DENON

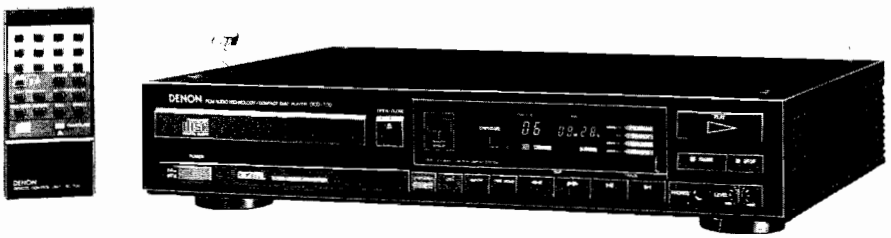
Hi-Fi Component

V05695

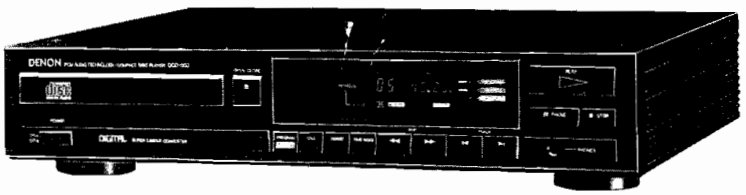
SERVICE MANUAL

STEREO CD PLAYER

MODEL DCD-700/500



DCD-700



DCD-500

NIPPON COLUMBIA CO., LTD.

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FEATURES

The DCD-700/500 compact laser disc player utilizes a unique DENON Super Linear Converter which prevents deterioration of sound quality in the PCM playback system, assuring accurate reproduction of sound recorded on compact laser discs, in the studio or in live sound production areas. The parts for this high performance disc player have been selected with careful discrimination, to produce realistic playback of the full musical production.

SPECIFICATIONS

AUDIO

No. of channels:	2 channels
Frequency response:	5 ~ 20,000 Hz ±0.5 dB
Dynamic range:	Above 95 dB
Signal-to-noise ratio:	Above 95 dB
Harmonic distortion:	0.004% (1 kHz)
Separation:	90 dB (1 kHz)
Wow and flutter:	Less than the measuring limit (±0.001% W. peak)
Output voltage:	2.0 V

DISCS

Playing time:	Compact discs are used.
Diameter:	60 min/single side 120 mm

SIGNAL FORMAT

Sampling frequency:	44.1 kHz
Quantization:	16 bit linear/channel
Transmission bit rate:	4.3218 M bits/sec

PICKUP

System:	Objective lens drive system, laser pickup
Lens drive system:	Two-dimensional parallel drive
Light source:	Semiconductor laser
Wavelength:	780 nm

GENERAL CHARACTERISTICS

Power supply:	50/60 Hz, Voltage is shown on rating label.
Power consumption:	13 W (US Model) 12 W (Others)
Dimensions:	434 (17.1 in) W x 92 (3.6 in) H x 305 (12.0 in) D mm
Weight:	3.6 kg

FUNCTIONS AND DISPLAY

Functions:	Direct selection, quick selection, programmed selection, repeat playback, pause, skip monitor
Display:	Track number, time, and program
Other functions:	Headphone jack (variable level), fixed level output terminal

REMOTE CONTROL UNIT

RC-700 DCD-700 only

Remote control system:	Infrared pulse system
Power supply:	3 V DC Two SUM-4 (standard size four) dry cell batteries
External dimensions:	60 (2.4 in) W x 129 (5.1 in) H x 17 (0.7 in) D mm
Weight:	85 g (Includes batteries)

ACCESSORIES

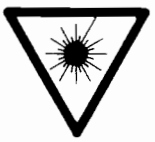
Connecting pin cord

* Design and specifications are subject to change without notice in the course of product improvement.

VAROITUS: SUOJAKOTELOA EI SAA AVATA. LAITE SISÄLTÄÄ LASER-DIODIN, JOKA LÄHETTÄÄ SILMÄLLE VAARALLISTA LASER-SATEILYÄ.

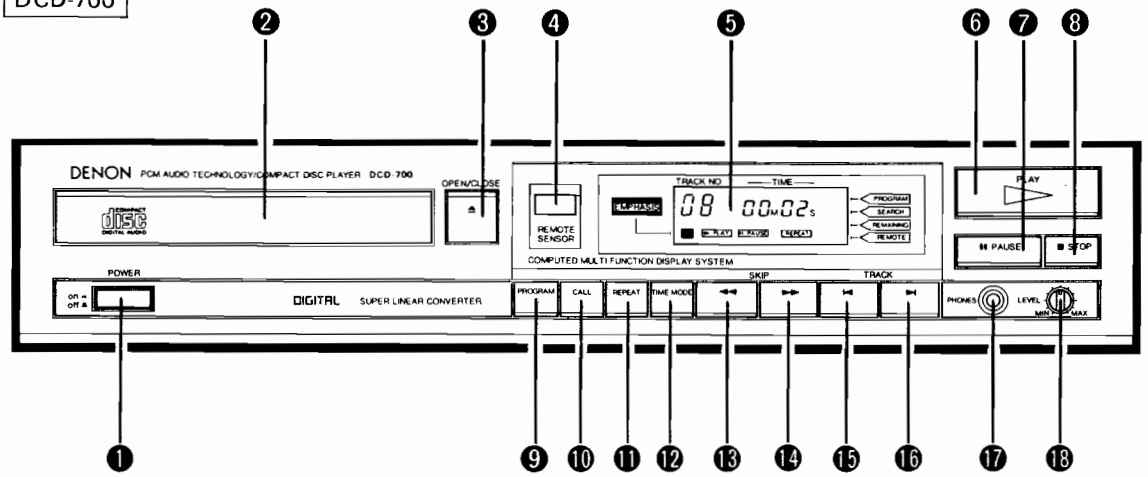
ADVARSEL: USYNLIG LASERSTRALING VED ABNING NAR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. UNDGA UDSAETTELSE FOR STRALING.

" CLASS I LASER PRODUCT "

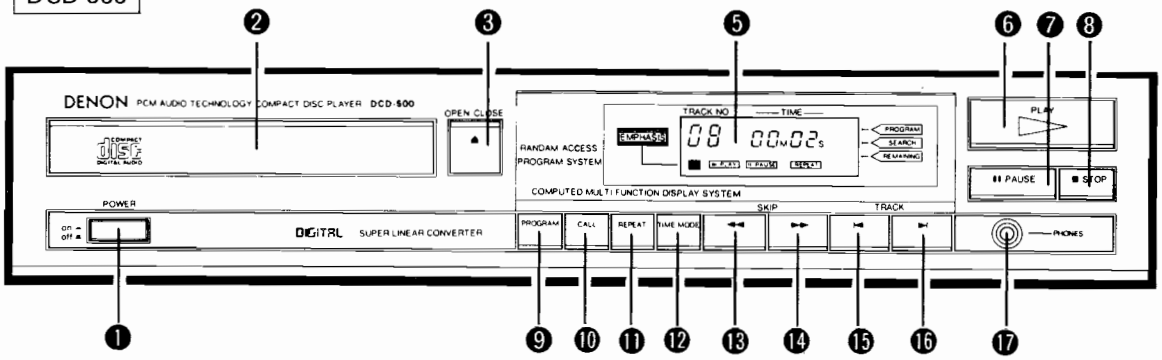


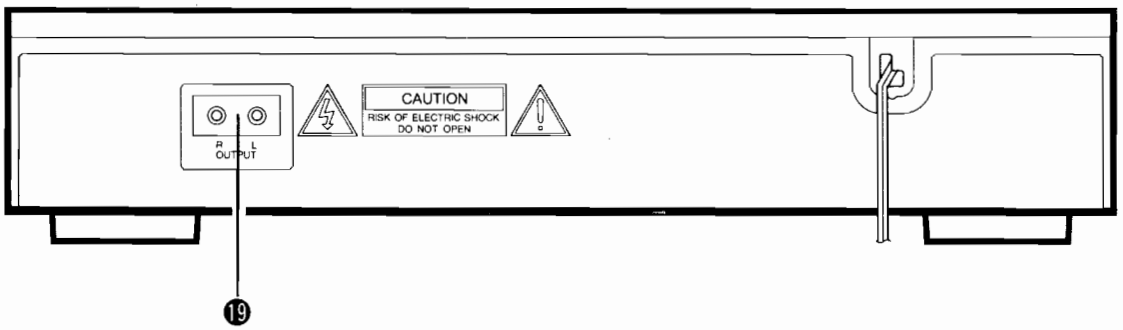
NAMES AND FUNCTIONS OF PARTS

DCD-700



DCD-500





❶ Power Switch (POWER)

- Press this switch to turn the power source ON.
- When the power is turned ON, (00) will light up in the display ❺.
- If a disc is loaded, the total number of tracks on the disc will be displayed in the TRACK NO. section of the display, and the total playback time will be displayed under the TIME section.

❷ Disc Holder

- The disc is loaded into the disc holder for play.
- The disc holder is opened and closed by pressing the disc holder open/close button (▲ OPEN/CLOSE) ❸.
- It can also be closed by pressing the play button (▶ PLAY) ❻ and the pause button (⏸ PAUSE) ❼.

❸ Disc Holder Open/Close Button (▲ OPEN/CLOSE)

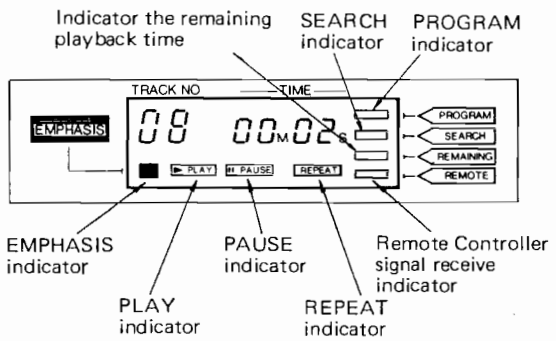
- The disc holder ❷ is opened and closed by pressing this button.
- Press the button once to eject the disc holder ❷ forward. Press it again to close the holder.
- If the disc holder is closed and a disc has been loaded, the disc is rotated for several seconds, and then the machine enters STOP state. The total number of tracks on the disc and the total playback time are then displayed on the digital display ❺.

❹ Remote Control Photosensitive Window DCD-700 only

- This window receives the light transmitted from the wireless remote control unit.
- The RC-700 wireless remote control unit should be operated while it is pointed in the direction of the photosensitive window.
- When the remote control is operated, the remote control sensor indicator will light in the display area ❺.

❺ Display

- The display area consists of sections for the TRACK NUMBER, the playback time, PLAY, PAUSE, REPEAT, PROGRAM, SEARCH, REMAINING, EMPHASIS and REMOTE (DCD-700 only).



❻ Play Button (▶ PLAY)

- Press this button to play a disc.
- When the PLAY button is pressed, the ▶ PLAY indicator lights, and the number of the track being played, and the elapsed playback time for that track are displayed.
- When playback of the last track has finished, the ▶ PLAY indicator goes out, and the machine enters stop state.
- It is also possible to use the PLAY button to close the disc holder after a disc has been inserted. Playback then begins.

❼ Pause Button (⏸ PAUSE)

- Press this button to stop the playback temporarily.
- If the PAUSE button is pressed during playback, the play is stopped temporarily, the PLAY lamp goes out, and the PAUSE lamp lights.
- To end the pause, push the PLAY key ❻.

❽ Stop Button (■ STOP)

- Press this button to stop the playback.
- The rotation of the disc stops, and the total number of tracks and the total playback time are read out on the TRACK NO. and TIME sections of the display.

❾ Program (PROGRAM)

- Press this button to program a selection into memory.

❿ Call Button (CALL)

- Press this button to verify the track numbers that have been programmed into memory.

⓫ Repeat Button (REPEAT)

- Press this button to repeat playback.
- When the REPEAT button is pressed, the REPEAT indicator lights and repeated playback is performed for all of the tracks on the disc. During programmed playback, all of the tracks programmed into memory are played repeatedly.
  Press the REPEAT button again to cancel the repeat operation.

⓬ Time Mode Button (TIME MODE)

- This button is used to select the type of information to be read out under the TIME section of the display. Either the elapsed playback time of the current track or the playback time for the remaining tracks on the disc can be selected. Normally the elapsed playback time of the current track is displayed. If the button is pressed, the REMAINING indicator lights and the playback time for the remaining tracks left on the disc is displayed. If the button is pressed again, the REMAINING indicator goes out and the display returns to the elapsed playback time for that track.
  During programmed playback, this switch do not operate.

⓭ Fast Reverse Skip Button (◀◀)

- Press this button to move playback in fast reverse.
- When the machine is in play, sound will be produced during the time that the button is being pressed and the fast reverse is operating.

⓮ Fast Forward Skip Button (▶▶)

- Press this button to move playback in forward.
- When the machine is in play, sound will be produced during the time that the button is being pressed and the fast forward is operating.

⓯ Track Button (⏮)

- Press this button to move the pickup forward and advance to the beginning of the desired track.
- If the TRACK button is pressed during playback or pause, the pickup moves forward to the beginning of the track that corresponds to the number of times the button was pressed.

⓰ Track Button (⏭)

- Press this button to move the pickup backward, to return to the beginning of the desired track.
- If the TRACK button is pressed during playback or pause, the pickup moves back to the beginning of the track that corresponds to the number of times the button was pressed.

⓱ Headphone Jack (PHONES)

- When using headphones, please listen to them at an appropriate volume.
  (Headphones are sold separately.)

⓲ Volume Adjustment Knob DCD-700 only

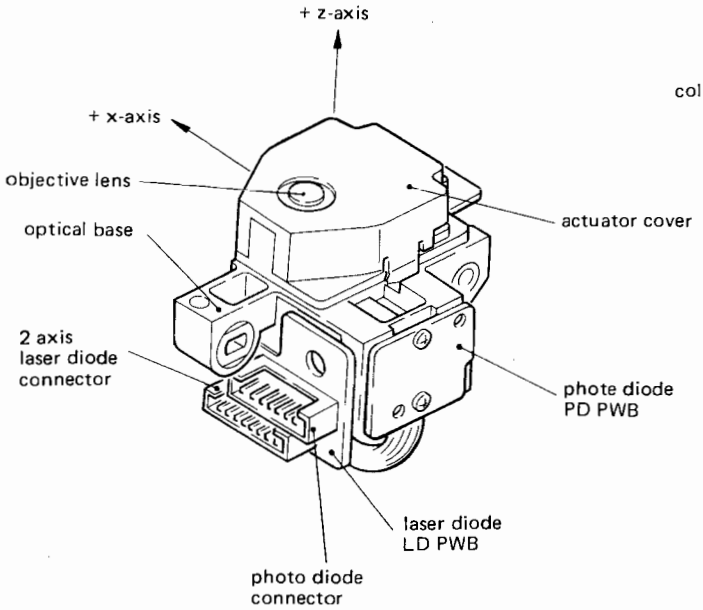
- This knob is used to adjust the output level (volume) of the headphone jack.

