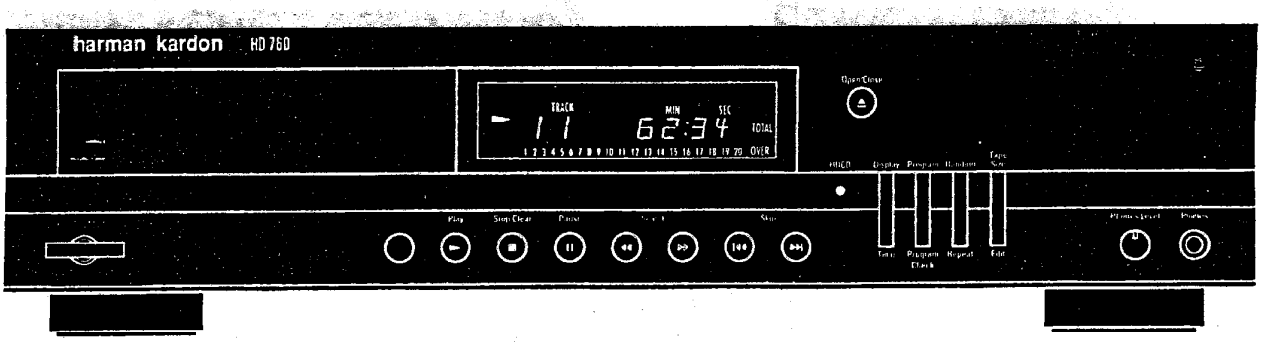
The harman kardon
Model *HD 760*

Manual A

COMPACT DISC PLAYER

Technical Manual



230V·····for EUR

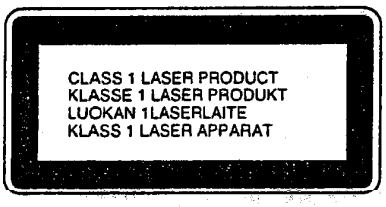
CONTENTS

harman/kardon
Parts and Service Office
250 Crossways Park Dr. Woodbury, N.Y. 11797
1112-HD760 0599 Printed In JAPAN
CEC6P20068540

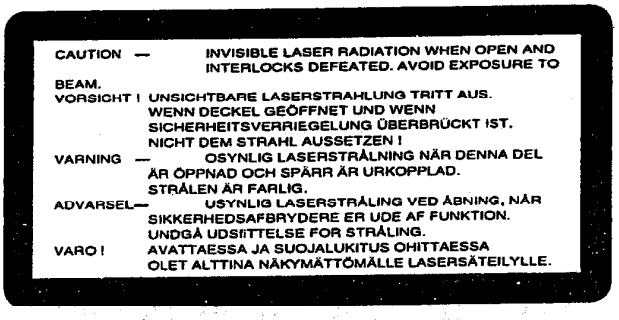
CLASS 1 LASER PRODUCT
Product complies with DHHS rules CFR subchapter J part 1040: 10 at date of manufacture.

DANGER —Invisible laser radiation when opened and interlock filed or defeated. Avoid direct exposure to the beam.

CAUTION — use of all controls, performance of procedures other than those specified herein may result in hazardous radiation exposure.



Be Careful of the Laser Pickup
Although you cannot see it from the outside, a laser pickup is located under the disc tray and a precision lens is built in it. Since the laser pickup, including the lens element, is especially sensitive to dust, keep the disc tray closed when not in use. Also do not put your hand inside the unit.



SPECIFICATIONS

System	: Compact disc Digital Audio
D/A Converter	: 20-bits
Signal Detection	: 3-Beam Semiconductor Optical Laser Pickup
Error Correction	: CIRC System
Low Level Linearity	: ±1dB(1KHz/-90dB)
Frequency Response	: 8Hz-20KHz ±1dB
Total Harmonic Distortion(THD)	: 0.0025%
Dynamic Range	: 98dB
Signal to Noise Ratio	: 106dB

Channel Separation	: 98dB
Line Output Level/Impedance	: 2V 10KΩ
Digital Output Level/Impedance (Coaxial)	: 0.5v p-p 75Ω
Power Supply	
International model	: AC230V,50Hz
Power Consumption	: 17W
Dimensions(WxHxD)	: 17.3" X 12.7" X 4.3" 440mm X 323mm X 110mm
Weight	: 5.4kg/11.9lbs

Specifications and components subject to change without notice.
Overall performance will be maintained or improved.

SAFETY PRECAUTIONS

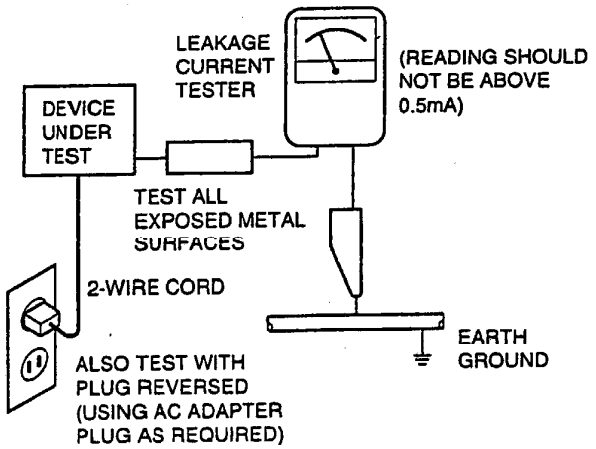
Before returning an instrument to the customer, always make a safety check of the entire instrument, including, but not limited to, the following items:

a. Be sure that no built-in protective devices are defective and/or have been defeated during servicing.
   (1) Protective shields are provided to protect both the technician and the customer. Correctly replace all missing protective shields, including any removed for servicing convenience.
   (2) When reinstalling the chassis and/or other assembly in the cabinet, be sure to put back in place all protective devices, including, but not limited to, nonmetallic control knobs. insulating fishpaper, adjustment and compartment cover/shields and isolation resistor/capacitor networks. **Do not operate this instrument or permit it to be operated without all protective devices correctly installed and functioning.**

b. Be sure that there are no cabinet openings through which an adult or child might be able to insert their fingers and contact a hazardous voltage. Such openings include, but are not limited to excessively wide cabinet ventilation slots, and an improperly fitted and/or incorrectly secured cabinet back cover.

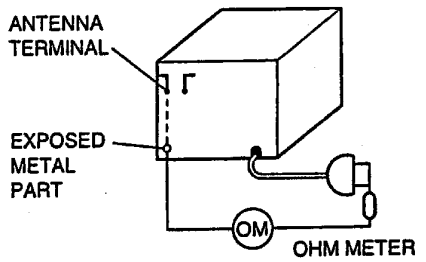
c. **Leakage Current Hot Check** - With the instrument completely reassembled, plug the AC line cord directly into a 120V AC outlet. (Do not use an isolation transformer during this test.) Use a leakage current tester or a metering system that complies with American National Standards Institute(ANSI) C101. 1 "Leakage Current for Appliances" and Underwriters Laboratories (UL) 1270,(34.6). With the instrument AC switch first in the ON position and then in the OFF position, measure from a known earth ground (metal waterpipe, conduit, etc.) to all exposed metal parrs of the instrument (antennas, handle bracket, metal cabinet, screwheads, metallic overlays, control shafts, etc.), especially any exposed metal parts that offer an electrical return path to the chassis. Any current measured must not exceed 0.5 milliamp. Reverse the instrument power cord plug in the outlet and repeat test. **ANY MEASUREMENTS NOT WITHIN THE LIMITS SPECIFIED HEREIN INDICATE A POTENTIAL SHOCK HAZARD THAT MUST BE ELIMINATED BEFORE RETURNING THE INSTRUMENT TO THE CUSTOMER.**

AC Leakage Test



d. **Insulation Resistance Test**
   (1) Unplug the power supply cord and connect a jumper wire between the two prongs of the plug.
   (2) Turn on the power switch of the instrument.
   (3) Measure the resistance with an ohmmeter between the jumpered AC plug and each **exposed metallic** cabinet part on the instrument, such as screwheads, antenna, control shafts, handle brackets, etc. The reading should be as shown below. If it is not within the limits specified, there is the possibility of a shock hazard, and the instrument must be repaired and rechecked before it is returned to the customer.

e. **Insulation Resistance Test Cold Check**
   (1) Unplug the power supply cord and connect a jumper wire between the two prongs of the plug.
   (2) Turn on the power switch of the instrument.
   (3) Measure the resistance with an ohmmeter between the jumpered AC plug and each **exposed metallic** cabinet part on the instrument, such as screwheads, antenna, control shafts, handle brackets, etc. When the exposed metallic part has a return path to the chassis, the reading should be between 1 and 5.2 Megohm. When there is no return path to the chassis, the reading must be "infinite". If it is not within the limits specified, there is the possibility of a shock hazard, and the instrument must be repaired and rechecked before it is returned to the **customer.**



PRODUCT SAFETY NOTICE

Some electrical and mechanical parts have special safety related characteristics which are often not evident from visual inspection, nor can the protection they give necessarily be obtained by replacing them with components rated for higher voltage, wattage, etc. Parts that have special safety characteristics are identified by shading, by ⚠ on schematics and parts listed. Use of a substitute replacement that does not have the same safety characteristics as the recommended replacement part might create shock, fire, and/or other hazards. Products Safety is under review continuously and new instructions are issued whenever appropriate.

SERVICING PRECAUTIONS

CAUTION: Before servicing instruments covered by this manual and its supplements. read and follow the SAFETY PRECAUTIONS on this page.

NOTE: If unforeseen circumstances created conflict between the following servicing precautions and any of the safety precautions, always follow the safety precautions

Remember: Safety First

General Service Precautions

a. Always unplug the instrument AC Power cord from the AC power souce before:
   (1) Removing or reinstalling any component, circuit board. module, or any other instrument assemdly.
   (2) Disconnecting or reconnecting any instrument electrical plug or other electrical connection.
   Connecting a test substitute in parallel with an electrolytic capacitor in the instrument.
   (3) Caution: A wrong part substitution or interlocks polarity installation of electrolytic capacitors may result in an explosion hazard.

b. Do not defeat any plug/socket B+ voltage interlocks with which instruments covered by this manual might beequipped.

c. Do not apply AC power to this instrument and/or any of its electrical assemblies unless all solid-state device heat sinks are correctly installed.

d. Always connect a test instrument's gground lead to the instrument chassis ground before connecting the test instrument positive lead. Always remove the test instrument ground lead last.

NOTE: Refer to Safety Precautions on page 3.

(1) or components. When servicing, follow the printed or indicated service precautions and service materials.
The Components used in the unit have a specified
(2) conflammability and dielectric stength. When replacing any components, use components which has the same ratings. Components marked (⚠) in the circuit diagram are important for safety or for the characteritics of the unit. Always replace with the appointed components.
(3) An insulation tube or tape is sometimes used and some components are raised above the printed wiring board for safety. The internal wiring is sometimes clamped to prevent contact with heating components. Install them as they were.
(4) A fter servicing, always check that the removed screws, components and wiring have been installed correctly and that the portion around the service part have not been damaged and co on. Further check the insulation between the blades of attachment plug and accessible conductive parts.

Insulation Checking Procedure

Disconnect the attachment plug from the AC outlet and turn the power on.Connect the insulation resistance meter (500V) to the blades of the attachment plug. The insulation resistance between the each blade of the attachment plug and accessible conductive parts (Note 1) should be more than 1M-ohm.

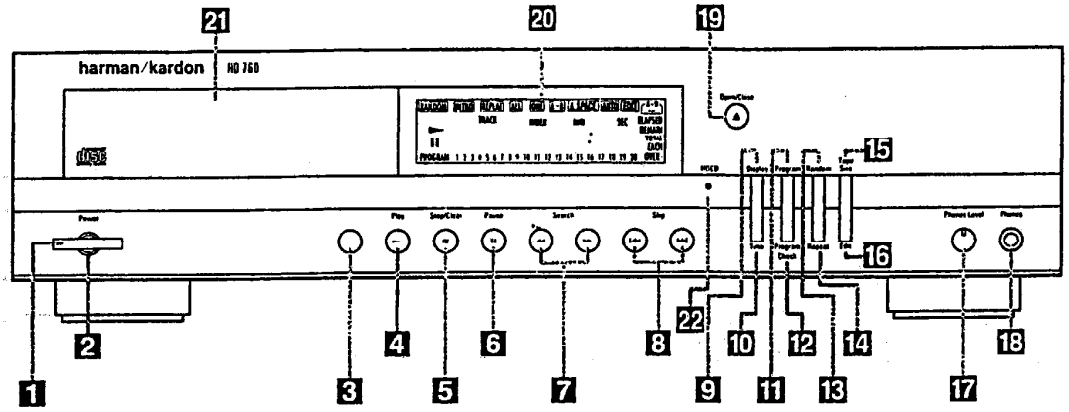
Note 1: Accessible Conductive parts including Metal panels, Output jacks, etc.

ELECTROSTATICALLY SENSITIVE (ES) DEVICES

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called electrostatically Sensitive (ES) Devices Examplles of typical ES devices are integrated circuits and some field effect transistors and semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by stsatic electricity.

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any electrostatic charge on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging wrist strap device, which should be removed for potintial shock reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.
4. Use only an anti-static solder removal device. Some solder removal devices not classified as "anti-static" can generate electrical charges sufficient to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical charge sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material).
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device wil be installed.
   CAUTION : Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.
8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of yuor clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity sufficient to damage an ES device).

CONTROLS AND FUNCTIONS



1 Power Switch:
Press this switch to apply powr to the HD760. When the switchis first turned on, the **Status Mode Indicator** light **2** surrounding the switch will turn green. Once the unit has been turned on with this switch it may be operated from either the front panel or remote control. Press the switch again to turn the unit completely off.

2 Status Mode Indicator:
When the HD760 is the ON mode, this indicator will glow green. When the unit has been placed in the Standby mode by pressing the Off button ❶ on the remote, the indicator will glow amber, indicating that the unit is still connected to the AC main supply and is ready to be turned on from the remote control.

3 Remote Sensor Window:
The sensor behind this window receives commands from the remote control. Keep this area clear if you wish to use the HD760 with a remote control.

4 Play Button:
Press this button to start the playback of a CD. If the CD drawer is open, pressing this button will automatically close the drawer.

5 Stop/Clear:
Press this button to stop the disc currently being played.During programming functions, this button is also used to clear the system memory.

6 Pause Button:
Press this button once to momentarily stop a disc. When the button is pressed again, the disc will resume play at the point it was stopped.

7 Search Buttons:
Press one of these buttons to search forward ►► or backwards ◄◄ through a disc to locate a particular portion of the selection.

8 Skip Buttons:
Press one of these buttons to move to the next track ►►|, or to move back to the previous track |◄◄.

9 Display Button:
Press this button to dim the brightness of the display. Press it again to turn the display off completely. An additional press of the button will return the display to normal brightness.

10 Time Button:
Press this button to select the time display.In normal operation,the display will show the running time of a track being played. Press the button once to check the time remaining for the track in play. Press the button again to view the total time remaining for the disc in play.

11 Program Button:
This button is used to program the playback of a disc in a particular order.

12 Program Check Button:
Press this button to check the order of tracks programmed into the HD760 s memory.

13 Random Button:
Press this button to put a disc into play, and to have all of the tracks played in a random order.

14 Repeat Button:
Press this button once to continually repeat all tracks on a disc. Press it again to repeat only the track currently being played.

15 Tape Size Button:
Use this button to select the cassette size when programming the HD760 for use with a cassette recorder.

16 Edit Button:
Press this button to begin the programming sequence that matches the lenght of a CD s tracks to the size of an audio-cassette when recording a CD to tape.

17 Headphones Level:
Turn this knob to increase or decrease the volime level for headphones connected to the HD760 s **Headphones Jack** **18**. Note that changing this level will not change the sound level for the unit s main output, as that remains constant.

18 Headphones Jack:
Connect a set of standard headphones to this jack for private listening

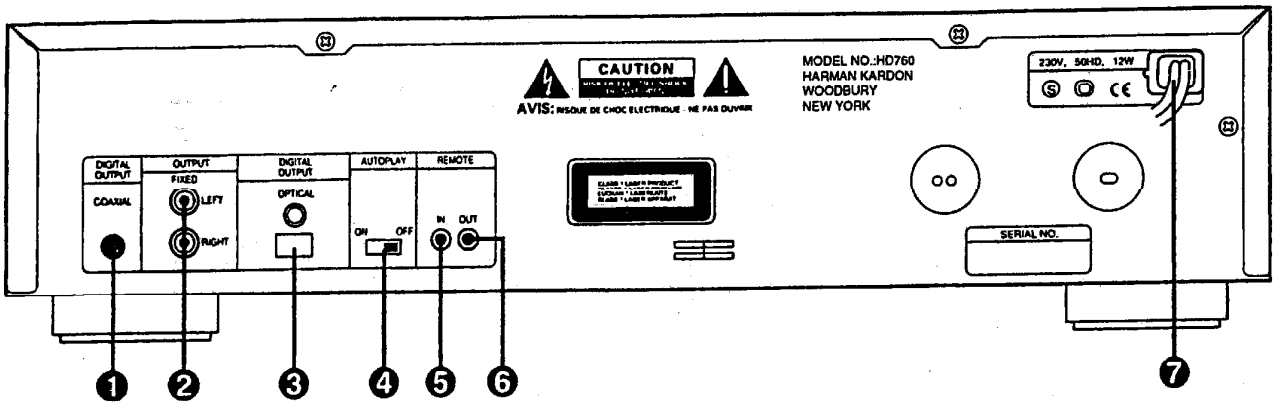
19 Open/Close:
Press this button to open or close the disc drawer. The drawer may also be closed by pressing the play button **4** ⓾, or by gently pressing the edge of the drawer. However, we do not recommend pushing the drawer, as damage to the transport mechanism may result.

20 Information Display:
This display provides details about the operation of the HD760.

21 Disc Drawer:
To play a disc, open the drawer by pressing the **Open/Close** button **19** and place a full-size (12cm) or CD single (8cm) disc in the drawer with the printed side facing upwards. Press the Play button **4** ⓾ to close the drawer and begin playback.

22 HDCD Disc Indicator:
When a HDCD disc is being played, this indicator will glow red.

REAR PANEL CONNECTIONS



❶ Coaxial Digital Output:
Connect this jack to the coaxial digital input of an external digital-to-analog converter for direct access to the digital signals of the HD760. DO NOT connect this jack to the standard audio inputs of any device.

❷ Fixed Audio Outputs:
Connect these jacks to the CD audio inputs of yuor receiver, surround processor or preamplifier.

❸ Optical Digital Output:
Connect this jack to the optical digital input of an external digital-to-analog converter for direct access to the digital signals of the HD760.

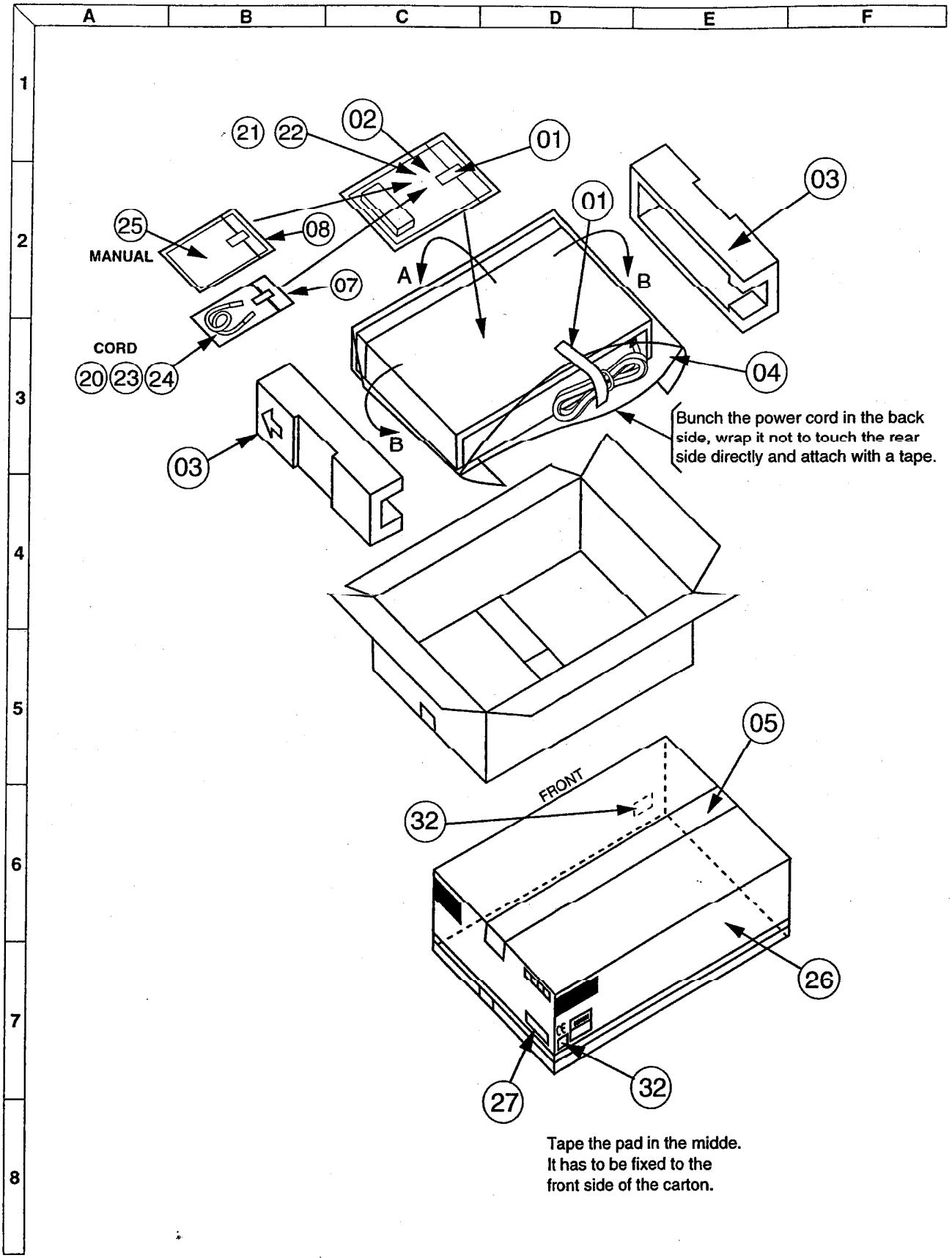
❹ Autoplay Switch:
When this switch is in the "ON" position, the HD760 will automatically go into the Play mode whenever the power is turned on and a disc is in the CD drawer. To disable the Autoplay function, put the switch in the OFF position.

❺ Remote Cotrol Input:
Connect the output of a remote infrared sensor or the remote control output of another compatible Harman Kardon product. This will enable the remote control system to operate even when the front panel **Remote Sensor** 3 is blocked. It will also allow use of the HD760 with optional, external control systems.

❻ Remote Cotrol Output:
Connect this jack to the input of another compatible Harman Kardon remote controlled device to have the remote sensor on the HD760 provide signals to other products.

❼ AC Power Cord:
Connect this plug to an AC outlet. If the outlet is switch controlled, make certain that the switch is in the ON position.

PACKING


A
B
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F
1
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02
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03
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MANUAL
08
07
CORD
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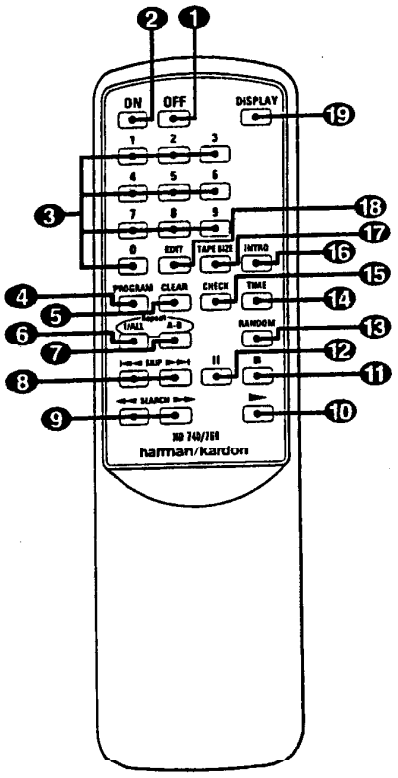
04
Bunch the power cord in the back side, wrap it not to touch the rear side directly and attach with a tape.
05
FRONT
32
26
27
Tape the pad in the midde.
It has to be fixed to the
front side of the carton.

REMOTE CONTROL



1. Power Off
2. Power On
3. Numeric Controls
4. Program Button
5. Cler Bottan
6. Repeat 1/All Button
7. Repeat A-B Button
8. Skip Button
9. Search Button
10. Play Button
11. Stop
12. Pause Button
13. Random Button
14. Time Button
15. Check Button
16. Intro Button
17. Tape Sizu Button
18. Edit Button
19. Display Button

1 Power Off:
Press this button to put the unit in the Standby mode.

2 Power On:
Press this button to turn on theHD740. Note that in order for the Power On button to perate, the front panel **Power Switch** **1** must be pressed, and the **Status Mode Indicator** **2** should glow amber.

3 Numeric Controls:
Press these buttons to select a specific track on a disc. The unit will immediately search for the track and begin to play it. For tracks 1 through 9 on a disc, you need only press the desired number. For tracks 10 and above, the second digit of the number must be entered within two seconds of the first digit. These buttons are also used to enter track numbers into the memory for pre-programmed play lists.

4 Program Button:
Press this button to begin the process of programming the HD760 to play the tracks on a disc in a specific order. Once the button is pressed, enter each of the desired track numbers in quick succession using the **Numeric Controls** **3** . When you have entered the tracks to be played, press the **play** button **10** to begin the programmed sequence.

5 Clear Button:
Press this button to remove tracks from a programmed sequence. Each press of the button will remove one track, starting with the last track programmed to play.

6 Repeat 1/All Button:
Press this button once so that the **REPEAT** and **ALL** indicators are illuminated to repeat all tracks on the disc. Press the button a second time to repeat only the track that is currently being played, and note that the **REPEAT** and **ONE** indicators will light in the **Information Display.**

7 Repeat A-B Button:
Press this button to repeat a segment of the disc. Press the button once to mark the start of the portion to be repeated. Press it again at the end of the desired sequence. The marked passage will play continuously until the **Stop** button **11** is pressed.

