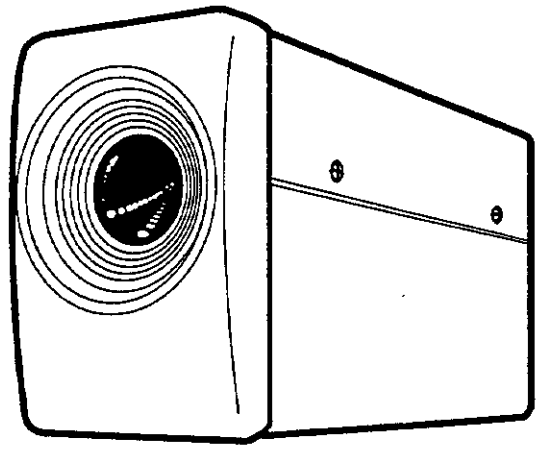
MITSUBISHI

Service Manual

VIDEO CAMERA



MODEL

CCD-300

SPECIFICATION

Image pick-up	1/3" CCD (total ~~41~~ 47 0,000 pixels)
Number of Pixels (Effective)	~~768~~ 752 H x ~~494~~ 582 V (~~380~~ 440,000 pixels) PAL
Signal System	Based on ~~NTSC~~ Color Standard
Scanning System	~~525~~ 625 Lines 2:1 Interlance
Scanning Frequency	15.~~734~~ 625 kHz/~~59.94~~ 50 Hz
Video Output	VBS 1.0Vp-p/75Ω (BNC output)
Horizontal Resolution	~~450~~ 430 TV Lines (S-Video output)
S/N Ratio (Luminance)	More than 46dB
Minimum Illumination	1 lux/F 1.8 (at GAIN UP mode)
Backlight Compensation	Built-in
White Balance	AUTO/LOCK/INDOOR/OUTDOOR
Electronic Shutter	1/~~60~~ 50 - 1/10000 (7 sets)
Lens	Electrically powered 8-power zoom lens F1.8, f=6.5-52mm (Auto iris)
Synchronizing System	Internal/External (when using the exclusive controller)
Y/C output	S-VIDEO OUT terminal
Input/Output	RS-232C interface (D-SUB 9pin)

Power Supply	DC12 +2 -0 V 500 (Ripple voltage less than ~~50~~ mVp-p)
Power Consumption	~~4.4W~~ 390mA
Dimensions	46.2(W)×76(H)×145(D)mm 1.82"(W)×2.99"(H)×5.71"(D) Excluding external connections
Weight	Approx. 490g (1.1lbs)
Operational Temperature	0°C–40°C (32°F–104°F)
Safekeeping Temperature	–20°C–+60°C (–4°F–+140°F)

● Design and specifications are subject to change without notice.

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CONTENTS

SAFETY PRECAUTIONS

INTRODUCTION

This manual provides service information for the adjustments of mechanical and electrical operations.

Due design modiifications, the servicing procedures and data given in this manual are subject to possible change without prior notice.

WARNING.
TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.
This equipment should be used with 12V DC only.

SAFETY NOTICE

Before returning VIDEO CAMERA to the customer, a safety check of the entire VIDEO CAMERA should be made, The service technician must be sure that no protective device built into the instrument by the manufacturer has become defective or inadvertenty damaged during servicing.

Observe all caution and safety related notes located on or inside the VIDEO CAMERA cabinet.

WARNING: Alterations of the design or circuitry of this VIDEO CAMERA should not be made.

Any design alterations or additions, such as circuit moodifications, auxiliary speaker jacks, switches, grounding, active or passive circuitry, etc. use of unauthorized AC power adapter, battery, cables, accessories, etc. may alter the safety characteristics of this VIDEO CAMERA and potentially create a hazardous situation for the user.

Any design alterations or unauthorized additions will invalidate the manufacyurer's warranty and will further relieve the manufacturer of responsibility for personal injury or property damage resulting from them.

When reassembling the VIDEO CAMERA, always be certain that all the protective devices are put back in place, such as non-metallic control knobs, shield plate, etc.

When service is required, observe the original lead dress.

Components that indicate evidence of overtheating or other electrical or mechanical damage should be replaced.

LEAKAGE CURRENT CHECK

Before returning the VIDEO CAMERA to the customer, it is recommended the leakage current be measured by the following methods.

1. Cold Check

With the AC plug removed from the AC source, place a jumper across the two AC plug prongs. Turn the AC switch on. Using an 500V D.C. Insulation resistance tester, connect one lead to the jumpered AC plug and touch the other lead to each exposed metal part(metal cabinet, screwheads, metal overlays, control shafts, etc.), particularly any exposed metal part having a return path to the chassis. Exposed metal parts having a return path to the chassis should have a minimum resistance reading of 1 megaohm. Any resistance below this value indicates an abnormality which requires corrective action. Exposed metal parts not having a return path to the chassis will indicate an open circuit.

2. Hot Check

The test sequence, with reference to the measuring circuit in Fig.1 is as follows:

(1) With switch S1 open, connect the VIDEO CAMERA to the measuring circuit. Immediately after connection, measure leakage current using both positions of switch S2 and with the switching devices in the VIDEO CAMERA in all of their operating positions.

(2) Close Switch S1, energizing the VIDEO CAMERA, and immediately after closing the switch, Measure the leakage current using both positions of switch S2, and with the switching devices in the VIDEO CAMERA in all of their operating positions.

Current measurements of items (1) and (2) are to be repeated after the VIDEO CAMERA has reached thermal stabilization.

The leakage current must not be more than 0.5 milliampere.

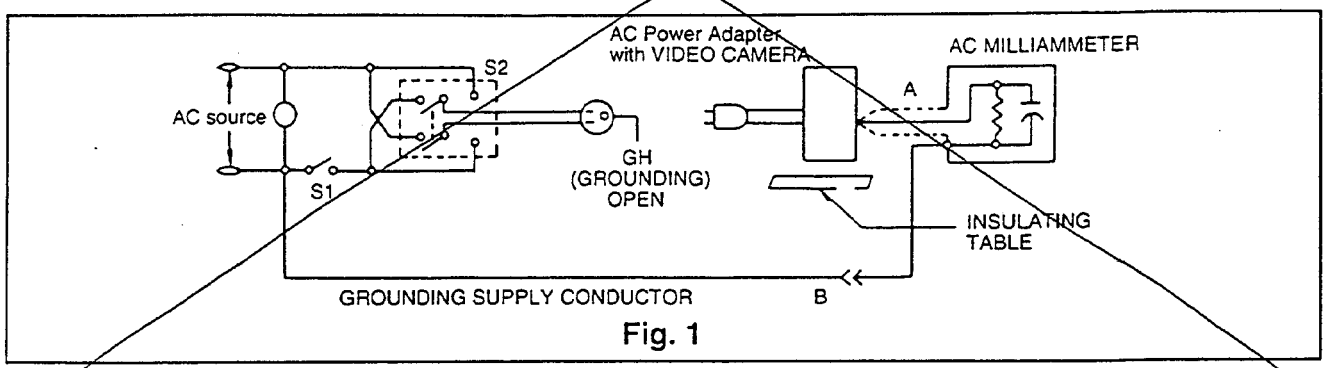


Fig. 1

DISASSEMBLY

When handling the FPC cable, do not detach it recklessly or touch the exposed terminals of the connector directly with your hand.
Pull the connector for FPC cable in the direction shown by the arrow in Fig.1 to remove the FPC cable.
Insert the connector, with the exposed terminals down, in the opposite direction of the arrow to connect the FPC cable.

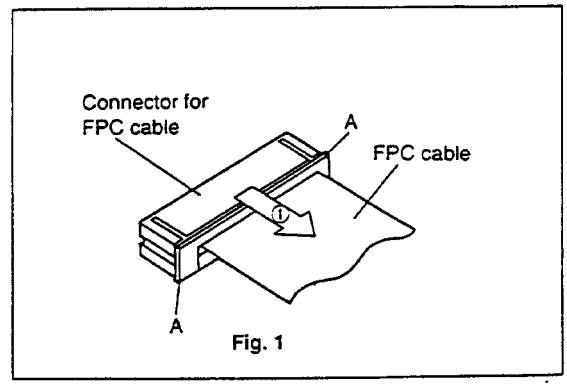


Fig. 1

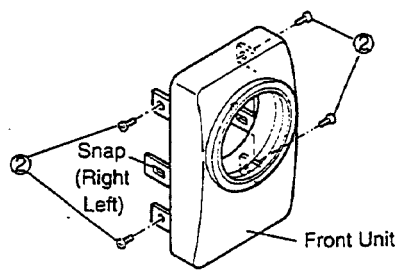
DISASSEMBLING PROCEDURE

Lens Assembly

Step No.	1	2	3	4	5
Parts name	Top cover, Bottom cover	Front Unit	Front Frame	Rear Assembly	Optical unit
Number of removed part	①	②	③	④	⑤
Screws to be removed	4 pcs.	4 pcs.	4 pcs.	5 pcs.	5 pcs.
Terminals to be removed				RD, PB	CE, CF

※ Refer to the "Optical unit detail drawing" on page 6 for the details of the Optical unit.

Important
Removing Front Unit
1. Remove 4 screws (②).
2. Remove 2 snaps.



Rear Assembly

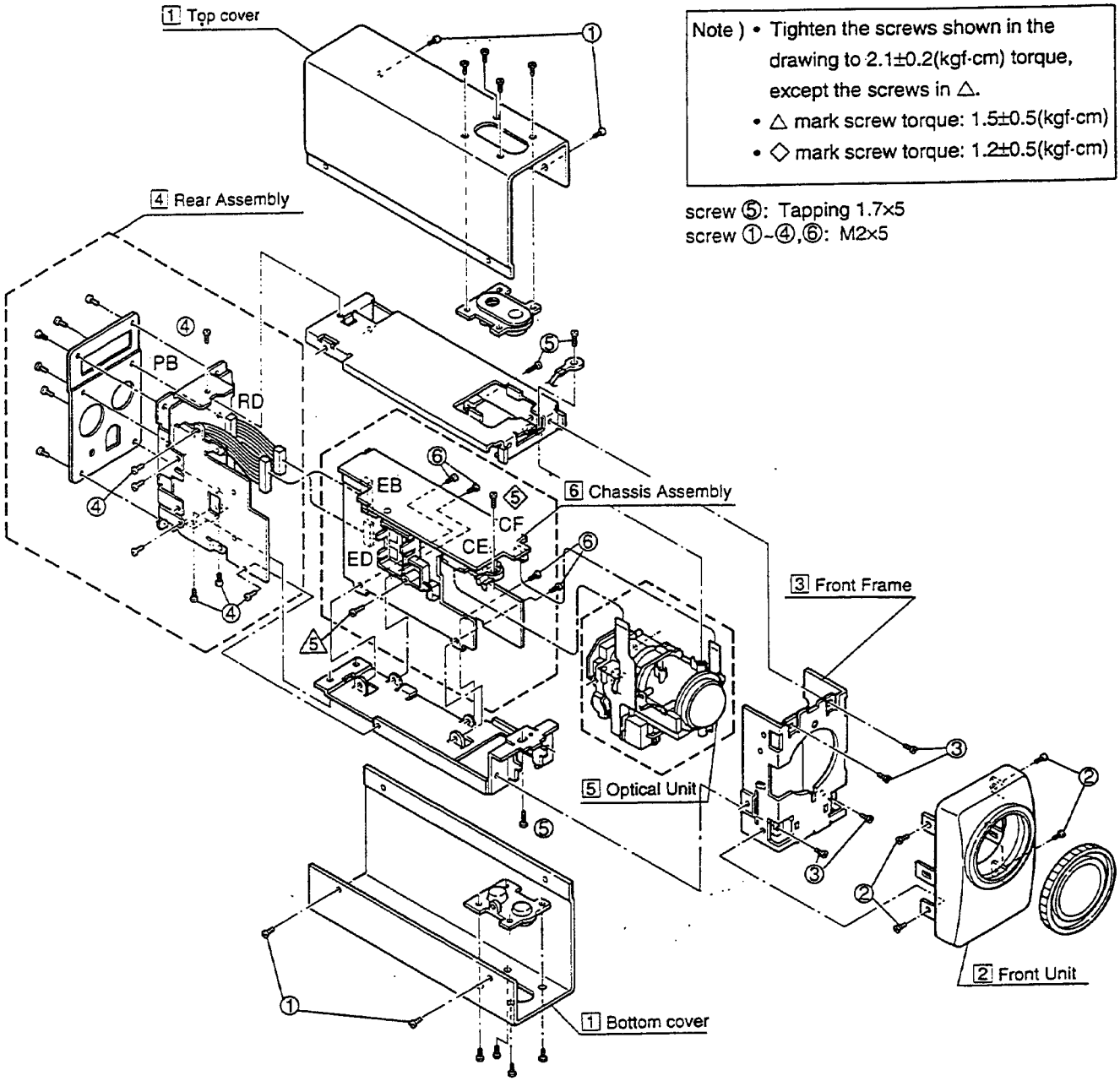
Step No.	1	2
Parts name	Top cover Bottom cover	Rear Assembly
Number of removed part	①	④
Screws to be removed	4 pcs.	5 pcs.
Terminals to be removed		RD, PB

※ Refar to the "rear assembly details" on page 7 for the details of the rear assembly.

Chassis Assembly

Step No.	1	2	3	4	5	6
Parts name	Top cover Bottom cover	Front Assembly	Front Frame	Rear Assembly	Lens Assembly	Chassis Assembly
Number of removed part	①	②	③	④	⑤	⑥
Screws to be removed	4 pcs.	4 pcs.	4 pcs.	5 pcs.	5 pcs.	4 pcs.
Terminals to be removed				RD, PB	CE, CF	

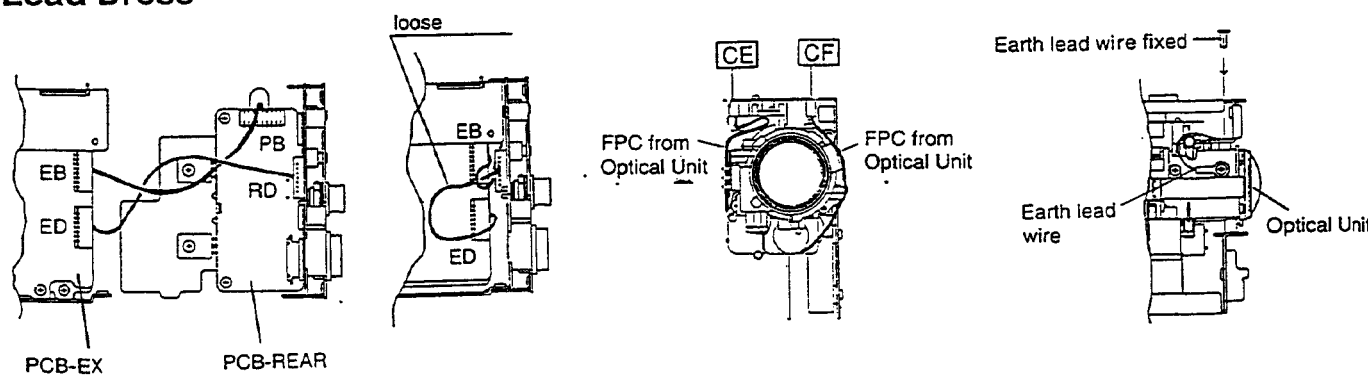
※ Reter to the "chassis assembly details" on pape 7 for the details of the chassis assembly.



Note) • Tighten the screws shown in the drawing to 2.1±0.2(kgf-cm) torque, except the screws in △.
• △ mark screw torque: 1.5±0.5(kgf-cm)
• ◇ mark screw torque: 1.2±0.5(kgf-cm)

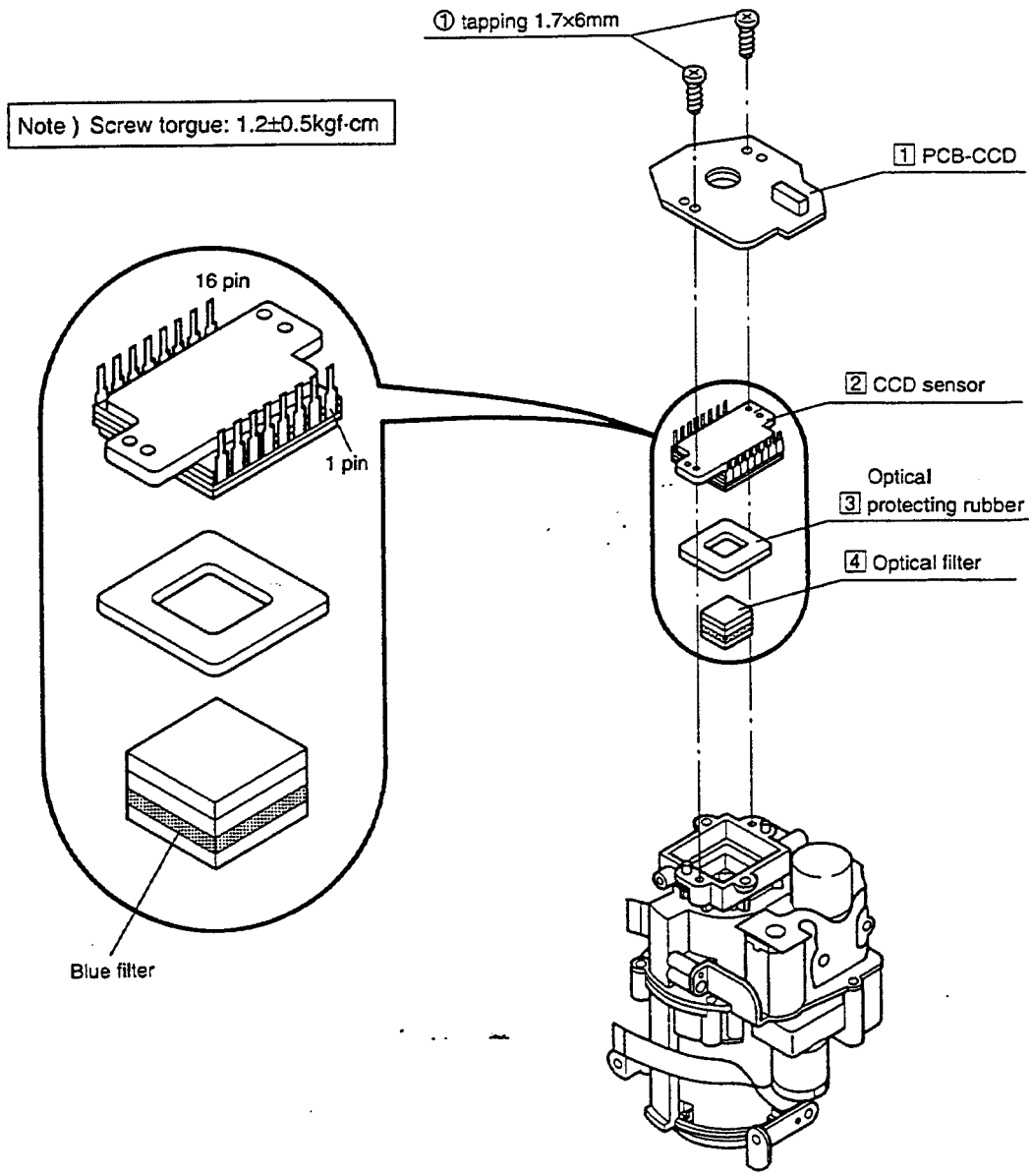
screw ⑤: Tapping 1.7×5
screw ①-④,⑥: M2×5

Lead Dress



Optical Unit details

Step No.	1	2	3	4
Parts name	PCB-CCD	CCD sensor	Optical protecting rubber	Optical filter
Number of removed part	①			
Screws to be removed	2 pcs.			
Terminal to be removed				

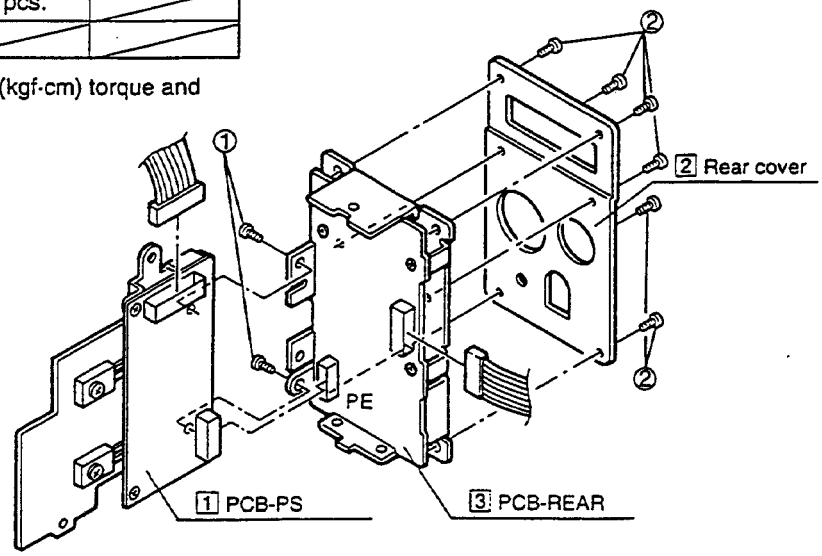


Rear Assembly details

Step No.	1	2	3
Parts name	PCB-PS	Rear cover	PCB-REAR
Number of removed part	①	②	
Screws to be removed	2 pcs.	6 pcs.	
Terminal to be removed	PE		

Note) Tighten screw ①, in the drawing 1.9~2.3 (kgf·cm) torque and screw ② with 2.1±0.2 (kgf·cm) torque.