⓳ Output Terminal (OUTPUT)

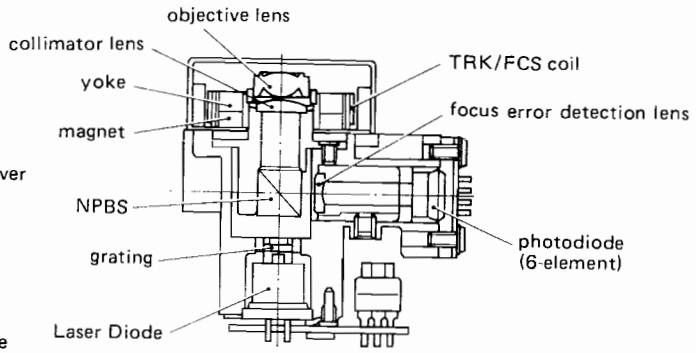
- Connect the output terminal to the input terminal of the amp.

NOTE FOR HANDLING OF LASER PICK-UP

DESCRIPTION OF THE COMPONENTS

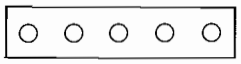


CROSS-SECTIONAL DRAWING OF THE OPTICAL PICK-UP



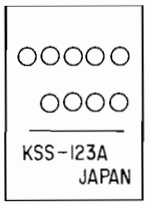
Label

1. Serial number



This denotes the serial number used for quality control in the manufacturing plant.

2. Label



Lot No.

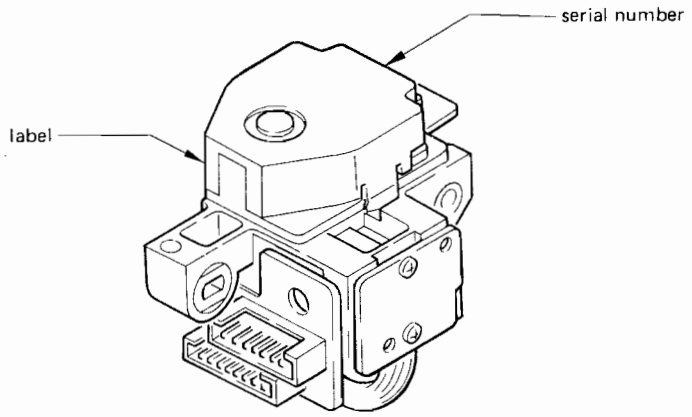
I_{op}

year
(last figure)
day month | quality control No.
○○ ○ ○ ○

10 1 10^{-1}
quality control ○ ○ ○ ○
LD drive current

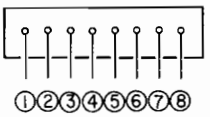
For example, 56.5 mA will be expressed as 565.

3. Position of the labels



ELECTRICAL PIN CONNECTION

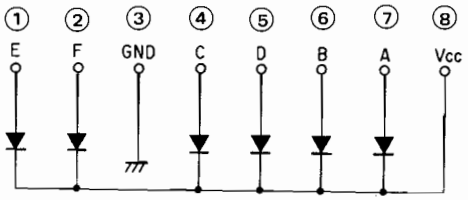
1. PD connector (JAPAN SOLDERLESS TERMINAL MFG CO. LTD "PH series" 8 pin)



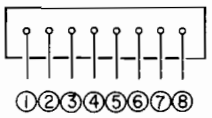
COLOR : WHITE

Pin No.	PD element
①	E
②	F
③	GND
④	C
⑤	D
⑥	B
⑦	A
⑧	Vcc

PD Circuit Diagram



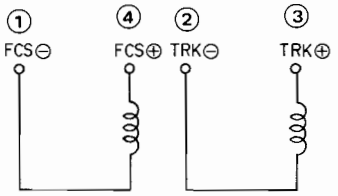
2. Actuator & LD connector (JAPAN SOLDERLESS TERMINAL, MFG CO. LTD "PH series" 8 pin)



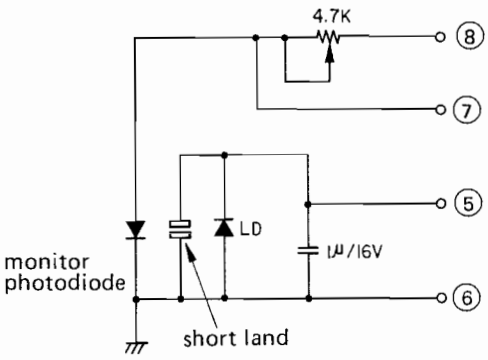
COLOR : RED

Pin No.	description
①	FCS ⊖
②	TRK ⊖
③	TRK ⊕
④	FCS ⊕
⑤	Laser
⑥	GND
⑦	monitor
⑧	reference

Actuator Circuit Diagram



LD Circuit Diagram



HANDLING, CONNECTION AND SAFETY INFORMATION FOR THE KSS-123A OPTICAL PICK-UP

1. Handling Instructions

Please read the following instructions carefully before handling pick-ups.

1) Handle with care

The pick-up KSS-123A is assembled and precisely adjusted using a sophisticated manufacturing process in our plant. Keep the pick-up protected from vibration and impact. Do not disassemble or attempt to re-adjust it. Hold the optical base (aluminum diecast) when handling it. Do not touch the PD and LD PWB (Printed Wiring Board).

2) Storage

Do not store the pick-up in dusty, high-temperature or high-humidity environments.

3) Laser Diode

Protect Your Eyes

Do not look at the laser light beam through the objective lens directly nor another lens or a mirror. The laser beam may damage the human eye, since the intensity of the focused spot may reach 1.3×10^4 W/cm^2 even if the intensity at the objective lens is 400 μW maximum.

Poison

The LD chip contains As (arsenic), a poison. Although the poison is relatively weak and the amount is small, avoid putting the chip in acid or an alkali solution, heating it over 200°C or putting it into your mouth.

Avoid surge current or electrostatic discharge

The LD may be damaged if a large current is applied to it, even if only a short pulse. For safe handling of an LD, grounding the human body and measuring equipment is strongly recommended. Make sure that there is no surge current in the LD driving circuit. The PINs of the LD are short-circuited for protection during shipment. To open the short circuit, remove the soldering quickly with a soldering iron whose insulation resistance is larger than 10 MΩ after connection to a suitable *APC circuit. The temperature of the soldering iron should be less than 320°C.

Note: *APC (Auto Power Control)

4) Actuator

The performance of the actuator may be effected if magnetic material is located nearby, since the actuator has a strong magnetic circuit.

Do not permit dust to enter through the gap of the cover.

Cleaning the lens:

Lens-cleaning paper with 50 : 50 mixed solvent of IPA (Isopropyl alcohol) and Freon (freon 113 CC1 F-CC1F) is recommended.

2. Connections

1) How to mount the pick-up

Use the reference plane as shown in the assembly drawing when mounting the pick-up in the transportation mechanism. No special adjustment such as skew adjustment or grating angle adjustment is required. The metal bearing of Cu-compound sintered alloy is impregnated with oil. You do not normally need to lubricate the bushing. If you need to lubricate, use Hydrofluid EP-56 (Mitsubishi Oil).

2) Harness and connector

Use the specified connector housings for electrical connections. Care should be taken to see that the connector of the LD harness is clamped tightly, since a loose connection may cause a serious damage to the LD. There may be a deterioration in the eye pattern if a digital noise source such as a microcomputer is positioned near the PD harness.

3) Safety regulations

This pick-up is designed to meet general safety regulations. For the pick-up as installed in a set to be certified as meeting the safety regulations of a particular country, however, application will have to be made to the proper authorities.

3. Deterioration of Laser Pick-up

When difficulty occurs in focus adjustment or unable to adjust the focus, it seems that the laser pick-up is deteriorated. In these cases, check a value of laser diode current and give a decision for deterioration.

4. Fundamental Deterioration Decision of Laser Pick-up

1) If a voltage value across pin ② and pin ③ of TP102 of the Servo and signal processor unit KU-59401, 59411, the value of laser diode current "iop 1" can be found a formula "iop 1" = $\frac{V1}{22}$.
2) If a "iop" exceeds ±10% compared with the IOP indication on the laser pick-up nameplate, there is a fair chance for deterioration when it is checked under a circumambient temperature 23°C.
3) When the circumambient temperature changes ±10%, "iop 1" will change ±5%. The "iop 1" will also be changed the passage of time.
4) In case of the above conditions taking into consideration and performed the adjustment in proper way, if the HF level at pin ① and pin ground of TP102 becomes 1V or lesser values; or a jitter occurs great, the laser pick-up may be deteriorated.

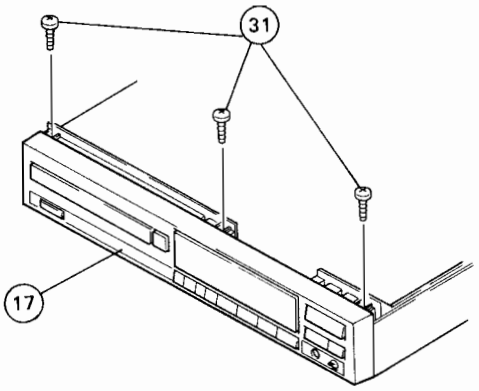
DISASSEMBLY

- **Top Cover**

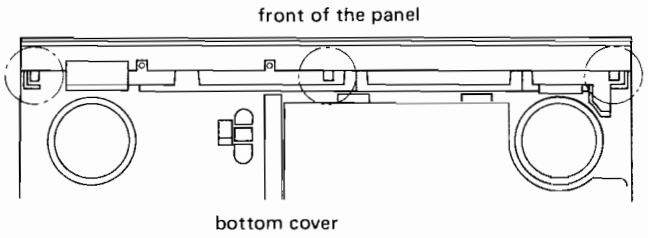
Remove four (31) screws, and tilt the rear side of the Top Cover upward.

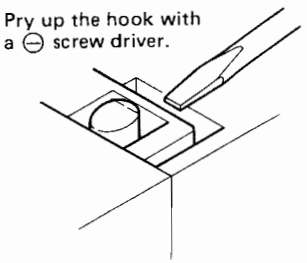
- **Front Panel**

(1) Remove three (31) screws from Front panel (17).



(2) Lightly pry up three hooks on the bottom of the panel with a – screwdriver.





(3) Hold the panel with both hands, tilt the left side upward and pull the panel forward.

- **Knob**

All knobs, three types (Gang of 8 switches, Play, Pause/Stop) are friction fit. Push lightly from front side.

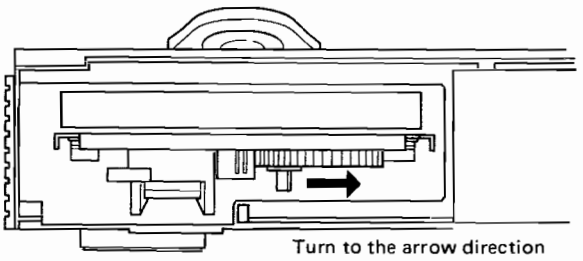
• Mechanism unit (FG-700)

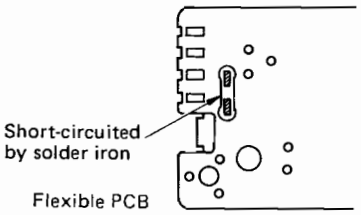
(1) Remove a screw (33) from right rear of the Loader frame (12) and detach the Magnet assembly (25).

(2) Turn Control gear (13) fully clockwise, confirm the Clamper arm is raised and the Loader frame is at the front, and pull the Loader frame forward.

(3) Remove Mechanism unit screw 00 , four special screws (32), and rise the Mechanism unit up and pull it out backward.

(Note) When remove the Mechanism unit, be sure to use a wrist ring grounded via 1 Meg Ω resistor, and be sure not touch the laser P.U. Also, when it is necessary to remove Laser P.U. lead, be sure to short circuit the terminal with solder bridge, before detach the lead.



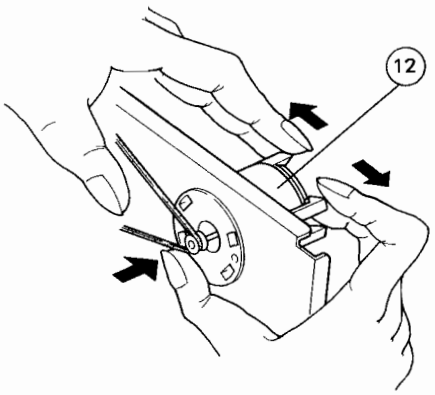


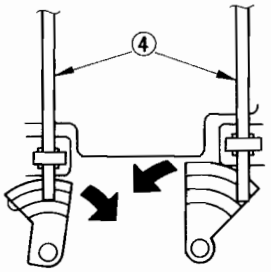
• Component parts of Mechanism Unit

(1) Loader motor (12)
Push four hooks outward with both hands and push the motor shaft with both thumbs.

(2) Slide shaft (4)
Turn the mould boss of the slide shaft to arrow direction with a ⊕ screwdriver or finger.

(3) Slider (2)
Pry up six hooks with a ⊖ screwdriver.





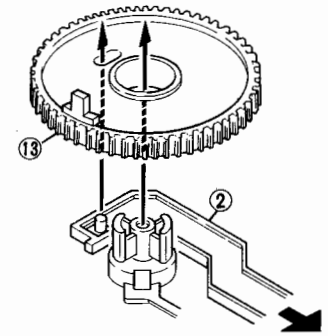
ASSEMBLY

Refer to the exploded view. Use care to assemble the following parts. (Refer to the exploded view of Mechanism unit)

- **How to assemble Mechanism Unit**

(1) Control gear ⑬
Pull the slider to arrow direction, and couple the oblong hole of the control gear to the boss of slider.

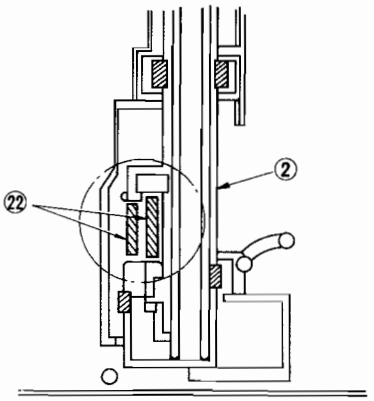
(2) Clamper arm ㉒ and Slider ②
Use care so that two clamper arms seat the slider groove. Install the slider after the clamper arm affixed.



- **How to assemble the Unit**

(1) How to install the Loader frame ⑫ in to the Base plate ①.
Turn round the Control gear ⑬ fully clockwise viewing from front side (to the position clamper arms raised up, then push the Loader frdmein along the guide.

(2) How to install All Knobs
In all 3 knobs, push lightly by hand to insert. Be sure to take dawn pause/stop knob before the setting of play knob.



MAINTENANCE SERVICE AND ADJUSTMENT

Changing and or repairing component parts may necessitate readjustment. The microcomputer employed in this unit contains maintenance service program. All necessary adjustment can be made via operation buttons normally used to play the unit.

1. Initialize maintenance service program.

(1) Turn power OFF.

(2) Detach Holder switch connector from the signal processing PCB (KU-5940/5941), and short circuit three pins.
(The same status can be obtained by shorting No. 5 pin of TP101 to No. 3 and 4 pins of TP102)

(3) Turn power ON. The serivce program initializes and 01 displays on the track number indicator.

(4) Remove the short circuit. Reconnect the connector if it has been disconnected.
Note) When the service program is initialized, the unit does not accept normal operation.

