

# Service Manual

AUTO PRODUCE  
CQ-J03LEE



**SPECIFICATIONS\ТЕХНИЧЕСКИЕ ХАРАКТЕРИСТИКИ**  
**BLOCK DIAGRAM\БЛОК-СХЕМА**  
**SCHEMATIC DIAGRAM\ПРИНЦИПИАЛЬНАЯ СХЕМА**  
**WIRING DIAGRAM\СХЕМА СОЕДИНЕНИЯ**  
**OPERATION OF LSI\ОПИСАНИЕ И ФУНКЦИИ БИС**  
**ALIGNMENT INSTRUCTIONS\МЕТОДИКА НАСТРОЙКИ**  
**ALIGNMENT POINTS\КОНТРОЛЬНЫЕ ТОЧКИ**  
**PACKAGE AND IC BLOCK DIAGRAM\ЦОКОЛЕВКА И БЛОК-СХЕМА**  
**ИНТЕГРАЛЬНОЙ МИКРОСХЕМЫ**  
**EXPLODED VIEW (UNIT)\СБОРОЧНЫЙ ЧЕРТЕЖ (ОСНОВНОЙ БЛОК)**  
**EXPLODED VIEW (DECK)\СБОРОЧНЫЙ ЧЕРТЕЖ (ДЕКА)**

# Panasonic

## SPECIFICATIONS\*

### General

Power Supply	: DC 12V (11-16V), Test Voltage 14.4V, Negative Ground
Current Consumption	: Less than 2.0A (Tape mode, 0.5W, 4-Speaker)
Maximum Power Output	: 2 × 7.5W, 4 × 5W (at 4Ω)
Power Output	: 2 × 4W, 4 × 2.5W (DIN45 324 at 4Ω)
Speaker Impedance	: 4-8Ω

### FM Stereo Radio

Frequency Range	: 64.0-74.0MHz / 87.5-108MHz
Usable Sensitivity	: 6dB/μV (S/N 30dB) [87.5-108MHz] : 9dB/μV (S/N 30dB) [64.0-74.0MHz]
Stereo Separation	: 35dB (at 1kHz)

### MW Radio

Frequency Range	: 531kHz-1,602kHz
Usable Sensitivity	: 28dB/μV (S/N 20dB)

### LW Radio

Frequency Range	: 153kHz-279kHz
Usable Sensitivity	: 32dB/μV (S/N 20dB)

### Cassette Player

Reproduction System	: 4-Track, 2-Program Stereo
Tape Speed	: 4.75 cm/sec.
F/F Rewind Time	: Less than 180sec. (C-60)
Frequency Response	: 35 to 14,000Hz ± 3dB
Wow and Flutter	: 0.12% (WRMS)
Signal to Noise Ratio	: 52dB

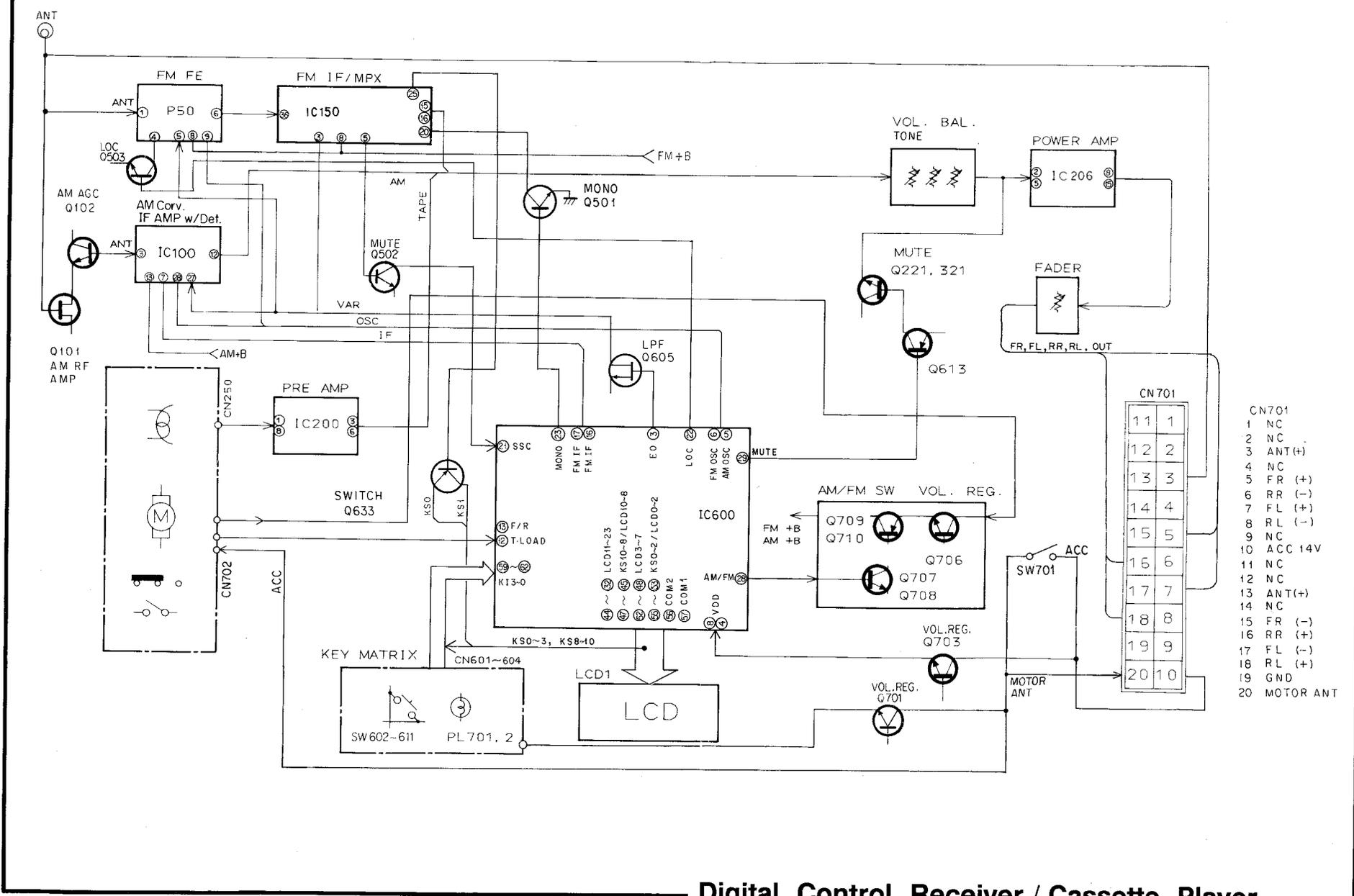
<b>Dimensions**</b> (Main Unit)	: 178(W) × 50(H) × 150(D) mm
(Bracket)	: 182(W) × 53(H) × 155(D) mm

<b>Weight**</b> (Main Unit)	: 1.45kg
(Bracket)	: 0.35kg

\* Specifications and the design are subject to modification without notice due to improvements in technology.

\*\* Dimensions and Weight shown are approximate.

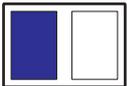
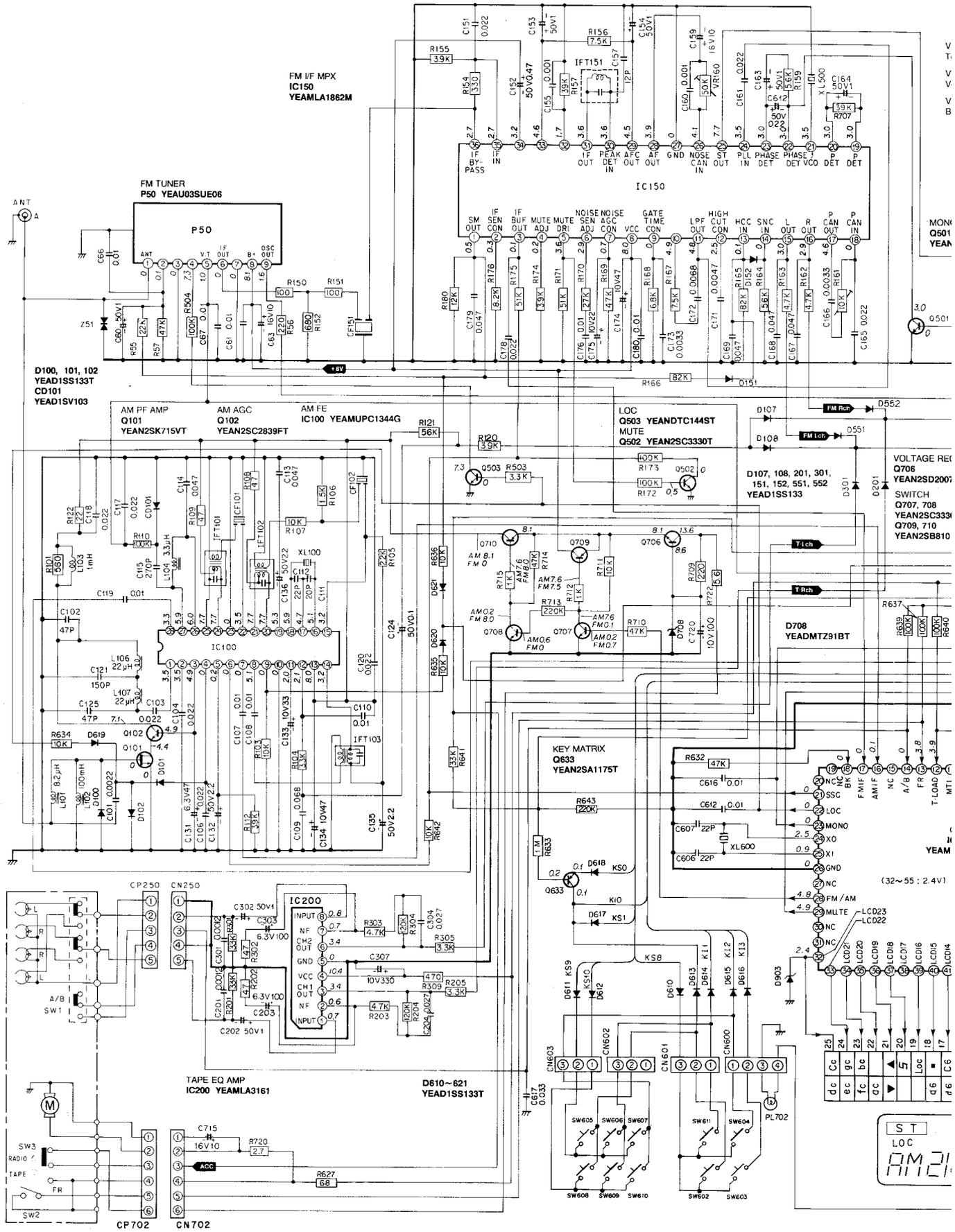
BLOCK DIAGRAM MODEL CQ-J03LEEP