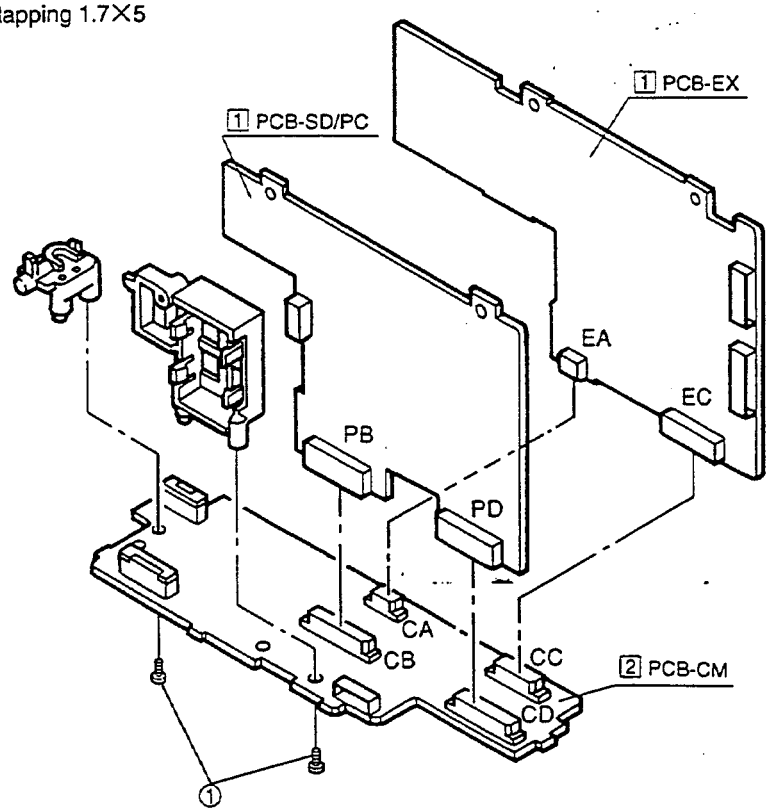
screw①②: M2×5



Chassis Assembly details

Step No.	1 Possible in any order.		2
Parts name	PCB-EX	PCB-SD/PC	PCB-CM
Number of removed part			①
Screws to be removed			2 pcs.
Terminals to be removed	CA, CC	CB, CD	CA, CB, CC, CD

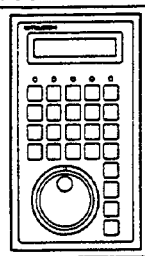
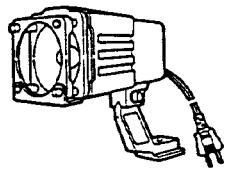
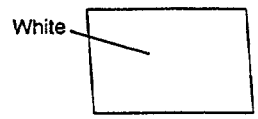
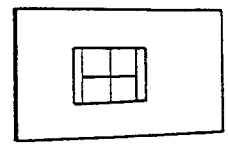
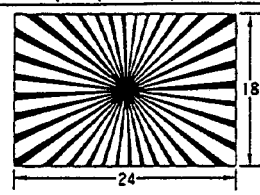
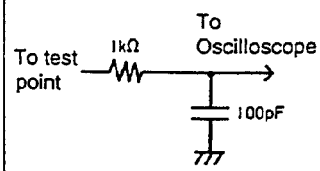
Note) Tighten screw ①, in the drawing 1.5±0.5(kgf·cm) torque.
screw ① :tapping 1.7×5



ADJUSTING CAMERA UNIT

1. Jigs and Measuring Instruments

1-1. Jigs

EVR Controller ※859C546O40	Halogen Light	White Chart (self-prepared)	Color Chart (Reflection type) 859C397O40
		 Stick white paper on a square corrugated board at the same size as the color chart.	
※: This EVR controller used for HC-CX7 (U), HC-CX4 (U) and HS-CX4 (C) is the same as that used for CCD-300U.	**Conversion Filter for Color Temperature**	**Radial Chart** (self-prepared)	**Low Pass Filter** (self-prepared)
	 C2 (859C361O80) C12 (859C361O70)	 A narrower width between lines the better.	

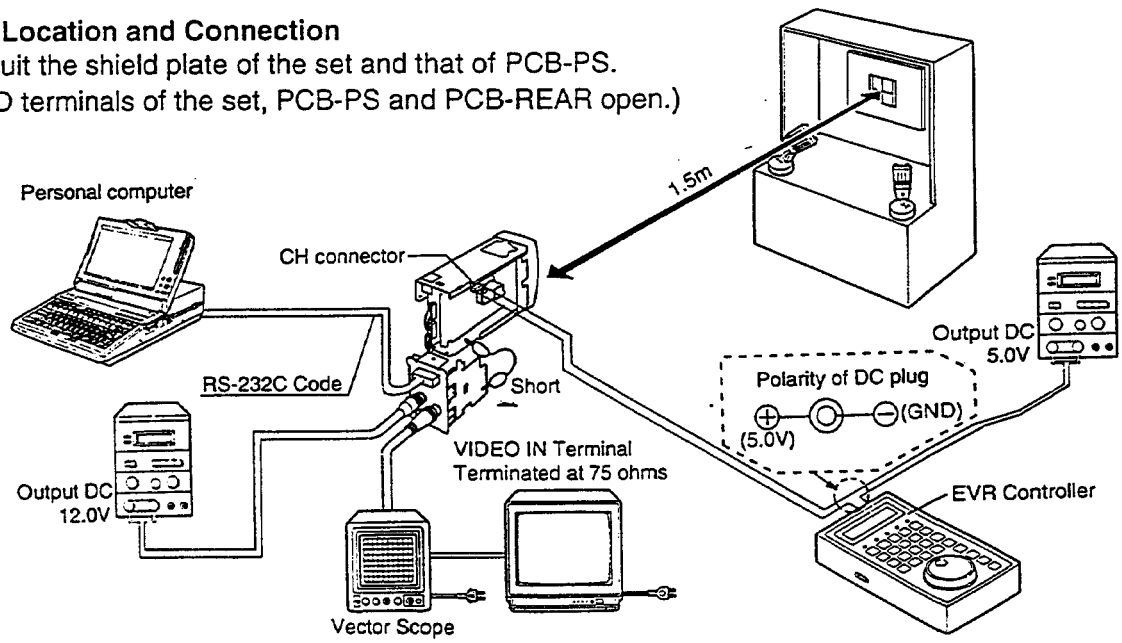
Note: Halogen light when specified color temperature at 3,200°K must be used when making adjustment.

1-2. Measuring Instruments

- Oscilloscope (Unless otherwise specified , use 10:1 probes.)
- Vector scope
- Illuminometer
- Digital voltmeter
- Color monitor
- Personal computer

1-3. Standard Location and Connection

Note: Short-circuit the shield plate of the set and that of PCB-PS.
(The GND terminals of the set, PCB-PS and PCB-REAR open.)

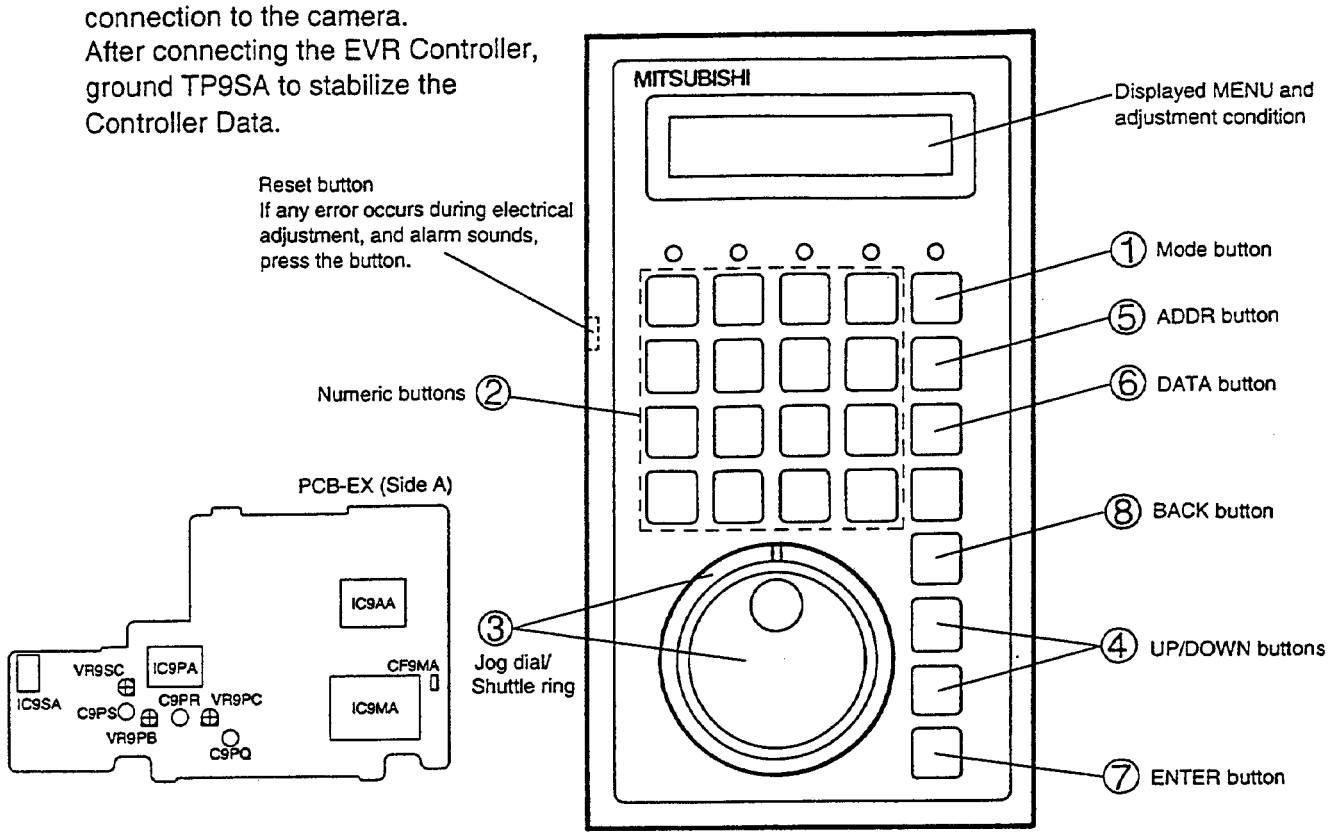


2. Activating Set Up and Adjustment Modes of the EVR Controller

Most of the initial Set Up and Adjustments in model CCD-300U can only be performed using the EVR Controller.

Standard Location and Connection as shown in the preceding page illustrates the EVR Controller connection to the camera.

After connecting the EVR Controller, ground TP9SA to stabilize the Controller Data.



EVR Controller (※859C546O40)

(This EVR controller used for HS-CX7 (U), HS-CX4(U) and HS-CX4 (C) is the same as that used for CCD-300U.)

Functions of EVR Controller Buttons.

① **MODE button**
While holding down the MODE button, press the RESET button. This activates the MENU mode.

② **Numeric buttons**
Used to enter hexadecimal Address and Data numbers.
Also used to select a specific mode.

③ **Jog dial (inner dial) and shuttle ring (outer ring)**
Rotate to select Address and data.

④ **UP and DOWN buttons**

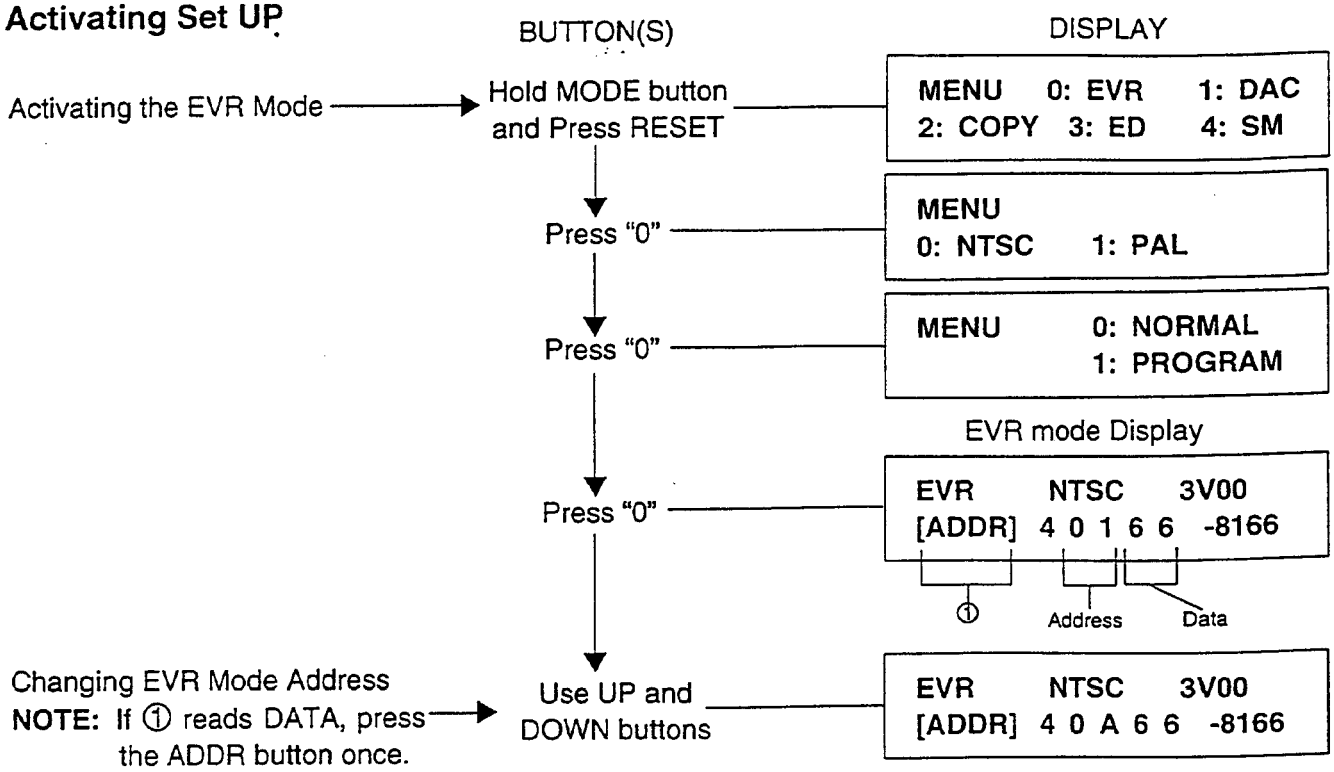
⑤ **ADDR button**
Press ADDR, then perform item ②, ③ or ④ to select on Address.

⑥ **DATA button**
Press DATA, then perform item ②, ③ or ④ to change Data.

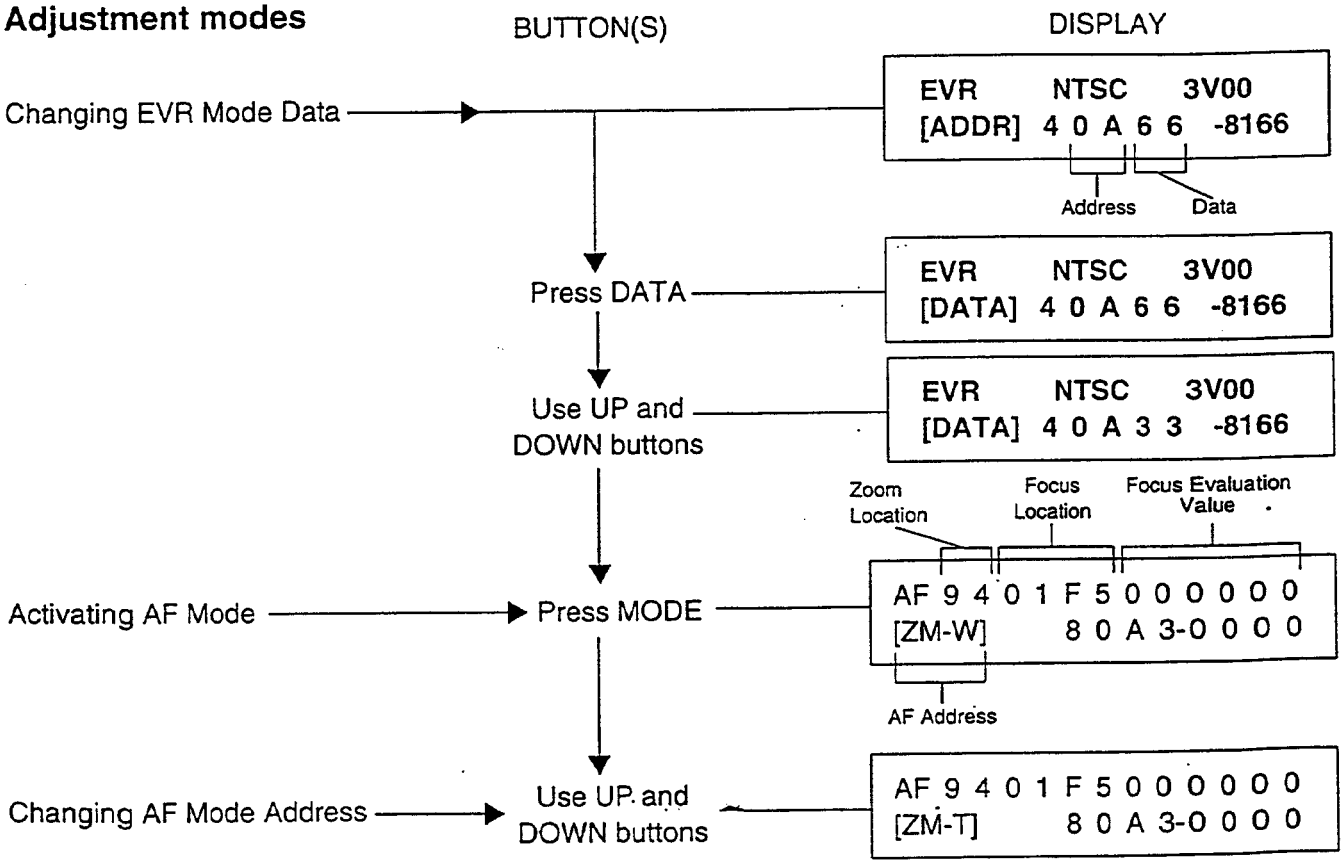
⑦ **ENTER button**
Press ENTER to write Data into memory.

⑧ **BACK button**
Press BACK to change data back to the original value.
This function is inoperative after the ENTER button has been pressed.

Activating Set UP



Adjustment modes



NOTE: After changing data in an EVR Address, or changing an adjustment in an AF Address, Press ENTER to write the data into memory.

3. Preparation and Check Items

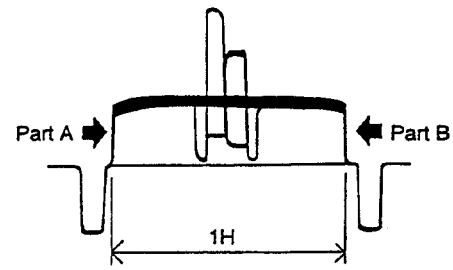
3-1. Preparations and Cautions

1. You must use lamps with color temperature at 3,000°K to illuminate a chart used during adjustments, and set the lamps so that luminance on the surface of the chart is kept at about 2000 lx. Install the lamps so that the chart is illuminated evenly (two or more light sources are preferable). If luminance on the surface of the chart is uneven, you cannot perform adjustments properly.
2. When adjusting the Camera unit, you must adjust it with using any extension cable (without separating any unit of a video camera), except where it's required.
3. Unless otherwise indicated in particular, distance between an object and the Camera unit should be 1.5 m.
4. Do not fail to ground TP9SA before the adjusting with the EVR controller. (EVR controller data is stabilized.)

3-2. Adjusting Standard Angle of View

When shooting a chart while adjusting the Camera unit, unless otherwise indicated in particular, shoot and adjust at the standard viewing angle 1.5 meter.

1. Shoot the Color chart.
2. Connect the probe of oscilloscope to TP3AY or a VIDEO OUT terminal of the video camera. Observe the waveform as shown on the right.
3. Adjust the Power zoom button so distance A to B in the waveform equals full effective range of the horizontal signal.



Data of EVR Controller

Verify data of EVR controller according to table listed below.
If you find any wrong values, correct them to the indicated.

EVR Address	Data
05	51
06	~~A0~~ 8A
09	FF
0F	E0
11	AC
16	~~65~~ 55
17	9F
18	07
19	1C
1A	62
1B	05
1C	04
1D	05

EVR Address	Data
1E	80
1F	90
26	10
27	FF
28	00
29	FF
2A	30
2B	20
2C	00
2D	05
2E	06
2F	02
30	05

EVR Address	Data
31	00
32	05
33	20
34	40
35	65
36	20
37	30
38	~~50~~ 60
39	03
3A	1A
3B	20
3C	00
3D	~~00~~ 04

EVR Address	Data
3E	~~00~~ 04
3F	~~08~~ 0A
40	~~0A~~ 0A ← 0A
41	10
44	02
4C	00
4D	00
4E	00
4F	00
50	00
51	00
54	37
55	FF

3-3. Standard Condition

1. Unless otherwise indicated, set each function of the video camera to the table given below.

Shutter	NORMAL (1/~~60~~ 50 s)
Focus	Manual
Back light compensation	Off
White balance	Indoor (3,000°K)

4. Precaution

This video camera is adjusted with Electric Variable Resistor (EVR). When replacing a PCB or a lens unit, you must confirm adjustment values. If you find any wrong value, re-adjust and correct it. When especially replacing a PCB-CM, perform adjustment below.

1. Camera unit: Adjustment
2. Y/C signal circuit: Verify adjustment values (Re-adjustment).
3. Camera unit: Verify adjustment values. (Re-adjustment)

5. Camera Unit Adjustment Procedure

The following lists all procedures to adjust the Camera unit. Perform only those adjustment item(s) necessary.

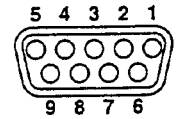
1. Camera Voltage
2. Reference Oscillating Frequency
3. MENU character position
4. Substrate and Reset Voltage
5. Lens-barrel
6. Writing Maximum Value of AGC Gain
7. ALC
8. Gain of Y Signal Delay Line
9. Setup Level
10. APL, Y Level
11. Gain of C Signal Delay Line
12. Burst Level
13. White Balance
14. Gain of R-Y and B-Y, and Chroma Hue
15. Amplifier Output of Iris Hole Element
16. S-Video output level

6. Commands of Personal Computer And Functions

This camera can be controlled by using the personal computer equipped with the RS-232C connector.
Perform Zoom and Focus operation by using a software for RS-232C Communication marketed for commercial use.