2. Button operation during the service mode.

(1) ▲ OPEN/CLOSE
Opens or Closes the disk holder. Note that when the holder is in operation, all other buttons are inoperative, until the holder operation completed.

Note) Be sure to remove the short circuit or reconnect the connector which disconnected to initialize the service program. Otherwise the Open/Close does not function correctly.

(2) ■ STOP
Stops the system. Track number indicator displays 01. Push the button when the servo adjustment completed, or when redo it.

(3) ▶ PLAY
Turns focus servo on and starts the disk. When a sequential functions ends, the track number indicator displays 02. Use it to adjust tracking offset.

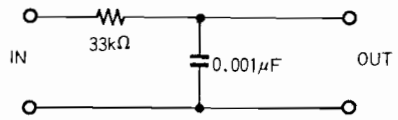
(4) ❚❚ PAUSE
Turns focus servo, tracking servo, slide servo and spindle servo on. When a sequential functions ends, the track number indicator displays 03. When the PLAY has already been pushed, turns tracking servo and slide servo on.

(5) Other buttons
Other buttons previously not mentioned are for factory use. Some of the buttons have specific function like checking IC. Operation of these buttons could invite incorrect CD player operation. Therefore never operate buttons which are not previously explained how to use. If these buttons are accidentally pushed, turn power off and initialize the service program again. Also never use remote controller when the service program is in operation.

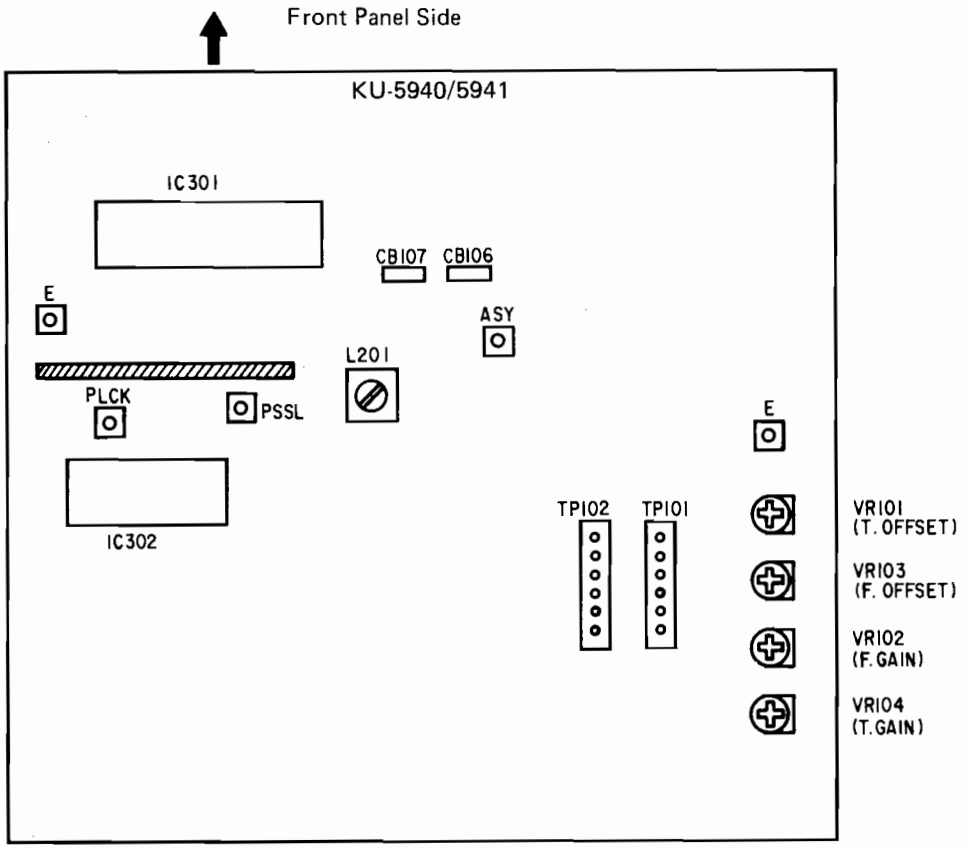
3. Adjustment

(1) Precaution to the Adjustment:
First adjust the height of turntable, etc., and then adjust the laser P.U. system and spindle motor system.
The super linear convertor employed in this unit requires no adjustment, except a specific case.

(2) Equipment required
1 Dual trace oscilloscope
2 Specific disk for adjustment
3 Low frequency oscillator
10 Hz ~ 10 kHz, Output: 0 V ~ 3 Vp-p
4 Frequency counter
Readable to 5 MHz
5 Filter (Network) for measurement

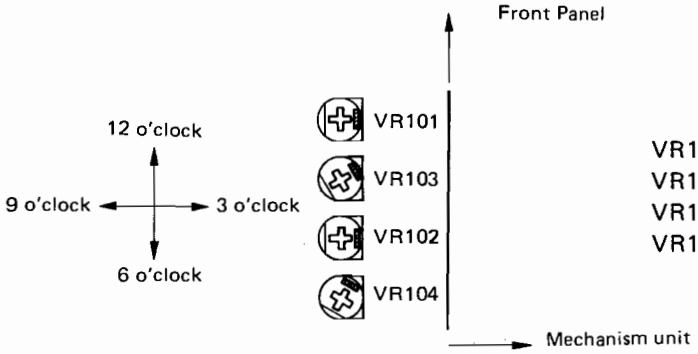


(3) Setup



1 Confirm power is OFF, detach connector CB106, short circuit pin 1, 2, 3, and turn power ON to initialize service program. Track number indicator displays [0 1], then revert the connection to the former status.

2 Preset VR101, 103, 102, 104 as per following.



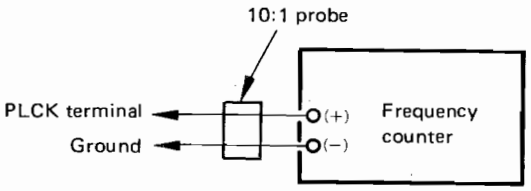
VR101 (330kΩ) ..... 3 o'clcok
VR102 (47kΩ) ..... 3 o'clcok
VR103 (10kΩ) ..... 2 o'clcok
VR104 (10kΩ) ..... 1 o'clcok

3 Make adjustment in the order of
1. PLL
2. Tracking offset
3. Focus gain
4. Focus offset
5. Tracking gain
6. Tracking offset (Recheck)

(4) PLL

1 Precaution
- Confirm the service program is initialized, and the disk is not loaded or the disk is stopped.
- Ground the test point PSSL and the assembly.

2 Equipment setup



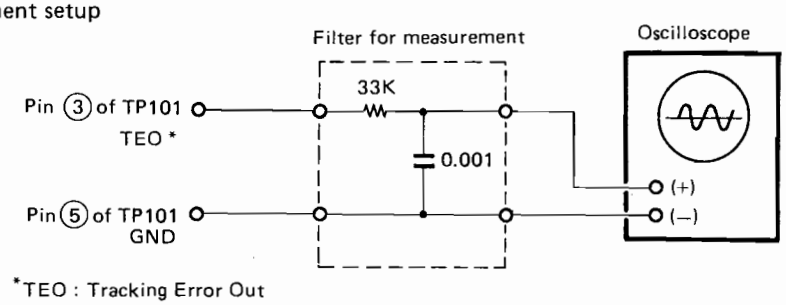
Connect PLCK terminal to the frequency counter via a 10:1 probe used for oscilloscope.

3 Adjustment
Adjust L201 with a non-magnetic screw driver so that frequency counter reads 4.24 MHz ± 20 kHz (4.22 MHz ~ 4.26 MHz). The L201 is sensitive: when the screw driver is detached from the coil frequency varies somewhat. Use care for the adjustment.

4 After the Adjustment
- Remove ground from test point PSSL and Assembly.
- Disconnect frequency counter.

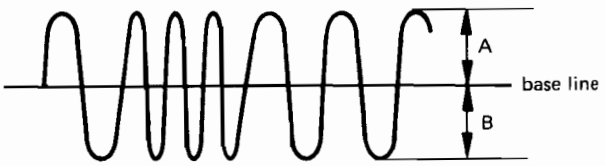
(5) Tracking offset

1 Equipment setup



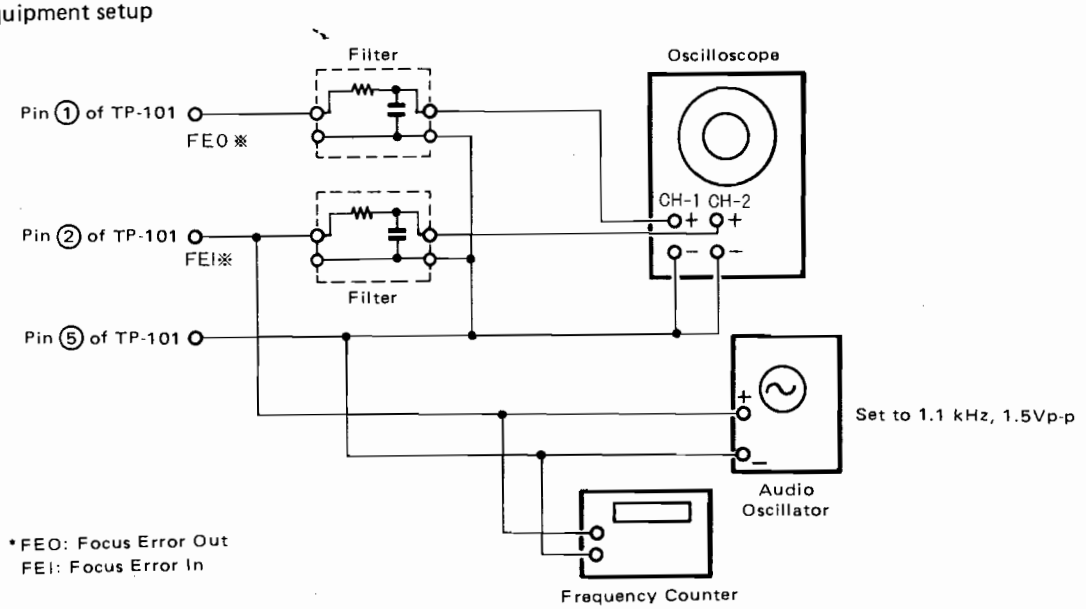
*TEO : Tracking Error Out

2 Push OPEN/CLOSE button to open the holder, put the disk for adjustment on the tray, and push the button to close the holder. When the service program is initialized, the laser P.U. is set to the correct position.
3 Push ▶ PLAY to start the disk.
4 Ground oscilloscope input terminal to confirm the base line, and set the oscilloscope to DC range, 0.1V/div (when 10:1 probe is used), 1 ms ~ 2 ms /div.
5 Adjust VR101 so that the amplitude of A equals B.

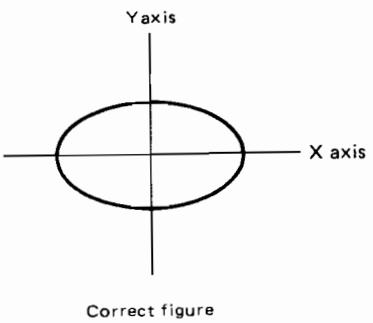


(6) Focus gain

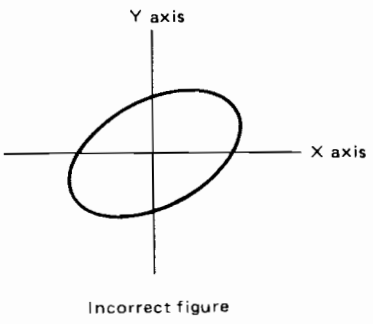
1 Push ⏸ PAUSE
2 Equipment setup



3 Adjustment
- Set low frequency oscillator output to 1.1 kHz, 1.5 Vp-p (±0.1 V).
- Select oscilloscope input so to observe Lissajous waveform (Select DC range for both X and Y input).
- Adjust VR103 so that each waveform symmetrizes X and Y axes. (Adjust each input phases 90°)



Correct figure



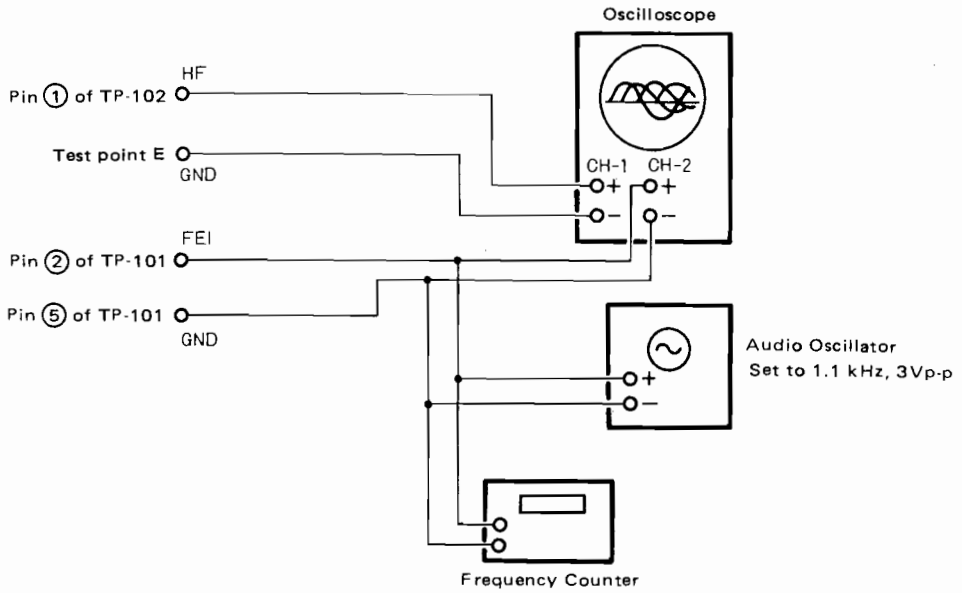
Incorrect figure

(7) Adjustment of Focus Offset

① Adjust it in the same condition as to focus gain except the measuring equipment connections.

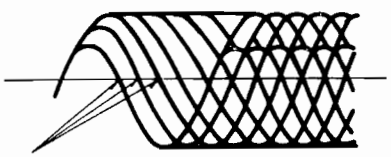
② Connection of measuring equipment

Note: Audio oscillator should be connected during the servo operation.



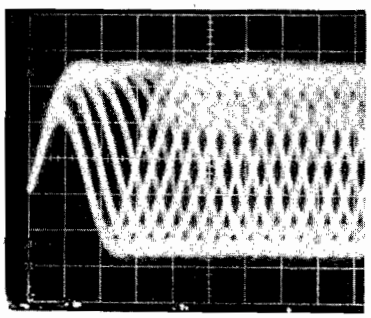
③ Adjustment

- Set the output of audio oscillator to 1.1 kHz, 3.0 Vp-p (±0.1 V).
- Select oscilloscope input mode at "ALTERNATE" or "CHOPPER" and set it to 50 mV/div or 20 mV/div (use 10:1 probe).
  Observe by setting the sweep time to 0.2 or 0.5 μs range.



Adjust A portion for most fine waveform.

- A waveform to observe in this time called "Eye Pattern".
- Adjust VR-102 for a minimum jitter amount.



(8) Adjustment of Tracking Gain

① Adjust it in the same condition as to focus gain except the measuring equipment connections.