8 Skip Buttons:
Press one of these buttons to move to the next track ▶| , or to move back to the previous track |◀ .

9 Search Buttons:
Press one of these buttons to search forward ▶▶ or backwards ◀◀ through a disc to locate a particular portion of the selection.

10 Play Button:
Press this button to start the playback of a CD. If the CD drawer is open, pressing this button will automatically close the drawer.

11 Stop:
Press this button to stop the disc currently being played.

12 Pause Button:
Press this button once to momentarily stop a disc. When the button is pressed again, the disc will resume play at the point it was stopped.

13 Random Button:
Press this button to put a disc into play, and to have all of the tracks played in a random order.

14 Time Button:
Press this button to select the time display. In normal operation, the display will show the running time of a track being played. Press the button once to check the time remaining for the track in play. Press the button a second time to view the total play time remaining for the disc in play.

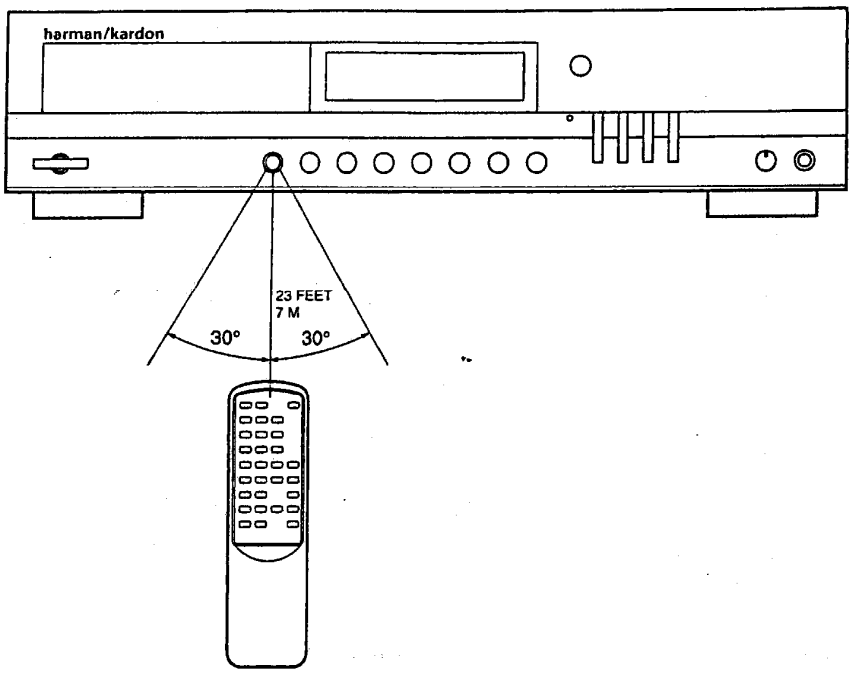
15 Check Button:
Press this button to check the order of tracks programmed into the HD760's memory.

16 Intro Button:
Press this button to put the HD760 in the intro Scan mode. When you press the button, the unit will play the first 15 seconds of each track on the disc, and then move to the next track. Press the button again to defeat the function and continue full play of the current track.

17 Tape Size Button:
Use this button to select the cassette size when programming the HD760 for use with a cassette recorder.

18 Edit Button:
Press this button to begin the programming sequence that matches the lenght of a CD's tracks to the size of an audio-cassette when recording a CD to tape.

19 Display Button:
Press this button once to dim the front panel display to half brightness. Press it again to turn the display lights off completely. Another press will return the display to normal brightness.



REMOTE CONTROL UNIT

HD760 REMOTE CONTROL OPERATION

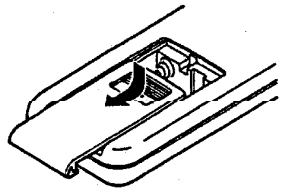
The remote control operates within a 30° angle and 23ft. (7m) range of the remote sensor on the front panel of the unit. Make sure that the remote's front projection "lens" as well as the REMOTE SENSOR area on the front panel of the unit are kept free from dirt to ensure proper transmission and reception of the infrared beam. Also make sure that no objects (e.g., stereo cabinet doors, end tables) block the path from the remote control to the REMOTE SENSOR area.

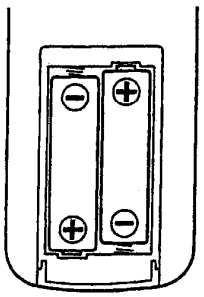
Avoid using the remote control near fluorescent lamps, as they may shorten its operating range.

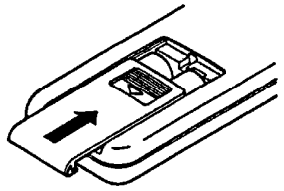
If your remote control will sit unused for a long period of time, remove the batteries to prevent damage from corrosion.

REAR PANEL REMOTE JACKS

The remote control input jack allows remote control of this unit via a cable. This cable can be connected to the remote control output jack of another Harman Kardon product. Alternatively, it can be connected to an accessory device that converts infrared remote control signals into detected pulses. While all Harman Kardon products with remote control jacks are compatible with one another, not all accessory devices or other manufactuer's products are. However, it is safe to experiment.







CONCERNING USE OF BATTERIES

Two batteries are provided with your remote control. To load batteries.

1. Locate the cover over the battery compartment on the back of the remote control. Remove the cover by sliding it in the direction of the embossed arrow.
2. Insert the two AA (1.5V/R6/UM3) batteries. Make sure you insert the batteries according to the + and – polarity symbols at the bottom of the battery compartment.
3. Replace the cover of the battery compartment.

NOTE :

1. When you replace weak batteries, replace both at the same time.
2. Remove the batteries if the remote is not to be used for an extended period of time.
3. Do not use rechargeable batteries (Ni-Cd-type)

DISASSEMBLY PROCEDURES (REFER TO PAGES 49 & 50)

[1] CABINET TOP (51-15) REMOVAL
Remove 6 screws (SE01)(SA05) and then remove the Cabinet Top (CO-01).

[2] FRONT PANEL ASS'Y REMOVAL
1. Remove the Cabinet Top (CO-01), referring to the previous step [1].
2. Disconnect the connector with lead wire (CN05,CN401) from connector (CN06,CN101) on the Main P.C. Board (45-01).
3. Press the POWER button to turn on.
   Press the OPEN/CLOSE button. The tray will slide out.
   Pull the TRAY COVER (51-16) upward to remove.
4. Remove 8 screws (SA07,SA08) and then remove the Front Panel (51-01) with the Front P.C. Board (45-03)
5. Remove 7 screws (SC01) and then remove the Front P.C. Board (45-03) from the Front panel Ass'y (51-01).

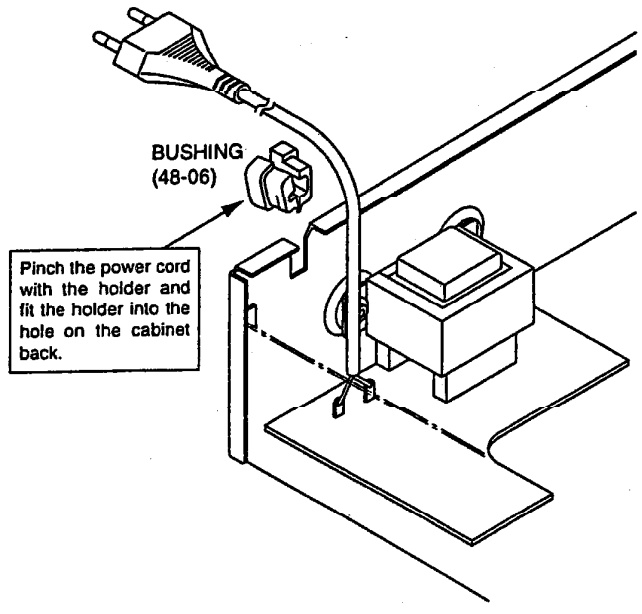
[3] MAIN P.C. BOARD (45-01) REMOVAL
1. Remove the Cabinet Top (51-15), referring to the previous step [1].
2. Remove 10 screws (SA01, SB01, SB04) and then remove the Main P.C. Board (45-01).

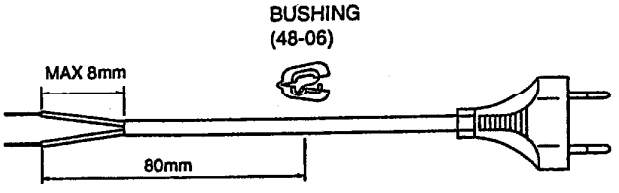
[4] CD PLAYER MECHANICAL ASSEMBLY REMOVAL
1. Remove the cover (CO-01). Refer to the step [1].
2. Plug the power cord into the AC outlet. Press the power button to turn on.
3. Press the OPEN/CLOSE button. The CD TRAY (31-23) will slide out.
4. Pull the TRAY COVER (51-16) upward to remove from the table loading (31-23).
5. Pull out the power cord from the AC outlet.
6. Push the table loading back half.
7. Remove 4 screws (SA03, SF01).
8. Remove the connectors (CN01, CN02, CN03, CN04) from the Main PCB.
9. Remove the CD MECHANISM (31-00) backward pulling upward.
10. Remove the screw (31-30).
11. Remove the CD PLAYER MECHANISM.

[5] SLIDE MOTOR REMOVAL
1. Remove 4 screws (31, 31SA2).
2. Remove the SUPPORT, MAGNET (08).
3. Pull out the table loading (23).
4. Remove the belt square (19).
5. Unsolder the terminal of the loading motor.
6. Remove 2 screws (33).
7. Remove the loading motor (24).

POWER CORD REPLACEMENT (FOR SERVICE ENGINEERS OTHER THAN NORTH AMERICA)

In order to prevent fire or shock hazard when replacing the power cord, follow the procedure below to replace the part with the standard supply parts.





TROUBLESHOOTING GUIDE

NO LIGHTS ON THE FRONT PANEL
- Power cord is not plugged into power outlet.
- Wall outlet or extension cord is faulty. Check for poor connections.
- Breaker on plug strip has tripped. Reset breaker.

FRONT PANEL LIGHTS ARE ON, BUT THE CD DOES NOT PLAY
- The disc may have been inserted upside down. Make sure the label side is facing up.
- Moisture may have formed on the laser/receptor inside the unit. This sometimes occurs in damp climates or when the unit is moved from a cold to a warm area. Leave the unit turned on at room temperature for 30 minutes to allow the moisture to evaporate, then play your disc.

THE PLAY INDICATOR LIGHTS, BUT NO SOUND IS HEARD
- The wrong SOURCE has been selected on your integrated amplifier/ receiver/ preamplifier. Make sure you have selected the SOURCE where your CD player is connected.

THE SOUND SKIPS OR STUTTERS DURING PLAYBACK
- The disc may be dirty or damaged.
- The unit may have been placed on an unstable surface. Isolate the unit from excessive vibration by placing it on a firmer surface or farther away from your speakers.

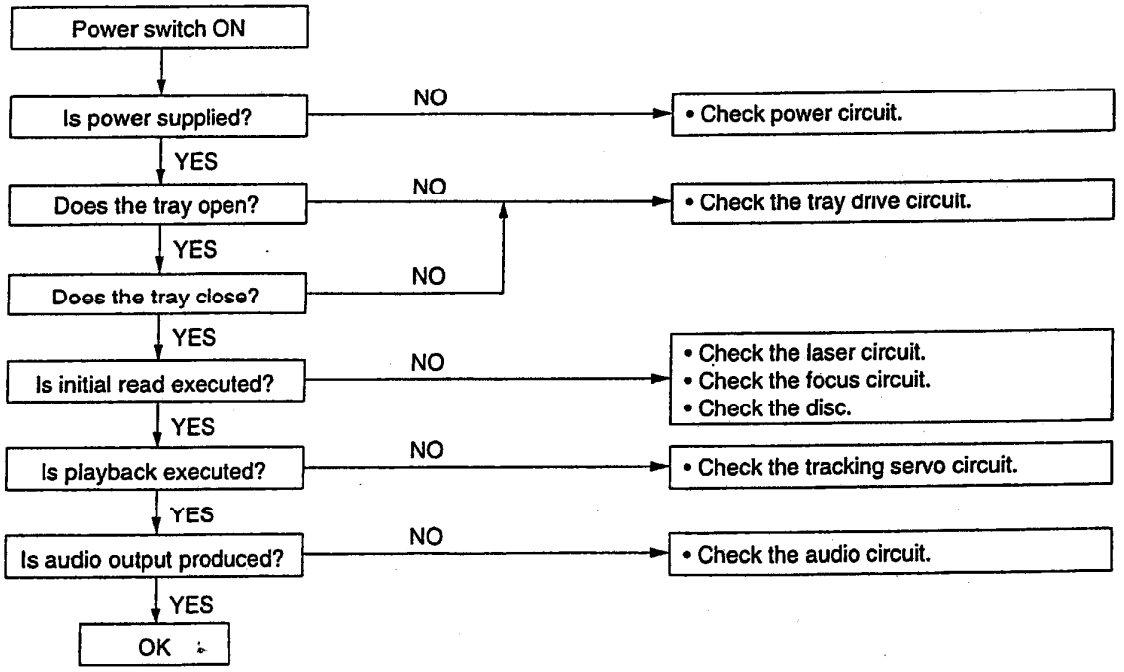
THE SOUND IS CONTINUOUSLY DISTORTED
- The cables from the HD760 have been plugged into the wrong input jacks on your integrated amplifier/receiver/ preamplifier. Make sure you have not plugged the unit into the PHONO jacks.

NOTHING HAPPENS WHEN FUNCTION KEYS ARE PRESSED
- Turn the power to the unit off, then back on again.

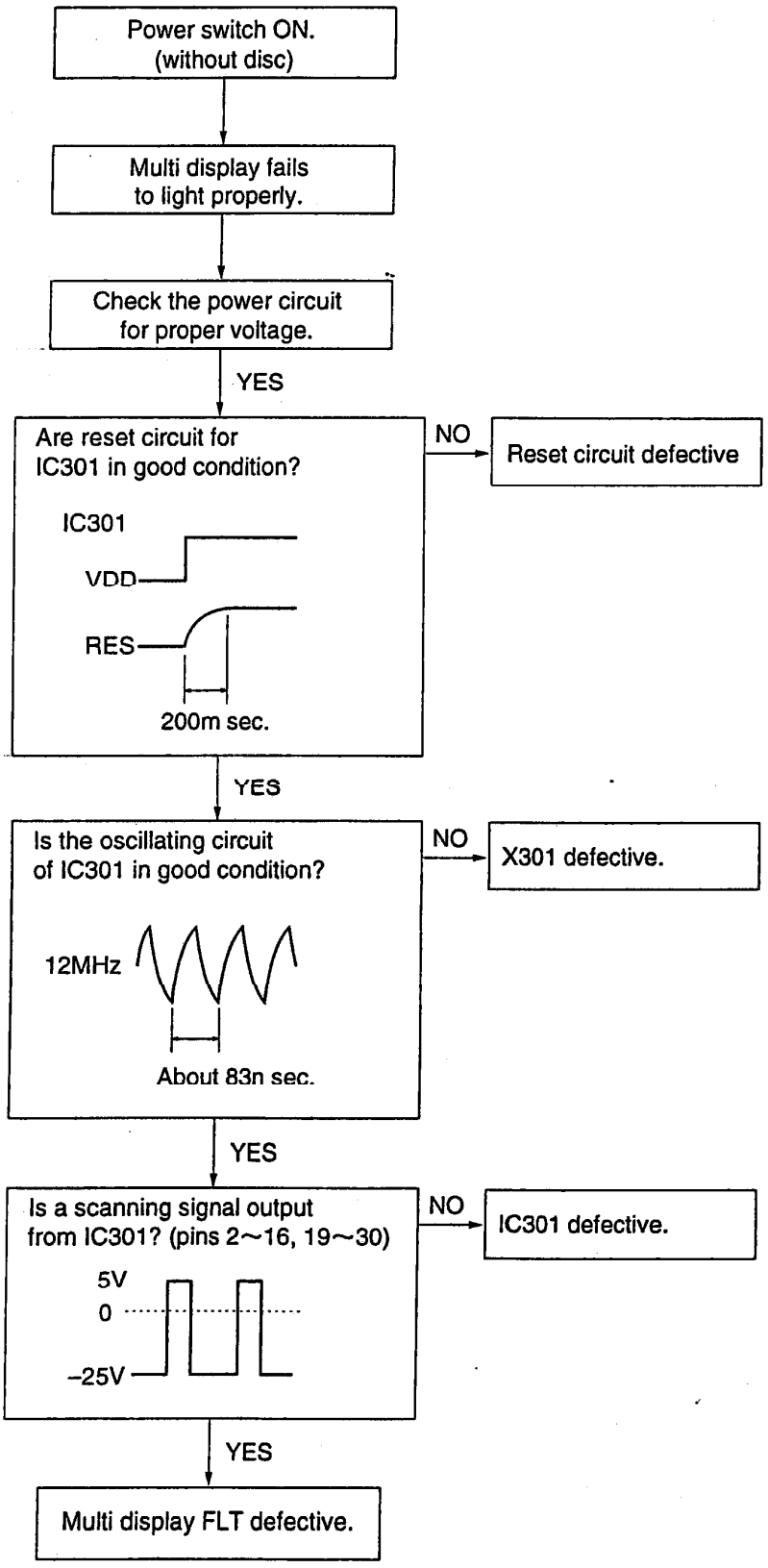
THE DISPLAY SHOWS BROKEN CHARACTERS
- Turn the power to the unit off, then back on again.

THE REMOTE CONTROL DOES NOT FUNCTION CORRECTLY
- Make sure you are using the remote control within the 30° angle and 23ft.(7m) range described in this manual.
- Make sure the remote transmitter lens and the front panel REMOTE SENSOR window are clean and that no objects are blocking the path from the remote control to the REMOTE SENSOR area on the front panel.
- Make sure that no strong fluorescent lights are being used in the listening room.
- Check that the batteries inside the remote control are fresh.

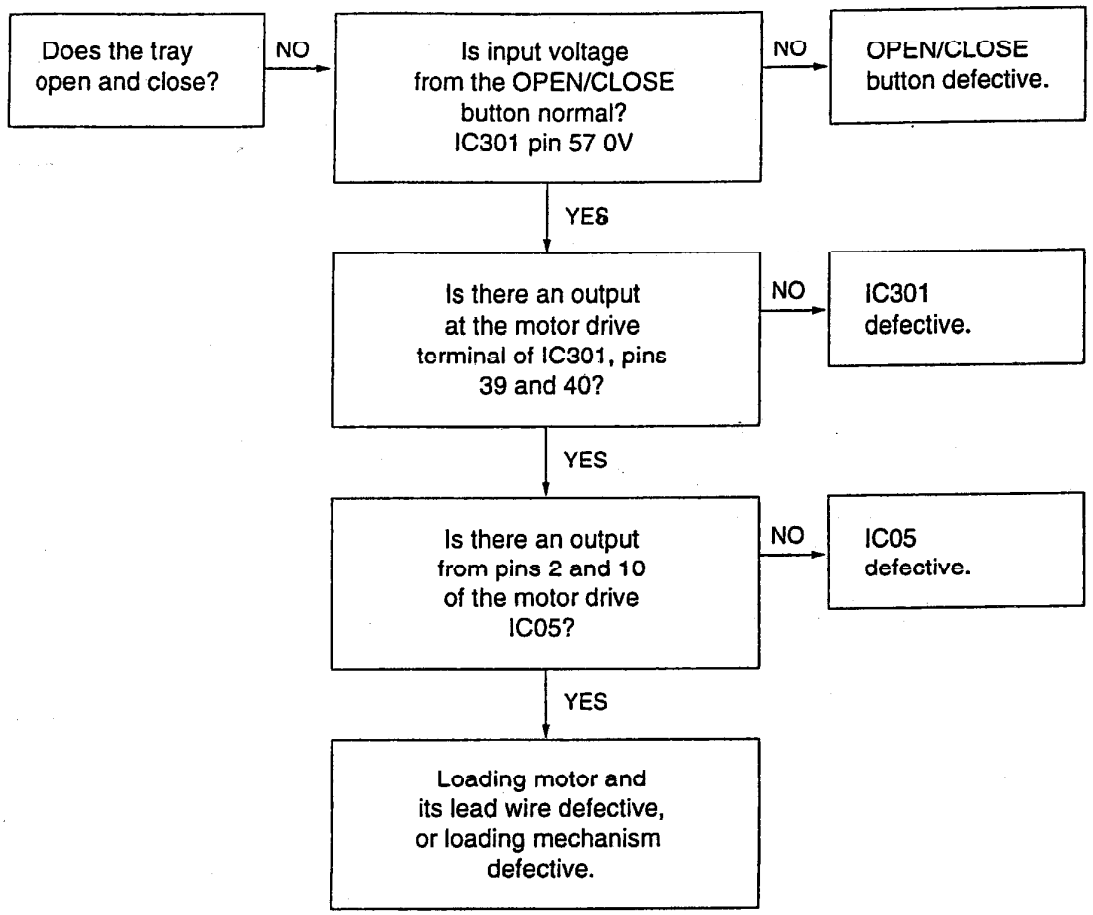
When a trouble has occurred, first check the pick-up lens for dirt and each connector for tight and secure connection.
If the problem persists after checking both of these items, use the following check procedures.



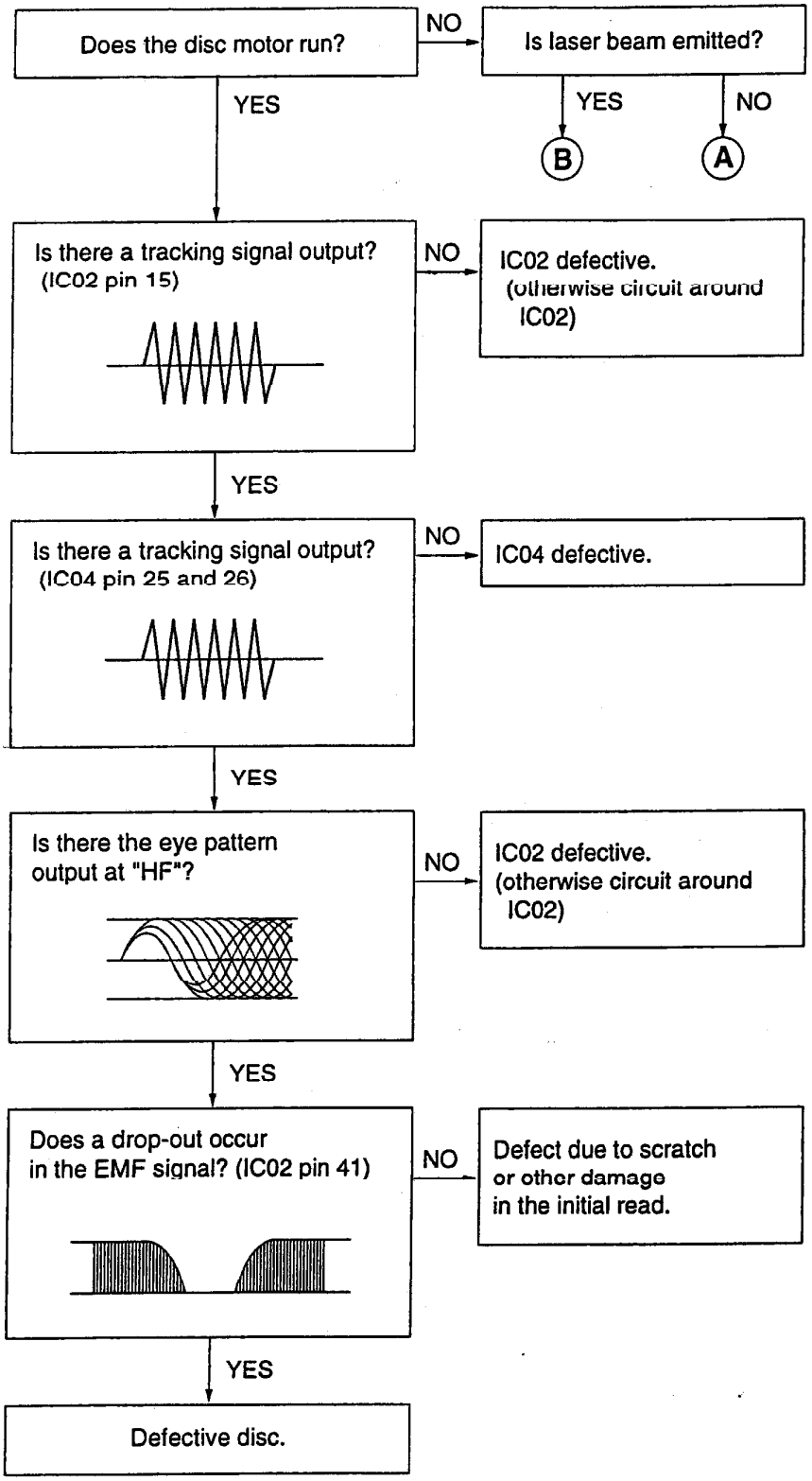
(1) When Multi Display fails to light properly.