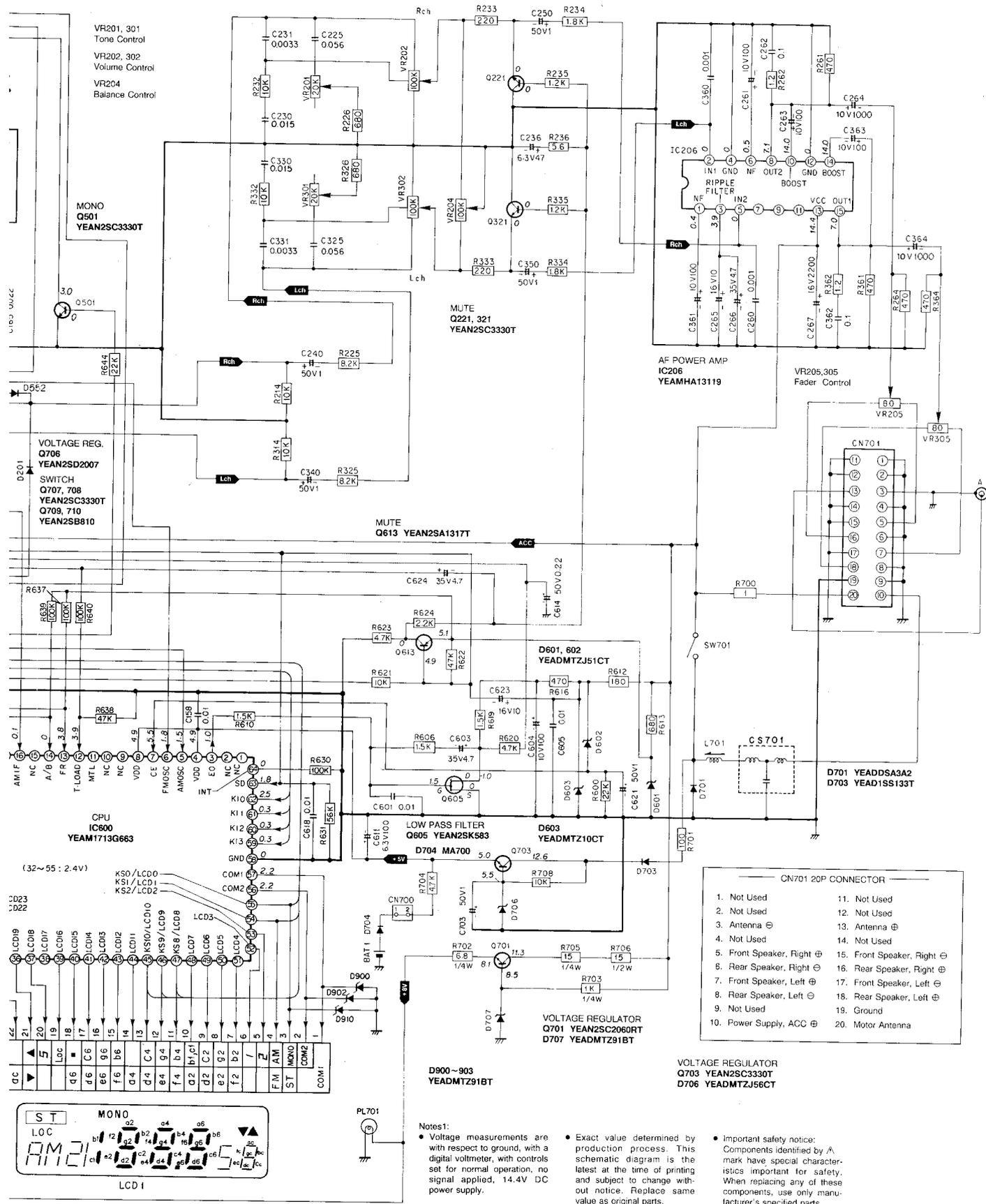


- CN701
- |    |    |
|----|----|
| 11 | 1  |
| 12 | 2  |
| 13 | 3  |
| 14 | 4  |
| 15 | 5  |
| 16 | 6  |
| 17 | 7  |
| 18 | 8  |
| 19 | 9  |
| 20 | 10 |
- 1 NC
  - 2 NC
  - 3 ANT(+)
  - 4 NC
  - 5 FR (+)
  - 6 RR (-)
  - 7 FL (+)
  - 8 RL (-)
  - 9 NC
  - 10 ACC 14V
  - 11 NC
  - 12 NC
  - 13 ANT(+)
  - 14 NC
  - 15 FR (-)
  - 16 RR (+)
  - 17 FL (-)
  - 18 RL (+)
  - 19 GND
  - 20 MOTOR ANT

Digital Control Receiver / Cassette Player

# SCHEMATIC DIAGRAM MODEL CQ-J03LEEP





GN701 20P CONNECTOR

1. Not Used	11. Not Used
2. Not Used	12. Not Used
3. Antenna ⊕	13. Antenna ⊕
4. Not Used	14. Not Used
5. Front Speaker, Right ⊕	15. Front Speaker, Right ⊕
6. Rear Speaker, Right ⊕	16. Rear Speaker, Right ⊕
7. Front Speaker, Left ⊕	17. Front Speaker, Left ⊕
8. Rear Speaker, Left ⊕	18. Rear Speaker, Left ⊕
9. Not Used	19. Ground
10. Power Supply, ACC ⊕	20. Motor Antenna

Notes:

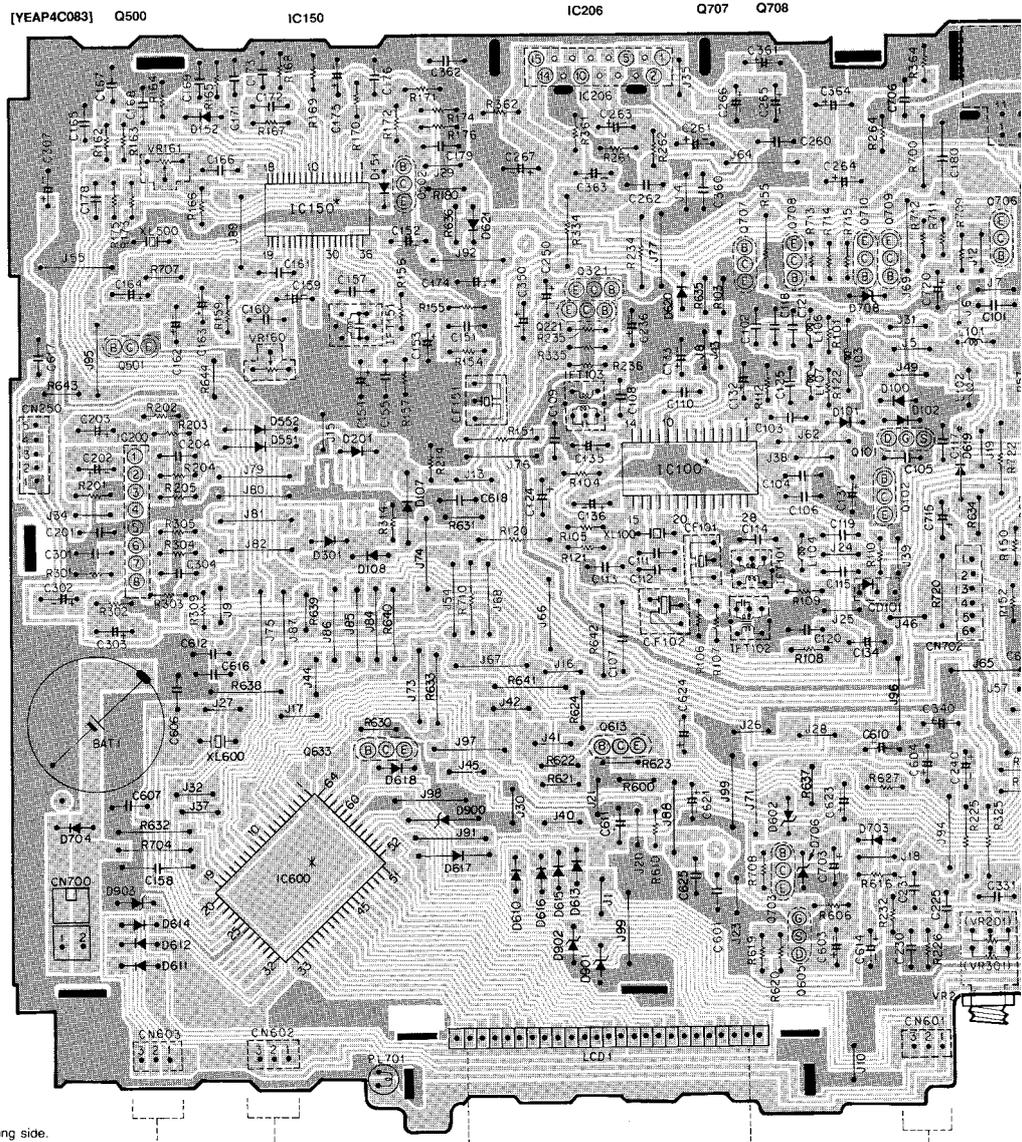
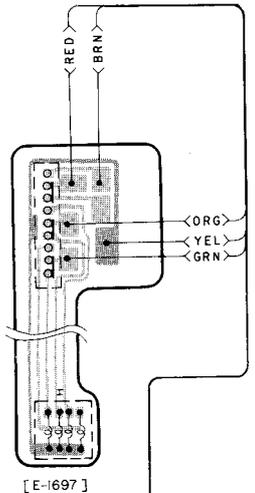
- Voltage measurements are with respect to ground, with a digital voltmeter, with controls set for normal operation, no signal applied, 14.4V DC power supply.
- Exact value determined by production process. This schematic diagram is the latest at the time of printing and subject to change without notice. Replace same value as original parts.
- Important safety notice: Components identified by A mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.

# Digital Control Receiver / Cassette Player



# WIRING DIAGRAM MODEL CQ-J03LEEP

CN701 20P CONNECTOR				
1. Not Used	6. Rear Speaker, Right (-)	11. Not Used		
2. Not Used	7. Front Speaker, Left (+)	12. Not Used		
3. Antenna (-)	8. Rear Speaker, Left (-)	13. Antenna (+)		
4. Not Used	9. Not Used	14. Not Used		
5. Front Speaker, Right (+)	10. Power Supply, ACC	15. Front Speaker, Right (-)		

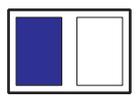
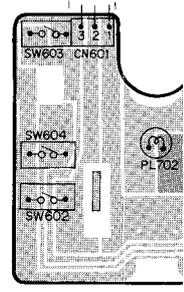
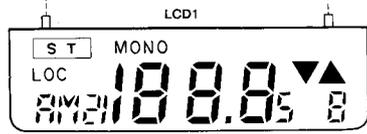
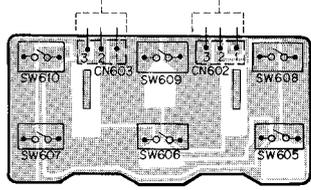


IC206			
1	0.4 V	9	-
2	0 V	10	14.0 V
3	3.9 V	11	-
4	0 V	12	0 V
5	0 V	13	14.4 V
6	0.5 V	14	14.0 V
7	-	15	7.0 V
8	7.1 V		

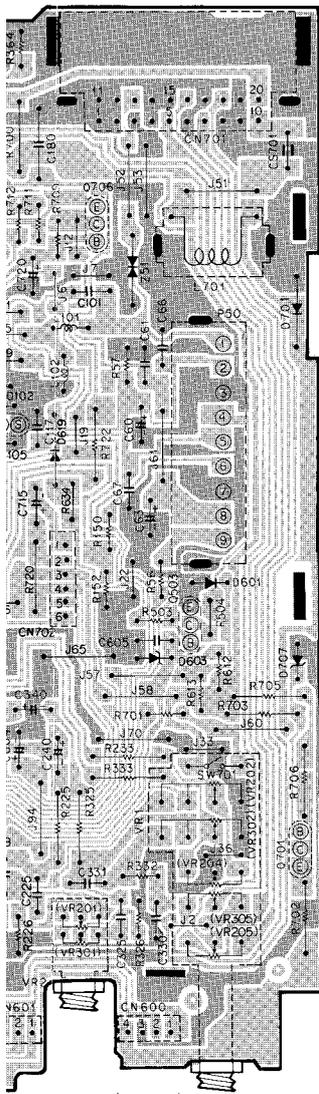
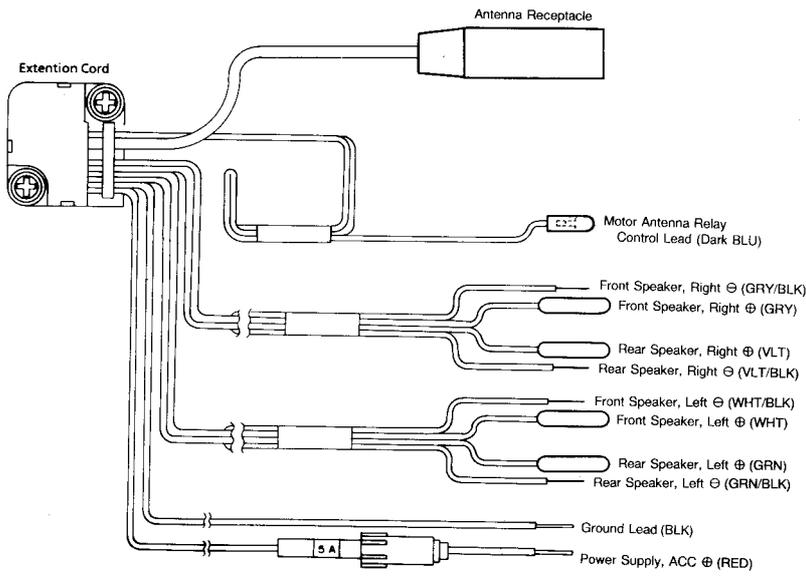
IC150			
1	0.5 V	19	3.0 V
2	0.3 V	20	3.0 V
3	0.1 V	21	3.5 V
4	0.2 V	22	3.0 V
5	3.6 V	23	3.0 V
6	2.9 V	24	3.5 V
7	0.7 V	25	7.7 V
8	8.0 V	26	4.1 V
9	0 V	27	0 V
10	4.9 V	28	3.9 V
11	4.8 V	29	4.5 V
12	2.5 V	30	3.6 V
13	0.1 V	31	3.6 V
14	0 V	33	1.7 V
15	3.0 V	33	4.6 V
16	2.9 V	34	3.2 V
17	4.6 V	35	2.7 V
18	0 V	36	2.7 V

Note :  
Marked (\*) parts are soldering side.