② Aduio oscillator should be connected while the servo is in operation.

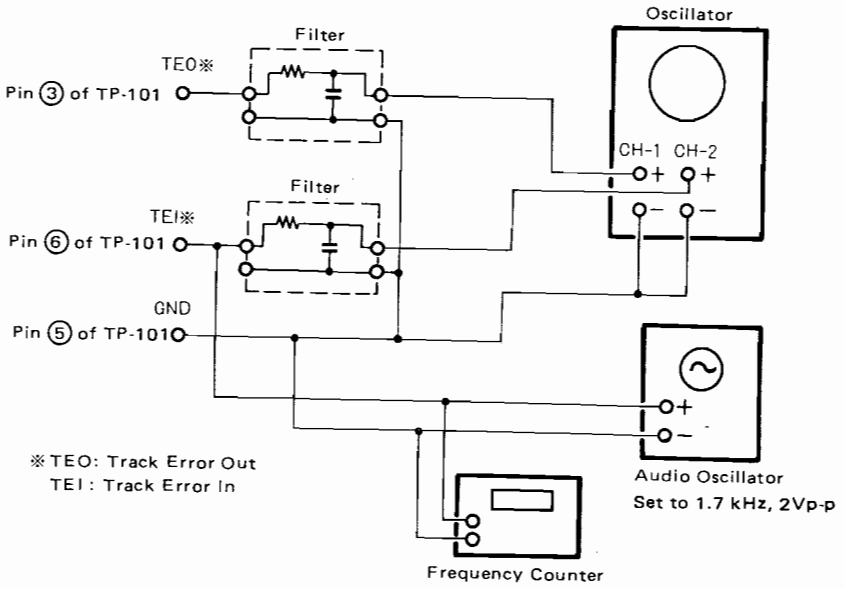
If the connection is made before servo operation, causing mis-operation.

If the connection is made in failure, disconnect oscillator, push stop button (■ STOP) to stop all operations, and follow the steps from the begining. Then push the pause button (**II PAUSE**) to activate the servo operation again.

③ Connection of measuring equipment.

④ Adjustment

- Set the output of audio oscillator to **1.7 kHz** ± 120 Hz 2 Vp-p ±0.1 V.
- Connect two filters as per illustration.
- Select oscilloscope input so to observe Lissajous waveform. (Select DC range both X and Y inputs.)
- Adjust VR-104 and obtain Lissajous waveform symmetric to X and Y axes. The waveform is the same as focus gain adjustment.



(9) Checking of Tracking Offset

① Check the adjustment performed in the previous column (5).

- Push stop button (■ STOP) to stop disc revolution.
- With a sufficient interval of time in between, push play button (▶ PLAY) twice and check that the disc starts to run.

Note: The microcomputer employed in the unit sometimes does not accept button operation. If so, push the button again. and confirm that "2" appears on the calendar.

- Observe a waveform and check that the height of upper and lower waveform are even. (Reference value: Difference of height between two is 5% or less.)
- If the difference is beyond the value, adjust VR-101.

② That is all to complete adjustments.

- Push the stop button (■ STOP) to stop disc revolution, and push open close button (▲OPEN CLOSE) to open the holder and remove the adjustment disc.

FUNCTION OF IC TERMINAL

• Remote Control IC LU59001 (DCD-700 only)

Terminal No.	Function	Terminal No.	Function
1	Serial data output	11	Remote control code input. Receivers code from RM577.
2	+5V		
3	Shift clock input	12	System address, ground.
4	RDY output	13	System address, ground.
5	+5V	14	System address, ground.
6	455 kHz osc.	15	System address, ground.
7	455 kHz osc.	16	Ground.
8	Ground.	17	+5V
9	ACL (Auto Clear).	18	System address, +5V
10	Ground.	19	+5V
		20	V_{DD}, +5V

• Table of LU59001 Date output

Dateof LU59001 when "KEY IN" by remote control.

Note: 0 : 0V
1 : 5V

Key of Remote Control (RC-700)		Terminal No. of LU59001												
		12	14	15	18	13	1	2	4	5	16	17	19	3
		↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
		System Address							Date				Expand Date	
		C 1	C 2	C 3	C 4	C 5	C 6	C 7	C 8	C 9	C 10	C 11	C 12	C 13
1	1	0	0	0	1	0	0	1	0	0	0	0	1	0
2	2						1	1	0	0	0	0		
3	3						0	0	1	0	0	0		
4	4						1	0	1	0	0	0		
5	5						0	1	1	0	0	0		
6	6						1	1	1	0	0	0		
7	7						0	0	0	1	0	0		
8	8						1	0	0	1	0	0		
9	9						0	1	0	1	0	0		
10	0						1	1	0	1	0	0		
11	+10						0	0	1	1	0	0		
12	PROGRAM						1	0	1	1	0	0		
13	OPEN/CLOSE						0	0	0	0	1	0		
14	CALL						0	1	0	0	1	0		
15	DISPLAY	↓	↓	↓	↓	↓	1	1	0	0	1	0	↓	↓
16	REPEAT	0	0	0	1	0	0	0	1	0	1	0	1	0
17	DIRECT						1	1	1	0	1	0		
18	TRACK ▶|						0	0	0	1	1	0		
19	TRACK |◀						1	0	0	1	1	0		
20	SKIP ▶▶						0	1	0	1	1	0		
21	SKIP ◀◀						1	1	0	1	1	0		
22	PLAY						0	0	1	1	1	0		
23	PAUSE						1	0	1	1	1	0		
24	STOP	↓	↓	↓	↓	↓	0	1	1	1	1	0	↓	↓
		Input					Output							

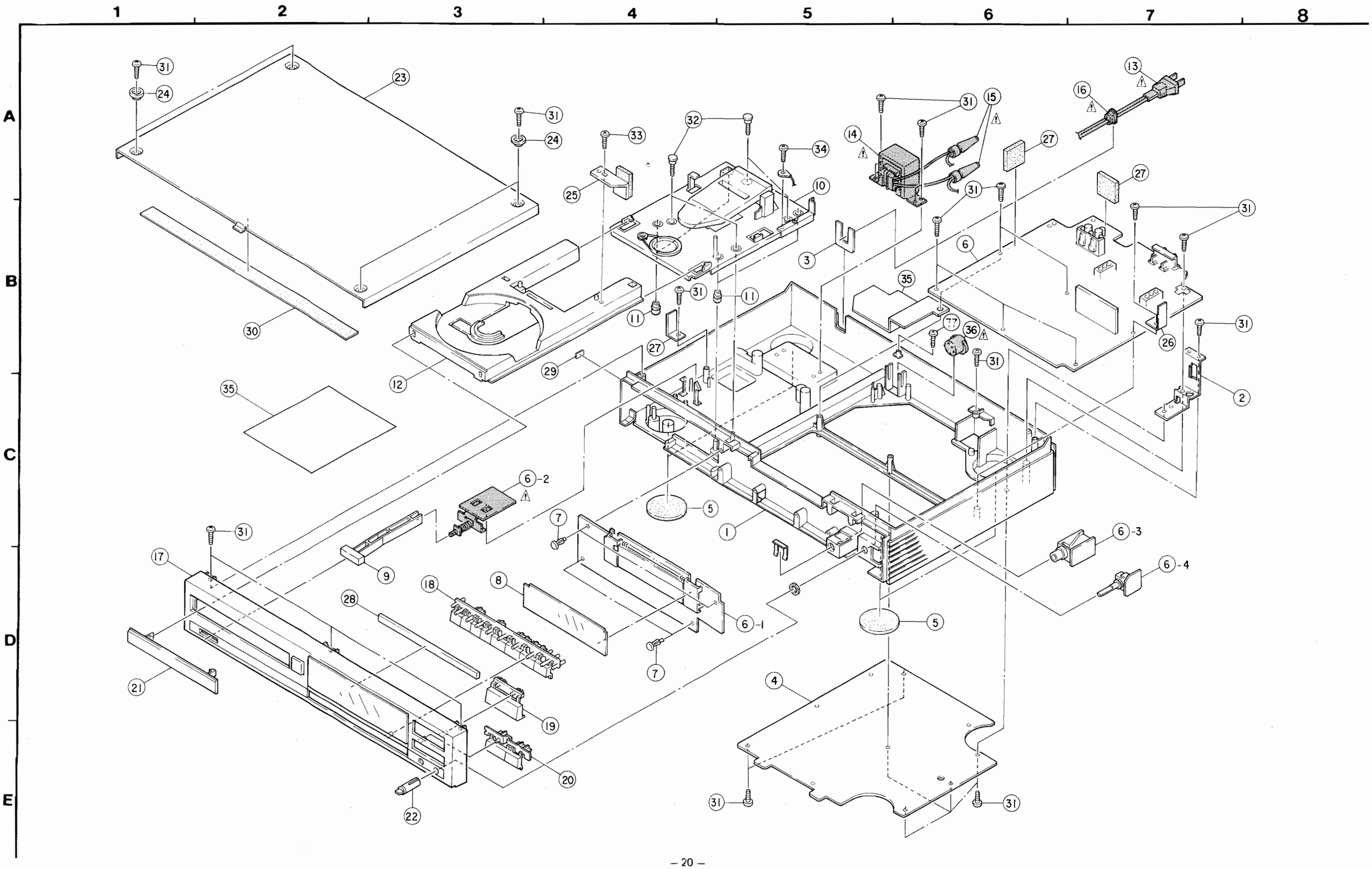
PARTS LIST OF P.W. BOARD

KU-5940/5941 SERVO & SIG. PRO UNIT

Ref. No.	Part No.	Part Name	Remarks
SEMICONDUCTOR GROUP			
IC101	2620613008	CX20109	
IC102	2620612009	CX20108	
IC103	2630257001	M-5218P	
IC201	2630257001	M-5218P	
IC202	2630244001	NJM082D	
IC301	2620676003	HD63A05X0	
IC302	2620672007	PCM54HP	
IC303,304	2630298002	LB1240	
IC305	2620635002	LU59001	KU-5940 only
IC401	2630360008	NE5532	
IC402	2620522005	TC-4053BP	
IC403,404	2630360008	NE5532	
IC405	2620419008	HD14053BP	
IC406,407	2630257001	M-5218P	
IC408	2630198005	NJM4556D	
IC601,602	2630254004	NJM78M05A	
IC603	2630272002	NJM79M05A	
IC604,605	2680055004	ICP-F15	
TR101	2740006002	2SD468(C)	
TR102	2740065044	2SD880(Y)/(GR)	
TR103	2720058013	2SB834(Y)/(GR)	
TR104	2740006002	2SD468(C)	
TR105	2720025004	2SB562(C)	
TR106	2740006002	2SD468(C)	
TR107	2720025004	2SB562(C)	
TR201	2740006002	2SD468(C)	
TR202	2720025004	2SB562(C)	
TR203	2740006002	2SD468(C)	
TR204	2720025004	2SB562(C)	
TR301, 302	2730178006	2SC1740(R/S)	
TR303	2690025901	RN1202(10K-10K)	
TR304	2690026900	RN2202(10K-10K)	
TR305	2690025901	RN1202(10K-10K)	KU-5940 only
TR306	2690026900	RN2202(10K-10K)	KU-5940 only
TR401, 402	2710101022	2SA933(Q)	
TR403, 404	2730253015	2SC2878(A/B)	
TR405	2690026900	RN2202(10K-10K)	
TR406	2690025901	RN1202(10K-10K)	
LF401, 402	2610071003	LOW PASS FILTER	
VD201	2760428001	KV1260	
D101	2760417902	1SS270	
D102	2760236057	HZ5C-3	
D301	2760185027	HZ4B-2	
D302	2760417902	1SS270	
D303,304	2760370007	1SS106	
D401	2760236057	HZ5C-3	
D601	2760405008	S1WB(A)	
D602,603	2760433902	DSM1A2	
D604	2760368006	HZ2C	
D605	2760433902	DSM1A2	
RESISTOR GROUP			
VR101	2116048035	V06PB334	330kΩB
VR102	2116048019	V06BP473	47kΩB
VR103, 104	2116048022	V06PB103	10kΩB
VR301	2116048064	V06PB104	100kΩB
VR401	2110459002	V1220Q25T-A103	10kΩA KU-5940 only
R145	2452148000	RN14K2E360G	36Ω 1/4W
R146	2452153008	RN14K2E560G	56Ω 1/4W
R140	2452175002	RN14K2E471G	470Ω 1/4W
R138	2452191002	RN14K2E222G	2.2kΩ 1/4W
R139	2452207006	RN14K2E103G	10kΩ 1/4W
R141	2452211005	RN14K2E153G	15kΩ 1/4W
R238	2440001023	RS14B3AR47JNBF	0.47Ω 1W
CAPACITOR GROUP			
C101	2544260045	CE04W1H010M	1μF 50V
C102	2551121038	CQ93M1H123J	0.012μF 50V
C103,104	2533611003	CC45SL1H220J	22pF 50V
C105	2551121009	CQ93M1H682J	6800pF 50V
C106,107	2533615009	CC45SL1H330J	33pF 50V
C108	2551120042	CQ93M1H222J	2200pF 50V
C109	2533643000	CC45SL1H471J	470pF 50V
C110	2544254035	CE04W1C470M	47μF 16V
C111	2531024003	CK45F1H103Z	0.01μF 50V
C112	2551121025	CQ93M1H103J	0.01μF 50V
C113	2544260032	CE04W1HR47M	0.47μF 50V
C114	2561035004	CF93A1H184J	0.18μF 50V
C115	2533639001	CC45SL1H331J	330pF 50V
C116	2561035020	CF93A1H274J	0.27μF 50V
C117	2533639001	CC45SL1H331J	330pF 50V
C118	2551121041	CQ93M1H153J	0.015μF 50V
C119	2551121012	CQ93M1H822J	8200pF 50V
C120,121	2544254006	CE04W1C100M	10μF 16V
C122	2561034005	CF93A1H273J	0.027μF 50V
C123	2533627000	CC45SL1H101J	100pF 50V
C124	2544254006	CE04W1C100M	10μF 16V
C125	2544258002	CE04W1V4R7M	4.7μF 35V
C126	2544252037	CE04W1A101M	100μF 10V
C127	2531024003	CK45F1H103Z	0.01μF 50V
C128	2533614000	CC45SL1H300J	30pF 50V
C129	2561034063	CF93A1H823J	0.082μF 50V
C130	2533628009	CC45SL1H111J	110pF 50V
C130	2539015001	CK45=1E104M	0.1μF 25V
C131	–	–	–
C132	2561034021	CF93A1H393J	0.039μF 50V
C133,134	2544254035	CE04W1C470M	47μF 16V
C135,136	2531024003	CK45F1H103Z	0.01μF 50V
C202	2539015001	CK45=1E104M	0.1μF 25V
C203	2533616008	CC45SL1H360J	36pF 50V
C204	2551120042	CQ93M1H222J	2200pF 50V
C205	2533633007	CC45SL1H181J	180pF 50V
C206	2544260045	CE04W1H010M	1μF 50V
C207,208	2551120084	CQ93M1H472J	4700pF 50V
C209	2561034050	CF93A1H683J	0.068μF 50V
C210	2544260045	CE04W1H010M	1μF 50V
C301	2544252037	CE04W1A101M	100μF 10V
C302	2531024003	CK45F1H103Z	0.01μF 50V
C303	2544260058	CE04W1H2R2M	2.2μF 50V
C304,305	2533635005	CC45SL1H221J	220pF 50V KU-5940 only
C306	2544260045	CE04W1H010M	1μF 50V
C307	2561035020	CF93A1H274J	0.27μF 50V
C308,309	2544254035	CE04W1C470M	47μF 16V
C310	2539015001	CK45=1E104M	0.1μF 25V
C401,402	2539015001	CK45=1E104M	0.1μF 25V
C403,404	2551120026	CQ93M1H152J	1500pF 50V
C405	2551120000	CQ93M1H102J	1000pF 50V
C406	–	–	–
C407 ~410	2531024003	CK45F1H103Z	0.01μF 50V
C411,412	2551120042	CQ93M1H222J	2200pF 50V
C413,414	2551120068	CQ93M1H332J	3300pF 50V
C415,416	2551121009	CQ93M1H682J	6800pF 50V
C417 ~420	2531024003	CK45F1H103Z	0.01μF 50V
C421,422	2551120097	CQ93M1H562J	5600pF 50V
C423,424	2533632008	CC45SL1H161J	160pF 50V
C425,426	2544254022	CE04W1C330M	33μF 16V
C427,428	2539015001	CK45=1E104M	0.1μF 25V
C431,432	2531024003	CK45F1H103Z	0.01μF 50V
C601,602	2544197008	CE04W1C222M	2200μF 16V
C603	2544163029	CE04W1C471M	470μF 16V
C604,605	2544197011	CE04W1C102M	1000μF 16V
C606	2544163016	CE04W1C331M	330μF 16V
OTHER PARTS GROUP			
L101	2350016904	INDUCTOR (100K)	
L201	2350017000	INDUCTOR (7μH)	
	4990049009	RM-577	KU-5940 only
X301	3990035001	CST 6.00MT	
X302	2610037005	CSB455E	KU-5940 only
	4150307002	INSULATING SHEET	
	4150308001	BUSH	
	2048179001	2P PIN JACK	
	2120274002	POWER SW	
	2124388004	TACT SWITCH	
	2048209007	H/P JACK	
	4430534003	FL HOLDER	
	3934021000	FIP7DM6	
	4122007000	EARTH PLATE	
	KU-5860	**DIGITAL SIG PRO UNIT**	
IC001	2620614007	CX23035	
IC002	2620673006	HM6116FP-4	
X001	3990036000	X'TAL 8.4672MHz	
C001,002	2533610004	CC45SL1H200J	20pF 50V
C003	2531024003	CK45F1H103Z	0.01μF 50V
C004	2544252037	CE04W1A101M	100μF 10V