PHISICAL PROTOCOL OF RS-232C

Pin No.	Signal line	Meanings	Directions (from camera side)
1	–	NC	–
2	RD	Recieved data	Input
3	SD	Transmitted	Output
4	ER	Data terminal ready	Output
5	SG	Signal ground	–
6	DR	Data set ready	Input
7	RS	Request to send	Output
8	CS	Clear to send	Input
9	–	NC	–



DATA LINK

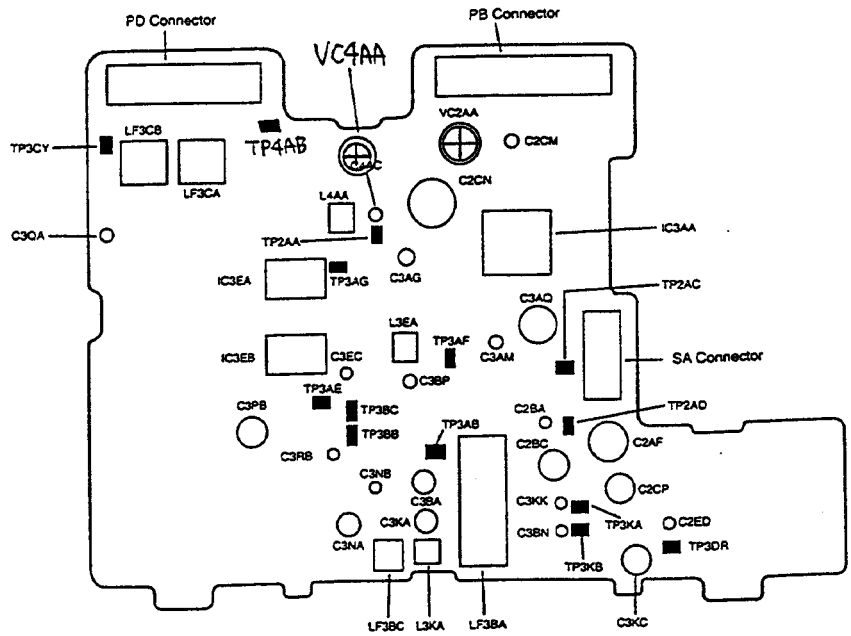
Transmission rate	9600 bps
Data bit length	8 bits
Stop bit length	1bit
Parity bit	Nil
Control Parameter	CR(0DH) or CR+LF(0DH+0AH)

COMMANDS AND FUNCTIONS

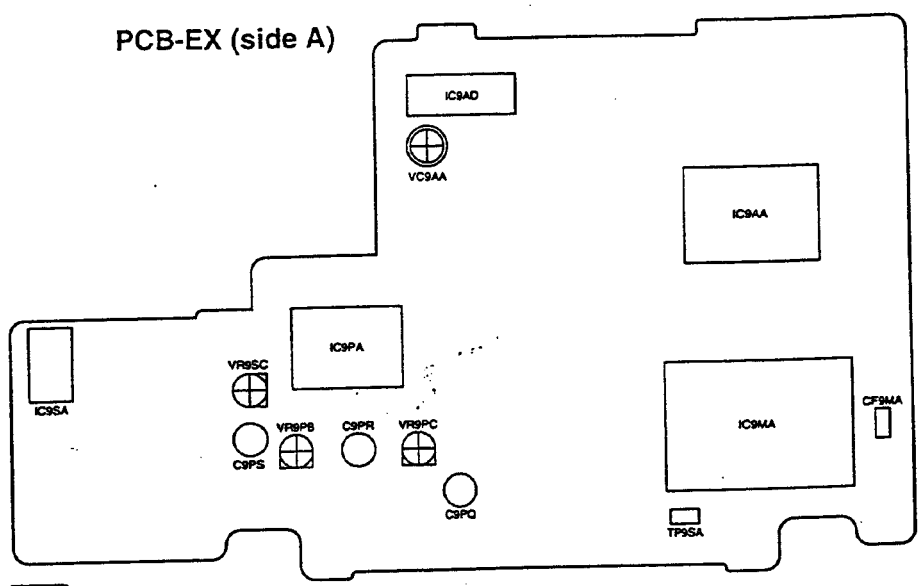
No.	Group	Command	Functions	Status
1	ZOOM	ZHT ↵	ZOOM TELE start (High speed)	RC ↵
2		ZHW ↵	ZOOM WIDE start (High speed)	EX15 ↵
3		ZMT ↵	ZOOM TELE start (Low speed)	RC ↵
4		ZMW ↵	ZOOM WIDE start (Low speed)	EX10 ↵
5		ZMS ↵	ZOOM Stop	
6	FOCUS	FCA ↵	Focus Auto start	RC ↵
7		FCN ↵	Focus NEAR start	EX11 ↵
8		FCF ↵	Focus FAR start	
9		FCS ↵	Focus stop	

ADJUSTING POINTS

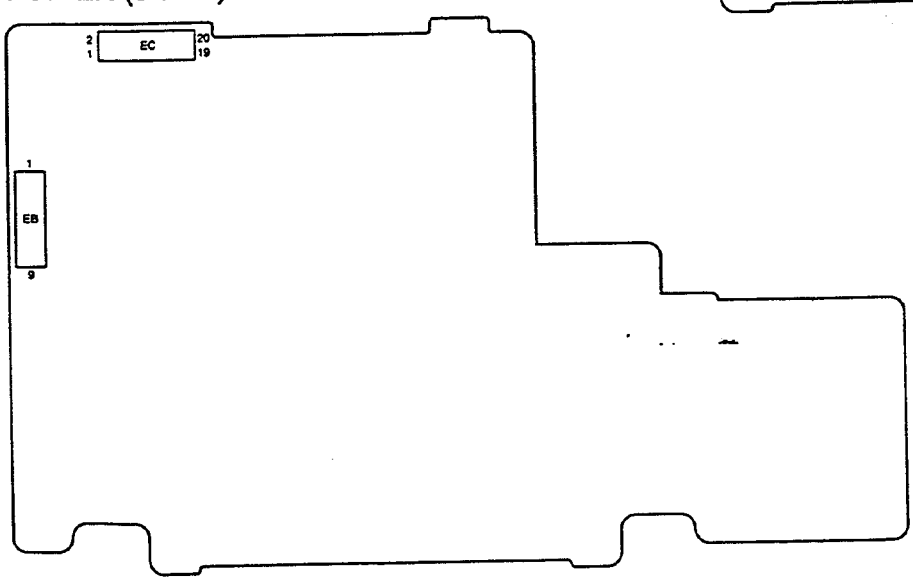
PCB-SD/PC (side A)



PCB-EX (side A)



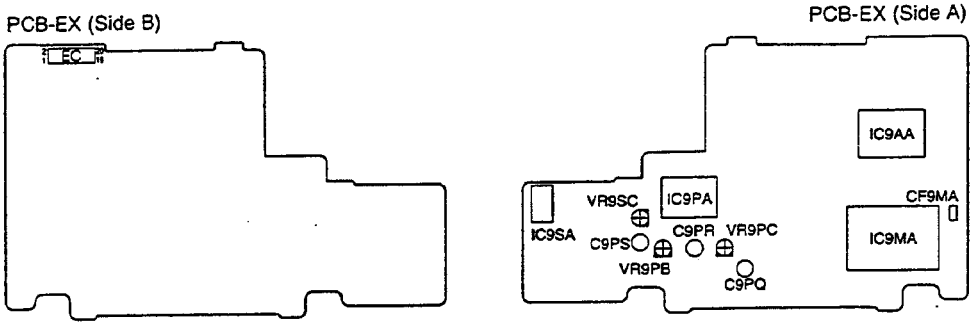
PCB-EX (side B)



1. Camera Voltage .	**Adjustment purpose**	To set the supply voltage of the camera.
	Sympton when incorrectly adjusted	Abnormal operation or damage to components.

Measuring instrument	Digital voltmeter
Test point	EC connector pin 6, 10
EXT trigger	---
Measurement range	---
Chart used	---

1. Adjust VR9SC so that the frequency is ~~100~~ 102kHz±500Hz.
2. Adjust VR9PB so that the DC voltage at the EC connector pin 10 is 5.0±0.03V.
3. Adjust VR9PC so that the DC voltage at the EC connector pin 7 is −8.5±0.4V.
   Note: Make sure that the DC voltage at the EC connector pin 16 is 6.5±0.5V.

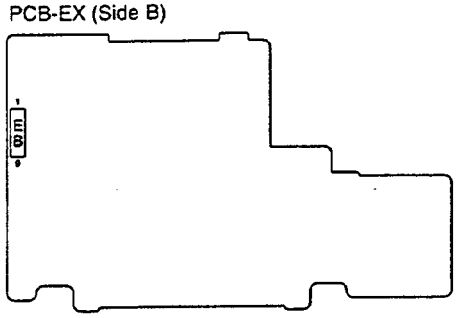


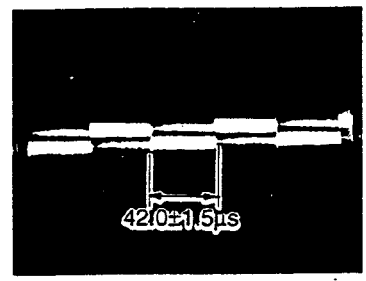
3. Menu Character Position	Adjustment purpose	To position the character display.
	Sympton when incorrectly adjusted	Incorrect character position.

Measuring instrument	Oscilloscope
Test point	EC connector pin 6
EXT trigger	---
Measurement range	20mV 10µs (DELAY mode)
Chart used	Lens shaded

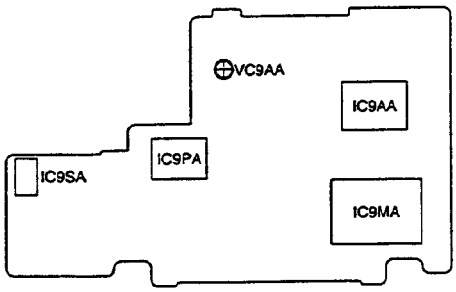
1. Select the character display command "CDE".
2. Observe the waveform at the EB connector pin 6.
3. Adjust VC9AA so that the period from the rise of horizontal synchronizing signal to the right edge of the "AUTO FOCUS" waveform is 42.0±1.5µs.

PCB-EX (Side B)





PCB-EX (Side A)



Note: Adjustments item 4 (Substrate and Reset Voltage)–item 15 (Amplifier Output of Iris Hole Element) must be performed with EVR controller. (See P.9)

4. Substrate and Reset Voltage	**Adjustment purpose**	Reference voltage for CCD drive.
	Sympton when incorrectly adjusted	Lower S/N ratio or blooming

Measuring instrument	Oscilloscope
Test point	TP2AC
EXT trigger	---
Measurement range	DIV: 0.1V TIM: 50 ns
Chart used	---

Determing VRGL Adjustment Point

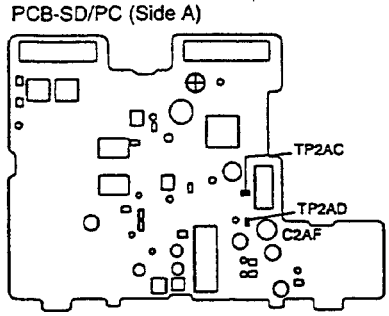
1. Check the VRGL number on the rear of the CCD (IC2AA).
2. Determine the VRGL Adjustment Point value from the Table below.

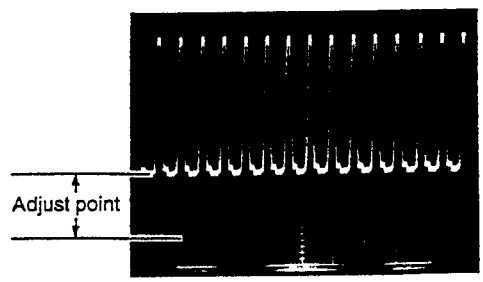
VRGL code address	0	1	2	3	4	5	6	7
Adjust point	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0

Reset Voltage Adjustment

1. Observe the waveform at TP2AC.
2. Set the EVR Address to 0A.
3. Adjust the data so the negative peaks of the waveform fall at the VRGL Adjustment Point ±0.1V.

PCB-SD/PC (Side A)

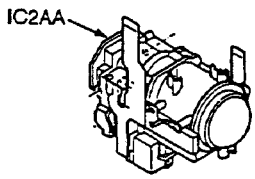




Determining VSUB Adjustment Point

1. Check the VSUB code on the rear of the CCD (IC2AA).
2. Determine the VSUB Adjustment Point value from the Table below.

IC2AA



VSUB code address	E	f	G	h	J	K	L	m	N	P
Adjust point	9.0	9.5	10.0	10.5	11.0	11.5	12.0	12.5	13.0	13.5

Q	R	S	T	U	V	W	X	Y	Z
14.0	14.5	15.0	15.5	16.0	16.5	17.0	17.5	18.0	18.5

Example

[4] [R] Adjustment value of VRGL: 2.5V

VRGL abbr. VSUB abbr. Adjustment value of VSUB: 14.5V

Substrate Voltage Adjustment

1. Observe the DC voltage at TP2AD.
2. Set the EVTR Address to 00.
3. Adjust the data so the negative peaks of the DC voltage fall at the VSUB Adjustment Point ±0.1V.
4. Press ENTER of the EVR controller to write the data into memory.

5. Lens-barrel	Adjustment purpose	Back focus of lens.
	Sympton when incorrectly adjusted	Out of focus when zooming

Measuring instrument	---
Test point	---
EXT trigger	---
Measurement range	---
Chart used	Radial chart

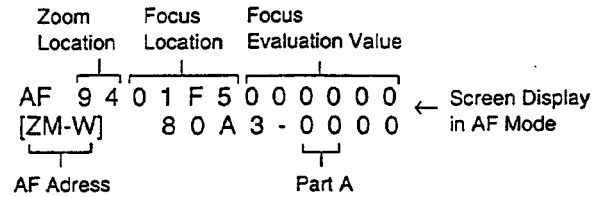
Initial Test Set Up

1. Install the Relay PCB-ASSY (with switch) between the CE connector on the PCB-CM and FPC on the Lens Assembly. The Relay PCB-ASSY is packed with the EVR Controller.
2. Set the switch on the Relay PCB-ASSY to ON.

Lens Barrel Adjustment

Position the Radial Chart at least 10 meters from the Camera

1. Set the unit to the AF Mode of the EVR controller.



2. Select the ZOOM PC Command key "ZMW", to set wide angle to maximum.
3. Select the FOCUS PC Command key "FCA".
4. Hold down the ZOOM PC Command key "ZMT" or "ZMW" to adjust for best focus. Roughly set focus by eye, then set to optimum focus by monitoring the Focus Evaluation Value on the Controller Display. (Optimum focus is at highest Focus Evaluation Value.)
5. Set the AF Address to ZM-W and press ENTER of the EVR Controller.
6. Set the Focus Location to 0000 by holding down the Zoom PC Command key "ZMT" or "ZMW". Set all switches on the Relay PCB-ASSY to OFF.
7. Set the normal screen.
8. Set the focus to optimum by (highest Focus Evalution Value), by holding down the PC Command key "ZMT" or "ZMW". Set all switches on the Relay PCB-ASSY on ON.
9. Set the AF Address to ZM-T, and press ENTER of the EVR controller.
10. Set the AF Address to FC, and press ENTER of the EVR controller.
11. Turn the camera and EVR Controller OFF and ON at the same time.

    IMPORTANT: In Steps 12 through 23, DO NOT change zoom by pressing the Zoom only. If this occurs, repeat the procedure from Step 1.

12. Set the unit to the AF Mode of EVR Controller.
13. Select the FOCUS PC command key "FCA".
14. Set the focus to optimum (maximum Focus Evaluation Value) by holding down the Zoom PC Command key "ZMT" or "ZMW".
15. Set the AF Address to AAAA, and press ENTER of the EVR controller. Confirm that Part A of the display reads 4C, if not, repeat the procedure from Step 1.

※ If no button has been pressed with the Menu screen displayed for about 30 seconds, the normal screen returns.

Position the Radial Chart 1.8 meters from the Camera

16. Select the FOCUS PC Comand key "FCA".
17. Set the focus to optimum (maximum Focus Evaluation Value) by holding down the Zoom PC Command Key "ZMT" or "ZMW".
18. Set AF Address to BBBB, and press ENTER of the EVR controller. Confirm that Part A of the display is "4D". If not, repeat the procedure from Step 1.

Position the Radial Chart 0.8 meters from the Camera

19. Select the FOCUS PC command key "FCA".
20. Set the focus to optimum (maximum Focus Evaluation Value) by holding down the Zoom PC command key "ZMT" or "ZMW".
21. Set the AF Address to CCCC, and press ENTER of the EVR controller. Confirm that Part A of the display is "4E". If not, repeat the procedure from Step 1.
22. Press the Power Zoom PC command key "ZMT" or "ZMW" to set the Zoom Location on the display, to 68±2H.

    IMPORTANT: In the following Steps, DO NOT change zoom by pressing the Power Zoom only. If this occurs, repeat the procedure from Step 22.

23. Set the focus to optimum (maximum Focus Evaluation Value) by holding down the Zoom PC command key "ZMT" or "ZMW".
24. Set the AF Address to FFFF, and press ENTER of the EVR controller. Confirm that Part A of the display is "51". If not, repeat the procedure from Step 1.

Position the Radial Chart 1.8 meters from the Camera

25. Select the FOCUS PC command key "FCA".
26. Set the focus to optimum (maximum Focus Evaluation Value) by holding down the Zoom PC command key "ZMT" or "ZMW".
27. Set the AF Address to EEEE, and press ENTER of the EVR controller. Confirm that Part A of the display is "50". If not, repeat the procedure from Step 1.

Position the Radial Chart 10 meters minimum from the Camera

28. Select the FOCUS PC command key "FCA".
29. Set the focus to optimum (maximum Focus Evaluation Value) by holding down the Zoom PC command key "ZMT" or "ZMW".
30. Set the AF Address to DDDD, and press ENTER of the EVR controller. Confirm that Part A of the display is "4F". If not, repeat the procedure from Step 1.
31. Turn the camera and the EVR Controller OFF and ON at the same time.

※ If no button has been pressed with the Menu screen displayed for about 30 seconds, the normal screen returns.

6. Writing Maximum Value of AGC Gain	**Adjustment purpose**	Setting maximum value of AGC gain of CCD.
	Symptom when incorrectly adjusted	Poor performance at low illuminance (dark areas).

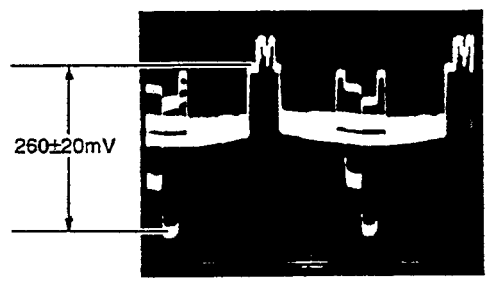
Measuring instrument	---
Test point	---
EXT trigger	---
Measurement range	---
Chart used	Lens shaded

1. Set the data to "00" so that EVR address to 03.
2. Shade the lens. After 5 sec press the ENTER button of the EVR controller.

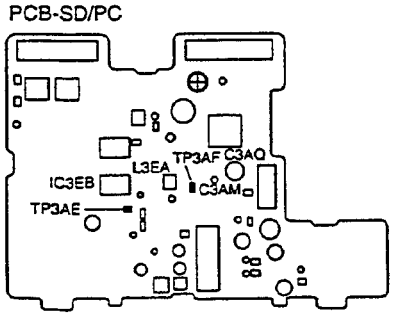
7. ALC	**Adjustment purpose**	Set the iris level.
	Symptom when incorrectly adjusted	Poor gradation or whitening by excessive light.

Measuring instrument	Oscilloscope
Test point	TP3AE
EXT trigger	---
Measurement range	DIV: 5 mV TIM: 1 µs
Chart used	Color chart

1. Display the color chart at the standard viewing angle.
2. Ground TP3AF.
3. Observe the waveform at TP3AE through a low pass filter. (See P.8)
4. Set EVR address to 01.
5. Reduce data from "FF", so that white peak level is 260±20mVp-p.
6. Press the ENTER button to the EVR controller.



PCB-SD/PC



8. Gain of Y Signal Delay Line	**Adjustment purpose**	Set the gain of delay line in the Y signal circuitry.
	Symptom when incorrectly adjusted	Low S/N ratio or horizontal noise appears.

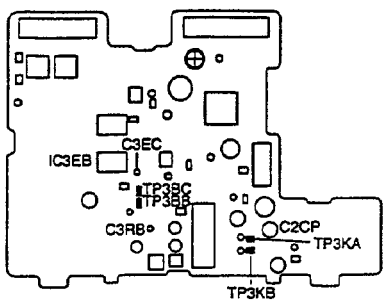
Measuring instrument	Oscilloscope
Test point	TP3BB
EXT trigger	---
Measurement range	DIV: 1 mV TIM: 10 µs
Chart used	Color chart

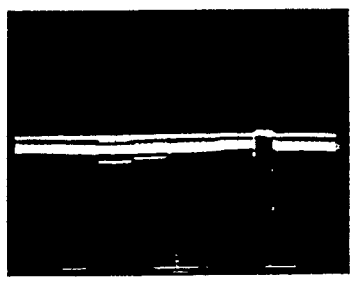
1. Display the color chart at the standard viewing angle.
2. Observe the waveform at TP3BB through a low pass filter. (See P.8)
3. Set EVR address to 10.
4. Set data so that the signal level is 0±5mV.
5. Set EVR address to 12.
6. Set data so that the signal level is 0±5mV, at TP3KA and TP3KB.

Note: An adjustment value of 5C or more at the two test points is normal.

7. Observe the waveform at TP3BC through a low pass filter. (See P.8)
8. Set EVR address to 13.
9. Set data so that the signal level is 0±5mV.
10. Press the ENTER button of the EVR controller.

