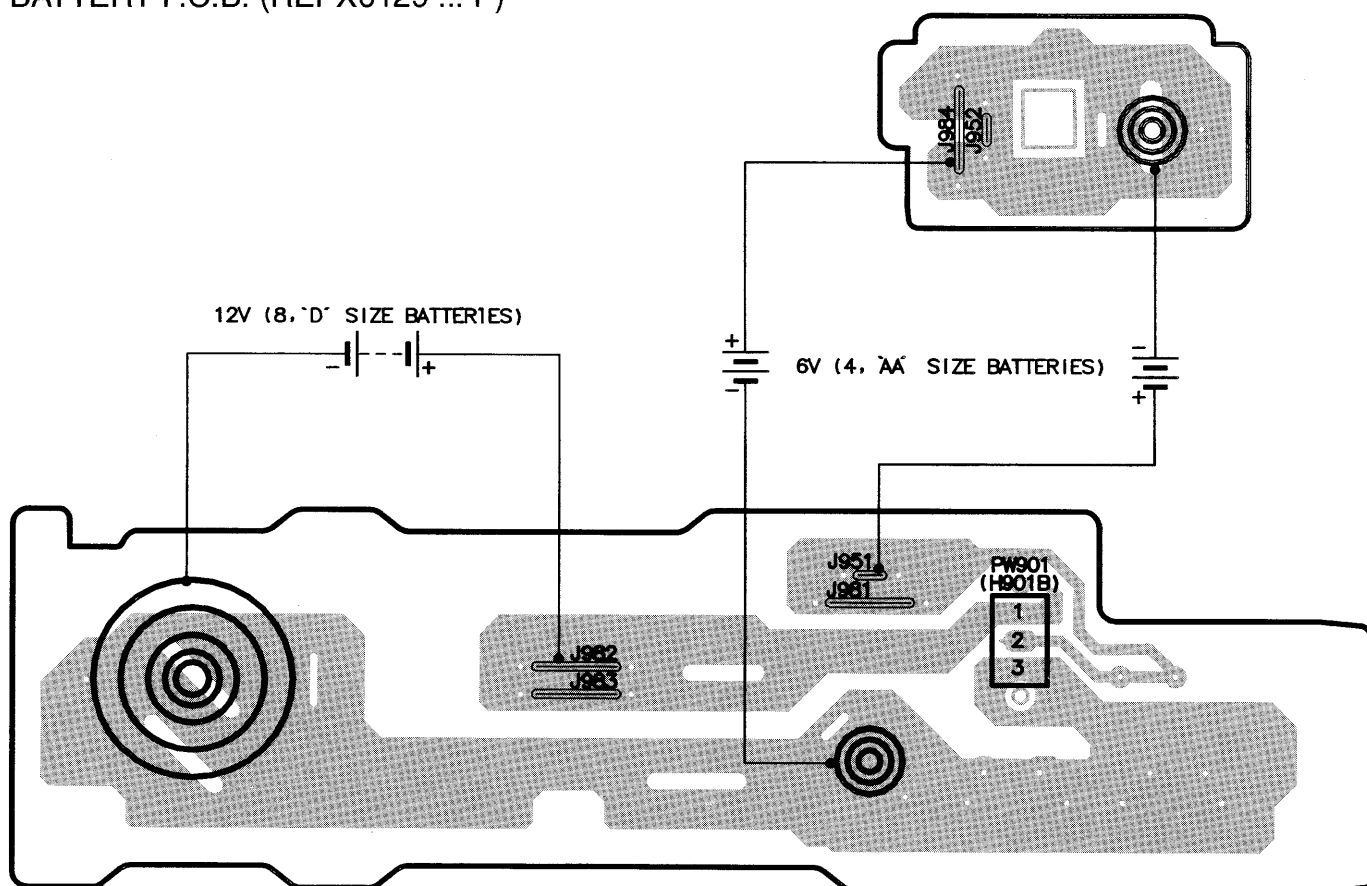
H BATTERY P.C.B. (REPX0129A ... PC)
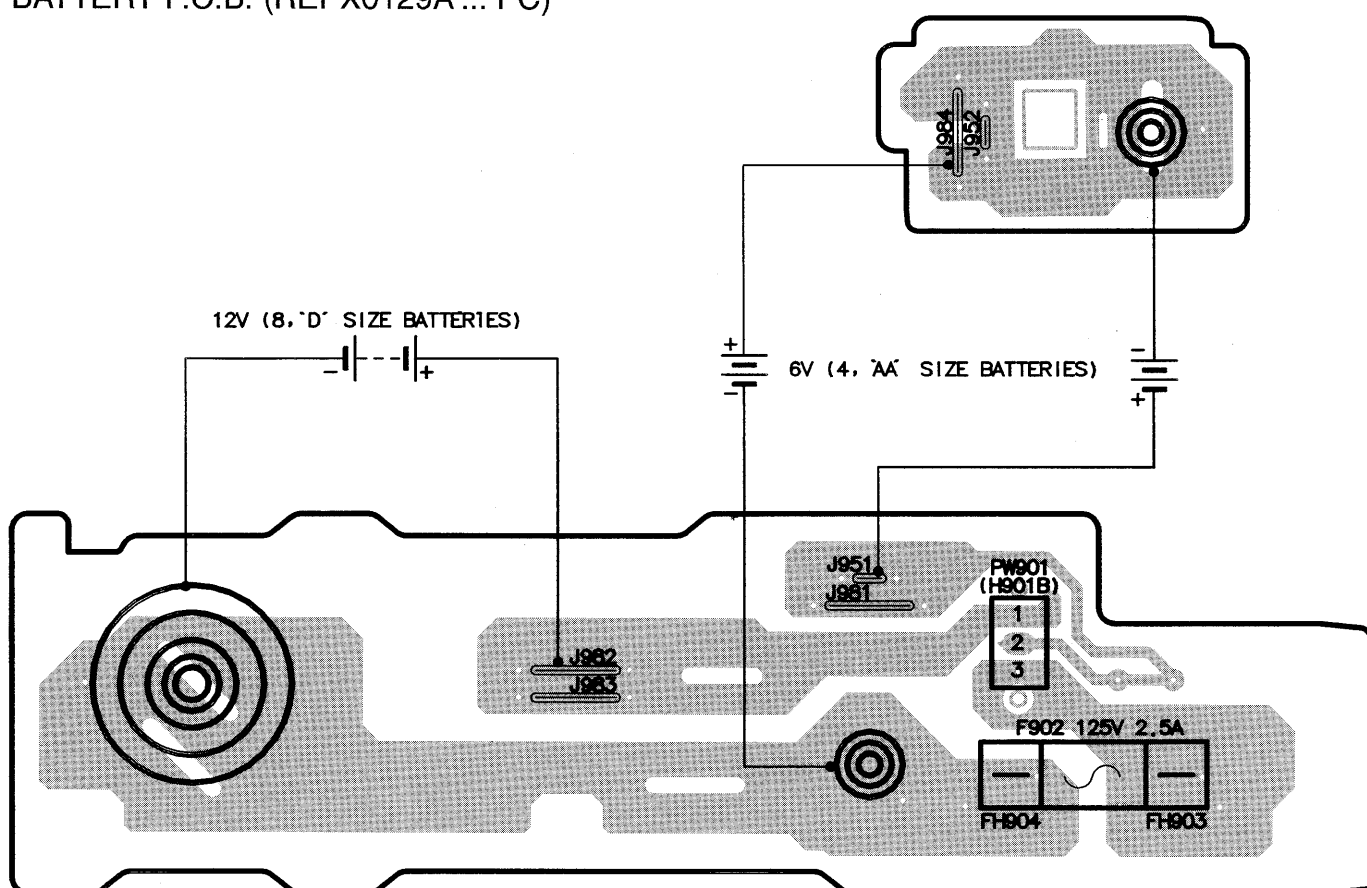
■ Schematic Diagram