• The carbon resistors at ¼W are not listed herein.

EXPLODED VIEW DCD-700



PARTS LIST OF EXPLODED VIEW

Ref. No.	Part No.	Part Name	Remarks
1	1030910101	CHASSIS	
	1030910114	CHASSIS	E1 only
2	4122012008	EARTH BRACKET	
3	4122008012	BUSHING PLATE	
4	1050673101	BOTTOM COVER	
5	4620070005	FOOT	
6	KU-5940	SERVO & SIG PRO UNIT	
7	4770096007	PUSH RIVET	
8	1430467021	DISPLAY SHEET	
9	1130818006	POWER SW LEVER ASS'Y	
10	FG-700	CD MECHA UNIT	
11	4620067005	BUSHING	
12	4310219202	LOADER FRAME ASS'Y	
⚠ 13	2062031002	AC CORD	EU, EC
	2062002031	AC CORD WITH PLUG	E2
	2062024006	AC CORD WITH LABEL	EK
	2062025005	AC CORD	EA
	2006031026	AC CORD	E1
⚠ 14	2335544006	POWER TRANS	E2, EK, EA
	2335545005	POWER TRANS	EU
	2335557006	POWER TRANS	EC
	2335546004	POWER TRANS	E1
15	2030150009	WIRE CONNECTOR	
⚠ 16	4450056008	CORD BUSH	
17	1030923101	FRONT PANEL ASS'Y	EU, EC, EA, E1
	1030923127	FRONT PANEL ASS'Y	E2, EK
18	1130797101	KNOB (8REN)	
19	1130798100	KNOB (PLAY)	
20	1130799109	KNOB (PAUSE)	
21	4250171303	LOADER PANEL	
22	1120475006	H/P KNOB	
23	1020248003	TOP COVER	
24	1460772003	TOP COVER WASHER	
25	4410729003	MAGNET ASS'Y	
26	4122068007	SIDE BRACKET	
27	4610274015	CUSHION (B)	
28	1290066002	SOFT TAPE	
29			
30	1220121001	HIMERON SHEET	
31	4737508017	3x10 CBTS(P)-B	
32	4737514001	SPECIAL SCREW	
33	4737500015	3x8 CBTS(P)-B	
34	4737002005	3x6 CBTS(S)	
35	4150367007	SHIELD SHEET	
36	2123315023	VOLTAGE SELECTOR	E1 only
37	4737501027	3x16 CBTS(P)-Z	E1 only

PACKING & ACCESSORIES GROUP

Ref. No.	Part No.	Part Name	Remarks
	5050102089	STYLEN PAPER	
	5030548100	CUSHION ASS'Y	
	5011111064	CARTON	
	5050061007	ENVELOPE	
	5111436005	INST. MANUAL	E2, EC, EK, EA, E1
	5111437004	INST. MANUAL	EU only
	5111438003	SWEDISH INST. MANUAL	E2 only
	2032195004	2P PIN CORD	
	4990050001	RC700	
	2033667007	PLUG ADAPTER	E1 only
	5150349108	WARRANTY IN ENVELOPE	EU only
	5118153006	SAFETY INSTRUCTION	EU only
	5138266009	DANGEROUS MARK	EU, EC
	5138306011	DANGER LABEL	EU, EC
	5130925005	CAUTION LABEL	
	5130985003	INST. LABEL	E2, EK, EA
	5130209019	NOTICE SHEET	EA only
	5150388004	DCI WARRANTY	EC only
	5138213007	DATE LABEL	EC only
	5138311006	CSA LABEL	EC only
	5131138105	CSA CERTIF LABEL	EC only
	5150359004	CAUTION SHEET	E1 only
	5131174004	LASER CAUTION LABEL	E2 only
	5138294000	VDE LABEL	E2 only
	5138253025	APPROVAL MARK	E2 only
	5131167008	CONTROL CARD	E2 only

WARNING:
Parts marked with ⚠ and/or shading have special characteristics important to safety.
Be sure to use the specified parts for replacement.

Remarks symbols in the parts list refer to the following countries and areas.

EA:	Australia	EC:	Canada
E1:	Multiple voltage model	EU:	U.S.A.
E2:	European continent	EK:	United Kingdom

PARTS LIST OF EXPLODED VIEW

Ref. No.	Part No.	Part Name	Remarks
1	1030910101	CHASSIS	
	1030910114	CHASSIS	E1 only
2	4122012008	EARTH BRACKET	
3	4122008012	BUSHING PLATE	
4	1050673101	BOTTOM COVER	
5	4620070005	FOOT	
6	KU-5941	SERVO & SIG PRO UNIT	
7	4770096007	PUSH RIVET	
8	1430467034	DISPLAY SHEET	
9	1130818006	POWER SW LEVER ASS'Y	
10	FG-700	CD MECHA UNIT	
11	4620067005	BUSHING	
12	4310219202	LOADER FRAME ASS'Y	
⚠ 13	2062031002	AC CORD	EU, EC
	2062002031	AC CORD WITH PLUG	E2
	2062024006	AC CORD WITH LABEL	EK
	2062025005	AC CORD	EA
	2006031026	AC CORD	E1
⚠ 14	2335544006	POWER TRANS	E2, EK, EA
	2335545005	POWER TRANS	EU
	2335557006	POWER TRANS	EC
	2335546004	POWER TRANS	E1
15	2030150009	WIRE CONNECTOR	
⚠ 16	4450056008	CORD BUSH	
17	1030923101	FRONT PANEL ASS'Y	EU, EC, EA, E1
	1030923130	FRONT PANEL ASS'Y	E2, EK
18	1130797101	KNOB (8REN)	
19	1130798100	KNOB (PLAY)	
20	1130799109	KNOB (PAUSE)	
21	4250171303	LOADER PANEL	
22	—	—	
23	1020248003	TOP COVER	
24	1460772003	TOP COVER WASHER	
25	4410729003	MAGNET ASS'Y	
26	4122068007	SIDE BRACKET	
27	4610274015	CUSHION (B)	
28	1290066002	SOFT TAPE	
29	—	—	
30	1220121001	HIMERON SHEET	
31	4737508017	3x10 CBTS(P)-B	
32	4737514001	SPECIAL SCREW	
33	4737500015	3x8 CBTS(P)-B	
34	4737002005	3x6 CBTS(S)	
35	4150367007	SHIELD SHEET	
36	2123315023	VOLTAGE SELECTOR	E1 only
37	4737501027	3x16 CBTS(P)-Z	E1 only

PACKING & ACCESSORIES GROUP

Ref. No.	Part No.	Part Name	Remarks
	5050102089	STYLEN PAPER	
	5030548100	CUSHION ASS'Y	
	5011111077	CARTON	
	5050061007	ENVELOPE	
	5111445009	INST. MANUAL	E2, EC, EK, EA, E1
	5111447007	INST. MANUAL	EU only
	5111446008	SWEDISH INST. MANUAL	E2 only
	2032195004	2P PIN CORD	
	2033667007	PLUG ADAPTER	E1 only
	5150349108	WARRANTY IN ENVELOPE	EU only
	5118153006	SAFETY INSTRUCTION	EU only
	5138266009	DANGEROUS MARK	EU, EC
	5138306011	DANGER LABEL	EU, EC
	5130925005	CAUTION LABEL	
	5130985003	INST. LABEL	E2, EK, EA
	5130209019	NOTICE SHEET	EA only
	5150388004	DCI WARRANTY	EC only
	5138213007	DATE LABEL	EC only
	5138311006	CSA LABEL	EC only
	5131138105	CSA CERTIF LABEL	EC only
	5150359004	CAUTION SHEET	E1 only
	5131174004	LASER CAUTION LABEL	E2 only
	5138294000	VDE LABEL	E2 only
	5138253025	APPROVAL MARK	E2 only
	5131167008	CONTROL CARD	E2 only

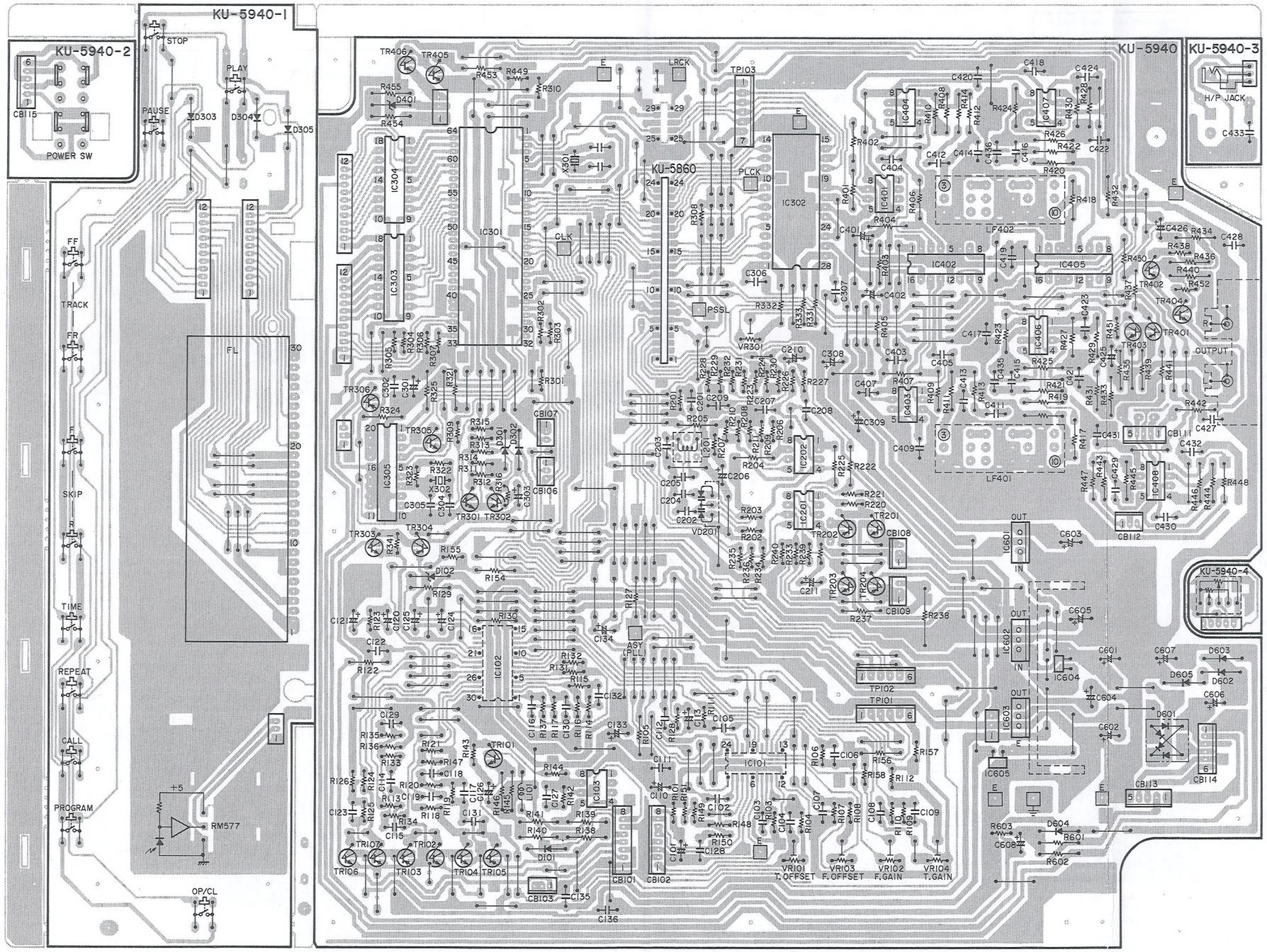
WARNING:
Parts marked with ⚠ and/or shading have special characteristics important to safety.
Be sure to use the specified parts for replacement.

Remarks symbols in the parts list refer to the following countries and areas.