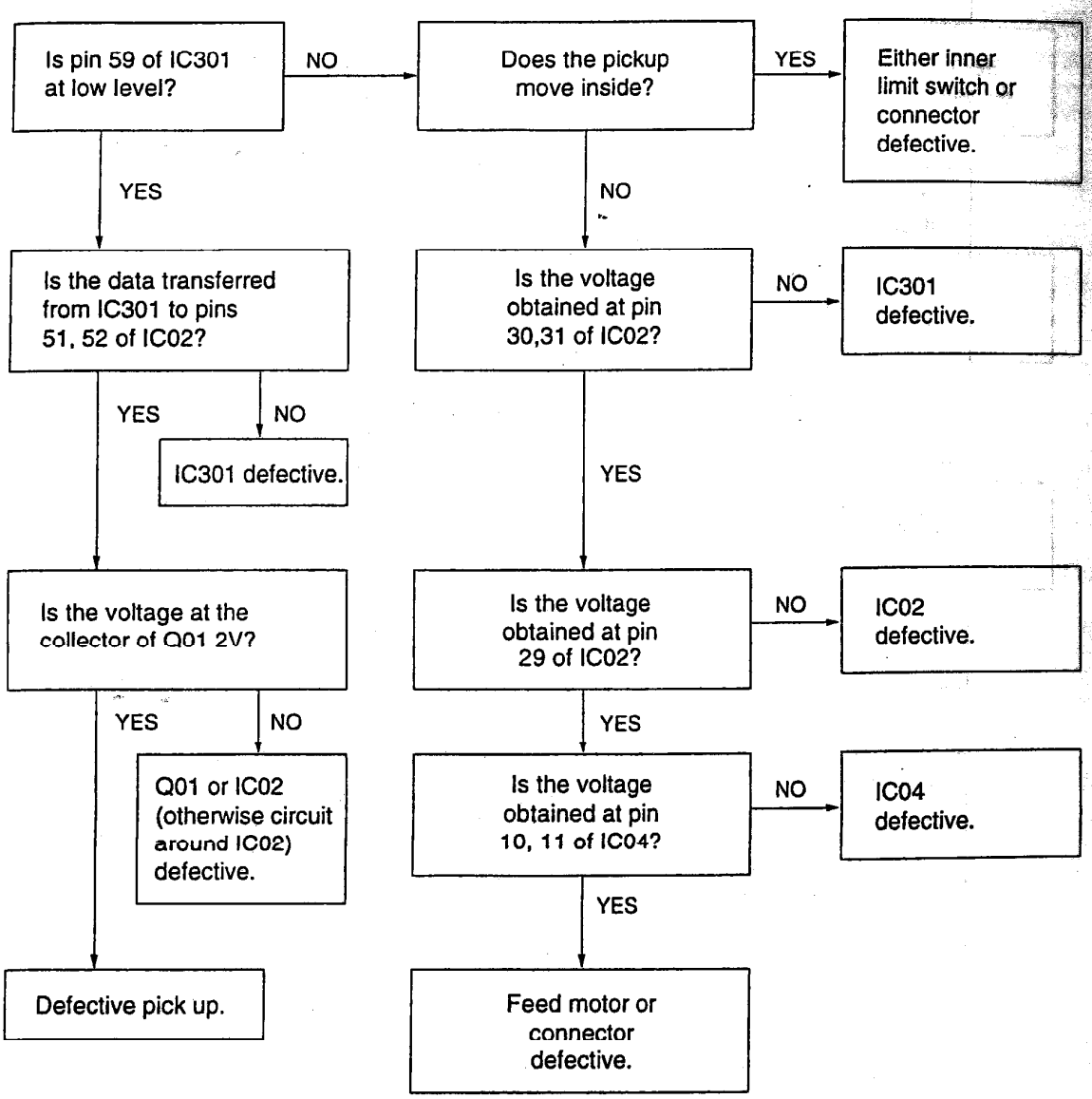
(2) When the tray fails to operate properly.



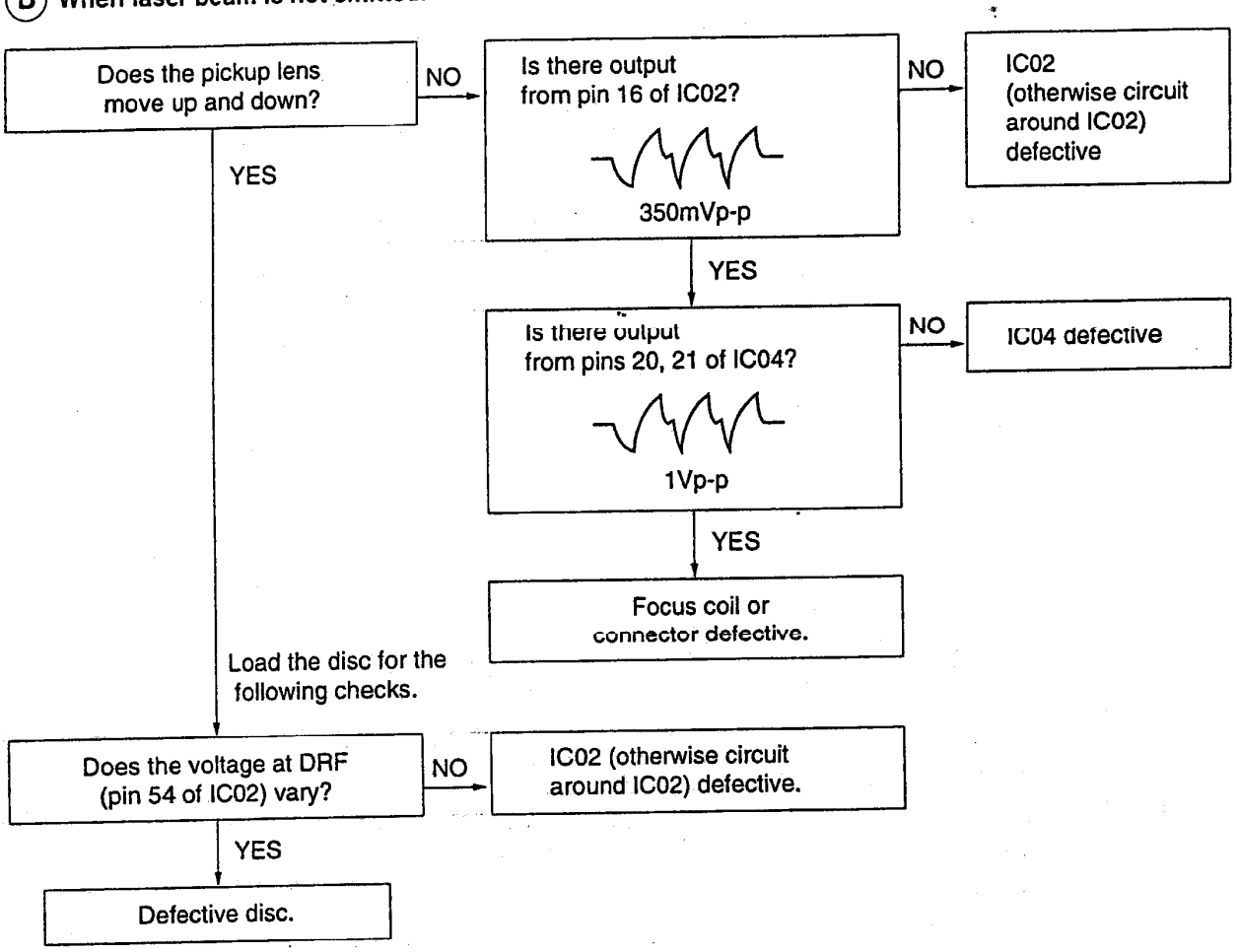
(3) When initial read cannot be executed.



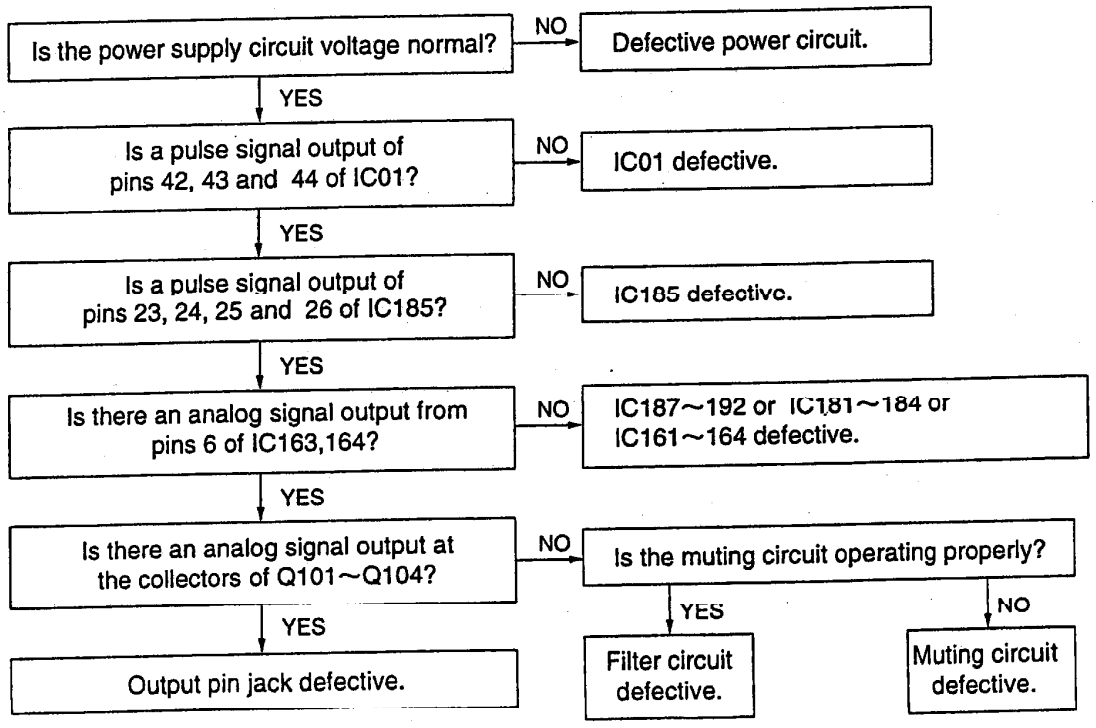
(A) When laser beam is not emitted.



Ⓑ When laser beam is not emitted.



When there is no audio output.



TERMINAL FUNCTIONS

IC01 LC78621ED Digital Signal Processor

IC No.	Pin No.	Symbol	I/O	Function		
IC01	1	DEFI	I	Defect detection signal (DEF) input (Must be tied low if unused.)		
	2	TAI	I	PLL pins	Test input. A pull-down resistor is built in.	
	3	PDO	O		External VCO control phase comparator output.	
	4	VVSS			Internal VCO ground. Normally 0V.	
	5	ISET	AI		PDO output current adjustment resistor connection.	
	6	VVDD			Internal VCO power supply.	
	7	FR	AI		VCO frequency range adjustment.	
	8	VSS		Digital system ground. Normally 0V.		
	9	$\overline{EFMO}$	O	Slice level control	EFM signal inverted output.	
	10	EFMO	O		EFM signal output.	
	11	EFMIN	I		EFM signal input.	
	12	TEST2	I	Test input. A pull-down resistor is built in.		
	13	CLV+	O	Spindle servo control output. Acceleration when CLV+ is high, deceleration when CLV- is high. Three-value output is also possible when specified by microprocessor command.		
	14	CLV-	O			
	15	V/$\overline{P}$	O	Rough servo/phase control automatic switching monitor output. Outputs a high level during servo and low level during phase control.		
	16	FOCS	O	Focus servo on/off output. Foucs servo is on when the output is low.		
	17	FST	O	Focus start pulse output. This is an open-drain output.		
	18	$\overline{FZD}$	I	Focus error zero cross signal input. (Must be tied low if unused.)		
	19	HFL	I	Track detection signal input. This is a Schmitt input.		
	20	TES	I	Tracking error signal input. This is a Schmitt input.		
	21	PCK	O	EFM data playback clock monitor.Outputs 4.3218 MHz when the phase is locked.		
	22	FSEQ	O	Synchronization signal detection output. Outputs a high level when the synchronization signal detected from the EFM signal and the internally generated synchronization signal agree.		
	23	TOFF	O	Tracking off output.		
	24	TGL	O	Tracking gain switching output. Increase the gain when low.		
	25	THLD	O	Tracking hold output.		
	26	TEST3	I	Test input. A pull-down resistor is built in.		
	27	VDD		Digital system power supply.		
	28	JP+	O	Track jump output.A high level output JP+ indicates acceleration during an outward jump or deceleration during an inward jump. A high level output from JP- indicates acceleration during an inward jump or deceleration during an outward jump. Three-value output is also possible when specified by microprocessor command.		
	29	JP-	O			
	30	DEMO	I	Sound output function input used for end product adjustment manufacturing steps. A pull-down resistor is built in.		
	31	TEST4	I	Test input. A pull-down resistor is built in.		
	32	EMPH	O	De-emphasis monitor pin. A high level indicates playback of a de-emphasis disk.		
	33	LRCKO	O	Digital filter output.	Word clock output.	
	34	DFORO	O		Right channel data output.	
	35	DFOLO	O		Left channel data output.	
	36	DACKO	O		Bit clock output.	
	37	TST10	O	Test output. Leave open. (Normally outputs a low level.)		
	38	ASDACK	I	Antishock system inputs. (Must be tied low if unused.)	Bit clock input.	
	39	ASDFIN	I		Left/right channel data input.	
	40	ASDFIR	I		Test input. (Should be tied low for normal operation.)	
	41	ASLRCK	I		Word clock input.	
	42	LRSY	O	ROMXA application output signals.	Left/right clock output.	
	43	CK2	O		Bit clock output. (after reset)	Inverted polarity clock output. (During CK2CON mode.)
	44	ROMXA	O		Interpolation data output (after reset)	ROM data output (During ROMXA mode.)
	45	C2F	O		C2 flag output.	

IC No.	Pin No.	Symbol	I/O	Function	
IC01	46	MUTEL	O	One-bit D/A converter	Left channel mute output.
	47	LVDD			Left channel power supply.
	48	LCHP	O		Left channel P output.
	49	LCHN	O		Left channel N output.
	50	LVSS			Left channel ground. Normally 0V.
	51	RVSS			Right channel ground. Normally 0V.
	52	RCHN	O		Right channel N output.
	53	RCHP	O		Right channel P output.
	54	RVDD			Right channel power supply.
	55	MUTER	O		Right channel mute output.
	56	DOUT	O	Digital output.	
	57	SBSY	O	Subcode block synchronization signal.	
	58	EFLG	O	C1, C2, signal and double error conection monitor pin.	
	59	PW	O	Subcode P, Q, R, S, T, U, V and W output.	
	60	SFSY	O	Subcode frame synchronization signal output. This signal falls when the subcodes are in the standby state.	
	61	SBCK	I	Subcode readout clock input. This is a Schmitt input. (Must be tied low when unused.)	
	62	FSX	O	Output for the 7.35 kHz synchronization signal divided from the crystal oscillator.	
	63	WRQ	O	Subcode Q output standby output.	
	64	RWC	I	Read/write control input. This is a Schmitt input.	
	65	SQOUT	O	Subcode Q output.	
	66	COIN	I	Command input from the control microprocessor.	
	67	$\overline{COCK}$	I	Input for both the command input acquisition clock and the SQOUT pin subcode readout clock input. This is a Schmitt input.	
	68	RES	I	Chip reset input. This pin must be set low briefly after power is first applied.	
	69	TST11	O	Test output. Leave open. (Nomally outputs a low level.)	
	70	$\overline{LASER}$	O	Laser on/off output. Controlled by serial data commands from the control microprocessor.	
	71	16M	O	16.9344 MHz output.	
	72	4.2M	O	4.2336 MHz output.	
	73	CONT	O	Supplementary control output. Controlled by serial data commands from the control microprocessor.	
	74	TEST5	I	Test input. A pull-down resistor is built in.	
	75	$\overline{CS}$	I	Chip select input. A pull-down resistor is built in.	
	76	XVSS		Crystal oscillator ground. Normally 0V.	
	77	XIN	I	Connections for a 16.9344 MHz crystal oscillator.	
	78	XOUT	O		
	79	XVDD		Crystal oscillator power supply.	
	80	TEST1	I	Test input. A pull-down resistor is built in.	

IC02 LA9240M RF AMP + Signal Servo Processor

IC No.	Pin No.	Symbol	Contents
IC02	1	FIN2	Pickup photodiode connection pin. Added to FIN1 pin to generate the RF signal, subtracted from FIN1 pin to generate the FE signal.
	2	FIN1	Pickup photodiode connection pin.
	3	E	Pickup photodiode connection pin. Subtracted from F pin to generate the TE signal.
	4	F	Pickup photodiode connection pin.
	5	TB	TE signal DC component input pin.
	6	TE-	Pin which connects the TE signal gain setting resistor between this pin and TE pin.
	7	TE	TE signal output pin.
	8	TESI	TES (Track Error Sense) comparator input pin. The TE signal is input through a handpass filter.
	9	SCI	Shock detection input pin.
	10	TH	Tracking gain time constant setting pin.
	11	TA	TA amplifier output pin.
	12	TD-	Pin for configuring the tracking phase compensation constant between the TD snd VR pins.
	13	TD	Tracking phase compensation setting pin.
	14	JP	Tracking jump signal (kick pulse) amplitude setting pin.

IC No.	Pin No.	Symbol	Contents
IC02	15	TO	Tracking control signal output pin.
	16	FD	Focusing control signal output pin.
	17	FD-	Pin for configuring the focusing phase compensation constant between the FD and FA pins.
	18	FA	Pin for configuring the focusing phase compensation constant between the FD- and FA- pins.
	19	FA-	Pin for configuring the focusing phase compensation constant between the FA and FE pins.
	20	FE	FE signal output pin.
	21	FE-	Pin which connects the FE signal gain setting resistor between this pin and FE pins.
	22	AGND	Analog signal GND.
	23	SP	CV+ and CV- pins input signal single-end output.
	24	SPI	Spindle amplifier input.
	25	SPG	12-cm spindle mode gain setting resistor connection pin.
	26	SP-	Spindle phase compensation constant connestion pin, along with the SPD pin.
	27	SPD	Spindle control signal output pin.
	28	SLEQ	Sled phase compensation constant connection pin.
	29	SLD	Sled control signal output pin.
	30	SL-	Input pin for seld movement signal from microprocessor.
	31	SL+	Input pin for seld movement signal from microprocessor.
	32	JP-	Input pin for tracking jump signal from DSP.
	33	JP+	Input pin for tracking jump signal from DSP.
	34	TGL	Input pin for tracking gain control signal from DSP. Gain is low when TGL is high.
	35	TOFF	Input pin for tracking off control signal from DSP. Tracking servo is off when TOFF is high.
	36	TES	Output pin for TES signal to DSP.
	37	HFL	The High Frequency Level is used to determine whether the main beam is positioned over a bit or over the mirrored surface.
	38	SLOF	Sled servo off control input pin.
	39	CV-	Input pin for CLV error signal from DSP.
	40	CV+	Input pin for CLV error signal from DSP.
	41	RFSM	RF output in.
	42	RFS-	RF gain setting and EFM signal 3T compensation constant setting pin, along with the RFSM pin.
	43	SLC	Slice Level Control is an output pin that controls the data slice level used by the DSP for the RF waveform.
	44	SLI	Input pin used by DSP for controlling the data slice level.
	45	DGND	Digital system GND pin.
	46	FSC	Focus search smoothing capacitor output pin.
	47	TBC	Tracking balance control; EF balance adjustment variable range setting pin.
	48	NC	No connection.
	49	DEF	Disc defect detection output pin.
	50	CLK	Reference clock input pin. 4.23 MHz signal from the DSP is input.
	51	CL	Microprocessor command clock input pin.
	52	DAT	Microprocessor command data input pin.
	53	CE	Microprocessor command chip enable input pin.
	54	DRF	RF level detection output (Detect RF).
	55	FSS	Focus search select; focus search mode (–search /+search vs. the reference voltage)switching pin.
	56	Vcc2	Servo system and digital system Vcc pin.
	57	REFI	By-pass capacitor connection pin for reference voltage.
	58	VR	Reference voltage output pin.
	59	LF2	Disc defect detection time constant setting pin.
	60	PH1	RF signal peak hold capacitor connection pin.
	61	BH1	RF signal bottom hold capacitor connection pin.
	62	LDD	APC circuit output pin.
	63	LDS	APC circuit input pin.
	64	Vcc1	RF system Vcc pin.

IC301 LC866012C Micro Computer					
PIN	PORT	#	STATE	NAME	REMARK
1	SO	—		—	NC
2-11	S1/T1-S11/T11	G	O	—	GRID
12-16	S11/T11-S15/T15			SEG	SEG
17	VDDVPP	—			
18	VP	—			
19	S16	G	O	SEG	SEG
20	S17	G	O	SEG	SEG
21	S18	G	O	SEG	SEG
22	S19	G	O	SEG	SEG
23	S20	G	O	SEG	SEG
24	S21	G	O	SEG	SEG
25	S22	G	O	SEG	SEG
26	S23	G	O	SEG	SEG
27	S24	G	O	SEG	SEG
28	S25	G	O	SEG	SEG
29	S26	G	O	SEG	SEG
30	S27	G	O	SEG	SEG
31	S28	G	O	—	NC
32	S29	G	O	—	NC
33	P00	E	I/O	OPEN SW	TRAY OPEN DETECTION
34	P01	E	I/O	CLOSE SW	TRAY CLOSE DETECTION
35	P02	E	I/O	AUTO PLAY	AUTO PLAY ON/OFF "H"=ON
36	P03	E	I/O	720/740	MODEL "H"=740 "L"=720
37	P04	E	I/O	SLED+	OUT WARD SLED KICK
38	P05	E	I/O	SLED—	IN WARD SLED KICK
39	P06	E	I/O	TRAY—	TRAY CLOSE "H"=CLOSE
40	P07	E	I/O	TRAY+	TRAY OPEN "H"=OPEN
41	P10/SO0	F	I/O	COIN	DSP
42	P11/SIO/SB0	F	I/O	SQOUT	DSP
43	P12/SCK0	F	I/O	CQCK	DSP
44	P13/SO1	F	I/O	RWC	DSP
45	P14/S11/SB1	F	I/O	POWER	POWER ON/OFF "H"=ON
46	P15/SCK1	F	I/O	—	NC
47	P16/BUZ	F	I/O	DMUTE	DRIVE MUTE
48	P17/PWM	F	I/O	AUDIO-MUTE	AUDIO MUTE "L"=MUTE ON
49	TEST1	—		—	μ-COM TEST
50	RES	—			
51, 52	XT1, XT2	—		—	
53	VSS	—		—	
54, 55	CF1, CF2	—		—	
56	VDD	—		—	
57	P80/AN0	B	I	*KEY2	KEY INPUT :1OP/CL, 2DISP, 3TIME, 4PROG, 5CHECK, 6RANDOM, 7REPEAT, 8TAPE, 9EDIT
58	P81/AN1	B	I	*KEY1	KEY INPUT :1STOP, 2PLAY, 3PAUSE, 4B-SEARCH, 5F-SEARCH, 6B-SKIP, 7F-SKIP, 8TEST
59	P82/AN2	B	I	PUIN	PICK SW IN INPUT
60	P83/AN3	B	I	—	(GND)
61	P70/INT0	D	I/O	WRQ	DSP
62	P71/INT1	C	I	DRF	ASP
63	P72/INT2/TOI	C	I	—	NC
64	P73/INT3/TOI	C	I	REMOCON	REMOCON INPUT

CIRCUIT DESCRIPTION

-CDP-

1. APC CIRCUIT

A semiconductor laser is used as the light source for the optical pickup. As the output from the semiconductor laser changes radically with changes in temperature, a circuit must be provided to stabilize this output. For this purpose, a monitor diode which detects the optical output of the laser diode is used in the semiconductor laser.

As the laser diode emits light from its bonded surface, light is emitted both in front and behind. The light emitted behind is monitored with the monitor diode installed on its rear surface, and the optical output is thus controlled, the light emitted in front becomes the light source for the pickup.

Fig.1 shows the APC circuit.

When the temperature rises and the optical output decreases, the monitor diode current (IS) decreases, the electric potential of IC02 pin 62 rises, the base current of the driving transistor increases, and the laser diode current increases. This causes the reduced optical output to return to its former level.

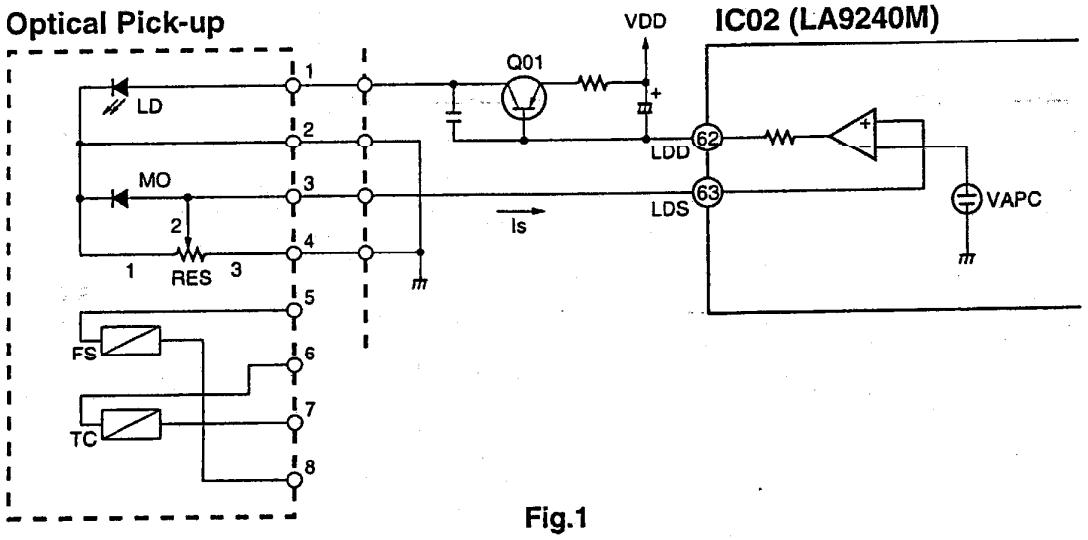


Fig.1

2. FOCUS SERVO

2-1. Optical pickup

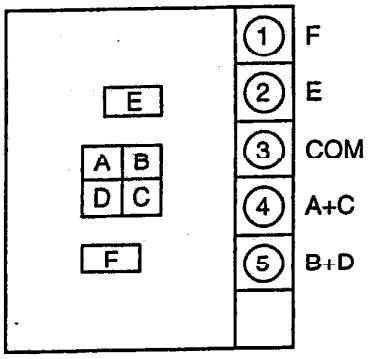
This set employs a three-beam optical pickup comprised of six division photodiodes. A through F as shown in Fig. 2. The four photodiodes (A through D) at the center provide focus into a round image only at a certain point.