- SW605 : Preset 1 Switch
- SW606 : Preset 2 Switch
- SW607 : Preset 3 Switch
- SW608 : Preset 4 Switch
- SW609 : Preset 5 Switch
- SW610 : Preset 6 Switch



- 16. Rear Speaker, Right (+)
- 17. Front Speaker, Left (-)
- 18. Rear Speaker, Left (+)
- 19. Ground
- 20. Motor Antenna

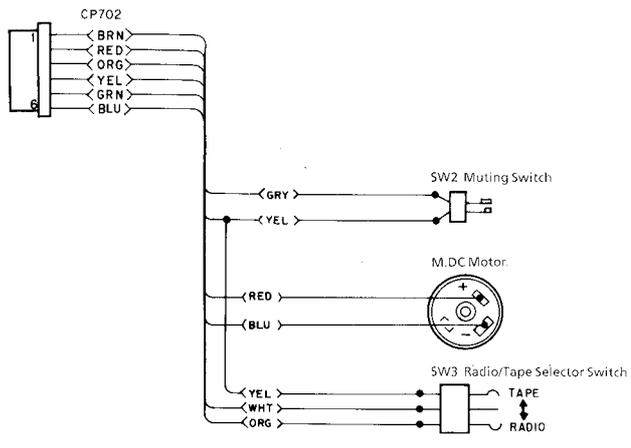


- Q502
- Q706
- Q710
- Q709
- Q321
- Q221
- P50
- Q101
- Q102
- IC100
- Q503
- Q613
- Q701
- Q703
- Q605

<b>Q101</b>	<b>Q102</b>	<b>Q221</b>	<b>Q321</b>	<b>Q500</b>	<b>Q501</b>	<b>Q502</b>	<b>Q503</b>
G 0V	B 4.9V	B 0V	B 0V	B 3.2V	B 0V	B 0.5V	B 0V
D 4.4V	C 7.1V	C 0V	C 0V	C 0V	C 3.0V	C 0V	C 7.3V
S 0V	E 4.4V	E 0V	E 0V	E 3.9V	E 0V	E 0V	E 0V

<b>Q605</b>	<b>Q613</b>	<b>Q633</b>	<b>Q701</b>	<b>Q703</b>	<b>Q706</b>
G 1.5V	B 4.9V	B 0.2V	B 8.5V	B 5.5V	B 8.6V
D 1.0V	C 0V	C 0.1V	C 11.3V	C 12.6V	C 13.6V
S 0V	E 5.1V	E 0.1V	E 8.1V	E 5.0V	E 8.1V



<b>Q707</b>	<b>Q708</b>
B AM 0.2V	B AM 0.6V
FM 0.7V	FM 0V
C AM 7.6V	AM 0.2V
FM 0.1V	FM 8.0V
E 0V	E 0V

<b>Q709</b>	<b>Q710</b>
B AM 7.6V	B AM 7.6V
FM 7.5V	FM 8.0V
C AM 1.2V	AM 8.1V
FM 8.1V	FM 0V
E 8.1V	E 8.1V

<b>P50</b>			
1	0V	6	0V
2	0.1V	7	0V
3	0V	8	8.1V
4	7.3V	9	1.6V
5	1.0V		

<b>IC100</b>			
1	3.5V	15	3.2V
2	3.5V	16	5.1V
3	4.9V	17	4.7V
4	0V	18	5.9V
5	0.2V	19	5.3V
6	0V	20	7.7V
7	0V	21	7.7V
8	5.1V	22	3.5V
9	0V	23	0V
10	0V	24	7.7V
11	2.0V	25	7.7V
12	2.1V	26	6.0V
13	8.0V	27	5.9V
14	3.2V	28	3.3V

<b>IC200</b>			
1	0.7V	5	0V
2	0.6V	6	3.4V
3	3.4V	7	0.7V
4	10.4V	8	0.8V

- VR1 : Power Switch
- SW701 : Power Switch
- VR202, 302 : Volume Control
- VR204 : Balance Control
- VR205, 305 : Fader Control
- VR2 : Tone Control
- VR201, 301 : Tone Control

- SW600 : P-Set Switch
- SW601 : MONO / LOC Switch
- SW602 : BAND Switch
- SW603 : Manual Tuning/Seek Down Switch
- SW604 : Manual Tuning/Seek Up Switch

**ICs & Transistors**

IC600 64Pin

IC200 8Pin

IC100 28Pin

IC150 35Pin

IC206 15Pin

Q706

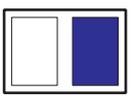
Q605

Q101

Q102, Q701

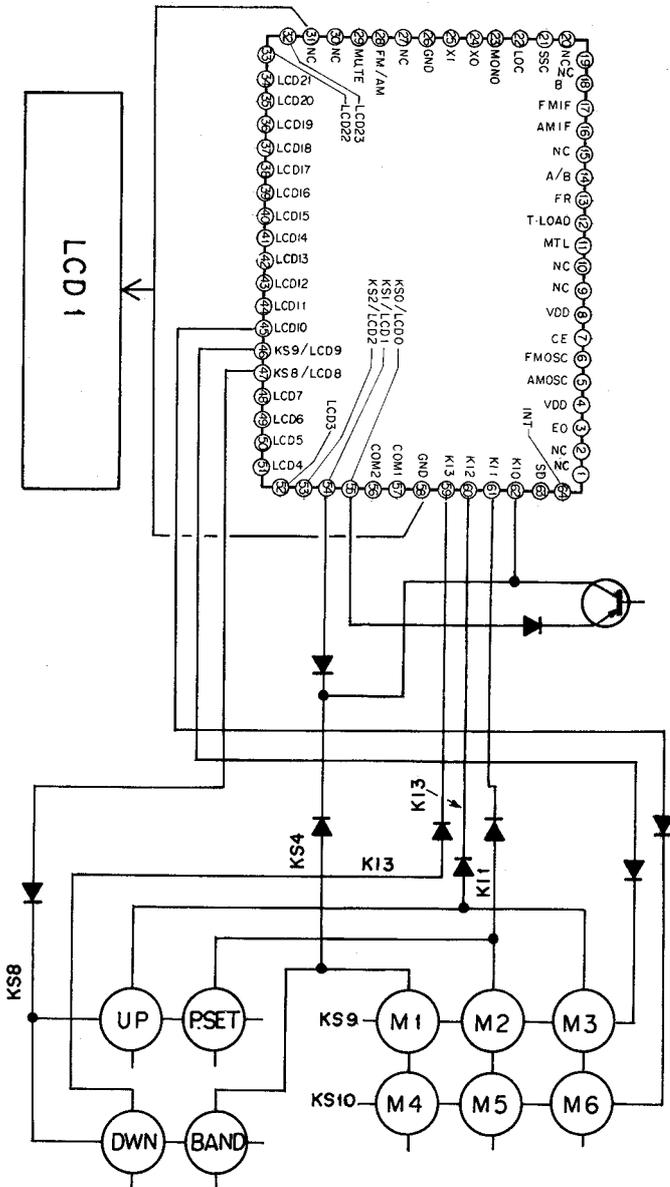
Other transistors

[YEAP4C084a]

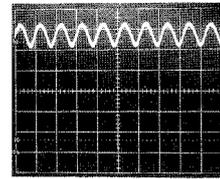


# OPERATION OF LSI

## ■ IC601, YEAM1723G663

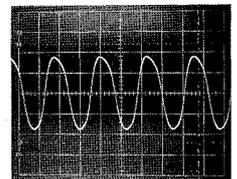


⑤ AM OSC



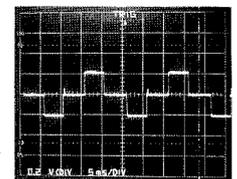
0.1V/DIV, 0.2μS/DIV

⑫ XO



1V/DIV, 0.1μS/DIV

⑰ COM1



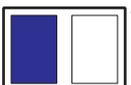
0.2V/DIV, 5ms/DIV

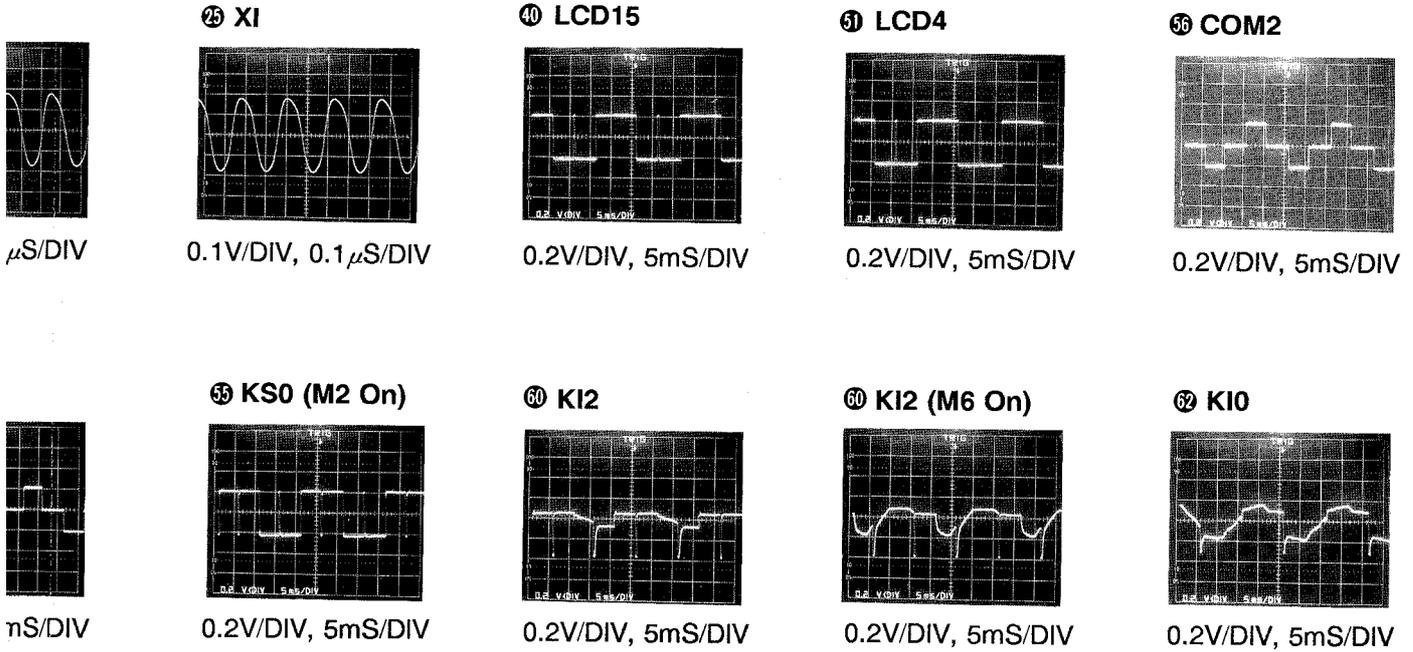
Pin No.	Port	Description	I/O	Vol. (V)	Pin f
1	NC	No Connection	-	-	23
2	NC	No Connection	-	-	24
3	E02	Output, PLL Phase detection Error	O	1.0	25
4	VDD	+5V Power Supply	-	4.9	26
5	AM OSC	Input, AM Local Oscillate Signal	I	1.5	27
6	FM OSC	Input, FM Local Oscillate Signal	I	1.8	28
7	CE	Input, Power Supply detection	I	5.5	29
8	VDD	+5V Power Supply	-	4.9	30
9	NC	No Connection	-	-	31
10	NC	No Connection	-	-	32
11	MTL	Not used	-	-	33
12	T·LOAD	Input, tape Insert detection	I	3.9	34
13	FR	Input, tape FF / REW Detection	I	3.8	35
14	A / B	Input, tape A / B Program Detection	I	0	36
15	NC	No Connection	-	-	37
16	AM IF	Input, AM IF Counter	I	0.1	38
17	FM IF	Input, FM IF Counter	I	0	39
18	BK	Input, BK Signal Counter	I	0	40
19	NC	No Connection	-	-	41
20	NC	No Connection	-	-	42
21	SSC	Output, Search Control	O	0	43
22	LOC	Output, Local Search Sensivity Control	O	0	44