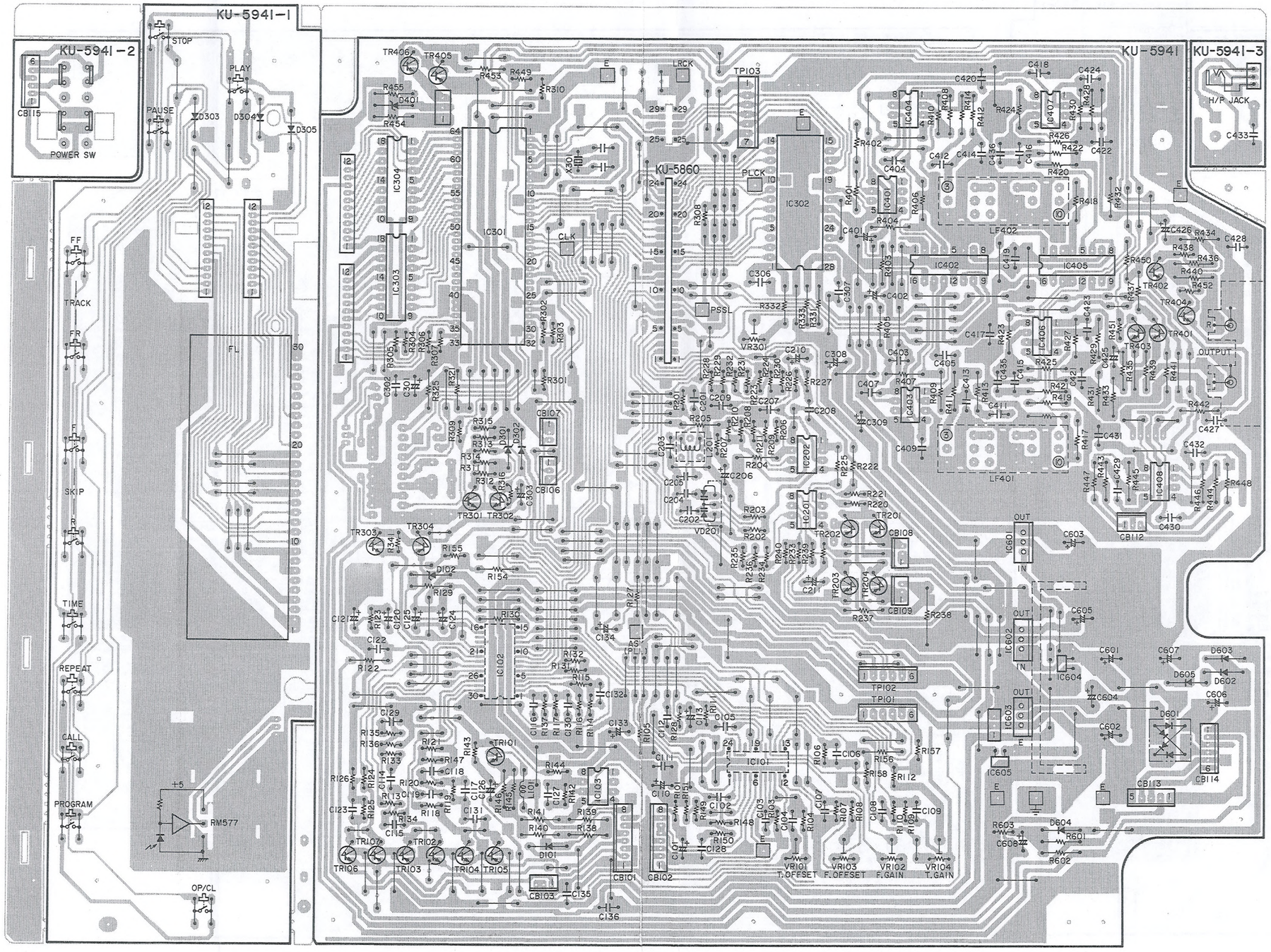
EA:	Australia	EC:	Canada
E1:	Multiple voltage model	EU:	U.S.A.
E2:	European continent	EK:	United Kingdom

P.W. BOARD

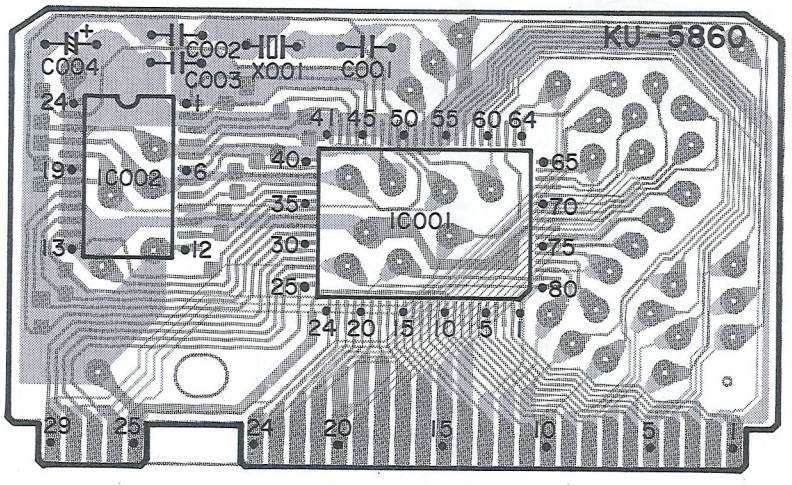
KU-5940 SERVO & SIG. PRO. UNIT (DCD-700)

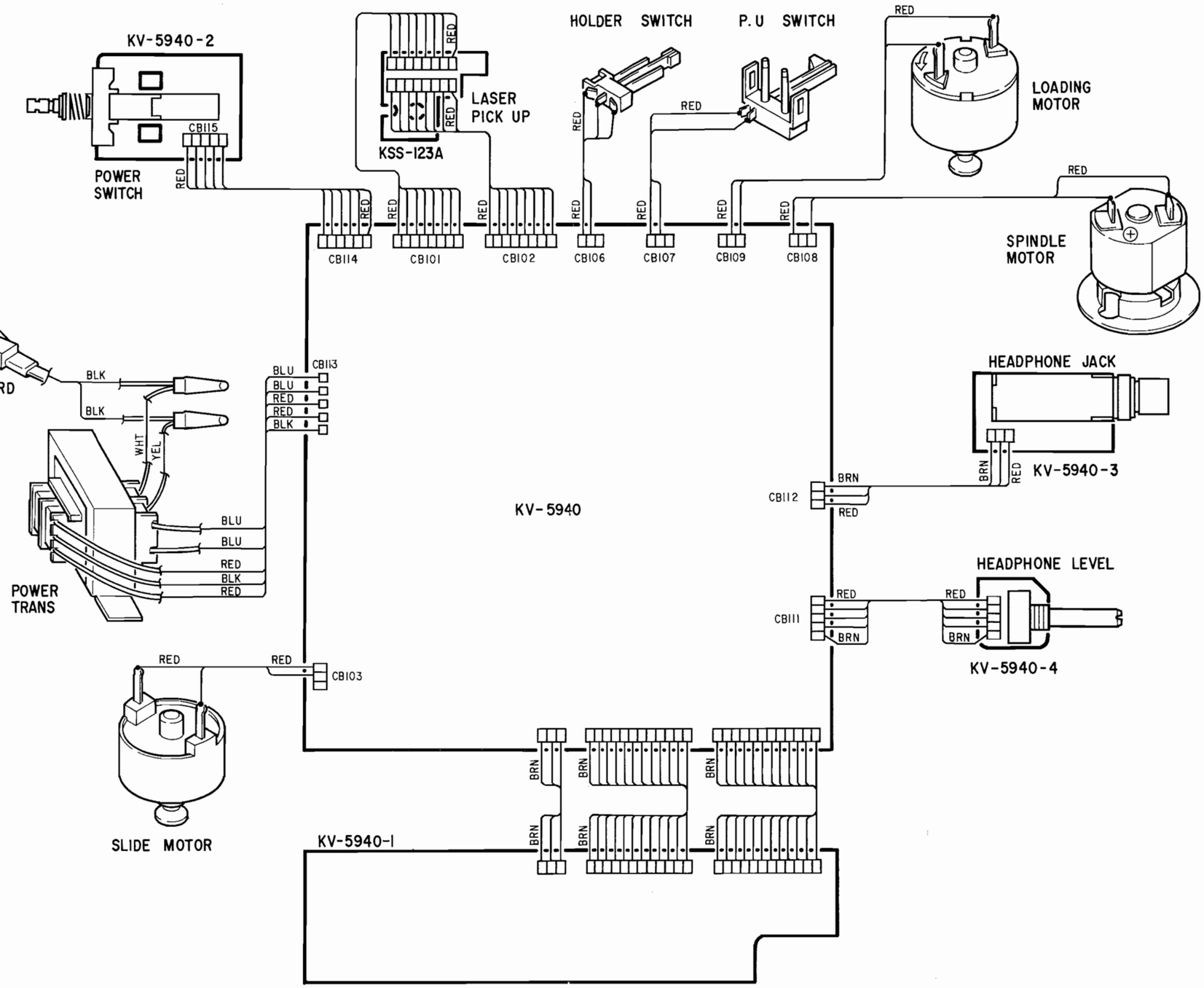


KU-5941 SERVO & SIG. PRO. UNIT (DCD-500)

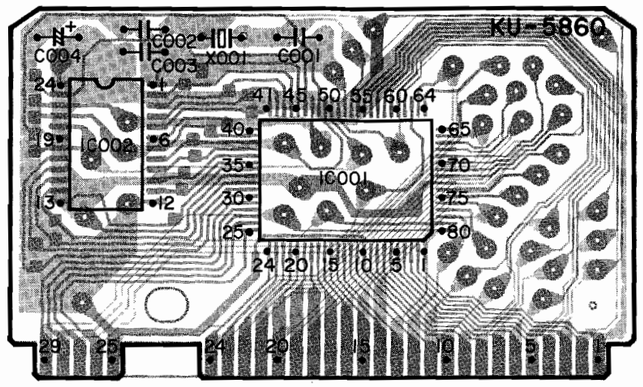


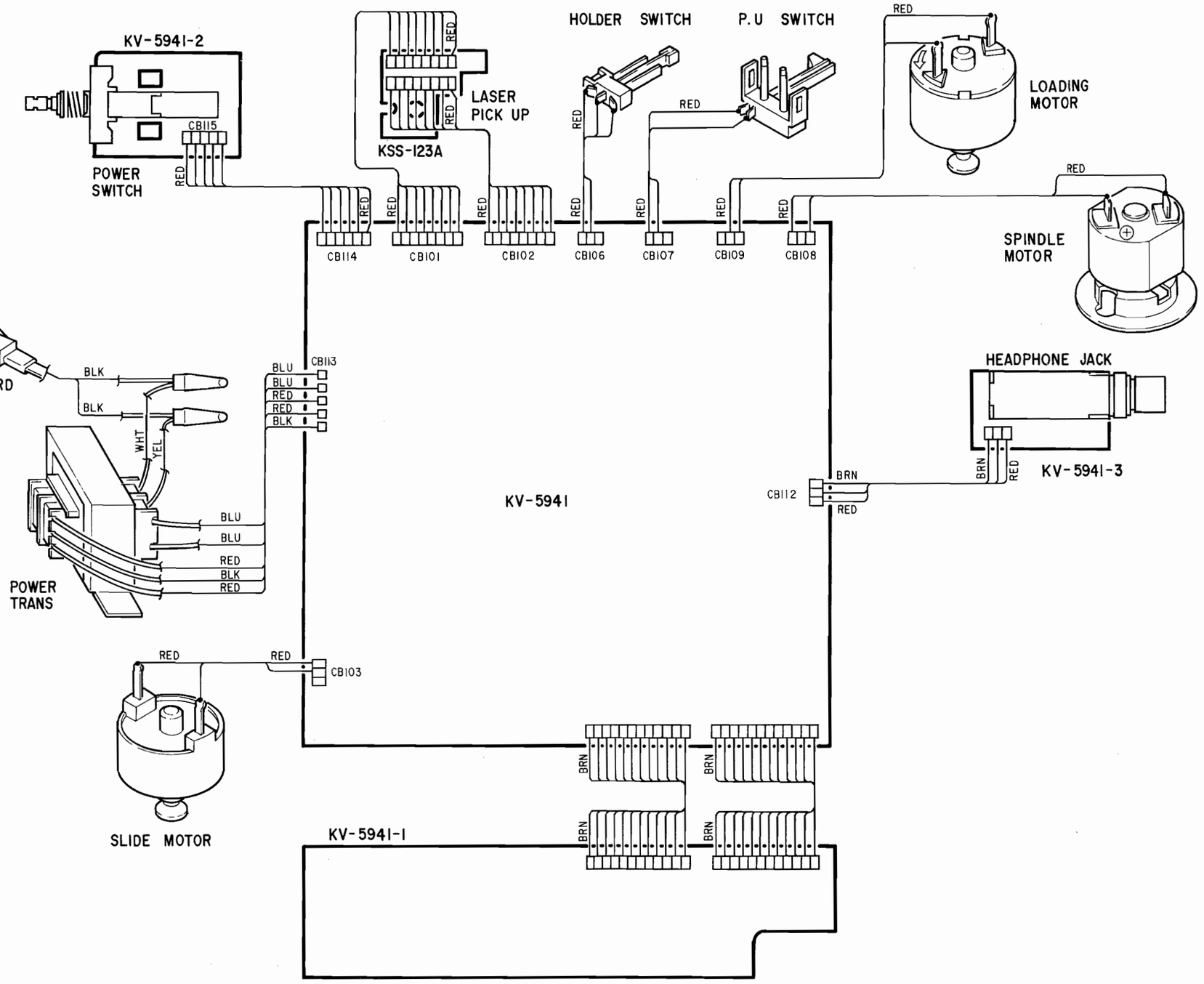
KU-5860 DIGITAL SIG. PRO. UNIT




KV-5940-2
CB115
POWER SWITCH
RED
LASER PICK UP
KSS-123A
HOLDER SWITCH
P.U SWITCH
LOADING MOTOR
SPINDLE MOTOR
CB114
CB101
CB102
CB106
CB107
CB109
CB108
AC CORD
BLK
WHT
YEL
BLU
RED
BLK
CB113
POWER TRANS
KV-5940
CB112
BRN
HEADPHONE JACK
KV-5940-3
CB111
HEADPHONE LEVEL
KV-5940-4
CB103
SLIDE MOTOR
KV-5940-1

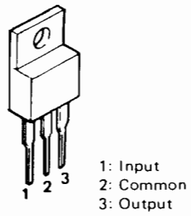
KU-5860 DIGITAL SIG. PRO. UNIT




KV-5941-2
CB115
POWER SWITCH
RED
KSS-123A
LASER PICK UP
HOLDER SWITCH
P.U SWITCH
LOADING MOTOR
SPINDLE MOTOR
CB114
CB101
CB102
CB106
CB107
CB109
CB108
AC CORD
BLK
BLK
WHT
YEL
BLU
BLU
RED
BLK
RED
POWER TRANS
CB113
KV-5941
CB112
BRN
RED
HEADPHONE JACK
KV-5941-3
CB103
SLIDE MOTOR
KV-5941-1