PCB-SD/PC (Side A)





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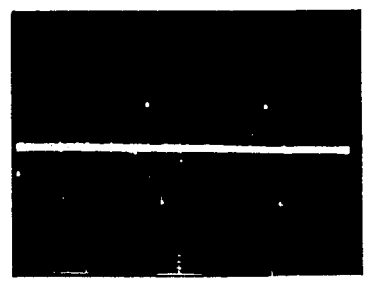
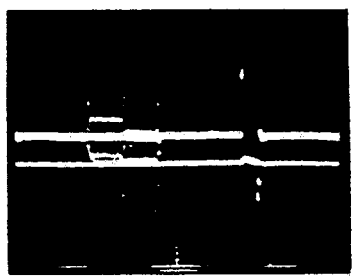


OK

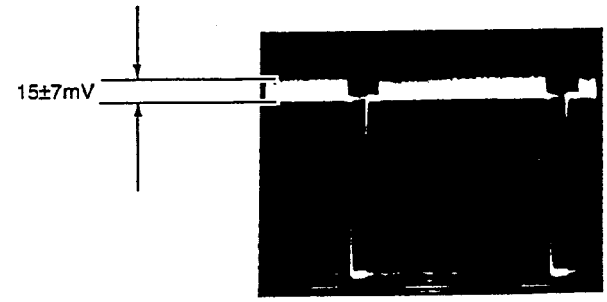


NG

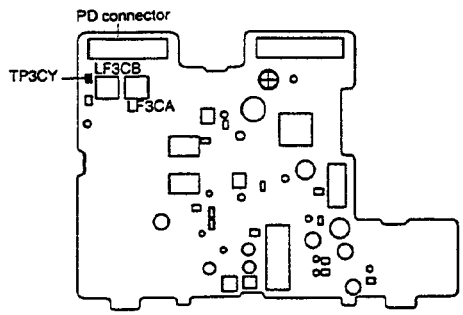
9. Setup Level	**Adjustment purpose**	To set the black level in video signal.
	Symptom when incorrectly adjusted	Too bright or too dark picture

Measuring instrument	Oscilloscope
Test point	VIDEO OUT terminal
EXT trigger	—
Measurement range	DIV: 5 mV TIM: 10 µs
Chart used	Lens shaded

1. Shade the lens.
2. Observe the waveform at VIDEO OUT terminal through a low pass filter. (See P.8)
3. Set EVR address to 07.
4. Set data so the setup level is 15±7mVp-p.
5. Press the ENTER button of the EVR controller.



PCB-SD/PC (Side A)

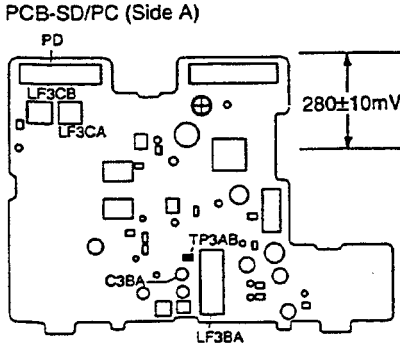


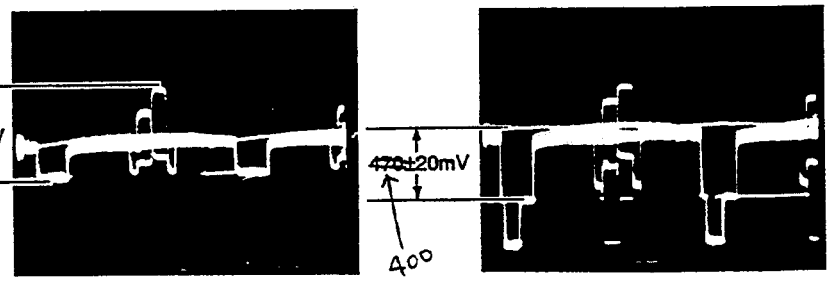
10. APL, Y Level	**Adjustment purpose**	AGC of video signal processing circuit.
	Symptom when incorrectly adjusted	Too bright or too dark picture.

Measuring instrument	Oscilloscope
Test point	TP3AB VIDEO OUT terminal
EXT trigger	—
Measurement range	DIV: 10 mV TIM: 10 µs
Chart used	Color chart

Note: Preheat the set for five second or more.
1. Display the color chart at the standard viewing angle.
2. Observe the waveform at TP3AB through a low pass filter. (See P.8)
3. Set EVR address to 02.
4. Set data so the white peak level is 280±10mVp-p.
5. Set the oscilloscope to 20mV/DIV.
6. Observe the waveform at VIDEO OUT terminal through a low pass filter. (See P.8)
7. Set EVR address to 04. 400
8. Set data so the background level of picture is ~~470~~±20mVp-p.
9. Press the ENTER button of the EVR controller.

PCB-SD/PC (Side A)





13. White Balance

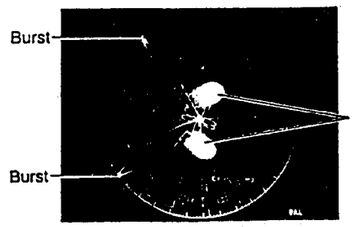
Adjustment purpose To set the reference level when displaying "white" on the screen.

Symptom when incorrectly adjusted Picture will turn reddish or bluish.

Measuring instrument	Vector scope
Test point	VIDEO OUT terminal
EXT trigger	---
Measurement range	GAIN: Max. SATURATION: 75%
Chart used	White chart

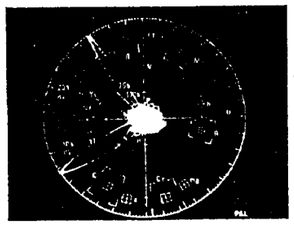
Note: Preheat the set for ten minutes or more.

1. Set mode of white balance to "for shooting in artificial light".
2. Display the white chart on the overall monitor screen.
3. Connect the video output terminal to the input terminal of the vector scope and observe the vector of the video output signal.
4. Adjust EVR addresses 14 and 15, so that bright spot is at the centre of the vector scope, as shown below.
5. Set mode of white balance to "for shooting in sunlight".
6. Shoot the white chart with a convention filter for colour temperature (C2 + C12).
7. Adjust EVR addresses 20 and 21, so that bright spot is at the centre of the vector scope, as shown below.
8. Press the ENTER button.



2 luminescence points around the centre

NG



OK

14. Gain of R-Y and B-Y, and Chroma phase

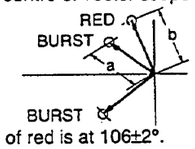
Adjustment purpose To set the amplitude of colour-difference signals and chroma phase of composite signal.

Symptom when incorrectly adjusted Wrong colours.

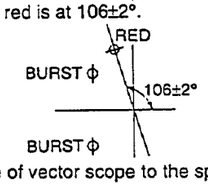
Measuring instrument	Vector scope
Test point	VIDEO OUT terminal
EXT trigger	---
Measurement range	GAIN: regular SATURATION: 75%
Chart used	Colour chart

1. Set mode of white balance to "for shooting in artificial light".
2. Display the colour chart at the standard viewing angles and connect the vector scope.
3. Set EVR address to 0C.
4. Adjust data so that the distance from the centre of vector scope to the spot of red is 1.2 times that of burst.

$\left(\frac{b}{a}=1.2\right)$

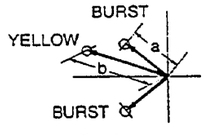


5. Set EVR address to 0E.
6. Adjust data so that the phase of the spot of red is at 106±2°.



7. Set EVR address to 0D.
8. Adjust data so the distance from the centre of vector scope to the spot of yellow is 1.7 times that of burst.

$\left(\frac{b}{a}=1.7\right)$



9. Repeat the adjusting procedures above so that all values are set as specified.
10. Press the ENTER button.

13. White Balance

Adjustment purpose To set the reference level when displaying "white" on the screen.

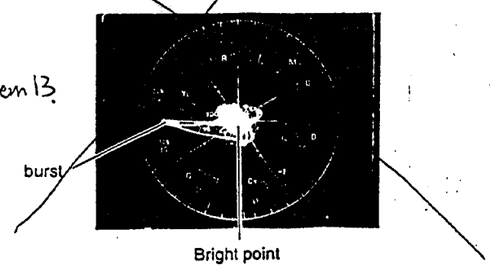
Symptom when incorrectly adjusted Picture will turn reddish or bluish.

Measuring instrument	Vector scope
Test point	VIDEO OUT terminal
EXT trigger	---
Measurement range	GAIN: Max. SATURATION: 75%
Chart used	White chart

Note: Preheat the set for ten minutes or more.

1. Set mode of white balance to "for shooting in artificial light".
2. Display the white chart on the overall monitor screen.
3. Connect the video output terminal to the input terminal of the vector scope and observe the vector of the video output signal.
4. Adjust EVR addresses 14 and 15, so that bright spot is at the center of the vector scope.
5. Set mode of white balance to "for shooting in sunlight".
6. Shoot the white chart with a convention filter for color temperature (C2 + C12).
7. Adjust EVR addresses 20 and 21, so that bright spot is at the position in waveform below.
8. Press the ENTER button of the EVR controller.

Same as CCD-200E
Service Manual Page 21 Item 13



Bright point

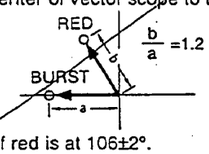
14. Gain of R-Y and B-Y, and Chroma Phase

Adjustment purpose To set the amplitude of color-difference signals and chroma phase of composite signal.

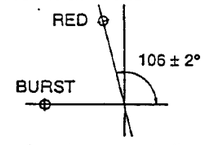
Symptom when incorrectly adjusted Wrong colors.

Measuring instrument	Vector scope
Test point	VIDEO OUT terminal
EXT trigger	---
Measurement range	GAIN: regular SATURATION: 75%
Chart used	Color chart

1. Set mode of white balance to "for shooting in artificial light".
2. Display the color chart at the standard viewing angles and connect the vector scope.
3. Set EVR address to 0C.
4. Adjust data so that the distance from the center of vector scope to the spot of red is 1.2 times that of burst.

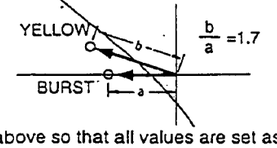


5. Set EVR address to 0E.
6. Adjust data so that the phase of the spot of red is at 106±2°.



Same as CCD-200E
page 21 Item 14.

7. Set EVR address to 0D.
8. Adjust data so the distance from the center of vector scope to the spot of yellow is 1.7 times that of burst.



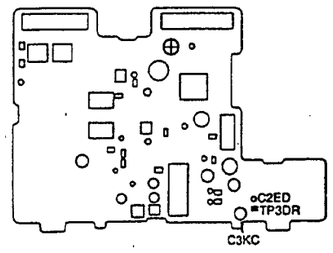
9. Repeat the adjusting procedures above so that all values are set as specified.
10. Press the ENTER button of the EVR controller.

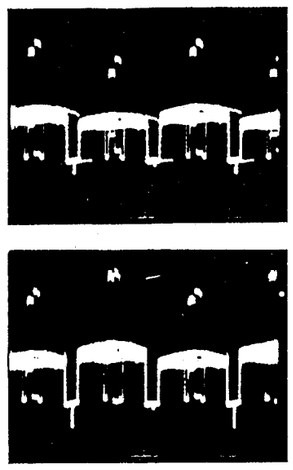
11. Gain of C Signal Delay Line	**Adjustment purpose**	Gain of delay line in color signal circuitry.
	Symptom when incorrectly adjusted	Color impurity.

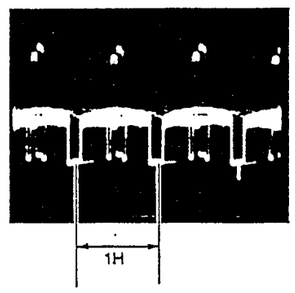
Measuring instrument	Oscilloscope
Test point	TP3DR
EXT trigger	---
Measurement range	DIV: 5 mV TIM: 20 µs
Chart used	Color chart

1. Display the color chart at the standard viewing angle.
2. Observe the waveform at TP3DR.
3. Set EVR address to 0B.
4. Set data so the amplitude difference of the waveform at TP3DR every 1H is 0±5mV or less.
5. Press the ENTER button of the EVR controller.

PCB-SD/PC (Side A)



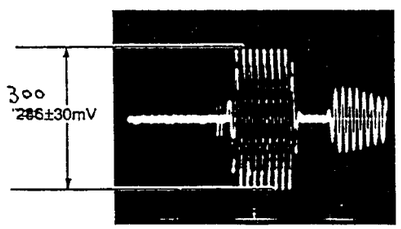




12. Burst Level	**Adjustment purpose**	To set the chroma level of video output signal.
	Symptom when incorrectly adjusted	Wrong colors.

Measuring instrument	Oscilloscope
Test point	VIDEO OUT terminal
EXT trigger	---
Measurement range	DIV: 10 mV TIM: 1 µs
Chart used	---

1. Observe the waveform at VIDEO OUT terminal.
2. Set EVR address to 08. 300
3. Set data so that the burst level is ~~286~~±30mV.
4. Press the ENTER button of the EVR controller.



15. Amplifier Output of Iris Hole Element	**Adjustment purpose**	Reading sensor voltage on both sides of iris.
	Symptom when incorrectly adjusted	Poor response of Auto focus.

Measuring instrument	---
Test point	---
EXT trigger	---
Measurement range	---
Chart used	Lens shaded

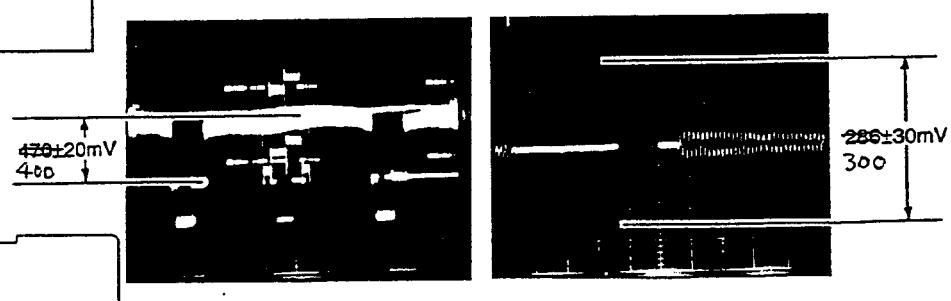
1. Set EVR address to A3.
2. Locate and shoot front of a halogen light at a distance of 1 m from the Camera unit. After 1 second or more, press the ENTER button of the EVR controller.
3. Shade the lens. After 1 second or more, press the ENTER button of the EVR controller.

16. S Video Output, Y/C Level	**Adjustment purpose**	To set the S luminance and S chroma signals to standard values.
	Sympton when incorrectly adjusted	No color and too bright or too dark picture of S video signal output.

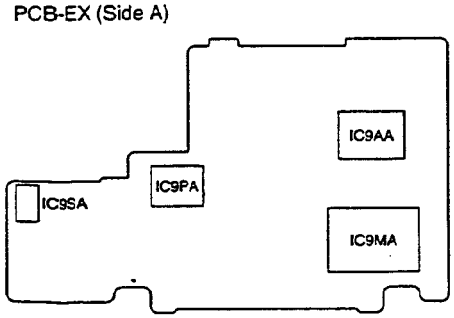
Measuring instrument	Oscilloscope
Test point	S video output terminal pin 3, 4
EXT trigger	---
Measurement range	DIV: 50mV TIM: 10µs (DELAY mode)
Chart used	Color chart

Note: Preheat the set for ten minutes or more.

1. Display the color chart at the standard viewing angle.
2. Observe the waveform at the S output terminal, pin 3. ~~470~~ 400
3. Adjust EVR addresses 04 so that the background level is ~~470~~±20mV.
4. Observe the waveform at the S output terminal, pin 4.
5. Adjust EVR addresses 08 so that the burst level is ~~286~~ 300 ±30mV.



PCB-EX (Side A)



CHIP PARTS REPLACEMENT

CHIP PARTS REPLACEMENT

Some resistors, shorting jumpers (0Ω resistor), ceramic capacitors, transistors and diodes are chip parts which are used for certain circuit elements. When replacing these parts, note the cautions as follows.

Cautions:

A. Use fine tipped, well insulated soldering pencil (iron), about 30 watts, and tweezers.
B. Melt the solder and remove the Chip Parts carefully not to tear off the copper foil of the printed circuit board.
C. Discard removed chips; do not reuse them.
D. Do not apply heat for more than 3 seconds to new chip Parts.
E. Avoid using a rubbing stroke when soldering.
F. Take care not to scratch, or damage the Chip Parts when soldering.
G. Supplementary cementing is not required.

1 Removal of Chip Parts (Resistors, capacitors, etc.)

A. Grasp the part with tweezers. Melt the solder at both sides alternately, remove the one side of the part with a twisting motion.
B. Melt the solder at the other side and remove the part.

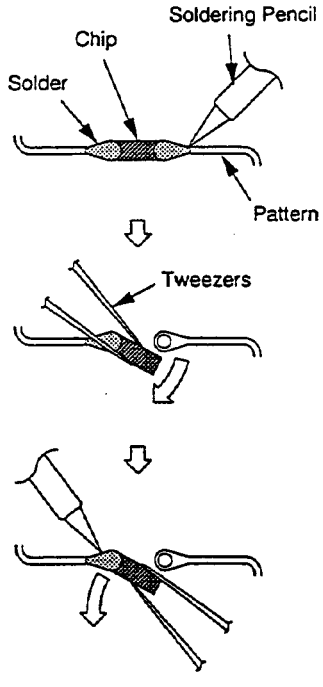


Fig. 1

2 Removal of Chip Parts (Transistors)

A. Melt the solder of one lead. Lift the side of that lead upward.
B. Simultaneously melt the solder of the two remaining leads and lift the part.

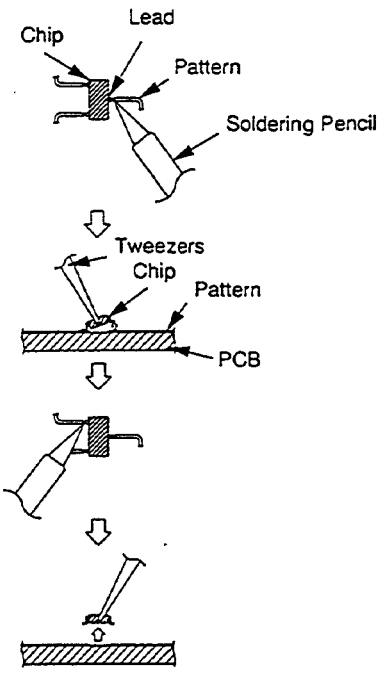


Fig. 2

3 Replacement

A. Presolder the contact points of the circuit pattern.
B. Press the part downward with tweezers and apply the soldering pencil as shown in Fig. 3.

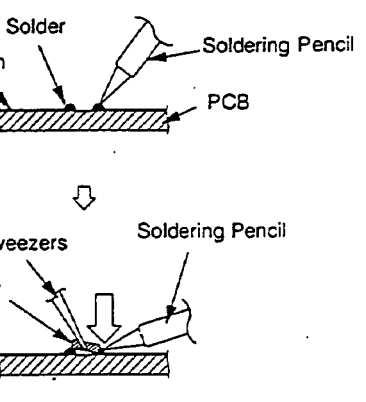


Fig. 3

PARTS LIST

MODEL : CCD – 300ヰE

In order to expedite delivery of replacement part orders.

Specify : 1. Model number/Serial number
2. Part number and Description
3. Quantity

Unless full information is supplied, delay in execution of orders will result.