### PRECAUTION IN HANDLING

#### (For Prevention of electrostatic fracture)

1. Except during operation keep all terminals in contact with conductive member. (The device is in this condition.)
2. Always connect the tip of soldering iron, tools, and tester to the ground when using.
3. Do not plug or unplug with the power supplied.
4. Never apply signal or voltage with the power off.
5. Keep all unused terminals at Vcc or Vdd.
6. Never apply the voltage exceeding the line voltage to the input terminal.





Vol. (V)	Pin No.	Port	Description	I/O	Vol. (V)	Pin No.	Port	Description	I/O	Vol. (V)
—	23	MONO	Output, Mono / FMO Change over	O	0	45	KS10/LCD10	Output, LCD Segment Drive Signal and Scan Signal	O	2.4
—	24	X <sub>O</sub>	4.5MHz Crystal Oscillator	—	2.5	46	KS9/LCD9			
1.0	25	X <sub>I</sub>			0.9	47	KS8/LCD8			
4.9	26	GND	Ground	—	0	48	LCD 7	Output, LCD Segment Drive Signal	O	2.4
1.5	27	NC	No Connection	—	—	49	LCD 6			
1.8	28	FM / AM	Output, FM / AM Band Selector	O	4.8	50	LCD 5			
5.5	29	MUTE	Output, Muting	O	4.9	51	LCD 4			
4.9	30	NC	No Connection	—	—	52	LCD 3			
—	31	NC	No Connection	—	—	53	LCD2/KS2	Output, LCD Segment Drive Signal and Scan Signal	O	2.4
—	32	LCD 23	Output, LCD Segment Drive Signal	O	2.4	54	LCD1/KS1			
—	33	LCD 22				55	LCD0/KS0			
3.9	34	LCD 21				56	COM 2	Output, LCD Common Signal	O	2.2
3.8	35	LCD 20				57	COM 1			
0	36	LCD 19				58	GND	Ground	—	0
—	37	LCD 18				Input, Key Return	I	0.3	59	KI 3
0.1	38	LCD 17							60	KI 2
0	39	LCD 16							61	KI 1
0	40	LCD 15							62	KI 0
—	41	LCD 14							63	SD
—	42	LCD 13	64	INT	Not used	—	0			
0	43	LCD 12								
0	44	LCD 11								



## ALIGNMENT INSTRUCTIONS

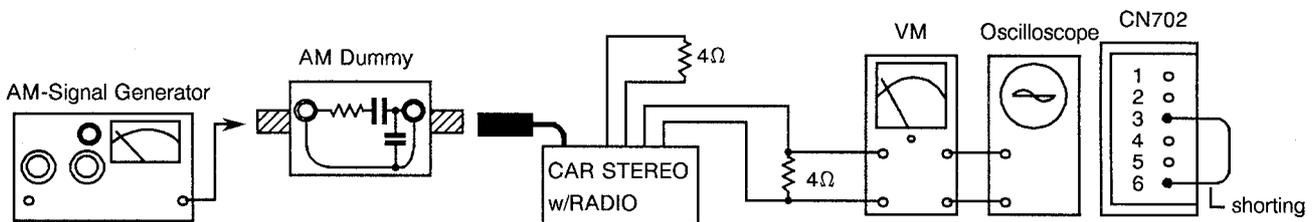
- |                      |          |                     |        |
|----------------------|----------|---------------------|--------|
| ● Power Supply :     | DC 14.4V | ● Tone Control :    | High   |
| ● Output Impedance : | 4Ω       | ● Balance Control : | Center |
| ● Output Power :     | 0.5W     | ● Fader Control :   | Front  |

**Note**

Do not align the AM, FM IF and FM MPX package blocks. When the package is necessary, it will be supplied already aligned at the factory.

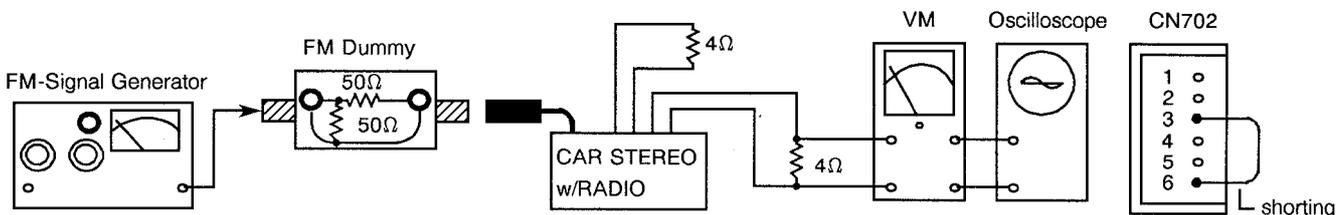
### 1. AM IFT ALIGNMENT

Step	Alignment Item	Band Selector	Signal Generator	Input Terminal	VM Connection	Display	Adjust	Remarks
①	AM IFT	AM	999kHz 25dB(μV) [400Hz Mod.]	Antenna Receptacle	Speaker Terminals	999kHz	IFT101, IFT102, IFT103	● Adjust for maximum volume.



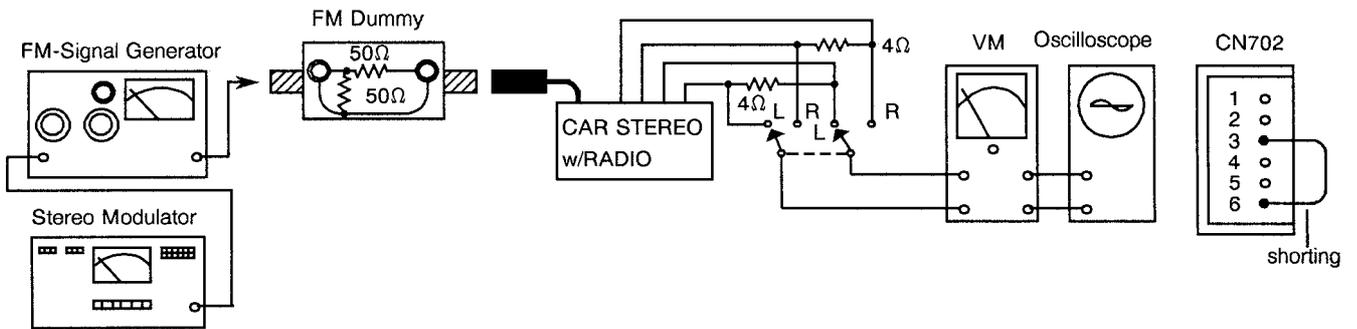
### 2. FM IFT ALIGNMENT

Step	Alignment Item	Band Selector	Signal Generator	Input Terminal	VM Connection	Display	Adjust	Remarks
②	FM IFT	FM	98.0MHz 9dB(μV) [400Hz Mod.]	Antenna Receptacle	Speaker Terminals	98.0MHz	IFT151	● Adjust for maximum volume. ● Adjust for minimum noise level. (rough adjustment)
③			98.0MHz 9dB(μV) [Non Mod.]					 Good
● Removed modulation. ● Adjust for minimum noise level. (fine adjustment)								



### 3. FM SEPARATION ALIGNMENT

Step	Alignment Item	Band Selector	Signal Generator	Input Terminal	VM Connection	Display	Adjust	Remarks
④	FM Sep.	FM	98.0MHz 80dB(μV) [400Hz Mod.]	Antenna Receptacle	Speaker Terminals	98.0MHz	VR160 VR161	● Adjust for maximum separation. ● Adjust again for maximum separation.



**4. HEAD HEIGHT ALIGNMENT**

Step	Alignment Item	Test Tape	Adjust	Remarks
⑤	Head Height	Tape path viewer (With mirror)	Head Mounting screws (Right and Left)	<ul style="list-style-type: none"> <li>Temporarily tighten the Head mounting screws (Right and Left) to the position shown Figure 1.</li> <li>Insert the Test Tape into the set, and press the play button (Keep power off).</li> <li>Adjust the height to the Head to be as shown in Figure 2 as viewed in front of the mirror, using the Head mounting screws.</li> </ul>

Note : • Test Tape No. : QZZCRD  
 • Make sure that the head cores are even top and bottom.

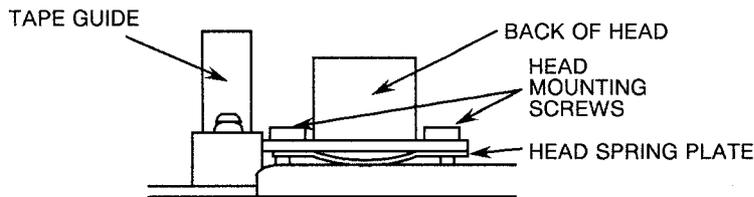


Fig. 1

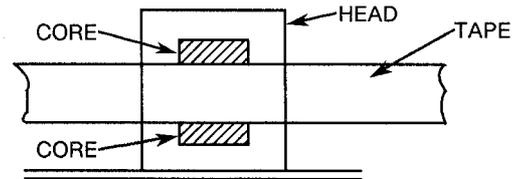


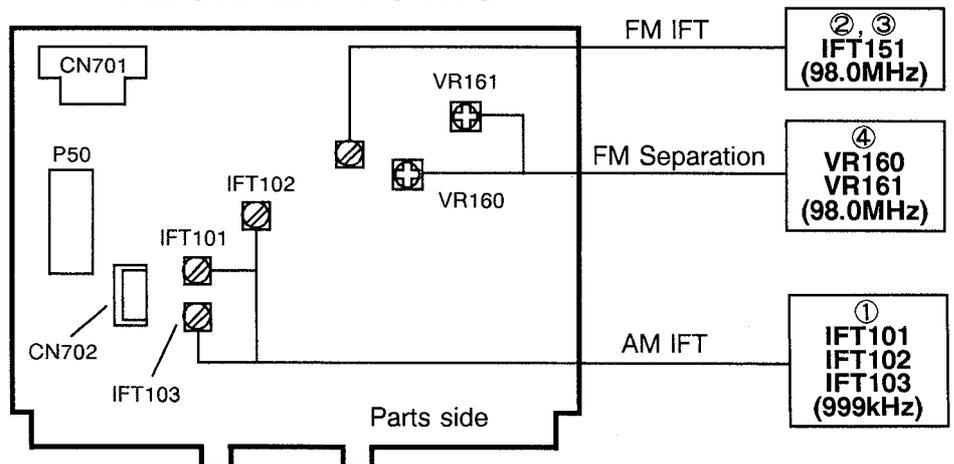
Fig. 2

**5. HEAD AZIMUTH ALIGNMENT**

Step	Alignment Item	Test Tape	Input Terminal	VM Connection	Adjust	Remarks
⑥	Head Azimuth	TCC-153	Playback Head	Speaker Terminals	Head Azimuth Adjustment Screw	<ul style="list-style-type: none"> <li>Adjust for maximum output.</li> <li>Use ⊕ Screw driver.</li> </ul>

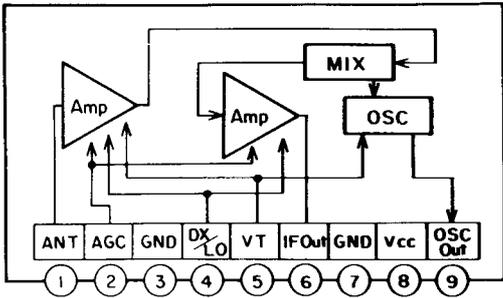
Note : If you do not have a test tape, use a tape whose recording level is than 6 kHz for head adjustment. After the above adjustment apply bonding agent to the adjustment screw.