D MAIN CIRCUIT

Z601 RSL5181-H

IC601
SC440422CFU
SYSTEM DRIVE AND FL DRIVE

IC602
S-806H-Z
RESET CONTROL

Q601, Q602
2SC2785FTA
SWITCHING

D601~D608
1SS254TA
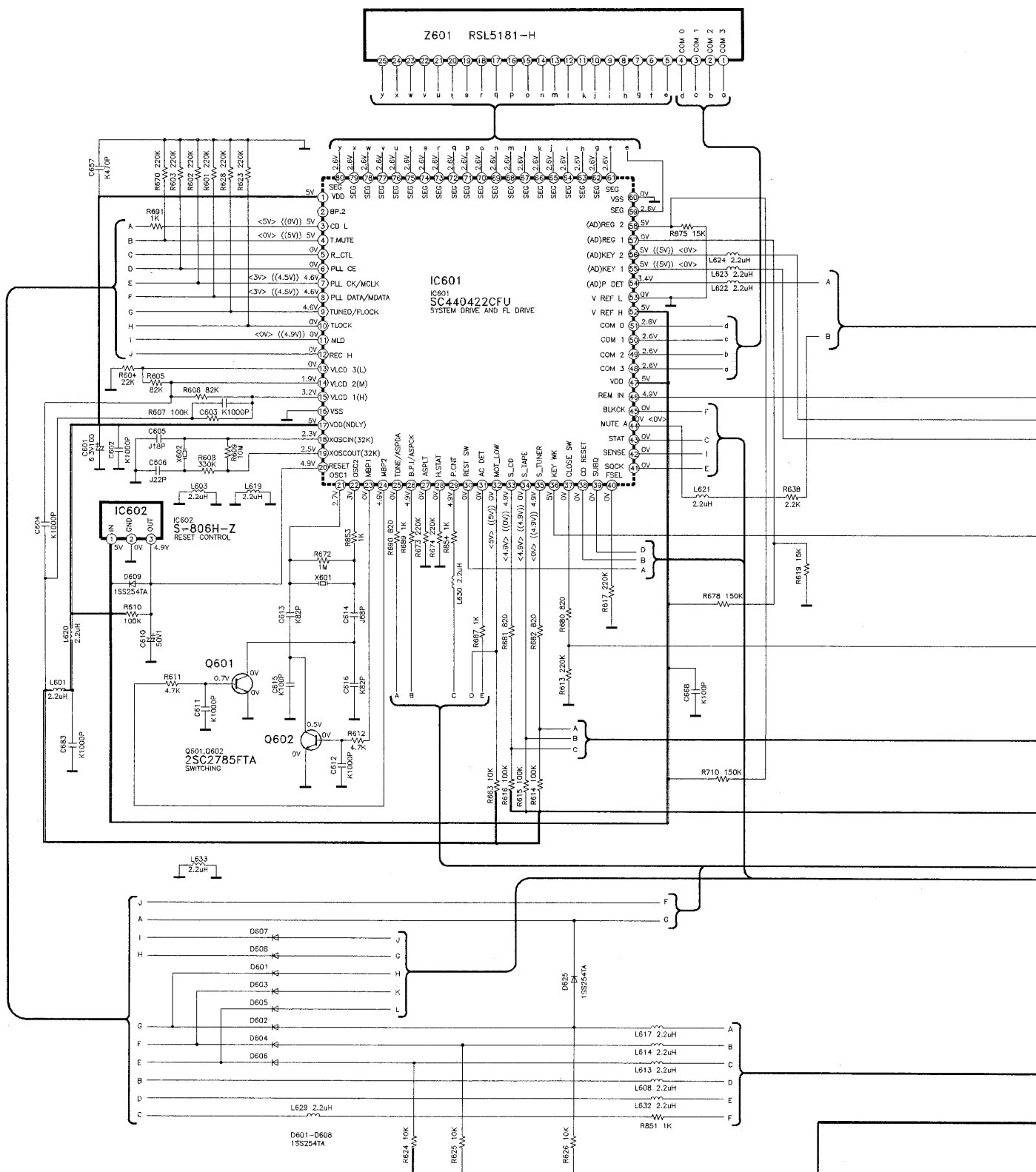
E OPERATION CIRCUIT
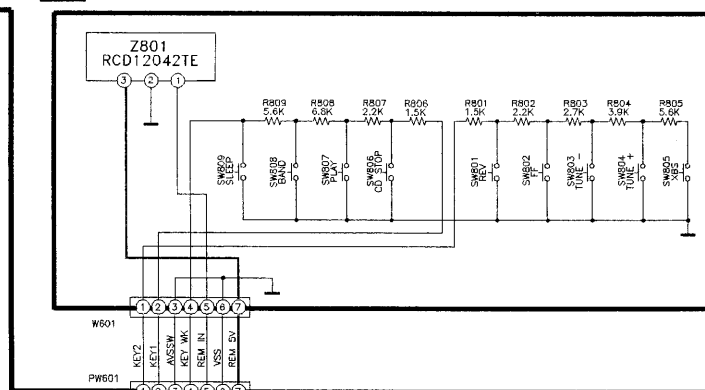
F SWITCH CIRCUIT
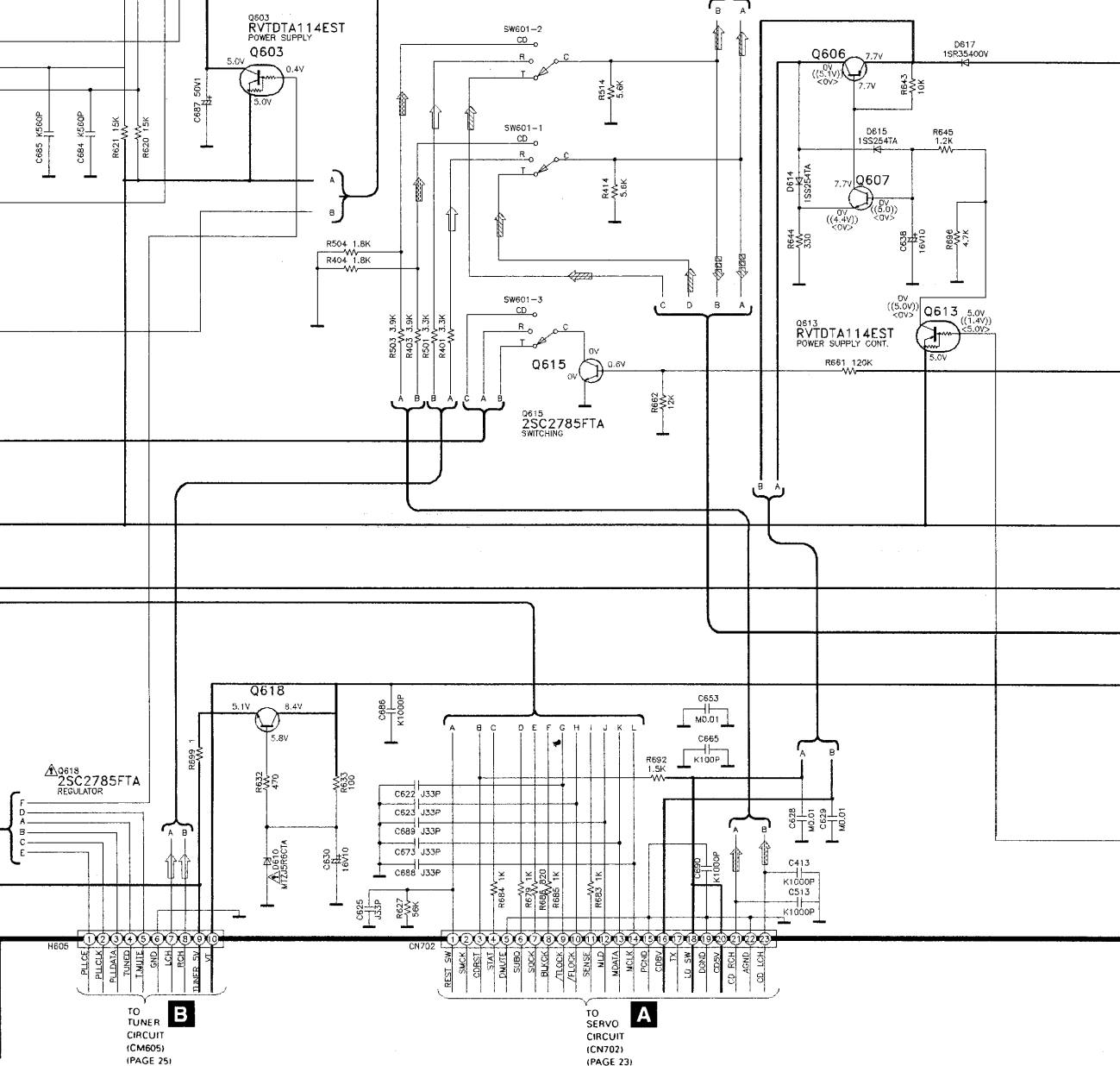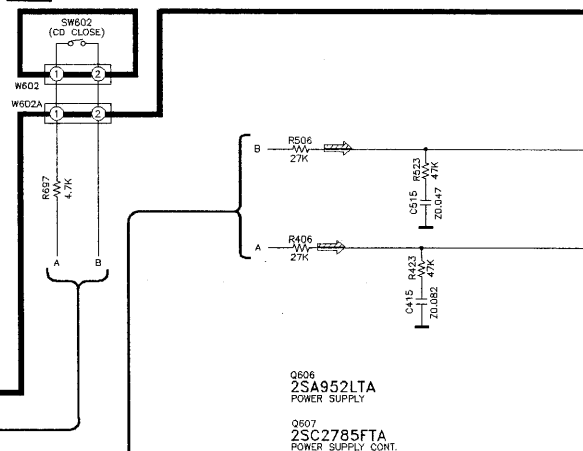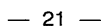
■ Schematic Diagram

A SERVO CIRCUIT

IC702
MN662741RPA
SERVO PROCESSOR / DIGITAL
SIGNAL PROCESSOR / DIGITAL
FILTER / D/A CONVERTER

D MAIN CIRCUIT
(CN702)
(PAGE 20)

— 23 —
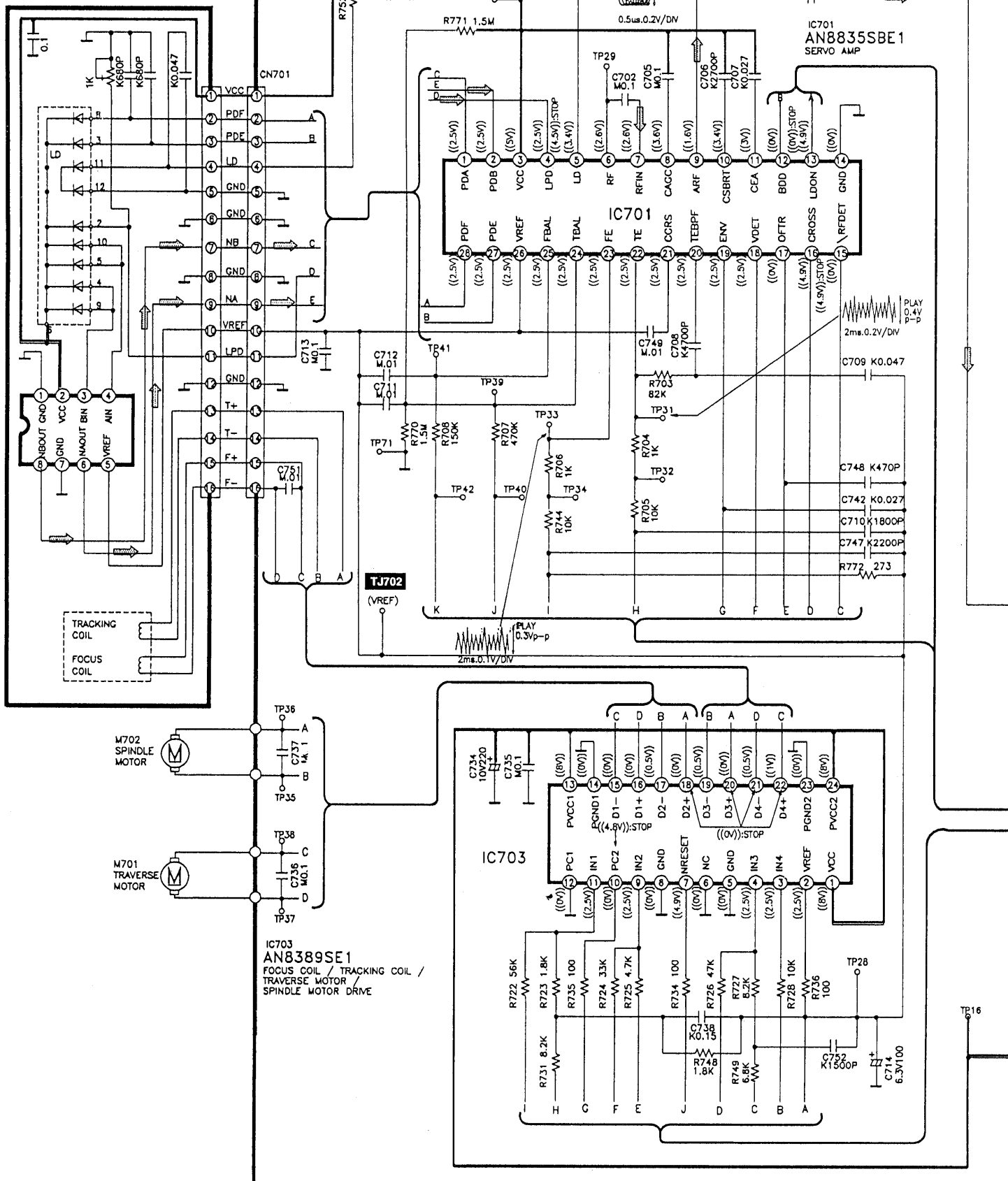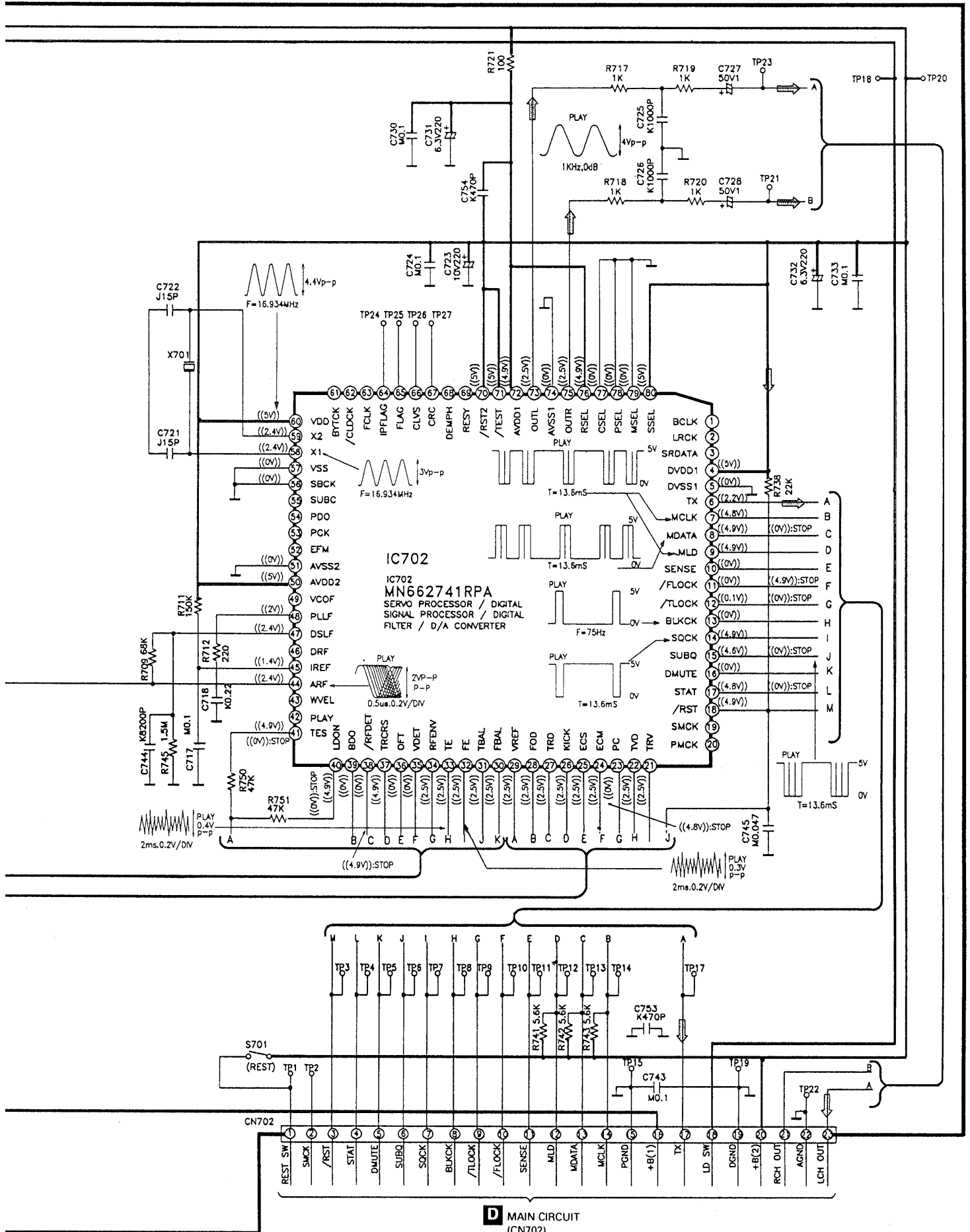
B TUNER CIRCUIT