* : Warranty return items

▨ : Critical components

MARK	B	C	D	F	G	J	K
TOLERANCE (%)	± 0.1	± 0.25	± 0.5	± 1	± 2	± 5	± 10

MARK	M	N	V	X	Z	P	Q
TOLERANCE (%)	± 20	± 30	+ 10 − 10	+ 40 − 20	+ 80 − 20	+ 100 − 0	+ 30 − 10

MARK	B	C	D	F	G
TOLERANCE (pF)	± 0.1	± 0.25	± 0.5	± 1	± 2

SYMBOL NO.	PARTS NO.	PARTS NAME	DESCRIPTION
		INTEGRATED CIRCUITS	
IC	928D087050	IC ASSY	
IC 9RA	263P404020	IC	μPD4712AGT-E1
IC2AB	274P218010	IC	CXD1250N
IC2AC	274P219010	IC	CXD1256R
IC3AA	272P913010	IC	CXA1390AR
IC3BA	272P914010	IC	CXA1391R
IC3CA	272P915010	IC	CXA1392R
IC3DA	272P485020	IC	NJM2902V
IC3DB	274P203020	IC	MC14051BF
IC3DC	272P205040	IC	LM2903DB
IC3EA	263P599010	IC	M62352GP
IC3EB	263P599010	IC	M62352GP
IC3KA	263P388010	IC	CXL5504M
IC3KB	274P220010	IC	CXL1517N
IC3PA	263P217010	IC	SC14S66F (C9)
~~IC3QA~~	~~263P388010~~	~~IC~~	~~CXL5504M~~
IC4AA	274P217010	IC	CXD1159Q 185
IC5AA	274P221030	IC	M38063M6-~~184~~GP
IC5AB	272P485010	IC	LM2902DB
IC5AC	272P485010	IC	LM2902DB
IC5EA	274P224010	IC	S-2919CIF
IC5GA	274P225010	IC	CF45062PM
IC5MA	272P920010	IC	TB6504F
IC5SW	263P143010	IC	SN74HC4066DB
IC5ZA	272P358020	IC	TK10501M
IC6AA	263P661010	IC	MC74HC157AF
IC8AA	274P016010	IC	M60023-0104FP
IC8AB	272P208010	IC	BA225F
IC8AC	263P217010	IC	SC14S66F (C9)
IC8AD	263P217010	IC	SC14S66F (C9)
IC9AA	272P668010	IC	AN3580SB
IC9AB	272P910010	IC	NJM2268M
IC9AC	272P546010	IC	MM1031XMR
IC9AD	274P573010	IC	M35013-050SP
IC9CA	263P149010	IC	SN74HC74DB
IC9CB	263P149010	IC	SN74HC74DB
IC9MA	274P617010	IC	M38063M6-XXXFP
IC9MB	274P224010	IC	S-2919CIF
IC9MC	263P440010	IC	S8054HNM-T1 (CQ)
IC9PA	272P547010	IC	MB3782PF-G-BND
IC9SA	272P366010	IC	LM311PS
IC9SB	263P220010	IC	SC7SU04F (E6)
		TRANSISTORS	
Q 2AA	260P854030	CHIP TRANSISTOR	2SC4098-Q
Q 2EA	260P855090	CHIP TRANSISTOR	2SD1819A-S
Q 2EB	260P845010	CHIP TRANSISTOR	IMX1
Q 3AA	260P849010	CHIP TRANSISTOR	IMZ1
Q 3AB	260P849010	CHIP TRANSISTOR	IMZ1
Q 3AE	260P857030	CHIP TRANSISTOR	UN5213
Q 3AF	260P857030	CHIP TRANSISTOR	UN5213
Q 3CA	260P859050	CHIP TRANSISTOR	2SA1576-R
Q 3DA	260P854030	CHIP TRANSISTOR	2SC4098-Q

SYMBOL NO.	PARTS NO.	PARTS NAME	DESCRIPTION
Q 3DB	260P858030	CHIP TRANSISTOR	UN5111 (6A)
Q 3DC	260P852010	CHIP TRANSISTOR	FMG2
Q 3DD	260P852010	CHIP TRANSISTOR	FMG2
Q 3DE	260P740010	CHIP TRANSISTOR	FMA9 (A9)
Q 3DF	260P857020	CHIP TRANSISTOR	DTC144EU
Q 3GA	260P845010	CHIP TRANSISTOR	IMX1
Q 3KA	260P854030	CHIP TRANSISTOR	2SC4098-Q
Q 3KB	260P859050	CHIP TRANSISTOR	2SA1576-R
Q 3KC	260P863010	CHIP TRANSISTOR	IMT1 (T1)
Q 3KD	260P859050	CHIP TRANSISTOR	2SA1576-R
Q 3NA	260P849010	CHIP TRANSISTOR	IMZ1
Q 3NB	260P863010	CHIP TRANSISTOR	IMT1 (T1)
Q 3NC	260P845010	CHIP TRANSISTOR	IMX1
Q 3ND	260P857020	CHIP TRANSISTOR	DTC144EU
Q 3PA	260P863010	CHIP TRANSISTOR	IMT1 (T1)
Q 3PD	260P845010	CHIP TRANSISTOR	IMX1
Q 3PE	260P854030	CHIP TRANSISTOR	2SC4098-Q
Q 3PF	260P857020	CHIP TRANSISTOR	DTC144EU
Q 3QA	260P845010	CHIP TRANSISTOR	IMX1
Q 3QB	260P854030	CHIP TRANSISTOR	2SC4098-Q
Q 3QC	260P854030	CHIP TRANSISTOR	2SC4098-Q
Q 3QD	260P857020	CHIP TRANSISTOR	DTC144EU
Q 3QE	260P857020	CHIP TRANSISTOR	DTC144EU
Q 5AB	260P855090	CHIP TRANSISTOR	2SD1819A-S
Q 5AC	260P854020	CHIP TRANSISTOR	2SC4098-P
Q 5AD	260P863010	CHIP TRANSISTOR	IMT1 (T1)
Q 5EF	260P845010	CHIP TRANSISTOR	IMX1
Q 5FA	260P859050	CHIP TRANSISTOR	2SA1576-R
Q 5FB	260P855090	CHIP TRANSISTOR	2SD1819A-S
Q 5FC	260P855090	CHIP TRANSISTOR	2SD1819A-S
Q 5FD	260P855090	CHIP TRANSISTOR	2SD1819A-S
Q 5FE	260P845010	CHIP TRANSISTOR	IMX1
Q 5FF	260P859090	CHIP TRANSISTOR	2SB1218A-S
Q 5FG	260P855090	CHIP TRANSISTOR	2SD1819A-S
Q 5FH	260P859050	CHIP TRANSISTOR	2SA1576-R
Q 5FJ	260P854030	CHIP TRANSISTOR	2SC4098-Q
Q 5FK	260P854030	CHIP TRANSISTOR	2SC4098-Q
Q 5FL	260P854030	CHIP TRANSISTOR	2SC4098-Q
Q 5FM	260P845010	CHIP TRANSISTOR	IMX1
Q 5LA	260P855090	CHIP TRANSISTOR	2SD1819A-S
Q 5LB	260P858010	CHIP TRANSISTOR	DTA114EU
Q 5LC	260P863010	CHIP TRANSISTOR	IMT1 (T1)
Q 8AA	260P857020	CHIP TRANSISTOR	DTC144EU
Q 9AA	260P849010	CHIP TRANSISTOR	IMZ1
Q 9AB	260P854030	CHIP TRANSISTOR	2SC4098-Q
Q 9AC	260P859050	CHIP TRANSISTOR	2SA1576-R
Q 9CA	260P859050	CHIP TRANSISTOR	2SA1576-R
Q 9CB	260P849010	CHIP TRANSISTOR	IMZ1
Q 9EA	260P849010	CHIP TRANSISTOR	IMZ1
Q 9EB	260P854030	CHIP TRANSISTOR	2SC4098-Q
Q 9GA	260P854030	CHIP TRANSISTOR	2SC4098-Q
Q 9GB	260P857020	CHIP TRANSISTOR	DTC144EU
Q 9GC	260P858010	CHIP TRANSISTOR	DTA114EU
Q 9GD	260P857020	CHIP TRANSISTOR	DTC144EU
Q 9MA	260P857020	CHIP TRANSISTOR	DTC144EU

SYMBOL NO.	PARTS NO.	PARTS NAME	DESCRIPTION
Q 9PA	260P701010	CHIP TRANSISTOR	2SA1213-Y
Q 9PB	260P701010	CHIP TRANSISTOR	2SA1213-Y
Q 9PC	260P701010	CHIP TRANSISTOR	2SA1213-Y
Q 9RA	260P854030	CHIP TRANSISTOR	2SC4098-Q
Q 9RB	260P858010	CHIP TRANSISTOR	DTA114EU
Q 9RC	260P857020	CHIP TRANSISTOR	DTC144EU
Q 9RD	260P701010	CHIP TRANSISTOR	2SA1213-Y
Q 9RE	260P854030	CHIP TRANSISTOR	2SC4098-Q
Q 9SA	260P854030	CHIP TRANSISTOR	2SC4098-Q
Q 9TA	260P854030	CHIP TRANSISTOR	2SC4098-Q
Q 9TB	260P710010	TRANSISTOR	2SC1568-S
Q 9TC	260P710010	TRANSISTOR	2SC1568-S
		DIODES	
D 2AA	264P837010	CHIP DIODE	MA141K
D 2EA	264P837010	CHIP DIODE	MA141K
D 2EB	264P814030	CHIP DIODE	MA142WA
D 2EC	264P830020	CHIP DIODE	DA204U
D 2ED	264P837010	CHIP DIODE	MA141K
D 3PA	264P814030	CHIP DIODE	MA142WA
D 5LA	264P814030	CHIP DIODE	MA142WA
D 5LB	264P828010	CHIP DIODE	DAN202U
D 8BA	264P834010	CHIP DIODE	MA341
D 9PA	264P850010	CHIP DIODE	MA720
D 9PB	264P832010	CHIP DIODE	SFPB-64V
D 9PC	264P814030	CHIP DIODE	MA142WA
D 9PD	264P814030	CHIP DIODE	MA142WA
D 9RA	264P815030	CHIP DIODE	RD4.7MB2
D 9SA	264P837010	CHIP DIODE	MA141K
D 9SB	264P837010	CHIP DIODE	MA141K
D 9TA	264P816090	CHIP DIODE	RD11MB2
D 9TB	264P831010	CHIP DIODE	SFPB-54V
D 9TC	264P831010	CHIP DIODE	SFPB-54V
		FILTERS	
	499P022010	OPTICAL FILTER	DRSS-1590
CF9MA	299P191010	CERAMIC RESONATOR	PBRC4.91BR1
LF3BA	409P786010	LOW PASS FILTER	4FT TH356LSM6281
LF3BC	409P785010	LOW PASS FILTER	MXF3535DR180
LF3CA	409P787010	LOW PASS FILTER	4FUSTH354LA16164
LF3CB	409P594010	LOW PASS FILTER	4FUS-4566
~~LF3CA~~	~~409P594010~~	~~LOW PASS FILTER~~	~~4FUS-4566~~
LF5AA	409P733010	LOW PASS FILTER	4FUSTH354LA15592
		COILS	
L 2BA	325C140010	CHIP COIL	1.0μH-M
L 2BB	325C140010	CHIP COIL	1.0μH-M
L 2CA	325C241070	CHIP COIL	22μH-K
L 2CB	325C140010	CHIP COIL	1.0μH-M
L 3CA	325C242030	CHIP COIL	68μH-K
L 3EA	325C241070	CHIP COIL	22μH-K
L 3KA	325C241070	CHIP COIL	22μH-K
L 3KB	325C241070	CHIP COIL	22μH-K
L 3KC	325C241030	CHIP COIL	10μH-K
~~L 3QA~~	~~325C241070~~	~~CHIP COIL~~	~~22μH-K~~

SYMBOL NO.	PARTS NO.	PARTS NAME	DESCRIPTION
L 4AA	325C241070	CHIP COIL	22μH-K
L 5AA	325C242020	CHIP COIL	56μH-K
L 5AD	325C242040	CHIP COIL	82μH-K
L 9AA	325C181050	CHIP COIL	15μH-K
L 9EA	325C240090	CHIP COIL	4.7μH-M
L 9EB	325C242040	CHIP COIL	82μH-K
L 9EC	325C241070	CHIP COIL	22μH-K
L 9ED	325C240050	CHIP COIL	2.2μH-M 322522
L 9MB	325C142050	CHIP COIL	100μH-K
L 9PA	351P087010	CHOKE COIL	CD54 22MHz
L 9PB	351P088030	CHOKE COIL	CDR74 270MHz
L 9PC	351P088020	CHOKE COIL	CDR74 68MHz
L 9PD	351P087010	CHOKE COIL	CD54 22MHz
L 9PE	325C242050	CHIP COIL	100μH-K
L 9PF	325C242050	CHIP COIL	100μH-K
L 9RA	325C241070	CHIP COIL	22μH-K
L 9SA	325C142000	CHIP COIL	39μH-K
L 9SB	351P112010	CHOKE COIL	CD75 120MHz
L 9TA	325C240050	CHIP COIL	2.2μH-M 322522
		TRANSFORMERS	
T 9PA	409P820010	TRANSFORMER	CMD-6LR084
		VARIABLE RESISTORS	
VR9PB	127C270040	VR-SEMIFIXED-CHIP	0.15W B1kΩ+-25%
VR9PC	127C270030	VR-SEMIFIXED-CHIP	0.15W B500Ω+-25%
VR9SA	127C270070	VR-SEMIFIXED-CHIP	0.15W B5kΩ+-25%
		RESISTORS	
R 2AA	103P504040	CHIP RESISTOR	1/16W 39kΩ-J
R 2AB	103P502040	CHIP RESISTOR	1/16W 820Ω-J
R 2AC	103P503040	CHIP RESISTOR	1/16W 5.6kΩ-J
R 2AD	103P509050	CHIP RESISTOR	0Ω RM1608
R 2AE	103P504090	CHIP RESISTOR	1/16W 100kΩ-J
R 2AF	103P500050	CHIP RESISTOR	1/16W 22Ω-J
R 2AG	103P509050	CHIP RESISTOR	0Ω RM1608
R 2AH	103P509050	CHIP RESISTOR	0Ω RM1608
R 2AJ	103P506010	CHIP RESISTOR	1/16W 1MΩ-J
R 2AK	103P509050	CHIP RESISTOR	0Ω RM1608
R 2CA	103P506010	CHIP RESISTOR	1/16W 1MΩ-J
R 2CB	103P509050	CHIP RESISTOR	0Ω RM1608
R 2CC	103P502050	CHIP RESISTOR	1/16W 1kΩ-J
R 2CD	103P502050	CHIP RESISTOR	1/16W 1kΩ-J
R 2CE	103P502050	CHIP RESISTOR	1/16W 1kΩ-J
R 2CF	103P502050 (1030)	CHIP RESISTOR	1/16W 1kΩ-J
~~R 2CH~~	~~103P509050~~	~~CHIP RESISTOR~~	~~0Ω RM1608~~
R 2CJ	103P509050	CHIP RESISTOR	~~0Ω RM1608~~ 1/16W 100Ω -J
R 2CK	103P509050	CHIP RESISTOR	~~0Ω RM1608~~
R 2CL	103P509050 (1030)	CHIP RESISTOR	0Ω RM1608 (1/16W 100Ω-J)
R 2CM	103P509050	CHIP RESISTOR	0Ω RM1608
R 2CN	103P509050	CHIP RESISTOR	0Ω RM1608
R 2CP	103P509050	CHIP RESISTOR	0Ω RM1608
R 2CQ	103P509050	CHIP RESISTOR	~~0Ω RM1608~~
R 2EA	103P506010 (1090)	CHIP RESISTOR	1/16W 1MΩ-J (1/16W 330Ω-J)

SYMBOL NO.	PARTS NO.	PARTS NAME	DESCRIPTION
R 2EB	103P504090	CHIP RESISTOR	1/16W 100kΩ-J
R 2EC	103P504070	CHIP RESISTOR	1/16W 68kΩ-J
R 2ED	103P503090	CHIP RESISTOR	1/16W 15kΩ-J
R 2EE	103P505040	CHIP RESISTOR	1/16W 270kΩ-J
R 2EF	103P503070	CHIP RESISTOR	1/16W 10kΩ-J
R 2EG	103P503070	CHIP RESISTOR	1/16W 10kΩ-J
R 2EH	103P504030	CHIP RESISTOR	1/16W 33kΩ-J
R 2EJ	103P504090	CHIP RESISTOR	1/16W 100kΩ-J
R 2EK	103P504090	CHIP RESISTOR	1/16W 100kΩ-J
R 2QA	103P503030	CHIP RESISTOR	1/16W 4.7kΩ-J
R 3AA	103P503090	CHIP RESISTOR	1/16W 15kΩ-J
R 3AB	103P504030	CHIP RESISTOR	1/16W 33kΩ-J
R 3AC	103P503070	CHIP RESISTOR	1/16W 10kΩ-J
R 3AD	103P504040	CHIP RESISTOR	1/16W 39kΩ-J
R 3AF	103P504030	CHIP RESISTOR	1/16W 33kΩ-J
R 3AH	103P504050	CHIP RESISTOR	1/16W 47kΩ-J
R 3AJ	103P502070	CHIP RESISTOR	1/16W 1.5kΩ-J
R 3AK	103P504010	CHIP RESISTOR	1/16W 22kΩ-J
R 3AL	103P504060	CHIP RESISTOR	1/16W 56kΩ-J
R 3AM	103P503080	CHIP RESISTOR	1/16W 12kΩ-J
R 3AR	103P503070	CHIP RESISTOR	1/16W 10kΩ-J
R 3AS	103P503090	CHIP RESISTOR	1/16W 15kΩ-J
R 3AT	103P502000	CHIP RESISTOR	1/16W 390Ω-J
R 3AU	103P504090	CHIP RESISTOR	1/16W 100kΩ-J
R 3AV	103P504090	CHIP RESISTOR	1/16W 100kΩ-J
R 3AW	103P503080	CHIP RESISTOR	1/16W 12kΩ-J
R 3AX	103P504040	CHIP RESISTOR	1/16W 39kΩ-J
R 3AY	103P504050	CHIP RESISTOR	1/16W 47kΩ-J
R 3BA	103P504040	CHIP RESISTOR	1/16W 39kΩ-J
R 3BB	103P503090	CHIP RESISTOR	1/16W 15kΩ-J
R 3BC	103P504050	CHIP RESISTOR	1/16W 47kΩ-J
R 3BD	103P504030	CHIP RESISTOR	1/16W 33kΩ-J
R 3BE	103P504040	CHIP RESISTOR	1/16W 39kΩ-J
R 3BF	103P504000	CHIP RESISTOR	1/16W 18kΩ-J
R 3BG	103P504030	CHIP RESISTOR	1/16W 33kΩ-J
R 3BH	103P503090	CHIP RESISTOR	1/16W 15kΩ-J
R 3BJ	103P504030	CHIP RESISTOR	1/16W 33kΩ-J
R 3BK	103P504040	CHIP RESISTOR	1/16W 39kΩ-J
R 3BL	103P504070	CHIP RESISTOR	1/16W 68kΩ-J
R 3BM	103P504010	CHIP RESISTOR	1/16W 22kΩ-J
R 3BN	103P504030	CHIP RESISTOR	1/16W 33kΩ-J
R 3BP	103P504010	CHIP RESISTOR	1/16W 22kΩ-J
R 3BS	103P504010	CHIP RESISTOR	1/16W 22kΩ-J
R 3BT	103P504030	CHIP RESISTOR	1/16W 33kΩ-J
R 3BU	103P504030	CHIP RESISTOR	1/16W 33kΩ-J
R 3BV	103P504010	CHIP RESISTOR	1/16W 22kΩ-J
R 3BY	103P495080	CHIP METAL	1/16W 24kΩ-F
R 3BZ	103P495080	CHIP METAL	1/16W 24kΩ-F
R 3CA	103P502050	CHIP RESISTOR	1/16W 1kΩ-J
R 3CB	103P502050	CHIP RESISTOR	1/16W 1kΩ-J
R 3CC	103P503020	CHIP RESISTOR	1/16W 3.9kΩ-J
R 3CE	103P503010	CHIP RESISTOR	1/16W 3.3kΩ-J
R 3CF	103P503070	CHIP RESISTOR	1/16W 10kΩ-J
~~R 3CG~~	~~103P509050~~	~~CHIP RESISTOR~~	~~0Ω RM1608~~
~~R 3CK~~	~~103P509050~~	~~CHIP RESISTOR~~	~~0Ω RM1608~~

SYMBOL NO.	PARTS NO.	PARTS NAME	DESCRIPTION
~~R 3CM~~	~~103P493080~~	~~CHIP METAL~~	~~1/16W 1.6kΩ-F~~
R 3CN	103P502070	CHIP RESISTOR	1/16W 1.5kΩ-J
R 3CP	103P500050	CHIP RESISTOR	1/16W 22Ω-J
R 3CR	103P509050	CHIP RESISTOR	0Ω RM1608
R 3CT	103P495000	CHIP METAL	1/16W 11kΩ-F
~~R 3CU~~	~~103P496020~~	~~CHIP METAL~~	~~1/16W 36kΩ-F~~
R 3CW	103P509050	CHIP RESISTOR	0Ω RM1608
R 3CZ	103P504030	CHIP RESISTOR	1/16W 33kΩ-J
R 3DA	103P493060	CHIP METAL	1/16W 3kΩ-F
R 3DB	103P500070	CHIP RESISTOR	1/16W 33Ω-J
R 3DC	103P504020	CHIP RESISTOR	1/16W 27kΩ-J
R 3DD	103P504050	CHIP RESISTOR	1/16W 47kΩ-J
R 3DE	103P504030	CHIP RESISTOR	1/16W 33kΩ-J
R 3DF	103P504030	CHIP RESISTOR	1/16W 33kΩ-J
R 3DG	103P504030	CHIP RESISTOR	1/16W 33kΩ-J
R 3DH	103P503010	CHIP RESISTOR	1/16W 3.3kΩ-J
R 3DJ	103P503010	CHIP RESISTOR	1/16W 3.3kΩ-J
R 3DK	103P506010	CHIP RESISTOR	1/16W 1MΩ-J
R 3DL	103P503040	CHIP RESISTOR	1/16W 5.6kΩ-J
R 3DM	103P502040	CHIP RESISTOR	1/16W 820Ω-J
R 3DN	103P504050	CHIP RESISTOR	1/16W 47kΩ-J
R 3DP	103P503080	CHIP RESISTOR	1/16W 12kΩ-J
R 3DQ	103P502080	CHIP RESISTOR	1/16W 2.7kΩ-J
R 3DR	103P502090	CHIP RESISTOR	1/16W 2.2kΩ-J
R 3GC	103P502010	CHIP RESISTOR	1/16W 470Ω-J
R 3GF	103P496030	CHIP RESISTOR	1/16W 39kΩ-F
R 3HA	103P504060	CHIP RESISTOR	1/16W 56kΩ-J
R 3HB	103P505020	CHIP RESISTOR	1/16W 180kΩ-J
R 3HE	103P506050	CHIP RESISTOR	1/16W 2.2MΩ-K
R 3HF	103P504040	CHIP RESISTOR	1/16W 39kΩ-J
R 3HH	103P503070	CHIP RESISTOR	1/16W 10kΩ-J
R 3HJ	103P503090	CHIP RESISTOR	1/16W 15kΩ-J
R 3JB	103P509050	CHIP RESISTOR	0Ω RM1608
R 3JC	103P503090	CHIP RESISTOR	1/16W 15kΩ-J
R 3JD	103P504030	CHIP RESISTOR	1/16W ~~33k~~ 47kΩ-J
R 3JE	103P504030	CHIP RESISTOR	1/16W 33kΩ-J
R 3JF	103P504010	CHIP RESISTOR	1/16W 22kΩ-J
R 3JG	103P504040	CHIP RESISTOR	1/16W 39kΩ-J
R 3JH	103P504070	CHIP RESISTOR	1/16W 68kΩ-J
R 3JJ	103P503000	CHIP RESISTOR	1/16W 2.7kΩ-J
R 3JM	103P502050	CHIP RESISTOR	1/16W 1kΩ-J
R 3JN	103P502050	CHIP RESISTOR	1/16W 1kΩ-J
R 3KA	103P502050	CHIP RESISTOR	1/16W 1kΩ-J
R 3KB	103P502050	CHIP RESISTOR	1/16W 1kΩ-J
R 3KC	103P501030	CHIP RESISTOR	1/16W 100Ω-J
R 3KD	103P502050	CHIP RESISTOR	1/16W 1kΩ-J
R 3KE	103P501050	CHIP RESISTOR	1/16W 150Ω-J
R 3KF	103P502050	CHIP RESISTOR	1/16W 1kΩ-J
R 3KG	103P506010	CHIP RESISTOR	1/16W 1MΩ-J
R 3KH	103P501030	CHIP RESISTOR	1/16W 100Ω-J
R 3KJ	103P503010	CHIP RESISTOR	1/16W 3.3kΩ-J
R 3KK	103P501030	CHIP RESISTOR	1/16W 100Ω-J
R 3KL	103P501030	CHIP RESISTOR	1/16W 100Ω-J
R 3KM	103P503000	CHIP RESISTOR	1/16W 2.7kΩ-J
R 3KN	103P501030	CHIP RESISTOR	1/16W 100Ω-J