**ALIGNMENT POINTS**

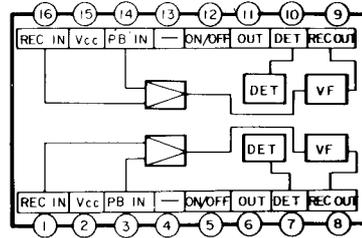


## PACKAGE AND IC BLOCK DIAGRAM

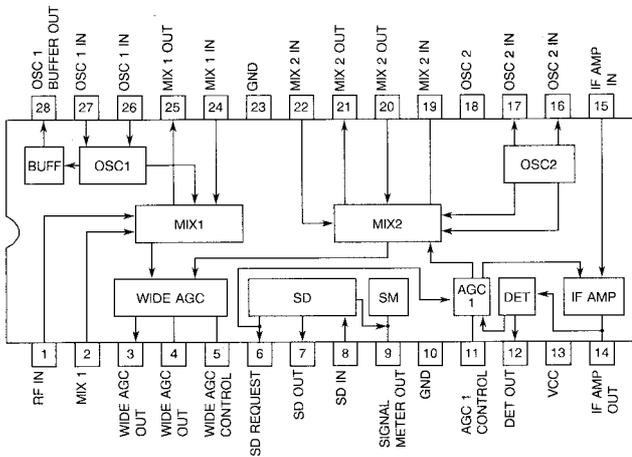
● P50 YEAU03SUE06



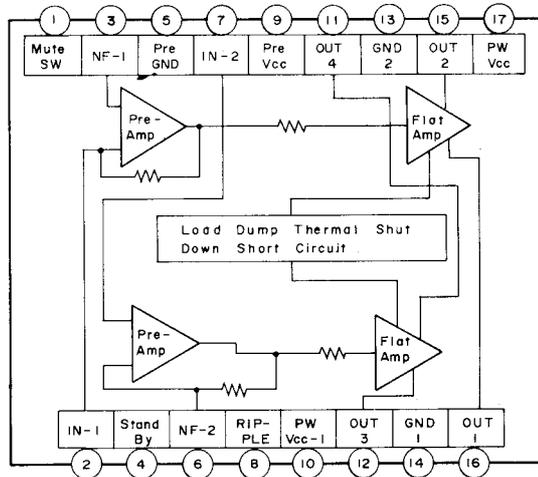
● IC200 YEAMLA3161



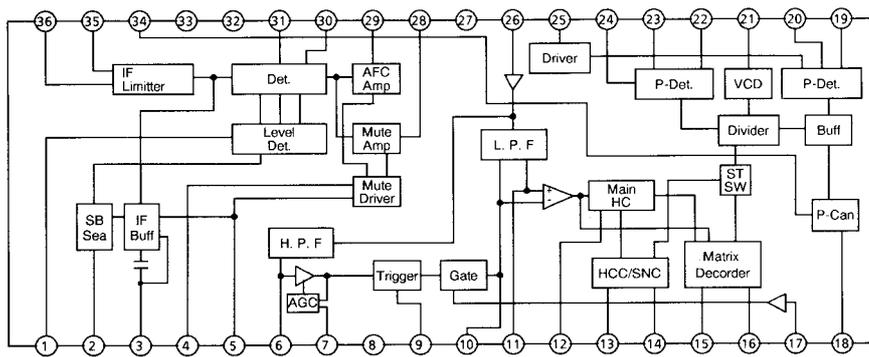
● IC100 YEAMUPC1344G



● IC206 YEAMHA13119



● IC150 YEAMLA1862M



Pin No.	Name	Pin No.	Name	Pin No.	Name
1	S meter output	13	HCC control input	25	Stereo indicator lamp terminal
2	IF buffer sensitivity control	14	SNC control input	26	Noise canceller input
3	IF buffer output	15	MPX Lch output	27	GND
4	Mute start point control	16	MPX Rch output	28	Muting amp output (AF output)
5	Mute drive terminal	17	Pilot cancel signal input	29	AFC output
6	Noise sensitivity control	18	Pilot cancel signal output	30	Peak detector input
7	Noise AGC sensitivity control	19	Pilot detection	31	IF output
8	Vcc	20	Pilot detection	32	Muting attenuation control
9	Gate time control	21	VCO	33	Regulated voltage output
10	Memory circuit	22	Phase detection	34	Pilot cancel signal detection
11	LPF output	23	Phase detection	35	IF input
12	High cut attenuation control	24	PLL input	36	IF bypass

**Replacement Parts List**  
**Model NO. CQ-J03LEEP**

**NOTES :**  
 1. Be sure to make your orders of replacement parts according to this list.  
 2. Important safety notice : Components identified by  $\Delta$  mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.  
 3. Next to the Ref. No. in the parts list is a location key, to show the general location of the parts shown in the exploded drawing, as in a road map.  
 4. T marks in remarks column are indicated supply parts of TAMACO.

Ref. No.	Part No.	Part Code	Part Name & Description	Pcs set	Remarks
<b>MISCELLANEOUS</b>					
F1	XBB1C30NR1		Fuse 3A	1	
PL701, 702	YEAL01184		Pilot Lamp	2	
Z51	YEAL02007		Neon Tube	1	
CN250	YEAE2011P05		5P Connector	1	T
CN600	YEAE014C04HU		4P Connector	1	T
CN601 to 603	YEAE014C03HU		3P Connector	3	T
CN700	YEAE256702TA		2P Connector	1	T
CN701	YEAE011351		20P Connector	1	T
CN702	YEAE2011P06		6P Connector	1	T
CP250	YEAE11H4105		5P Connector	1	T
CP700	YEAE3200SU		2P Connector	1	T
CP702	YEAE11H4106		6P Connector	1	T
1	(2-B) YEFX0214C099		Bracket for Connector	1	T
2	(2-C) YEFX0214C108		Bracket for IC	1	T
3	(1-B) YEFX0014C013		Panel Light	1	T
4	(1-B) YEFX0214C075		Bracket for LCD	1	T
5	(1-B) YFX214C130ZA		LCD Base	1	T
6	(1-B) YEFK044C006		Pilot Lamp Holder for PL701	1	T
7	(4-A) YEFX0464C001		Bracket for Eject	1	T
8	$\otimes$ YEJT034C007		Screw	1	T
9	(3-A) FX0214C128ZA		Bracket for Deck	1	T
10	(3-A) YEFV024C009		Shade	1	T
11	$\Delta$ YEJS064C001		Screw	4	T
12	(4-A) YEFE134C064		Knob, EJECT	1	T
13	(3-A) YEFE134C067		Knob, FF	1	T

Ref. No.	Part No.	Part Code	Part Name & Description	Pcs set	Remarks
14	(3-A) YEFE134C068		Knob, REW	1	T
15	(2-A) YFC024C239ZA		Escutcheon Assy	1	T
16	(4-B) YFA034C024ZA		Upper Cover	1	T
17	(1-C) YEFA054C017		Under Cover	1	T
18	(3-C) YFA014C039ZA		Chassis Assy	1	T
19	(1-A) YFC054C038ZA		Handle Assy	1	T
20	(2-B) FX0214C123ZA		Bracket for VR	1	T
21	$\boxtimes$ YEJT034C010		Screw	2	T
22	$\odot$ XSS5 + 8FXS		Screw	2	
23	$\odot$ XTB3 + 6FFXS		Screw	9	
24	$\star$ XSB3 + 6FFXS		Screw	1	
25	$\blacktriangle$ YEJT034C006		Screw	1	T
26	(4-A) YEFS014C003		Pad	1	T
27	(1-C) YFV014C025ZA		Insulator	1	T
28	(2-A) YFE074C038ZA		Knob, TONE	1	T
29	(2-A) YEFE074C029		Knob	1	T
31	(2-A) YEFE074C026		Knob	1	T
32	(2-B) YEABCR2032H9		Battery	1	
33	(2-A) YEFK044C005		Pilot Lamp Holder for PL702	1	T
34	(1-B) YEFX9994C024		Sheet	1	T
35	(1-B) YEFX9994C025		Sheet	1	T
36	(4-B) YEFS014C009		Pad	1	T
<b>ICs AND TRANSISTORS</b>					
P50	YEAU03SUE06		FM Tuner	1	
IC100	YEAMUPC1344G		IC	1	T
IC150	YEAMLA1862M		IC	1	T
IC200	YEAMLA3161		IC	1	
IC206	YEAMHA13119		IC	1	T
IC600	YEAM1723G663		IC	1	T
Q101	YEAN2SK715VT		Transistor	1	T
Q102	YEANC2839FT		Transistor	1	T
Q221,321	YEAN2SC3330T		Transistor	2	T
Q501	YEAN2SC3330T		Transistor	1	T