The sums of outputs from diagonal two elements of four division photodiodes (A+C and B+D) are compared by the differential amplifier in IC02 to detect the shape of the beam image.

The remaining two diodes (E and F) provide tracking error detection by means of sub-beam spots.

2-2.Focus error detecting operation

The reflected laser beam from a disc is polarized 90° with the beam-splitter and sent to the cylindrical lens. The beam passed through this cylindrical lens is then sent to the four division photodiodes and focuses into an image whose shape varies with the distance between the disc and the objective lens. Such change in the beam shape causes the current flowing from the photodiodes to vary.

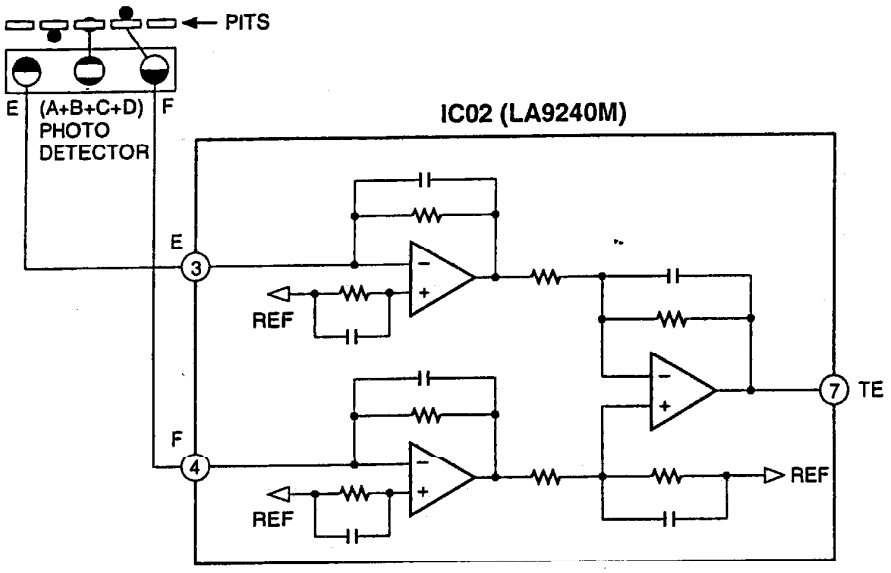


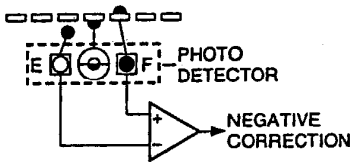
Three spotted (six-division) photo diodes

Fig.2

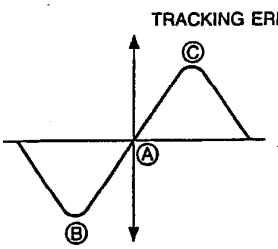
The currents from the photodiodes (A+C and B+D) are applied to pins 1 and 2 of IC02 and converted to voltage by RF I-V amplifiers (1) and (2) included in IC02

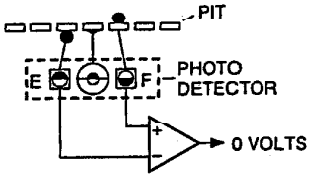
3. TRACKING ERROR AMPLIFIER





(B) TRACKING ERROR

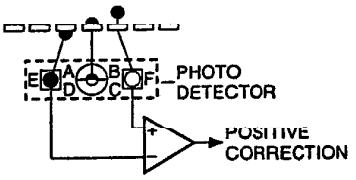




(A) TRACKING CORRECT

Fig.3

The output of photo detector F is directed to the (–) input of F I-V AMP A and out of photo detector E is directed to the (–) input of E I-V AMP.
These input signals are current.
E I-V AMP and F I-V AMP are converted into voltage from the current signal. When correct tracking, two input (VF, VE) Signals are equal. The occurrence of tracking error is due to difference between F I-V AMP output and E I-V AMP output.



(C) TRACKING ERROR

4.FOCUS ERROR AMPLIFIER

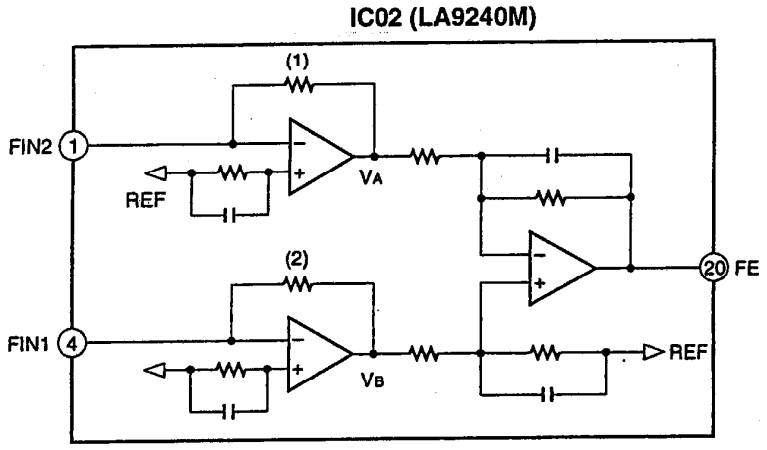
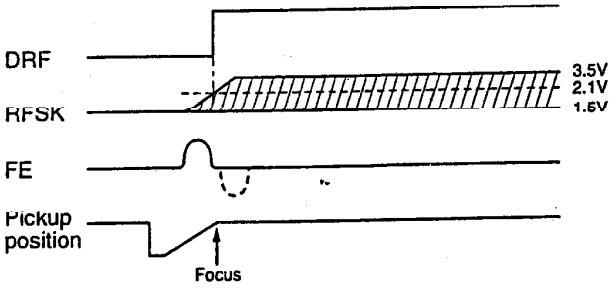


Fig.4

The focus error amp is the difference between RF I-V AMP (1) output VA and RF I-V AMP (2) output VB.
This two (VA, VB) Signals are each applied to the (–) and (+) input of focus error amp.
As the result of differential voltage. Focus error signal appears at FE Pin(Pin 20).
This FE Output Voltage (low frequency) becomes (A+C)–(B+D).
The focus error voltage is directed to the focus servo Block, to maintain optimum focusing at all times.

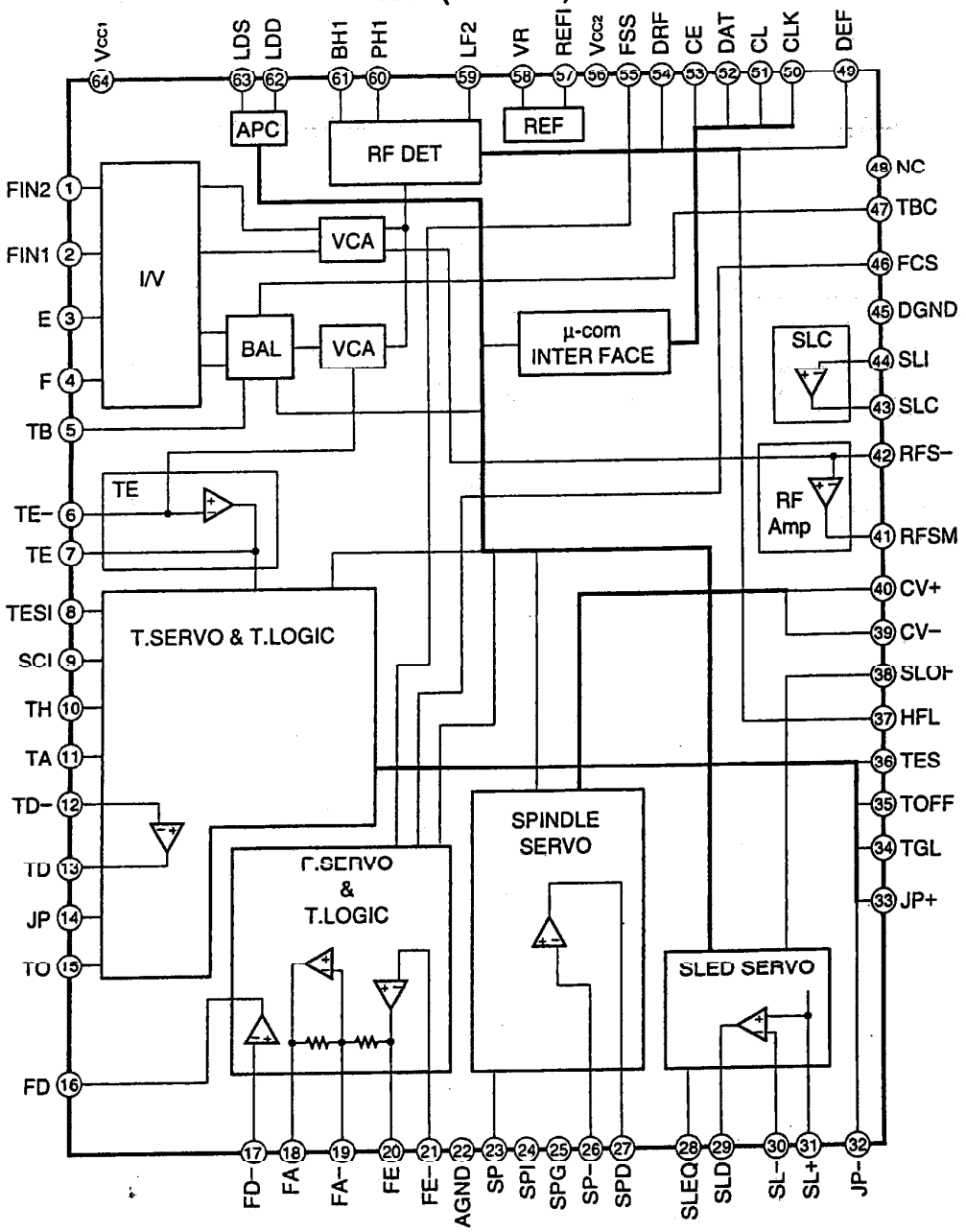
5. FOCUS OK GENERATION CIRCUIT

DRF(luminous energy determination)
DRF goes high when the peak of the EFM signal (RFSM output) held by the PHI (pin 60) capacitor exceeds approximately 2.1 V.
The PHI (pin 60) capacitor affects the DRF detection time constant and the RFAGC response bidirectional setting.
The DRF output is driven by a constant current (250 µA).



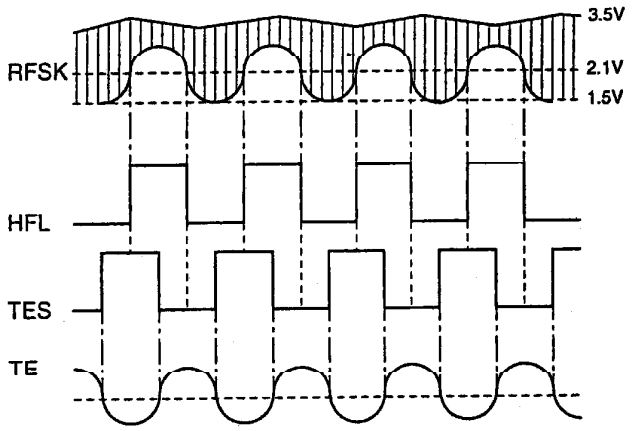
A6016

IC02 (LA9240M)



6. MIRROR CIRCUIT

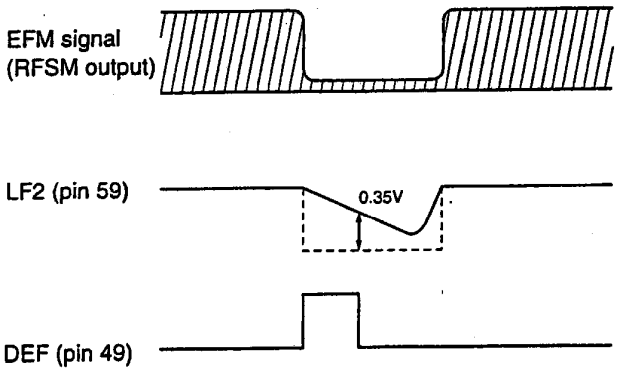
TES and HFL (traverse signals)
When moving the pickup from the outer track to the inner track, the EF output from the pickup must be connected so that the phase relationship of TES and HFL is as shown in the diagram below. For the TESI input, the TES comparator has negative polarity and hysteresis of approximately ±100 mV. An external bandpass filter is needed in order to extract only the required signal from the TE signal.



A6015

7. DEFECT CIRCUIT

DEFECT
The mirrored surface level is maintained by the capacitor for LF2 (pin 59); when a drop in the EFM signal (RFSM output) reaches 0.35 V or more, a high signal is output to DEF (pin 49). If DEF(pin 49) goes high, the tracking servo enters THLD mode. In order to prevent the tracking servo from entering THLD mode when a defect is detected, prevent DEFECT from being output by either shorting DEF (pin 49) to GND, or shorting LF2 (pin 59) to GND. The DEFECT output is driven by constant current (approximately 100 μA).



A6018

8. EFM COMPARATOR

SLC (slice level control)
The SLC sets the duty ratio for the EFM signal that is input to the DSP to 50%. The DC level is determined by integrating the EFMO signal output from the DSP to determine the duty factor.

9. APC (AUTOMATIC POWER CONTROL) CIRCUIT

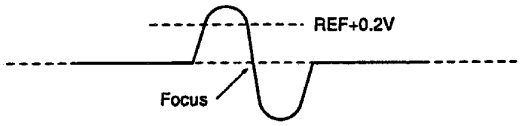
A. +5V single Power Supply P-sub Laser

APC (auto laser power control)
This circuit controls the pickup laser power. The laser is turned on and off by commands from the microprocessor.

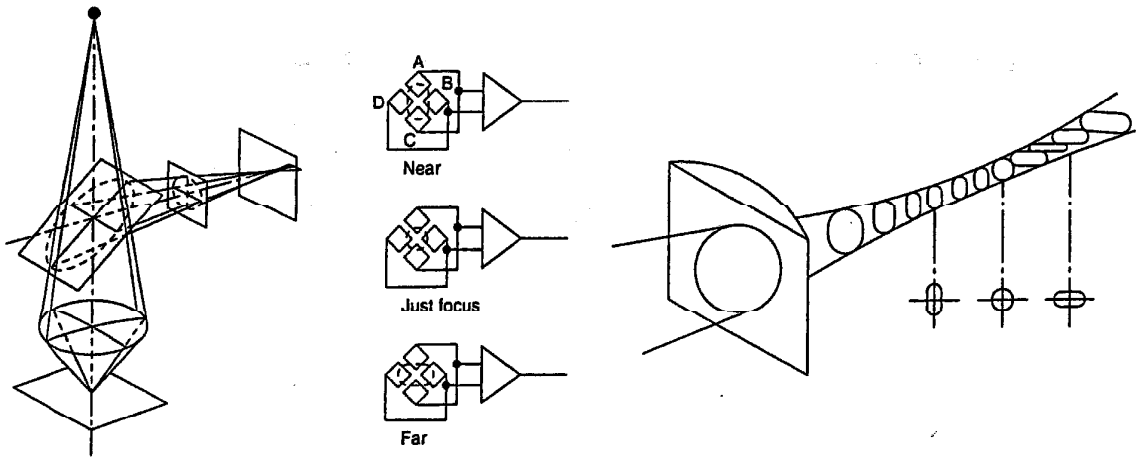
10. SERVO BLOCK

10-1. FOCUS SERVO BLOCK

Focus determination
Focus is assumed to be obtained when the focus error signal S curve reaching REF + 0.2V is detected, and the S curve subsequently returns to REF.



A6017



Foundamental Drawing

10-2. TRACKING AND SLED SERVO LOOP

Tracking servo
The pickup photodiode output current is input to E (pin 3) and F (pin 4). The current that is input is converted to the voltage, passes through the balance adjustment VCA circuit and then the VCA circuit that follows the gain in the RFAGC circuit, and is then output from TE (pin 7). The tracking error gain is set by the resistance between TE^- (pin 6) and TE (pin 7).
Offset cancellation is performed by the TE amplifier. Offset cancellation terminates after about 30 ms. The TRACK-OFFSET ADJUST OFF command is used to return to the state before the offset.
The TH amplifier alters the servo response characteristics according to the THLD signal, etc., generated internally after detection of the TGL signal from the DSP or the JP signal. When a defect is detected, the THLD mode goes into effect internally. To avoid this, short DEF (pin 49) to L=GND. By inserting an external bandpass filter to remove the shock component from the tracking error signal at SCI (pin 9), the gain is automatically boosted when a defect is detected.
The TA output (pin 11) has a built-in resistance to allow configuration of a low-pass filter.
The TD amplifier performs servo loop phase compensation; the characteristics are set by external CR. Furthermore, this amplifier has a mute function, which is applied when VCC is turned on or the TRACK-SERVO OFF command is issued. The muting function is released by the TRACK-SERVO ON command.
The TOFF amplifier that is positioned immediately after TD (pin 13) functions to turn off the servo in response to the TOFF signal from the DSP.
The TO amplifier has a JP pulse composition function. The JP pulse is set by JP (pin 14). (THLD detection is performed internally.)

10-3. SPINDLE SERVO AND LOW PASS FILTER

Spindle servo
This configures the servo circuit, which maintains the linear velocity of the disc at a constant speed, along with the DSP.
This circuit accepts signals from the DSP through CV^- (pin 39) and CV^+ (pin 40) and sets the equalizer characteristics through SP (pin 23), SP^- (pin 36), and SPD (pin 27), which are output to SPD (pin 27). The 12-cm mode amplifier gain is set by the resistor connected between SPG (pin 25) and the reference voltage. In 8-cm mode, this amplifier serves as an internal buffer, and SPG (pin 25) is ignored. Note that the gain setting is made for 8-cm mode first, and then 12-cm mode. If SPG (pin 25) is left open, the gain is forcibly set for 8-cm mode, regardless of whether 8-cm or 12-cm mode is in effect.

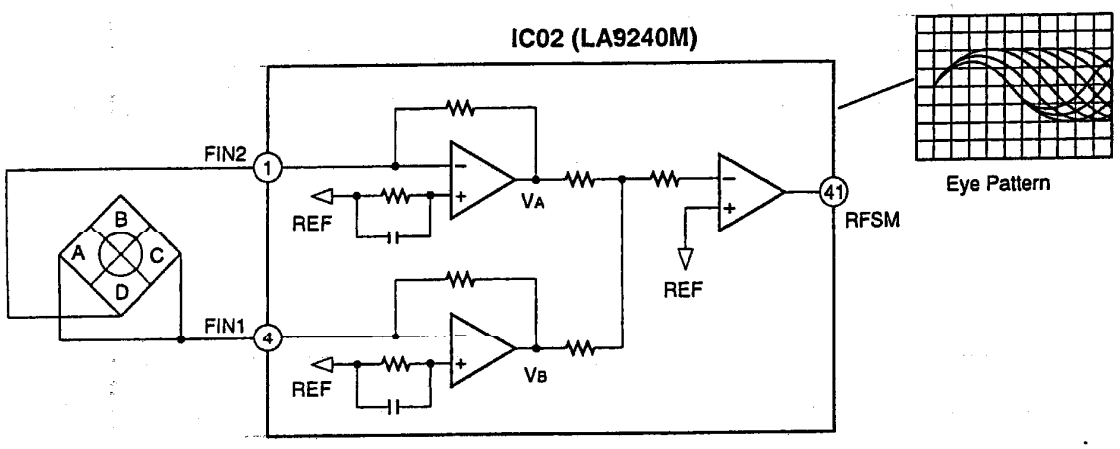
11. RF AMP BLOCK

RF amplifier (eye pattern output)
The pickup photodiode output current (A+C) is input to FIN2 (pin 1), and (B+D) is input to FINI (pin 2). The current that is input is converted to the voltage, passes through the AGC circuit, and is then output from the RFSM amplifier output RFSM (pin 41).
The internal AGC circuit has a variable range of ±3 dB, and the time constant can be changed through the external capacitor connected to PHI (pin 60). In addition, this circuit also controls the bottom level of the EFM signal (RFSM output), and the response can be changed through external capacitor connect to BHI (pin 61). The center gain setting for the AGC variable range is set by the resistance between RFSM (pin 41) and RFS^- (pin 42); if necessary, this resistance is also used for 3T compensation for the EFM signal.

11-1. Description

The photo detector is composed of 6 light sensor (A through F). The photo detector A, B, C, and D detect audio modulation signal on the disc and generate focus error signal.
The E and F photo detectors generate tracking error signal.

11-2. RF AMPLIFIER



RF I-V AMP (1) and RF I-V AMP (2) are converted current of PD1 (A+C) and PD2(B+D) through the internal resistor into Voltage. Furthermore, they are added to RF Summing amplifier.
This signal (A+B+C+D) is output from RFO (Pin 41).

11-3. EFM demodulation, error correction, serial/parallel conversion

EFM demodulation error correction and serial parallel conversion are performed by the internal circuitry of IC01.
The eye-pattern signals from pin 41 of IC02 are sent to pin 11 of IC01 then demodulated from 14 bits to 8 bits by EFM readjustment. At the same time any error, if found, is corrected (CIRC) and the signals are sent to the D/A converter interface. After that, they are output as digital signals from pins 42, 43 and 44 of IC01 and fed to the HDCD process decoder of IC185.