SYMBOL NO.	PARTS NO.	PARTS NAME	DESCRIPTION
R 3KP	103P503000	CHIP RESISTOR	1/16W 2.7kΩ-J
R 3KR	103P503060	CHIP RESISTOR	1/16W 8.2kΩ-J
R 3LA	103P503090	CHIP RESISTOR	1/16W 15kΩ-J
R 3LB	103P504050	CHIP RESISTOR	1/16W 47kΩ-J
R 3LG	103P502050	CHIP RESISTOR	1/16W 1kΩ-J
R 3NA	103P503040	CHIP RESISTOR	1/16W 5.6kΩ-J
R 3NB	103P503040	CHIP RESISTOR	1/16W 5.6kΩ-J
R 3NC	103P504060	CHIP RESISTOR	1/16W 56kΩ-J
R 3ND	103P504020	CHIP RESISTOR	1/16W 27kΩ-J
R 3NE	103P502050	CHIP RESISTOR	1/16W 1kΩ-J
R 3NF	103P503010	CHIP RESISTOR	1/16W 3.3kΩ-J
R 3NG	103P501070	CHIP RESISTOR	1/16W 220Ω-J
R 3NH	103P502080	CHIP RESISTOR	1/16W 2.7kΩ-J
R 3NJ	103P503030	CHIP RESISTOR	1/16W 4.7kΩ-J
R 3NK	103P503040	CHIP RESISTOR	1/16W 5.6kΩ-J
R 3NL	103P502050	CHIP RESISTOR	1/16W 1kΩ-J
R 3NM	103P503080	CHIP RESISTOR	1/16W 12kΩ-J
R 3NN	103P503040	CHIP RESISTOR	1/16W 5.6kΩ-J
R 3NP	103P503020	CHIP RESISTOR	1/16W 3.9kΩ-J
R 3NQ	103P502050	CHIP RESISTOR	1/16W 1kΩ-J
R 3PA	103P504020	CHIP RESISTOR	1/16W 27kΩ-J
R 3PB	103P504010	CHIP RESISTOR	1/16W 22kΩ-J
R 3PK	103P502050	CHIP RESISTOR	1/16W 1kΩ-J
R 3PL	103P502090	CHIP RESISTOR	1/16W 2.2kΩ-J
R 3PM	103P502090	CHIP RESISTOR	1/16W 2.2kΩ-J
R 3PQ	103P502090	CHIP RESISTOR	1/16W 2.2kΩ-J
R 3PR	103P502080	CHIP RESISTOR	1/16W 2.7kΩ-J
R 3PS	103P503000	CHIP RESISTOR	1/16W 2.7kΩ-J
R 3PT	103P503070	CHIP RESISTOR	1/16W 10kΩ-J
R 3PU	103P504020	CHIP RESISTOR	1/16W 27kΩ-J
R 3PV	103P503080	CHIP RESISTOR	1/16W 12kΩ-J
R 3PW	103P503070	CHIP RESISTOR	1/16W 10kΩ-J
R 3PX	103P501060	CHIP RESISTOR	1/16W 180Ω-J
R 3PY	103P503030	CHIP RESISTOR	1/16W 4.7kΩ-J
R 3PZ	103P503070	CHIP RESISTOR	1/16W 10kΩ-J
~~R 3QA~~	~~103P493010~~	~~CHIP METAL~~	~~1/16W 1.8kΩ-F~~
~~R 3QB~~	~~103P493010~~	~~CHIP METAL~~	~~1/16W 1.8kΩ-F~~
~~R 3QC~~	~~103P491060~~	~~CHIP METAL~~	~~1/16W 430Ω-F~~
~~R 3QD~~	~~103P492050~~	~~CHIP METAL~~	~~1/16W 1kΩ-F~~
~~R 3QE~~	~~103P503070~~	~~CHIP RESISTOR~~	~~1/16W 10kΩ-J~~
~~R 3QF~~	~~103P503000~~	~~CHIP RESISTOR~~	~~1/16W 2.7kΩ-J~~
~~R 3QG~~	~~103P493000~~	~~CHIP METAL~~	~~1/16W 1.6kΩ-F~~
R 3QH	103P506000	CHIP RESISTOR	1/16W 820kΩ-J
R 3QL	103P509050	CHIP RESISTOR	0Ω RM1608
R 3QM	103P502050	CHIP RESISTOR	1/16W 1kΩ-J
R 3QN	103P502050	CHIP RESISTOR	1/16W 1kΩ-J
R 3QP	103P509050	CHIP RESISTOR	0Ω RM1608
R 3QQ	103P503000	CHIP RESISTOR	1/16W 2.7kΩ-J
R 3QR	103P504000	CHIP RESISTOR	1/16W 18kΩ-J
R 3QS	103P503090	CHIP RESISTOR	1/16W 15kΩ-J
R 3QT	103P503070	CHIP RESISTOR	1/16W 10kΩ-J
R 3QU	103P501030	CHIP RESISTOR	1/16W 100Ω-J
R 3QV	103P503020	CHIP RESISTOR	1/16W 3.9kΩ-J
R 3QW	103P493040	CHIP METAL	1/16W 2.4kΩ-F
R 3QX	103P493050	CHIP METAL	1/16W 2.7kΩ-F

SYMBOL NO.	PARTS NO.	PARTS NAME	DESCRIPTION
R 3QY	103P504020	CHIP RESISTOR	1/16W 27kΩ-J
~~R 3RA~~	~~103P504040~~	~~CHIP RESISTOR~~	~~1/16W 39kΩ-J~~
~~R 3RB~~	~~103P503090~~	~~CHIP RESISTOR~~	~~1/16W 15kΩ-J~~
R 3RC	103P491030	CHIP METAL	1/16W 330Ω-F
R 4AA	103P502050	CHIP RESISTOR	1/16W 1kΩ-J
~~R 4AB~~	~~103P509050~~	~~CHIP RESISTOR~~	~~0Ω RM1608~~
~~R 4AE~~	~~103P509050~~	~~CHIP RESISTOR~~	~~0Ω RM1608~~
~~R 4AL~~	~~103P509050~~	~~CHIP RESISTOR~~	~~0Ω RM1608~~
~~R 4AP~~	~~103P501030~~	~~CHIP RESISTOR~~	~~1/16W 100Ω-J~~
R 5AA	103P503070	CHIP RESISTOR	1/16W 10kΩ-J
R 5AB	103P503070	CHIP RESISTOR	1/16W 10kΩ-J
R 5AC	103P503070	CHIP RESISTOR	1/16W 10kΩ-J
R 5AD	103P502050	CHIP RESISTOR	1/16W 1kΩ-J
R 5AE	103P502050	CHIP RESISTOR	1/16W 1kΩ-J
R 5AF	103P500080	CHIP RESISTOR	1/16W 39Ω-J
R 5AG	103P494050	CHIP METAL	1/16W 6.8kΩ-F
R 5AH	103P503090	CHIP RESISTOR	1/16W 15kΩ-J
~~R 5AJ~~	~~103P504010~~	~~CHIP RESISTOR~~	~~1/16W 22kΩ-J~~
~~R 5AK~~	~~103P503070~~	~~CHIP RESISTOR~~	~~1/16W 10kΩ-J~~
~~R 5AL~~	~~103P504000~~	~~CHIP RESISTOR~~	~~1/16W 18kΩ-J~~
R 5AM	103P503070 (3070)	CHIP RESISTOR	1/16W 10kΩ-J (10K)
R 5AN	103P503040	CHIP RESISTOR	1/16W ~~150~~kΩ-J
R 5AP	103P503030	CHIP RESISTOR	1/16W 4.7kΩ-J
R 5AV	103P504010	CHIP RESISTOR	1/16W 22kΩ-J
R 5AY	103P503070	CHIP RESISTOR	1/16W 10kΩ-J
R 5EJ	103P503030	CHIP RESISTOR	1/16W 4.7kΩ-J
R 5EK	103P501030	CHIP RESISTOR	1/16W 100Ω-J
R 5EL	103P503000	CHIP RESISTOR	1/16W 2.7kΩ-J
R 5EM	103P501030	CHIP RESISTOR	1/16W 100Ω-J
R 5FA	103P501090	CHIP RESISTOR	1/16W 330Ω-J
R 5FB	103P502030	CHIP RESISTOR	1/16W 680Ω-J
R 5FC	103P494020	CHIP METAL	1/16W 5.1kΩ-F
R 5FD	103P503020	CHIP RESISTOR	1/16W 3.9kΩ-J
R 5FE	103P503050	CHIP RESISTOR	1/16W 6.8kΩ-J
R 5FF	103P502020	CHIP RESISTOR	1/16W 560Ω-J
R 5FG	103P493020	CHIP METAL	1/16W 2kΩ-F
R 5FH	103P501030	CHIP RESISTOR	1/16W 100Ω-J
R 5FJ	103P503050	CHIP RESISTOR	1/16W 6.8kΩ-J
R 5FK	103P502020	CHIP RESISTOR	1/16W 560Ω-J
R 5FL	103P501060	CHIP RESISTOR	1/16W 180Ω-J
R 5FM	103P493010	CHIP METAL	1/16W 1.8kΩ-F
R 5FN	103P492080	CHIP RESISTOR	1/16W 1.3kΩ-F
R 5FP	103P492090	CHIP RESISTOR	1/16W 1.5kΩ-F
R 5FQ	103P493030	CHIP METAL	1/16W 2.2kΩ-F
R 5FR	103P502060	CHIP RESISTOR	1/16W 1.2kΩ-J
R 5FS	103P501090	CHIP RESISTOR	1/16W 330Ω-J
R 5FT	103P502050	CHIP RESISTOR	1/16W 1kΩ-J
R 5FU	103P503050	CHIP RESISTOR	1/16W 6.8kΩ-J
R 5FV	103P502020	CHIP RESISTOR	1/16W 560Ω-J
R 5FW	103P493090	CHIP METAL	1/16W 3.9kΩ-F
R 5FY	103P493090	CHIP METAL	1/16W 3.9kΩ-F
R 5FZ	103P495080	CHIP METAL	1/16W 24kΩ-F
R 5GE	103P502050	CHIP RESISTOR	1/16W 1kΩ-J
R 5GF	103P504050	CHIP RESISTOR	1/16W 47kΩ-J
R 5GG	103P503070	CHIP RESISTOR	1/16W 10kΩ-J

SYMBOL NO.	PARTS NO.	PARTS NAME	DESCRIPTION
R 5GH	103P494020	CHIP METAL	1/16W 5.1kΩ-F
R 5GJ	103P503070	CHIP RESISTOR	1/16W 10kΩ-J
R 5GK	103P503020	CHIP RESISTOR	1/16W 3.9kΩ-J
R 5GL	103P502090	CHIP RESISTOR	1/16W 2.2kΩ-J
R 5GM	103P503070	CHIP RESISTOR	1/16W 10kΩ-J
R 5GN	103P501030	CHIP RESISTOR	1/16W 100Ω-J
R 5GP	103P503060	CHIP RESISTOR	1/16W 8.2kΩ-J
R 5GQ	103P501090	CHIP RESISTOR	1/16W 330Ω-J
R 5GR	103P502050	CHIP RESISTOR	1/16W 1kΩ-J
R 5GS	103P504010	CHIP RESISTOR	1/16W 22kΩ-J
R 5GT	103P504010	CHIP RESISTOR	1/16W 22kΩ-J
R 5GY	103P504000	CHIP RESISTOR	1/16W 18kΩ-J
R 5~~H~~	103P509050	CHIP RESISTOR	0Ω RM1608
R 5JT	103P509050	CHIP RESISTOR	0Ω RM1608
R 5JV	103P509050	CHIP RESISTOR	0Ω RM1608
R 5JX	103P509050	CHIP RESISTOR	0Ω RM1608
R 5LA	103P503030	CHIP RESISTOR	1/16W 4.7kΩ-J
R 5LB	103P506050	CHIP RESISTOR	1/16W 2.2MΩ-K
R 5LC	103P504050	CHIP RESISTOR	1/16W 47kΩ-J
R 5LD	103P504050	CHIP RESISTOR	1/16W 47kΩ-J
R 5LE	103P502090	CHIP RESISTOR	1/16W 2.2kΩ-J
R 5LF	103P502050	CHIP RESISTOR	1/16W 1kΩ-J
R 5LG	103P496000	CHIP METAL	1/16W 30kΩ-F
R 5LH	103P505000	CHIP RESISTOR	1/16W 120kΩ-J
R 5LJ	103P492090	CHIP RESISTOR	1/16W 1.5kΩ-F
R 5LK	103P491080	CHIP METAL	1/16W 510Ω-F
R 5LL	103P495010	CHIP METAL	1/16W 12kΩ-F
R 5LM	103P497050	CHIP METAL	1/16W 120kΩ-F
R 5LN	103P495010	CHIP METAL	1/16W 12kΩ-F
R 5LP	103P504090	CHIP RESISTOR	1/16W 100kΩ-J
R 5LQ	103P504060	CHIP RESISTOR	1/16W 56kΩ-J
R 5LR	103P495070	CHIP METAL	1/16W 22kΩ-F
R 5LS	103P496010	CHIP METAL	1/16W 33kΩ-F
R 5LU	103P502000	CHIP RESISTOR	1/16W 390Ω-J
R 5LV	103P495070	CHIP METAL	1/16W 22kΩ-F
R 5LW	103P502010	CHIP RESISTOR	1/16W 470Ω-J
R 5LX	103P501020	CHIP RESISTOR	1/16W 82Ω-J
R 5LY	103P509010	CHIP METAL	1/16W 8.2Ω-K
R 5MA	103P508050	CHIP RESISTOR	1/16W 2.7Ω-K
R 5MC	103P508050	CHIP RESISTOR	1/16W 2.7Ω-K
R 5SA	103P502050	CHIP RESISTOR	1/16W 1kΩ-J
R 5ZA	103P498000	CHIP METAL	1/16W 200kΩ-F
R 5ZB	103P497030	CHIP METAL	1/16W 100kΩ-F
R 5ZC	103P496050	CHIP METAL	1/16W 47kΩ-F
R 5ZD	103P495080	CHIP METAL	1/16W 24kΩ-F
R 5ZE	103P495010	CHIP METAL	1/16W 12kΩ-F
R 5ZH	103P494090	CHIP METAL	1/16W 10kΩ-F
R 5ZL	103P493020	CHIP METAL	1/16W 2kΩ-F
R 6AA	103P504050	CHIP RESISTOR	1/16W 47kΩ-J
R 6HG	103P504050	CHIP RESISTOR	1/16W 47kΩ-J
R 6VG	103P504050	CHIP RESISTOR	1/16W 47kΩ-J
~~R 8AA~~	~~103P509050~~	~~CHIP RESISTOR~~	~~0Ω RM1608~~
R 8AC	103P495020	CHIP METAL	1/16W 13kΩ-F
R 8AD	103P503070	CHIP RESISTOR	1/16W 10kΩ-J
R 8AF	103P494090	CHIP METAL	1/16W 10kΩ-F

SYMBOL NO.	PARTS NO.	PARTS NAME	DESCRIPTION
R 8AG	103P494090	CHIP METAL	1/16W 10kΩ-F
R 8AH	103P503070	CHIP RESISTOR	1/16W 10kΩ-J
R 8AJ	103P504020	CHIP RESISTOR	1/16W 27kΩ-J
R 8BA	103P504090	CHIP RESISTOR	1/16W 100kΩ-J
R 8CA	103P509050	CHIP RESISTOR	0Ω RM1608
R 8SA	103P503020	CHIP RESISTOR	1/16W 3.9kΩ-J
R 8TA	103P504090	CHIP RESISTOR	1/16W 100kΩ-J
R 9AA	103P501030	CHIP RESISTOR	1/16W 100Ω-J
R 9AB	103P493000	CHIP METAL	1/16W 1.6kΩ-F
R 9AC	103P492090	CHIP RESISTOR	1/16W 1.5kΩ-F
R 9AD	103P502050	CHIP RESISTOR	1/16W 1kΩ-J
R 9AE	103P491030	CHIP METAL	1/16W 330Ω-F
R 9AG	103P504090	CHIP RESISTOR	1/16W 100kΩ-J
R 9AH	103P494050	CHIP METAL	1/16W 6.8kΩ-F
R 9AJ	103P494050	CHIP METAL	1/16W 6.8kΩ-F
R 9AK	103P495050	CHIP METAL	1/16W 18kΩ-F
R 9AL	103P493090	CHIP METAL	1/16W 3.9kΩ-F
R 9AM	103P509090	CHIP RESISTOR	1/16W 75Ω-J
R 9AN	103P509090	CHIP RESISTOR	1/16W 75Ω-J
R 9AP	103P504090	CHIP RESISTOR	1/16W 100kΩ-J
R 9AQ	103P504090	CHIP RESISTOR	1/16W 100kΩ-J
R 9AR	103P509090	CHIP RESISTOR	1/16W 75Ω-J
R 9AS	103P493090	CHIP METAL	1/16W ~~2.7k~~Ω-F
R 9AT	103P493060	CHIP METAL	1/16W 3kΩ-F
R 9AU	103P491050	CHIP METAL	1/16W 390Ω-F
R 9AV	103P491070	CHIP METAL	1/16W 470Ω-F
R 9AW	103P501030	CHIP RESISTOR	1/16W 100Ω-J
R 9AY	103P495030	CHIP METAL	1/16W 15kΩ-F
R 9AZ	103P359050	CHIP RESISTOR	1/8W 0Ω
R 9BA	103P359050	CHIP RESISTOR	1/8W 0Ω
R 9BC	103P359050	CHIP RESISTOR	1/8W 0Ω
R 9BD	103P503030	CHIP RESISTOR	1/16W 4.7kΩ-J
R 9BX	103P509050	CHIP RESISTOR	0Ω RM1608
R 9BY	103P509050	CHIP RESISTOR	0Ω RM1608
R 9CA	103P502050	CHIP RESISTOR	1/16W 1kΩ-J
R 9CB	103P504030	CHIP RESISTOR	1/16W 33kΩ-J
R 9CC	103P504030	CHIP RESISTOR	1/16W 33kΩ-J
R 9CD	103P502080	CHIP RESISTOR	1/16W 2.7kΩ-J
R 9CE	103P504090	CHIP RESISTOR	1/16W 100kΩ-J
R 9CF	103P503020	CHIP RESISTOR	1/16W 3.9kΩ-J
R 9EA	103P509090	CHIP RESISTOR	1/16W 75Ω-J
R 9EB	103P503070	CHIP RESISTOR	1/16W 10kΩ-J
R 9EC	103P504040	CHIP RESISTOR	1/16W 39kΩ-J
R 9ED	103P502050	CHIP RESISTOR	1/16W 1kΩ-J
R 9EE	103P502000	CHIP RESISTOR	1/16W 390Ω-J
R 9EF	103P503010	CHIP RESISTOR	1/16W 3.3kΩ-J
R 9EG	103P501080	CHIP RESISTOR	1/16W 270Ω-J
R 9EH	103P503050	CHIP RESISTOR	1/16W 6.8kΩ-J
R 9EJ	103P503070	CHIP RESISTOR	1/16W 10kΩ-J
R 9EK	103P500070	CHIP RESISTOR	1/16W 33Ω-J
R 9EL	103P504090	CHIP RESISTOR	1/16W 100kΩ-J
R 9EM	103P502090	CHIP RESISTOR	1/16W 2.2kΩ-J
R 9GA	103P509050	CHIP RESISTOR	0Ω RM1608
R 9GB	103P502090	CHIP RESISTOR	1/16W 2.2kΩ-J
R 9GC	103P509050	CHIP RESISTOR	0Ω RM1608