C DECK CIRCUIT

Q301
2SC1740SRTA
SWITCHING
(BEAT PROOF)

Q303
2SC1684STA
BIAS OSC
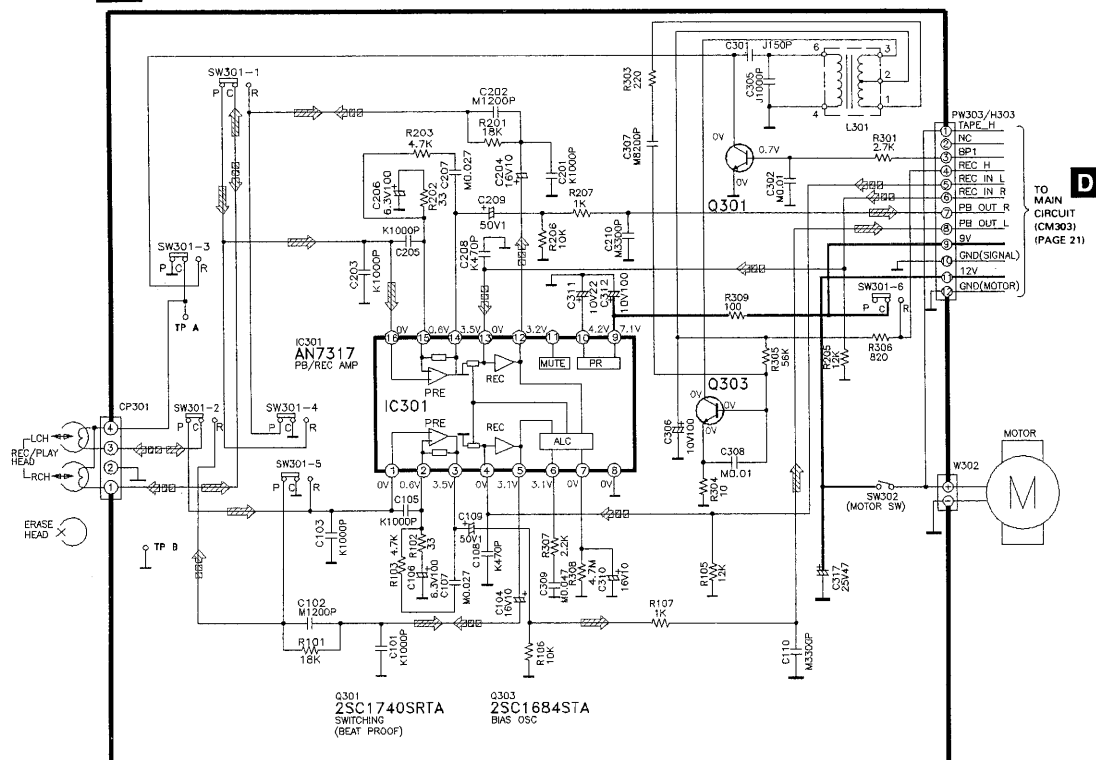
■ Schematic Diagram

(All schematic diagrams may be modified at any time with the development of new technology)
Note :

< for Main circuit, Switch circuit and Operation circuit > (Page 20)
- SW601-1 ~ SW601-3 : Function switch
- SW602 : Leaf switch
- SW801 : Reverse switch
- SW802 : Fast Forward switch
- SW803 : M. Tune (–) switch
- SW804 : M. Tune (+) switch
- SW805 : XBS switch
- SW806 : CD Stop/Clear switch
- SW807 : CD Play/Pause switch
- SW808 : Band switch
- SW809 : Sleep (TUNER/CD) switch

< for Power circuit > (Page 21)
- SW901 : AC/DC switch (JK901)

< for Servo circuit > (Page 23)
- S701 : Reset switch

< for Deck circuit > (Page 26)
- SW301-1 ~ SW301-6 : RECORD switch
- SW302 : Leaf switch

< General >
- **Battery Current**

Vol. min	180 mA (FM)	Vol. max	520 mA (FM)
	160 mA (AM)		340 mA (AM)
	230 mA (TAPE)		910 mA (TAPE)
	350 mA (CD)		1.12 A (CD)

$$\left(\begin{array}{l} \text{Measurement condition:} \\ \text{Radio} \quad : \quad \text{FM 60 dB, 30\%mod} \\ \qquad\qquad \text{AM 74 dB/m, 30\%mod} \\ \text{Tape} \quad : \quad \text{315 Hz, 0dB} \\ \text{CD} \qquad : \quad \text{1kHz, 0dB} \end{array} \right)$$

•Signal line

▬▬▬▬ : +B line	: Record signal line	: AM OSC signal line
➡ : FM/AM signal line	: CD signal line	: FM OSC signal line
: Main signal line	: FM signal line	
: Playback signal line	➡ : AM signal line	

•The voltage value and waveforms are the reference voltage of this unit measured by DC electronic voltmeter (high impedance) and oscilloscope on the basis of chassis.
Accordingly, there may arise some error in voltage values and waveforms depending upon the internal impedance of the tester or the measuring unit.

No mark : Playback   << >>......Rec   (( )) : CD   ( ) ..... AM   < > ..... FM

•Importance safety notice:
Components identified by ⚠ mark have special characteristics important for safety. Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used. When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.

Caution !
IC, LSI and VLSI are sensitive to static electricity.
Secondary trouble can be prevented by taking care during repair.
•Cover the parts boxes made of plastics with aluminium foil.
•Ground the soldering iron.
•Put a conductive mat on the work table.
•Do not touch the pins of IC, LSI or VLSI with fingers directly.

CAUTION : FOR CONTINUED PROTECTION
AGAINST FIRE HAZARD, REPLACE ONLY WITH
SAME TYPE **F901 2.5A 125V FUSE**
     F902 2.5A 125V FUSE (PC)

⚠

RISK OF FIRE-REPLACE FUSE AS MARKED.

FUSE CAUTION

These symbols located near the fuse indicates that the fuse used is a fast operating type. For continued protection against fire harzard, replace with the same type fuse. For fuse rating, refer to the marking adjacent to the symbol.

Ce symbole indique que le fusible utilisé est à rapide. Pour une protection permanente, n' utiliser que des fusibles de même type. Ce dernier est indiqué là qù le présent symbole est apposé.