# EXPLODED VIEW (UNIT)

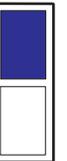
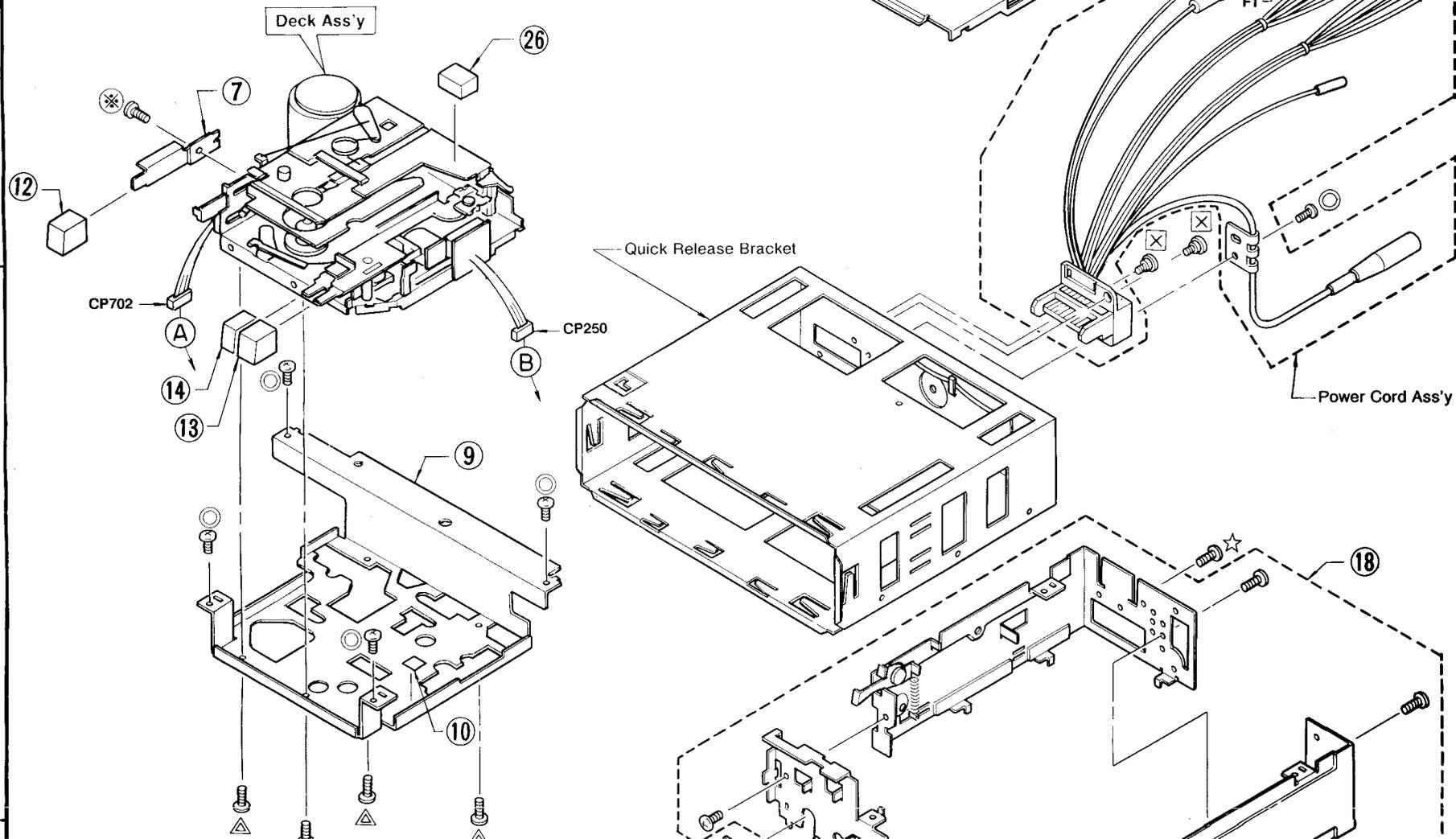
■ Numbers in ○ are indicated REF.No. in the REPLACEMENT PARTS LIST

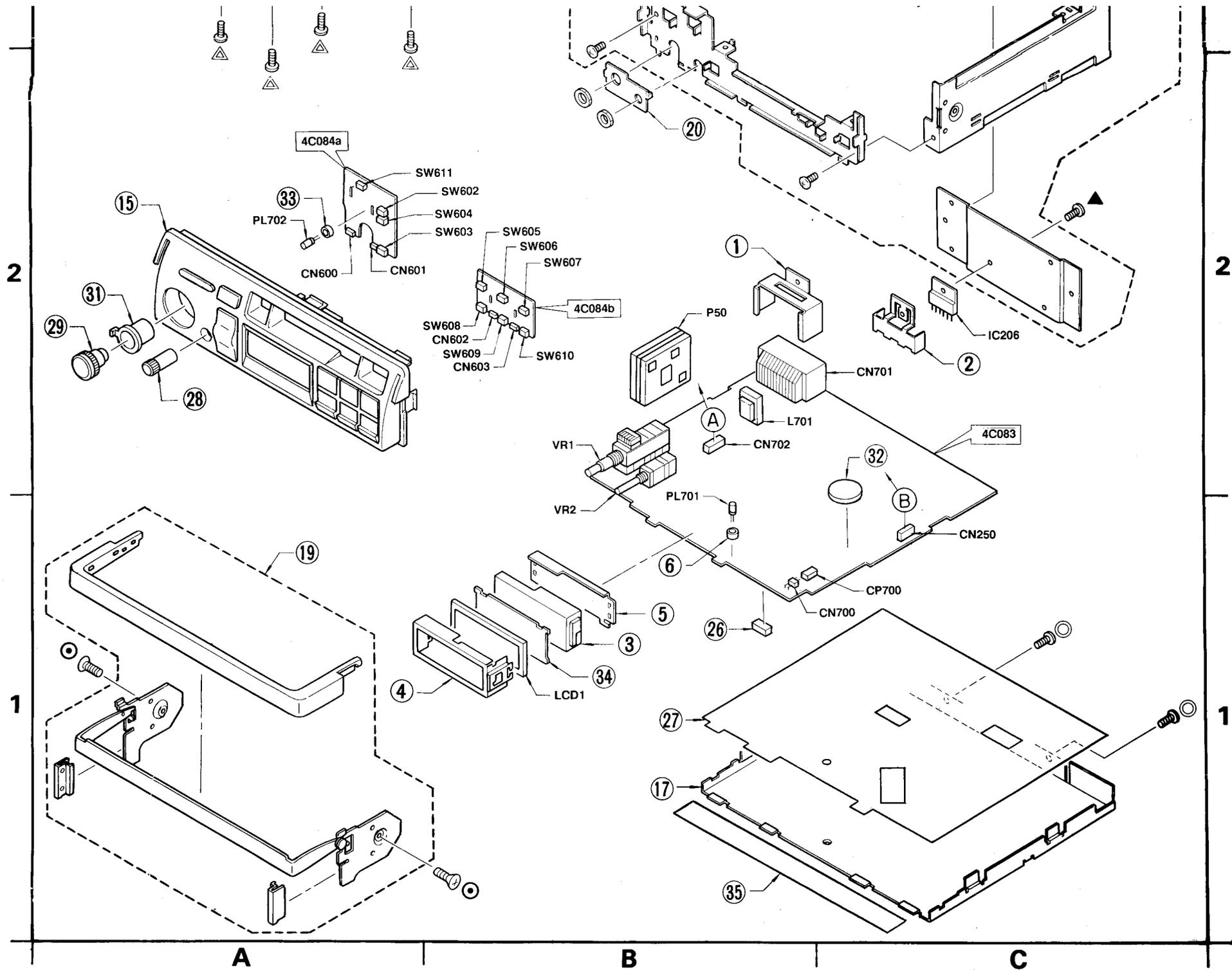
■ The symbols next to the screws indicate as follows.

8	⊗	YEJT034C007	⊕Screw	
11	△	YEJS064C001	⊕Screw	
21	⊗	YEJT034C010	⊕Screw	
22	⊙	XSS5 + 8FXS	⊕Screw	5mmφ × 8mm
23	⊙	XTB3 + 6FFXS	⊕Screw	3mmφ × 6mm
24	☆	XSB3 + 6FXS	⊕Screw	3mmφ × 6mm
25	▲	YEJT034C006	⊕Screw	

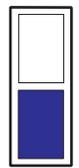
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4