SYMBOL NO.	PARTS NO.	PARTS NAME	DESCRIPTION
R 9GE	103P494010	CHIP METAL	1/16W 4.7kΩ-F
R 9GF	103P501030	CHIP RESISTOR	1/16W 100Ω-J
R 9GG	103P509050	CHIP RESISTOR	0Ω RM1608
R 9GH	103P501030	CHIP RESISTOR	1/16W 100Ω-J
R 9GJ	103P509050	CHIP RESISTOR	0Ω RM1608
R 9GK	103P495070	CHIP METAL	1/16W 22kΩ-F
R 9GL	103P504050	CHIP RESISTOR	1/16W 47kΩ-J
R 9GM	103P504050	CHIP RESISTOR	1/16W 47kΩ-J
R 9GN	103P504050	CHIP RESISTOR	1/16W 47kΩ-J
R 9GP	103P504050	CHIP RESISTOR	1/16W 47kΩ-J
R 9MA	103P504050	CHIP RESISTOR	1/16W 47kΩ-J
R 9MB	103P504050	CHIP RESISTOR	1/16W 47kΩ-J
R 9MC	103P504050	CHIP RESISTOR	1/16W 47kΩ-J
R 9ME	103P504050	CHIP RESISTOR	1/16W 47kΩ-J
R 9MJ	103P504050	CHIP RESISTOR	1/16W 47kΩ-J
R 9MU	103P504050	CHIP RESISTOR	1/16W 47kΩ-J
R 9MV	103P504030	CHIP RESISTOR	1/16W 33kΩ-J
R 9MW	103P504030	CHIP RESISTOR	1/16W 33kΩ-J
R 9MX	103P504030	CHIP RESISTOR	1/16W 33kΩ-J
R 9MY	103P503070	CHIP RESISTOR	1/16W 10kΩ-J
R 9PA	103P496000	CHIP METAL	1/16W 30kΩ-F
R 9PB	103P497010	CHIP METAL	1/16W 82kΩ-F
R 9PC	103P496010	CHIP METAL	1/16W 33kΩ-F
R 9PD	103P497010	CHIP METAL	1/16W 82kΩ-F
R 9PE	103P496050	CHIP METAL	1/16W 47kΩ-F
R 9PH	103P504070	CHIP RESISTOR	1/16W 68kΩ-J
R 9PJ	103P502000	CHIP RESISTOR	1/16W 390Ω-J
R 9PK	103P402080	CHIP RESISTOR	1/10W 1.8kΩ-J
R 9PL	103P504010	CHIP RESISTOR	1/16W 22kΩ-J
R 9PM	103P494020	CHIP METAL	1/16W 5.1kΩ-F
R 9PN	103P495030	CHIP METAL	1/16W 15kΩ-F
R 9PP	103P494010	CHIP METAL	1/16W 4.7kΩ-F
R 9PQ	103P502000	CHIP RESISTOR	1/16W 390Ω-J
R 9PR	103P352070	CHIP RESISTOR	1/8W 1.5kΩ-J
R 9PS	103P504020	CHIP RESISTOR	1/16W 27kΩ-J
R 9PT	103P495010	CHIP METAL	1/16W 12kΩ-F
R 9PU	103P494090	CHIP METAL	1/16W 10kΩ-F
R 9PV	103P504030	CHIP RESISTOR	1/16W 33kΩ-J
R 9PW	103P504080	CHIP RESISTOR	1/16W 82kΩ-J
R 9PX	103P494090	CHIP METAL	1/16W 10kΩ-F
R 9PY	103P502000	CHIP RESISTOR	1/16W 390Ω-J
R 9PZ	103P503020	CHIP RESISTOR	1/16W 3.9kΩ-J
R 9QA	103P504050	CHIP RESISTOR	1/16W 47kΩ-J
R 9QB	103P493020	CHIP METAL	1/16W 2kΩ-F
R 9QC	103P495080	CHIP METAL	1/16W 24kΩ-F
R 9QD	103P500090	CHIP RESISTOR	1/20W 47Ω-J
R 9QE	103P352070	CHIP RESISTOR	1/8W 1.5kΩ-J
R 9RA	103P503060	CHIP RESISTOR	1/16W 8.2kΩ-J
R 9RB	103P503040	CHIP RESISTOR	1/16W 5.6kΩ-J
R 9RC	103P503070	CHIP RESISTOR	1/16W 10kΩ-J
R 9RD	103P504010	CHIP RESISTOR	1/16W 22kΩ-J
R 9RE	103P502050	CHIP RESISTOR	1/16W 1kΩ-J
R 9RF	103P352090	CHIP METAL	1/8W 2.2kΩ-J
R 9RG	103P503030	CHIP RESISTOR	1/16W 4.7kΩ-J
R 9RH	103P503030	CHIP RESISTOR	1/16W 4.7kΩ-J
R 9RJ	103P352090	CHIP METAL	1/8W 2.2kΩ-J
R 9RL	103P509050	CHIP RESISTOR	0Ω RM1608
R 9RM	103P509050	CHIP RESISTOR	0Ω RM1608
R 9RN	103P509050	CHIP RESISTOR	0Ω RM1608
R 9RP	103P502030	CHIP RESISTOR	1/16W 680Ω-J
R 9RQ	103P502030	CHIP RESISTOR	1/16W 680Ω-J
R 9RR	103P502030	CHIP RESISTOR	1/16W 680Ω-J
R 9SA	103P494040	CHIP METAL	1/16W 6.2kΩ-F
R 9SB	103P493030	CHIP METAL	1/16W 2.2kΩ-F
R 9SC	103P494070	CHIP METAL	1/16W 8.2kΩ-F
R 9SD	103P502050	CHIP RESISTOR	1/16W 1kΩ-J
R 9SE	103P502050	CHIP RESISTOR	1/16W 1kΩ-J
R 9SG	103P504090	CHIP RESISTOR	1/16W 100kΩ-J
R 9SH	103P503070	CHIP RESISTOR	1/16W 10kΩ-J
R 9TA	103P503050	CHIP RESISTOR	1/16W 6.8kΩ-J
R 9TB	103P505030	CHIP RESISTOR	1/16W 220kΩ-J
R 9TC	103P501010	CHIP RESISTOR	1/16W 68Ω-J
R 9TD	103P503020	CHIP RESISTOR	1/16W 3.9kΩ-J
R 9TK	103P501070	CHIP RESISTOR	1/16W 220Ω-J
R 9TL	103P502030	CHIP RESISTOR	1/16W 680Ω-J
R 9TM	103P509050	CHIP RESISTOR	0Ω RM1608
R 9TN	103P509050	CHIP RESISTOR	0Ω RM1608
R 9TW	103P359050	CHIP RESISTOR	1/8W 0Ω
		CAPACITORS AND TRIMMERS	
C 2AA	141P135070	CHIP CAPACITOR	F16V 1μF-Z
C 2AC	181P500080	CHIP ELECTROLYTIC-C	10V 33μF-M
C 2AE	141P143080	CHIP CAPACITOR	F50V 0.01μF-Z
C 2AF	181P505000	CHIP ELECTROLYTIC-C	35V 10μF-M
C 2AG	141P140090	CHIP CAPACITOR	B50V 1000pF-K
C 2AH	141P143080	CHIP CAPACITOR	F50V 0.01μF-Z
C 2AJ	181P509080	CHIP ELECTROLYTIC-C	50V 1μF-M
C 2BA	141P143080	CHIP CAPACITOR	F50V 0.01μF-Z
C 2BB	141P143080	CHIP CAPACITOR	F50V 0.01μF-Z
C 2BC	181P508070	CHIP ELECTROLYTIC-C	16V 4.7μF-M
C 2BD	141P143080	CHIP CAPACITOR	F50V 0.01μF-Z
C 2BF	141P143080	CHIP CAPACITOR	F50V 0.01μF-Z
C 2BG	141P143080	CHIP CAPACITOR	F50V 0.01μF-Z
C 2BJ	141P143080	CHIP CAPACITOR	F50V 0.01μF-Z
C 2CA	141P140090	CHIP CAPACITOR	B50V 1000pF-K
C 2CC	141P143080	CHIP CAPACITOR	F50V 0.01μF-Z
C 2CM	141P143080	CHIP CAPACITOR	F50V 0.01μF-Z
C 2CN	181P520040	CHIP ELECTROLYTIC-C	6.3V 100μF-M
C 2CP	181P508050	CHIP ELECTROLYTIC-C	6.3V 22μF-M
C 2CQ	141P143080	CHIP CAPACITOR	F50V 0.01μF-Z
C 2CR	141P143080	CHIP CAPACITOR	F50V 0.01μF-Z
C 2EA	181P509030	CHIP ELECTROLYTIC-C	35V 3.3μF-M
C 2EB	181P509080	CHIP ELECTROLYTIC-C	50V 1μF-M
C 2EC	141P135080	CHIP CAPACITOR	F25V 0.1μF-Z
C 2ED	141P139030	CHIP CAPACITOR	B25V 0.1μF-K
C 2EE	181P509080	CHIP ELECTROLYTIC-C	50V 1μF-M
C 3AA	181P508050	CHIP ELECTROLYTIC-C	6.3V 22μF-M
C 3AB	141P143080	CHIP CAPACITOR	F50V 0.01μF-Z
C 3AC	189P125010	C-TANT	25V0.47μF-M
C 3AD	189P125010	C-TANT	25V0.47μF-M

SYMBOL NO.	PARTS NO.	PARTS NAME	DESCRIPTION
C 3AE	141P135080	CHIP CAPACITOR	F25V 0.1μF-Z
C 3AF	189P122010	C-TANT	10V 2.2μF-M
C 3AG	189P123010	C-TANT	16V 1μF-M
C 3AH	141P135080	CHIP CAPACITOR	F25V 0.1μF-Z
C 3AJ	141P135080	CHIP CAPACITOR	F25V 0.1μF-Z
C 3AK	189P121020	C-TANT	6.3V 4.7μF-M
C 3AL	189P121020	C-TANT	6.3V 4.7μF-M
C 3AM	141P135080	CHIP CAPACITOR	F25V 0.1μF-Z
C 3AQ	181P510070	CHIP ELECTROLYTIC-C	NP10V 10μF-M
C 3AR	141P135070	CHIP CAPACITOR	F16V 1μF-Z
C 3AT	141P135080	CHIP CAPACITOR	F25V 0.1μF-Z
C 3AU	141P135080	CHIP CAPACITOR	F25V 0.1μF-Z
C 3AV	141P135080	CHIP CAPACITOR	F25V 0.1μF-Z
C 3BA	181P508050	CHIP ELECTROLYTIC-C	6.3V 22μF-M
C 3BB	141P143080	CHIP CAPACITOR	F50V 0.01μF-Z
C 3BC	141P144020	CHIP CAPACITOR	F16V 0.1μF-Z
C 3BD	141P144020	CHIP CAPACITOR	F16V 0.1μF-Z
C 3BE	141P144020	CHIP CAPACITOR	F16V 0.1μF-Z
C 3BF	141P144020	CHIP CAPACITOR	F16V 0.1μF-Z
C 3BG	141P135080	CHIP CAPACITOR	F25V 0.1μF-Z
C 3BH	141P135080	CHIP CAPACITOR	F25V 0.1μF-Z
C 3BJ	141P144020	CHIP CAPACITOR	F16V 0.1μF-Z
C 3BK	141P144020	CHIP CAPACITOR	F16V 0.1μF-Z
C 3BL	141P135080	CHIP CAPACITOR	F25V 0.1μF-Z
C 3BM	141P135080	CHIP CAPACITOR	F25V 0.1μF-Z
C 3BN	141P135080	CHIP CAPACITOR	F25V 0.1μF-Z
C 3BP	141P135080	CHIP CAPACITOR	F25V 0.1μF-Z
C 3BQ	141P135080	CHIP CAPACITOR	F25V 0.1μF-Z
C 3BR	141P135080	CHIP CAPACITOR	F25V 0.1μF-Z
C 3BS	154P343010	CHIP CAPACITOR	CH50V 68pF-J
C 3CB	141P143080	CHIP CAPACITOR	F50V 0.01μF-Z
C 3CC	154P342030	CHIP CAPACITOR	CH50V 33pF-J
C 3CD	154P342030	CHIP CAPACITOR	CH50V 33pF-J
C 3CE	141P135080	CHIP CAPACITOR	F25V 0.1μF-Z
C 3CF	141P144020	CHIP CAPACITOR	F16V 0.1μF-Z
C 3CG	141P140090	CHIP CAPACITOR	B50V 1000pF-K
C 3CJ	141P144020	CHIP CAPACITOR	F16V 0.1μF-Z
C 3CK	154P343010	CHIP CAPACITOR	CH50V 22pF-J
C 3CL	141P143080	CHIP CAPACITOR	F50V 0.01μF-Z
C 3CM	141P135080	CHIP CAPACITOR	F25V 0.1μF-Z
C 3CN	141P135080	CHIP CAPACITOR	F25V 0.1μF-Z
C 3CP	141P135080	CHIP CAPACITOR	F25V 0.1μF-Z
C 3CQ	141P135080	CHIP CAPACITOR	F25V 0.1μF-Z
C 3CR	141P135080	CHIP CAPACITOR	F25V 0.1μF-Z
C 3CS	141P135080	CHIP CAPACITOR	F25V 0.1μF-Z
C 3CT	141P144020	CHIP CAPACITOR	F16V 0.1μF-Z
C 3DA	189P121020	C-TANT	6.3V 4.7μF-M
C 3DB	141P143080	CHIP CAPACITOR	F50V 0.01μF-Z
C 3DC	189P125030	C-TANT	25V 1μF-M
C 3DE	141P135080	CHIP CAPACITOR	F25V 0.1μF-Z
C 3DF	141P144000	CHIP CAPACITOR	F25V 0.033μF-Z
C 3EA	141P135080	CHIP CAPACITOR	F25V 0.1μF-Z
C 3EB	141P135080	CHIP CAPACITOR	F25V 0.1μF-Z
C 3EC	141P135080	CHIP CAPACITOR	F25V 0.1μF-Z
C 3ED	141P135080	CHIP CAPACITOR	F25V 0.1μF-Z

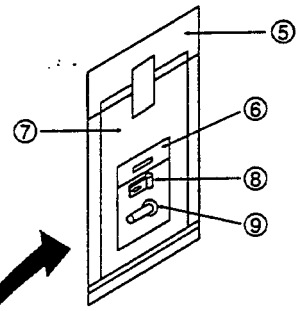
SYMBOL NO.	PARTS NO.	PARTS NAME	DESCRIPTION
C 3KA	181P508050	CHIP ELECTROLYTIC-C	6.3V 22μF-M
C 3KB	141P143080	CHIP CAPACITOR	F50V 0.01μF-Z
C 3KC	181P508050	CHIP ELECTROLYTIC-C	6.3V 22μF-M
C 3KD	141P143080	CHIP CAPACITOR	F50V 0.01μF-Z
C 3KE	154P341030	CHIP CAPACITOR	CH50V 12pF-J
C 3KF	141P144020	CHIP CAPACITOR	F16V 0.1μF-Z
C 3KG	141P135070	CHIP CAPACITOR	F16V 1μF-Z
C 3KH	141P135080	CHIP CAPACITOR	F25V 0.1μF-Z
C 3KJ	141P135070	CHIP CAPACITOR	F16V 1μF-Z
C 3KK	141P135080	CHIP CAPACITOR	F25V 0.1μF-Z
C 3KL	141P135080	CHIP CAPACITOR	F25V 0.1μF-Z
C 3KM	141P135080	CHIP CAPACITOR	F25V 0.1μF-Z
C 3KN	141P135070	CHIP CAPACITOR	F16V 1μF-Z
C 3KP	141P135070	CHIP CAPACITOR	F16V 1μF-Z
C 3KQ	141P135080	CHIP CAPACITOR	F25V 0.1μF-Z
C 3KR	141P140090	CHIP CAPACITOR	B50V 1000pF-K
C 3NA	181P508080	CHIP ELECTROLYTIC-C	16V 10μF-M
C 3NB	141P135080	CHIP CAPACITOR	F25V 0.1μF-Z
C 3PB	181P508050	CHIP ELECTROLYTIC-C	6.3V 22μF-M
~~C 3QA~~	~~141P135070~~	~~CHIP CAPACITOR~~	~~F16V 1μF-Z~~
~~C 3QB~~	~~141P135070~~	~~CHIP CAPACITOR~~	~~F16V 1μF-Z~~
~~C 3QC~~	~~141P140090~~	~~CHIP CAPACITOR~~	~~B50V 1000pF-K~~
~~C 3QD~~	~~141P143080~~	~~CHIP CAPACITOR~~	~~F50V 0.01μF-Z~~
~~C 3QE~~	~~154P342030~~	~~CHIP CAPACITOR~~	~~CH50V 33pF-J~~
C 3QG	141P135070	CHIP CAPACITOR	F16V 1μF-Z
~~C 3RA~~	~~141P143080~~	~~CHIP CAPACITOR~~	~~F50V 0.01μF-Z~~
C 3RC	154P355020	CHIP CAPACITOR	SL50V 470pF-J
C 3RE	141P143050	CHIP CAPACITOR	F50V 1000pF-Z
C 4AA	181P508050	CHIP ELECTROLYTIC-C	6.3V 22μF-M
C 4AB	141P143080	CHIP CAPACITOR	F50V 0.01μF-Z
C 4AD	154P342030	CHIP CAPACITOR	CH50V 33pF-J
C 5AA	141P135080	CHIP CAPACITOR	F25V 0.1μF-Z
C 5AB	189P125030	C-TANT	25V 1μF-M
C 5AC	141P144020	CHIP CAPACITOR	F16V 0.1μF-Z
C 5AD	141P135080	CHIP CAPACITOR	F25V 0.1μF-Z
C 5AE	141P135080	CHIP CAPACITOR	F25V 0.1μF-Z
C 5AF	181P508050	CHIP ELECTROLYTIC-C	6.3V 22μF-M
C 5AG	141P135080	CHIP CAPACITOR	F25V 0.1μF-Z
C 5AH	181P508050	CHIP ELECTROLYTIC-C	6.3V 22μF-M
C 5AJ	141P135080	CHIP CAPACITOR	F25V 0.1μF-Z
~~C 5AM~~	~~181P516010~~	~~CHIP ELECTROLYTIC-C~~	~~NP 50V 1μF~~
~~C 5AN~~	~~141P135070~~	~~CHIP CAPACITOR~~	~~F16V 1μF-Z~~
C 5AQ	154P343050	CHIP CAPACITOR	CH50V 100pF-J
C 5EA	141P135080	CHIP CAPACITOR	F25V 0.1μF-Z
C 5EB	141P135080	CHIP CAPACITOR	F25V 0.1μF-Z
C 5EC	141P135080	CHIP CAPACITOR	F25V 0.1μF-Z
C 5FA	154P342030	CHIP CAPACITOR	CH50V 33pF-J
C 5FB	154P342030	CHIP CAPACITOR	CH50V 33pF-J
C 5FC	141P143080	CHIP CAPACITOR	F50V 0.01μF-Z
C 5FD	154P329020	CHIP CAPACITOR	SL25V 4700pF-J
C 5FE	181P508050	CHIP ELECTROLYTIC-C	6.3V 22μF-M
C 5FF	141P135080	CHIP CAPACITOR	F25V 0.1μF-Z
C 5FG	141P143080	CHIP CAPACITOR	F50V 0.01μF-Z
C 5FH	154P329020	CHIP CAPACITOR	SL25V 4700pF-J
C 5FJ	141P135080	CHIP CAPACITOR	F25V 0.1μF-Z

SYMBOL NO.	PARTS NO.	PARTS NAME	DESCRIPTION
C 5FL	181P508050	CHIP ELECTROLYTIC-C	6.3V 22μF-M
C 5FN	154P343050	CHIP CAPACITOR	CH50V 100pF-J
C 5FP	154P344050	CHIP CAPACITOR	CH25V 270pF-J
C 5FQ	141P135080	CHIP CAPACITOR	F25V 0.1μF-Z
C 5FR	141P135080	CHIP CAPACITOR	F25V 0.1μF-Z
C 5FS	141P135070	CHIP CAPACITOR	F16V 1μF-Z
C 5FT	154P343050	CHIP CAPACITOR	CH50V 100pF-J
C 5FU	141P135080	CHIP CAPACITOR	F25V 0.1μF-Z
C 5GB	141P135080	CHIP CAPACITOR	F25V 0.1μF-Z
C 5GC	141P135070	CHIP CAPACITOR	F16V 1μF-Z
C 5GD	141P135080	CHIP CAPACITOR	F25V 0.1μF-Z
C 5GE	141P135070	CHIP CAPACITOR	F16V 1μF-Z
C 5LA	141P138080	CHIP CAPACITOR	B25V 0.33μF-K
C 5LB	141P140090	CHIP CAPACITOR	B50V 1000pF-K
C 5LC	141P144020	CHIP CAPACITOR	F16V 0.1μF-Z
C 5LD	189P121010	C-TANT	6.3V 3.3μF-M
C 5LP	141P135080	CHIP CAPACITOR	F25V 0.1μF-Z
C 5MA	141P141050	CHIP CAPACITOR	B50V 3300pF-K
C 5MB	141P135080	CHIP CAPACITOR	F25V 0.1μF-Z
C 5MC	181P500080	CHIP ELECTROLYTIC-C	10V 33μF-M
C 5TA	189P123010	C-TANT	16V 1μF-M
C 5ZA	141P143080	CHIP CAPACITOR	F50V 0.01μF-Z
C 5ZB	141P136060	CHIP CAPACITOR	F16V 4.7μF-Z
C 5ZC	141P135000	CHIP CAPACITOR	F25V 0.22μF-Z
C 6AA	141P135080	CHIP CAPACITOR	F25V 0.1μF-Z
C 6VD	181P500040	CHIP ELECTROLYTIC-C	6.3V 100μF-M
C 8AA	141P143080	CHIP CAPACITOR	F50V 0.01μF-Z
C 8AB	141P141070	CHIP CAPACITOR	B50V 4700pF-K
C 8AD	141P139030	CHIP CAPACITOR	B25V 0.1μF-K
C 8AE	141P142010	CHIP CAPACITOR	B25V 0.01μF-K
C 8BA	154P342030	CHIP CAPACITOR	CH50V 33pF-J
C 8TA	181P508050	CHIP ELECTROLYTIC-C	6.3V 22μF-M
C 9AA	189P123070	C-TANT	16V 10μF-M
C 9AC	141P143080	CHIP CAPACITOR	F50V 0.01μF-Z
C 9AG	181P515000	CHIP ELECTROLYTIC-C	NP35V 10μF-M
C 9AH	141P143080	CHIP CAPACITOR	F50V 0.01μF-Z
C 9AJ	189P121020	C-TANT	6.3V 4.7μF-M
C 9AK	141P143080	CHIP CAPACITOR	F50V 0.01μF-Z
C 9AL	141P143080	CHIP CAPACITOR	F50V 0.01μF-Z
C 9AM	189P123010	C-TANT	16V 1μF-M
C 9AQ	141P143080	CHIP CAPACITOR	F50V 0.01μF-Z
C 9AR	141P144020	CHIP CAPACITOR	F16V 0.1μF-Z
C 9AS	141P143080	CHIP CAPACITOR	F50V 0.01μF-Z
C 9AT	181P500040	CHIP ELECTROLYTIC-C	6.3V 100μF-M
C 9AU	181P500010	CHIP ELECTROLYTIC-C	6.3V 22μF-M
C 9AV	181P512020	CHIP ELECTROLYTIC-C	NP16V 4.7μF-M
C 9AW	141P143080	CHIP CAPACITOR	F50V 0.01μF-Z
C 9AX	189P123070	C-TANT	16V 10μF-M
C 9AY	181P502030	CHIP ELECTROLYTIC-C	16V 10μF-M
C 9AZ	181P500040	CHIP ELECTROLYTIC-C	6.3V 100μF-M
C 9BA	154P342030	CHIP CAPACITOR	CH50V 33pF-J
C 9BB	181P500030	CHIP ELECTROLYTIC-C	6.3V 47μF-M
C 9BC	141P143080	CHIP CAPACITOR	F50V 0.01μF-Z
C 9BD	141P143080	CHIP CAPACITOR	F50V 0.01μF-Z
C 9BE	141P144020	CHIP CAPACITOR	F16V 0.1μF-Z

