

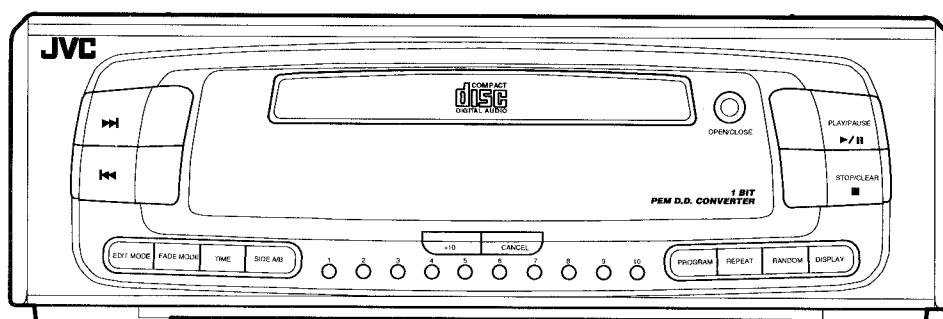
JVC

SERVICE MANUAL

COMPACT COMPONENT SYSTEM

CA-MXG7BK/XT-MXG7BK (Unit No. XL-MXG7BK)

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日本ビクター株式会社
サービス部 部品管理課



COMPU LINK
Remote Control Component

* For instruction manual, packing materials and accessories, please refer to the RX-MXG7BK (S.M.No.20393).

* RX-MXG7BK is needed (for power supply etc.) when servicing.

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Safety Precautions

1. The design of this product contains special hardware and many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Services should be performed by qualified personnel only.
2. Alterations of the design or circuitry of the product should not be made. Any design alterations of the product should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacture of responsibility for personal injury or property damage resulting therefrom.
3. Many electrical and mechanical parts in the products have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the Parts List of Service Manual. Electrical components having such features are identified by shading on the schematics and by (Δ) on the Parts List in the Service Manual. The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement parts shown in the Parts List of Service Manual may create shock, fire, or other hazards.
4. The leads in the products are routed and dressed with ties, clamps, tubings, barriers and the like to be separated from live parts, high temperature parts, moving parts and/or sharp edges for the prevention of electric shock and fire hazard. When service is required, the original lead routing and dress should be observed, and it should be confirmed that they have been returned to normal, after re-assembling.

5. Leakage current check (Electrical shock hazard testing)

After re-assembling the product, always perform an isolation check on the exposed metal parts of the product (antenna terminals, knobs, metal cabinet, screw heads, headphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.

Do not use a line isolation transformer during this check.

- Plug the AC line cord directly into the AC outlet. Using a "Leakage Current Tester", measure the leakage current from each exposed metal parts of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground. Any leakage current must not exceed 0.5mA AC (r.m.s.).

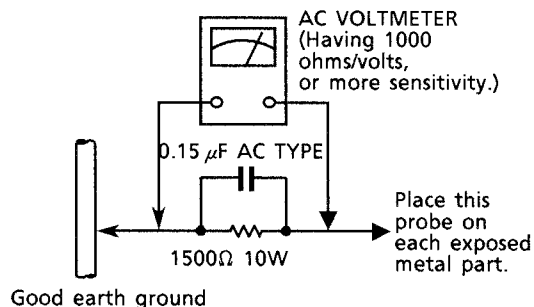
● Alternate check method

Plug the AC line cord directly into the AC outlet. Use an AC voltmeter having, 1,000 ohms per volt or more sensitivity in the following manner. Connect a 1,500 Ω 10 W resistor paralleled by a 0.15 μ F AC-type capacitor between an exposed metal part and a known good earth ground.

Measure the AC voltage across the resistor with the AC voltmeter.

Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and measure the AC voltage across the resistor.

Now, reverse the plug in the AC outlet and repeat each measurement. Any voltage measured must not exceed 0.75 V AC (r.m.s.). This corresponds to 0.5 mA AC (r.m.s.).



Warning

1. This equipment has been designed and manufactured to meet international safety standards.
2. It is the legal responsibility of the repairer to ensure that these safety standards are maintained.
3. Repairs must be made in accordance with the relevant safety standards.
4. It is essential that safety critical components are replaced by approved parts.
5. If mains voltage selector is provided, check setting for local voltage.

Important for Laser Products

1. **CLASS 1 LASER PRODUCT**
2. **DANGER** : Invisible laser radiation when open and interlock failed or defeated. Avoid direct exposure to beam.
3. **CAUTION** : There are no serviceable parts inside the Laser Unit. Do not disassemble the Laser Unit. Replace the complete Laser Unit if it malfunctions.
4. **CAUTION** : The compact disc player uses invisible laser radiation and is equipped with safety switches which prevent emission of radiation when the drawer is open and the safety interlocks have failed or are defeated. It is dangerous to defeat the safety switches.
5. **CAUTION** : If safety switches malfunction, the laser is able to function.
6. **CAUTION** : Use of controls, adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.
7. **CAUTION** : The compact disc player provides a laser diode of wavelength 780-790nm and optical output power typical 3mW at the laser diode.

VARNING : Osynlig laserstrålning när denna del är öppnad och spärren är urkopplad. Betrakta ej strålen.

VARO : Avattaessa ja suojalukitus ohitettaessa olet alttiina näkymättömälle lasersäteilylle. Älä katso säteeseen.

ADVARSEL : Usynlig laserstrålning ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

ADVARSEL : Usynlig laserstrålning ved åbning, når sikkerhedsbryteren er avslott. unngå utsettelse for stråling.

REPRODUCTION AND POSITION OF LABELS

WARNING LABEL

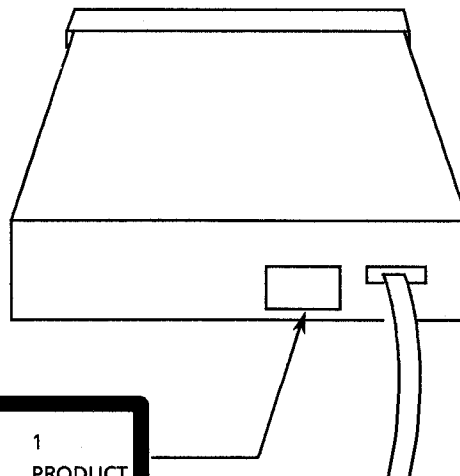
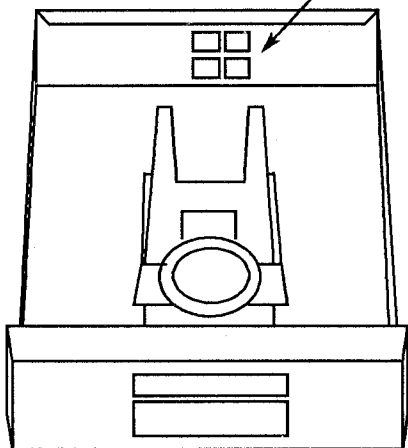
(Except for the U. S. A.)

DANGER: Invisible laser radiation when open and interlock failed or defeated. AVOID DIRECT EXPOSURE TO BEAM. (e)

VARNING: Osynlig laserstrålning när denna del är öppnad och spärren är urkopplad. Betrakta ej strålen. (s)

ADVARSEL: Usynlig laserstrålning ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling. (d)

VARO: Avattaessa ja suojalukitus ohitettaessa olet alttiina näkymättömälle lasersäteilylle. Älä katso säteeseen. (f)



**CLASS 1
LASER PRODUCT**

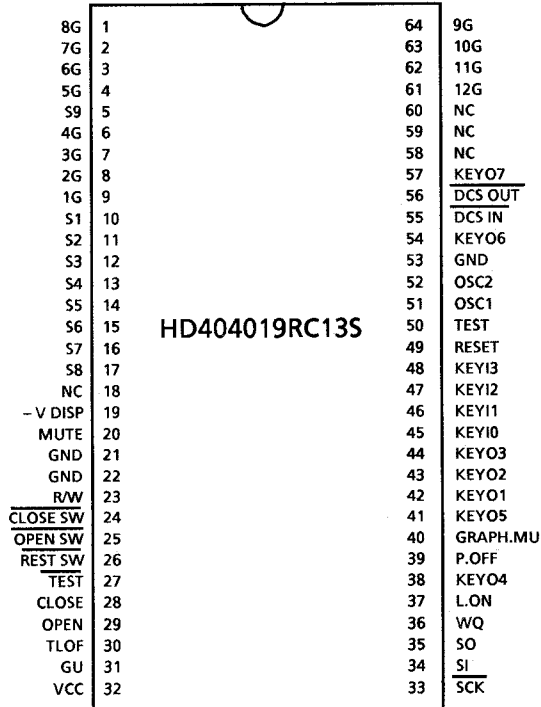
CLASSIFICATION LABEL

(Except for the U. S. A. and Canada)

Description of Major LSIs

■ HD404019RC13S (IC991) † Micro-computer

1. Terminal Layout



2. Key matrix

	KEY IN 0	KEY IN 1	KEY IN 2	KEY IN 3
KEY OUT 1	①	③	⑦	⑨
KEY OUT 2	④	②	⑤	
KEY OUT 3	⑩	⑥	⑧	PROGRAM
KEY OUT 4		⏪	EDIT MODE	⏩
KEY OUT 5	SIDE A/B	TIME	FADE MODE	
KEY OUT 6	REPEAT ALL / 1	RANDOM	DISPLAY	+ 10
KEY OUT 7	PLAY / PAUSE	OPEN / CLOSE	CANCEL	STOP / CLEAR

3. Pin Description

Pin No.	Symbol	I/O	Functions and Operations	Pin No.	Symbol	I/O	Functions and Operations
1~4	8G~5G	O	FL grid control output	35	(D IN) SO	O	Serial data output for IC841
5	S9	O	FL segment control output	36	WQ	I	Write request signal input
6~9	4G~1G	O	FL grid control output	37	L.ON	O	Laser on signal output
10~17	S1~S8	O	FL segment control output	38	KEYO4	O	Key matrix output
18	NC	--	Non connection	39	P.OFF	O	Power off signal output
19	-V DISP	I	FL Power supply	40	GRAPH.MU	O	Graphic mute signal output
20	MUTE	O	Mute signal output	41	KEYO5	O	Key matrix output
21	GND	--	Ground	42~44	KEY OUT1 ~ KEY OUT3	O	Key matrix output
22	GND	I	Ground	45~48	KEY IN0 ~ KEY IN3	I	Key matrix input
23	R/W	O	Read / Write signal output	49	RESET	I	Reset signal input
24	CLOSE SW	I	Close switch : active low	50	TEST	I	Test mode input : connected to + 5V
25	OPEN SW	I	Open switch : active low	51	OSC 1	I	Clock Oscillation input
26	RESET SW	I	Reset switch : active low at the inmost position of pickup	52	OSC 2	O	Clock Oscillation output
27	TEST	I	Test mode input	53	GND	--	Ground
28	CLOSE	O	Close signal output	54	KEYO6	O	Key matrix output
29	OPEN	O	Open signal output	55	DCS IN	I	Compu-link signal input
30	TLOF	O	Tracking servo off signal output	56	DCS OUT	O	Compu-link signal output
31	GU	O	Tracking gain up signal output	57	KEYO7	O	Key matrix output
32	VCC	--	+ 5V	58~60	NC	--	Non connection
33	SCK	O	Clock output for IC841	61	12G	O	FL grid control output
34	(D OUT) SI	I	Serial data input from IC841	62~64	11G~9G	O	FL grid control output

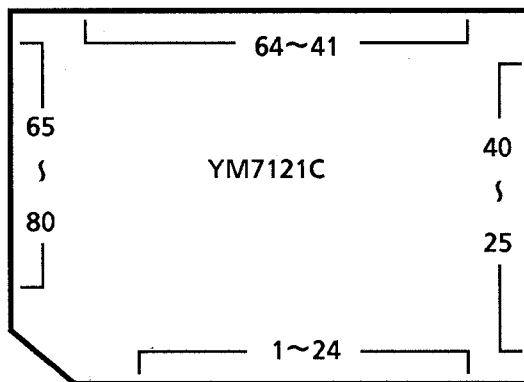
■ YM7121C(IC401)

1. Outline

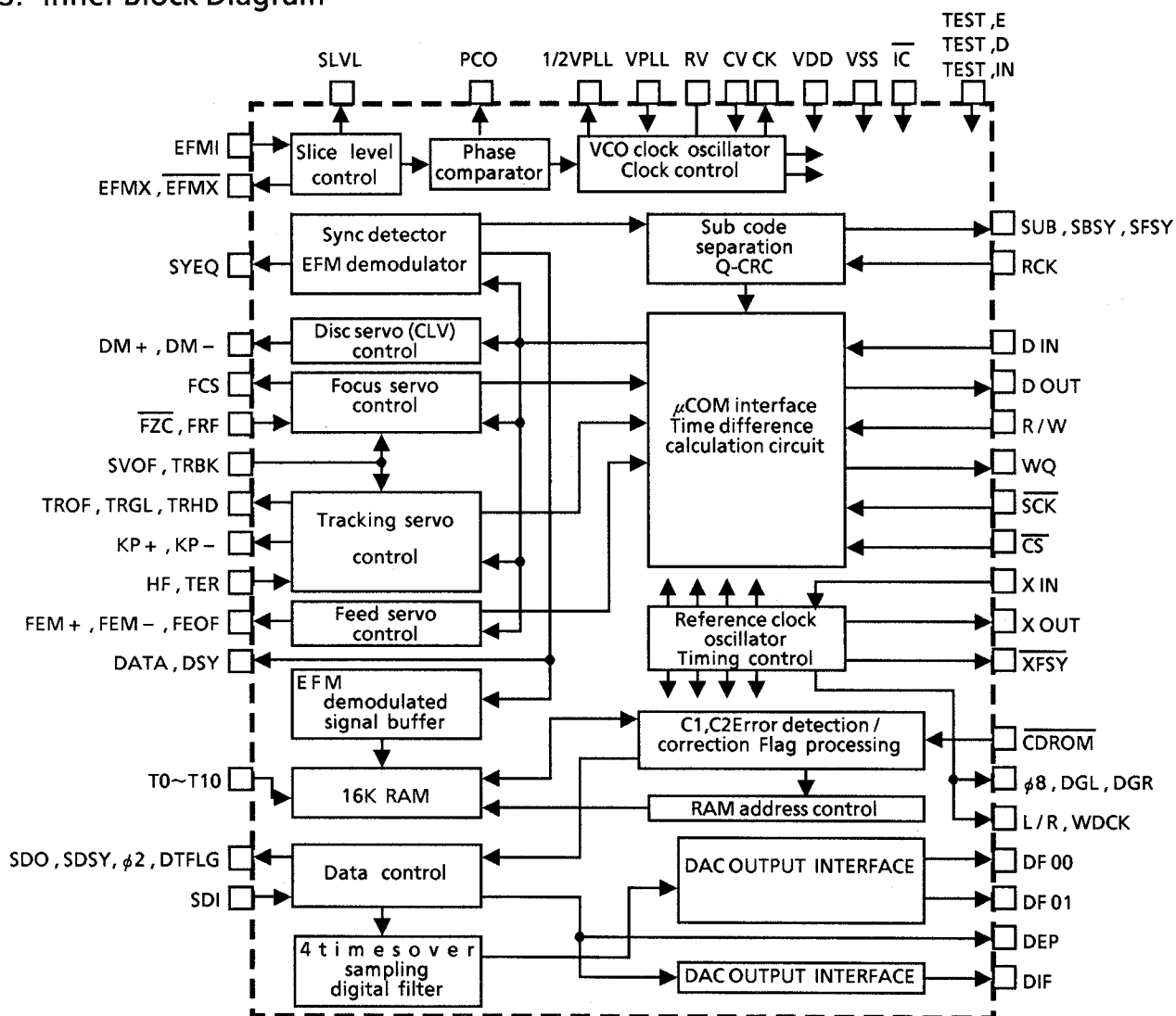
YM7121 is a C-MOS LSI for signal processing and servo control (SVC) in a CD player. It is used for the demodulation of the EFM signal from the laser pick up , detection / correction of the error signal , signal processing in digital filtering , etc. and for various servo controls (focusing , disc , tracking and feed servos).

And it contains digital interface which output the audio digital signals in S-RAM and CD-player. This digital interface matches EIAJ standards.

2. Top View



3. Inner Block Diagram



4. Terminal Function

Pin No.	Symbol	I/O	Function and Operation
1	CV	I	Adequate time constant is added to this terminal and input the PCO output. This makes the structure of clock reproduce circuit by inner VCO circuit.
2	RV	-	RV terminal is standard voltage terminal of inner VCO. And capacity for stabilizing is added to this terminal.
3 32 72	VDD	-	These are +5V power supply terminals.
4 5 70	TEST. IN TEST. E TEST. D	I I I	These terminals are for test.
6	SYEQ	O	This is the check output terminal, it becomes high when flame synchronizing signal detected from EFM pattern coincides frame synchronizing signal from internal counter.
7 8	DSY DATA	O O	Not used.
9	CK	O	CK has 4.3218 MHz clock.
10~19	T0~T9	I	This terminal is internal RAM test terminal, and connected GND.
22	DEP	O	De-emphasis is necessary when this terminal is high.
23	DIF	O	DIF is digital audio interface format output matched EIAJ standards.
24	SDO	O	SDO is a serial signal output of $\phi 2$ bit rate. (The MSB puts in at first.)
25	SDI	I	SDI is the input terminal of 4 times over sampling digital filter. It is usually connected with SDO.
26	SDSY	O	This terminal changes the Lch/Rch by LSB of the SDO.
27	DTFLG	O	Not used.
28	$\phi 2$	O	$\phi 2$ is 2.1168 MHz crystal clock.
29, 52, 77, 66	VSS	-	GND
30	XOUT	O	Not used.
31	XIN	I	Input from crystal clock.
33	XFSY	O	Not used.
34 35 36 37	SUB SBSY RCK SFSY	O O I O	After detecting that SBSY changes from low to high by IC991, the sub-code(P~W) can be output from SUB output terminal by inputting 8 clocks to RCK terminal at every point where SFSY changes low to high.
38	CDROM	O	Not used.
39	$\phi 8$	O	$\phi 8$ is 8.4672MHz crystal clock.
40	WDCK	O	Not used.
41	L/R	O	This is synchronizing signal for data transfer and it connects with DAC.
42 43	DGL DGR	O O	Not used.
44 45	DF01 DF00	O O	Serial data output.(Right channel). Serial data output.(Left channel).
46	SCK	I	This terminal is connected to μ COM. It is an input terminal that carries the clock signal for data transfers.
47	R/W	I	This connects with microcomputer and it is an output terminal for switching data transmission mode. it enables to transmit data from SVC to microcomputer when R/M is "L" and from microcomputer to SVC when R/W is "H".
48	CS	I	This is a chip select terminal for YM7121.
49	DOUT	O	This terminal is the data output terminal connected to μ COM. When R/W is low, data is transferred from YM7121 to μ COM, according to the SCK clock input.