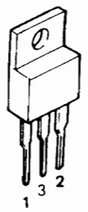
SEMICONDUCTORS

● IC



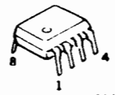
1: Input
2: Common
3: Output

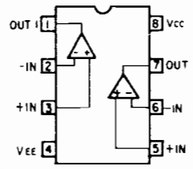
NJM78M05A



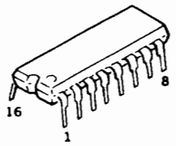
1: Gnd
2: Output
3: Input

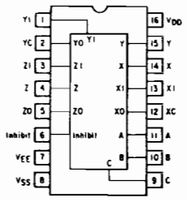
NJM79M05A



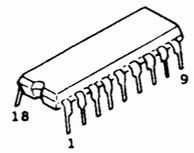


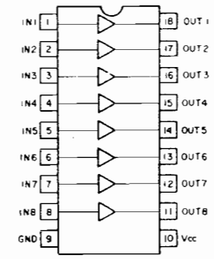
NJM082D
NE5532
M5218P
NJM4556D



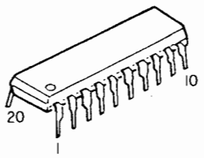


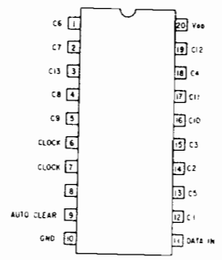
TC4053BP
HD-14053BP



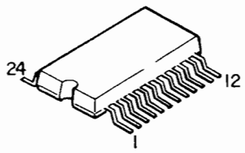


LB1240

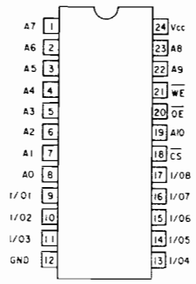




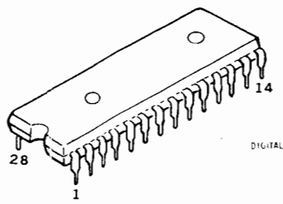
LU59001



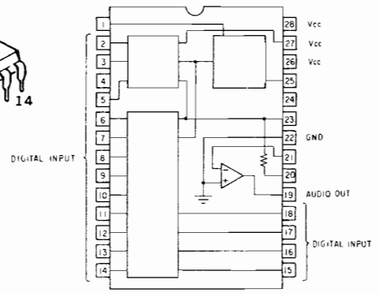
HM6116FP-4

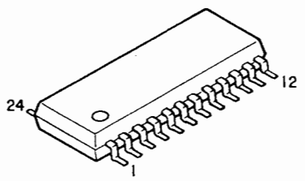


HM6116P-4

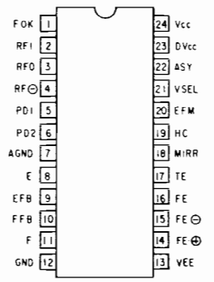


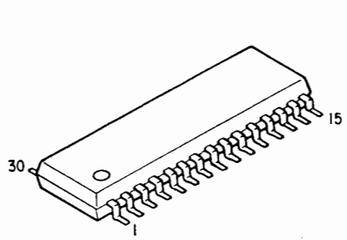
PCM54HP

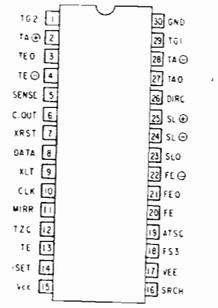




CX20109

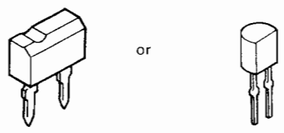






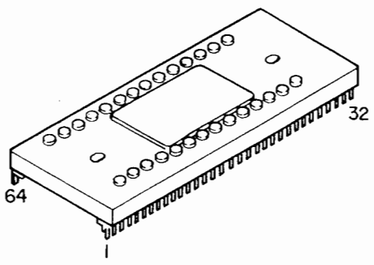
CX20108

● IC PROTECTOR

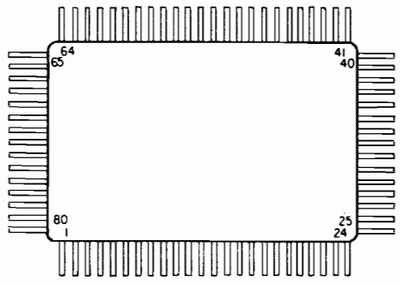


or

ICP-F15

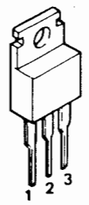


HD63A05XOA80P



CX23035

● TRANSISTORS

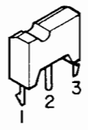


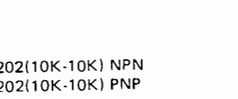
1: Input
2: Common
3: Output

2SB834(GR/Y)
2SD880(GR/Y)

2SA933(Q)
2SC1740(R/S)
2SC2878(A/B)

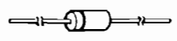
2SB562(C)
2SD468(C)

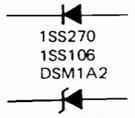




RN1202(10K-10K) NPN
RN2202(10K-10K) PNP

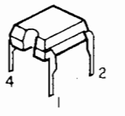
● DIODES

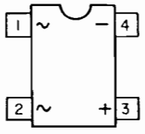




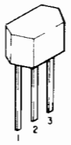
1SS270
1SS106
DSM1A2

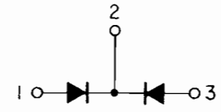
HZ4B-2
HZ5C-3
HZ2C





S1WB





KV1260

SCHEMATIC DIAGRAM DCD-700

1 2 3 4 5 6 7 8 9

KU-5860 DIGITAL SIG.PRO. UNIT

KU-5940 SERVO & SIG.PRO. UNIT

KU-5940-1

IC002 HM6116FP-4

IC001 CX23035

IC301 HD63A05X0

IC303 LB1240

IC304 LB1240

FL FIP7DM6

HOLDER SW

P.U SW

CBI06

CBI07

D303 ISSI06

D304 ISSI06

D305 ISSI06

PAUSE

STOP

REPEAT

CALL

TR301 2SC1740

TR302 2SC1740

D301 HZ-4B-2

D302 1SS270

X301 CST 6MHz

IC202(1/2) NJM082D

DATA P.L.L

IC202(1/2) NJM082D

IC302 PCM54HP

IC401 NE5532D

IC402 TC4053BP

IC403(1/2) NE5532

IC403 (2/2) NE55 -32

IC404 (1/2) NE5532

IC404 (2/2)

IC405 HDI40538P

IC405(1/3)

IC405(2/3)

IC405(3/3) HDI40538P

IC305 LU59001

TR305 RN1202

TR306 RN2202

TR405 RN2202

TR406 RN1202

TR303 RN1202

TR304 RN2202

D401 HZ5C-3

D102 HZ5C-3

IC102 CX20108

IC604

IC601 NJM78M05

IC602 NJM78M05

R/C RECEIVER

LF 401

LE 402

SHILD

SPINDLE DRIVE

LOADING DRIVE

SPINDLE MOTOR

LOADING MOTOR

LASER SW

TR201 2SD468

TR202 2SB562

TR203 2SD468

TR204 2SB562

IC201(1/2) M5128P

IC103 M5218

ALPC

TR101 2SD468

D101 1SS270

LASER DIODE

MONITOR DIODE

TP102

TP101

CBI08

CBI09

CBI01(1/2)

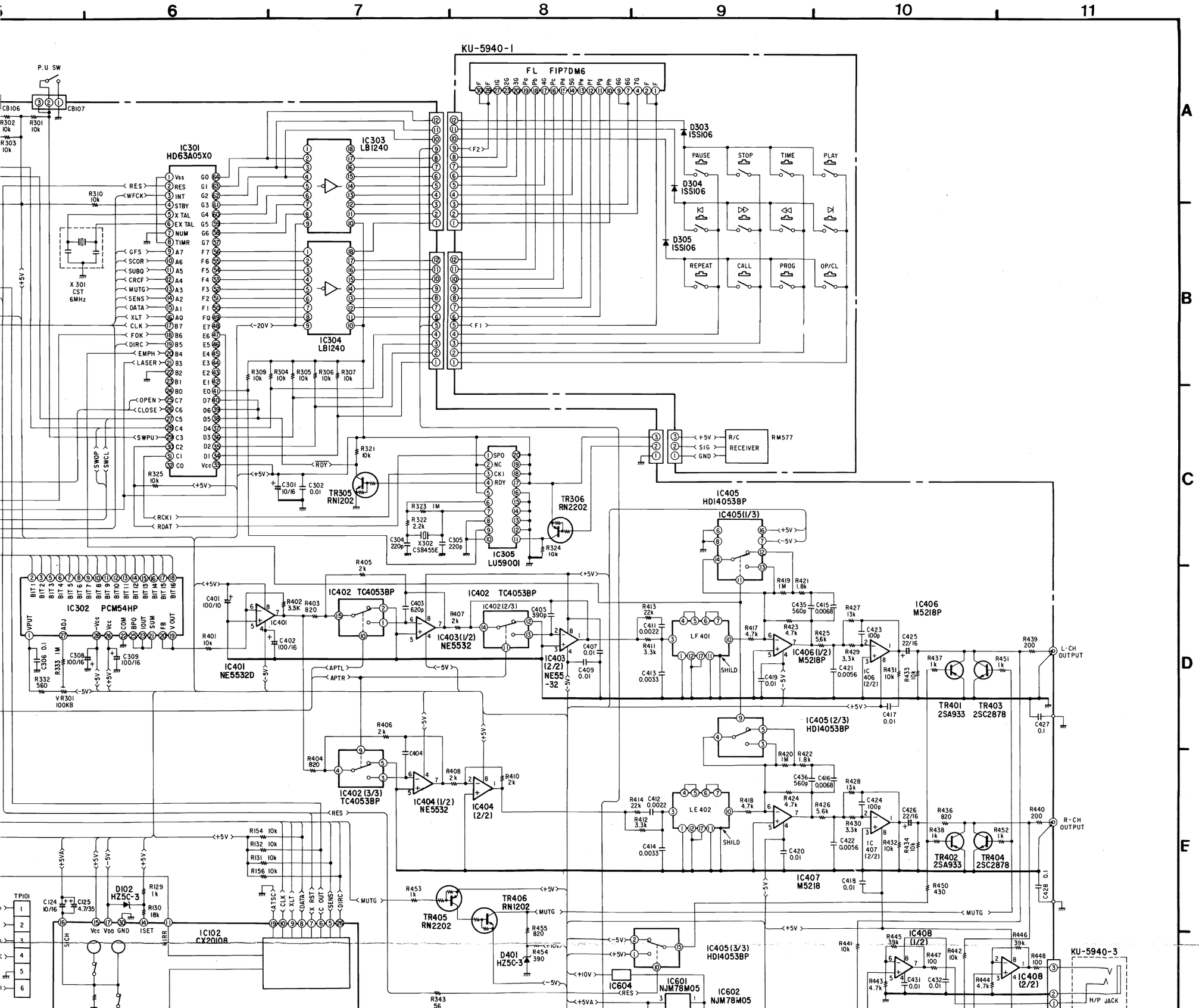
GFS CTCP RFCK WFCK SCOR SUBQ SBSO EXCX CRCF MUTG SENS CNIN XRST DATA XLT CLK PDO TEST VCOI VCOO MIRR ASY EFM MDS MDP MON FSW

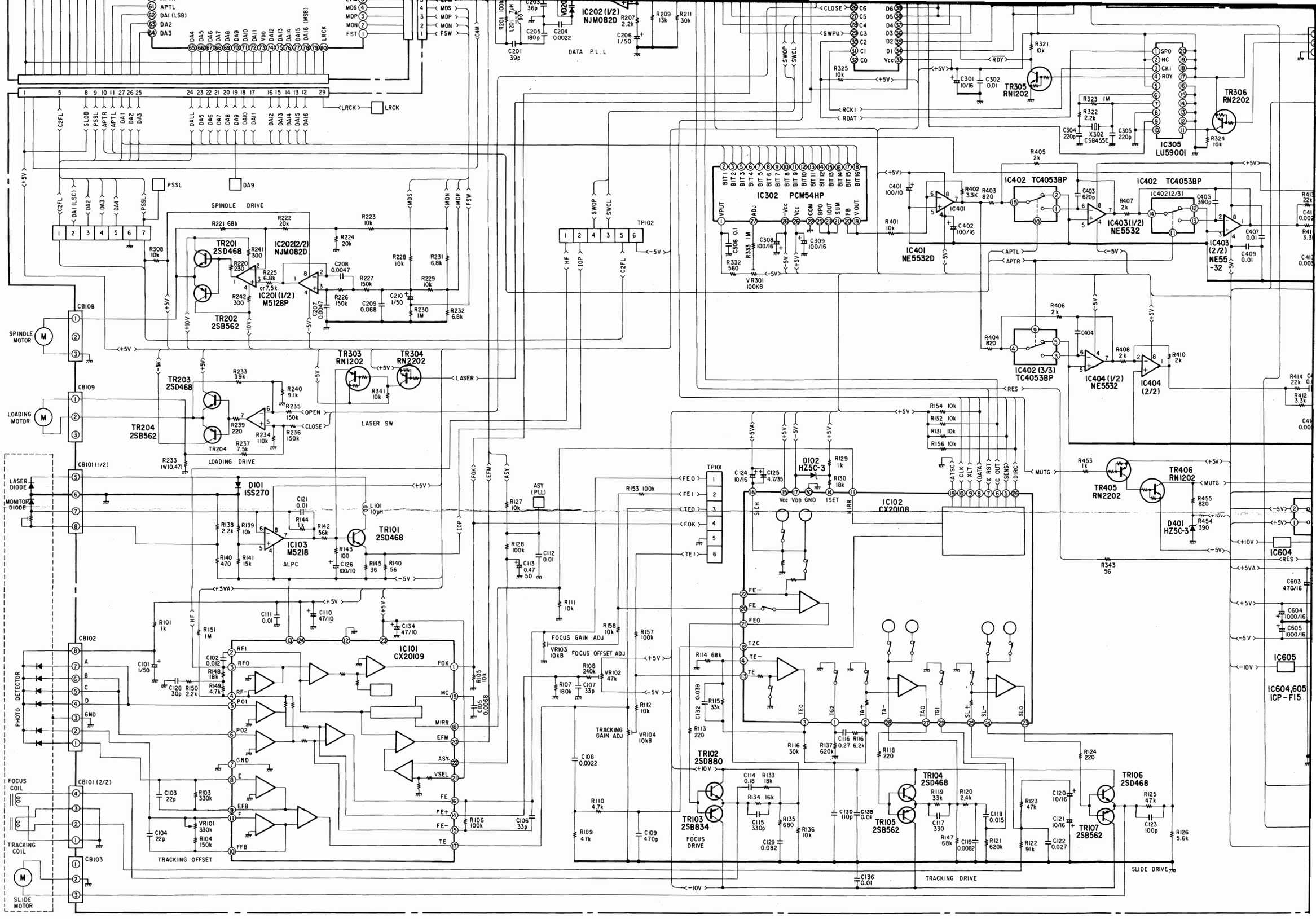
RES WFCK INT STBY X TAL EX TAL NUM TIMR GFS SCOR SUBQ CRCF MUTG SENS DATA XLT CLK FOK DIRC EMPH LASER OPEN CLOSE SWPU RCKI RDAT