■ Troubleshooting Guide
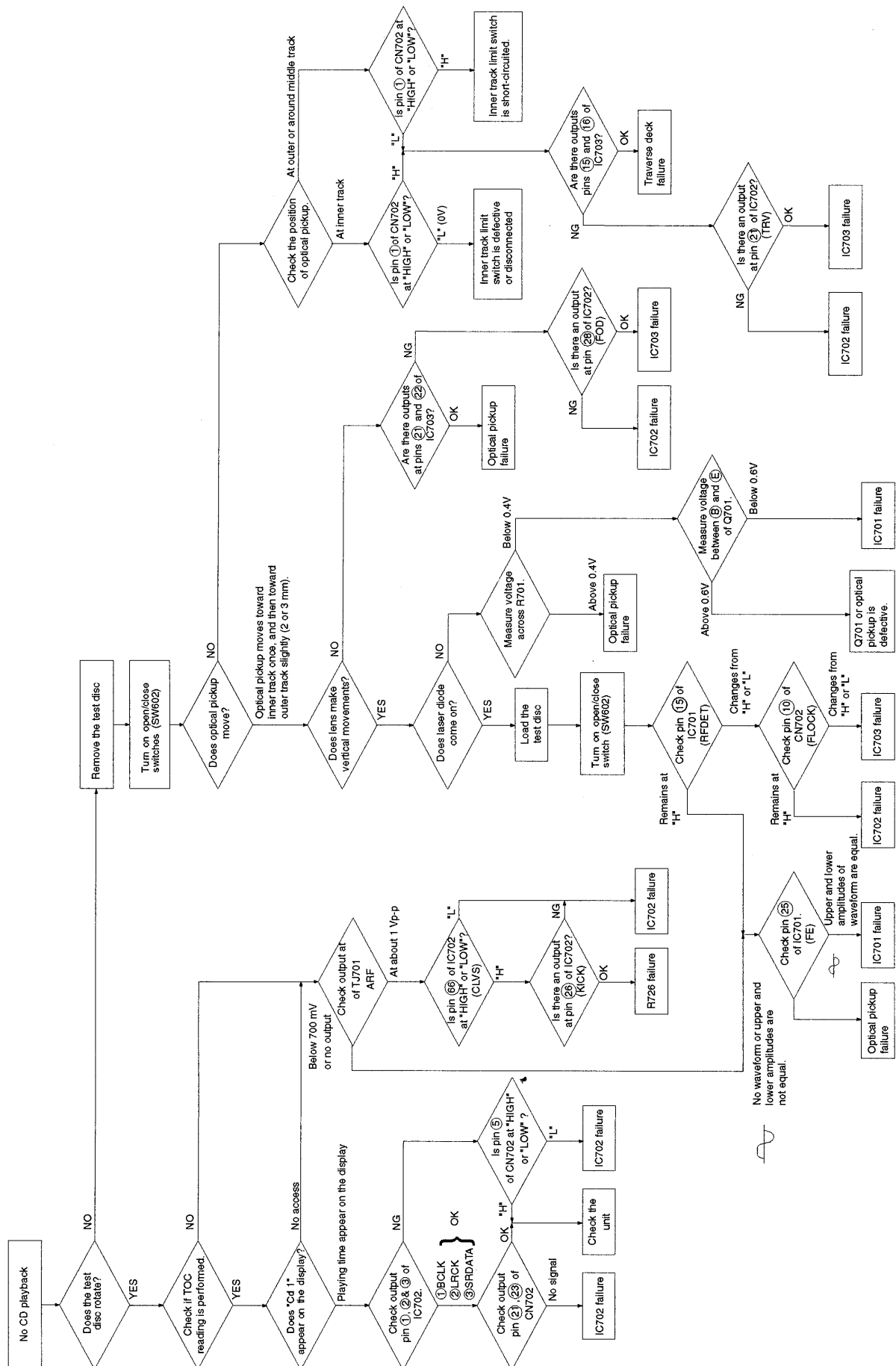
■ Mechanism Parts Location (RAA0935)

Note : Refer to **Mechanism Parts List** on page 30.

SPECIFICATION

Playback troque	25 ~ 60 g.cm
Fast forward torque	65 ~ 130 g.cm
Rewind torque	65 ~ 130 g.cm
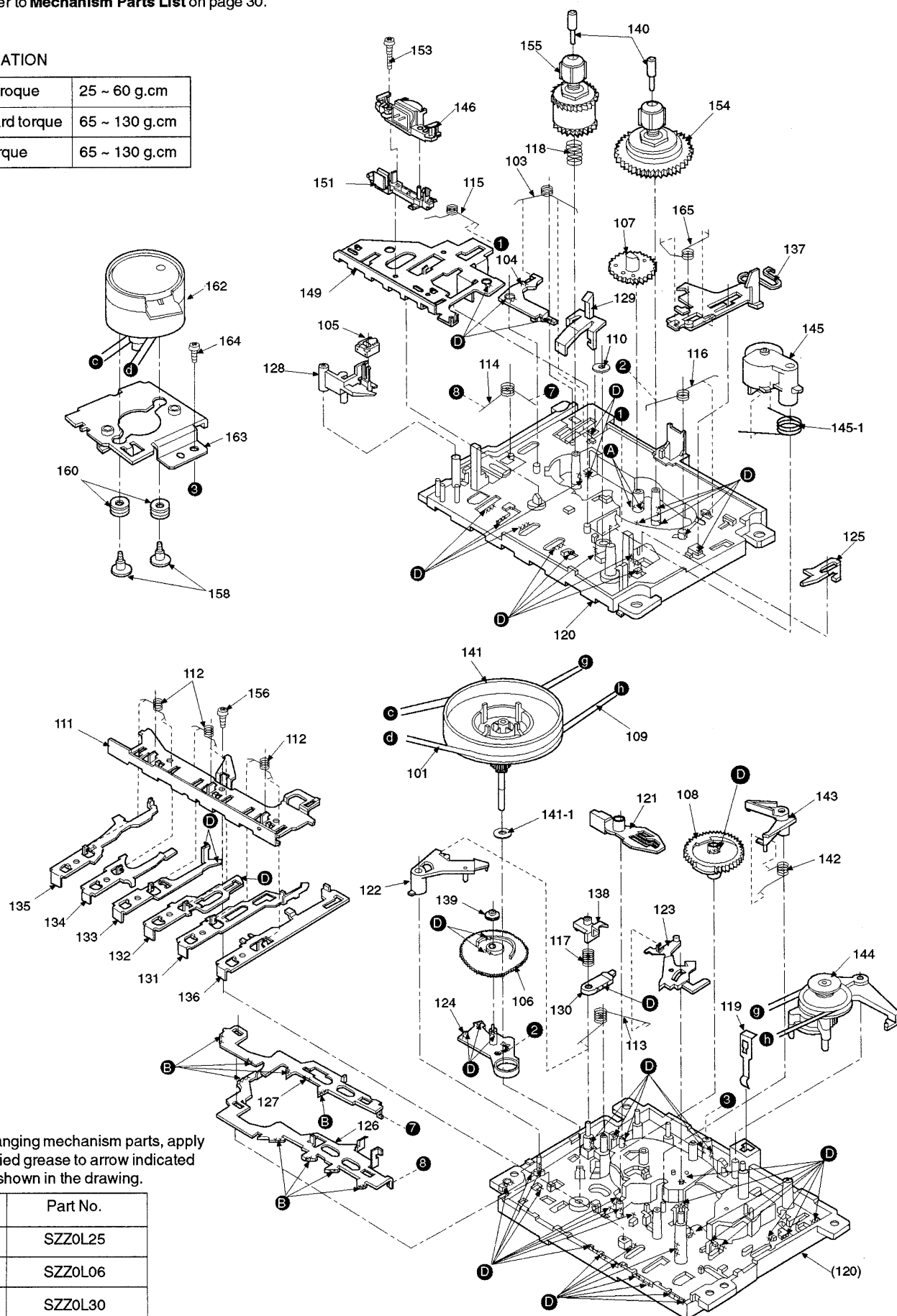
Note:
When changing mechanism parts, apply the specified grease to arrow indicated areas as shown in the drawing.

Ref No.	Part No.
Ⓐ	SZZ0L25
Ⓑ	SZZ0L06
Ⓓ	SZZ0L30

■ Mechanism Parts List

Note : • **[M]** mark in Remarks column indicates parts that are supplied by **MESA**.
• Refer to **Mechanism Parts Location** on pages 29.

Ref No.	Part No.	Part Name & Description	Remarks	Ref No.	Part No.	Part Name & Description	Remarks	Ref No.	Part No.	Part Name & Description	Remarks
		CASSETTE DECK		145	RXP0015	PINCH ROLLER ASS'Y	[M]				
101	RDV0007	MAIN BELT	[M]	145-1	RMB0049	SPRING	[M]				
103	RMB0109-1	BRAKE SPRING	[M]	146	RBR4CY016-M	R/P HEAD	[M]				
104	RML0116	BRAKE	[M]	149	RMA0696	HEAD BASE	[M]				
105	RBR2CY009	ERASE HEAD	[M]	151	RMQ0384	HEAD BASE	[M]				
106	RDG0057	IDLER GEAR	[M]	153	XTN2+12F	SCREW	[M]				
107	RDG0059	FF RELAY GEAR	[M]	154	RXR0004	TAKE-UP REEL ASS'Y	[M]				
108	RDK0005	CAM GEAR	[M]	155	RXR0005	SUPPLY REEL ASS'Y	[M]				
109	RDV0006-1	RF BELT	[M]	156	XTN2+6J	BACK PLATE SCREW	[M]				
110	RHW16009	CAPSTAN WASHER	[M]	158	RHD26002	MOTOR SCREW	[M]				
111	RMA0109	BACK PLATE	[M]	160	RMG0102	RUBBER SPACER	[M]				
112	RMB0043-1	ROD OPERATION SPRING	[M]	162	RFKPXDS101PK	DC MOTOR ASS'Y	[M]				
113	RMB0045	AS SPRING	[M]	163	RMA0108	MOTOR ANGLE	[M]				
114	RMB0046-1	LOCK PLATE SPRING	[M]	164	XTN26+8J	MOTOR BK SCREW	[M]				
115	RMB0047	HEAD PANEL SPRING	[M]	165	RME0098-2	SPRING					
116	RMB0048	IDLER LEVER SPRING	[M]								
117	RMB0053	PAUSE LEVER SPRING	[M]								
118	RMB0125	BACK TENSION SPRING	[M]								
119	RMC0061	PACK SPRING	[M]								
120	RFKRCT090P-K	CHASSIS ASS'Y	[M]								
121	RML0071	SWAY LEVER	[M]								
122	RML0072	AS RELEASE LEVER	[M]								
123	RML0073-1	AS PROTECT LEVER	[M]								
124	RML0074	IDLER LEVER	[M]								
125	RML0076	EJECT SELECT LEVER	[M]								
126	RML0077	LOCK PLATE	[M]								
127	RML0078	FUNCTION PLATE	[M]								
128	RML0080-1	ERASE HEAD ARM	[M]								
129	RML0081-1	REC. SAFETY LEVER	[M]								
130	RML0082	PAUSE LEVER	[M]								
131	RMM0023	PLAY ROD	[M]								
132	RMM0024	REW ROD	[M]								
133	RMM0025	FF ROD	[M]								
134	RMM0026	STOP ROD	[M]								
135	RMM0027	PAUSE ROD	[M]								
136	RMM0028	REC ROD	[M]								
137	RMM0029	EJECT SLIDE LEVER	[M]								
138	RMR0211	PAUSE BUSH	[M]								
139	RMR0227	IDLER GEAR BUSH	[M]								
140	RMS0055	REEL SHAFT	[M]								
141	RXF0012	FLYWHEEL ASS'Y	[M]								
141-1	RHW21008	WASHER	[M]								
142	RMB0044	TRIGGER SPRING	[M]								
143	RML0075	TRIGGER LEVER	[M]								
144	RXP0014	RF CLUTCH ASS'Y	[M]								

■ Cabinet Parts Location

45 45 2 67
10
66 45
70
63
64
71 77 72 77 73 65
46 46 47
82 78
75 8-1
CP301 8-2 47
62 (TUNER P.C.B) 47
SW302 (DECK P.C.B)
CW303 CM605
69 83 47
74 4 47
46 68 47
49 25 47
46
56 55 8
52 (P.C.B)
52-1 30 (POWER P.C.B)
52-1 32 80 T901
52-1 52-2 F902 FOR JK901
12 PC ONLY (BATTERY P.C.B) 79 46 F901
14 PW901 CP604
53 W601 (OPERATION P.C.B) PW901A(H901A)
53 81
54 CN701 CN702 15 46
57 (MAIN P.C.B) 76
46 (SERVO 16
58 P.C.B) JK601
59 37 36 61
46 46 W602 CM303 CN702 6
1 W601 PW601 SW601 PW604
26 38 CP603
2 13 46
9-1
9-2 24
9 7 36

(P.C.B)

■ Replacement Parts List

Notes: • Important safety notice :
  Components identified by ⚠ mark have special characteristics important for safety.
  Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used.
  When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.
  • The parenthesized indications in the Remarks column specify the areas. (refer to the cover page for area.)
  Parts without these indications can be used for all areas.
  • The "(SF)" mark denotes the standard part.
  • [M] indicates in Remarks column parts that are supplied by **MESA**.
  • Remote Control Unit :
  Supply period for three years from terminal of production.
  • **Warning** : This product uses a laser diode. Refer to caution statements on page 2.