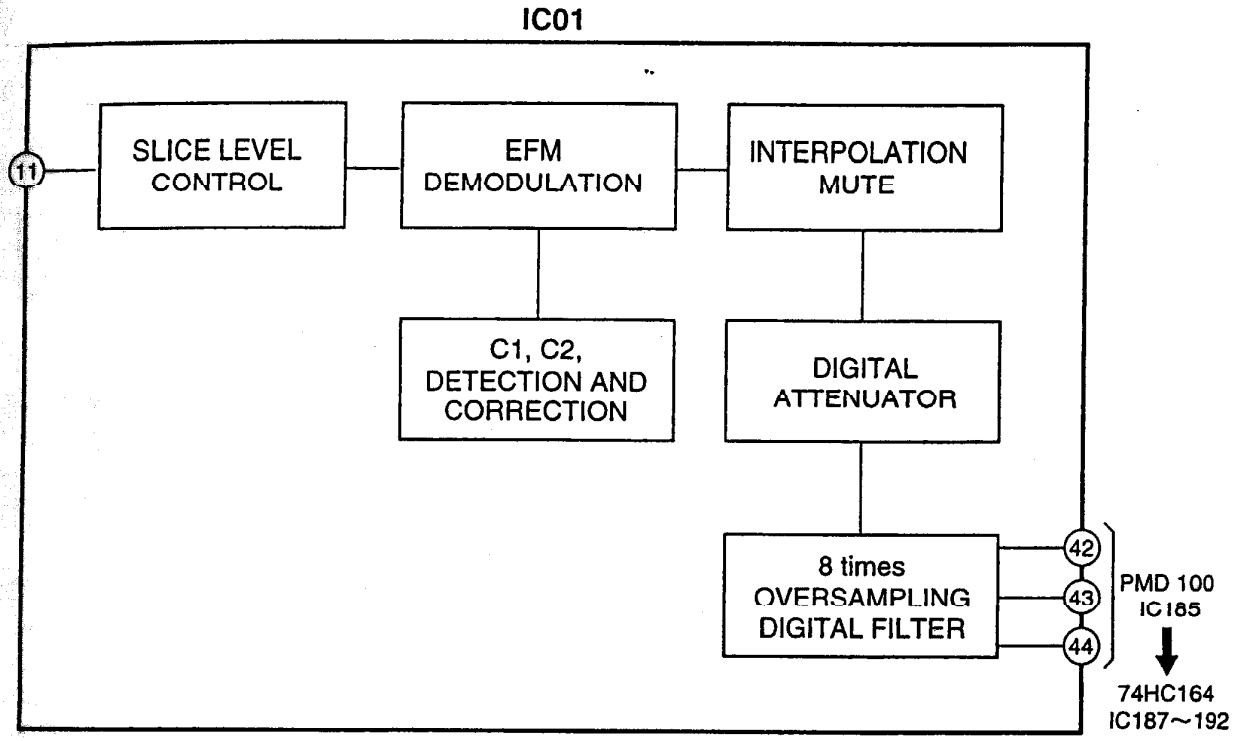


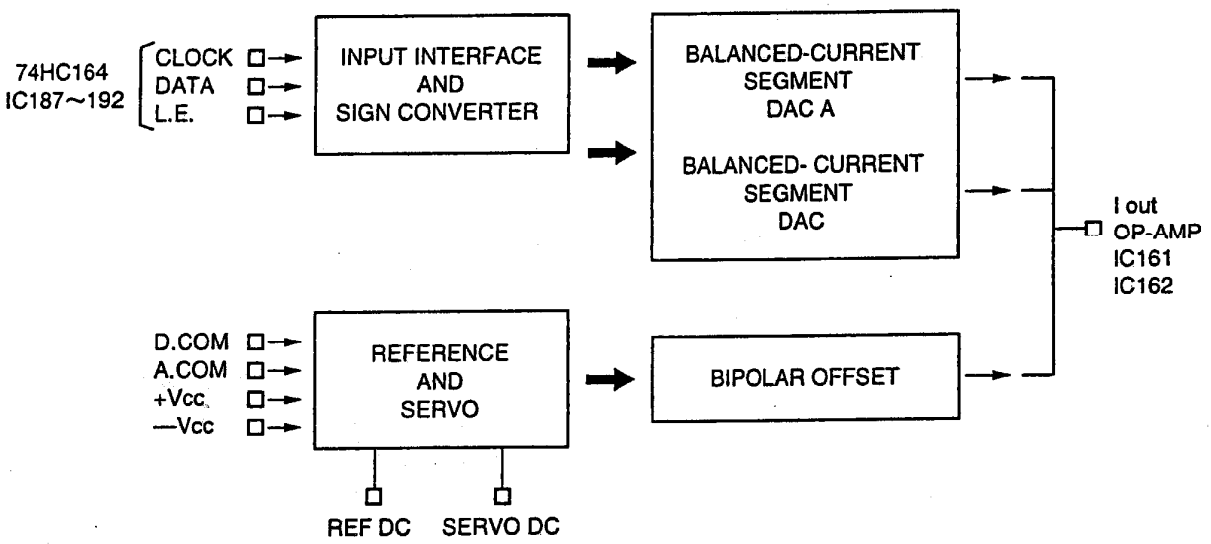
Fig.7

12. D/A Converter

D/A Converter PCM1702

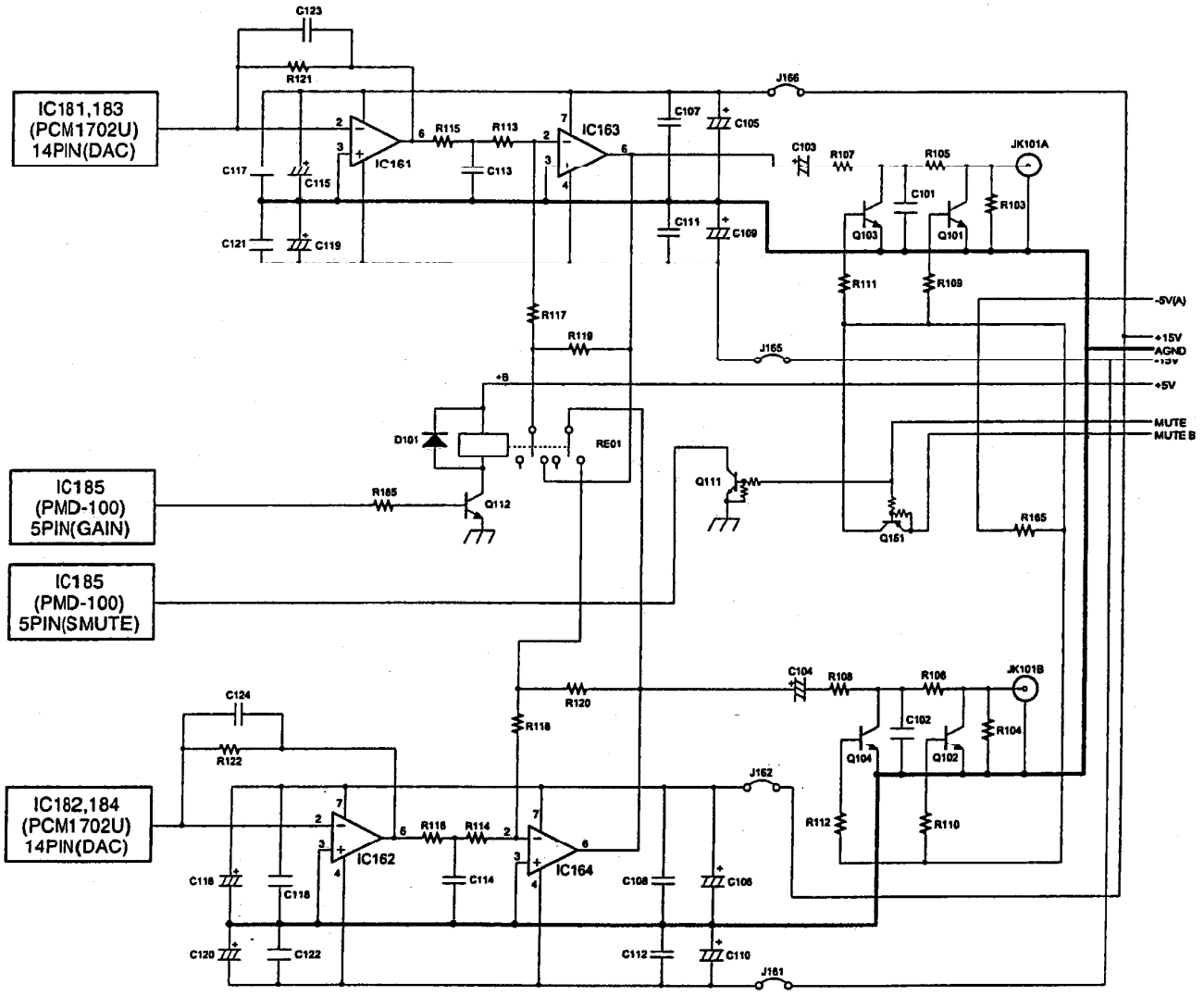
Features.

1. Advanced sign magnitude type
2. 20-bit DACs
3. Low distortion
4. High SNR
5. Non- zero-cross distortion
6. For 8 times oversampling
7. Low power consumption



Audio Circuit

The output from Pin6 of IC161(Left channel) passes through the 1-step L.P.F. which consists of C113 and R115. The high frequency component of the output from DAC is removed. And the signal passes through the amplifier.
When IC185(PMD-100) detects HDCD(peak-extend) process information in the input data, it automatically switches to HDCD decode mode, and controls RE01(RELAY) by the GAIN output(5Pin).
HDCD recordings can have peaks which are 6dB higher than standard recordings with the same average levels. Q101, Q102, Q103, Q104, and Q151 are power muting circuit.



Low-Pass filter

Fig.10 shows a final-stage circuit which includes a low-pass filter and other elements.

The portion of Fig.10 enclosed by the broken line is ~~another active~~ Passive LPF. This LPF causes noise in the high range to be cut.
Q105 and Q107 (Left channel) and Q106 and Q108 (Right channel) are buffer circuit of inverted darlington configuration.
Q109 and Q110 are FET controlled constant current circuits. Q110, Q109, Q103, Q104, Q101 and Q102 ~~is~~ are power muting circuit.

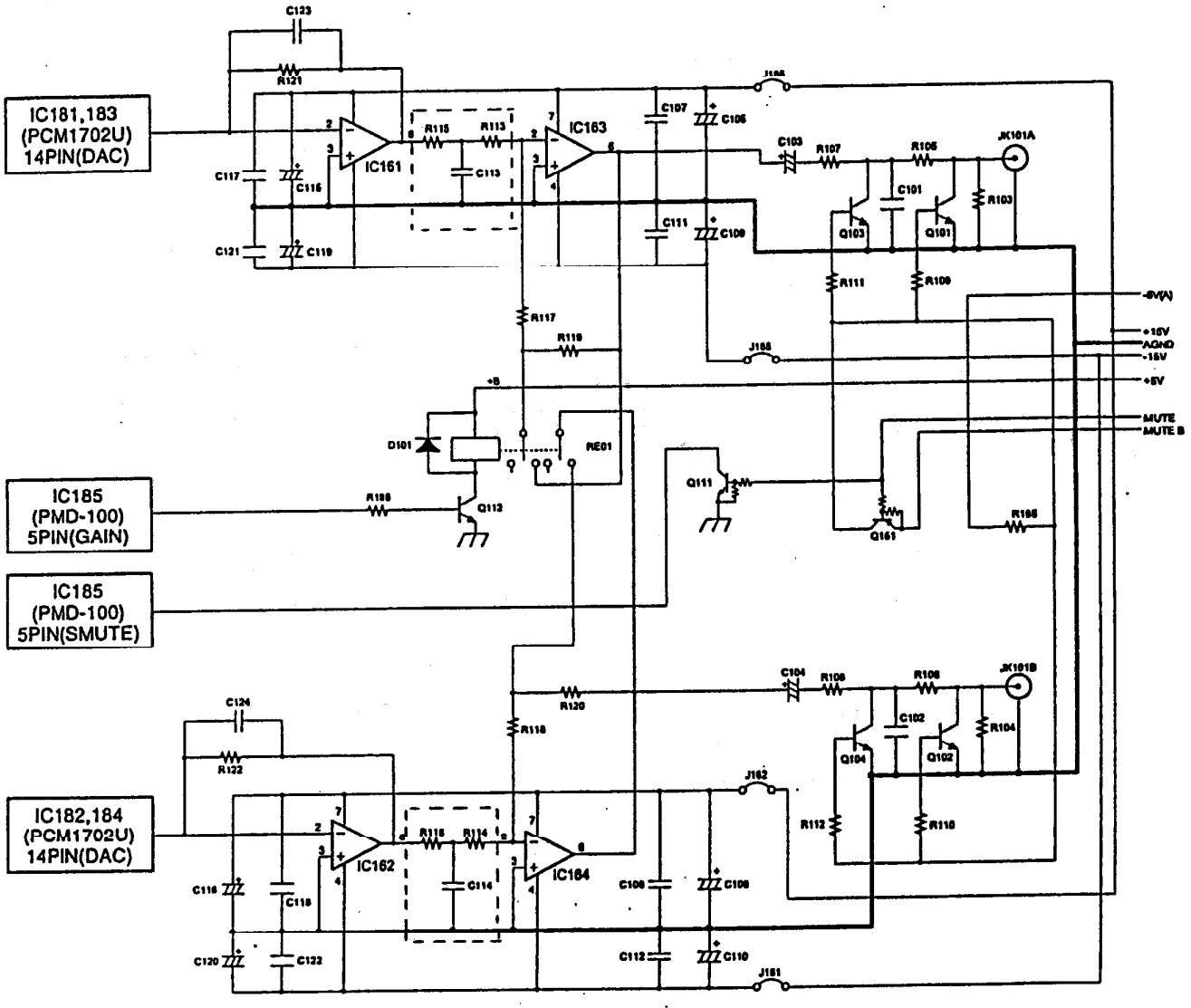
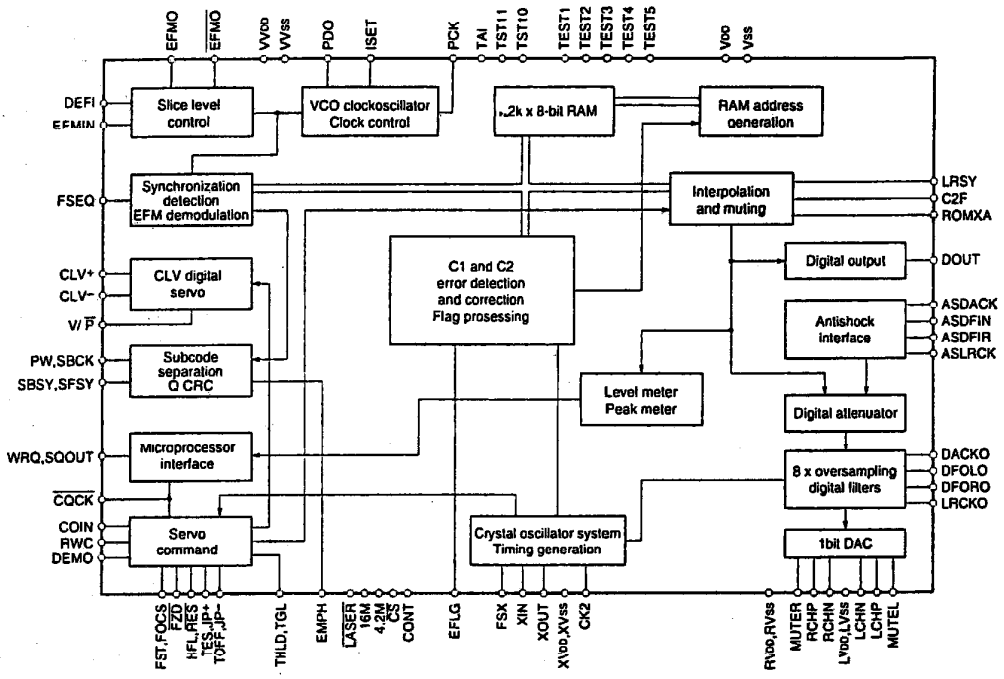


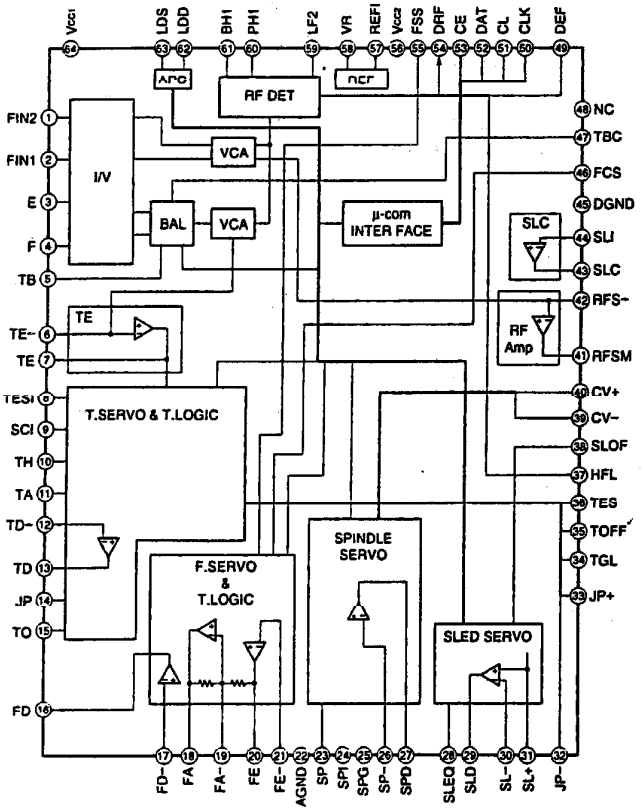
Fig. 10

IC BLOCK DIAGRAM

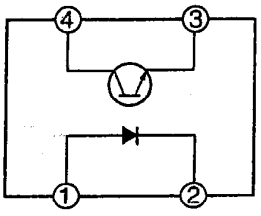
IC01 IC LC78621E
Digital Signal processor



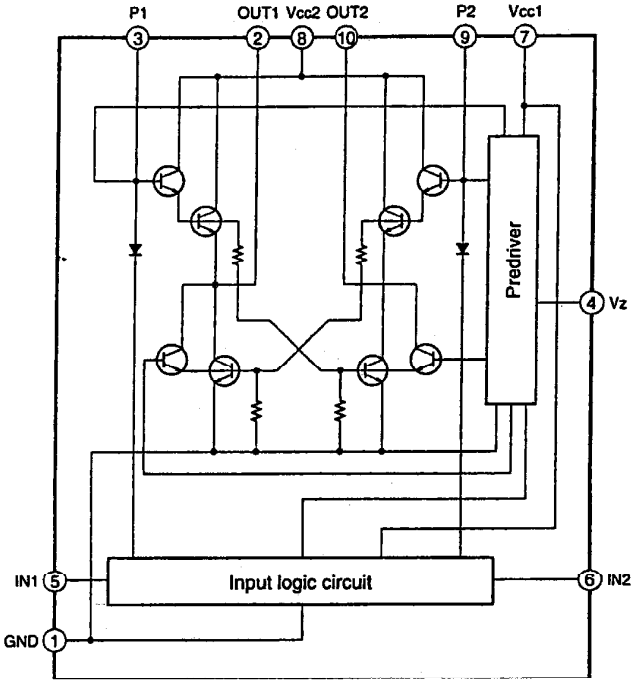
IC02 IC LA9240M
RF AMP+SSP (Signal Servo processor)



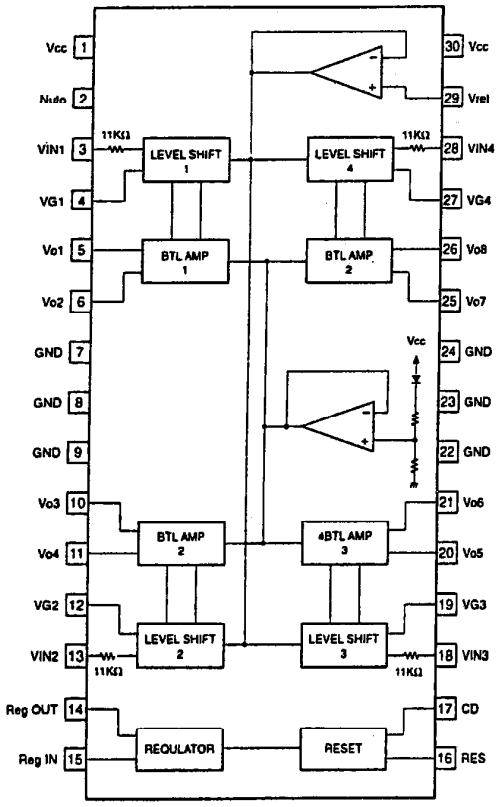
IC03 IC PC817B
Photo Coupler



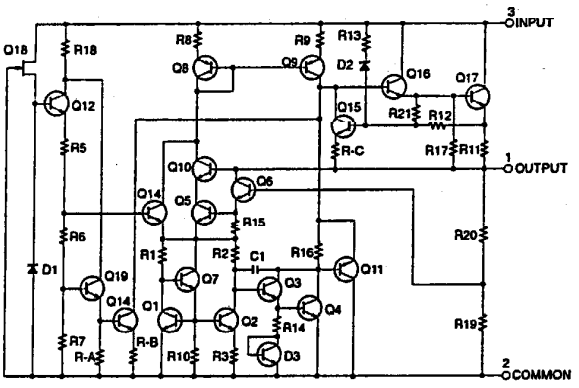
IC05 IC LB1641
Motor Driver



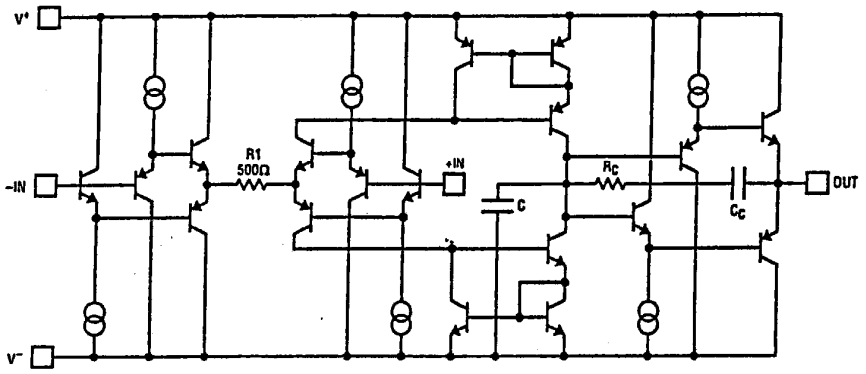
IC04 IC LA6541D
4ch Bridge Driver



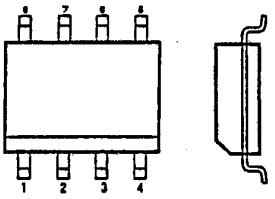
IC10 IC NJM7805FA or IC L7805CV
Voltage Regulator



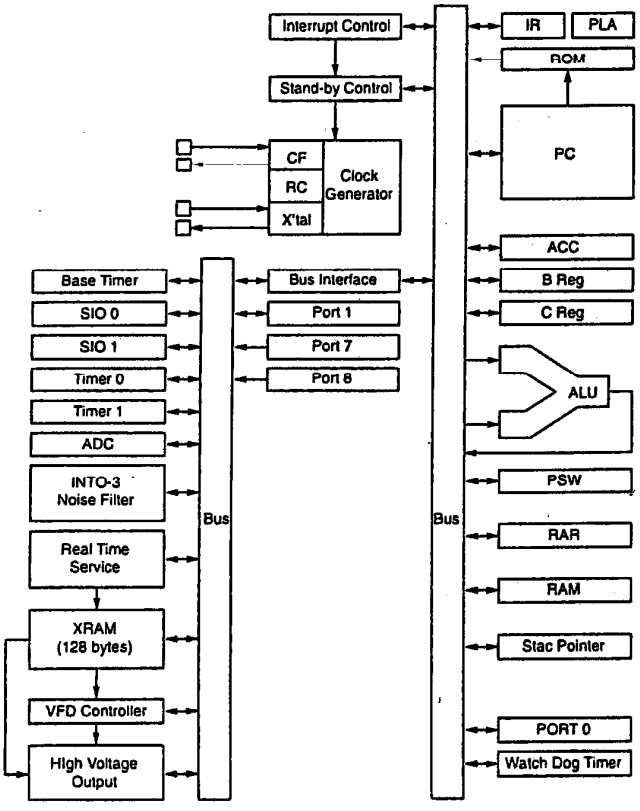
IC161~ IC164 LT1363
S8 Package 8-Lead Plastic SOIC



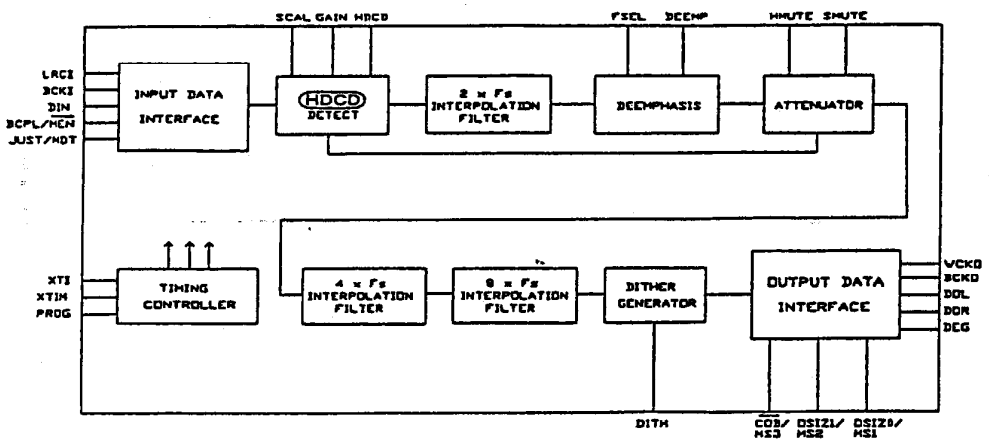
(Top/Side Views)



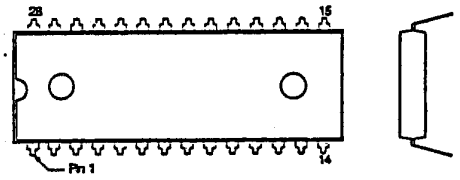
IC301 IC LC866012C-5H37 (5K25)
Micro computer



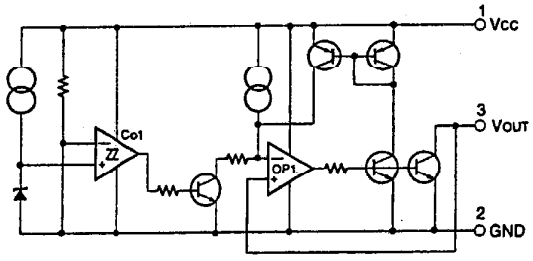
IC185 IC PMD100
HDCD Process Decoder



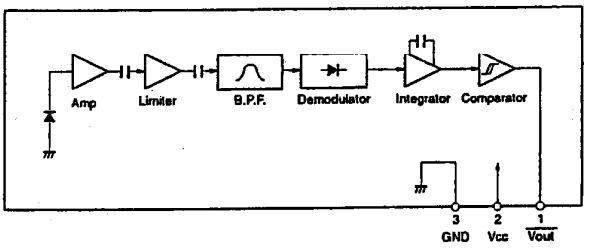
(Top Side Views)



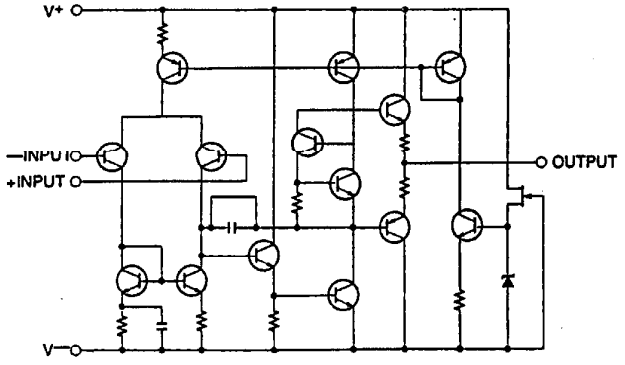
IC302 IC PST600D-2
Reset IC

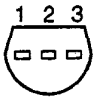


U301 GP-281



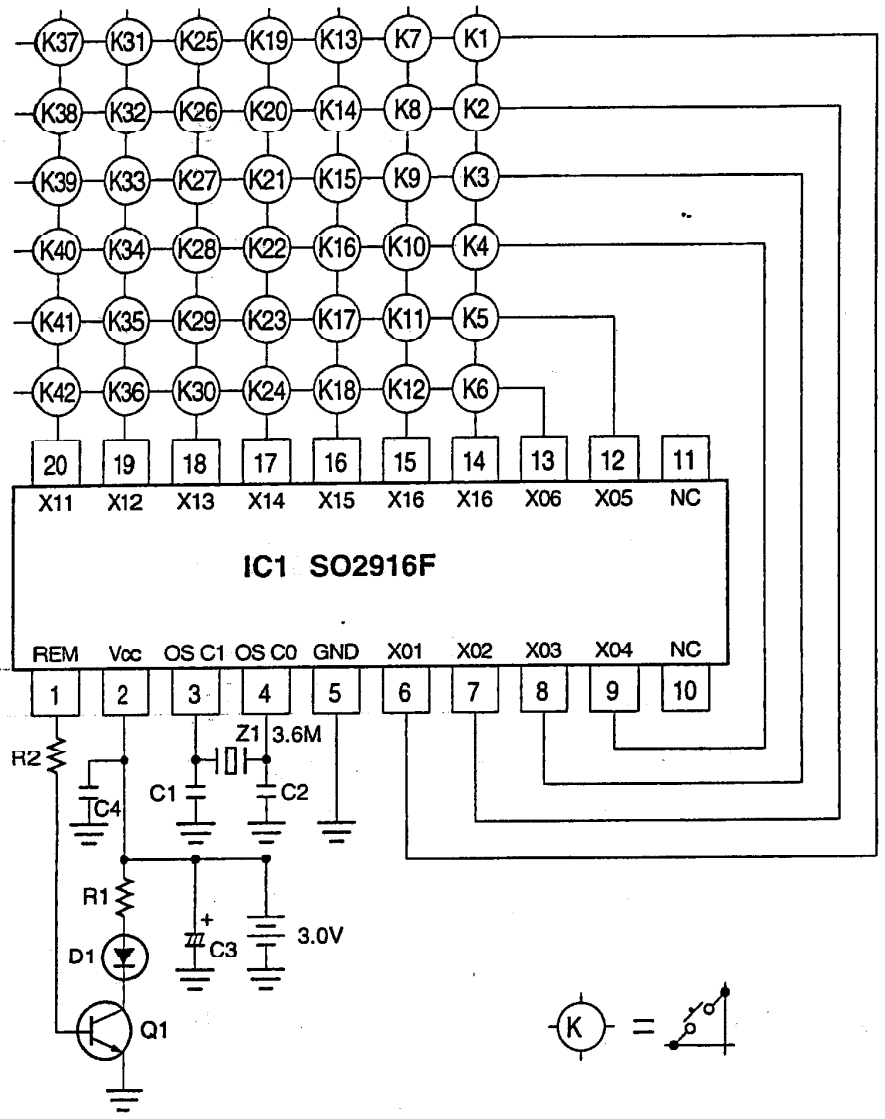
IC401 IC NJM4560D or M5218P
OP AMP



TR 2SA933AS-TP-R		TR 2SC1740S-TP-R	
	Q01 Q105 Q106		Q08 Q107 Q108
TR 2SB892-T		**TR 2SD1936-T-AC**	
	Q03		Q101 Q102 Q103 Q104
TR DTC124-ES-TP		**TR 2SK246-GR (TPE2)**	
	Q04 Q151		Q109 Q110
TR 2SB1142-T		**TR 2SC3382-T-AA**	
	Q05		Q111 Q112 Q115 Q116
TR DTA143-ES-TP		**TR 2SA1391S**	
	Q07		Q113 Q114 Q117 Q118