Pin No.	Symbol	I/O	Function and Operation
50	WQ	O	This terminal is connected to μ COM. It is a request signal which demands to μ COM inputting the data transfer (YM7121 to μ COM).
51	DIN	I	This is a data input terminal connected to μ COM. When R/W is high, the data is transferred from μ COM to YM7121 according to the SCK clock input.
53 54	DM+ DM-	O O	These terminals output the PWM to control the speed of spindle motor. The speed of the motor goes up when DM+ is high, and slows down when DM- is high: both terminals can not become high simultaneously.
55 56 60 61 62 63 64	HF TER TRHD TRGL TROF KP- KP+	I I O O O O O	When tracks are being crossed during serches, the amplitude variation of the generated HF signal is sampled at the zero - cross point of the tracking error signal TER and the TROF signal is output. The level variations of this signal turn the servo on and off, greatly facilitaing track acquisition. KP+ or KP- is output to conduct tracking, and TRHD is output during tracking to cause generation of the tracking error signal. The TRGL signal is for increasing the tracking gain after tracking is completed.
57 58 59	FEM+ FEM- FEOF	O O O	The FEM+ and FEM- are output as high speed feed signals, and FEOF signal is output for cutting the feed servo during high speed feed.
65	TRBK	I	TRBK is input to apply tracking brake from outside. TRGL becomes low with high input and inner control signal TBKE becomes high.
67 58 59	$\overline{\text{FZC}}$ FCS FRF	I O I	These terminals are used for controlling the focus servo. The FCS is for a leading signal of Focusing; the signal, generated when the focus point is achieved, terminate the focusing operation; and FCO flag is dropped internally by FRF signal generated when reflected light is detected.
71	$\overline{\text{IC}}$	I	YM7121 needs initializing when power supply turn on. IC will be low more than 400 μ s since XIN is input clock with VDD standard.
73 74 75	SLVL $\overline{\text{EFMX}}$ $\overline{\text{EFMX}}$	O O O	Amplitude limited, mutually anti-phased signals are output from EFMX and $\overline{\text{EFMX}}$. Slice level is controlled by these signals and external amplifier. SLVL is output amplitude alteration component of both terminals. When integral circuit is connected to external. YM7121 easily can control slice level.
76	EFMI	I	This terminal is input EFM signal. (1~2 Vpp)
78	PCO	O	This terminal outputs the phase difference when the polarity of the clock and the EFM pattern changes.
79	VPLL	I	This terminal is input D.C. voltage matched VCO free run frequency. (17.2872 MHz)
80	1/2 VPLL	O	This terminal outputs a half of VPLL input, and capacity for stabilizing is added to this terminal.

■ JCE4501(IC873) : D / A CONVERTER

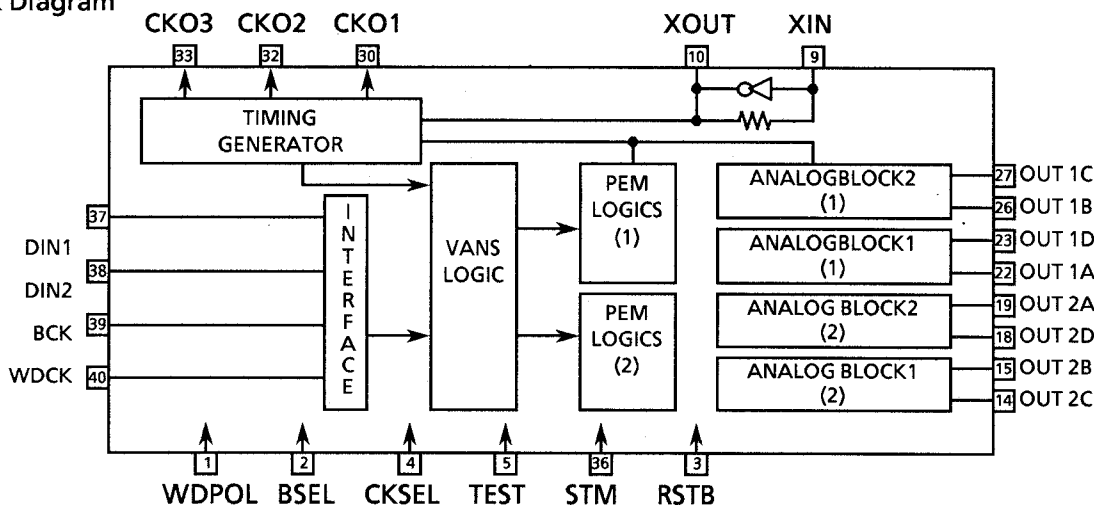
1. Outline

The JCE4501 is a CMOS digital-analog converter with independent left and right channels. It was developed for PCM digital audio equipment. It features pulse edge modulation (PEM) and Victor advanced noise shaping (VANS) for resolution equipment to 20 bits(0-20kHz) and a low distortion ratio. At JVC, this type of digital-analog converter is called a DD converter.

2. Terminal Layout

WDPOL	1	40	WDCK
BSEL	2	39	BCK
RSTB	3	38	DIN2
CLKSEL	4	37	DIN1
TEST	5	36	STM
COM	6	35	NC
NSUB	7	34	DVDD2
DVDD1	8	33	CKO3
XIN	9	32	CKO2
XOUT	10	31	DVSS2
DVSS1	11	30	CKO1
NC	12	29	NC
AVSS1	13	28	AVSS4
OUT2C	14	27	OUT1C
OUT2B	15	26	OUT1B
AVDD1	16	25	AVDD4
AVDD2	17	24	AVDD3
OUT2D	18	23	OUT1D
OUT2A	19	22	OUT1A
AVSS2	20	21	AVSS3

3. Block Diagram

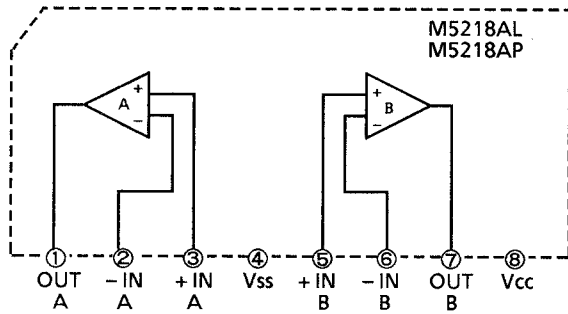


4. Description

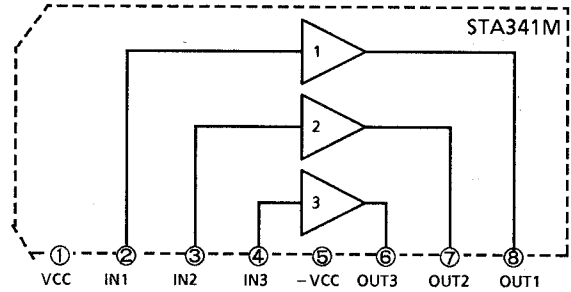
Pin No	Symbol	I/O	Description	Pin No	Symbol	I/O	Description
1	WDPOL	I	Word data polarity switching pin	21	AVSS3	--	Analog ground pin 3
2	BSEL	I	H:CDX2554P format,L: YM3414 format	22	OUT1A	O	Not used
3	RSTB	I	Reset pin (low active)	23	OUT1D	O	1D PEM output pin
4	CLKSEL	I	H: 256fs mode,L: 384fs mode	24	AVDD3	--	Analog power supply pin 3
5	TEST	I	Test mode switching pin	25	AVDD4	--	Analog power supply pin 4
6	COM	I	COM board voltage fastening pin	26	OUT1B	O	Not used
7	NSUB	I	Silicon board voltage fastening pin	27	OUT1C	O	1C PEM output pin
8	DVDD1	--	Digital power supply pin 1	28	AVSS4	--	Analog ground pin 4
9	XIN	I	Crystal oscillator input pin	29	NC	--	To ground
10	XOUT	O	Crystal oscillator output pin	30	CKO1	O	Clock output pin 1(384fs output)
11	DVSS1	--	Digital ground pin 1	31	DVSS2	--	Digital ground pin 2
12	NC	--	To ground	32	CKO2	O	Clock output pin 2(192fs output)
13	AVSS1	--	Analog ground pin 1	33	CKO3	O	Clock output pin 3(128fs output)
14	OUT2C	O	2C PEM output pin	34	DVDD2	--	Digital power supply pin 2
15	OUT2B	O	Not used	35	NC	--	Non connection
16	AVDD1	--	Analog power supply pin 1	36	STM	I	Stereo/Monaural switching pin H: stereo,L:left channel,reversed polarity left channel
17	AVDD2	--	Analog power supply pin 2	37	DIN1	I	Left channel 18-bits 8Fs serial data input
18	OUT2D	O	2D PEM output pin	38	DIN2	I	Right channel 18-bits 8Fs serial data input
19	OUT2A	O	Not used	39	BCK	I	Bit clock input pin
20	AVSS2	--	Analog ground pin 2	40	WDCK	I	Word clock input pin

Internal Block Diagrams of Other ICs

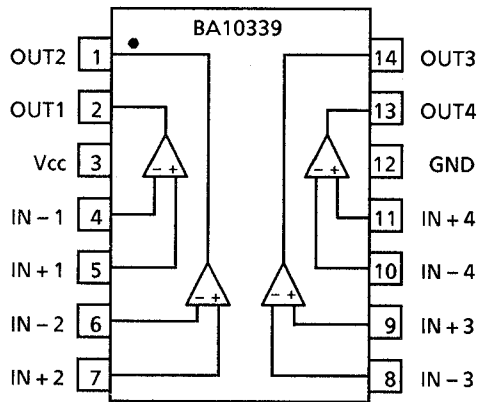
■ M5218AL (IC 762,781,803)
M5218AP (IC 871) : Dual OP Amp.



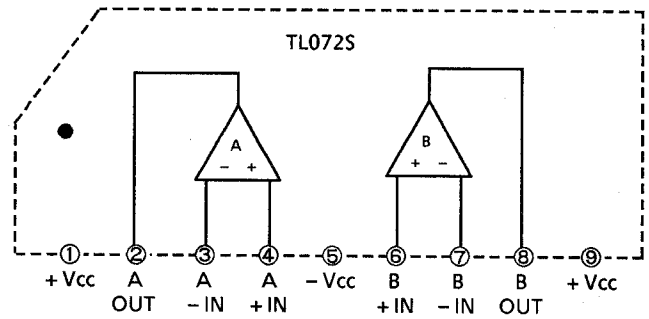
■ STA341M (IC761) : Motor Driver



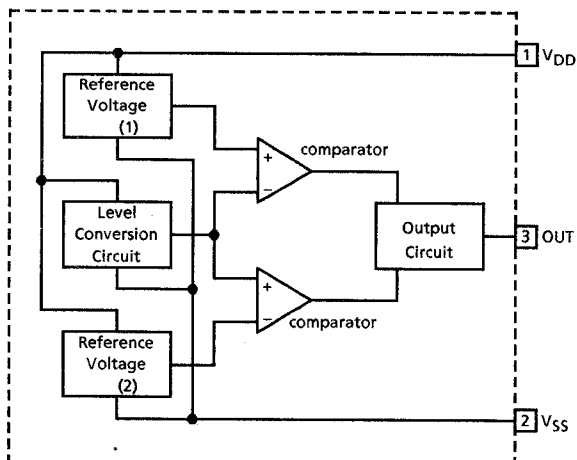
■ XRA10339 (IC802) : Comparator



■ TL072S (IC801) : Dual OP Amp.



■ MN1280 (P.Q.) : IC992 RESET IC

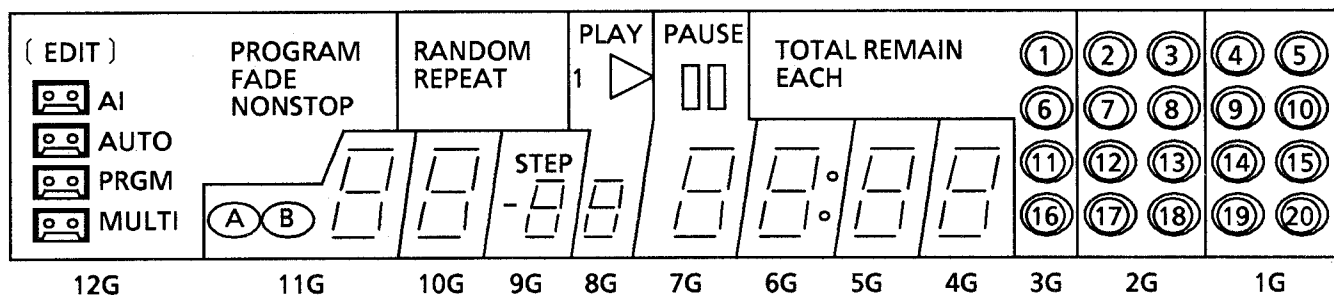


Pin No.	Pin Name	Functions
1	V _{DD}	Power supply
2	V _{SS}	Ground
3	OUT	Reset signal output : Low level is output when resetting : High level is output when cancelling the reset.

Internal Connections for the FL Display Tube

■ ELU0001-140:(FL991)

1. Grid Layout



2. Pin Connections

TERMINAL NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
ELECTRODE	F1	F1	NP	NP	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	P8	P7	P6	P5	P4	P3

TERMINAL NO.	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46
ELECTRODE	P2	P1	NP	1G	2G	3G	4G	P9	5G	6G	7G	8G	9G	10G	11G	12G	NP	NP	1G	NP	NP	F2	F2

(Note) F: Filament G: Grid NP: NoPin NC: No Connection P1~P9: Anode

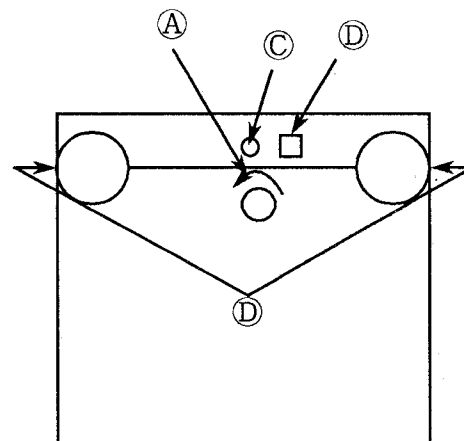
3. Anode Connection Table

	12G	11G	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G
S1	AI&MARK	a	a	a	a	a	a	a	a	(1)	(2)	(4)
S2	AUTO&MARK	b	b	b	b	b	b	b	b	(6)	(7)	(9)
S3	PRGM&MARK	c	c	c	c	c	c	c	c	(11)	(12)	(14)
S4	MULTI&MARK	d	d	d	d	d	d	d	d	(16)	(17)	(19)
S5	FADE	e	e	e	e	e	e	e	e	TOTAL	(3)	(5)
S6	NONSTOP	f	f	f	f	f	f	f	f	EACH	(8)	(10)
S7	(EDIT)	g	g	g	g	g	g	g	g	REMAIN	(13)	(15)
S8	PROGRAM	(A)	RANDOM	STEP	REPEAT	----	----	----	----	----	(18)	(20)
S9	----	(B)	REPEAT	(-)	PLAY >	PAUSE	DP(:)	----	----	----	----	----

Disassembly Procedures

1. Removing the top cover

- (1) Remove the 2 screws on both sides of the top cover and the 4 screws on the rear side.
- (2) Gently spread both sides of the top cover to the outside, lift up the rear section, and remove the top cover.



2. Removing the tray

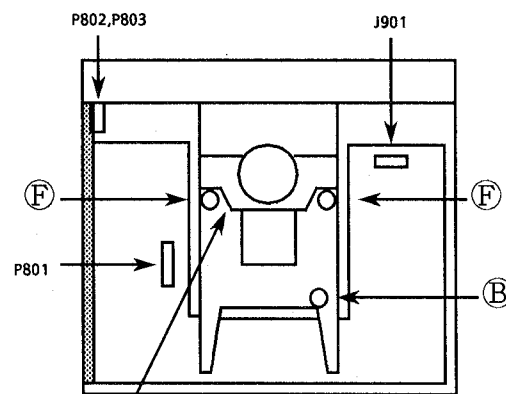
- (1) Remove the top cover.
- (2) Switch on the power of RX-MXG7BK. Press the OPEN / CLOSE switch to bring the tray forward and with the tray forward, switch off the power.
- (3) Remove the screw on the tray ②.
- (4) Pull the tray toward the front to move it.

Note

If the power does not come on due to breakdown or the, insert a Philips screwdriver through the hole at the bottom of the front panel and turn it counter-clockwise to bring the tray forward ①.

3. Removing the front panel assembly

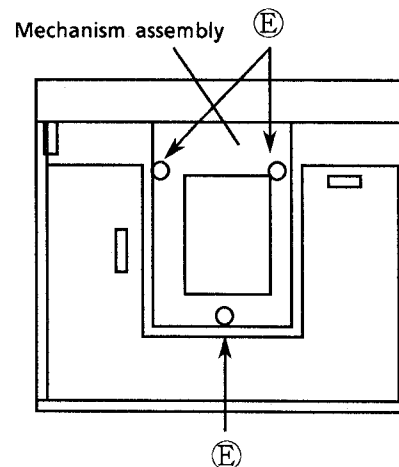
- (1) Remove the top cover.
- (2) Remove the connectors (P901) connecting with main P.C. Boards.
- (3) Remove the screw ③
- (4) Remove the 3 hooks ④ to remove the front panel.



Clamp assembly

4. Removing the mechanism assembly

- (1) Remove the top cover.
- (2) Remove the tray.
- (3) Remove the connectors (P801, P802, P803).
- (4) Remove the 2 screws ⑥ holding the clamp assembly, then remove it.
- (5) Remove the 3 screws ⑤ holding the mechanism assembly.



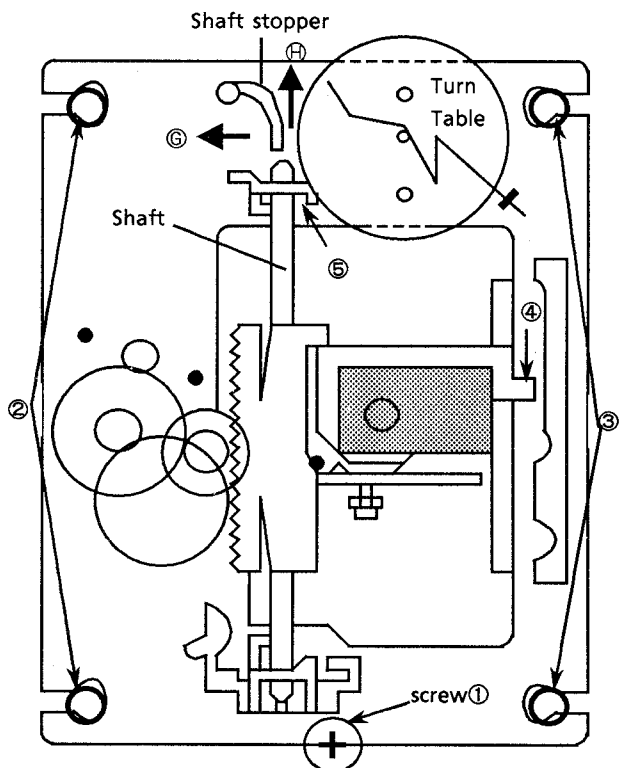
7. Removing the Laser Pickup

- 1) Remove the metal cover, tray assembly and the clamp.
- 2) Remove the screw ① from the Mecha Base assembly.
- 3) Remove the Mecha Base assembly from the rubber cushion ②③.
- 4) Move the Shaft stopper from the rest position to the left side ④.
- 5) Remove the Pickup Shaft from the Mecha Base assembly. (Slide the Pickup shaft to the up side ⑤)
- 6) Remove the CD Pick Unit with the shaft.