Ref No.	Part No.	Part Name & Description	Remarks
		CABINET AND CHASSIS	
1	RAS10P09-H	SPEAKER	[M]
2	RDG0183-L	DAMPER GEAR	[M]
4	REX0827	SP. CONNECTING WIRE	[M]
6	REX0829	MAIN TO PWR PCB WIRE	[M]
7	RFKGXDS17PK	FRONT CABINET ASS'Y	[M]
8	RFKHXDS17PCK	BACK CABINET ASS'Y	[M](PC)
8	RFKHXDS17PK	BACK CABINET ASS'Y	[M](P)
8-1	RJC91008	+ BATTERY TERMINAL	[M]
8-2	RJR0172	ANTENNA TERMINAL	[M]
9	RFKLXDS17-KA	CD LID ASS'Y	[M]
9-1	RGU1464-K	CD EJECT BUTTON	[M]
9-2	RML0456	CD LOCK LEVER	[M]
10	RFKLXDS17-KB	CASS. LID ASS'Y	[M]
12	RFKNRXDS17PA	DISC HOLDER ASS'Y	[M]
13	RGQ0195-K	CD TRAY	[M]
14	RGU1514-H	OPERATION BUTTON(L)	[M]
15	RGU1515-H	OPERATION BUTTON(R)	[M]
16	RGV0185-K	VOLUME KNOB	[M]
17	RGV0186-S	FUNCTION BUTTON	[M]
24	RMB0491	CD OPEN SPRING(R)	[M]
25	RMB0492	CD CLAMPER SPRING	[M]
26	RMB0498	CD OPEN SPRING(L)	[M]
30	RMK0337	CD SUPPORT	[M]
32	RML0455	CD CLAMPER HOLDER	[M]
36	RMN0395	SP SUPPORT PLATE	[M]
37	RMN0396	SP SUPPORT PLATE	[M]
38	RMN0400	LEAF SW. COVER	[M]
45	XTN3+10CFZ	TOP CAB. SCREW	[M]
46	XTV3+12G	SP.SCREW	[M]
47	XTV3+20G	REAR CAB SCREW	[M]
52	RAE0150Z	TRAVERSE UNIT	[M]
52-1	SHGD113-1	FLOATING RUBBER	[M]
52-2	XQS17+A35FZ	SCREW	[M]
53	RME0109	FLOATING SPRING A	[M]

Ref No.	Part No.	Part Name & Description	Remarks
54	RME0142	FLOATING SPRING B	[M]
55	RMS0123-1	FIXED PIN A	[M]
56	RMS0350	FIXED PIN B	[M]
57	RMR0698-K	TRAVERSE CHASIS	[M]
58	XTN2+6G	SCREW	[M]
59	XTV2+6G	SCREW	[M]
61	REEX0024	CD FFC WIRE	[M]
62	REXX0141	TAPE HEAD WIRE	[M]
63	RGZX0025-K	MECHA BUTTON	[M]
64	RKH0038-K	HANDLE	[M]
65	RKK347ZB-K	BATTERY COVER	[M]
66	RKQX0007A-K	TOP CABINET	[M]
67	RMB0490	CASS. OPEN SPRING	[M]
68	RMC0325	CD TRAY OPEN SPRING	[M]
69	RMK0338	PCB CHASSIS	[M]
70	RMQ0649	MECHA BUTTON SUPPORT	[M]
71	RMXX0004	SPACER	[M]
72	SUX102	MECHA ROD	[M]
73	XEARR175EA-Y	R. ANT	[M]
74	XTN2+14GF	SCREW (DECK PCB)	[M]
75	XTN2+3F	SCREW (R/P PLATE)	[M]
76	XTV3+8F	POWER AMP IC SCREW	[M]
77	XTWS3+8T	MECHA SCREW	[M]
78	XYN3+F12FY	R.ANT SCREW	[M]
79	RSC0464	SAFETY COVER	[M]
80	RSC0459	SAFETY COVER	[M]
81	RSC0471	SAFETY COVER	[M]
82	RMC0312	R/P PLATE	[M]
83	RML0462	R/P LEVER	[M]
		INTEGRATED CIRCUITS	
IC1	TA7358FMATEL	IC, FM RF	[M]
IC2	BU2616F-E2	IC, PLL	[M]
IC3	LA1832MLSTEL	IC, IF/MULTI	[M]
IC301	AN7317	IC, PLAYBACK/RECORD AMP	[M]
IC601	SC440422CFU	IC, MICRO COMPUTER	[M]

Ref No.	Part No.	Part Name & Description	Remarks
IC602	S-806H-Z	IC, RESET	[M]
IC603	S81250PG-T	IC, 5V REGULATOR	[M]⚠
IC604	TA8227P	IC, POWER	[M]
		TRANSISTORS	
Q1	2SC2785FTA	TRANSISTOR	[M]
Q2	2SC2785FTA	TRANSISTOR	[M]
Q3	2SC2786LTA	TRANSISTOR	[M]
Q4	2SC3313BTA	TRANSISTOR	[M]
Q5	RVTDTA143XST	TRANSISTOR	[M]
Q12	2SC2785FTA	TRANSISTOR	[M]
Q301	2SC1740SRTA	TRANSISTOR	[M]
Q303	2SC1684STA	TRANSISTOR	[M]
Q401	2SC2785FTA	TRANSISTOR	[M]
Q402	2SC2785FTA	TRANSISTOR	[M]
Q403	2SC1684STA	TRANSISTOR	[M]
Q501	2SC2785FTA	TRANSISTOR	[M]
Q502	2SC2785FTA	TRANSISTOR	[M]
Q503	2SC1684STA	TRANSISTOR	[M]
Q601	2SC2785FTA	TRANSISTOR	[M]
Q602	2SC2785FTA	TRANSISTOR	[M]
Q603	RVTDTA114EST	TRANSISTOR	[M]
Q606	2SA952LTA	TRANSISTOR	[M]
Q607	2SC2785FTA	TRANSISTOR	[M]
Q608	2SB1566E	TRANSISTOR	[M]⚠
Q609	2SC2785FTA	TRANSISTOR	[M]⚠
Q611	2SA952LTA	TRANSISTOR	[M]
Q612	RVTDTC143XST	TRANSISTOR	[M]
Q613	RVTDTA114EST	TRANSISTOR	[M]
Q615	2SC2785FTA	TRANSISTOR	[M]
Q616	2SC2785FTA	TRANSISTOR	[M]
Q617	RVTDTC144EST	TRANSISTOR	[M]
Q618	2SC2785FTA	TRANSISTOR	[M]⚠
		DIODES	

Ref No.	Part No.	Part Name & Description	Remarks	Ref No.	Part No.	Part Name & Description	Remarks	Ref No.	Part No.	Part Name & Description	Remarks
D1	KV1360NT	DIODE	[M]	SW803	EVQ21405R	SW, M.TUNE(-)	[M]	Z601	RSL5181-H	LCD	[M]
D3	KV1583BMTL	DIODE	[M]	SW804	EVQ21405R	SW, M.TUNE(+)	[M]	Z801	RCD12042TE	REMOTECONTROLSENSOR	[M]
D4	KV1360NT	DIODE	[M]	SW805	EVQ21405R	SW, XBS	[M]				
D8	1SS254TA	DIODE	[M]	SW806	EVQ21405R	SW, STOP/CLR	[M]			**CERAMIC FILTERS**	
D11	RVD1SS135TA	DIODE	[M]	SW807	EVQ21405R	SW, PLAY/PAUSE	[M]				
D601	1SS254TA	DIODE	[M]	SW808	EVQ21405R	SW, FM/AM (BAND)	[M]	CF1	RLFFETMLA02D	FILTER	[M]
D602	1SS254TA	DIODE	[M]	SW809	EVQ21405R	SW, SLEEP	[M]	CF2	RLFFETMLA02D	FILTER	[M]
D603	1SS254TA	DIODE	[M]	SW901	RJJ1SM02-H	SW, AC IN(JK901)	[M]⚠	CF3	RLFDFT14AD	FM RESONATOR	[M]
D604	1SS254TA	DIODE	[M]								
D605	1SS254TA	DIODE	[M]			**CONECTIONS**				**OSCILLATORS**	
D606	1SS254TA	DIODE	[M]								
D607	1SS254TA	DIODE	[M]	CM303	RJS1A5212	12P MOLEX	[M]	X1	RSXZ456KM01	19KHZ OSC	[M]
D608	1SS254TA	DIODE	[M]	CM605	RJS1A5210	10P MOLEX	[M]	X2	RSXC7M20S04T	XTAL 7.2MHZ	[M]
D609	1SS254TA	DIODE	[M]	CN702	RJS1A6223-1	FFC CONNECTOR	[M]	X601	EF0EN4194T4	CERAMIC OSC	[M]
D610	MTZJ5R6CTA	DIODE	[M]⚠	CP301	RJP4G17ZA	TAPE HEAD CONNECTOR	[M]	X602	RSXD32K7S02	32.768HKZ X'TAL	[M]
D614	1SS254TA	DIODE	[M]	CP603	RJP3G9YA	SOCKET	[M]				
D615	1SS254TA	DIODE	[M]	CP604	RJP4G9YA	SOCKET	[M]			**FUSES**	
D617	1SR35400V	DIODE	[M]								
D618	1SS254TA	DIODE	[M]			**COILS & TRANSFORMERS**		F901	XBA1C25NBAL	FUSE	[M]⚠
D619	1SS254TA	DIODE	[M]					F902	XBA1C25NBAL	FUSE	[M](PC)⚠
D620	MTZJ8R2CTA	DIODE	[M]⚠	L1	RL02B012-T	COIL	[M]				
D624	1SS254TA	DIODE	[M]	L3	RLV2C032-0	F. ANT	[M]			**FUSE HOLDERS**	
D625	1SS254TA	DIODE	[M]	L5	RLQZP8R2JT-Y	COIL	[M]				
D626	1SS254TA	DIODE	[M]	L8	ELEXT101KA9	AXIAL COIL	[M]	FH901	RJR0169T	FUSE HOLDER	[M]
D627	1SS254TA	DIODE	[M]	L301	RL09B17-T	COIL	[M]	FH902	RJR0169T	FUSE HOLDER	[M]
D628	MTZJ15BTA	DIODE	[M]⚠	L601	RLQZP2R2KT-Y	AXIAL COIL	[M]	FH903	RJR0169T	FUSE HOLDER	[M](PC)
D901	RL203M11	DIODE	[M]⚠	L603	RLQZP2R2KT-Y	AXIAL COIL	[M]	FH904	RJR0169T	FUSE HOLDER	[M](PC)
D902	RL203M11	DIODE	[M]⚠	L608	RLQZP2R2KT-Y	AXIAL COIL	[M]				
D903	RL203M11	DIODE	[M]⚠	L613	RLQZP2R2KT-Y	AXIAL COIL	[M]			**LCD HOLDER**	
D904	RL203M11	DIODE	[M]⚠	L614	RLQZP2R2KT-Y	AXIAL COIL	[M]				
D905	1SS254TA	DIODE	[M]⚠	L617	RLQZP2R2KT-Y	AXIAL COIL	[M]	LH601	RMN0393	LCD HOLDER	[M]
				L619	RLQZP2R2KT-Y	AXIAL COIL	[M]				
		VARIABLE RESISTORS		L620	RLQZP2R2KT-Y	AXIAL COIL	[M]			**JACKS**	
				L621	RLQZP2R2KT-Y	AXIAL COIL	[M]				
VR601	RRV30P01B54A	VR, VOLUME	[M]	L622	RLQZP2R2KT-Y	AXIAL COIL	[M]	JK601	RJJ37TK01-1C	JK, HEADPHONE	[M]
				L623	RLQZP2R2KT-Y	AXIAL COIL	[M]	JK901	RJJ1SM02-H	JK, AC (IN LET)	[M]⚠
		TRIMMER		L624	RLQZP2R2KT-Y	AXIAL COIL	[M]				
				L629	RLQZP2R2KT-Y	AXIAL COIL	[M]			**PACKING MATERIALS**	
CT1	RCV10AF1T-S	TRIMMER	[M]	L630	RLQZP2R2KT-Y	AXIAL COIL	[M]	P1	RPGX0371	GIFT BOX	[M](P)
				L632	RLQZP2R2KT-Y	AXIAL COIL	[M]	P1	RPGX0372	GIFT BOX	[M](PC)
		SWITCHES		L633	RLQZP2R2KT-Y	AXIAL COIL	[M]	P2	RPH0131	MIRAMAT SHEET	[M]
				L901	RLL500050T-Y	RF CHOKE COIL	[M]	P3	RPN0998	POLYFOAM	[M]
SW301	RSP2F001-A	SW, RECORD	[M]	T1	RLI2Z010-T	AM IFT	[M]	P4	RPN1057	POLYFOAM (CENTRE)	[M]
SW302	RSH1A013-2I	SW. LEAF	[M]	T901	RTP1K1C009-X	POWER TRANSFORMER	[M]⚠				
SW601	RSS3D002-B	SW, FUNCTION	[M]							**ACCESSORIES**	
SW602	RSH1A037-U	SW, LEAF	[M]			**COMPONENTCOMBINATION**		A1	RAK-RX929WK	REM. CON	[M]
SW801	EVQ21405R	SW, REV	[M]					A1-1	HTR0212-72PW	REM.CON BATTERY COVER	[M]
SW802	EVQ21405R	SW, FF	[M]	Z1	RXABPWB6AT	BAND PASS FILTER	[M]	A2	RFKSDS17PCK	O/I BOOK	[M](PC)