1→ Emitter 2→ Collector 3→ Base

REMOTE CONTROL SCHEMATIC DIAGRAM



KEY No.	NAME
1	SKIP ⏭
2	
3	
4	
5	0
6	1
7	SKIP ⏮
8	3
9	4
10	5
11	6
12	7
13	8
14	9
15	EDIT
16	TAPE SIZE
17	INTRO
18	REPEAT
19	A – B
20	TIME
21	CLEAR
22	CHECK
23	PROGRAM
24	RANDOM
25	DISPLAY
26	
27	
28	
29	PLAY
30	PAUSE
31	STOP
32	
33	SEARCH ◄◄
34	SEARCH ►►
35	
36	2
37	
38	
39	
40	
41	POWER ON
42	POWER OFF

ELECTRICAL PARTS LIST

45-01 CEC0B10029100 ASSY,PCB,MAIN

Ref No	Parts Number	Description			
CONNECTOR					
GND1	CEC4J13007100	CONNECTOR 1P ASSY			
GND2	CEC4J13007101	CONNECTOR 1P ASSY			
CN-07	CEC0J13002501	ASSY,CONNECTOR,3P			
CN-77	CEC4J13014400	CONNECTOR 3P SAN ASSY			
CORE2	CEC4Z21000700	CORE,BP53RB120070060M] OR USE			
CORE2	CEC4Z21000800	CORE,E04RA120070060]			
WB-01	14124729071000	WIRE BAND			
CN-101	CEC0J13003500	ASSY,CONNECOTR,1P			
CN-11	CEC4J13007100	CONNECTOR 1P ASSY			
	CK1H102KFABNN	CERAMIC	1000P	K	50V
TUB-01	53831000400000	ULT AWG12 105			
HEAT SINK					
HS-01	CEC2425001200	HEAT SINK			
HS-02	13126201280000	PLATE HEAT SINK			
	SFBDN308R0SM-	SCR S-TPG BIN 3X8			
CAPACITORS					
C01	CK1H102KFABNA	CERAMIC	1000P	K	50V
C02	CF1H104KADALC	POLYESTER	0.1U	K	50V
C04	CF1H333KADALC	POLYESTER	0.033U	K	50V
C06	CK1H331KFABNA	CERAMIC	330P	K	50V
C07	CE1HR10MDFALC	ELECT	0.1U	M	50V
C08	CB1C332MFARNA	CERAMIC	3300P	M	16V
C09	CF1H154KADALC	POLYESTER	0.15U	K	50V
C10	CF1H473KADALC	POLYESTER	0.047U	K	50V
C11	CE1H2R2MDFALC	ELECT	2.2U	M	50V
C12	CF1H183KADALC	POLYESTER	0.018U	K	50V
C13	CF1H153KADALC	POLYESTER	0.015U	K	50V
C14	CF1H104KADALC	POLYESTER	0.1U	K	50V
C15	CK1H102KFABNA	CERAMIC	1000P	K	50V
C16	CB1C332MFARNA	CERAMIC	3300P	M	16V
C17	CK1H101KFABNA	CERAMIC	100P	K	50V
C18	CE1HR22MDFALC	ELECT	0.22U	M	50V
C19	CE1H4R7MDFALC	ELECT	4.7U	M	50V
C20	CE1A220MAWALC	ELECT	22U	M	10V
C21	CB1C332MFARNA	CERAMIC	3300P	M	16V
C22	CB1C103MFAGNA	CERAMIC	0.01U	M	16V
C23	CF1H473KADALC	POLYESTER	0.047U	K	50V
C24	CE1HR33MDFALC	ELECT	0.33U	M	50V
C25	CF1H333KADALC	POLYESTER	0.033U	K	50V
C26	CC1H1R0MFAGNA	CERAMIC	1P	M	50V
C27	CC1H150JFAGNA	CERAMIC	15P	J	50V
C28	CB1C332MFARNA	CERAMIC	3300P	M	16V
C29	CK1H104ZFAFNA	CERAMIC	0.1U	Z	50V
C30	CK1H104ZFAFNA	CERAMIC	0.1U	Z	50V
C31	CC1H120JFAGNA	CERAMIC	12P	J	50V
C32	CC1H120JFAGNA	CERAMIC	12P	J	50V
C33	CB1E223ZFAFNA	CERAMIC	0.022U	Z	25V
C34	CE1A101MDFALC	ELECT	100U	M	10V
C35	CE1A101MDFALC	ELECT	100U	M	10V
C36	CB1E223ZFAFNA	CERAMIC	0.022U	Z	25V
C37	CE1A101MDFALC	ELECT	100U	M	10V
C38	CB1E223ZFAFNA	CERAMIC	0.022U	Z	25V
C39	CB1E223ZFAFNA	CERAMIC	0.022U	Z	25V
C40	CE1E100MDFALC	ELECT	10U	M	25V
C41	CE1A470MDFALC	ELECT	47U	M	10V
C42	CB1E223ZFAFNA	CERAMIC	0.022U	Z	25V
C43	CB1E223ZFAFNA	CERAMIC	0.022U	Z	25V
C44	CE1A471MAEANN	ELECT	470U	M	10V
C45	CE1H1R0MAEALC	ELECT	1U	M	50V

Ref No	Parts Number	Description			
C46	CE1A101MDFALC	ELECT	100U	M	10V
C47	CK1H104ZFAFNA	CERAMIC	0.1U	Z	50V
C48	CB1C103MFAGNA	CERAMIC	0.01U	M	16V
C49	CE1A470MDFALC	ELECT	47U	M	10V
C51	CE1A101MDFALC	ELECT	100U	M	10V
C52	CE1A101MDFALC	ELECT	100U	M	10V
C53	CE1A470MDFALC	ELECT	47U	M	10V
C54	CB1E223ZFAFNA	CERAMIC	0.022U	Z	25V
C56	CK1H181KFABNA	CERAMIC	180P	K	50V
C57	CB1E223ZFAFNA	CERAMIC	0.022U	Z	25V
C58	CE1A102MAEANN	ELECT	1000U	M	10V
C59	CE1A470MDFALC	ELECT	47U	M	10V
C61	CE1A331MAEALC	ELECT	330U	M	10V
C62	CE1A221MAEALC	ELECT	220U	M	10V
C63	CE1E472MDFANN	ELECT	4700U	M	25V
C64	CE1H1R0MAEALC	ELECT	1U	M	50V
C65	CE1H220MAEALC	ELECT	22U	M	50V
C66	CE1V470MAEALC	ELECT	47U	M	35V
C67	CE1H101MAEALC	ELECT	100U	M	50V
C69	CE1H1R0MAEALC	ELECT	1U	M	50V
C70	CE1E222MGXANN	ELECT	2200U	M	25V
C71	CE1E222MGXANN	ELECT	2200U	M	25V
C72	CE1E470MAEALC	ELECT	47U	M	25V
C73	CE1E470MAEALC	ELECT	47U	M	25V
C75	CE1E222MGXANN	ELECT	2200U	M	25V
C76	CE1E222MGXANN	ELECT	2200U	M	25V
C77	CE1C101MDFALC	ELECT	100U	M	16V
C78	CE1C101MDFALC	ELECT	100U	M	16V
C80	CE1A470MAEALC	ELECT	47U	M	10V
C81	CE1A101MDFALC	ELECT	100U	M	10V
C82	CE1A101MDFALC	ELECT	100U	M	10V
C83	CE1A101MDFALC	ELECT	100U	M	10V
C84	CE1A101MDFALC	ELECT	100U	M	10V
C87	CE1A101MDFALC	ELECT	100U	M	10V
C91	CE1A470MAEALC	ELECT	47U	M	10V
C92	CK1H221KFABNA	CERAMIC	220P	K	50V
C93	CK1H104ZFAFNA	CERAMIC	0.1U	Z	50V
C94	CB1C122MFARNA	CERAMIC	1200P	M	16V
C95	CB1C822MFAGNA	CERAMIC	8200P	M	16V
C96	CE1A101MAEALC	ELECT	100U	M	10V
C97	CK1H102KFABNA	CERAMIC	1000P	K	50V
C98	CK1H221KFABNA	CERAMIC	220P	K	50V
C99	CK1H221KFABNA	CERAMIC	220P	K	50V
C103	CE1C100MGWALC	ELECT	10U	M	16V
C104	CE1C100MGWALC	ELECT	10U	M	16V
C105	CU1C101MAAANN	OS-SOLID	100U	M	16V
C106	CU1C101MAAANN	OS-SOLID	100U	M	16V
C107	CF1H104KADALC	POLYESTER	0.1U	K	50V
C108	CF1H104KADALC	POLYESTER	0.1U	K	50V
C109	CU1C101MAAANN	OS-SOLID	100U	M	16V
C110	CU1C101MAAANN	OS-SOLID	100U	M	16V
C111	CF1H104KADALC	POLYESTER	0.1U	K	50V
C112	CF1H104KADALC	POLYESTER	0.1U	K	50V
C113	CF1H332KADALC	POLYESTER	3300P	K	50V
C114	CF1H332KADALC	POLYESTER	3300P	K	50V
C115	CU1C101MAAANN	OS-SOLID	100U	M	16V
C116	CU1C101MAAANN	OS-SOLID	100U	M	16V
C117	CF1H104KADALC	POLYESTER	0.1U	K	50V
C118	CF1H104KADALC	POLYESTER	0.1U	K	50V
C119	CU1C101MAAANN	OS-SOLID	100U	M	16V
C120	CU1C101MAAANN	OS-SOLID	100U	M	16V
C121	CF1H104KADALC	POLYESTER	0.1U	K	50V
C122	CF1H104KADALC	POLYESTER	0.1U	K	50V
C123	CK1H102KFABNA	CERAMIC	1000P	K	50V

ELECTRICAL PARTS LIST

Ref No	Parts Number	Description			
C124	CK1H102KFABNA	CERAMIC	1000P	K	50V
C131	CU1A101MAAANN	OS-SOLID	100U	M	10V
C132	CU1A101MAAANN	OS-SOLID	100U	M	10V
C133	CU1A101MAAANN	OS-SOLID	100U	M	10V
C134	CU1A101MAAANN	OS-SOLID	100U	M	10V
C135	CF1H104KADALC	POLYESTER	0.1U	K	50V
C136	CF1H104KADALC	POLYESTER	0.1U	K	50V
C137	CF1H104KADALC	POLYESTER	0.1U	K	50V
C138	CF1H104KADALC	POLYESTER	0.1U	K	50V
C139	CU1A101MAAANN	OS-SOLID	100U	M	10V
C140	CU1A101MAAANN	OS-SOLID	100U	M	10V
C141	CU1A101MAAANN	OS-SOLID	100U	M	10V
C142	CU1A101MAAANN	OS-SOLID	100U	M	10V
C143	CF1H104KADALC	POLYESTER	0.1U	K	50V
C144	CF1H104KADALC	POLYESTER	0.1U	K	50V
C145	CF1H104KADALC	POLYESTER	0.1U	K	50V
C146	CF1H104KADALC	POLYESTER	0.1U	K	50V
C147	CE1A470MDFALC	ELECT	47U	M	10V
C148	CE1A470MDFALC	ELECT	47U	M	10V
C149	CE1A470MDFALC	ELECT	47U	M	10V
C150	CE1A470MDFALC	ELECT	47U	M	10V
C151	CE1A101MDFALC	ELECT	100U	M	10V
C152	CE1A101MDFALC	ELECT	100U	M	10V
C153	CE1A101MDFALC	ELECT	100U	M	10V
C154	CE1A101MDFALC	ELECT	100U	M	10V
C155	CE1A220MAWALC	ELECT	22U	M	10V
C156	CE1A220MAWALC	ELECT	22U	M	10V
C157	CE1A220MAWALC	ELECT	22U	M	10V
C158	CE1A220MAWALC	ELECT	22U	M	10V
C159	CU1A101MAAANN	OS-SOLID	100U	M	10V
C160	CU1A101MAAANN	OS-SOLID	100U	M	10V
C161	CU1A101MAAANN	OS-SOLID	100U	M	10V
C162	CU1A101MAAANN	OS-SOLID	100U	M	10V
C163	CU1A101MAAANN	OS-SOLID	100U	M	10V
C164	CU1A101MAAANN	OS-SOLID	100U	M	10V
C165	CU1A101MAAANN	OS-SOLID	100U	M	10V
C166	CU1A101MAAANN	OS-SOLID	100U	M	10V
C171	CK1H104ZFAFNA	CERAMIC	0.1U	Z	50V
C172	CK1H104ZFAFNA	CERAMIC	0.1U	Z	50V
C173	CK1H104ZFAFNA	CERAMIC	0.1U	Z	50V
C174	CK1H104ZFAFNA	CERAMIC	0.1U	Z	50V
C175	CK1H104ZFAFNA	CERAMIC	0.1U	Z	50V
C176	CK1H104ZFAFNA	CERAMIC	0.1U	Z	50V
C181	CE1A101MDFALC	ELECT	100U	M	10V
C182	CK1H104ZFAFNA	CERAMIC	0.1U	Z	50V
C191	CK1H104ZFAFNA	CERAMIC	0.1U	Z	50V
C200	CB1E223ZFAFNA	CERAMIC	0.022U	Z	25V
C201	CK1H104ZFAFNA	CERAMIC	0.1U	Z	50V

PLUG

CN01	42369749100	PLUG 5P
CN02	42369749900	PLUG 8P,PH,V
CN03	42369749200	PLUG 6P,PH,V
CN04	42369749100	PLUG 5P
CN05	42362009000	PLUG 8P
CN06	CEC4J10005429	PLUG
CN101	42369749100	PLUG 5P

DIODE

D03	DD1A3-I-----C	DIODE 1A3-I
D04	DD1A3-I-----C	DIODE 1A3-I
D05	DD1A3-I-----C	DIODE 1A3-I
D06	DD1A3-I-----C	DIODE 1A3-I
D07	DD1A3-I-----C	DIODE 1A3-I
D08	DD1A3-I-----C	DIODE 1A3-I
D09	DD1A3-I-----C	DIODE 1A3-I

Ref No	Parts Number	Description
D10	DD1A3-I-----C	DIODE 1A3-I
D11	DZGZB24B----N	ZENER DIODE GZB24B
D12	DZMTZJ6.2A--A	ZENER DIODE MTZJ6.2A
D13	DZMTZJ7.5B--A	ZENER DIODE MTZJ7.5B
D14	DD1SS133----A	DIODE 1SS133-T-77
D16	DD1A3-I-----C	DIODE 1A3-I
D17	DD1A3-I-----C	DIODE 1A3-I
D18	DZMTZJ4.3A--A	ZENER DIODE MTZJ4.3A
D19	DD1A3-I-----C	DIODE 1A3-I
D20	DD1A3-I-----C	DIODE 1A3-I
D31	DD1SS133----A	DIODE 1SS133-T-77
D32	DD1SS133----A	DIODE 1SS133-T-77
D58	DD1SS133----A	DIODE 1SS133-T-77
D101	DD1SS133----A	DIODE 1SS133-T-77

INTEGRATED CIRCUITS

IC01	QLC78621ED--N	IC LC78621ED
IC02	QLA9240M----N	IC LA9240M
IC03	CECDCPC80000N	PHOTO COUPLE PC817B
IC04	QLA6541D----N	IC LA6541D
IC05	QLB1641-----N	IC LB1641
IC06	QNJM7815FA--N	IC NJM7815FA
IC07	QNJM7915FA--N	IC NJM7915FA
IC08	QNJM7805FA--N	IC NJM7805FA
IC09	QNJM7905FA--N	IC NJM7905FA
IC10	QNJM7805FA--N	IC NJM7805FA] OR USE
IC10	CEC4D61006200	IC L7805CV]
IC11	QNJM7805FA--N	IC NJM7805FA
IC12	QNJM7905FA--N	IC NJM7905FA
IC161	QLT1363CS8--P	IC LT1363CS8
IC162	QLT1363CS8--P	IC LT1363CS8
IC163	QLT1363CS8--P	IC LT1363CS8
IC164	QLT1363CS8--P	IC LT1363CS8
IC181	CECQPCM17004N	IC PCM1702U-J
IC182	CECQPCM17004N	IC PCM1702U-J
IC183	CECQPCM17004N	IC PCM1702U-J
IC184	CECQPCM17004N	IC PCM1702U-J
IC185	CECQPMD10000N	IC PMD100
IC186	QTC74HC04AF-N	IC TC74HC04AF
IC187	CECQTC74HC12N	IC TC74HC164AF
IC188	CECQTC74HC12N	IC TC74HC164AF
IC189	CECQTC74HC12N	IC TC74HC164AF
IC190	CECQTC74HC12N	IC TC74HC164AF
IC191	CECQTC74HC12N	IC TC74HC164AF
IC192	CECQTC74HC12N	IC TC74HC164AF
IC193	QTC74HCU04AFP	IC TC74HCU04AF

JACKS

JK01	CEC4J12002800	JACK REM
JK02	CEC4J12002800	JACK REM
JK03	CEC4J12001202	JACK,VIDEO
JK04	CEC4U23000800	CONVERTOR GP1F32T
JK101	CEC4J12000801	JACK RCA 2P

TRANSISTORS

Q01	T2SA933AS-R-C	TR 2SA933AS-TP-R
Q03	T2SB892-T---N	TR 2SB892-T
Q04	TDTC124-ES--C	TR DTC124-ES-TP
Q05	T2SB1142-T--N	TR 2SB1142-T
Q07	TDTA143-ES--C	TR DTA143-ES-TP
Q08	T2SC1740S-R-C	TR 2SC1740S-TP-R
Q09	T2SB892-T---N	TR 2SB892-T
Q10	TDTC124-ES--C	TR DTC124-ES-TP
Q11	TDTA124-ES--C	TR DTA124-ES-TP
Q12	T2SD1207-T--N	TR 2SD1207-T

ELECTRICAL PARTS LIST

Ref No	Parts Number	Description
Q101	T2SD1936-T--C	TR 2SD1936-T-AC
Q102	T2SD1936-T--C	TR 2SD1936-T-AC
Q103	T2SD1936-T--C	TR 2SD1936-T-AC
Q104	T2SD1936-T--C	TR 2SD1936-T-AC
Q111	TDTC124-ES--C	TR DTC124-ES-TP
Q112	T2SD734-E---C	TR 2SD734-E-AA
Q112	T2SD734-F---C	TR 2SD734-F-AA
Q151	TDTA124-ES--C	TR DTA124-ES-TP
RESISTORS		
R01	RDD1001JPAANA	CARBON 1K JA 1/6W
R02	RDD10R0JPAANA	CARBON 10 JA 1/6W
R03	RDD1503JPAANA	CARBON 150K JA 1/6W
R05	RDD6801JPAANA	CARBON 6.8K JA 1/6W
R06	RDD2201JPAANA	CARBON 2.2K JA 1/6W
R07	RDD3901JPAANA	CARBON 3.9K JA 1/6W
R08	RDD4701JPAANA	CARBON 4.7K JA 1/6W
R10	RDD1003JPAANA	CARBON 100K JA 1/6W
R11	RDD1502JPAANA	CARBON 15K JA 1/6W
R12	RDD2702JPAANA	CARBON 27K JA 1/6W
R13	RDD3300JPAANA	CARBON 330 JA 1/6W
R14	RDD3301JPAANA	CARBON 3.3K JA 1/6W
R15	RDD6801JPAANA	CARBON 6.8K JA 1/6W
R17	RDD1202JPAANA	CARBON 12K JA 1/6W
R18	RDD1501JPAANA	CARBON 1.5K JA 1/6W
R19	RDD3302JPAANA	CARBON 33K JA 1/6W
R20	RDD1202JPAANA	CARBON 12K JA 1/6W
R21	RDD1802JPAANA	CARBON 18K JA 1/6W
R22	RDD2202JPAANA	CARBON 22K JA 1/6W
R23	RDD6801JPAANA	CARBON 6.8K JA 1/6W
R25	RDD3302JPAANA	CARBON 33K JA 1/6W
R26	RDD5602JPAANA	CARBON 56K JA 1/6W
R27	RDD1001JPAANA	CARBON 1K JA 1/6W
R28	RDD5602JPAANA	CARBON 56K JA 1/6W
R29	RDD5601JPAANA	CARBON 5.6K JA 1/6W
R32	RDD1002JPAANA	CARBON 10K JA 1/6W
R33	RDD6801JPAANA	CARBON 6.8K JA 1/6W
R34	RDD5601JPAANA	CARBON 5.6K JA 1/6W
R36	RDD1003JPAANA	CARBON 100K JA 1/6W
R37	RDD1003JPAANA	CARBON 100K JA 1/6W
R38	RDD4701JPAANA	CARBON 4.7K JA 1/6W
R39	RDD1003JPAANA	CARBON 100K JA 1/6W
R40	RDD1002JPAANA	CARBON 10K JA 1/6W
R41	RDD1802JPAANA	CARBON 18K JA 1/6W
R42	RDD1802JPAANA	CARBON 18K JA 1/6W
R43	RDD1001JPAANA	CARBON 1K JA 1/6W
R44	RDD3300JPAANA	CARBON 330 JA 1/6W
R45	RDD6800JPAANA	CARBON 680 JA 1/6W
R46	RDD5602JPAANA	CARBON 56K JA 1/6W
R47	RDD1201JPAANA	CARBON 1.2K JA 1/6W
R48	RDD4701JPAANA	CARBON 4.7K JA 1/6W
R49	RDD4701JPAANA	CARBON 4.7K JA 1/6W
R50	RDD2202JPAANA	CARBON 22K JA 1/6W
R53	RDD1001JPAANA	CARBON 1K JA 1/6W
R54	RDD2202JPAANA	CARBON 22K JA 1/6W
R55	RDD1003JPAANA	CARBON 100K JA 1/6W
R58	RDD2200JPAANA	CARBON 220 JA 1/6W
R60	RDD1201JPAANA	CARBON 1.2K JA 1/6W
R61	RDD4700JPAANA	CARBON 470 JA 1/6W
R62	RDD4701JPAANA	CARBON 4.7K JA 1/6W
R63	RDB6800JPAANA	CARBON 680 JA 1/4W
R64	RDD3302JPAANA	CARBON 33K JA 1/6W
R65	RDB47R0JPAANA	CARBON 47 JA 1/4W
R66	RDB2R20JPAANA	CARBON 2.2 JA 1/4W
R67	RDB47R0JPAANA	CARBON 47 JA 1/4W
R68	RDD1002JPAANA	CARBON 10K JA 1/6W

Ref No	Parts Number	Description
R69	RDD1002JPAANA	CARBON 10K JA 1/6W
R70	RDD1001JPAANA	CARBON 1K JA 1/6W
R73	RDD4701JPAANA	CARBON 4.7K JA 1/6W
R74	RDD4701JPAANA	CARBON 4.7K JA 1/6W
R75	RDD3901JPAANA	CARBON 3.9K JA 1/6W
R76	RDD2201JPAANA	CARBON 2.2K JA 1/6W
R80	1EA4W3JP1000T	LEAD JUMPER P 10.0
R81	RFXEA01610R0N	FUSIBLE RES 10 JA 1/4W
R82	RFXEA01610R0N	FUSIBLE RES 10 JA 1/4W
R83	RFXEA01610R0N	FUSIBLE RES 10 JA 1/4W
R85	RDD75R0JPAANA	CARBON 75 JA 1/6W
R86	RDD1500JPAANA	CARBON 150 JA 1/6W
R91	1EA4W3JP0500T	LEAD JUMPER P 5.0
R92	RDD3901JPAANA	CARBON 3.9K JA 1/6W
R93	RDD4702JPAANA	CARBON 47K JA 1/6W
R94	RDD3300JPAANA	CARBON 330 JA 1/6W
R95	RDD47R0JPAANA	CARBON 47 JA 1/6W
R101	RDD3902JPAANA	CARBON 39K JA 1/6W
R102	RDD3902JPAANA	CARBON 39K JA 1/6W
R103	RDD2202JPAANA	CARBON 22K JA 1/6W
R104	RDD2202JPAANA	CARBON 22K JA 1/6W
R105	RDD47R0JPAANA	CARBON 47 JA 1/6W
R106	RDD47R0JPAANA	CARBON 47 JA 1/6W
R107	RDD1000JPAANA	CARBON 100 JA 1/6W
R108	RDD1000JPAANA	CARBON 100 JA 1/6W
R109	RDD3301JPAANA	CARBON 3.3K JA 1/6W
R110	RDD3301JPAANA	CARBON 3.3K JA 1/6W
R111	RDD3301JPAANA	CARBON 3.3K JA 1/6W
R112	RDD3301JPAANA	CARBON 3.3K JA 1/6W
R113	RDD1001JPAANA	CARBON 1K JA 1/6W
R114	RDD1001JPAANA	CARBON 1K JA 1/6W
R115	RDD1001JPAANA	CARBON 1K JA 1/6W
R116	RDD1001JPAANA	CARBON 1K JA 1/6W
R117	RDD2201JPAANA	CARBON 2.2K JA 1/6W
R118	RDD2201JPAANA	CARBON 2.2K JA 1/6W
R119	RDD2201JPAANA	CARBON 2.2K JA 1/6W
R120	RDD2201JPAANA	CARBON 2.2K JA 1/6W
R121	RDD1301JPAANA	CARBON 1.3K JA 1/6W
R122	RDD1301JPAANA	CARBON 1.3K JA 1/6W
R165	RDD1004JPAANA	CARBON 1M JA 1/6W
R180	RDD1004JPAANA	CARBON 1M JA 1/6W
R181	RDD1001JPAANA	CARBON 1K JA 1/6W
R182	RDD1000JPAANA	CARBON 100 JA 1/6W
R183	RDD1000JPAANA	CARBON 100 JA 1/6W
R184	RDD1000JPAANA	CARBON 100 JA 1/6W
R185	RDD1002JPAANA	CARBON 10K JA 1/6W
R186	RDD2202JPAANA	CARBON 22K JA 1/6W
SWITCH		
SW01	CEC4S10001000	SWITCH,SLIDE
TRANS		
T01	1EA4L13A00100	TRANS,PULSE
CRYSTAL		
JX01	42259711010	CRYSTAL 16.9344MHZ
JUMPER		
JP-P10	1EA4W3JP1000T	LEAD JUMPER P 10.0
JP-P05	1EA4W3JP0500T	LEAD JUMPER P 5.0
JP9	CEC4L26000400	INDUCTOR FERRITE
JP109	CEC4L26000400	INDUCTOR FERRITE
JP128	CEC4L26000400	INDUCTOR FERRITE
JP138	CEC4L26000400	INDUCTOR FERRITE
JP169	CEC4L26000400	INDUCTOR FERRITE
JP170	CEC4L26000400	INDUCTOR FERRITE