8. Installing the Laser Pickup

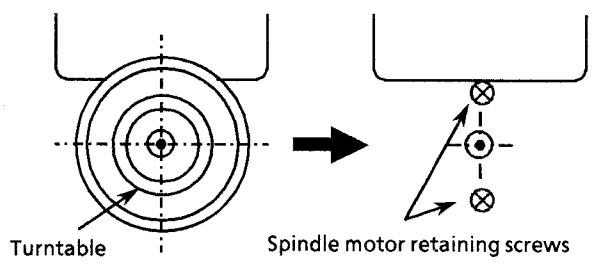
(See page 1-15 (Before installing the pickup))

- 1) Connect the Flat wire with the connectors of APC (Automatic Power Control) P.C. Board.
- 2) While installing the ④ in the CD Support, set the shaft on the base hook ⑤.
- 3) Install the Mecha Base assembly to the rubber cushion ②③.



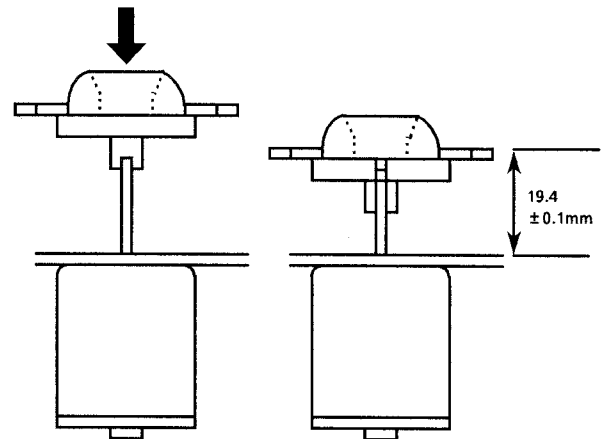
9. Removing the spindle motor

- 1) Remove the Mechanism assembly.
- 2) Remove the turntable, and remove the two screws retaining the spindle motor.
- 3) Remove the screw retaining the spindle and the Feed Motor P.C. Board and unsolder it.

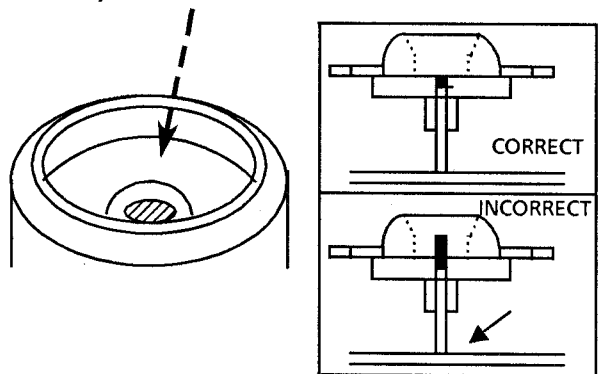


10. Installing the spindle motor

- 1) Tighten the 2 screws to the same torque.
- 2) Fasten the Spindle and the Feed Motor P.C. Board with the screw and solder.
- 3) Install the turntable. When installing, press straight down at the center of the turntable until the distance from the surface of the mechanism base to the top of the turntable is exactly 19.4 ± 0.1 mm.

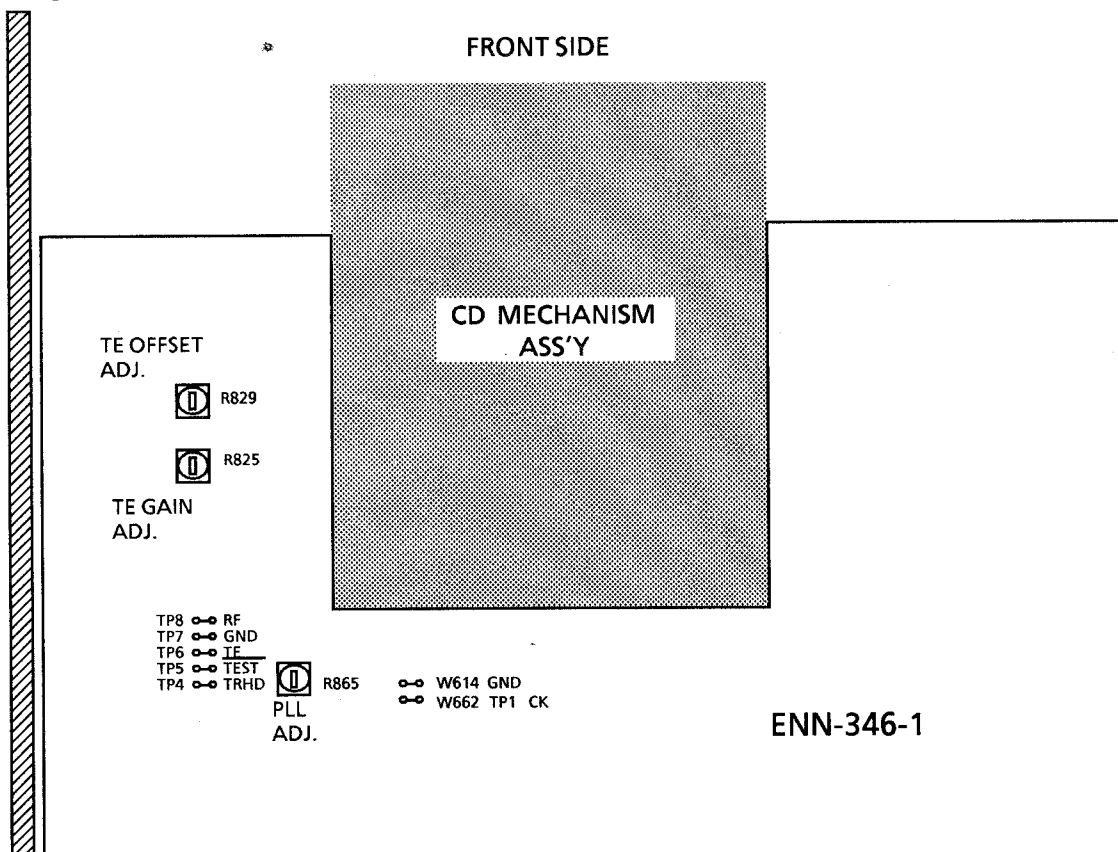


- 4) After insertion is complete, bond the motor shaft and turntable together (at the section marked by an arrow in the figure on the left below).



- 5) Use "LOCTITE" #460 bonding agent, and apply as little as possible. Take care not to allow any excess bonding agent to get onto the turntable. Be extremely careful not to allow bonding agent to adhere to the motor bearings (the section marked by an allow in the figure on the right).

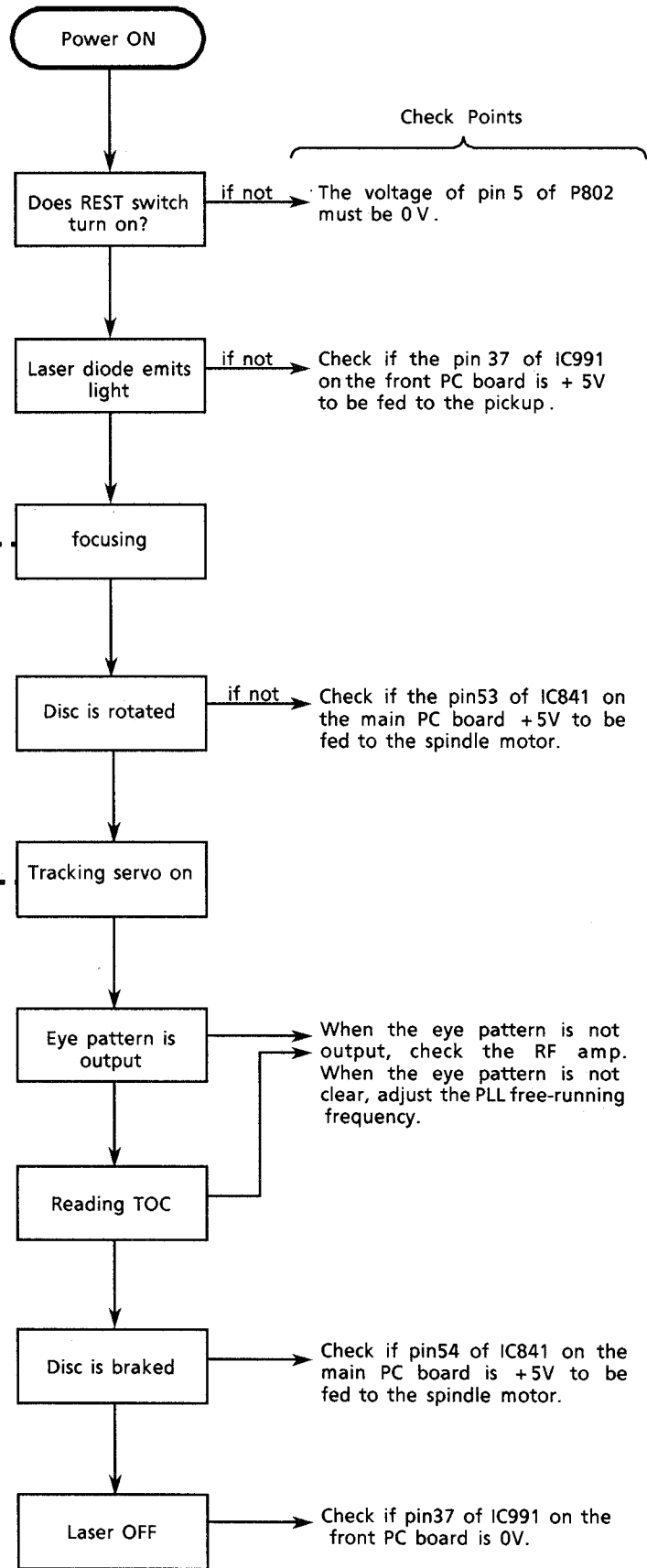
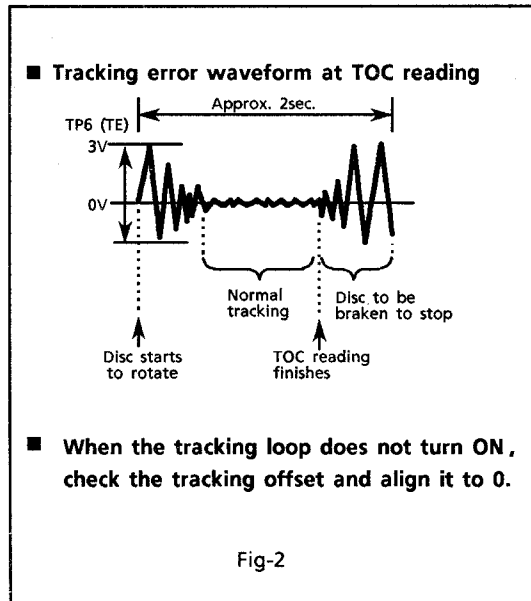
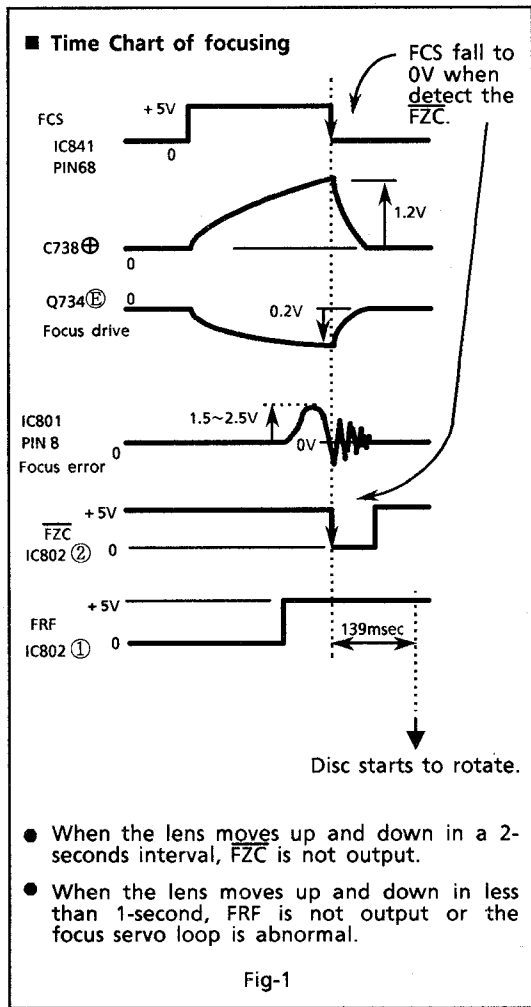
Adjustment Procedures



*** Use RX-MXG7BK when adjusting .**

1. PLL free-running adjustment
 - 1) Measuring instrument
Frequency counter
 - 2) Adjusting procedure
 - (1) Connect a frequency counter with TP1 (CK:W662) and W614 (GND) on the main PC board .
 - (2) Adjust R865 for setting the frequency counter's value becomes $4.295 \pm 0.005\text{MHz}$.
2. Tracking gain adjustment
 - 1) Measuring instruments
Oscilloscope, Normal disc
 - 2) Adjusting procedure
 - (1) Connect an oscilloscope with TP6 (TE) and TP7 (GND) on the main PC board.
 - (2) Play a disc.
 - (3) Short circuit TP5 (TEST) to TP7 (GND).
 - (4) Adjust R825 for setting tracking error signal becomes $2.0 V_{p-p}$.
3. Tracking offset adjustment
 - 1) Measuring instruments
Oscilloscope, Normal disc
 - 2) Adjusting procedure
 - (1) Connect an oscilloscope with TP6 (TE) and TP7 (GND) on the main PC board.
 - (2) Play a disc.
 - (3) Short circuit TP5 (TEST) to TP7 (GND).
 - (4) Adjust R829 for setting the DC level of the tracking error (off set) becomes 0.

Flow of Functional Operation Until TOC is Read



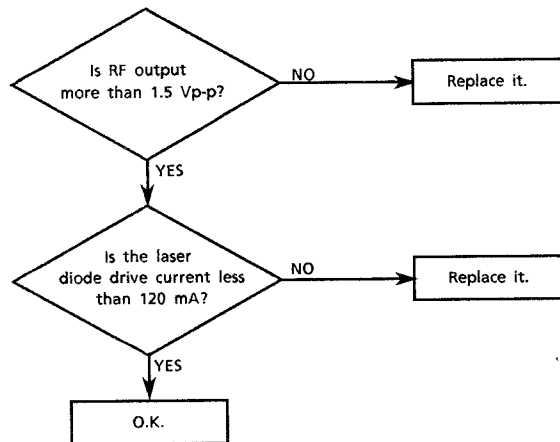
Maintenance of Laser Pickup

1. Life of the laser diode

When the life of the laser diode has expired, the following symptoms will appear.

- (1) The level of RF output (EFM output: amplitude of eye pattern) will be low.
- (2) The drive current required by the laser diode will be increased.

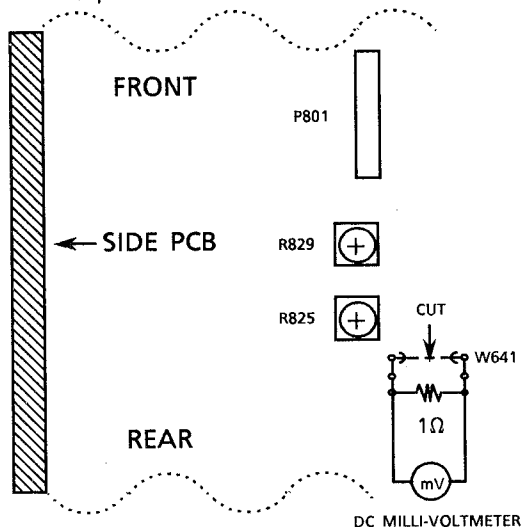
In such a case, check the life of the laser diode following the flowchart below



2. Measurement of laser diode drive current

Replace the jump wire (W641) shown below with the resistor (1Ω).

Measure the voltage across the resistor with a milli-voltmeter. When the voltage is more than 120mV, it shows that the life of the laser diode has expired



3. Semi-fixed resistor on the APC PC board

The semi-fixed resistor on the APC printed circuit board which is attached to the pickup is used to adjust the laser power. Since this adjustment should be performed to match the characteristics of the whole optical block, do not touch the semi-fixed resistor.

If the laser power is lower than the specified value, the laser diode is almost worn out, and the laser pickup should be replaced.

If the semi-fixed resistor is adjusted while the pickup is functioning normally, the laser pickup may be damaged due to excessive current.

Replacement of Laser Pickup

Turn off the power switch of RX-MXG7BK and, disconnect the power cord from the AC outlet, then disconnect the system connector

Replace the pickup with a normal one. (Refer to "Laser pickup Removal" on the previous page.)

Plug in the system connector and the AC cord of RX-MXG7BK, then turn the power switch on. At this time, check that the laser emits for about 3 seconds and the objective lens moves up and down.

Play a disc, and when it starts rotating, short circuit between TP5 (TEST) and TP7 (GND).

Adjust tracking gain.

Adjust tracking offset.

Disconnect TP5 (TEST) from TP7 (GND).

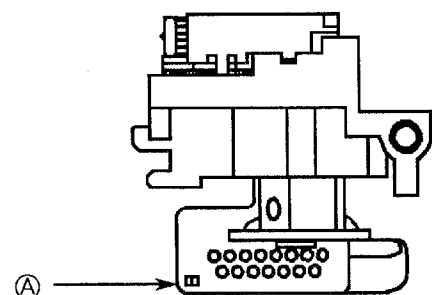
Check the eye-pattern at the TP8 (RF).

Finish.

Note : Since one adjustment may affect other settings, repeat these adjustments a few times.