Ref No.	Part No.	Part Name & Description	Remarks	Ref No.	Part No.	Part Name & Description	Remarks	Ref No.	Part No.	Part Name & Description	Remarks
A2	RQT3709-P	O/I BOOK	[M](P)	IC703	AN8389SE1	IC, COIL/MOTOR DRIVE	[M]			**CONNECTIONS**	
A3	SJA172	AC CORD (UL/CSA)	[M](SF)					CN701	RJU035T016-1	16P FFC CONNECTOR	[M]
						TRANSISTORS		CN702	RJS1A6723-1Q	23P FFC CONNECTOR	[M]
		<SERVO P.C.B.>		Q701	2SB709S	TRANSISTOR	[M]				
		INTEGRATED CIRCUITS								**OSCILLATOR**	
IC701	AN8835SBE1	IC, SERVO AMP.	[M]			**SWITCH**		X701	RSXZ16M9M01T	CERAMIC OSC	[M]
IC702	MN662741RPA	IC, DIGITAL LSI	[M]	S701	RSM0006-P	SW, RESET	[M]				

■ Resistors & Capacitors

Notes : • Important safety notice:
   Components identified by ⚠ mark have special characteristics important for safety.
   Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors),etc. are used.
   When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.
   • The parenthesized indications in the Remarks column specify the areas. (refer to the cover page for area.)
   Parts without these indications can be used for all areas.
   • [M] indicates in Remarks column parts that are supplied by **MESA**.
   • Capacitor values are in microfarad (μF) unless specified otherwise, P=Pico-farads (pF) F=Farads (F)
   • Resistors values are in ohms, unless specified otherwise, 1k=1,000(OHM), 1M=1,000k(OHM)

Ref No.	Part No.	Values & Remarks	Ref No.	Part No.	Values & Remarks	Ref No.	Part No.	Values & Remarks	Ref No.	Part No.	Values & Remarks
RESISTORS			R31	ERDS2TJ472T	4.7K 1/4W [M]	R401	ERDS2TJ332T	3.3K 1/4W [M]	R523	ERDS2TJ473T	47K 1/4W [M]
			R41	ERDS2TJ301T	300 1/4W [M]	R403	ERDS2TJ392T	3.9K 1/4W [M]	R601	ERDS2TJ224T	220K 1/4W [M]
R1	ERDS2TJ104T	100K 1/4W [M]	R47	ERDS2TJ332T	3.3K 1/4W [M]	R404	ERDS2TJ182T	1.8K 1/4W [M]	R602	ERDS2TJ224T	220K 1/4W [M]
R2	ERDS2TJ332T	3.3K 1/4W [M]	R49	ERDS2TJ103T	10K 1/4W [M]	R406	ERDS2TJ273T	27K 1/4W [M]	R603	ERDS2TJ224T	220K 1/4W [M]
R3	ERDS2TJ104T	100K 1/4W [M]	R52	ERDS2TJ223T	22K 1/4W [M]	R407	ERDS2TJ562T	5.6K 1/4W [M]	R604	ERDS2TJ223T	22K 1/4W [M]
R4	ERDS2TJ103T	10K 1/4W [M]	R59	ERDS2TJ471T	470 1/4W [M]	R410	ERDS2TJ474T	470K 1/4W [M]	R605	ERDS2TJ823T	82K 1/4W [M]
R5	ERDS2TJ103T	10K 1/4W [M]	R61	ERDS2TJ103T	10K 1/4W [M]	R411	ERDS2TJ221T	220 1/4W [M]	R606	ERDS2TJ823T	82K 1/4W [M]
R6	ERDS2TJ152T	1.5K 1/4W [M]	R62	ERDS2TJ471T	470 1/4W [M]	R412	ERDS2TJ221T	220 1/4W [M]	R607	ERDS2TJ104T	100K 1/4W [M]
R7	ERDS2TJ330T	33 1/4W [M]	R64	ERDS2TJ332T	3.3K 1/4W [M]	R413	ERDS2TJ181T	180 1/4W [M]	R608	ERDS2TJ334T	330K 1/4W [M]
R8	ERDS2TJ104T	100K 1/4W [M]	R65	ERDS2TJ470T	47 1/4W [M]	R414	ERDS2TJ562T	5.6K 1/4W [M]	R609	ERDS2TJ106T	10M 1/4W [M]
R9	ERDS2TJ471T	470 1/4W [M]	R66	ERDS2TJ332T	3.3K 1/4W [M]	R416	ERDS2TJ392T	3.9K 1/4W [M]	R610	ERDS2TJ104T	100K 1/4W [M]
R10	ERDS2TJ102T	1K 1/4W [M]	R101	ERDS2TJ183T	18K 1/4W [M]	R417	ERDS2TJ152T	1.5K 1/4W [M]	R611	ERDS2TJ472T	4.7K 1/4W [M]
R11	ERDS2TJ103T	10K 1/4W [M]	R102	ERDS2TJ330T	33 1/4W [M]	R418	ERDS2TJ332T	3.3K 1/4W [M]	R612	ERDS2TJ472T	4.7K 1/4W [M]
R12	ERDS2TJ223T	22K 1/4W [M]	R103	ERDS2TJ472T	4.7K 1/4W [M]	R420	ERDS2TJ473T	47K 1/4W [M]	R613	ERDS2TJ224T	220K 1/4W [M]
R13	ERDS2TJ153T	15K 1/4W [M]	R105	ERDS2TJ123T	12K 1/4W [M]	R422	ERDS2TJ103T	10K 1/4W [M]	R614	ERDS2TJ104T	100K 1/4W [M]
R14	ERDS2TJ103T	10K 1/4W [M]	R106	ERDS2TJ103T	10K 1/4W [M]	R423	ERDS2TJ473T	47K 1/4W [M]	R615	ERDS2TJ104T	100K 1/4W [M]
R15	ERDS2TJ223T	22K 1/4W [M]	R107	ERDS2TJ102T	1K 1/4W [M]	R501	ERDS2TJ332T	3.3K 1/4W [M]	R616	ERDS2TJ104T	100K 1/4W [M]
R16	ERDS2TJ105T	1M 1/4W [M]	R201	ERDS2TJ183T	18K 1/4W [M]	R503	ERDS2TJ392T	3.9K 1/4W [M]	R617	ERDS2TJ224T	220K 1/4W [M]
R17	ERDS2TJ103T	10K 1/4W [M]	R202	ERDS2TJ330T	33 1/4W [M]	R504	ERDS2TJ182T	1.8K 1/4W [M]	R619	ERDS2TJ153T	15K 1/4W [M]
R18	ERDS2TJ223T	22K 1/4W [M]	R203	ERDS2TJ472T	4.7K 1/4W [M]	R506	ERDS2TJ273T	27K 1/4W [M]	R620	ERDS2TJ153T	15K 1/4W [M]
R19	ERDS2TJ101T	100 1/4W [M]	R205	ERDS2TJ123T	12K 1/4W [M]	R507	ERDS2TJ562T	5.6K 1/4W [M]	R621	ERDS2TJ153T	15K 1/4W [M]
R20	ERDS2TJ151T	150 1/4W [M]	R206	ERDS2TJ103T	10K 1/4W [M]	R510	ERDS2TJ474T	470K 1/4W [M]	R623	ERDS2TJ224T	220K 1/4W [M]
R21	ERDS2TJ104T	100K 1/4W [M]	R207	ERDS2TJ102T	1K 1/4W [M]	R511	ERDS2TJ221T	220 1/4W [M]	R624	ERDS2TJ103T	10K 1/4W [M]
R22	ERDS2TJ331T	330 1/4W [M]	R301	ERDS2TJ272T	2.7K 1/4W [M]	R512	ERDS2TJ221T	220 1/4W [M]	R625	ERDS2TJ103T	10K 1/4W [M]
R24	ERDS2TJ471T	470 1/4W [M]	R303	ERDS2TJ221T	220 1/4W [M]	R513	ERDS2TJ181T	180 1/4W [M]	R626	ERDS2TJ103T	10K 1/4W [M]
R25	ERDS2TJ104T	100K 1/4W [M]	R304	ERDS2TJ100T	10 1/4W [M]	R514	ERDS2TJ562T	5.6K 1/4W [M]	R627	ERDS2TJ563T	56K 1/4W [M]
R26	ERDS2TJ102T	1K 1/4W [M]	R305	ERDS2TJ563T	56K 1/4W [M]	R516	ERDS2TJ392T	3.9K 1/4W [M]	R628	ERDS2TJ224T	220K 1/4W [M]
R27	ERDS2TJ102T	1K 1/4W [M]	R306	ERDS2TJ821T	820 1/4W [M]	R517	ERDS2TJ152T	1.5K 1/4W [M]	R630	ERDS2TJ474T	470K 1/4W [M]
R28	ERDS2TJ334T	330K 1/4W [M]	R307	ERDS2TJ222T	2.2K 1/4W [M]	R518	ERDS2TJ332T	3.3K 1/4W [M]	R631	ERDS2TJ474T	470K 1/4W [M]
R29	ERDS2TJ331T	330 1/4W [M]	R308	ERDS2TJ475T	4.7M 1/4W [M]	R520	ERDS2TJ473T	47K 1/4W [M]	R632	ERDS2TJ471T	470 1/4W [M]
R30	ERDS2TJ822T	8.2K 1/4W [M]	R309	ERDS2TJ101T	100 1/4W [M]	R522	ERDS2TJ103T	10K 1/4W [M]	R633	ERDS2TJ101T	100 1/4W [M]