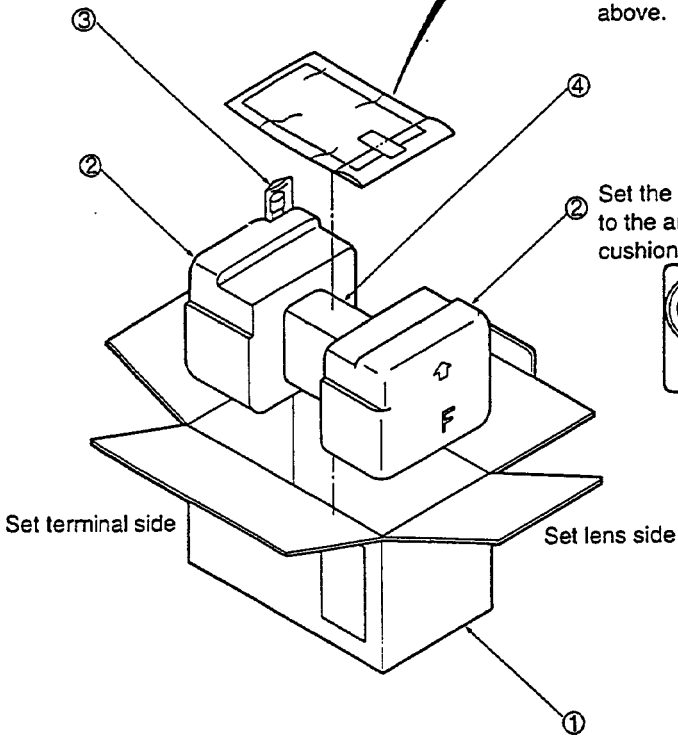
SYMBOL NO.	PARTS NO.	PARTS NAME	DESCRIPTION
C 9CA	141P144000	CHIP CAPACITOR	F25V 0.033μF-Z
C 9CB	141P144000	CHIP CAPACITOR	F25V 0.033μF-Z
C 9CF	141P144000	CHIP CAPACITOR	F25V 0.033μF-Z
C 9CG	181P515000	CHIP ELECTROLYTIC-C	NP35V 10μF-M
C 9CH	154P343030	CHIP CAPACITOR	CH50V 82pF-J
C 9CJ	141P135070	CHIP CAPACITOR	F16V 1μF-Z
C 9EA	154P342090	CHIP CAPACITOR	CH50V 56pF-J
C 9EB	154P343070	CHIP CAPACITOR	CH50V 120pF-J
C 9EC	154P345010	CHIP CAPACITOR	CH25V 470pF-J
C 9ED	141P143080	CHIP CAPACITOR	F50V 0.01μF-Z
C 9EE	154P341090	CHIP CAPACITOR	CH50V 22pF-J
C 9EF	154P344030	CHIP CAPACITOR	CH50V 220pF-J
C 9EG	141P139050	CHIP CAPACITOR	B25V/16V 0.15μF-PK
C 9EH	141P144000	CHIP CAPACITOR	F25V 0.033μF-Z
C 9EJ	141P143080	CHIP CAPACITOR	F50V 0.01μF-Z
C 9EK	181P508050	CHIP ELECTROLYTIC-C	6.3V 22μF-M
C 9GD	141P144020	CHIP CAPACITOR	F16V 0.1μF-Z
C 9MF	141P144000	CHIP CAPACITOR	F25V 0.033μF-Z
C 9MJ	141P144000	CHIP CAPACITOR	F25V 0.033μF-Z
C 9MK	141P143080	CHIP CAPACITOR	F50V 0.01μF-Z
C 9MM	141P135070	CHIP CAPACITOR	F16V 1μF-Z
C 9MN	181P500030	CHIP ELECTROLYTIC-C	6.3V 47μF-M
C 9PA	141P144020	CHIP CAPACITOR	F16V 0.1μF-Z
C 9PB	141P144020	CHIP CAPACITOR	F16V 0.1μF-Z
C 9PC	141P144020	CHIP CAPACITOR	F16V 0.1μF-Z
C 9PE	189P122010	C-TANT	10V 2.2μF-M
C 9PM	141P141070	CHIP CAPACITOR	B50V 4700pF-K
C 9PN	154P345050	CHIP CAPACITOR	CH25V 680pF-J
C 9PP	141P144020	CHIP CAPACITOR	F16V 0.1μF-Z
C 9PT	181P500080	CHIP ELECTROLYTIC-C	10V 33μF-M
C 9PU	181P505000	CHIP ELECTROLYTIC-C	35V 10μF-M
C 9PV	141P143080	CHIP CAPACITOR	F50V 0.01μF-Z
C 9PW	141P144020	CHIP CAPACITOR	F16V 0.1μF-Z
C 9RE	181P502040	CHIP ELECTROLYTIC-C	16V 22μF-M
C 9RF	181P502040	CHIP ELECTROLYTIC-C	16V 22μF-M
C 9RG	181P502040	CHIP ELECTROLYTIC-C	16V 22μF-M
C 9RH	181P502040	CHIP ELECTROLYTIC-C	16V 22μF-M
C 9RJ	181P500030	CHIP ELECTROLYTIC-C	6.3V 47μF-M
C 9RK	141P144020	CHIP CAPACITOR	F16V 0.1μF-Z
C 9SA	141P144000	CHIP CAPACITOR	F25V 0.033μF-Z
C 9SC	141P140090	CHIP CAPACITOR	B50V 1000pF-K
C 9SD	141P140090	CHIP CAPACITOR	B50V 1000pF-K
C 9TA	181P510030	CHIP ELECTROLYTIC-C	NP6.3V 47μF-M
C 9TB	181P510030	CHIP ELECTROLYTIC-C	NP6.3V 47μF-M
C 9TC	181P510030	CHIP ELECTROLYTIC-C	NP6.3V 47μF-M
C 9TD	141P135080	CHIP CAPACITOR	F25V 0.1μF-Z
C 9TF	154P343070	CHIP CAPACITOR	CH50V 120pF-J
VC2AA	202P220010	CHIP C-TRIMMER	3pF-10pF
VC9AA	202P220060	CHIP C-TRIMMER	15pF-60pF
		MISCELLANEOUS	
	490P101010	OPTICAL UNIT	
J	450C023010	PLUG BNC	
J 9RA	452D240010	CONNECTOR BNC	
J 9RB	451C158010	JACK POWER	
J 9RC	449C112010	SOCKET DIN	4PIN

SYMBOL NO.	PARTS NO.	PARTS NAME	DESCRIPTION	SYMBOL NO.	PARTS NO.	PARTS NAME	DESCRIPTION
TP2AA	299P136090	CHIP TEST POINT	1608				
TP2AC	299P136090	CHIP TEST POINT	1608				
TP2AD	299P136090	CHIP TEST POINT	1608				
TP3AB	299P136090	CHIP TEST POINT	1608				
TP3AE	299P136090	CHIP TEST POINT	1608				
TP3AF	299P136090	CHIP TEST POINT	1608				

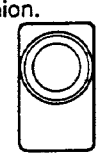
PACKING PARTS



A model number on the instruction manual should be visible from above.

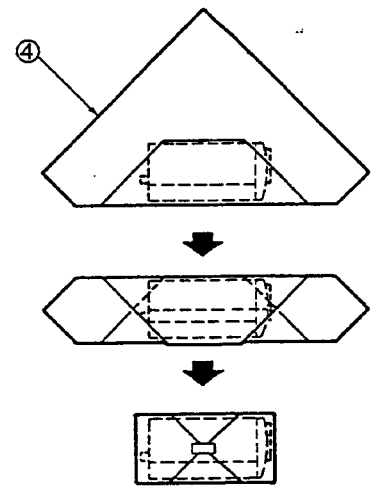


Set the top of the product to the arrow on the packing cushion.



How to Set of Packing sheet

Packing sheet
Package a product with the glazed side outside.

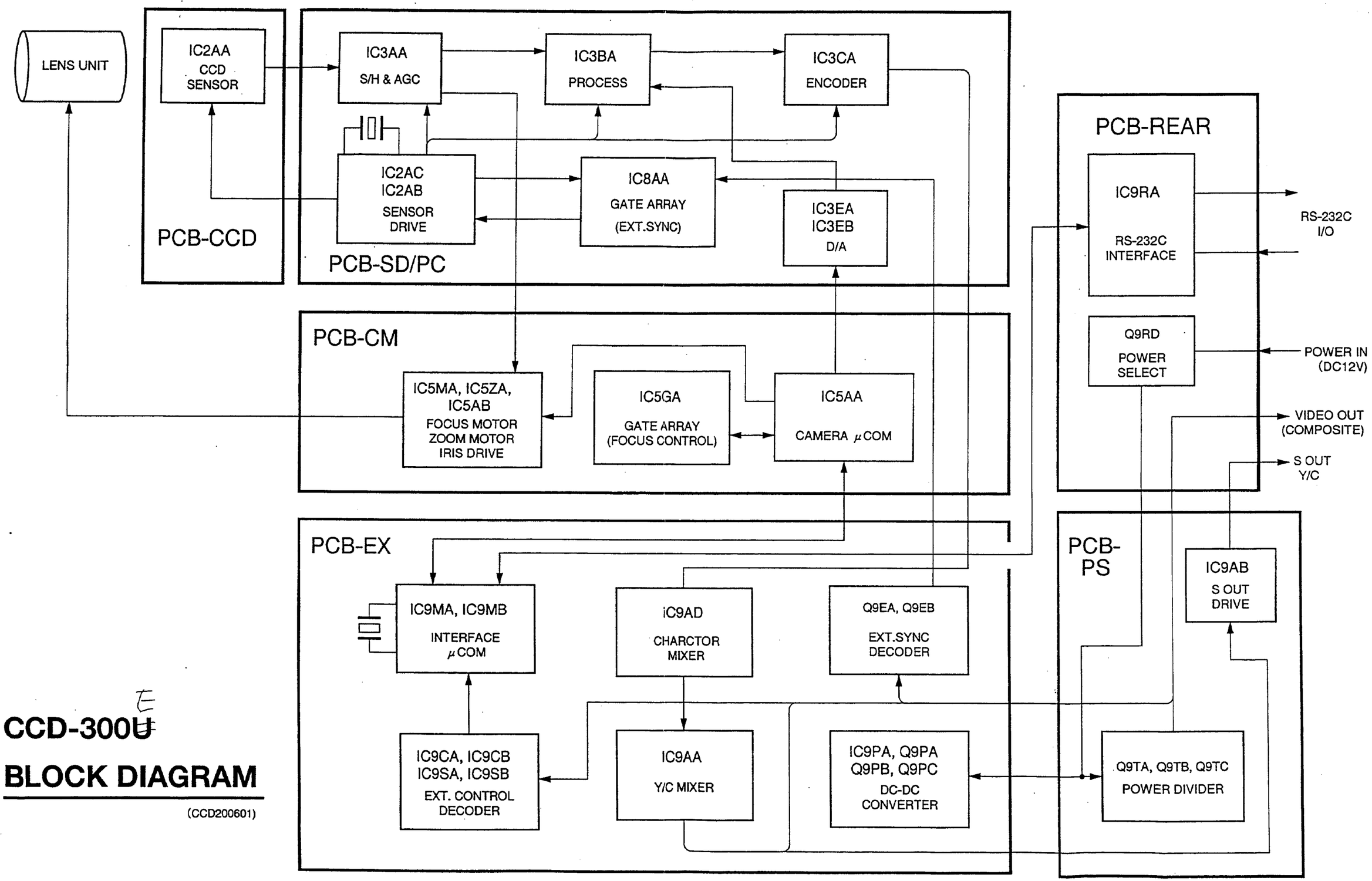


ITEM NO.	PARTS NO.	PARTS NAME	DESCRIPTION
1	801C252040	PACKING CASE	
2	803B741010	PACKING CUSHION	
3	450C023010	BNC PLUG	
4	831D190040	PACKING SHEET	300X300
5	831D264010	PACKING BAG	190X120X0.06
6	831D252020	PACKING BAG	110X70X0.06
7	872C061020	INSTRUCTION BOOK	
8	540D217010	CLAMPER	
9	669D171090	SCREW	M3X6 P=0.5

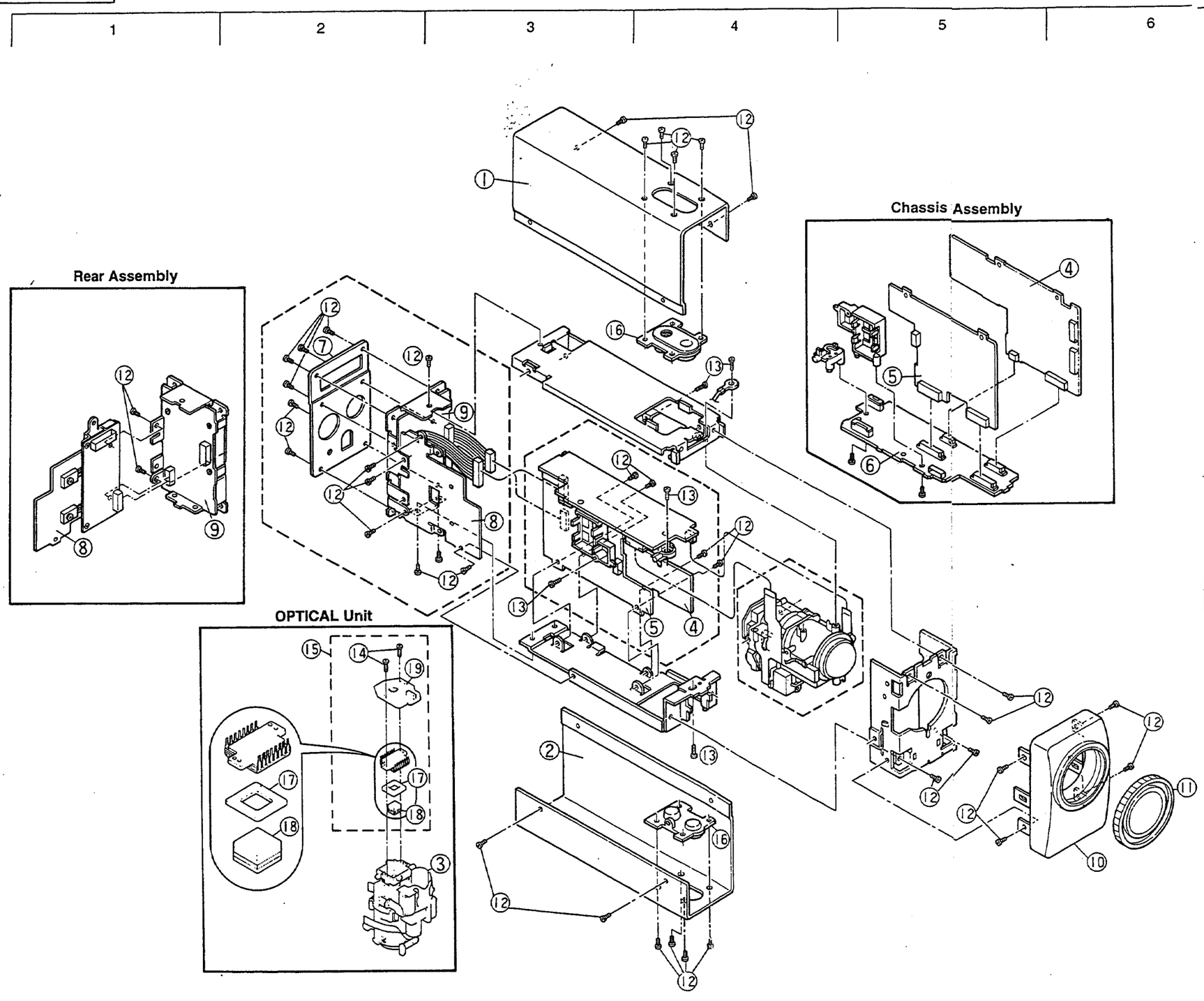
CCD-300U E

BLOCK DIAGRAM

(CCD200601)



EXPLODED VIEW

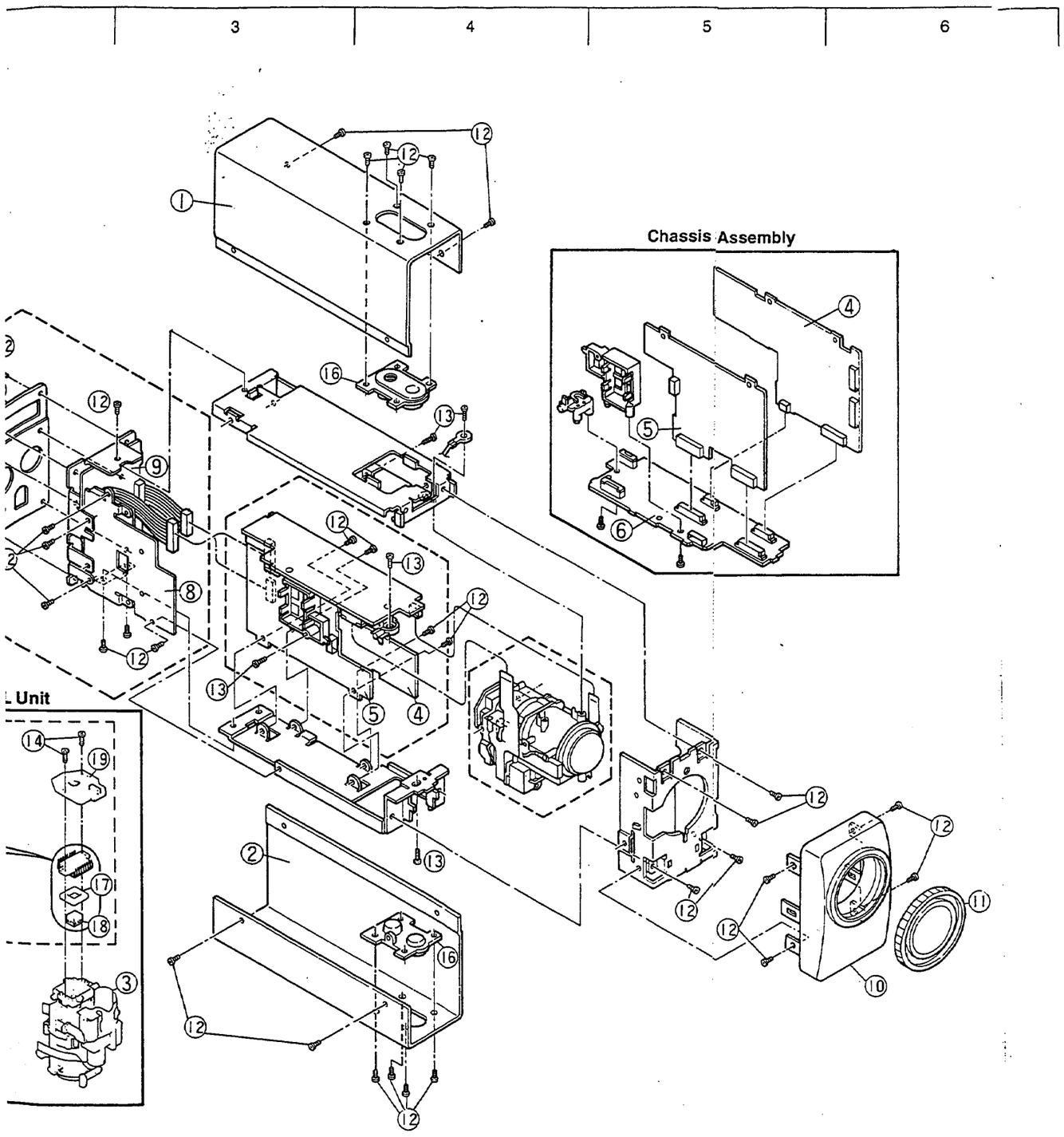


PARTS LIST

In order to expedite delivery of rep
Specify : 1. Model number/Serial
2. Part number and Des
3. Quantity
Unless full information is supplied,
* : Warranty return items
: Critical components

SYMBOL NO.	PARTS NO.	ADDRESS	
1	591B986050	A-3	
2	591B986060	D-3	
3	490P101010	D-3	
* 4	928D231001	B-6	C-4
* 5	928D164002	B-5	C-4
* 6	928D165002	B-5	
7	712C668010	B-2	
* 8	928D233001	C-1	C-3
* 9	928D232001	B-3	C-1
10	701C053010	D-6	
11	704C918010	D-6	
12	669D372010	A-4	B-1
		B-2	C-2
		C-3	C-4
		D-3	D-5
		D-6	E-4
13	669D435020	C-3	C-4
		D-4	
14	669D435050	C-2	
15	928D087050	C-2	
16	769C003010	B-3	
17	☆	D-2	
18	499P022010	D-2	
* 19	928D166002	C-2	

☆ : Not a stocked item



PARTS LIST

In order to expedite delivery of replacement part orders.
Specify : 1. Model number/Serial number
2. Part number and Description
3. Quantity

Unless full information is supplied, delay in execution of orders will result.

* : Warranty return items

: Critical components

SYMBOL NO.	PARTS NO.	ADDRESS		PARTS NAME	DESCRIPTION
1	591B986050	A-3		TOP COVER	
2	591B986060	D-3		BOTTOM COVER	
3	490P101010	D-3		OPTICAL UNIT	
* 4	928D231001	B-6	C-4	EX PCB ASSY	
* 5	928D164002	B-5	C-4	SD/PC PCB ASSY	
* 6	928D165002	B-5		CM PCB ASSY	
7	712C668010	B-2		REAR COVER	
* 8	928D233001	C-1	C-3	PS PCB ASSY	
* 9	928D232001	B-3	C-1	REAR PCB ASSY	
10	701C053010	D-6		FRONT UNIT	
11	704C918010	D-6		LENS CAP	
12	669D372010	A-4	B-1	SCREW	M2X4 D=3.5 BLK
		B-2	C-2		
		C-3	C-4		
		D-3	D-5		
		D-6	E-4		
13	669D435020	C-3	C-4	SCREW	1.7X5 NI
		D-4			
14	669D435050	C-2		SCREW	1.7X6 BLK
15	928D087050	C-2		IC ASSY	
16	769C003010	B-3		TRIPOD BASE	
17	☆	D-2		OPTICAL PROTECTING RUBBER	
18	499P022010	D-2		OPTICAL FILTER	
* 19	928D166002	C-2		CCD PCB ASSY	

☆ : Not a stocked item