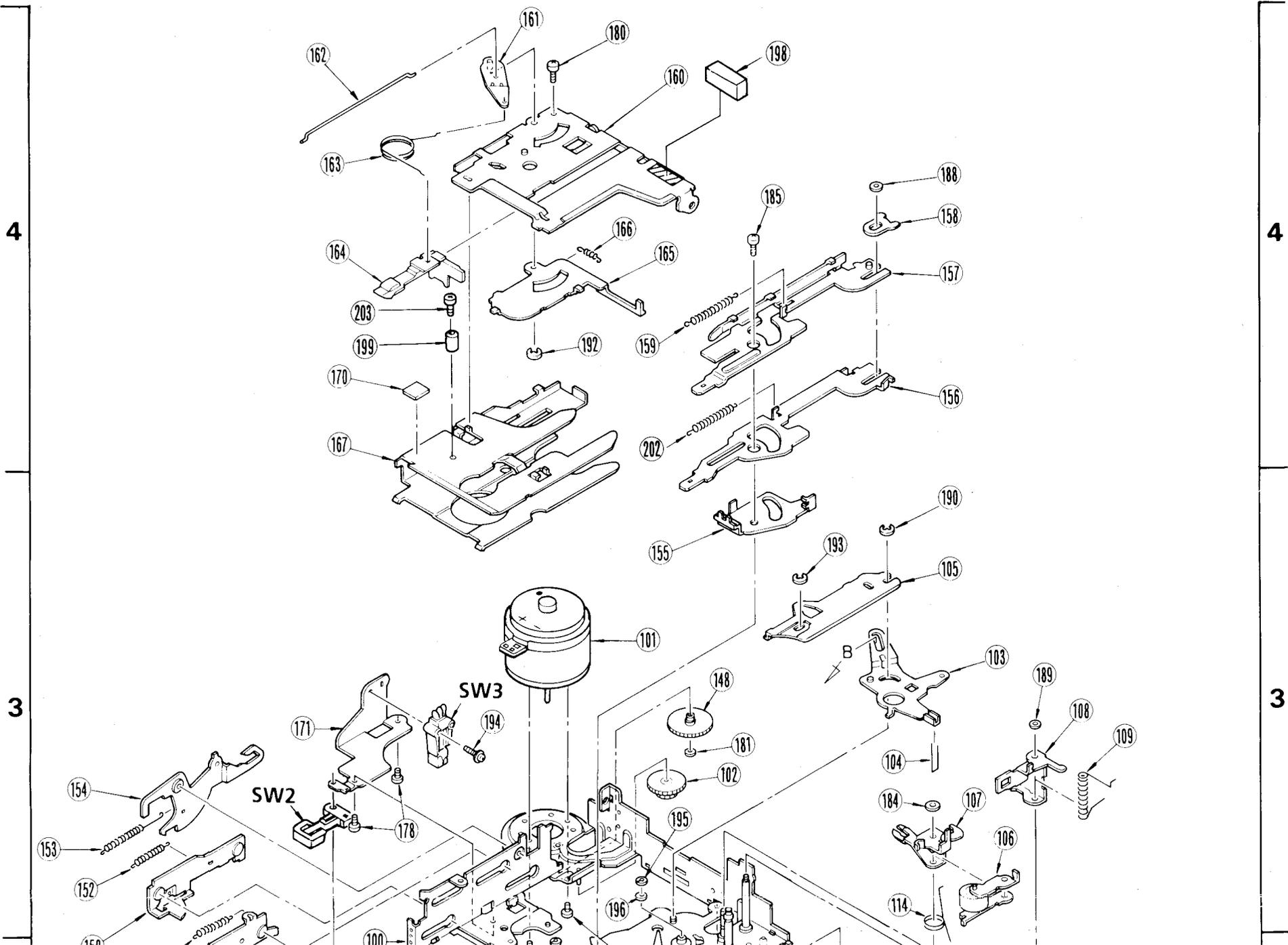


CA-J03LEEP

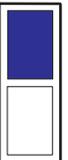


# EXPLODED VIEW (TAPE DECK)

■ Numbers in ○ are indicated REF.No. in the REPLACEMENT PARTS LIST



CQ-J03LEEP C

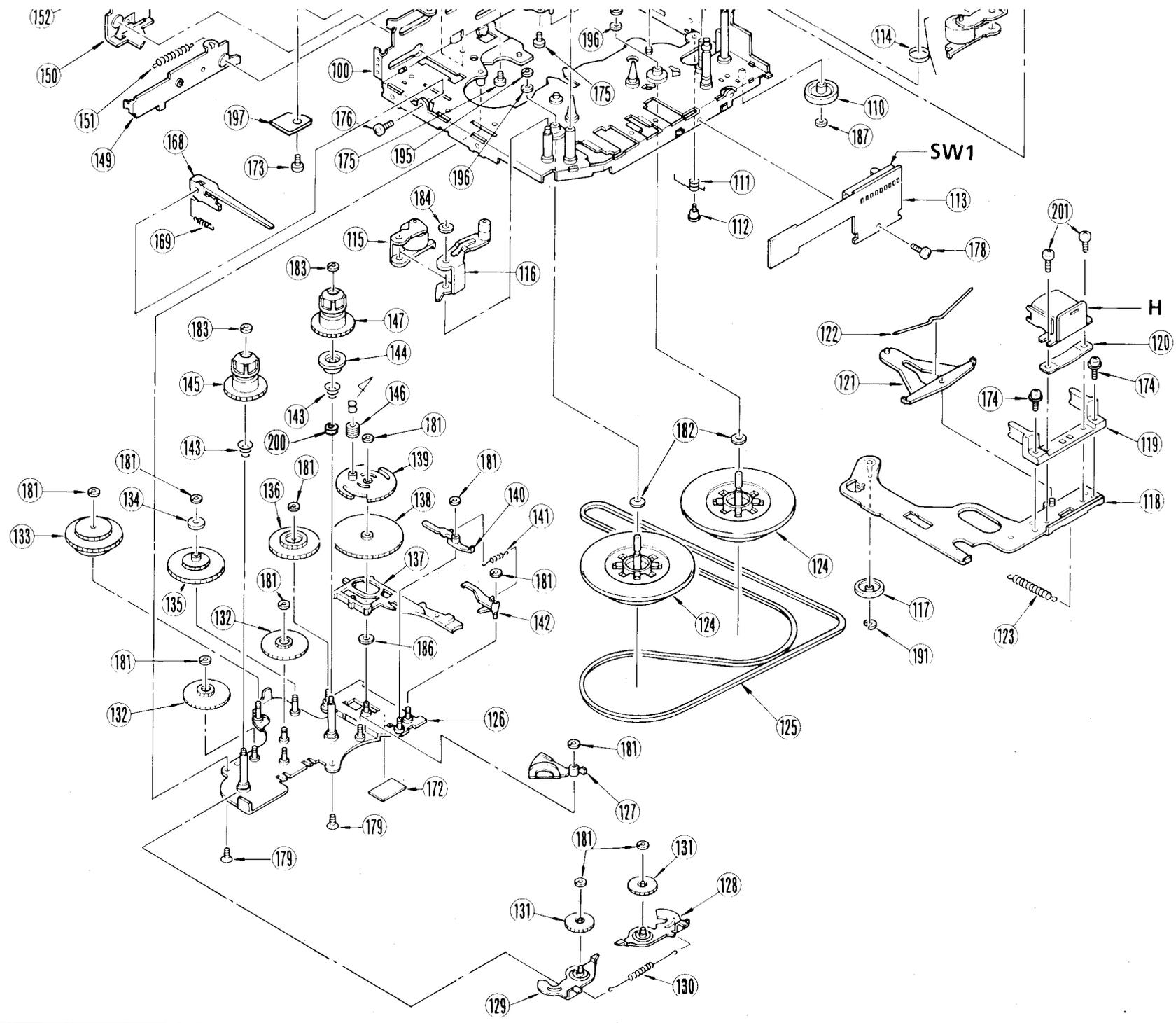


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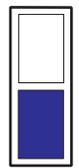
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A

B

C



Ref. No.	Part No.	Part Code	Part Name & Description	Pcs set	Remarks	Ref. No.	Part No.	Part Code	Part Name & Description	Pcs set	Remarks
Q502	YEAN2SC3330T		Transistor	1	T	<b>CAPACITORS</b>					
Q503	YEANDTC144ST		Transistor	1		C60	ECEA1HU010		Electrolytic AL, 1MFD 50WV	1	
Q605	YEAN2SK583		Transistor	1		C61	YEE05Y103N		Ceramic, 0.01MFD 50WV	1	
Q613	YEAN2SA1317T		Transistor	1	T	C63	ECEA1CK100		Electrolytic AL, 10MFD 16WV	1	
Q633	YEAN2SA1175T		Transistor	1		C66	YEE05Y103N		Ceramic, 0.01MFD 50WV	1	
Q701	YEANC2060RT		Transistor	1	T	C67	YEE05Y103N		Ceramic, 0.01MFD 50WV	1	
Q703	YEAN2SC3330T		Transistor	1	T	C101	YEE05X222M		Ceramic, 0.0022MFD 50WV	1	
Q706	YEAN2SD2007		Transistor	1		C102	YEU05SL470J		Ceramic, 47PF 50WV	1	
Q707, 708	YEAN2SC3330T		Transistor	2	T	C103	ECFLD223KDY		Ceramic, 0.022MFD 25WV	1	T
Q709, 710	YEAN2SB810T		Transistor	2		C104	ECFLD223KDY		Ceramic, 0.022MFD 25WV	1	T
<b>DIODES</b>						C106	ECFLD223KDY		Ceramic, 0.022MFD 25WV	1	T
D100, 101	YEAD1SS133T		Diode	2		C107	YEE05Y103N		Ceramic, 0.01MFD 50WV	1	
D102	YEAD1SS133T		Diode	1		C108	YEE05Y103N		Ceramic, 0.01MFD 50WV	1	
D107	YEAD1SS133T		Diode	1		C109	ECFL1C683KDY		Ceramic, 0.068MFD 16WV	1	T
D108	YEAD1SS133T		Diode	1		C110	YEE05Y103N		Ceramic, 0.01MFD 50WV	1	
D151, 152	YEAD1SS133T		Diode	2		C111	YEU05SL200J		Ceramic, 20PF 50WV	1	T
D201, 301	YEAD1SS133T		Diode	2		C112	YEU05SL220J		Ceramic, 22PF 50WV	1	T
D551	YEAD1SS133T		Diode	1		C113	ECFL1C473KDY		Ceramic, 0.047MFD 16WV	1	T
D552	YEAD1SS133T		Diode	1		C114	ECFL1C473KDY		Ceramic, 0.047MFD 16WV	1	T
D601	YEADMTZJ51CT		Diode	1	T	C115	YEU05B271K		Ceramic, 270PF 50WV	1	
D602	YEADMTZJ51CT		Diode	1	T	C117	ECFLD223KDY		Ceramic, 0.022MFD 25WV	1	T
D603	YEADMTZ10CT		Diode	1	T	C118	ECFLD223KDY		Ceramic, 0.022MFD 25WV	1	T
D610 to 621	YEAD1SS133T		Diode	12		C119	YEE05Y103N		Ceramic, 0.01MFD 50WV	1	
D701	YEADDSA3A2		Diode	1	T	C120	ECFLD223KDY		Ceramic, 0.022MFD 25WV	1	T
D703	YEAD1SS133T		Diode	1		C121	YEU05B151K		Ceramic, 150PF 50WV	1	
D704	MA700		Diode	1		C124	ECEA1HKS0R1		Electrolytic AL, 0.1MFD 50WV	1	
D706	YEADRD56JS3T		Diode	1	T	C125	YEU05SL470J		Ceramic, 47PF 50WV	1	
D707, 708	YEADMTZ91BT		Diode	2	T	C131	ECEA0JKS470		Electrolytic AL, 47MFD 6.3WV	1	
D900 to 903	YEADMTZ91BT		Diode	4	T	C132	ECEA1HKS2R2		Electrolytic AL, 2.2MFD 50WV	1	
CD101	YEAD1SV103		Diode	1		C133	ECEA1AKS330		Electrolytic AL, 33MFD 10WV	1	
						C134	ECEA1AK470		Electrolytic AL, 47MFD 10WV	1	
						C135, 136	ECEA1HKS2R2		Electrolytic AL, 2.2MFD 50WV	2	
						C151	ECFLD223KDY		Ceramic, 0.022MFD 25WV	1	T

Ref. No.	Part No.	Part Code	Part Name & Description	Pcs set	Remarks
C152	ECEA1HKSR47		Electrolytic AL, 0.47MFD 50WV	1	
C153, 154	ECEA1HKS010		Electrolytic AL, 1MFD 50WV	2	
C155	YEU05B102K		Ceramic, 0.001MFD 50WV	1	
C157	YEU05SL120J		Ceramic, 12PF 50WV	1	
C158	YEE05Y103N		Ceramic, 0.01MFD 50WV	1	
C159	ECEA1CKS100		Electrolytic AL, 10MFD 16WV	1	
C160	YEU05B102K		Ceramic, 0.001MFD 50WV	1	
C161	ECFLD223KDY		Ceramic, 0.022MFD 25WV	1	T
C162	ECEA1HKSR22		Electrolytic AL, 0.22MFD 50WV	1	
C163, 164	ECEA1HKS010		Electrolytic AL, 1MFD 50WV	2	
C165	ECFLD223KDY		Ceramic, 0.022MFD 25WV	1	T
C166	YEE05X332M		Ceramic, 0.0033MFD 50WV	1	
C167	ECFL1C473KDY		Ceramic, 0.047MFD 16WV	1	T
C168	ECFL1C473KDY		Ceramic, 0.047MFD 16WV	1	T
C169	ECFL1C473KDY		Ceramic, 0.047MFD 16WV	1	T
C171	YEE05X472M		Ceramic, 0.0047MFD 50WV	1	
C172	YEE05X682M		Ceramic, 0.0068MFD 50WV	1	
C173	YEE05X332M		Ceramic, 0.0033MFD 50WV	1	
C174	ECEA1AKS470		Electrolytic AL, 47MFD 10WV	1	
C175	ECEA1AK220		Electrolytic AL, 22MFD 10WV	1	
C176	YEE05Y103N		Ceramic, 0.01MFD 50WV	1	
C178	ECFLD223KDY		Ceramic, 0.022MFD 25WV	1	T
C179	ECFL1C473KDY		Ceramic, 0.047MFD 16WV	1	T
C180	YEE05Y103N		Ceramic, 0.01MFD 50WV	1	
C201	YEE05X122M		Ceramic, 0.0012MFD 50WV	1	
C202	ECEA1HKS010		Electrolytic AL, 1MFD 50WV	1	
C203	ECEA0JKS101		Electrolytic AL, 100MFD 6.3WV	1	
C204	ECFLD273KDY		Ceramic, 0.027MFD 25WV	1	T
C225	ECFL1C563KDY		Ceramic, 0.056MFD 16WV	1	T
C230	ECFLD153KDY		Ceramic, 0.015MFD 25WV	1	T
C231	YEE05X332M		Ceramic, 0.0033MFD 50WV	1	
C236	ECEA0JKS470		Electrolytic AL, 47MFD 6.3WV	1	
C240	ECEA1HK010		Electrolytic AL, 1MFD 50WV	1	
C250	ECEA1HKS010		Electrolytic AL, 1MFD 50WV	1	

Ref. No.	Part No.	Part Code	Part Name & Description	Pcs set	Remarks
C260	YEU05B102K		Ceramic, 0.001MFD 50WV	1	
C261	ECEA1AU101		Electrolytic AL, 100MFD 10WV	1	
C262	ECFL1C104KDY		Ceramic, 0.1MFD 16WV	1	T
C263	ECEA1AU101		Electrolytic AL, 100MFD 10WV	1	
C264	ECEA1AU102BQ		Electrolytic AL, 1000MFD 10WV	1	T
C265	ECEA1CK100		Electrolytic AL, 10MFD 16WV	1	
C266	ECEA1VK4R7		Electrolytic AL, 4.7MFD 35WV	1	
C267	ECEA1CU222		Electrolytic AL, 2200MFD 16WV	1	
C301	YEE05X122M		Ceramic, 0.0012MFD 50WV	1	
C302	ECEA1HKS010		Electrolytic AL, 1MFD 50WV	1	
C303	ECEA0JKS101		Electrolytic AL, 100MFD 6.3WV	1	
C304	ECFLD273KDY		Ceramic, 0.027MFD 25WV	1	T
C307	ECEA1AU331		Electrolytic AL, 330MFD 10WV	1	
C325	ECFL1C563KDY		Ceramic, 0.056MFD 16WV	1	T
C330	ECFLD153KDY		Ceramic, 0.015MFD 25WV	1	T
C331	YEE05X332M		Ceramic, 0.0033MFD 50WV	1	
C340	ECEA1HK010		Electrolytic AL, 1MFD 50WV	1	
C350	ECEA1HKS010		Electrolytic AL, 1MFD 50WV	1	
C360	YEU05B102K		Ceramic, 0.001MFD 50WV	1	
C361	ECEA1AU101		Electrolytic AL, 100MFD 10WV	1	
C362	ECFL1C104KDY		Ceramic, 0.1MFD 16WV	1	T
C363	ECEA1AU101		Electrolytic AL, 100MFD 10WV	1	
C364	ECEA1AU102BQ		Electrolytic AL, 1000MFD 10WV	1	T
C601	YEE05Y103N		Ceramic, 0.01MFD 50WV	1	
C603	ECEA1VK4R7		Electrolytic AL, 4.7MFD 35WV	1	
C604	ECEA1AU101		Electrolytic AL, 100MFD 10WV	1	
C605	YEE05Y103N		Ceramic, 0.01MFD 50WV	1	
C606	YEU05SL220J		Ceramic, 22PF 50WV	1	
C607	YEU05SL220J		Ceramic, 22PF 50WV	1	
C611	ECEA0JKS101		Electrolytic AL, 100MFD 6.3WV	1	
C612	YEE05Y103N		Ceramic, 0.01MFD 50WV	1	
C614	ECEA1HKS010		Electrolytic AL, 0.22MFD 50WV	1	
C616	YEE05Y103N		Ceramic, 0.01MFD 50WV	1	
C617	ECFLD333KDY		Ceramic, 0.033MFD 25WV	1	T