Ref No.	Part No.	Values & Remarks		Ref No.	Part No.	Values & Remarks		Ref No.	Part No.	Values & Remarks		Ref No.	Part No.	Values & Remarks	
R637	ERDS2TJ102T	1K	1/4W [M]	R710	ERDS2TJ154T	150K	1/4W [M]	C36	RCBS1H102KBY	1000P	50V [M]	C205	ECBT1H102KB5	1000P	50V [M]
R638	ERDS2TJ222T	2.2K	1/4W [M]	R801	ERDS2TJ152T	1.5K	1/4W [M]	C37	RCBS1H102KBY	1000P	50V [M]	C206	ECEA0JKA101B	100	6.3V [M]
R639	ERDS2TJ473T	47K	1/4W [M]	R802	ERDS2TJ222T	2.2K	1/4W [M]	C38	ECBT1H331KB5	330P	50V [M]	C207	ECFR1C273MR	0.027	16V [M]
R640	ERDS2TJ472T	4.7K	1/4W [M]	R803	ERDS2TJ272T	2.7K	1/4W [M]	C39	ECBT1C103MS5	0.01	16V [M]	C208	ECBT1H471KB5	470P	50V [M]
R643	ERDS2TJ103T	10K	1/4W [M]	R804	ERDS2TJ392T	3.9K	1/4W [M]	C40	ECBT1C103MS5	0.01	16V [M]	C209	ECEA1HKA010B	1	50V [M]
R644	ERDS2TJ331T	330	1/4W [M]	R805	ERDS2TJ562T	5.6K	1/4W [M]	C44	ECEA1AU101B	100	10V [M]	C210	ECBT1C332MR5	3300P	16V [M]
R645	ERDS2TJ122T	1.2K	1/4W [M]	R806	ERDS2TJ152T	1.5K	1/4W [M]	C47	ECFR1C223MR	0.022	16V [M]	C301	ECQP2A151JZT	150P	100V [M]
R646	ERDS2TJ331T	330	1/4W [M]	R807	ERDS2TJ222T	2.2K	1/4W [M]	C48	ECEA0JU101B	100	6.3V [M]	C302	ECBT1C103MS5	0.01	16V [M]
R647	ERDS2TJ103T	10K	1/4W [M]	R808	ERDS2TJ682T	6.8K	1/4W [M]	C51	ECEA1HKA010B	1	50V [M]	C305	ECQP1102JZT	1000P	100V [M]
R651	ERDS2TJ122T	1.2K	1/4W [M]	R809	ERDS2TJ562T	5.6K	1/4W [M]	C52	ECFR1C473MR	0.047	16V [M]	C306	ECEA1AU101B	100	10V [M]
R657	ERDS2TJ393T	39K	1/4W [M]	R851	ERDS2TJ102T	1K	1/4W [M]	C60	ECEA1AKA220B	22	10V [M]	C307	ECBT1C822MS5	8200P	16V [M]
R658	ERDS2TJ153T	15K	1/4W [M]	R853	ERDS2TJ102T	1K	1/4W [M]	C61	ECBT1C332MR5	3300P	16V [M]	C308	ECBT1C103MS5	0.01	16V [M]
R659	ERDS2TJ103T	10K	1/4W [M]	R854	ERDS2TJ102T	1K	1/4W [M]	C62	RCBS1H102KBY	1000P	50V [M]	C309	ECFR1C473MR	0.047	16V [M]
R661	ERDS2TJ124T	120K	1/4W [M]	R901	ERDS2TJ272T	2.7K	1/4W [M]	C63	ECBT1H681KB5	680P	50V [M]	C310	ECEA1CKA100B	10	16V [M]
R662	ERDS2TJ123T	12K	1/4W [M]	R902	ERDS2TJ683T	68K	1/4W [M]	C67	ECFR1C223MR	0.022	16V [M]	C311	ECEA1AKA220B	22	10V [M]
R663	ERDS2TJ103T	10K	1/4W [M]					C68	ECEA1HKA010B	1	50V [M]	C312	ECEA1AKA101B	100	10V [M]
R664	ERDS2TJ472T	4.7K	1/4W [M]		**CAPACITORS**			C69	ECFR1C183MR	0.018	16V [M]	C317	ECEA1EU470B	47	25V [M]
R665	ERDS2TJ123T	12K	1/4W [M]					C70	ECFR1C183MR	0.018	16V [M]	C404	ECEA1HKA010B	1	50V [M]
R667	ERDS1FVJ2R7T	2.7 ⚠	1/2W [M]	C3	ECFR1C473MR	0.047	16V [M]	C71	ECEA1HKA2R2B	2.2	50V [M]	C405	ECBT1H331KB5	330P	50V [M]
R668	ERDS2TJ472T	4.7K	1/4W [M]	C4	RCBS1H102KBY	1000P	50V [M]	C72	ECEA1HKA010B	1	50V [M]	C406	ECEA1HKAR68B	0.68	50V [M]
R669	ERDS2TJ121T	120	1/4W [M]	C5	ECBT1H2R2KC5	2.2P	50V [M]	C74	ECBT1H471KB5	470P	50V [M]	C408	ECBT1C332MR5	3300P	16V [M]
R670	ERDS2TJ224T	220K	1/4W [M]	C6	RCBS1H102KBY	1000P	50V [M]	C75	ECEA1HKA010B	1	50V [M]	C409	ECEA0JU101B	100	6.3V [M]
R672	ERDS2TJ105T	1M	1/4W [M]	C9	ECEA1HKN010B	1	50V [M]	C76	ECEA1HKA010B	1	50V [M]	C410	ECEA1CKA101B	100	16V [M]
R673	ERDS2TJ224T	220K	1/4W [M]	C10	ECBT1C332MR5	3300P	16V [M]	C77	ECEA1HKA010B	1	50V [M]	C411	ECQV1H224JZ3	0.22	50V [M]
R674	ERDS2TJ224T	220K	1/4W [M]	C11	ECEA1AKA101B	100	10V [M]	C80	ECBT1H331KB5	330P	50V [M]	C412	ECEA1AU471B	470	10V [M]
R675	ERDS2TJ153T	15K	1/4W [M]	C12	ECFR1C223MR	0.022	16V [M]	C81	ECBT1H331KB5	330P	50V [M]	C413	ECBT1H102KB5	1000P	50V [M]
R677	ERDS2TJ333T	33K	1/4W [M]	C13	ECFR1C103MR	0.01	16V [M]	C82	ECBT1H150JC5	15P	50V [M]	C415	ECBT1H473ZF5	0.082	16V [M]
R678	ERDS2TJ154T	150K	1/4W [M]	C14	ECBT1C103MS5	0.01	16V [M]	C83	ECBT1H331KB5	330P	50V [M]	C504	ECEA1HKA010B	1	50V [M]
R679	ERDS2TJ102T	1K	1/4W [M]	C15	ECBT1H3R9KC5	3.9P	50V [M]	C84	ECBT1C103MS5	0.01	16V [M]	C505	ECBT1H331KB5	330P	50V [M]
R680	ERDS2TJ821T	820	1/4W [M]	C16	RCBS1H102KBY	1000P	50V [M]	C85	ECBT1C103MS5	0.01	16V [M]	C506	ECEA1HKAR68B	0.68	50V [M]
R681	ERDS2TJ821T	820	1/4W [M]	C17	RCBS1H102KBY	1000P	50V [M]	C86	ECBT1H331KB5	330P	50V [M]	C508	ECBT1C332MR5	3300P	16V [M]
R682	ERDS2TJ821T	820	1/4W [M]	C18	ECBT1H200JC5	20P	50V [M]	C87	ECBT1C103MS5	0.01	16V [M]	C509	ECEA0JU101B	100	6.3V [M]
R683	ERDS2TJ102T	1K	1/4W [M]	C19	ECBT1H220JC5	22P	50V [M]	C88	ECBT1C103MS5	0.01	16V [M]	C510	ECEA1CKA101B	100	16V [M]
R684	ERDS2TJ102T	1K	1/4W [M]	C20	RCBS1H102KBY	1000P	50V [M]	C89	ECBT1H101KB5	100P	50V [M]	C511	ECQV1H224JZ3	0.22	50V [M]
R685	ERDS2TJ102T	1K	1/4W [M]	C21	ECEA1AKA101B	100	10V [M]	C101	ECBT1H102KB5	1000P	50V [M]	C512	ECEA1AU471B	470	10V [M]
R686	ERDS2TJ821T	820	1/4W [M]	C22	RCBS1H102KBY	1000P	50V [M]	C102	ECBT1C122MR5	1200P	16V [M]	C513	ECBT1H102KB5	1000P	50V [M]
R687	ERDS2TJ102T	1K	1/4W [M]	C23	RCBS1H102KBY	1000P	50V [M]	C103	ECBT1H102KB5	1000P	50V [M]	C515	ECBT1H473ZF5	0.047	50V [M]
R689	ERDS2TJ102T	1K	1/4W [M]	C24	RCBS1H102KBY	1000P	50V [M]	C104	ECEA1CKS100B	10	16V [M]	C516	ECFR1C823MR	0.082	16V [M]
R690	ERDS2TJ821T	820	1/4W [M]	C25	ECBT1H150JC5	15P	50V [M]	C105	ECBT1H102KB5	1000P	50V [M]	C601	ECEA0JKA101B	100	6.3V [M]
R691	ERDS2TJ102T	1K	1/4W [M]	C26	ECBT1H6R8KC5	6.8P	50V [M]	C106	ECEA0JKA101B	100	6.3V [M]	C602	ECBT1H102KB5	1000P	50V [M]
R692	ERDS2TJ152T	1.5K	1/4W [M]	C27	ECBT1H4R7KC5	4.7P	50V [M]	C107	ECFR1C273MR	0.027	16V [M]	C603	ECBT1H102KB5	1000P	50V [M]
R693	ERDS2TJ222T	2.2K	1/4W [M]	C28	RCBS1H102KBY	1000P	50V [M]	C108	ECBT1H471KB5	470P	50V [M]	C604	ECBT1H102KB5	1000P	50V [M]
R694	ERDS2TJ472T	4.7K	1/4W [M]	C29	RCBS1H102KBY	1000P	50V [M]	C109	ECEA1HKA010B	1	50V [M]	C605	ECBT1H180JC5	18P	50V [M]
R695	ERDS2TJ103T	10K	1/4W [M]	C31	RCBS1H102KBY	1000P	50V [M]	C110	ECBT1C332MR5	3300P	16V [M]	C606	ECBT1H220JC5	22P	50V [M]
R696	ERDS2TJ472T	4.7K	1/4W [M]	C32	ECBT1H101KB5	100P	50V [M]	C201	ECBT1H102KB5	1000P	50V [M]	C610	ECEA1HKA010B	1	50V [M]
R697	ERDS2TJ472T	4.7K	1/4W [M]	C33	ECBT1H101KB5	100P	50V [M]	C202	ECBT1C122MR5	1200P	16V [M]	C611	ECBT1H102KB5	1000P	50V [M]
R698	ERD2FCVG390T	39	1/4W [M]	C34	ECBT1H680J5	68P	50V [M]	C203	ECBT1H102KB5	1000P	50V [M]	C612	ECBT1H102KB5	1000P	50V [M]
R699	ERDS2TJ1R0T	1	1/4W [M]	C35	ECBT1H1R5MC5	1.5P	50V [M]	C204	ECEA1CKS100B	10	16V [M]	C613	ECBT1H820KB5	82P	50V [M]