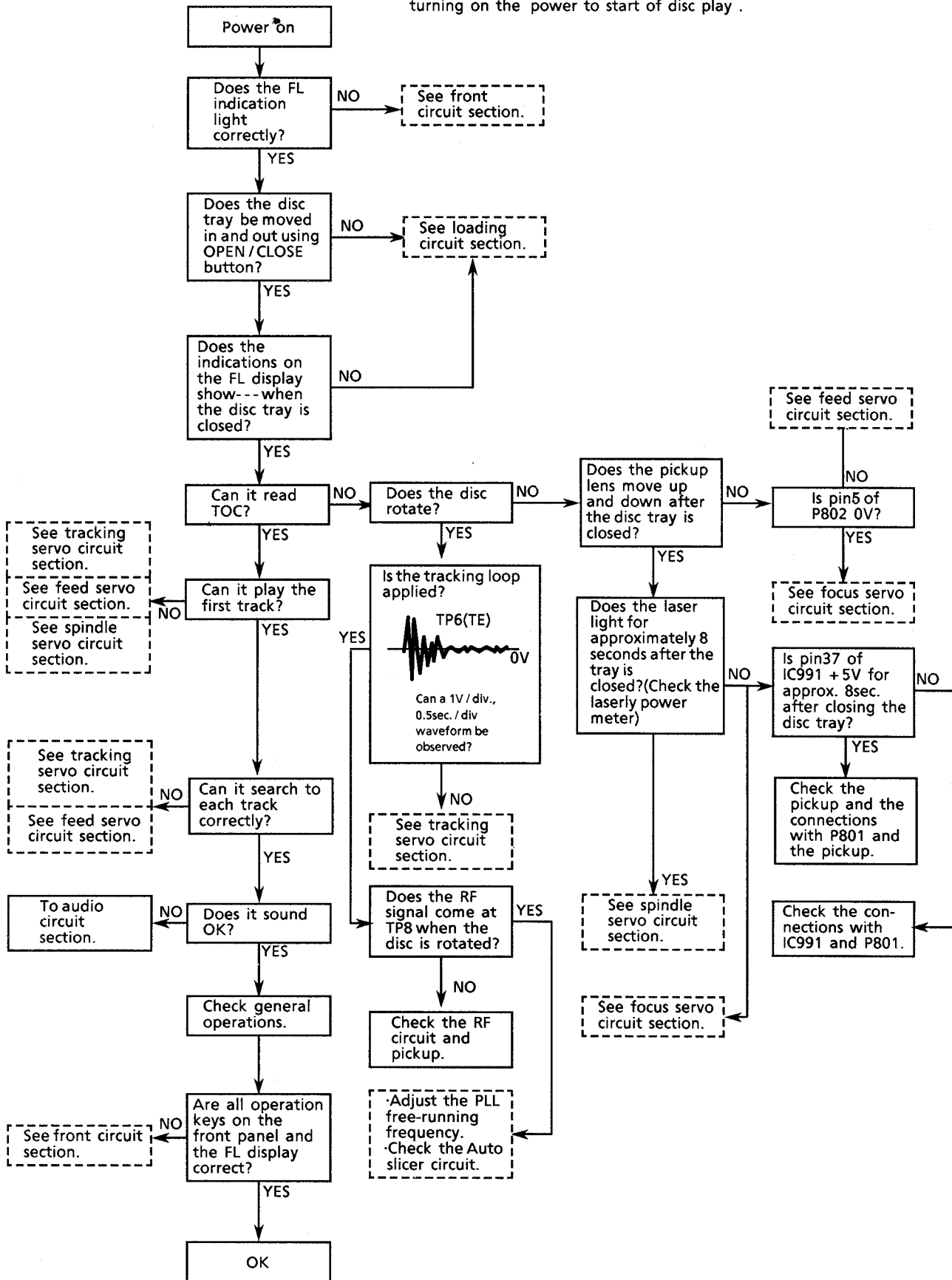
Before installing the pickup

Unsolder the part ①, which is used for countermeasure for static electricity.

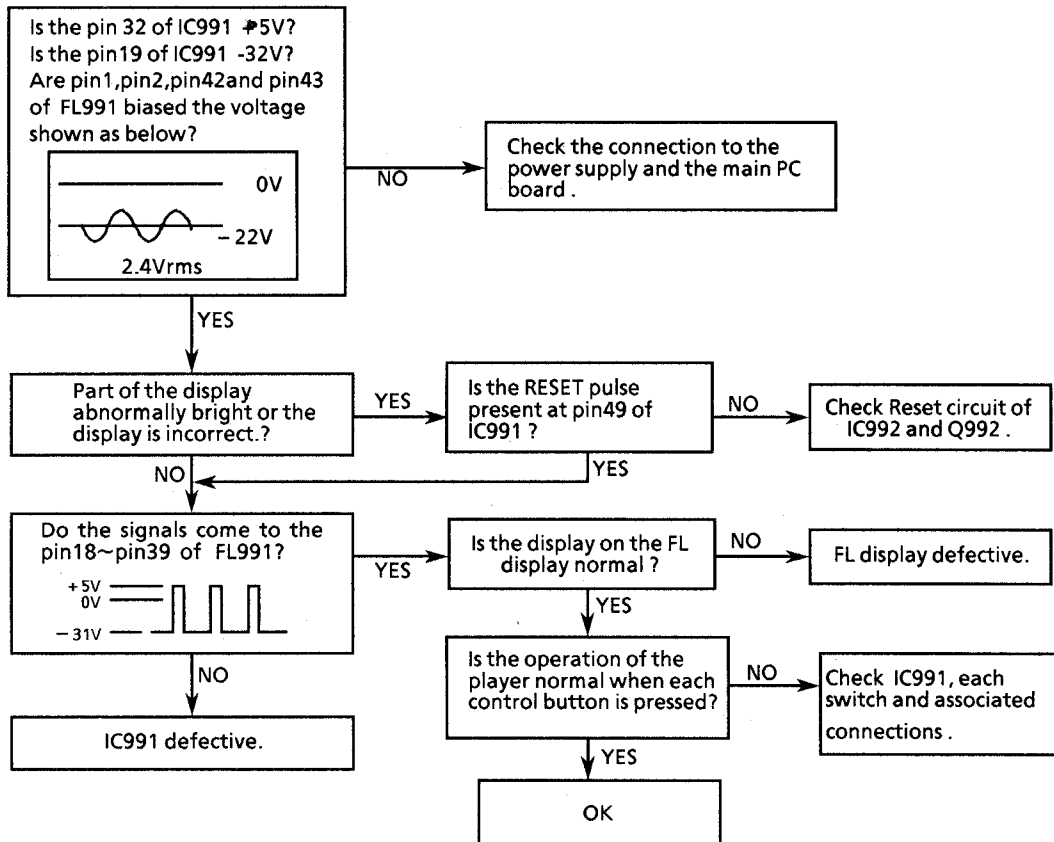


Troubleshooting

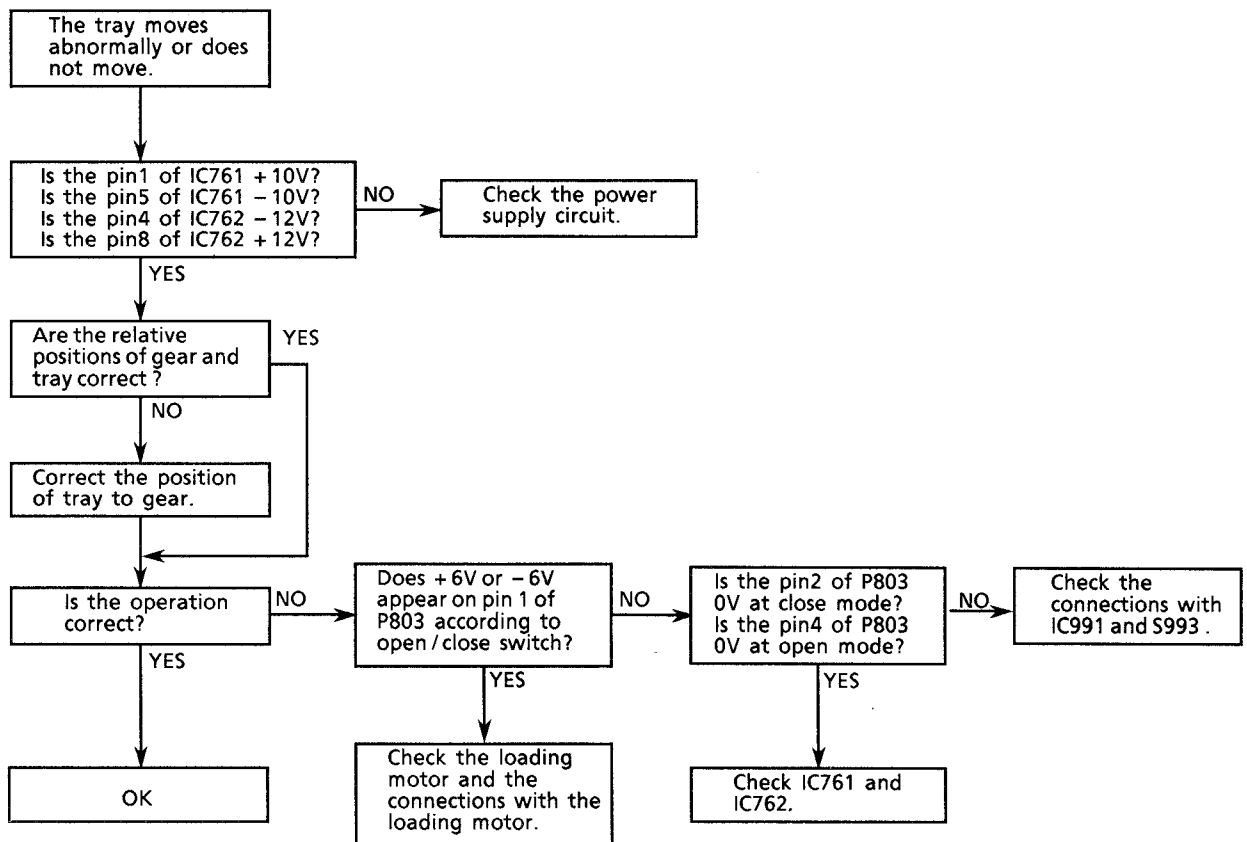
The following shows the status of the various circuits from turning on the power to start of disc play.



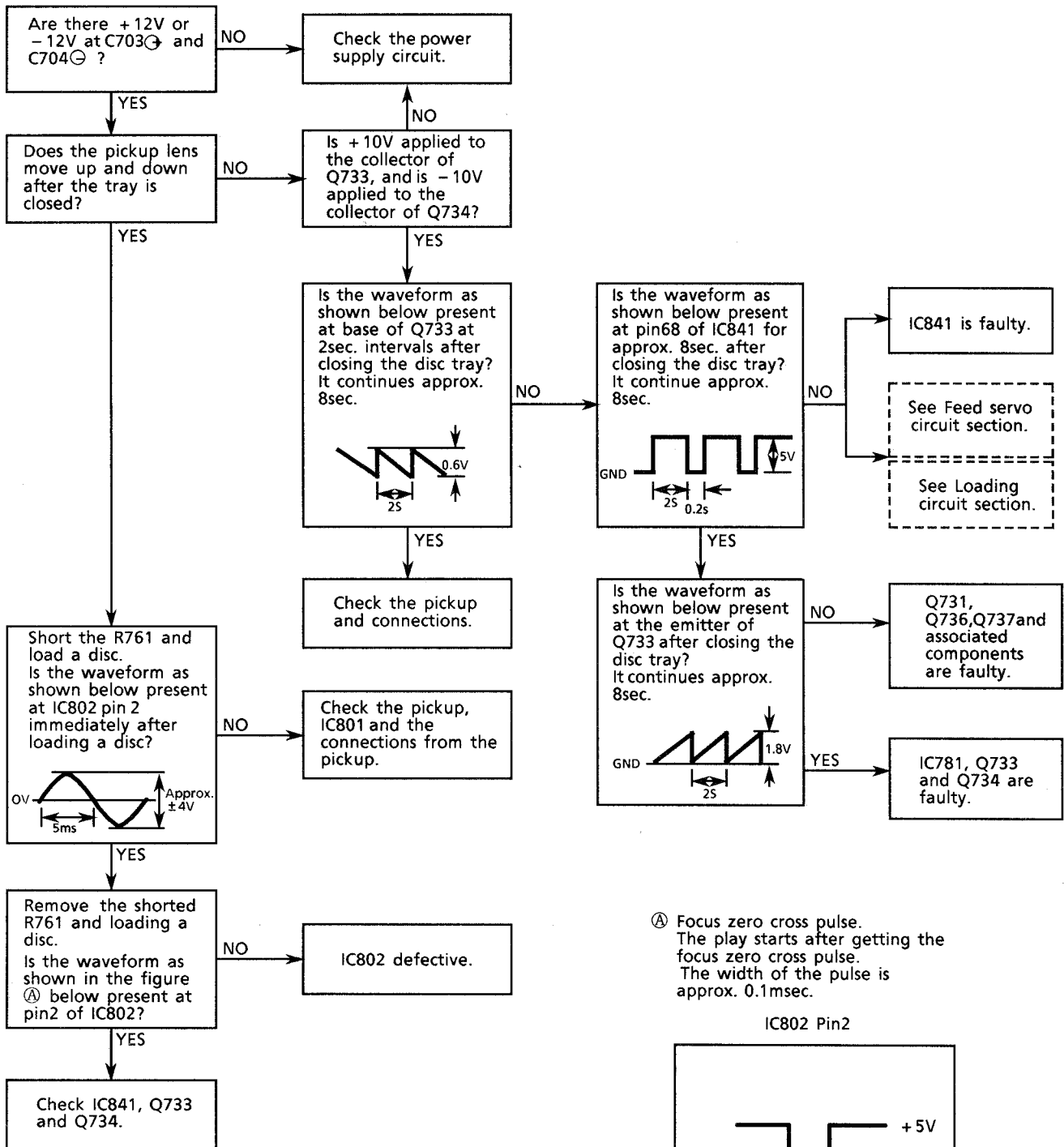
Front circuit Section



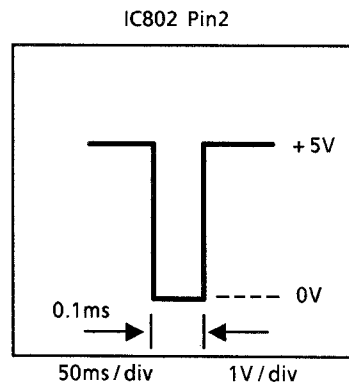
Loading circuit section



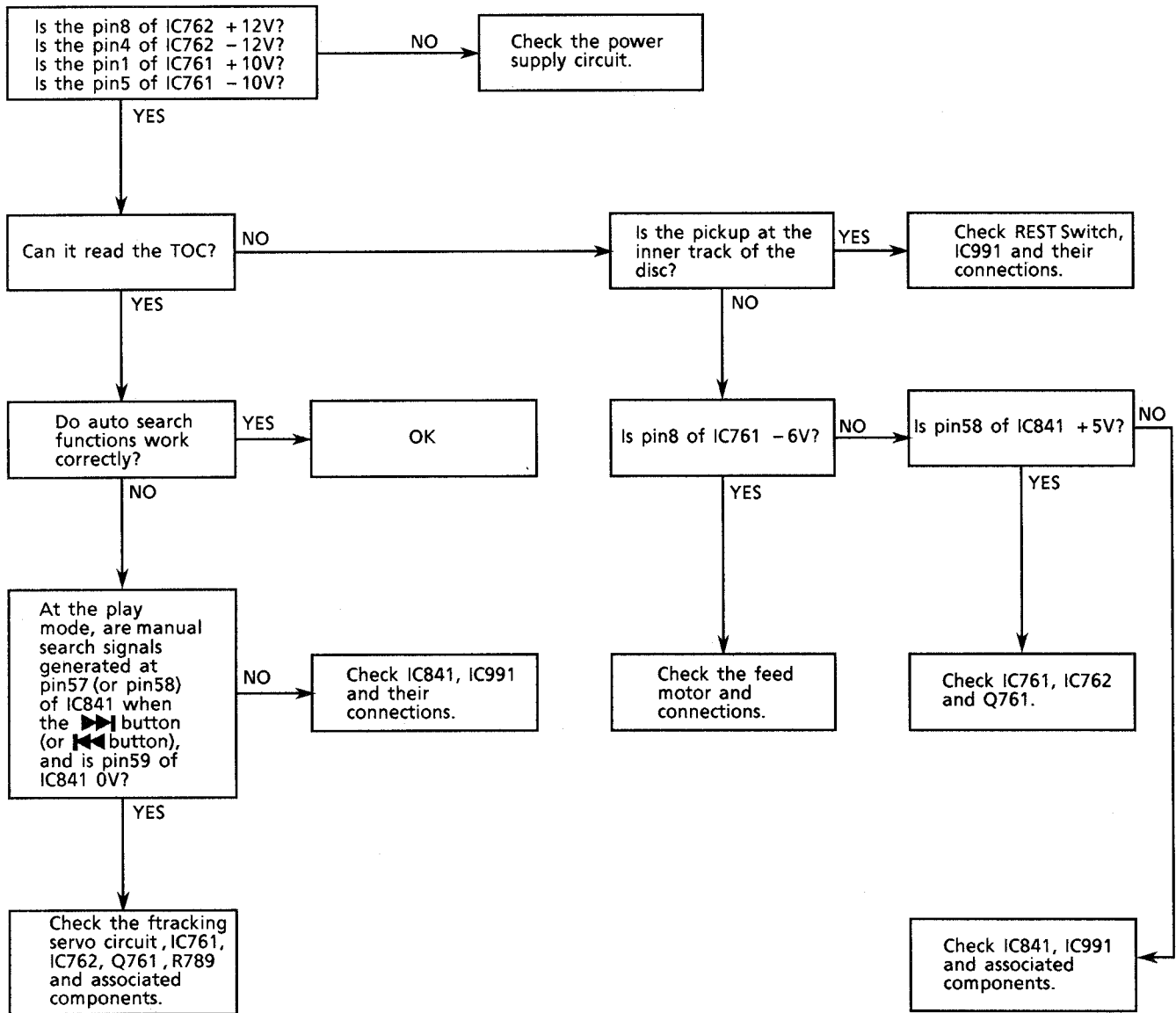
Focus circuit section



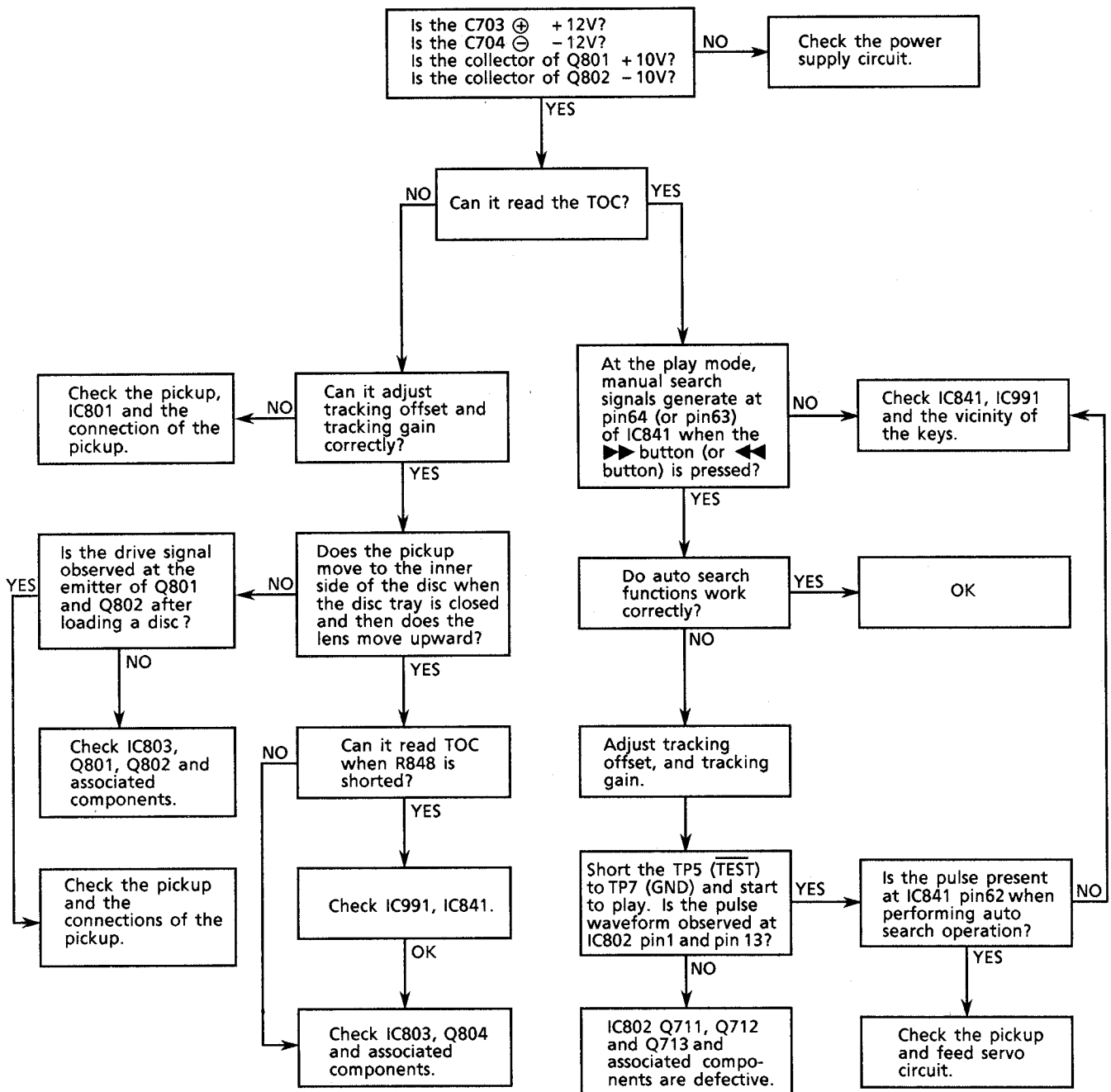
Ⓐ Focus zero cross pulse. The play starts after getting the focus zero cross pulse. The width of the pulse is approx. 0.1msec.