ELECTRICAL PARTS LIST

Ref No	Parts Number	Description
COIL		
L90	CEC4L26000400	INDUCTOR FERRITE
L190	CEC4L24000900	COIL
RELAY		
RE01	CEC4S21000900	RELAY,TF2-5V
TW-1	75030000500303	TWS UL1007 AWG26 BK
TW-2	75030000500303	TWS UL1007 AWG26 BK

45-02 CEC0B10029240 ASSY,PCB,POWER,230V

Ref No	Parts Number	Description
TRANS		
T501	CEC4L50006140	POWER TRANS
TERMINALS		
EC501	42372008300	EC TERMINAL 1P
EC502	42372008300	EC TERMINAL 1P
POWER,CORD		
PWC-01	CEC4W10005400	POWER,CORD,EUR ┐OR USE
PWC-01	CEC4W10004000	POWER,CORD,EUR ┘
FUSE, HOLDER		
F501	CEC4J20000500	FUSE HOLDER
F502	CEC4J20000500	FUSE HOLDER
F503	CEC4J20000500	FUSE HOLDER
CAPACITORS		
C501	CEC4C10002000	CAPACITOR ┐OR USE
C501	42239709700	CAPACITOR 0.01MF400V ┘
SWITCH		
SW501	CEC4S11002000	SWITCH,PUSH,POWER
CONNECTOR		
W501	CEC0J13003200	ASSY,CONNECTOR,8P
CN-**	CEC4J13012283	CONNECTOR,8P,ASSY
CORE1	CEC4Z21000500	CORE

45-03 CEC0B10026902 ASSY,PCB,DISPLAY

Ref No	Parts Number	Description
CONNECTOR		
	CEC4J13007101	CONNECTOR 1P ASSY

Ref No	Parts Number	Description			
RESISTORS					
R300	RDD1002JPAANA	CARBON	10K	JA	1/6W
R301	RDD1101JPAANA	CARBON	1.1K	JA	1/6W
R302	RDD1501JPAANA	CARBON	1.5K	JA	1/6W
R303	RDD1801JPAANA	CARBON	1.8K	JA	1/6W
R304	RDD2401JPAANA	CARBON	2.4K	JA	1/6W
R305	RDD3301JPAANA	CARBON	3.3K	JA	1/6W
R306	RDD5101JPAANA	CARBON	5.1K	JA	1/6W
R307	RDD2702JPAANA	CARBON	27K	JA	1/6W
R310	RDD1002JPAANA	CARBON	10K	JA	1/6W
R311	RDD1101JPAANA	CARBON	1.1K	JA	1/6W
R312	RDD1501JPAANA	CARBON	1.5K	JA	1/6W
R313	RDD1801JPAANA	CARBON	1.8K	JA	1/6W
R314	RDD2401JPAANA	CARBON	2.4K	JA	1/6W
R315	RDD3301JPAANA	CARBON	3.3K	JA	1/6W
R316	RDD5101JPAANA	CARBON	5.1K	JA	1/6W
R317	RDD8201JPAANA	CARBON	8.2K	JA	1/6W
R318	RDD1802JPAANA	CARBON	18K	JA	1/6W
R321	RDD1800JPAANA	CARBON	180	JA	1/6W
R322	RDD1500JPAANA	CARBON	150	JA	1/6W
R323	RDD2202JPAANA	CARBON	22K	JA	1/6W
R324	RDD2202JPAANA	CARBON	22K	JA	1/6W
R325	RDD2202JPAANA	CARBON	22K	JA	1/6W
R326	RDD2202JPAANA	CARBON	22K	JA	1/6W
R327	RDD4702JPAANA	CARBON	47K	JA	1/6W
R328	RDD1001JPAANA	CARBON	1K	JA	1/6W
R329	RDD2200JPAANA	CARBON	220	JA	1/6W
R330	RDD1000JPAANA	CARBON	100	JA	1/6W
R331	RDD1000JPAANA	CARBON	100	JA	1/6W
R332	RDD1000JPAANA	CARBON	100	JA	1/6W
R333	RDD1000JPAANA	CARBON	100	JA	1/6W
R334	RDD1000JPAANA	CARBON	100	JA	1/6W
R335	RDD1000JPAANA	CARBON	100	JA	1/6W
R336	RDD2203JPAANA	CARBON	220K	JA	1/6W
R337	RDD2203JPAANA	CARBON	220K	JA	1/6W
R338	RDD2203JPAANA	CARBON	220K	JA	1/6W
R339	RDD2203JPAANA	CARBON	220K	JA	1/6W
R340	RDD2203JPAANA	CARBON	220K	JA	1/6W
R341	RDD2203JPAANA	CARBON	220K	JA	1/6W
R342	RDD2203JPAANA	CARBON	220K	JA	1/6W
R343	RDD2203JPAANA	CARBON	220K	JA	1/6W
R344	RDD2203JPAANA	CARBON	220K	JA	1/6W
R345	RDD2203JPAANA	CARBON	220K	JA	1/6W
R346	RDD4701JPAANA	CARBON	4.7K	JA	1/6W
R347	RDD2202JPAANA	CARBON	22K	JA	1/6W
R348	RDD6801JPAANA	CARBON	6.8K	JA	1/6W
R349	RDD1800JPAANA	CARBON	180	JA	1/6W
R350	1EA4W3JP0500T	LEAD JUMPER P 5.0			
R351	RDD3900JPAANA	CARBON	390	JA	1/6W

CAPACITORS					
C301	CE1A470MAEANN	ELECT	47U	M	10V
C302	CB1E223ZFAFNA	CERAMIC	0.022U	Z	25V
C303	CE1A470MAEANN	ELECT	47U	M	10V
C304	CE1H1R0MAEANN	ELECT	1U	M	50V
C305	CK1H104ZFAFNA	CERAMIC	0.1U	Z	50V
C306	CK1H104ZFAFNA	CERAMIC	0.1U	Z	50V
C310	CC1H330JFAGNA	CERAMIC	33P	J	50V
C311	CC1H330JFAGNA	CERAMIC	33P	J	50V
C312	CE1A470MAEANN	ELECT	47U	M	10V
C315	CK1H102KFABNA	CERAMIC	1000P	K	50V

JUMPER		
JP-P05	1EA4W3JP0500T	LEAD JUMPER P 5.0
JP-P10	1EA4W3JP1000T	LEAD JUMPER P 10.0
PAD		
PAD-1	CEC2448001401	PAD
PLUG		
CN301	CEC4J10005469	PLUG 29P R
DIODE		
D303	DD1SS133----A	DIODE 1SS133-T-77
D304	CECDLSLR-510T	LED SLR-56VCTB7
INTGRATED CIRCUITS		
U301	CEC4D61005900	IC GP1U281X
	CEC4T41000900	FLT 10-BT-204GK
IC301	QXXGA0052229N	IC LC866012C-5K25
IC302	QPST600D-2--C	IC PST600D-2

ELECTRICAL PARTS LIST

Ref No	Parts Number	Description
RESONATOR		
X301	CEC4V10000900	RESONATOR,CSA12.0MTZ
SWITCH		
SW301	CEC4S14000400	SWITCH,TACT
SW302	CEC4S14000400	SWITCH,TACT
SW303	CEC4S14000400	SWITCH,TACT
SW304	CEC4S14000400	SWITCH,TACT
SW305	CEC4S14000400	SWITCH,TACT
SW306	CEC4S14000400	SWITCH,TACT
SW307	CEC4S14000400	SWITCH,TACT
SW309	CEC4S14000400	SWITCH,TACT
SW310	CEC4S14000400	SWITCH,TACT
SW311	CEC4S14000400	SWITCH,TACT
SW312	CEC4S14000400	SWITCH,TACT
SW313	CEC4S14000400	SWITCH,TACT
SW314	CEC4S14000400	SWITCH,TACT
SW315	CEC4S14000400	SWITCH,TACT
SW316	CEC4S14000400	SWITCH,TACT
SW317	CEC4S14000400	SWITCH,TACT
TRANSISTORS		
Q301	T2SA933AS-R-C	TR 2SA933AS-TP-R
Q302	TDTA124ESA--C	TR DTA124ESA-TP

45-04 CEC0B10026910 ASSY,PCB,LED

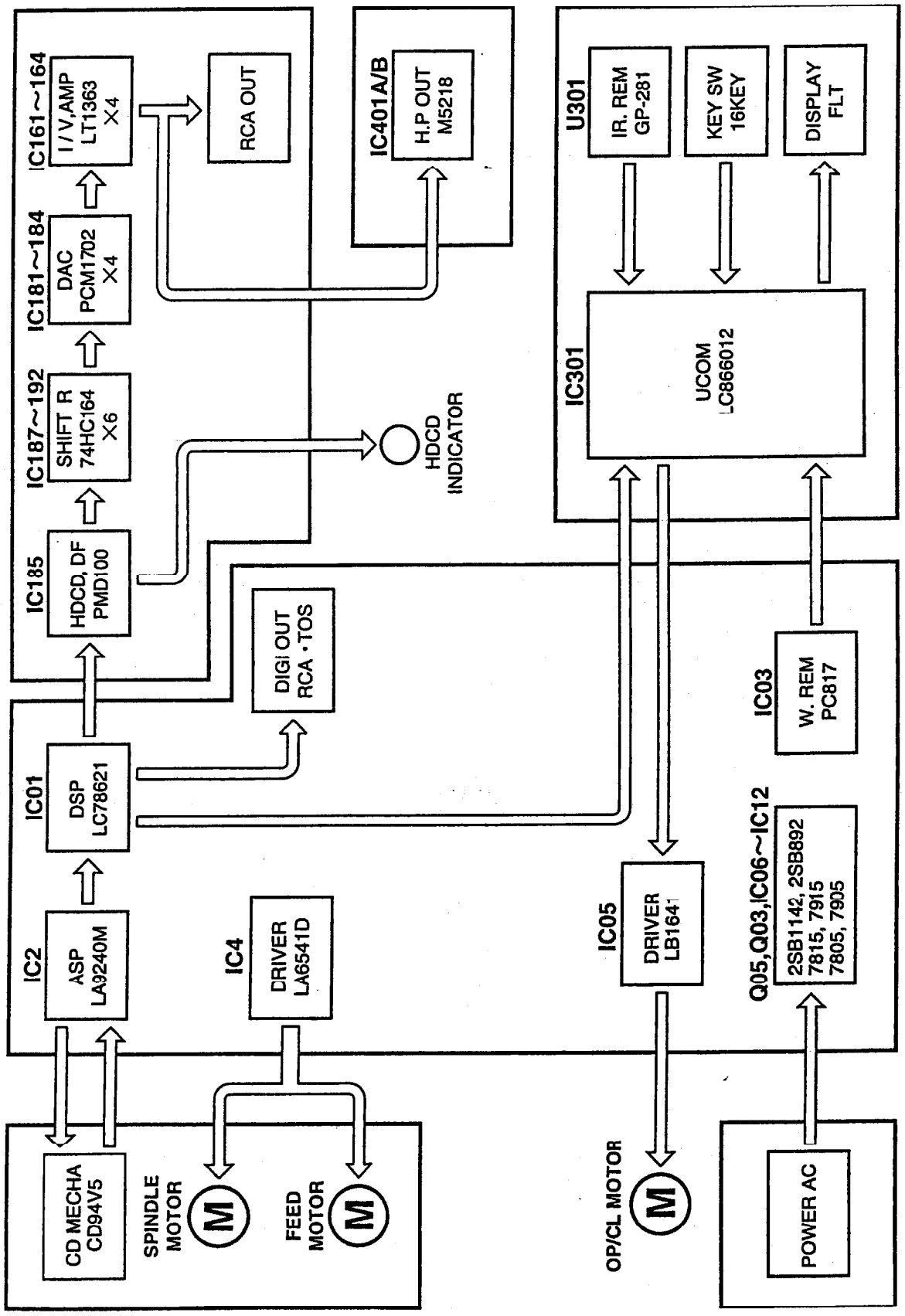
Ref No	Parts Number	Description
JUMPER		
WJ-01	CEC4W30008308	WIRE,JUMPER,3P,UL2651
LED		
D305	CECDLSPR-300N	LED SPR-39MVWF

45-05 CEC0B10027003 ASSY,PCB,H.P.

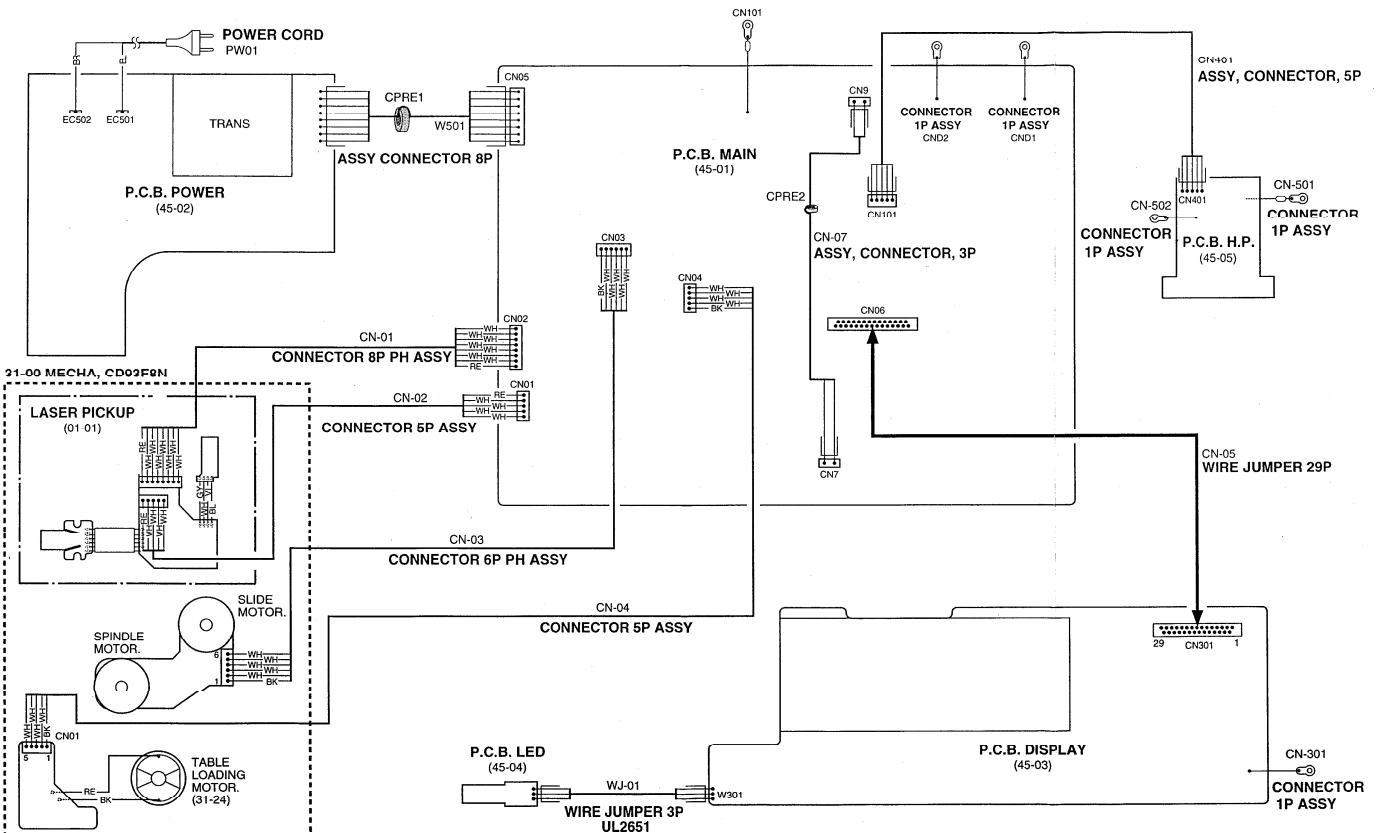
Ref No	Parts Number	Description			
CONNECTOR					
CN-501	CEC0J13002300	ASSY,CONNECTOR,1P			
C416	CK1H102KFABNN	CERAMIC	1000P	K	50V
CN-55	CEC4J13007100	CONNECTOR 1P ASSY			
GND1	CEC4J13007101	CONNECTOR 1P ASSY			
CN401	CEC0J13003400	ASSY,CONNECTOR,5P			
CN1	CEC4J13015600	CONNECTOR,5P,PH,ASSY			
COR-1	CEC4Z21000700	CORE,BP53RB120070060M] OR USE			
COR-2	CEC4Z21000800	CORE,F04RA120070060] OR USE			
INTGRATED CIRCUITS					
IC401	QNJM4560D---N	IC NJM4560D] OR USE			
IC401	QM5218P-----N	IC M5218P] OR USE			
JACK					
JK401	CEC4J12001501	JACK,HP,GO			
VR					
VR401	CEC4R20001300	VR ROTARY 50K			
CAPACITORS					
C407	CF1H473KADALC	POLYESTER	0.047U	K	50V
C408	CF1H473KADALC	POLYESTER	0.047U	K	50V
C409	CE1C101MDFALC	ELECT	100U	M	16V
C411	CE1C101MDFALC	ELECT	100U	M	16V

Ref No	Parts Number	Description			
C413	CK1H102KFABNA	CERAMIC	1000P	K	50V
C414	CK1H102KFABNA	CERAMIC	1000P	K	50V
C415	CEC4L24000900	COIL			
RESISTORS					
R401	1EA4W3JP0500T	LEAD JUMPER P	5.0		
R402	1EA4W3JP0500T	LEAD JUMPER P	5.0		
R403	RDD1000JPAANA	CARBON	100	JA	1/6W
R404	RDD1000JPAANA	CARBON	100	JA	1/6W
R407	RDD4703JPAANA	CARBON	470K	JA	1/6W
R408	RDD4703JPAANA	CARBON	470K	JA	1/6W
R409	RDD1001JPAANA	CARBON	1K	JA	1/6W
R410	RDD1001JPAANA	CARBON	1K	JA	1/6W
R411	RDD1201JPAANA	CARBON	1.2K	JA	1/6W
R412	RDD1201JPAANA	CARBON	1.2K	JA	1/6W
JUMPER					
J401	CEC4L24000900	COIL			
J402	CEC4L24000900	COIL			
J403	1EA4W3JP0500T	LEAD JUMPER P	5.0		
J405	1EA4W3JP0500T	LEAD JUMPER P	5.0		

FUNCTIONAL BLOCK DIAGRAM

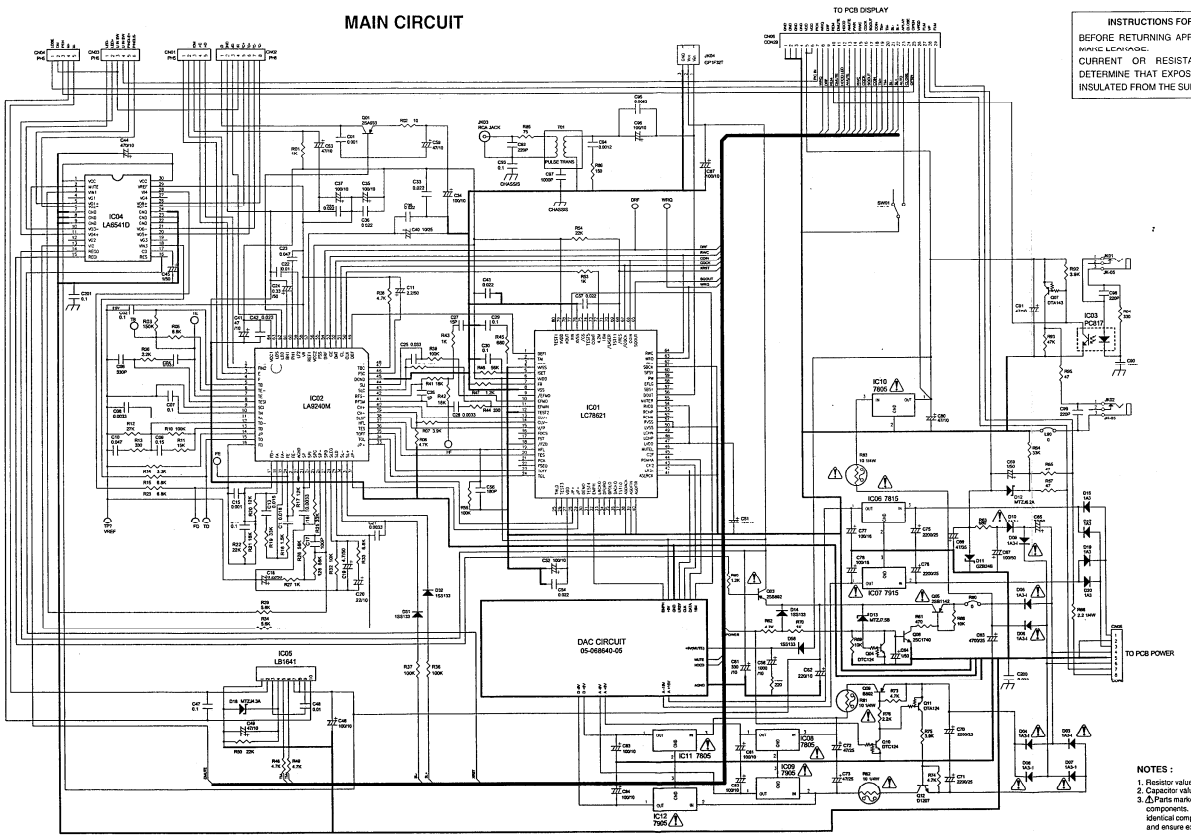


POINT TO POINT WIRING DIAGRAM



SCHEMATIC DIAGRAMS

MAIN CIRCUIT



INSTRUCTIONS FOR SERVICE PERSONNEL

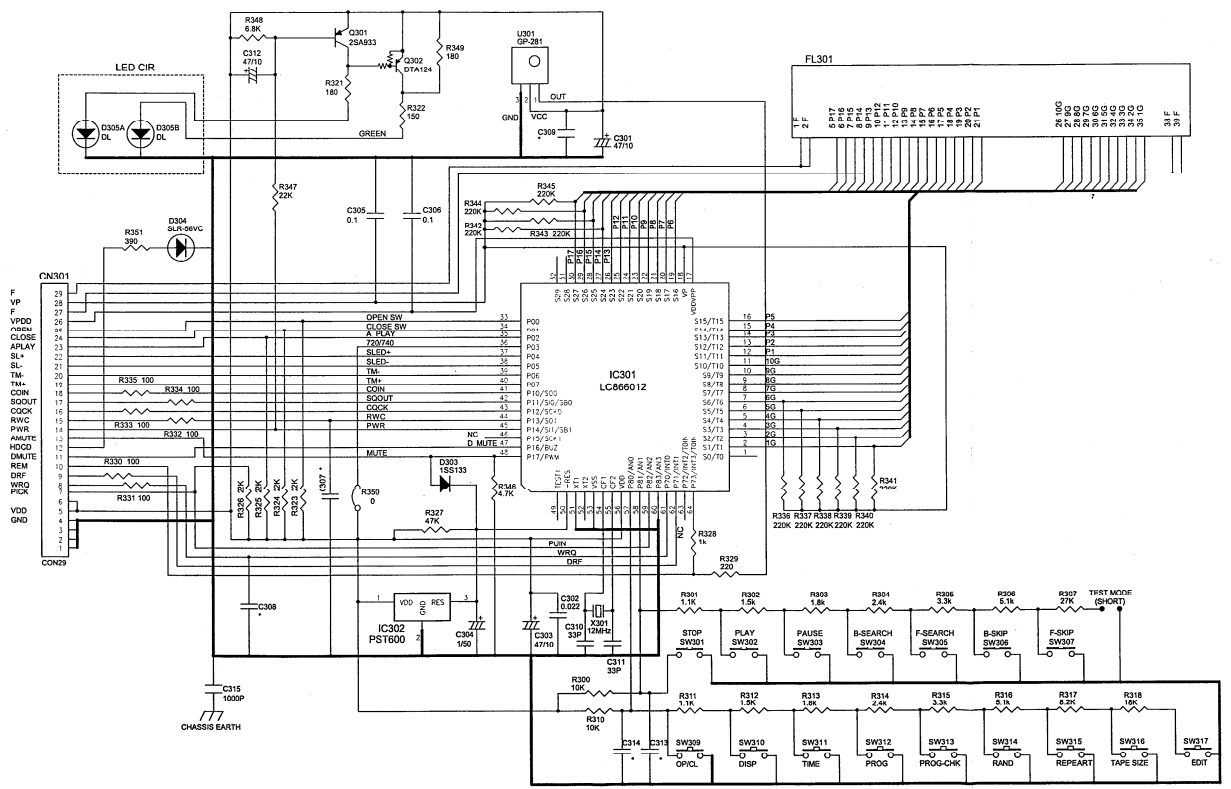
BEFORE RETURNING APPLIANCE TO THE CUSTOMER, MAKE LEAKAGE CURRENT OR RESISTANCE MEASUREMENTS TO DETERMINE THAT EXPOSED PARTS ARE ACCEPTABLY INSULATED FROM THE SUPPLY CIRCUIT.