Ref No.	Part No.	Values & Remarks	
C614	ECBT1H680J5	68P	50V [M]
C615	ECBT1H101KB5	100P	50V [M]
C616	ECBT1H820KB5	82P	50V [M]
C622	ECBT1H330J5	33P	50V [M]
C623	ECBT1H330J5	33P	50V [M]
C625	ECBT1H330J5	33P	50V [M]
C628	ECBT1C103MS5	0.01	16V [M]
C629	ECBT1C103MS5	0.01	16V [M]
C630	ECEA1CKA100B	10	16V [M]
C632	ECEA1AU101B	100	10V [M]
C633	ECEA1CU100B	10	16V [M]
C634	RCE1EU101BT	100	25V [M]
C635	ECEA1EU471B	470	25V [M]
C637	ECEA1EU332E	3300 ⚠	25V [M]
C638	ECEA1CU100B	10	16V [M]
C639	ECEA1CU220B	22	16V [M]
C641	ECBT1H471KB5	470P	50V [M]
C642	ECEA0JU101B	100	6.3V [M]
C646	ECEA1CU101B	100	16V [M]
C647	ECEA1CKA100B	10	16V [M]
C653	ECBT1C103MS5	0.01	16V [M]
C657	ECBT1H471KB5	470P	50V [M]
C665	ECBT1H101KB5	100P	50V [M]
C668	ECBT1H101KB5	100P	50V [M]
C671	ECQV1H154JZ3	0.15	50V [M]
C673	ECBT1H330J5	33P	50V [M]
C683	ECBT1H102KB5	1000P	50V [M]
C684	ECBT1H561KB5	560P	50V [M]
C685	ECBT1H561KB5	560P	50V [M]
C686	ECBT1H102KB5	1000P	50V [M]
C687	ECEA1HKA010B	1	50V [M]
C688	ECBT1H330J5	33P	50V [M]
C689	ECBT1H330J5	33P	50V [M]
C690	ECBT1H102KB5	1000P	50V [M]
C901	ECKR1H103ZF5	0.01	50V [M]
C902	ECKR1H103ZF5	0.01	50V [M]
C903	ECKR1H103ZF5	0.01	50V [M]
C904	ECKR1H103ZF5	0.01	50V [M]
	<SERVO P.C.B.>		
	RESISTORS		
R701	ERJ6GEYJ4R7V	4.7	1/10W [M]
R703	ERJ6GEYJ823	82K	1/10W [M]
R704	ERJ6GEYJ102V	1K	1/10W [M]
R705	ERJ6GEYJ103V	10K	1/10W [M]
R706	ERJ6GEYJ102V	1K	1/10W [M]
R707	ERJ6GEYJ474V	470K	1/10W [M]

Ref No.	Part No.	Values & Remarks	
R708	ERJ6GEYJ154V	150K	1/10W [M]
R709	ERJ6GEYJ683V	68K	1/10W [M]
R710	ERDS2TJ153T	15K	1/4W [M]
R711	ERJ6GEYJ154V	150K	1/10W [M]
R712	ERJ6GEYJ221V	220	1/10W [M]
R717	ERJ6GEYJ102V	1K	1/10W [M]
R718	ERJ6GEYJ102V	1K	1/10W [M]
R719	ERJ6GEYJ102V	1K	1/10W [M]
R720	ERJ6GEYJ102V	1K	1/10W [M]
R721	ERJ6GEYJ101V	100	1/10W [M]
R722	ERJ6GEYJ563V	56K	1/10W [M]
R723	ERJ6GEYJ182V	1.8K	1/10W [M]
R724	ERJ6GEYJ333V	33K	1/10W [M]
R725	ERJ6GEYJ472V	4.7K	1/10W [M]
R726	ERJ6GEYJ473V	47K	1/10W [M]
R727	ERJ6GEYJ822V	8.2K	1/10W [M]
R728	ERJ6GEYJ103V	10K	1/10W [M]
R731	ERJ6GEYJ822V	8.2K	1/10W [M]
R734	ERJ6GEYJ101V	100	1/10W [M]
R735	ERJ6GEYJ101V	100	1/10W [M]
R736	ERJ6GEYJ101V	100	1/10W [M]
R738	ERJ6GEYJ223V	22K	1/10W [M]
R741	ERJ6GEYJ562V	5.6K	1/10W [M]
R742	ERJ6GEYJ562V	5.6K	1/10W [M]
R743	ERJ6GEYJ562V	5.6K	1/10W [M]
R744	ERJ6GEYJ103V	10K	1/10W [M]
R745	ERJ6GEYJ155V	1.5M	1/10W [M]
R748	ERJ6GEYJ182V	1.8K	1/10W [M]
R749	ERJ6GEYJ682V	6.8K	1/10W [M]
R750	ERJ6GEYJ473V	47K	1/10W [M]
R751	ERJ6GEYJ473V	47K	1/10W [M]
R752	ERJ8GEYJ220V	22	1/8W [M]
R770	ERJ6GEYJ155V	1.5M	1/10W [M]
R771	ERJ6GEYJ155V	1.5M	1/10W [M]
R772	ERJ6GEYJ273V	27K	1/10W [M]
	CAPACITORS		
C701	ECEA0JKA330I	33	6.3V [M]
C702	ECUZNE104MBN	0.1	25V [M]
C703	ECEA0JKA101I	100	6.3V [M]
C704	ECUZNE104MBN	0.1	25V [M]
C705	ECUZNE104MBN	0.1	25V [M]
C706	ECUV1H272KBN	2700P	50V [M]
C707	ECUV1E273KBN	0.027	25V [M]
C708	ECUV1H472KBN	4700P	50V [M]
C709	ECUV1C473KBN	0.047	16V [M]
C710	ECUV1H182KBN	1800P	50V [M]

Ref No.	Part No.	Values & Remarks	
C711	ECUZNE104MBN	0.1	25V [M]
C712	ECUZNE104MBN	0.1	25V [M]
C713	ECUV1C104MBM	0.1	16V [M]
C714	ECEA0JKA101I	100	6.3V [M]
C716	ECUV1H561KBN	560P	50V [M]
C717	ECUZNE104MBN	0.1	25V [M]
C718	ECUV1C224KBN	0.22	16V [M]
C721	ECUV1H150JCN	15P	50V [M]
C722	ECUV1H150JCN	15P	50V [M]
C723	ECEA1AKA221I	220	10V [M]
C724	ECUV1C104MBM	0.1	16V [M]
C725	ECUV1H102KBN	1000P	50V [M]
C726	ECUV1H102KBN	1000P	50V [M]
C727	ECEA1HPK010I	1	50V [M]
C728	ECEA1HPK010I	1	50V [M]
C730	ECUZNE104MBN	0.1	25V [M]
C731	ECEA0JKA221I	220	6.3V [M]
C732	ECEA0JKA221I	220	6.3V [M]
C733	ECUZNE104MBN	0.1	25V [M]
C734	ECEA1AKA221I	220	10V [M]
C735	ECUZNE104MBN	0.1	25V [M]
C736	ECUZNE104MBN	0.1	25V [M]
C737	ECUZNE104MBN	0.1	25V [M]
C738	ECUV1C154KBN	0.15	16V [M]
C742	ECUV1E273KBN	0.027	25V [M]
C743	ECUZNE104MBN	0.1	25V [M]
C744	ECUV1E822KBN	8200P	25V [M]
C745	ECUV1C473MBN	0.047	16V [M]
C747	ECUV1H222KBN	2200P	50V [M]
C748	ECUV1H471KBM	470P	50V [M]
C749	ECUZNE104MBN	0.1	25V [M]
C751	ECUZNE104MBN	0.1	25V [M]
C752	ECUV1H152KBN	1500P	50V [M]
C753	ECUV1H471KBM	470P	50V [M]
C754	ECUV1H471KBN	470P	50V [M]
	CHIP JUMPERS		
RJ701	ERJ8GEY0R00A	0	1/8W [M]
RJ702	ERJ8GEY0R00A	0	1/8W [M]
RJ703	ERJ8GEY0R00A	0	1/8W [M]
RJ704	ERJ8GEY0R00A	0	1/8W [M]
RJ707	ERJ8GEY0R00A	0	1/8W [M]
RJ709	ERJ8GEY0R00A	0	1/8W [M]
RJ714	ERJ8GEY0R00A	0	1/8W [M]
RJ715	ERJ8GEY0R00A	0	1/8W [M]
RJ716	ERJ8GEY0R00A	0	1/8W [M]
RJ717	ERJ8GEY0R00A	0	1/8W [M]

Ref No.	Part No.	Values & Remarks	
RJ721	ERJ8GEY0R00A	0	1/8W [M]
RJ722	ERJ8GEY0R00A	0	1/8W [M]
RJ723	ERJ8GEY0R00A	0	1/8W [M]
RJ724	ERJ8GEY0R00A	0	1/8W [M]
RJ725	ERJ8GEY0R00A	0	1/8W [M]
RJ726	ERJ8GEY0R00A	0	1/8W [M]
RJ727	ERJ8GEY0R00A	0	1/8W [M]
RJ728	ERJ8GEY0R00A	0	1/8W [M]
RJ729	ERJ8GEY0R00A	0	1/8W [M]
RJ730	ERJ8GEY0R00A	0	1/8W [M]
	TEST JUMPERS		
TJ701	EYF8CU	TESTJUMPER[M]	
TJ702	EYF8CU	TESTJUMPER[M]	