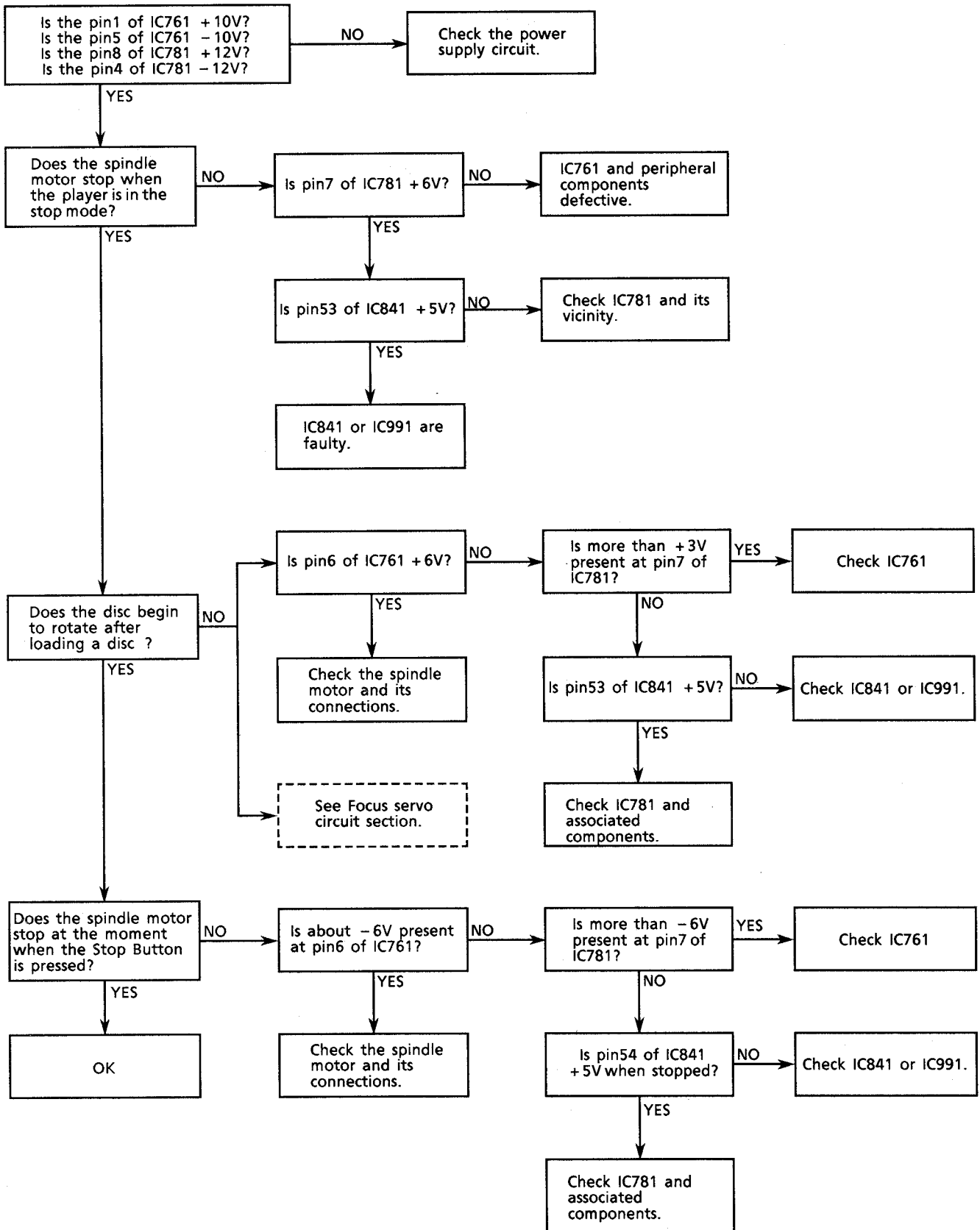
Feed circuit section



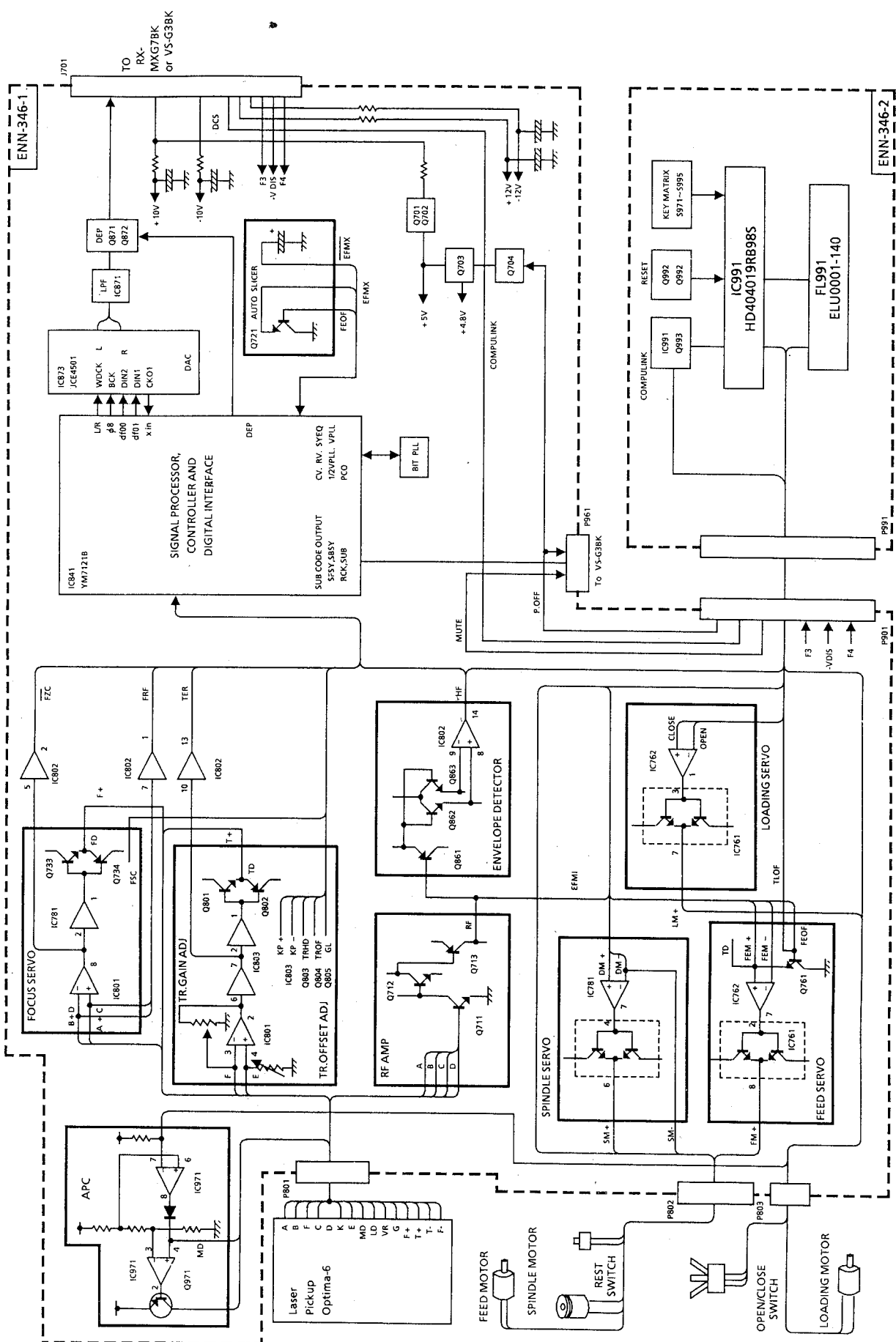
Tracking circuit section



Spindle circuit section





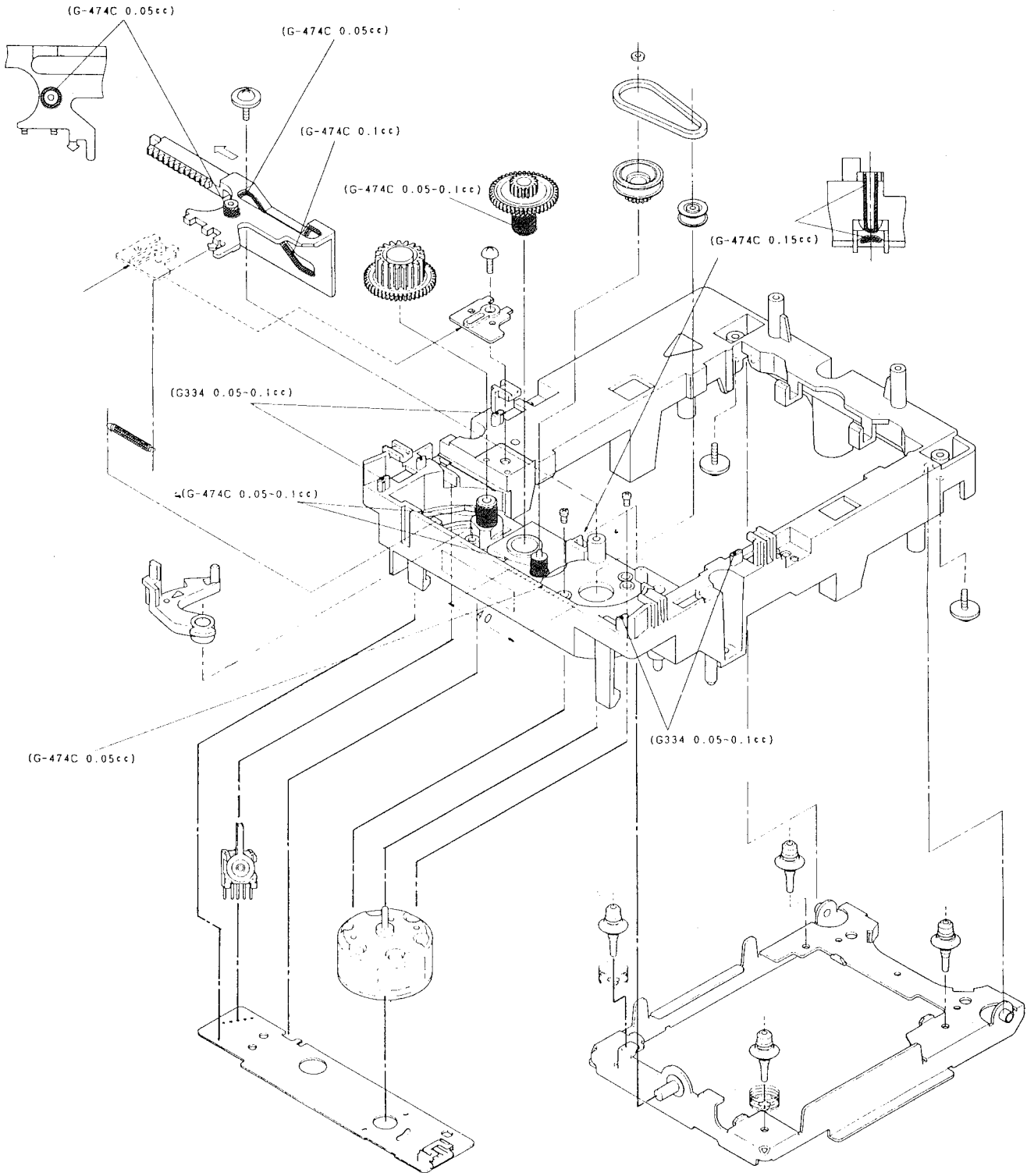
Block Diagram



Exploded View of Assemblies and Application Points for Grease

Grease used

-  G-334 (Shin-Etsu Chemical Co., Ltd.)
-  G-474C (Kanto Chemical Co., Ltd.)