NOTES :

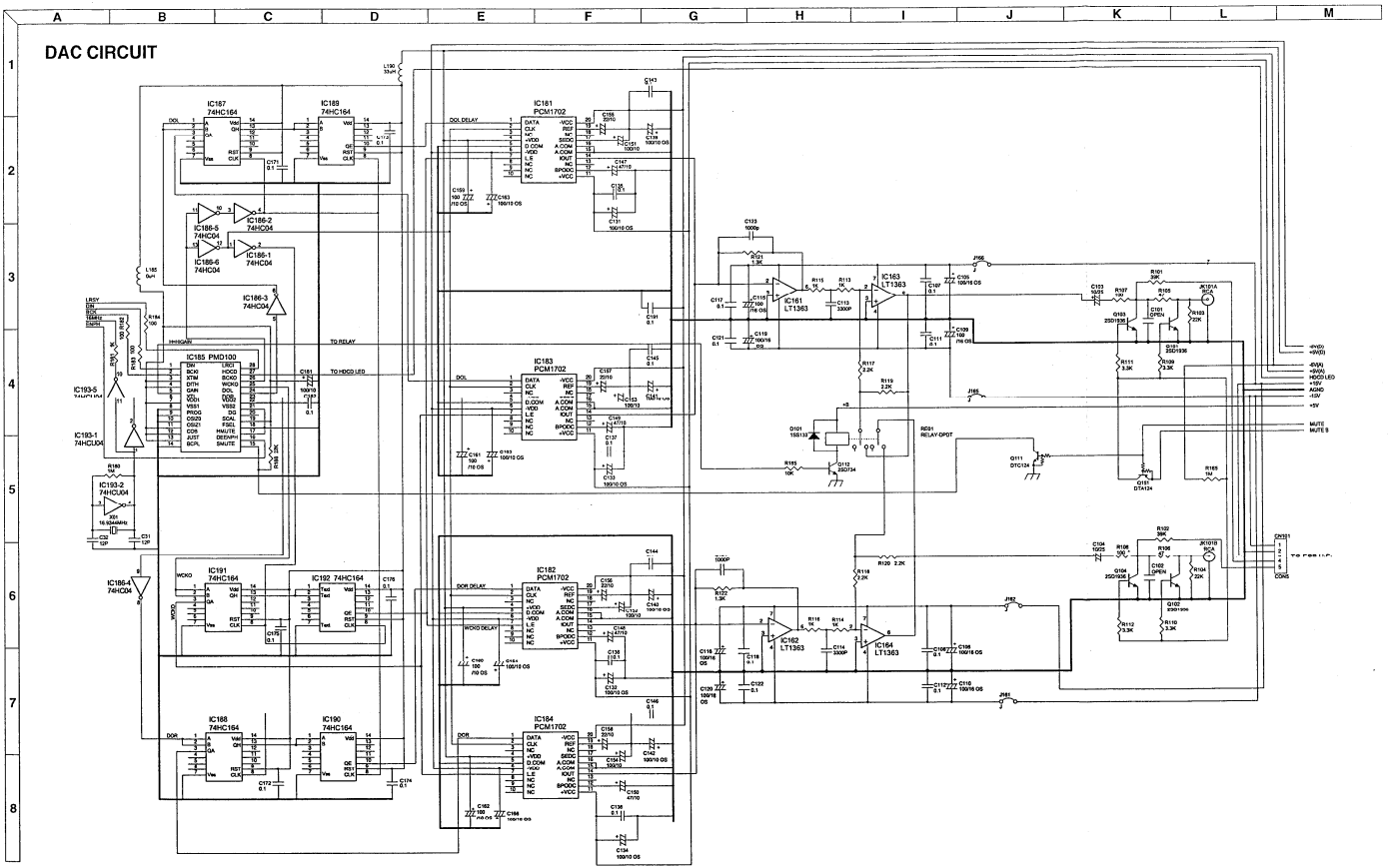
1. Resistor values are in ohms (k=kilo-ohms, M=megohms).
2. Capacitor values are in microfarads (p=picofarads).
3. ⚠ Parts marked with this sign are safety critical components. They must always be replaced with identical components-refer to the appropriate parts list and ensure exact replacement.

SCHEMATIC DIAGRAMS

DISPLAY CIRCUIT

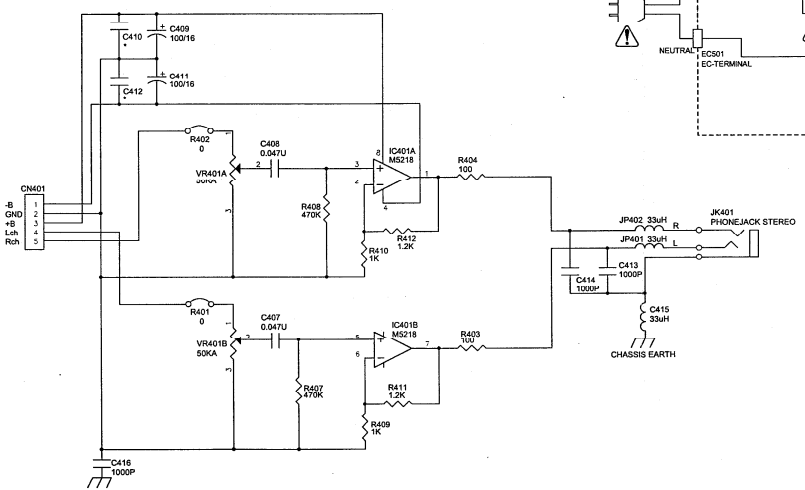


DAC CIRCUIT

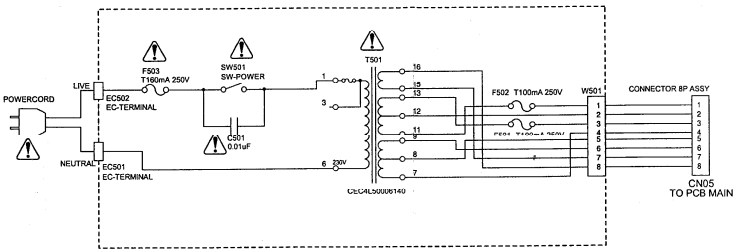

IC187 74HC164
IC189 74HC164
IC186-5 74HC04
IC186-2 74HC04
IC186-6 74HC04
IC186-1 74HC04
IC186-3 74HC04
IC185 PMD100
IC193-5 74HC04
IC193-1 74HC04
IC193-2 74HC04
IC186-4 74HC04
IC191 74HC164
IC192 74HC164
IC188 74HC164
IC190 74HC164
IC181 PCM1702
IC183 PCM1702
IC182 PCM1702
IC184 PCM1702
IC161 LT1363
IC163 LT1363
IC162 LT1363
IC164 LT1363
TO RELAY
TO HDCD LED
RELAY-DPDT
MUTE
MUTE S
+VD(I)
+VD(O)
+5V(I)
+5V(O)
+5V(A)
HDCD LED
+15V
AGND
-15V
+5V

SCHEMATIC DIAGRAMS

HEAD PHONE CIRCUIT



POWER CIRCUIT



INSTRUCTIONS FOR SERVICE PERSONNEL

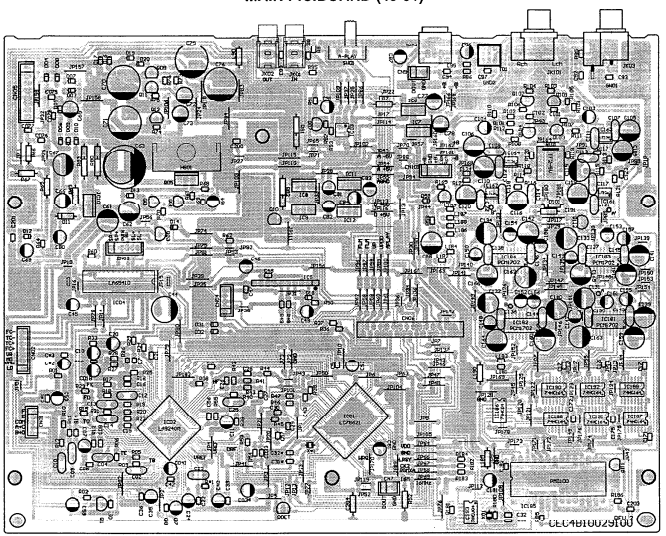
BEFORE RETURNING APPLIANCE TO THE CUSTOMER, MAKE LEAKAGE.
CURRENT OR RESISTANCE MEASUREMENTS TO DETERMINE THAT EXPOSED PARTS ARE ACCEPTABLY INSULATED FROM THE SUPPLY CIRCUIT.

NOTES :

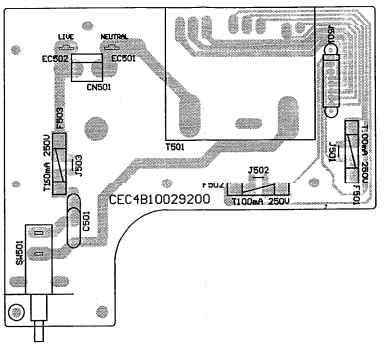
1. Resistor values are in ohms (k=kilo-ohms, M=megohms).
2. Capacitor values are in microfarads (p=picofarads).
3. ⚠ Parts marked with this sign are safety critical components. They must always be replaced with identical components-refer to the appropriate parts list and ensure exact replacement.

P.C.BOARDS

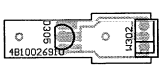
MAIN P.C.BOARD (45-01)



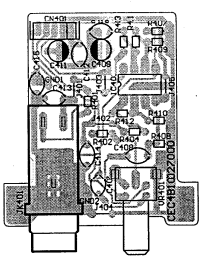
POWER P.C.BOARD (45-02)



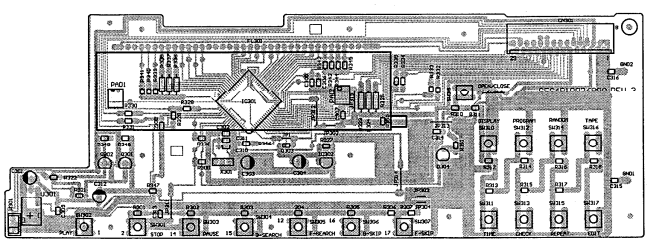
LED P.C.BOARD (45-04)



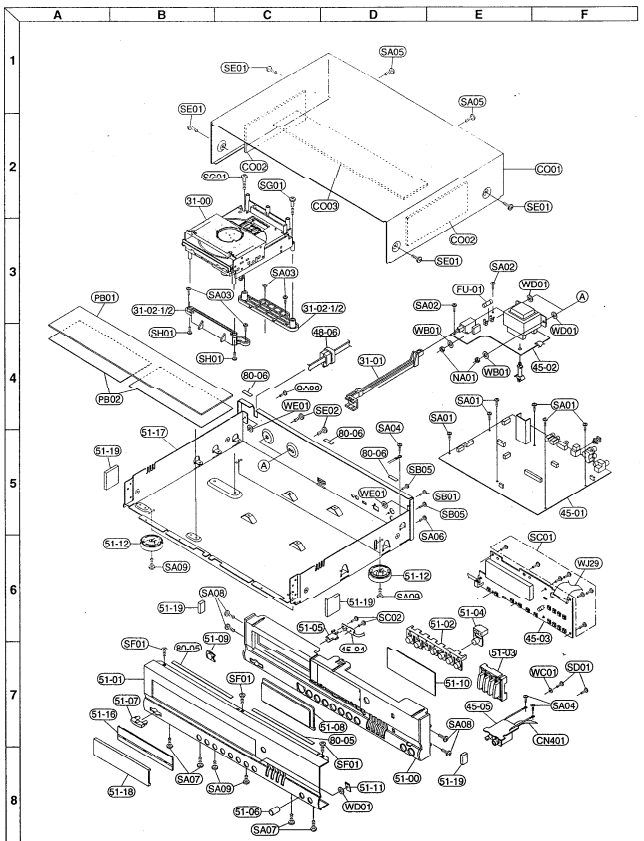
H.P. P.C.BOARD (45-05)



DISPLAY P.C.BOARD (45-03)



EXPLODED VIEW



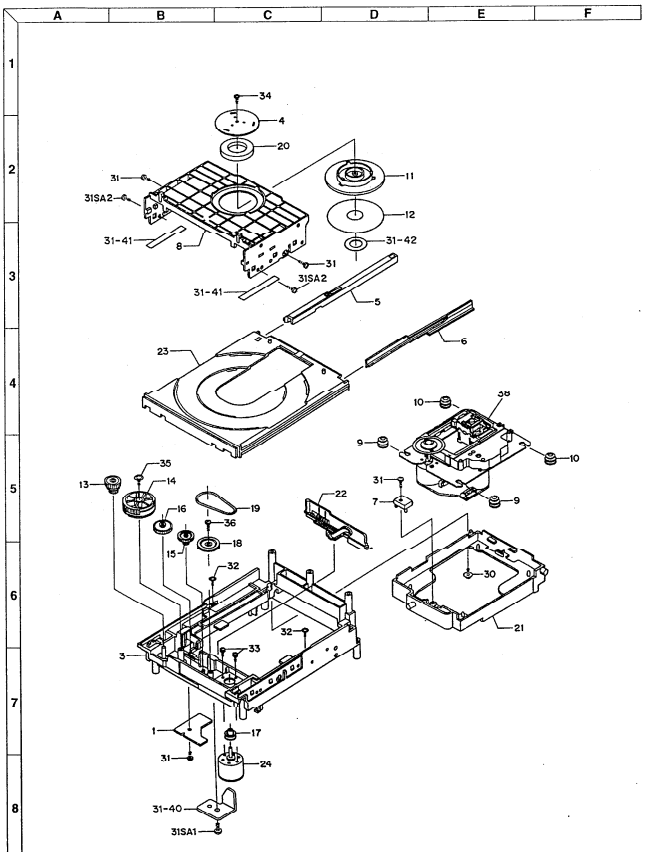
PARTS LIST

CABINET

Ref No	Parts Number	Description
31-00	CEC0991004200	ASSY,MECHA,CD93F8N
31-11	CEC0991004201	MECHA,CD93F8N
31-17	CEC2462011200	SHEET,MECHA
31-40	CEC2322001300	BRACKET
31SA1	SFBDN308R0SE-	SCR S-TPG BIN 3X8
31SA2	SFBDN308R0SE-	SCR S-TPG BIN 3X8
31-01	CEC2351001800	JOINT
31-02	CEC2441008100	SPACER,MECHA
31-13	CEC4J13005038	CONNECTOR 5P PH ASSY
31-14	CEC4J13005039	CONNECTOR 6P PH ASSY
31-15	CEC4J13005040	CONNECTOR 5P PH ASSY
48-06	CEC2446000200	BUSHING,NIFCO 2271
51-00	CEC2141003200	ESCUTCHEON,INNER
51-01	CEC2152006210	PANEL,FRONT
51-02	CEC2175011610	BUTTON,7KEY
51-03	CEC2175011710	BUTTON,4KEY
51-04	CEC2175012400	BUTTON,EJECT
51-05	CEC2212000900	INDICATOR,POWER
51-06	CEC2171001900	KNOB,ROTARY
51-07	CEC2174005100	KNOB,POWER
51-08	CEC2164006200	WINDOW
51-09	CEC2431001400	FILTER,IR
51-10	CEC2431001500	FILTER,FL
51-11	CEC2212000700	INDICATOR,LED
51-16	CEC2144003800	DECORATION,CD
51-17	CEC2311006821	CHASSIS
51-18	CEC2151001610	PANEL,DECORATION
51-19	CEC2448003300	PAD
51-22	CEC2444004900	CUSHION
CO01	CEC2121004000	COVER
CO02	CEC2462011600	SHEET
CO03	CEC2462007900	SHEET,DAMPER
CO05	CEC2571002300	FELT
LG-01	CEC2377001600	LUG
NA01	SNZHNN405M--	NUT HEX M4
PB01	CEC2336008300	PLATE,BOTTOM
PB02	CEC2462011700	SHEET,DAMPER
SA01	SFBDN306R0SM-	SCR S-TPG BIN 3X6
SA02	SFBDN306R0SM-	SCR S-TPG BIN 3X6
SA03	SFBDN306R0SM-	SCR S-TPG BIN 3X6
SA04	SFBDN306R0SM-	SCR S-TPG BIN 3X6
SA05	SFBDN306R0SM-	SCR S-TPG BIN 3X6
SA06	SFBDN306R0SM-	SCR S-TPG BIN 3X6
SA07	SFBDN306R0SM-	SCR S-TPG BIN 3X6
SA08	SFBDN306R0SM-	SCR S-TPG BIN 3X6
SA09	SFBDN306R0SM-	SCR S-TPG BIN 3X6
SA10	SFBDN306R0SM-	SCR S-TPG BIN 3X6
SA11	SFBDN306R0SM-	SCR S-TPG BIN 3X6
SB01	SFBDN308R0SM-	SCR S-TPG BIN 3X8
SB04	SFBDN308R0SM-	SCR S-TPG BIN 3X8
SB05	SFBDN308R0SM-	SCR S-TPG BIN 3X8
SC01	SFBDN266R0SE-	SCR S-TPG BIN 2.6X6
SC02	SFBDN266R0SE-	SCR S-TPG BIN 2.6X6
SD01	1412421942700	SCREW WASHER
SE01	SFSDN408R0SM-	SCR S-TPG BIN 4X8
SE02	SFSDN408R0SM-	SCR S-TPG BIN 4X8
SF01	SFBFN306R0SM-	SCR S-TPG FLT 3X6
SG01	SFBAN30300SE-	SCR S-TPG BRZ 3X30
SH01	SFBDN30120SE-	SCR S-TPG BIN 3X12
SP-01	CEC2441008200	SPACER,PCB
WA01	SWZ328R00R5SE	WASHER Z 3.2X8X0.5
WB01	SWP401001R0SM	WASHER T M4X10X1T
WC01	SWZ321000R5SE	WASHER Z 3.2X10X0.5

Ref No	Parts Number	Description
WD-01	CEC2383005200	WASHER,PVC4.2X20X0.3 BK
WD01	CEC2383000900	WASHER,SPECIAL
WE-01	CEC2383005100	WASHER
CN-05	CEC4W30004796	WIRE JUMPER 29P
	CEC2448003600	PAD
	13169429181000	TAPE DOUBLE FACE 5
	CEC6K60000900	TAPE ACETATE
	CEC0B10029100	ASSY,PCB,MAIN
45-02	CEC0B10029240	ASSY,PCB,POWER,230V
45-03	CEC0B10026902	ASSY PCB DISPLAY
45-04	CEC0B10026910	ASSY,PCB,LED
45-05	CEC0B10027003	ASSY,PCB,H.P.
F501	F31SR10C2SCTX	FUSE 250V 0.1A] OR USE
F501	CEC4S30001300	FUSE 250V 100mA]
F502	F31SR10C2SCTX	FUSE 250V 0.1A
F502	CEC4S30001300	FUSE 250V 100mA] OR USE
F503	F31SR16C2SCTX	FUSE 250V 0.16A
F503	CEC4S30001200	FUSE 250V 160mA] OR USE
51-12	CEC0251001900	ASSY,LEG
	CEC2251003410	LEG
	CEC2571000300	FELT
51-20	CEC6P49018100	LABEL,CHINA
51-21	CEC6P41001700	LABEL,SERIAL NO.
51-22	CEC6K60000700	TAPE D.FACE 10MM
51-23	CEC6P47A00300	LABEL,SAFETY(LASER)
51-24	CEC2571002300	FELT
80-06	CEC2571002400	FELT

MECHANISM EXPLODED VIEW



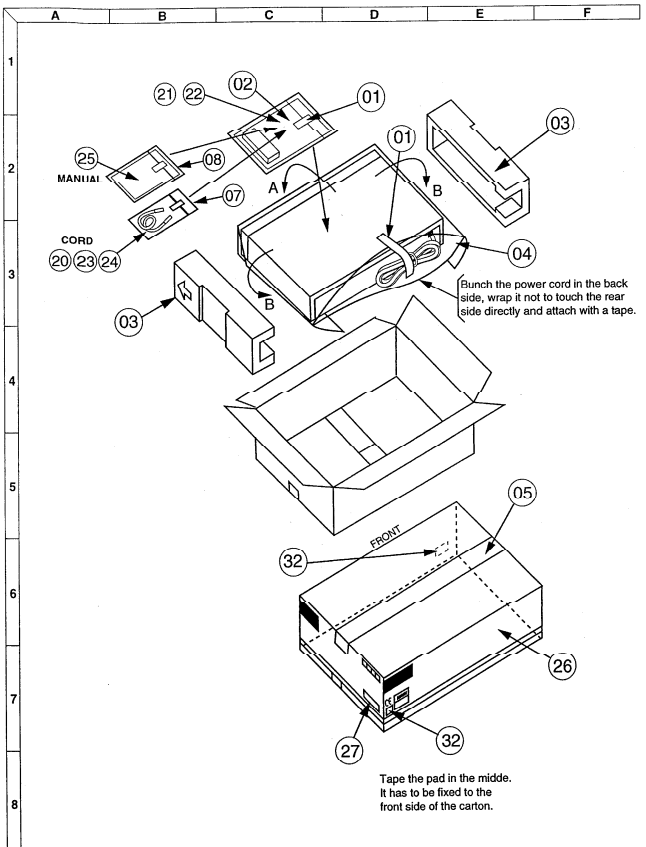
PARTS LIST

31-00 MECHA,CD93F8N

Ref No	Parts Number	Description
01	1EA0B10A98100	ASSY,PCB SWITCH
03	1EA2311A06600	CHASSIS,FRAME
04	1EA2336A05300	PLATE,MAGNET
05	1EA0363A00100	ASSY,RAIL,LEFT
06	1EA2363A00300	RAIL,RIGHT
07	1EA2366A01200	STOPPER,CHASSIS
08	1EA2413A01700	SUPPORT,MAGNET
09	1EA2443A07504	CUSHION,RUBBER(BLUE)
10	1EA2443A07503	CUSHION,RUBBER(PURPLE)
11	1EA2451A09000	HOLDER,MAGNET
12	1EA2462A13000	SHEET
13	1EA2511A10900	GEAR,LOADING
14	1EA2511A11000	GEAR,LIFTER
15	1EA2511A11100	GEAR,IDLER,A
16	1EA2511A11200	GEAR,IDLER,B
17	1EA2523A01700	PULLEY,MOTOR
18	1EA2524A01600	PULLEY,GEAR
19	1EA2563A02200	BELT,SQUARE
20	1EA2641A01300	MAGNET,DISC CLAMP
21	1EA2713A00600	LIFTER,MECHA
22	1EA2741A01300	SLIDE,LIFTER
23	1EA2761A00700	TABLE,LOADING
24	1EA4M10A02100	MOTOR,3.0V,0.3W
30	SFBAY306R0SE-	SCR S-TPG BRZ+FLG 3X8
31	SFBDN268R0SE-	SCR S-TPG BIN 2.6X8
32	SFBPY206R0SE-	SCR S-TPG PAN+FLG 2X6
33	SM2PS173R5SE-	SCR PAN+SW 1.7X3.5
34	SGXEA00201---	SPECIAL SCREW
35	SFBAY306R0SM-	SCR S-TPG BRZ+FLG 3X8
36	SFBDN268R0SM-	SCR S-TPG BIN 2.6X8
38	13927800	CD95V5
31-40	CEC2322001300	BRACKET
31-41	CEC2462011200	SHEET, MECHA
31-42	CEC2571001900	FELT, FLAP
31SA1	SFBDN308ROSE-	SCR S-TPG BIN 3X8
31SA2	SFBDN308ROSE-	SCR S-TPG BIN 3X8

IF CD MECHANISM IS DEFECTIVE, PLEASE ORDER ENTIRE MECHANISM # CEC0991004200 FOR SERVICE INDIVIDUAL PARTS MAY NOT BE AVAILABLE.

PACKING



PARTS LIST

PACKING

Ref No	Parts Number	Description
70-20	CEC4W20004000	PLUG,CORD,RCA
70-21	CEC4U10002208	REMOCON
70-22	CEC4D10000700	BATTERY
70-23	CEC4W20004300	PLUG,CORD,RCA,1P
70-24	CEC4W20004400	PLUG,CORD
70-25	CEC6P10068640	MANUAL
70-26	CEC6P35000800	CARD,HOLD
80-01	CEC6K60000300	TAPE,18MM,BLUE
80-01	CEC6K60000300	TAPE,18MM,BLUE
80-02	CEC6K62000100	BAG FAN
80-03	CEC6K41009600	PAD
80-04	CEC6K31003600	POLY,COVER
80-05	CEC6K60001200	TAPE 50MM
80-06	CEC6K31003700	POLY,COVER
80-07	CEC6K32000100	BAG FAN
80-14	CEC6K40002600	SHEET,POLY
80-26	CEC6K21017600	CARTON
80-27	CEC6P42005042	LABEL,BAR CODE
80-32	CEC6P49018000	LABEL,CHINA