Ref. No.	Part No.	Part Code	Part Name & Description	Pcs set	Remarks	Ref. No.	Part No.	Part Code	Part Name & Description	Pcs set	Remarks
<b>VARIABLE RESISTORS</b>						<b>LCD</b>					
VR001	YEVK4C12B010		Volume Control	1	T	LCD	YEXDCM4C007		LCD	1	T
VR002	YEVK4C09D002		Tone Control	1	T						
VR160	EVNDXAA00B54		50k ohms	1							
VR161	EVNDXAA00B14		10k ohms	1							
<b>CRYSTALS</b>						<b>PRINTING</b>					
XL100	YEXL49U1026T		Crystal	1	T		YFM284C161ZA		Operating Instruction	1	T
XL500	YEXLS456F23M		Crystal	1							
XL600	YEXL49U0450T		Crystal	1							
<b>COILS</b>						<b>INSTALLATION HARDWARE</b>					
CF101, 151	YEIN09NM11FT		Ceramic Filter	2		1	FX0214C118ZA		Mounting Collar	1	T
CF102	YEINSFP450H		Ceramic Filter	1	T	2	YAJ024C025ZA		Power Cord	1	T
IFT101	YEIA4C07S005		IFT Coil	1	T	3	XVG5C25FXS		Hex, Bolt	1	
IFT102	YEIA4C07S006		IFT Coil	1	T	4	XNG5AFXS		Nut	2	
IFT103	YEIA4C07S007		IFT Coil	1	T	5	XWA5BFX		Washer	2	
IFT151	YEIF4C07S005		IFT Coil	1	T	6	XWG5FX		Washer	2	
L101	YELT02C101KT		RF Coil	1	T	7	XWC5CFX		Washer	1	
L102	YELT4C07S003		AM ANT Coil	1	T	8	YEJV014C002A		Bolt	1	T
L103	YELT03C102KT		RF Coil	1	T	9	YEFG044C002		Rear Support Strap	1	T
L104	YELT02C3R3KT		RF Coil	1	T						
L106	YELT02C220KT		RF Coil	1	T						
L107	YELT02C220KT		RF Coil	1	T						
L701	YETQ024C011		Choke Coil	1	T						

Ref. No.	Part No.	Part Code	Part Name & Description	Pcs set	Remarks	Ref. No.	Part No.	Part Code	Part Name & Description	Pcs set	Remarks
<b>TAPE PLAYER PARTS</b>											
						4C006E [83, 3, 22]					
<b>HEAD</b>											
H	(2-C)	MR25P-KF015	Head	1	T	117	(1-C)	YEFX026099	Head Plate Roller	1	
						118	(2-C)	YEFX0461025	Head Panel Ass'y	1	
						119	(2-C)	YEFX239287	Tape Guide	1	
						120	(2-C)	YEFX005961	Head Adjust Spring	1	
						121	(2-C)	YEFX013013	Pinch Roller Actuator	1	
						122	(2-C)	YEFX0051288	Pinch Roller Spring	1	
						123	(1-C)	YEFX0051423	Head Panel Spring	1	
						124	(1-C)	YEFX213191	Flywheel Ass'y	2	
						125	(1-B)	YEFR03070	Main Belt	1	
						126	(1-B)	YEFA011015	Main Gear Plate Ass'y	1	
						127	(1-B)	YEFX046759	End Detector Plate (F)	1	
						128	(1-B)	YEFX0461026	Take Up Gear Plate (F) Ass'y	1	
						129	(1-B)	YEFX0461027	Take Up Gear Plate (R) Ass'y	1	
						130	(1-B)	YEFX0051289	Take Up Gear Plate Spring	1	
						131	(1-C)	YEFX003400	FF Gear	2	
						132	(1-A)	YEFX003271A	FF & Take Up Gear	2	
						133	(2-A)	YEFX026116	FF.REW Clutch Ass'y	1	
						134	(2-A)	YEFX003272	Device Gear (Upper)	1	
						135	(1-A)	YEFX003273	Device Gear (Lower)	1	
						136	(2-A)	YEFX003274	Device & Trigger Stop Arm Gear	1	
						137	(1-B)	YEFX0461028	End Sensing Plate	1	
						138	(2-B)	YEFX003275B	Trigger & Stop Arm Actuator Gear	1	
						139	(2-B)	YEFX003276	Turn Over Gear	1	
						140	(2-B)	YEFX046765	Stop Arm	1	
						141	(2-B)	YEFX0051290	Trigger & Stop Arm Spring	1	
						142	(1-B)	YEFX0461029	Trigger Arm	1	
						143	(2-A)	YEFX005967	End Detector spring	2	
						144	(2-A)	YEFX026101	End Detector Piece	1	
						145	(2-A)	YEFX209239	Take Up Reel Sub-Ass'y	1	
						146	(2-A)	YEFX026102	Turn Over Gear Collar	1	
						147	(2-A)	YEFX209240	Take Up Reel Sub-Ass'y	1	
						148	(3-B)	YEFX003456	Center Gear (B)	1	
						149	(2-A)	YEFX0461030	Push Lever Ass'y	1	
						150	(2-A)	YEFX0461031	Cassette Case & Head Panel Push Plate Ass'y	1	
<b>SWITCHEs</b>											
SW1	(2-C)	YEAS07136	Auto Reverse Switch	1							
SW2	(3-A)	YEAS134C001	Muting Switch	1							
SW3	(3-B)	YEAS23152	Radio/Tape Selector	1							
<b>MECHANICAL PARTS</b>											
100	(2-A)	YEFA011097	Chassis Ass'y	1							
101	(3-B)	YASAK01082	Motor Ass'y (1840-01-317)	1	T						
102	(3-B)	YEFX003317	Main Gear	1							
103	(3-C)	YEFX249339	Change Plate Ass'y	1							
104	(3-C)	YEFX005956	Head Switch Spring	1							
105	(3-C)	YEFA011014	Main Plate	1							
106	(3-C)	YEFX233268	Pinch Roller Arm (F) Ass'y	1							
107	(3-C)	YEFX013014	Trigger & Stop Arm Actuator	1							
108	(3-C)	YEFX249340	F.R (FF.REW) Lock Plate B	1							
109	(3-C)	YEFX0051286	F.R (FF.REW) Lock Spring	1							
110	(2-C)	YEFX026106A	Center Pulley (C)	1							
111	(2-B)	YEFX0051293	Control Spring (C)	1							
112	(2-B)	YEJS06061	Collar Screw	1							
113	(2-C)	YEAP1697	Head PCB	1							
114	(3-C)	YEFX0051287	Trigger & Stop Arm Actuator Spring	1							
115	(2-A)	YEFX233269	Pinch Roller Arm (R) Ass'y	1							
116	(2-C)	YEFX0212249	Pull Plate Ass'y	1							

Ref. No.	Part No.	Part Code	Part Name & Description	Pcs set	Remarks	Ref. No.	Part No.	Part Code	Part Name & Description	Pcs set	Remarks
151	(2-A)	YEFX005969	Push Lever Spring	1		186	(1-B)	YEJW04028	Polyslider 3.1×4.8×0.1	1	
152	(3-A)	YEFX0051291	Cassette Case Head Panel Spring E	1		187	(2-C)	YEJW05055	Polyslider 0.85×2.8×0.25	1	
153	(3-A)	YEFX005971	Lift Up Lever Spring	1		188	(4-C)	YEJW05078	Polyslider 3.0×6.0×0.4	1	
154	(3-A)	YEFX046770	Lift Up Lever B	1		189	(3-C)	YEJW05053	Polyslider 1.6×3.8×0.3	1	
155	(3-B)	YEFX0212250	FF.REW Bracket	1		190	(3-C)	YEFX014028	E Ring (B) Special 1.5	1	
156	(4-C)	YEFX0461032	REW Lever	1		191	(1-C)	YEFX014029	E Ring 1.2	1	
157	(4-C)	YEFX0461033	FF Lever	1		192	(4-B)	YEFX014030	E Ring 1.5	1	
158	(4-C)	YEFX0461034	Program Changer Plate	1		193	(3-B)	YEFX014031	E Ring 2.0	1	
159	(4-B)	YEFX0051292	FF.REW Lever spring	2		194	(3-B)	YEJS06103	⊕ Screw w/washer 2.0×8	1	
160	(4-B)	YEFA01757	Case Lifter	1		195	(2-A)(3-B)	YEJW05079	Polyslider 1.5×3.2×0.5	2	
161	(4-B)	YEFX0461035	Pack Eject Plate Ass'y	1		196	(2-B)(3-B)	YEJW05080	Polyslider 1.8×3.2×0.2	2	
162	(4-A)	YEFX005973	Pack Eject Spring	1		197	(2-A)	YEAP1802	Switch PCB	1	
163	(4-A)	YEFX005974B	Turn Over Spring	1		198	(4-B)	YEFS01825	Cushion	1	
164	(4-A)	YEFX0461020	Pack Slider	1		199	(4-A)	YEFW07141	C Stopper	1	
165	(4-B)	YEFX046776	Cassette Detecting Plate	1		200	(2-A)	YEJW05081	Polyslider 3.6×5×0.13	1	
166	(4-B)	YEFX005975	Cassette Detecting Spring	1		201	(2-C)	YEJS06105	Camera Screw 2.0×3	1	
167	(4-A)	YEFA01758	Cassette Case	1		202	(4-B)	YEFX0051292	FR Lever Spring	1	
168	(2-A)	YEFX046777	Timing Plate	1		203	(4-A)	YEJS06102	Camera Screw 2.0×2.5	1	
169	(2-A)	YEFX005976	Spring	1							
170	(4-A)	YEFS01404	Cushion Rubber	1							
171	(3-A)	YEFX0461036	Switch Bracket (SW3)	1							
172	(1-B)	YEFS02090	Cushion Felt	1							
173	(2-A)	YEJS06055	Camera Screw Flush 1.7×3.5	1							
174	(2-C)	YEJS06056	⊕ Screw w/washer 2.0×5	2							
175	(2-A)(2-B)	YEJS06099	Camera Screw, Flat 2.0×2.5	2							
176	(2-A)	YEJS06057	Camera Screw 2.0×2	1							
178	(2-C)(3-A)	YEJS06058	Camera Screw, Tapping 2.0×3	3							
179	(1-A)	YEJS06059	Camera Screw, Flat 2.0×3.5	2							
180	(4-B)	YEJS06060	Camera screw, Tapping 2.0×4	1							
181		YEJW05043	Polyslider 1.2×3.0×0.25	12							
182	(2-B)	YEJW05044	Polyslider 2.1×0.5×0.13	2							
183	(2-A)	YEJW05045	Polyslider 1.6×3.4×0.3	2							
184	(2-B)(3-C)	YEJW05046	Polyslider 2.1×5.0×0.4	2							
185	(4-B)	YEJS06075	Camera Screw 2.6×4.5	1							