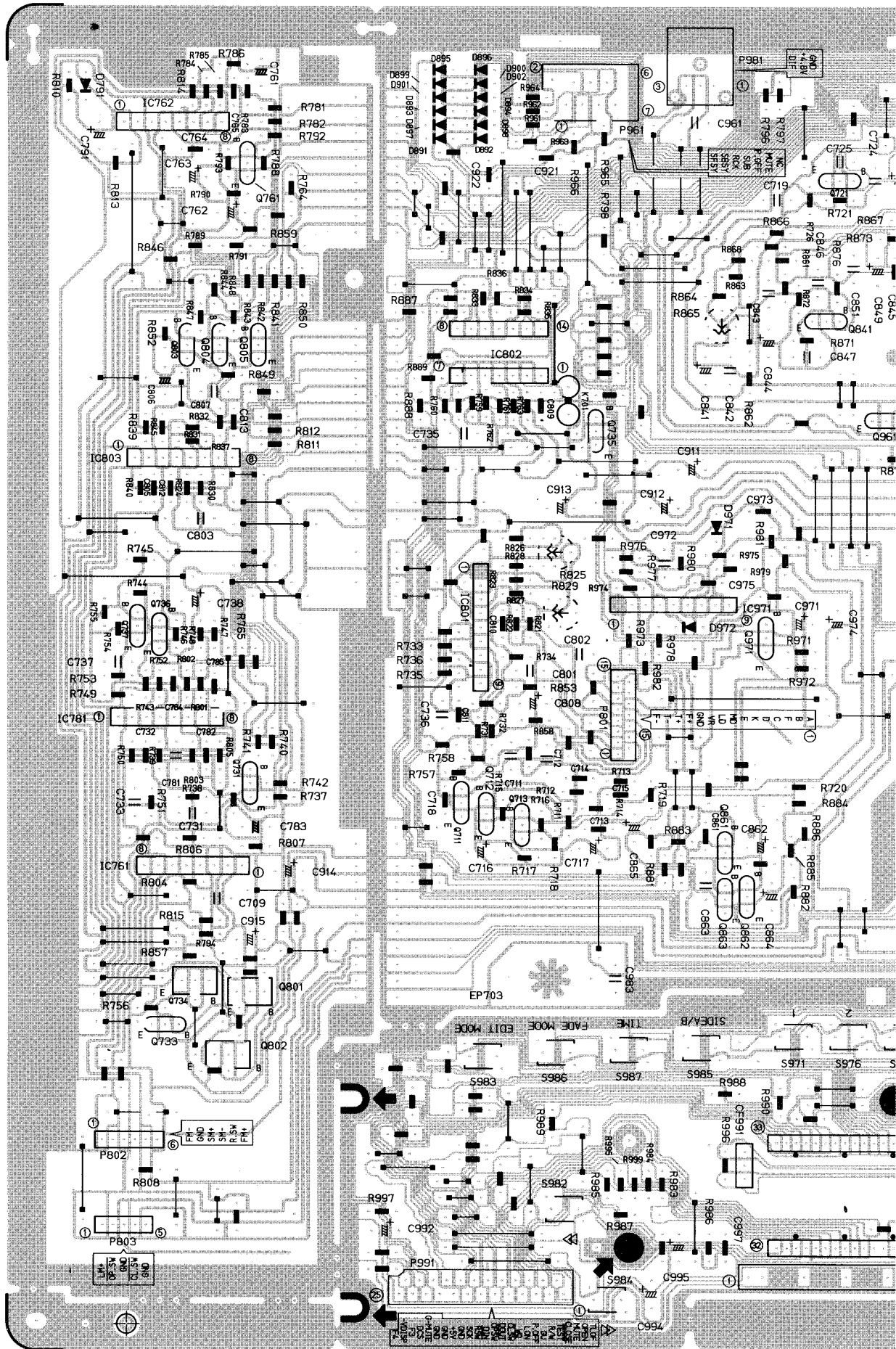
Grease part numbers

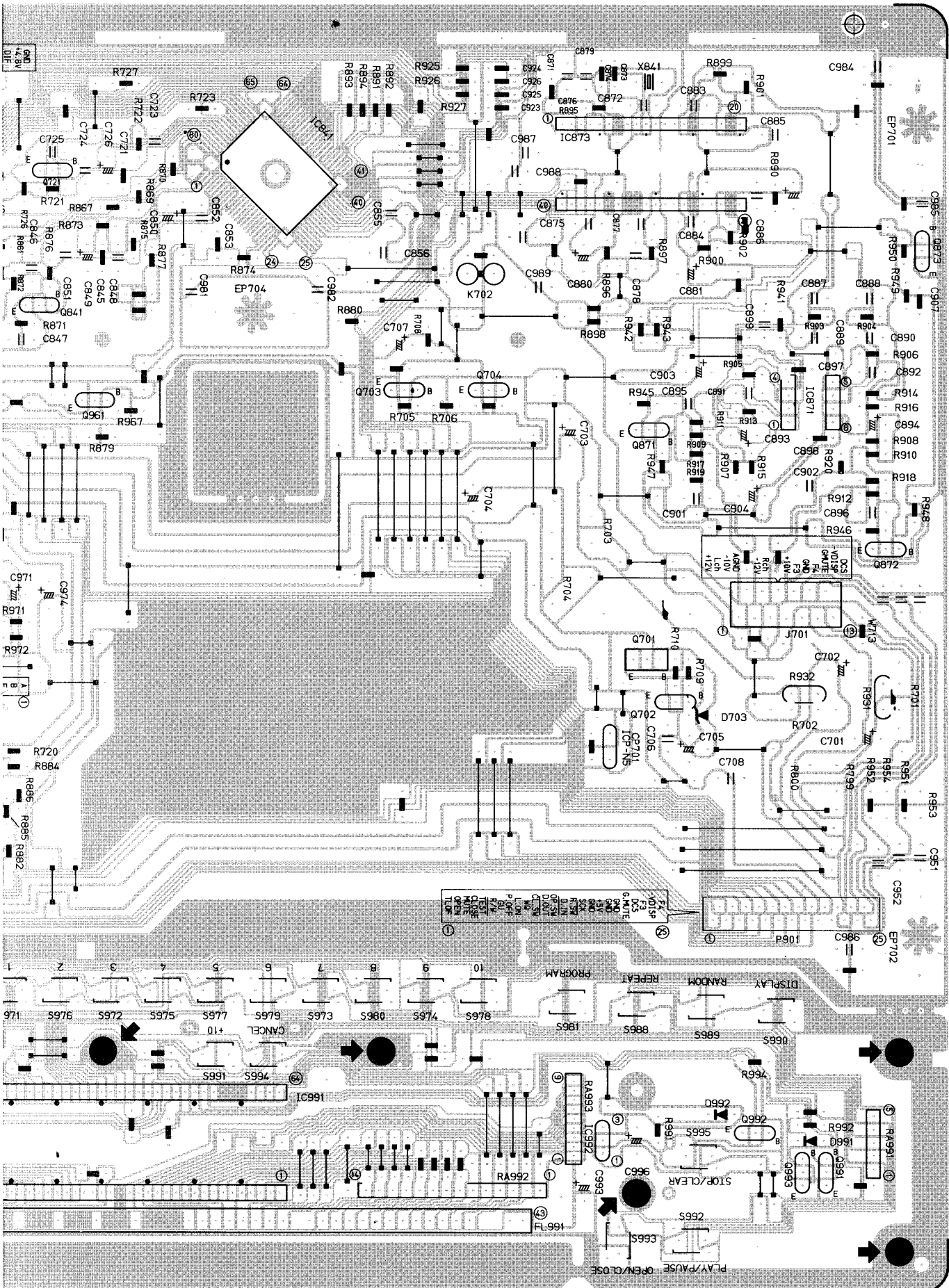
G-334: EBS0006-009B

G-474C: EBS0006-019B

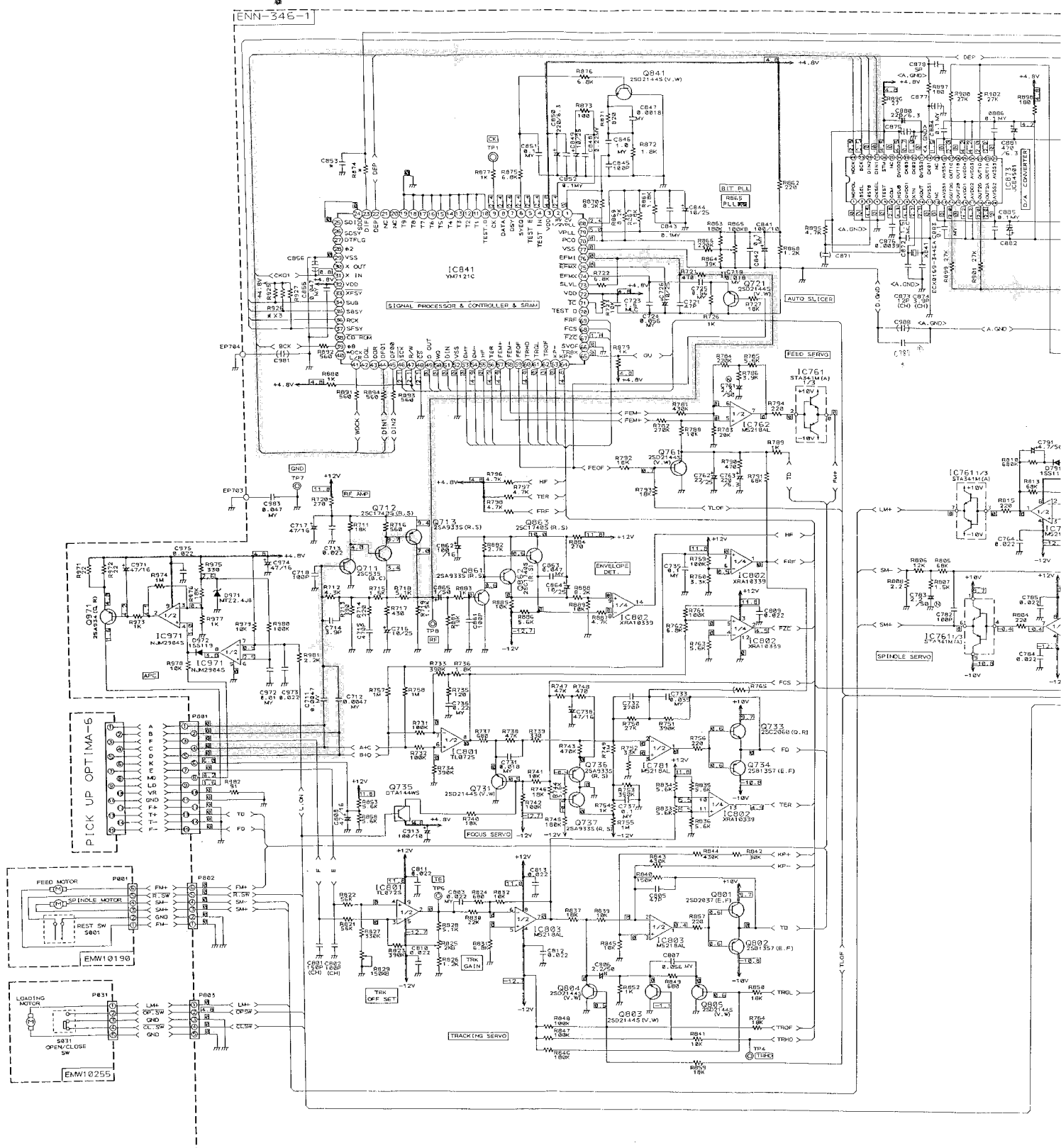
Printed Circuit Boards

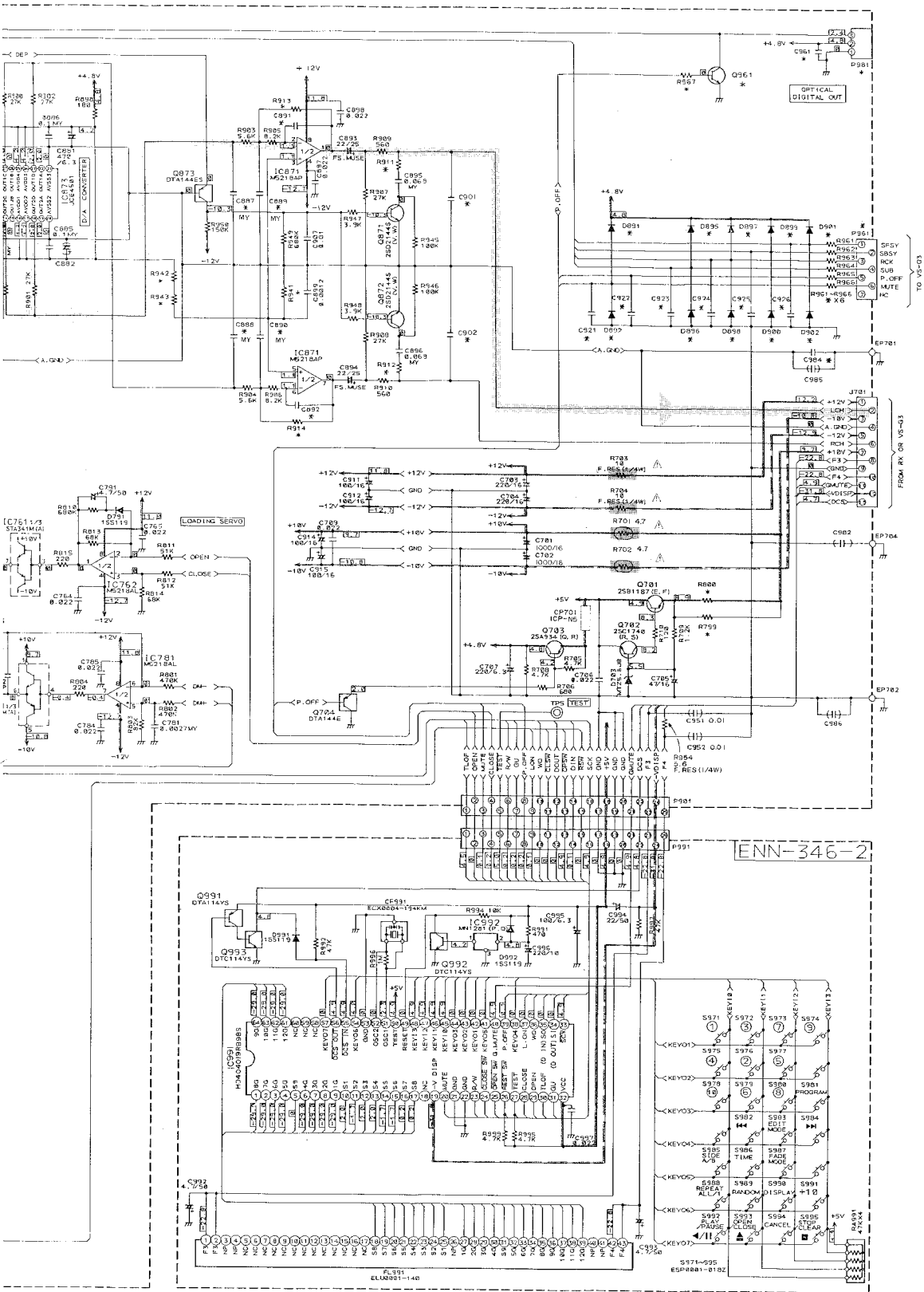
EMW10279-005 ENN-346





Schematic Diagram ■ Tuner Section





* MARK

Ver. / Symbol	C	D	E
R925 R927	1K x 3	NONE	NONE
R961 R966	68 x 6	NONE	NONE
D891 D892	ISS119	NONE	NONE
D895 D902	ISS119 x 8	NONE	NONE
C921 C926	68P x 6	NONE	NONE
P961	USED	NONE	NONE
C984	0.047	0.047	NONE
C887 C888	680P	680P	0.001
C889 C890	680P	680P	0.0018
C891 C892	150P	150P	120P
R911 R912	220	220	180
C901 C902	NONE	NONE	0.012

Notes:

1. indicates + B power supply.
2. indicates - B power supply.
3. indicates main signal path.
4. When replacing the parts in the shaded are () and those marked with , be sure to use the designated parts to ensure safety.
5. The design and contents are subject to change without notice.

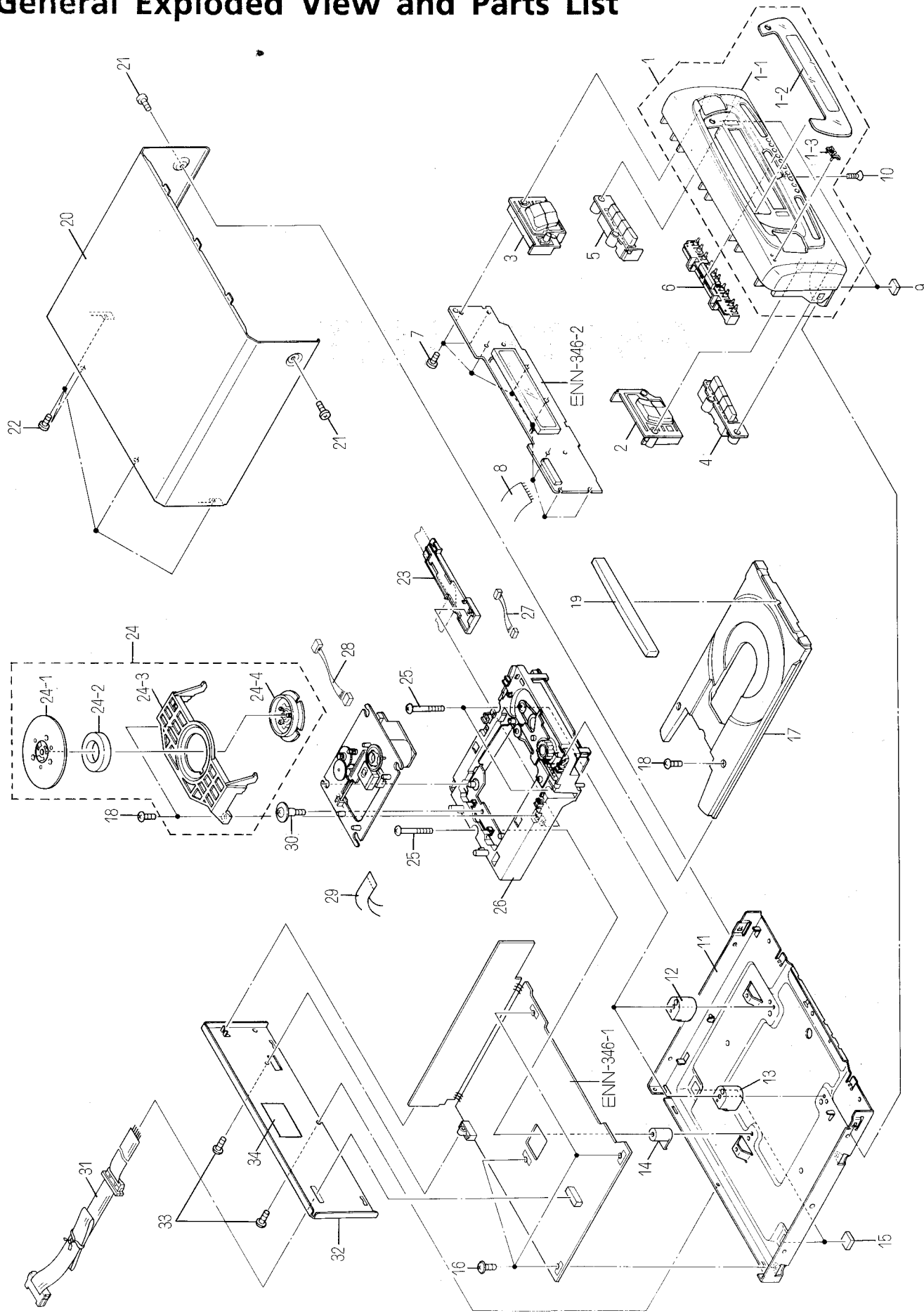
PARTS LIST

Note : All printed circuit boards and its assemblies are not available as service parts.

Contents

General Exploded View and Parts List	2-2
CD Mechanism Ass'y and Parts List	2-4
Printed Circuit Board Ass'y and Parts List	2-6
■ ENN-346 □ CD PC Board Ass'y	2-6

General Exploded View and Parts List



■ Parts List

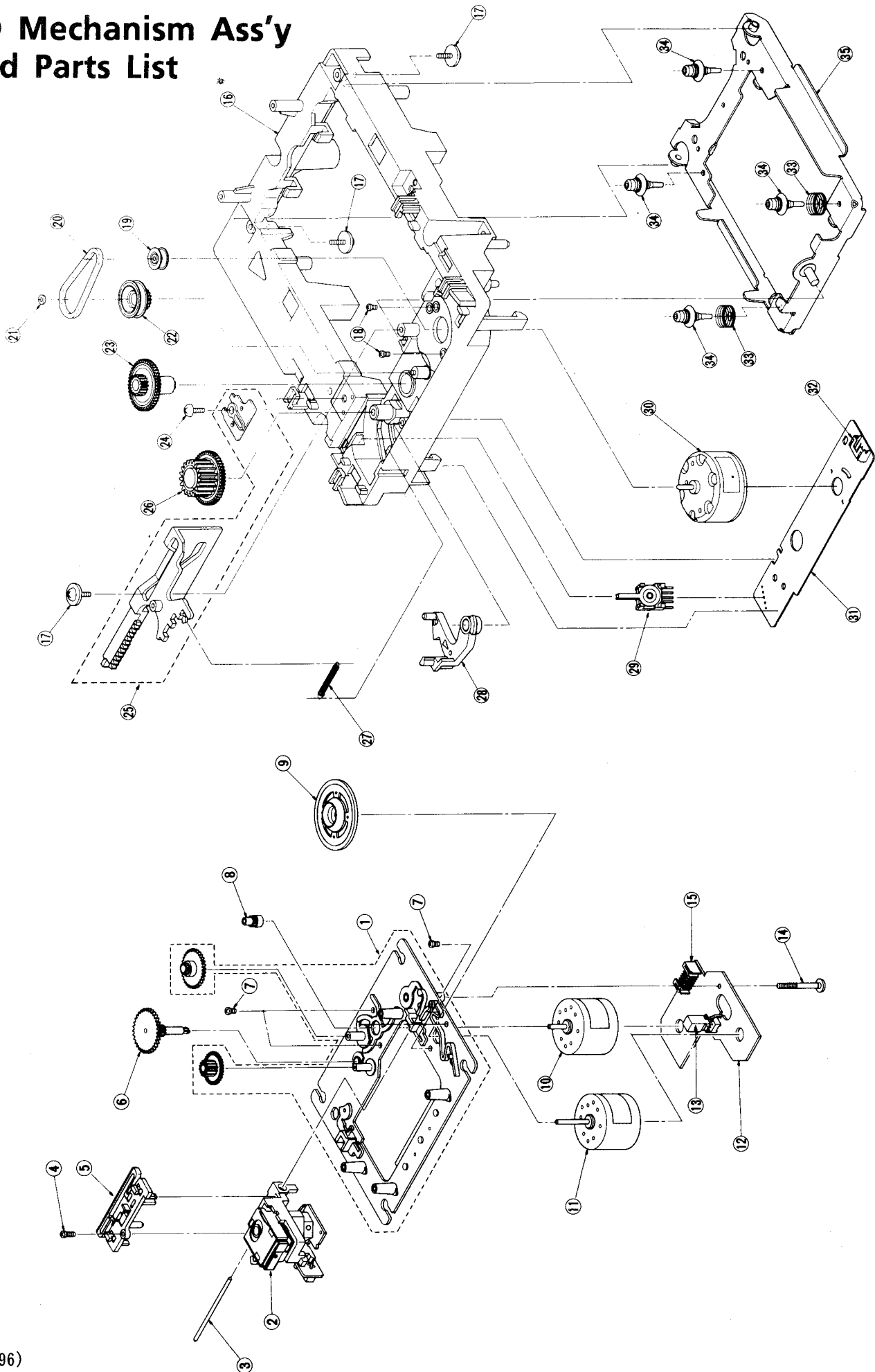
△	Item	Part Number	Part Name	Q'ty	Description	Area
	1	EFP-XLMXG7BKE(S	FRONT PANEL ASSY	1		
	1-1	E102630-003	FRONT PANEL	1		
	1-2	E207658-002	WINDOW SCREEN	1		
	1-3	E406971-221	JVC MARK	1		
	2	E207627-001	PUSH BUTTON	1	SERACH	
	3	E207629-001	PUSH BUTTON	1	PLAY	
	4	E207631-001	PUSH BUTTON	1	SKIP	
	5	E207633-001	PUSH BUTTON	1	EDIT	
	6	E207635-002	PUSH BUTTON	1	10KEY	
	7	SDSF2608Z	SCREW	8		
	8	EWR125K-15TT	FLAT WIRE	1	25PIN	
	9	E406855-008	SPACER	2	FRONT FOOT	
	10	SSST3006M	SCREW	1		
	11	E102467-002	CHASSIS BASE	1		
	12	E308199-001	MECHA STAND	1		
	13	E308200-001	MECHA STAND	1		
	14	E308201-001	MECHA STAND	1		
	15	E406855-011	SPACER	2	REAR FOOT	
	16	GBSG3008CC	SCREW	4		
	17	E102358-222	CD TRAY	1		
	18	SBSF3008M	SCREW	3		
	19	E308196-001	CD FITTING	1		
	20	E207626-001	METAL COVER	1		
	21	SDSG3008M	SCREW	2		
	22	E73273-003	SPECIAL SCREW	4		
	23	E308181-001	FFC HOLDER	1		
	24	E306837-005	CLAMPER ASSY	1		
24-1	24-1	E26756-002	CLAMPER BASE	1		
24-2	24-2	E306835-001	CD CLAMPER	1		
24-3	24-3	E74897-002	MAGNET	2		
24-4	24-4	E306836-003	YOKE PLATE	1		
	25	SBST3027Z	SCREW	3		
	26	-----	CD MECHANISM UNIT ASSY	1	See page 2-4	
	27	EWS265-B410	SOCKET WIRE	1		
	28	EWS266-B411	SOCKET WIRE	1	6PIN	
	29	EWpz02-001	FFC CABLE	1	5PIN	
	30	E406293-001	SPECIAL SCREW	1		
	31	EWp907-016	PLUG CORD ASSY	1		
	32	E207637-004	REAR PANEL	1		A
	32	E207637-004	REAR PANEL	1		BS
	32	E207637-004	REAR PANEL	1		EF
	32	E207637-004	REAR PANEL	1		EN
	32	E207637-004	REAR PANEL	1		G
	32	E207637-003	REAR PANEL	1		GI
	32	E207637-003	REAR PANEL	1		U
	32	E207637-003	REAR PANEL	1		UT
	33	SBSG3008CC	SCREW	1		
	34	E406507-001	CAUTION LABEL	1		
	-	E61029-005	NUMBER LABEL	1		
	-	E70891-001	LABEL	1		

△ : Safety Parts

The Marks for Designated Areas

- | | | | | | |
|----------|-------------|----------|----------|-----------------------------|--------------------|
| A | Australia | G | Germany | U | Universal Type |
| UT | Taiwan | BS | the U.K. | EF | Continental Europe |
| EN | Scandinavia | GI | Italy | No mark indicates all area. | |

CD Mechanism Ass'y and Parts List



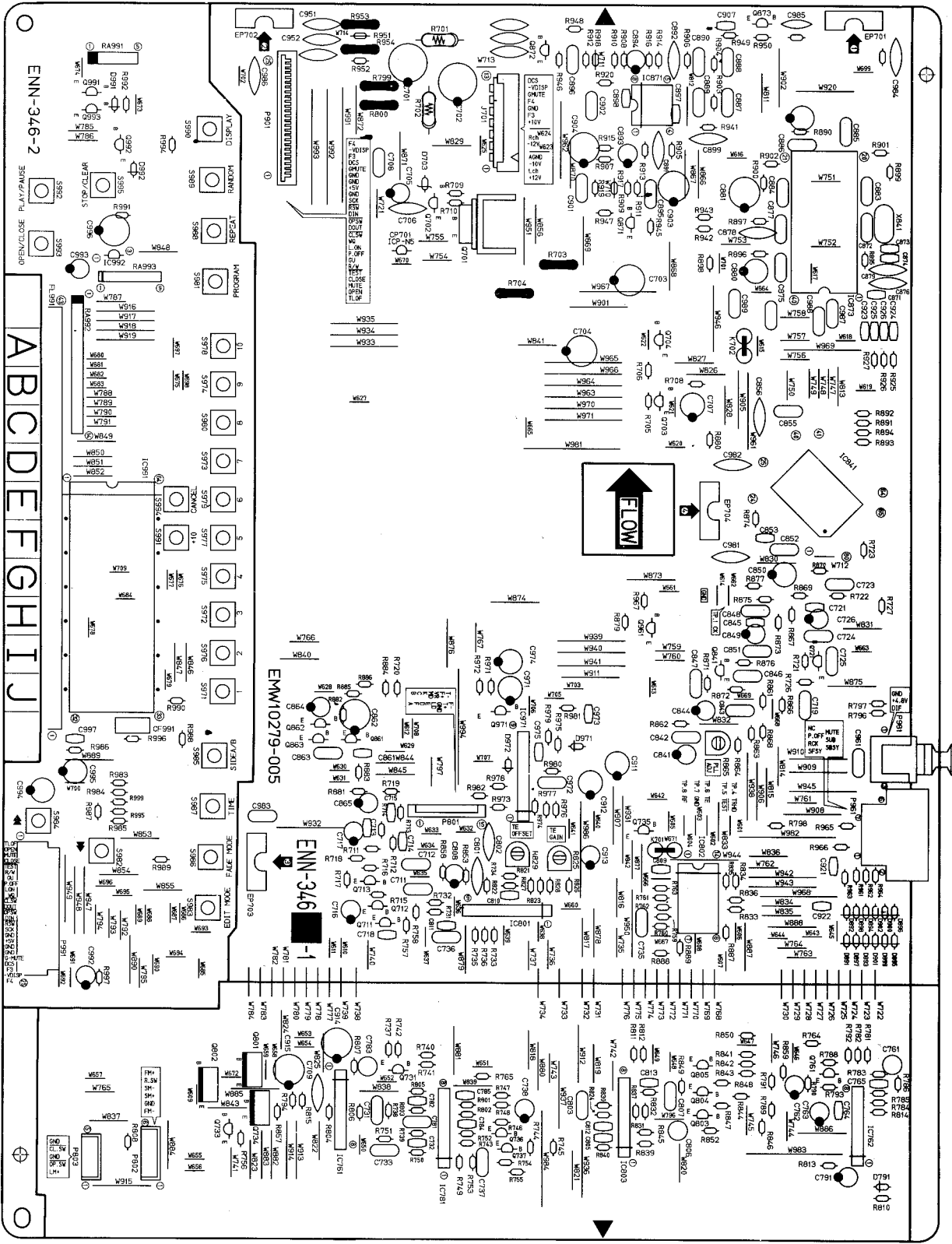
■ Parts List (CD Mechanism Ass'y)

Item	Part Number	Part Name	Q'ty	Description	Area
1	EPB-002A	MECHANISM BASE ASSY	1		
2	OPTIMA-6S	PICK UP ASS'Y	1		
3	E406777-001	SHAFT	1		
4	SDSF2006Z	SCREW	1		
5	E307746-001	CD RACK	1		
6	EPB-003A	MECHANISM BASE ASSY	1		
7	SDSP2003N	SCREW	4		
8	E406750-001	PINION GEAR	1		
9	EPB-001C	TURNTABLE	1		
10	E406784-001	DC MOTOR	1		
11	E406783-001	DC MOTOR	1		
12	EMW10190-001(S)	CIRCUIT BOARD	1		
13	ESB1100-005	LEAF SWITCH	1		
14	E75832-001	SPECIAL SCREW	1		
15	EMV5109-006B	PLUG ASSY	1	6PIN	
16	E102357-221	LOADING BASE	1		
17	E65923-003	SCREW	3		
18	SPSK2640Z	SCREW	2		
19	E75984-001	MOTOR PULLEY	1		
20	E75950-002	BELT	1		
21	E72024-001	SPEED NUT	1		
22	E75985-001	GEAR	1		
23	E75986-002	GEAR	1		
24	SBSF3008Z	SCREW	1		
25	E307252-221	CAM - PLATE	1		
26	E75987-001	REEL GEAR	1		
27	E75989-001	SPRING	1		
28	E307162-221	LEVER	1		
29	ESS1200-002	SLIDE SWITCH	1		
30	RF-500TB-12560	MOTOR	1		
31	EMW10255-002(S)	CIRCUIT BOARD	1		
32	EMV5109-005B	PLUG ASSY	1	5PIN	
33	E406871-001	SPRING	2		
34	E406294-002	INSULATOR	4		
35	E307179-221	ELEVATOR BASE ASSY	1		

Printed Circuit Board Ass'y and Parts List

■ ENN-346 □ CD PC Board Ass'y

Note : ENN-346 □ varies according to the areas employed. See note (1) when placing an order.



Note (1)

PC Board Ass'y	Designated Areas
ENN-346 D	Australia the U.K. Continental Europe Scandinavia
ENN-346 E	Germany Italy
ENJ-063 C	Universal Type Taiwan

CAPACITORS

Δ	ITEM	PART NUMBER	DESCRIPTION			AREA
	C701	QETB1CM-108	1000MF	16V	ELECTRO	
	C702	QETB1CM-108	1000MF	16V	ELECTRO	
	C703	QETB1CM-227	220MF	16V	ELECTRO	
	C704	QETB1CM-227	220MF	16V	ELECTRO	
	C705	QETB1CM-476	47MF	16V	ELECTRO	
	C706	QCF21HP-223	0.022MF	50V	CERAMIC	
	C707	QETBOJM-227	220MF	6.3V	ELECTRO	
	C709	QCF21HP-223	0.022MF	50V	CERAMIC	
	C711	QFN81HJ-472	4700PF	50V	MYLAR	
	C712	QFN81HJ-472	4700PF	50V	MYLAR	
	C713	QCHB1EZ-223	0.022MF	25V	CERAMIC	
	C714	QCSB1HK-3R9	3.9PF	50V	CERAMIC	
	C715	QCSB1HK-471	470PF	50V	CERAMIC	
	C716	QETB1EM-106	10MF	25V	ELECTRO	
	C717	QETB1CM-476	47MF	16V	ELECTRO	
	C718	QCBB1HK-101	100PF	50V	CERAMIC	
	C719	QFN81HJ-183	0.018MF	50V	MYLAR	
	C721	QCSB1HJ-470	47PF	50V	CERAMIC	
	C723	QCZ0202-155	1.5MF	25V	CERAMIC	
	C724	QFN81HJ-563	0.056MF	50V	MYLAR	
	C725	QFVB1HJ-564N	0.56MF	50V	T.FILM	
	C726	QETB1EM-106	10MF	25V	ELECTRO	
	C731	QFN81HJ-183	0.018MF	50V	MYLAR	
	C732	QCBB1HK-271	270PF	50V	CERAMIC	
	C733	QFN81HJ-393	0.039MF	50V	MYLAR	
	C735	QFVB1HJ-104N	0.1MF	50V	T.FILM	
	C736	QFVB1HJ-224N	0.22MF	50V	T.FILM	
	C737	QFVB1HJ-104N	0.1MF	50V	T.FILM	
	C738	QETB1CM-476	47MF	16V	ELECTRO	
	C761	QEN51HM-225	2.2MF	50V	NON POLE	
	C762	QETB1EM-226	22MF	25V	ELECTRO	
	C763	QETBOJM-227	220MF	6.3V	ELECTRO	
	C764	QCHB1EZ-223	0.022MF	25V	CERAMIC	
	C765	QCHB1EZ-223	0.022MF	25V	CERAMIC	
	C781	QFN81HJ-272	2700PF	50V	MYLAR	
	C782	QCBB1HK-101	100PF	50V	CERAMIC	
	C783	QEN51HM-225	2.2MF	50V	NON POLE	
	C784	QCHB1EZ-223	0.022MF	25V	CERAMIC	
	C785	QCHB1EZ-223	0.022MF	25V	CERAMIC	
	C791	QETB1HM-475	4.7MF	50V	ELECTRO	
	C801	QCT26CH-151	150PF	50V	CERAMIC	
	C802	QCT26CH-101	100PF	50V	CERAMIC	
	C803	QFN81HJ-223	0.022MF	50V	MYLAR	
	C805	QCSB1HJ-470	47PF	50V	CERAMIC	
	C806	QEN51HM-225	2.2MF	50V	NON POLE	
	C807	QFN81HJ-563	0.056MF	50V	MYLAR	
	C808	QETB1CM-476	47MF	16V	ELECTRO	
	C809	QCHB1EZ-223	0.022MF	25V	CERAMIC	
	C810	QCHB1EZ-223	0.022MF	25V	CERAMIC	
	C811	QCHB1EZ-223	0.022MF	25V	CERAMIC	
	C812	QCHB1EZ-223	0.022MF	25V	CERAMIC	
	C813	QCHB1EZ-223	0.022MF	25V	CERAMIC	
	C841	QETB1AM-107	100MF	10V	ELECTRO	
	C842	QFVB1HJ-104N	0.1MF	50V	T.FILM	
	C843	QFVB1HJ-104N	0.1MF	50V	T.FILM	
	C844	QETB1EM-106	10MF	25V	ELECTRO	
	C845	QCBB1HK-101	100PF	50V	CERAMIC	
	C846	QFVB1HJ-105N	1MF	50V	T.FILM	
	C847	QFN81HJ-182	1800PF	50V	MYLAR	
	C848	QFVB1HJ-224N	0.22MF	50V	T.FILM	
	C849	QETB1EM-106	10MF	25V	ELECTRO	
	C850	QETBOJM-227	220MF	6.3V	ELECTRO	
	C851	QFVB1HJ-104N	0.1MF	50V	T.FILM	
	C852	QFVB1HJ-104N	0.1MF	50V	T.FILM	
	C855	QFN81HJ-473	0.047MF	50V	MYLAR	
	C861	QCBB1HK-101	100PF	50V	CERAMIC	
	C862	QER51CM-107	100MF	16V	ELECTRO	
	C863	QFN81HJ-473	0.047MF	50V	MYLAR	
	C864	QER51EM-106	10MF	25V	ELECTRO	
	C865	QETB1HM-105	1MF	50V	ELECTRO	
	C872	QCZ0202-155	1.5MF	25V	CERAMIC	
	C873	QCT30CH-120	12PF	50V	CERAMIC	
	C874	QCT30CH-3R9	3.9PF	50V	CERAMIC	
	C876	QCY21HK-392	3900PF	50V	CERAMIC	
	C878	QCS21HJ-5R0	5PF	50V	CERAMIC	
	C880	QETBOJM-227	220MF	6.3V	ELECTRO	
	C881	QETBOJM-477	470MF	6.3V	ELECTRO	
	C883	QFVB1HJ-104N	0.1MF	50V	T.FILM	
	C884	QFVB1HJ-104N	0.1MF	50V	T.FILM	
	C885	QFVB1HJ-104N	0.1MF	50V	T.FILM	
	C886	QFVB1HJ-104N	0.1MF	50V	T.FILM	
	C887	QFN81HJ-681	680PF	50V	MYLAR	
	C888	QFN81HJ-681	680PF	50V	MYLAR	
	C889	QFN81HJ-681	680PF	50V	MYLAR	
	C890	QFN81HJ-681	680PF	50V	MYLAR	
	C891	QCS21HJ-151	150PF	50V	CERAMIC	
	C892	QCS21HJ-151	150PF	50V	CERAMIC	
	C893	EEZ2505-226	22MF	50V	ELECTRO	
	C894	EEZ2505-226	22MF	50V	ELECTRO	
	C895	QFN81HJ-683	0.068MF	50V	MYLAR	
	C896	QFN81HJ-683	0.068MF	50V	MYLAR	
	C897	QCHB1EZ-223	0.022MF	25V	CERAMIC	
	C898	QCHB1EZ-223	0.022MF	25V	CERAMIC	
	C899	QCY21HK-122	1200PF	50V	CERAMIC	
	C907	QCVB1CM-103	0.01MF	16V	CERAMIC	

TRANSISTORS

Δ	ITEM	PART NUMBER	DESCRIPTION		AREA
	Q701	2SB1187(E,F)	SILICON	ROHM	
	Q702	2SC1740S(R,S)	SILICON	ROHM	
	Q703	2SA934(Q,R)	SILICON	ROHM	
	Q704	DTA144ES	SILICON	ROHM	
	Q711	2SC535(B,C)	SILICON	HITACHI	
	Q712	2SC1740S(R,S)	SILICON	ROHM	
	Q713	2SA933S(R,S)	SILICON	ROHM	
	Q721	2SD2144S(VW)	SILICON	ROHM	
	Q731	2SD2144S(VW)	SILICON	ROHM	
	Q733	2SC2060(Q,R)	SILICON	ROHM	
	Q734	2SB1357(E,F)	SILICON	ROHM	
	Q735	DTA144WS	SILICON	ROHM	
	Q736	2SA933S(R,S)	SILICON	ROHM	
	Q737	2SA933S(R,S)	SILICON	ROHM	
	Q761	2SD2144S(VW)	SILICON	ROHM	
	Q801	2SD2037(E,F)	SILICON	ROHM	
	Q802	2SB1357(E,F)	SILICON	ROHM	
	Q803	2SD2144S(VW)	SILICON	ROHM	
	Q804	2SD2144S(VW)	SILICON	ROHM	
	Q805	2SD2144S(VW)	SILICON	ROHM	
	Q841	2SD2144S(VW)	SILICON	ROHM	
	Q861	2SA933S(R,S)	SILICON	ROHM	
	Q862	2SC1740S(R,S)	SILICON	ROHM	
	Q863	2SC1740S(R,S)	SILICON	ROHM	
	Q871	2SD2144S(VW)	SILICON	ROHM	
	Q872	2SD2144S(VW)	SILICON	ROHM	
	Q873	DTA144ES	SILICON	ROHM	
	Q971	2SA934(Q,R)	SILICON	ROHM	
	Q991	DTA114YS	SILICON	ROHM	
	Q992	DTC114YS	SILICON	ROHM	
	Q993	DTC114YS	SILICON	ROHM	

Δ : SAFETY PARTS

I. C. S.

Δ	ITEM	PART NUMBER	DESCRIPTION		AREA
	IC761	STA341M(A)	I.C.	SANKEN	
	IC762	M5218AL	I.C.	MITSUBISHI	
	IC781	M5218AL	I.C.	MITSUBISHI	
	IC801	NJM072S	I.C.	DAINICHI	
	IC802	XRA10339	I.C.	EXAR JAPAN	
	IC803	M5218AL	I.C.	MITSUBISHI	
	IC841	YM7121C	I.C.	YAMAHA	
	IC871	M5218AP	I.C.	MITSUBISHI	
	IC873	JCE4501	I.C.	MATSUSHITA	
	IC971	NJM2904S	I.C.	DAINICHI	
	IC991	HD404019RC13S	I.C.	HITACHI	
	IC992	MN1281(P,Q)	I.C.	MATSUSHITA	

Δ : SAFETY PARTS

DIODES

Δ	ITEM	PART NUMBER	DESCRIPTION		AREA
	D703	MTZ5.6JB	ZENER	ROHM	
	D791	1SS119	SILICON	HITACHI	
	D891	1SS119	SILICON	HITACHI	
	D892	1SS119	SILICON	HITACHI	C
	D895	1SS119	SILICON	HITACHI	C
	D896	1SS119	SILICON	HITACHI	C
	D897	1SS119	SILICON	HITACHI	C
	D898	1SS119	SILICON	HITACHI	C
	D899	1SS119	SILICON	HITACHI	C
	D900	1SS119	SILICON	HITACHI	C
	D901	1SS119	SILICON	HITACHI	C
	D902	1SS119	SILICON	HITACHI	C
	D971	MTZ2.4JB	ZENER	ROHM	
	D972	1SS119	SILICON	HITACHI	
	D991	1SS119	SILICON	HITACHI	
	D992	1SS119	SILICON	HITACHI	

Δ : SAFETY PARTS

Δ : SAFETY PARTS

CAPACITORS

Δ	ITEM	PART NUMBER	DESCRIPTION	AREA
	C911	QETB1CM-107	100MF 16V ELECTRO	
	C912	QETB1CM-107	100MF 16V ELECTRO	
	C913	QETB1AM-107	100MF 10V ELECTRO	
	C914	QETB1CM-107	100MF 16V ELECTRO	
	C915	QETB1CM-107	100MF 16V ELECTRO	
	C921	QCSB1HJ-680	68PF 50V CERAMIC	C
	C922	QCSB1HJ-680	68PF 50V CERAMIC	C
	C923	QCSB1HJ-680	68PF 50V CERAMIC	C
	C924	QCSB1HJ-680	68PF 50V CERAMIC	C
	C925	QCSB1HJ-680	68PF 50V CERAMIC	C
	C926	QCSB1HJ-680	68PF 50V CERAMIC	C
	C951	QCY21HK-103	0.01MF 50V CERAMIC	
	C952	QCY21HK-103	0.01MF 50V CERAMIC	
	C971	QER51CM-476	47MF 16V ELECTRO	
	C972	QFNB1HJ-103	0.01MF 50V MYLAR	
	C973	QCHB1EZ-223	0.022MF 25V CERAMIC	
	C974	QER51CM-476	47MF 16V ELECTRO	
	C975	QCHB1EZ-223	0.022MF 25V CERAMIC	
	C983	QFNB1HJ-473	0.047MF 50V MYLAR	
	C987	QCZ0202-155	1.5MF 25V CERAMIC	
	C992	QER51HM-475	4.7MF 50V ELECTRO	
	C993	QER51HM-475	4.7MF 50V ELECTRO	
	C994	QEK51HM-226	22MF 50V ELECTRO	
	C995	QER50JM-107	100MF 6.3V ELECTRO	
	C996	QER51AM-227	220MF 10V ELECTRO	
	C997	QCHB1EZ-223	0.022MF 25V CERAMIC	

Δ SAFETY PARTS

RESISTORS

Δ	ITEM	PART NUMBER	DESCRIPTION	AREA
Δ	R701	PTH61G25AR4R7M	FUSIBLE RE	SI
Δ	R702	PTH61G25AR4R7M	FUSIBLE RE	SI
Δ	R703	QRZ0077-100	10 1/4W FUSIBLE	
	R704	QRZ0077-100	10 1/4W FUSIBLE	
	R705	QRD167J-472	4.7K 1/6W CARBON	
	R706	QRD167J-681	680 1/6W CARBON	
	R708	QRD167J-472	4.7K 1/6W CARBON	
	R709	QRD167J-122	1.2K 1/6W CARBON	
	R710	QRD167J-121	120 1/6W CARBON	
	R711	QRD167J-183	18K 1/6W CARBON	
	R712	QRD167J-432	4.3K 1/6W CARBON	
	R713	QRD167J-391	390 1/6W CARBON	
	R714	QRD161J-221	220 1/6W CARBON	
	R715	QRD167J-152	1.5K 1/6W CARBON	
	R716	QRD167J-561	560 1/6W CARBON	
	R717	QRD167J-431	430 1/6W CARBON	
	R718	QRD167J-512	5.1K 1/6W CARBON	
	R719	QRD167J-152	1.5K 1/6W CARBON	
	R720	QRD167J-271	270 1/6W CARBON	
	R721	QRD167J-471	470 1/6W CARBON	
	R722	QRD167J-682	6.8K 1/6W CARBON	
	R723	QRD167J-103	10K 1/6W CARBON	
	R726	QRD167J-102	1K 1/6W CARBON	
	R727	QRD167J-183	18K 1/6W CARBON	
	R731	QRD167J-104	100K 1/6W CARBON	
	R732	QRD167J-104	100K 1/6W CARBON	
	R733	QRD167J-394	390K 1/6W CARBON	
	R734	QRD167J-394	390K 1/6W CARBON	
	R735	QRD167J-121	120 1/6W CARBON	
	R736	QRD167J-182	1.8K 1/6W CARBON	
	R737	QRD167J-681	680 1/6W CARBON	
	R738	QRD167J-473	47K 1/6W CARBON	
	R739	QRD167J-331	330 1/6W CARBON	
	R740	QRD167J-183	18K 1/6W CARBON	
	R741	QRD167J-103	10K 1/6W CARBON	
	R742	QRD167J-104	100K 1/6W CARBON	
	R743	QRD167J-474	470K 1/6W CARBON	
	R744	QRD167J-562	5.6K 1/6W CARBON	
	R745	QRD167J-184	180K 1/6W CARBON	
	R746	QRD167J-183	18K 1/6W CARBON	
	R747	QRD167J-473	47K 1/6W CARBON	
	R748	QRD167J-471	470 1/6W CARBON	
	R749	QRD167J-105	1M 1/6W CARBON	
	R750	QRD167J-273	27K 1/6W CARBON	
	R751	QRD167J-394	390K 1/6W CARBON	
	R752	QRD167J-333	33K 1/6W CARBON	
	R753	QRD167J-394	390K 1/6W CARBON	
	R754	QRD167J-102	1K 1/6W CARBON	
	R755	QRD167J-105	1M 1/6W CARBON	
	R756	QRD161J-221	220 1/6W CARBON	
	R757	QRD167J-105	1M 1/6W CARBON	
	R758	QRD167J-105	1M 1/6W CARBON	
	R759	QRD167J-104	100K 1/6W CARBON	
	R760	QRD167J-332	3.3K 1/6W CARBON	
	R761	QRD167J-104	100K 1/6W CARBON	
	R762	QRD167J-682	6.8K 1/6W CARBON	
	R763	QRD167J-562	5.6K 1/6W CARBON	
	R764	QRD167J-183	18K 1/6W CARBON	
	R781	QRD167J-434	430K 1/6W CARBON	
	R782	QRD167J-274	270K 1/6W CARBON	

Δ SAFETY PARTS

RESISTORS

Δ	ITEM	PART NUMBER	DESCRIPTION	AREA
	R783	QRD167J-203	20K 1/6W CARBON	
	R784	QRD167J-224	220K 1/6W CARBON	
	R785	QRD167J-562	5.6K 1/6W CARBON	
	R786	QRD167J-392	3.9K 1/6W CARBON	
	R788	QRD167J-103	10K 1/6W CARBON	
	R789	QRD167J-102	1K 1/6W CARBON	
	R790	QRD167J-471	470 1/6W CARBON	
	R791	QRD167J-683	68K 1/6W CARBON	
	R792	QRD167J-183	18K 1/6W CARBON	
	R793	QRD167J-183	18K 1/6W CARBON	
	R794	QRD161J-221	220 1/6W CARBON	
	R796	QRD167J-472	4.7K 1/6W CARBON	
	R797	QRD167J-472	4.7K 1/6W CARBON	
	R798	QRD167J-472	4.7K 1/6W CARBON	
Δ	R800	QRZ0077-4R7	4.7 1/4W FUSIBLE	
	R801	QRD167J-474	470K 1/6W CARBON	
	R802	QRD167J-474	470K 1/6W CARBON	
	R803	QRD167J-823	82K 1/6W CARBON	
	R804	QRD161J-221	220 1/6W CARBON	
	R805	QRD167J-683	68K 1/6W CARBON	
	R806	QRD167J-123	12K 1/6W CARBON	
	R807	QRD167J-152	1.5K 1/6W CARBON	
	R808	QRD167J-2R2	2.2 1/6W CARBON	
	R810	QRD167J-684	680K 1/6W CARBON	
	R811	QRD167J-513	51K 1/6W CARBON	
	R812	QRD167J-513	51K 1/6W CARBON	
	R813	QRD167J-683	68K 1/6W CARBON	
	R814	QRD167J-683	68K 1/6W CARBON	
	R815	QRD161J-221	220 1/6W CARBON	
	R821	QRD167J-563	56K 1/6W CARBON	
	R822	QRD167J-563	56K 1/6W CARBON	
	R823	QRD167J-394	390K 1/6W CARBON	
	R824	QRD167J-681	680 1/6W CARBON	
	R825	QVPA601-202A	2K VARIABLE	
	R826	QRD167J-122	1.2K 1/6W CARBON	
	R827	QRD167J-334	330K 1/6W CARBON	
	R828	QRD167J-512	5.1K 1/6W CARBON	
	R829	QVPA601-154A	150K VARIABLE	
	R830	QRD167J-223	22K 1/6W CARBON	
	R831	QRD167J-682	6.8K 1/6W CARBON	
	R832	QRD167J-103	10K 1/6W CARBON	
	R833	QRD167J-562	5.6K 1/6W CARBON	
	R834	QRD167J-562	5.6K 1/6W CARBON	
	R835	QRD167J-562	5.6K 1/6W CARBON	
	R836	QRD167J-562	5.6K 1/6W CARBON	
	R837	QRD167J-183	18K 1/6W CARBON	
	R839	QRD167J-103	10K 1/6W CARBON	
	R840	QRD167J-154	150K 1/6W CARBON	
	R841	QRD167J-103	10K 1/6W CARBON	
	R842	QRD167J-303	30K 1/6W CARBON	
	R843	QRD167J-434	430K 1/6W CARBON	
	R844	QRD167J-434	430K 1/6W CARBON	
	R845	QRD167J-103	10K 1/6W CARBON	
	R846	QRD167J-184	180K 1/6W CARBON	
	R847	QRD167J-104	100K 1/6W CARBON	
	R848	QRD167J-104	100K 1/6W CARBON	
	R849	QRD167J-681	680 1/6W CARBON	
	R850	QRD167J-183	18K 1/6W CARBON	
	R852	QRD167J-102	1K 1/6W CARBON	
	R853	QRD167J-562	5.6K 1/6W CARBON	
	R857	QRD161J-221	220 1/6W CARBON	
	R858	QRD167J-562	5.6K 1/6W CARBON	
	R859	QRD167J-183	18K 1/6W CARBON	
	R861	QRD167J-182	1.8K 1/6W CARBON	
	R862	QRD161J-221	220 1/6W CARBON	
	R863	QRD167J-184	180K 1/6W CARBON	
	R864	QRD167J-393	39K 1/6W CARBON	
	R865	QVPA601-104A	100K VARIABLE	
	R866	QRD167J-224	220K 1/6W CARBON	
	R867	QRD167J-182	1.8K 1/6W CARBON	
	R868	QRD167J-122	1.2K 1/6W CARBON	
	R869	QRD167J-822	8.2K 1/6W CARBON	
	R870	QRD167J-822	8.2K 1/6W CARBON	
	R871	QRD167J-821	820 1/6W CARBON	
	R872	QRD167J-182	1.8K 1/6W CARBON	
	R873	QRD167J-101	100 1/6W CARBON	
	R875	QRD167J-682	6.8K 1/6W CARBON	
	R876	QRD167J-682	6.8K 1/6W CARBON	
	R877	QRD167J-102	1K 1/6W CARBON	
	R879	QRD167J-102	1K 1/6W CARBON	
	R880	QRD167J-102	1K 1/6W CARBON	
	R881	QRD167J-103	10K 1/6W CARBON	
	R882	QRD167J-272	2.7K 1/6W CARBON	
	R883	QRD167J-102	1K 1/6W CARBON	
	R884	QRD167J-271	270 1/6W CARBON	
	R885	QRD167J-103	10K 1/6W CARBON	
	R886	QRD167J-562	5.6K 1/6W CARBON	
	R887	QRD167J-472	4.7K 1/6W CARBON	
	R888	QRD167J-822	8.2K 1/6W CARBON	
	R889	QRD167J-103	10K 1/6W CARBON	
	R891	QRD167J-561	560 1/6W CARBON	
	R892	QRD167J-561	560 1/6W CARBON	
	R893	QRD167J-561	560 1/6W CARBON	
	R894	QRD167J-561	560 1/6W CARBON	
	R895	QRD167J-472	4.7K 1/6W CARBON	

Δ SAFETY PARTS

RESISTORS

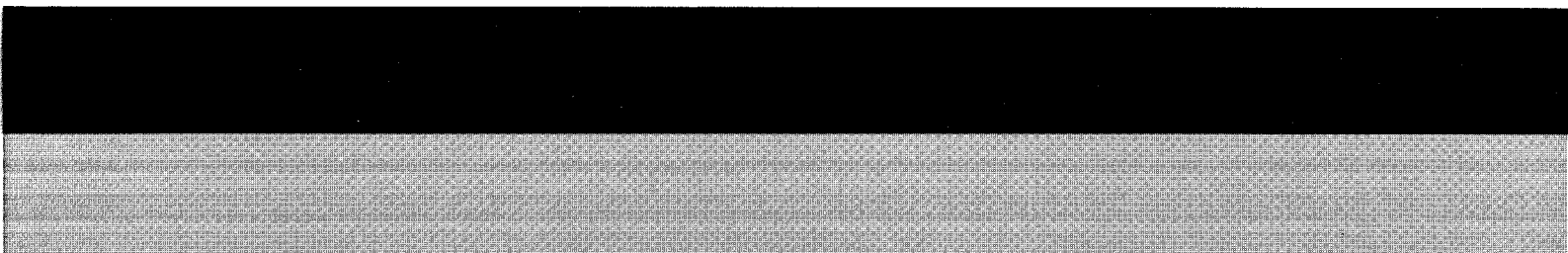
△	ITEM	PART NUMBER	DESCRIPTION	AREA
	R896	QRD167J-270	27 1/6W CARBON	
	R897	QRD167J-181	180 1/6W CARBON	
	R898	QRD167J-181	180 1/6W CARBON	
	R899	QRD167J-273	27K 1/6W CARBON	
	R900	QRD167J-273	27K 1/6W CARBON	
	R901	QRD167J-273	27K 1/6W CARBON	
	R902	QRD167J-273	27K 1/6W CARBON	
	R903	QRD167J-562	5.6K 1/6W CARBON	
	R904	QRD167J-562	5.6K 1/6W CARBON	
	R905	QRD167J-822	8.2K 1/6W CARBON	
	R906	QRD167J-822	8.2K 1/6W CARBON	
	R907	QRD167J-273	27K 1/6W CARBON	
	R908	QRD167J-273	27K 1/6W CARBON	
	R909	QRD167J-561	560 1/6W CARBON	
	R910	QRD167J-561	560 1/6W CARBON	
	R911	QRD161J-221	220 1/6W CARBON	
	R912	QRD161J-221	220 1/6W CARBON	
	R913	QRD167J-153	15K 1/6W CARBON	
	R914	QRD167J-153	15K 1/6W CARBON	
	R925	QRD167J-102	1K 1/6W CARBON	C
	R926	QRD167J-102	1K 1/6W CARBON	C
	R927	QRD167J-102	1K 1/6W CARBON	C
	R941	QRD167J-152	1.5K 1/6W CARBON	
	R942	QRD167J-512	5.1K 1/6W CARBON	
	R943	QRD167J-201	200 1/6W CARBON	
	R945	QRD167J-104	100K 1/6W CARBON	
	R946	QRD167J-104	100K 1/6W CARBON	
	R947	QRD167J-392	3.9K 1/6W CARBON	
	R948	QRD167J-392	3.9K 1/6W CARBON	
	R949	QRD167J-684	680K 1/6W CARBON	
△	R950	QRD167J-154	150K 1/6W CARBON	
	R954	QRZ0077-5R6	5.6 1/4W FUSIBLE	
	R961	QRD167J-680	68 1/6W CARBON	C
	R962	QRD167J-680	68 1/6W CARBON	C
	R963	QRD167J-680	68 1/6W CARBON	C
	R964	QRD167J-680	68 1/6W CARBON	C
	R965	QRD167J-680	68 1/6W CARBON	C
	R966	QRD167J-680	68 1/6W CARBON	C
	R971	QRD167J-220	22 1/6W CARBON	
	R972	QRD167J-220	22 1/6W CARBON	
	R973	QRD167J-102	1K 1/6W CARBON	
	R974	QRD167J-105	1M 1/6W CARBON	
	R975	QRD167J-331	330 1/6W CARBON	
	R976	QRD167J-183	18K 1/6W CARBON	
	R977	QRD167J-102	1K 1/6W CARBON	
	R978	QRD167J-103	10K 1/6W CARBON	
	R979	QRD167J-103	10K 1/6W CARBON	
	R980	QRD167J-104	100K 1/6W CARBON	
	R981	QRD167J-222	2.2K 1/6W CARBON	
	R982	QRD167J-910	91 1/6W CARBON	
	R991	QRD167J-471	470 1/6W CARBON	
	R992	QRD167J-473	47K 1/6W CARBON	
	R994	QRD167J-103	10K 1/6W CARBON	
	R995	QRD167J-472	4.7K 1/6W CARBON	
	R996	QRD167J-105	1M 1/6W CARBON	
	R997	QRD167J-473	47K 1/6W CARBON	
	R999	QRD167J-472	4.7K 1/6W CARBON	
	RA991	GRB045J-473M	47K 1/8W R.NETWORK	

△ : SAFETY PARTS.

OTHERS

△	ITEM	PART NUMBER	DESCRIPTION	AREA
		E308198-001	FL HOLDER	
		E3400-420	FELT SPACER	
	J701	EMV7141-013M	CONNECTOR13PIN	
	P801	EMV7144-015	CONNECTOR15PIN	
	P802	EMV5109-006A	PLUG ASSY6PIN	
	P803	EMV5109-005A	PLUG ASSY5PIN	
	P901	EMV7123-025	CONNECTOR25PIN	
	P961	EMV7127-007	CONNECTOR7PIN	C
	P991	EMV7123-025R	CONNECTOR25PIN	
	S971	ESP0001-018	TACT SWITCH①	
	S972	ESP0001-018	TACT SWITCH③	
	S973	ESP0001-018	TACT SWITCH⑦	
	S974	ESP0001-018	TACT SWITCH③	
	S975	ESP0001-018	TACT SWITCH④	
	S976	ESP0001-018	TACT SWITCH②	
	S977	ESP0001-018	TACT SWITCH⑤	
	S978	ESP0001-018	TACT SWITCH⑥	
	S979	ESP0001-018	TACT SWITCH⑤	
	S980	ESP0001-018	TACT SWITCH③	
	S981	ESP0001-018	TACT SWITCHPROGRAM	
	S982	ESP0001-018	TACT SWITCHM	
	S983	ESP0001-018	TACT SWITCHEDIT MODE	
	S984	ESP0001-018	TACT SWITCHM	
	S985	ESP0001-018	TACT SWITCHSIDE A/B	
	S986	ESP0001-018	TACT SWITCHTIME	
	S987	ESP0001-018	TACT SWITCHFADE MODE	
	S988	ESP0001-018	TACT SWITCHREPEAT ALL/1	
	S989	ESP0001-018	TACT SWITCHRANDOM	
	S990	ESP0001-018	TACT SWITCHDISPLAY	
	S991	ESP0001-018	TACT SWITCH+10	
	S992	ESP0001-018	TACT SWITCHPLAY/PAUSE	
	S993	ESP0001-018	TACT SWITCHOPEN/CLOSE	
	S994	ESP0001-018	TACT SWITCHCANCEL	
	S995	ESP0001-018	TACT SWITCHSTOP/CLEAR	
	X841	ECX0169-344EA	RESONATOR	
	CF991	ECX0004-194KM	RESONATOR	
△	CP701	ICP-N5	I.C. PROTECTOR	
	EP701	E70859-001	EARTH PLATE	
	EP702	E70859-001	EARTH PLATE	
	EP703	E70859-001	EARTH PLATE	
	EP704	E70859-001	EARTH PLATE	
	FL991	ELU0001-140	FL TUBE	

△ : SAFETY PARTS.



JVC

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