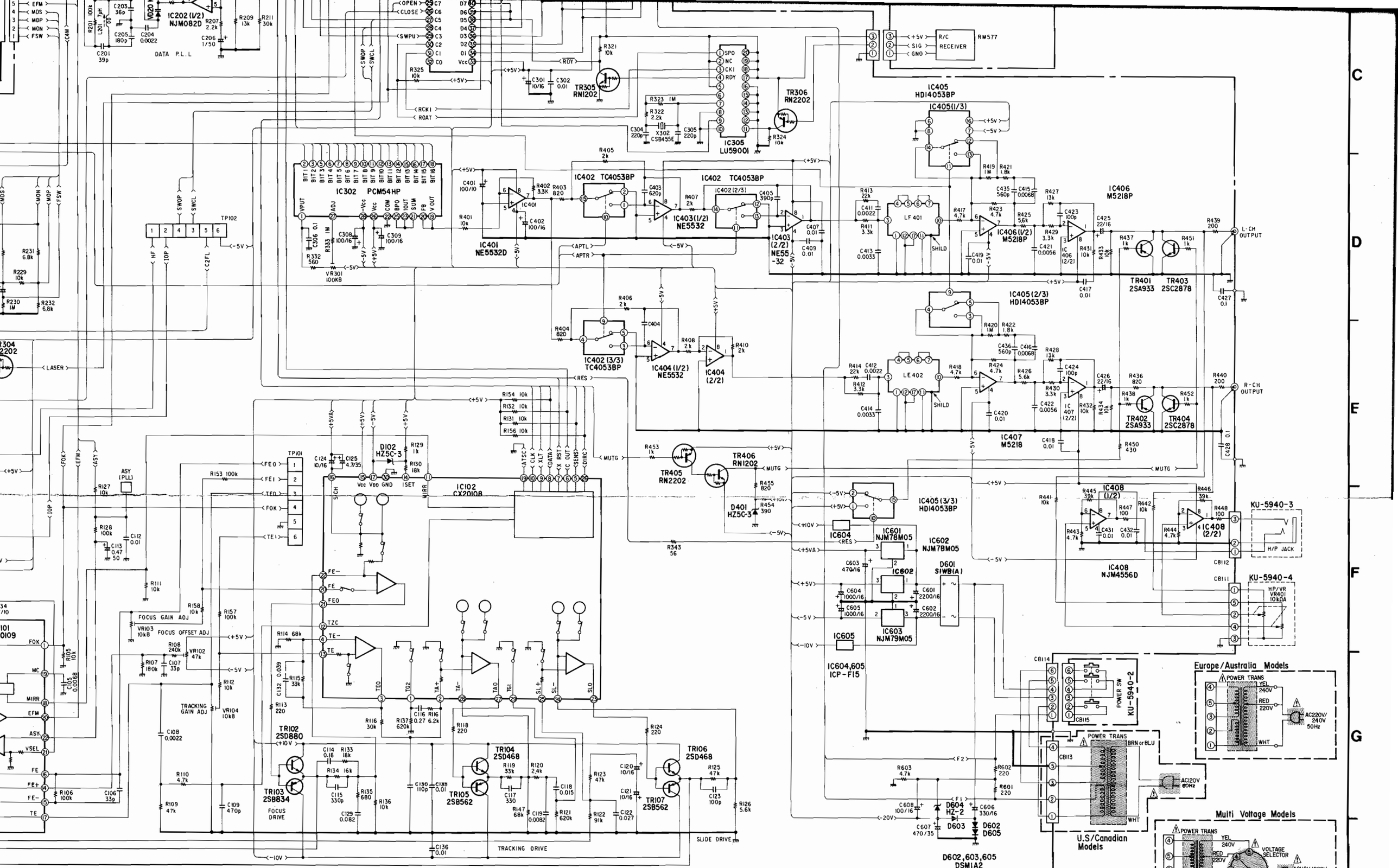
SWOP SWCL HF IOP C2FL

PSSL DA9 LRCK

F1 F2 -20V +5V -5V +10V -10V


KU-5940-1
FL FIP7DM6
P.U SW
CB106
CB107
R302 10k
R301 10k
R303 10k
IC301 HD63A05X0
Vss
RES
INT
STBY
X TAL
EX TAL
NUM
TIMR
A7
A6
A5
A4
A3
A2
A1
A0
B7
B6
B5
B4
B3
B2
B1
B0
C7
C6
C5
C4
C3
C2
C1
C0
Vcc
G0
G1
G2
G3
G4
G5
G6
G7
F7
F6
F5
F4
F3
F2
F1
F0
E7
E6
E5
E4
E3
E2
E1
E0
D7
D6
D5
D4
D3
D2
D1
D0
R310 10k
X301 CST 6MHz
GFS
SCOR
SUBQ
CRCF
MUTG
SENS
DATA
XLT
CLK
FOK
DIRC
EMPH
LASER
OPEN
CLOSE
SWPU
SWOP
SWCL
RCKI
RDAT
IC303 LB1240
IC304 LB1240
-20V
R309 10k
R304 10k
R305 10k
R306 10k
R307 10k
R321 10k
R325 10k
C301 10/16
C302 0.01
TR305 RN1202
RDY
SPO
NC
CKI
RDY
R323 1M
R322 2.2k
C304 220p
X302 CSB455E
C305 220p
IC305 LU5900I
TR306 RN2202
R324 10k
F2
F1
D303 1SS106
D304 1SS106
D305 1SS106
PAUSE
STOP
TIME
PLAY
REPEAT
CALL
PROG
OP/CL
+5V
R/C RECEIVER
SIG
GND
RM577
IC405 HDI4053BP
IC405(1/3)
R419 1M
R421 1.8k
IC406 M5218P
R427 13k
C435 560p
C415 0.0068
C423 100p
C425 22/16
R429 3.3k
C421 0.0056
R431 10k
R433 10k
IC406 (2/2)
R439 200
L-CH OUTPUT
R437 1k
R451 1k
TR401 2SA933
TR403 2SC2878
C427 0.1
C417 0.01
IC405(2/3) HDI4053BP
R420 1M
R422 1.8k
IC407 M5218
C436 560p
C416 0.0068
C424 100p
C426 22/16
R428 13k
R430 3.3k
C422 0.0056
R432 10k
R434 10k
IC407 (2/2)
R440 200
R-CH OUTPUT
R438 1k
R452 1k
TR402 2SA933
TR404 2SC2878
C428 0.1
C418 0.01
R450 430
C420 0.01
R413 22k
C411 0.0022
R411 3.3k
C413 0.0033
LF 401
SHILD
R417 4.7k
R423 4.7k
R425 5.6k
C419 0.01
R414 22k
C412 0.0022
R412 3.3k
C414 0.0033
LE 402
R418 4.7k
R424 4.7k
R426 5.6k
IC402 TC4053BP
IC402(2/3)
R405 2k
C401 100/10
R402 3.3K
R403 820
C403 620p
R407 2k
IC403(1/2) NE5532
C405 390p
C407 0.01
C409 0.01
IC403 (2/2) NE55 -32
IC401 NE5532D
C402 100/16
R401 10k
APTL
APTR
IC402 (3/3) TC4053BP
R406 2k
R404 820
C404
R408 2k
IC404 (1/2) NE5532
IC404 (2/2)
R410 2k
IC302 PCM54HP
VPUT
ADJ
-Vcc
Vcc
COM
BPO
IOUT
SUM
FB
V OUT
C306 0.1
C308 100/16
C309 100/16
R333 1M
R332 560
VR301 100KB
IC102 CX20108
TPI01
C124 10/16
C125 4.7/35
D102 HZ5C-3
R129 1k
R130 18k
Vcc
Vdd
GND
ISET
NIRR
S/CH
R154 10k
R132 10k
R131 10k
R156 10k
ATSC
CLK
XLT
DATA
X RST
C OUT
SENS
DIRC
MUTG
TR405 RN2202
TR406 RN1202
R453 1k
R455 820
D401 HZ5C-3
R454 390
R343 56
IC604
RES
IC601 NJM78M05
IC602 NJM78M05
IC405(3/3) HDI4053BP
IC408 (1/2)
IC408 (2/2)
R441 10k
R445 39k
R447 100
R442 10k
R446 39k
R448 100
R443 4.7k
C431 0.01
C432 0.01
R444 4.7k
KU-5940-3
H/P JACK


IC202 (1/2) NJM082D
DATA P.L.L
IC302 PCM54HP
IC402 TC4053BP
IC401 NE5532D
IC403 (1/2) NE5532
IC403 (2/2) NE55-32
IC404 (1/2) NE5532
IC404 (2/2)
IC305 LU59001
TR305 RN1202
TR306 RN2202
SPINDLE DRIVE
TR201 2SD468
IC201 (1/2) M5128P
TR202 2SB562
SPINDLE MOTOR
TR203 2SD468
TR204 2SB562
LOADING MOTOR
LOADING DRIVE
TR303 RN1202
TR304 RN2202
LASER SW
LASER DIODE
MONITOR DIODE
DI01 ISS270
IC103 M5218 ALPC
TR101 2SD468
IC101 CX20109
FOCUS GAIN ADJ
FOCUS OFFSET ADJ
TRACKING GAIN ADJ
TRACKING OFFSET
FOCUS COIL
TRACKING COIL
SLIDE MOTOR
PHOTO DETECTOR
IC102 CX20108
DI02 HZ5C-3
TR102 2SD880
TR103 2SB834
FOCUS DRIVE
TR104 2SD468
TR105 2SB562
TRACKING DRIVE
TR106 2SD468
TR107 2SB562
SLIDE DRIVE
TR405 RN2202
TR406 RN1202
D401 HZ5C-3
IC604 <RES
IC605
IC604,605 ICP-F15
CB101
CB101 (1/2)
CB101 (2/2)
CB102
CB103
CB108
CB109
TP101
TP102
DA9
PSSL
LRCK
MDS
MDP
MON
FSW
SWOP
SWCL
RDY
RCKI
RDAT
RES
MUTG



NOTE 1. UNLESS OTHERWISE SPECIFIED, ALL RESISTOR VALUES IN OHMS, 1/4 WATT.
2. UNLESS OTHERWISE SPECIFIED, ALL CAPACITANCE VALUES ARE IN μF, P=PF
3. THIS SCHEMATIC DIAGRAM IS BASIC CIRCUITRY AND SUBJECT TO CHANGE, WITHOUT NOTICE FOR FURTHER IMPROVEMENT.

SCHEMATIC DIAGRAM DCD-500

1 2 3 4 5 6 7 8

A B C D E

KU-5860 DIGITAL SIG.PRO. UNIT

KU-5941 SERVO & SIG.PRO. UNIT

KU-5941-1

IC002 HM6116FP-4

IC001 CX23035

X001 8467.2 101

C001 20p

C002 20p

C003 0.01

C004 100/10

HOLDER SW OPEN CLOSE

P.U SW

CB106

CB107

R302 10k

R301 10k

R303 10k

TR301 2SC1740

TR302 2SC1740

D301 HZ-48-2

D302 ISS270

R312 470

R313 3.3k

R314 2.4k

R315 7.5k

R316 100

R331 100

R342 56

C303 2.2/50

C310 0.1

IC301 HD6305X0

R310 10k

X 301 CST 6MHz

IC303 LB1240

IC304 LB1240

FL FIP7DM6

R304 10k

R305 10k

R306 10k

R307 10k

C301 10/16

C302 0.01

R205 4.7k

R206 33k

R208 9.1k

R210 30k

R209 13k

R211 30k

R207 2.2k

C206 1/50

R203 100k

R202 100k

R204 1k

VD20 KV1280

C202 0.0022

C203 36p

C204 0.0022

C205 180p

C201 39p

R201 100k

L201 7μH

IC202(1/2) NJM082D

DATA P.L.L

IC302 PCM54HP

VR301 100KB

IC401 NE5532

IC402 TC4053BP

IC403(1/2) NE5532

IC403 (2/2) NE55 -32

IC404 (1/2) NE5532

IC404 (2/2)

IC402 (2/3) TC4053BP

IC402 (3/3) TC4053BP

R405 2k

R406 2k

R407 2k

R408 2k

R410 2k

R401 10k

R402 3.3K

R403 820

R404 820

C401 100/10

C402 100/16

C403 620p

C404

C405 390p

C407 0.01

C409 0.01

C306 0.1

C308 100/16

C309 100/16

R332 560

R333 1M

R413 22k

C411 0.0022

R411 3.3k

C413 0.0033

R414 22k

C412 0.0022

R412 3.3k

C414 0.0033

SPINDLE DRIVE

R221 68k

R222 20k

R223 10k

R224 20k

R228 10k

R231 6.8k

R229 10k

R232 6.8k

R308 10k

TR201 2SD468

TR202 2SB562

IC201(1/2) M5218P

R220 230

R225 3.6.8k or 7.5k

R241 300

R242 300

C208 0.0047

C209 0.068

C210 1/50

C207 0.0047

R226 150k

R227 150k

R230 1M

CB108

SPINDLE MOTOR

CB109

LOADING MOTOR

TR203 2SD468

TR204 2SB562

TR204

R233 39k

R240 9.1k

R235 150k

R234 110k

R236 150k

R237 7.5k

R239 220

R233 1W(0.47)

LOADING DRIVE

TR303 RN1202

TR304 RN2202

R341 10k

LASER SW

CB101(1/2)

LASER DIODE

MONITOR DIODE

DI01 ISS270

C121 0.01

R144 1k

L101 10μH

TR101 2SD468

IC103 M5218

ALPC

R138 2.2k

R139 10k

R140 470

R141 15k

R142 56k

R143 100

C126 100/10

R145 36

R140 56

R127 10k

R128 100k

C112 0.01

C113 0.47

ASY (PLL)

TP101

R153 100k

TP102

IC102 CX20108

DI02 HZ5C-3

C124 10/16

C125 4.7/35

R129 1k

R130 18k

R154 10k

R132 10k

R131 10k

R156 10k

TR405 RN2202

TR406 RN1202

R453 1k

R455 820

DI03 HZ5C-3 390

R343 56

IC604

C2FL SLOB PSSL APTR APTL DA1 DA2 DA3 DA4 DA5 DA6 DA7 DA8 DA9 DA10 DA11 DA12 DA13 DA14 DA15 DA16 LRCK

GFS CTCP RFCK WFCK SCOR SUBQ SBSO EXCX CRCF MUTG SENS CNIN XRST DATA XLT CLK PDO TEST VCOI VCOO MIRR ASY EFM MDS MDP MON FST C4M

HF IOP C2FL SWOP SWCL

FOK EFM ASY MDS MDP MON FSW

RES WFCK SCOR SUBQ CRCF MUTG SENS DATA XLT CLK FOK DIRC EMPH LASER OPEN CLOSE SWPU

APTL APTR

+5V -5V +10V -10V +5VA -20V

4 5 6 7 8 9 10 11

IG. PRO. UNIT

KU-5941-1

HOLDER SW
OPEN
CLOSE
P.U SW
CB106
CB107
R302 10k
R301 10k
R303 10k

IC301 HD6305X0
IC303 LB1240
IC304 LB1240

FL FIP7DM6

D303 ISS106
D304 ISS106
D305 ISS106
PAUSE
STOP
TIME
PLAY
REPEAT
CALL
PROG
OP/CL

TR301 2SC1740
TR302 2SC1740
D301 HZ-48-2
D302 ISS270
R312 470
R313 3.3k
R314 2.4k
R315 7.5k
R316 100
R342 56
C303 2.2/50
C310 0.1

X 301 CST 6MHz
R310 10k

RES
WFCK
GFS
SCOR
SUBQ
CRCF
MUTG
SENS
DATA
XLT
CLK
FOK
DIRC
EMPH
LASER
OPEN
CLOSE
SWPU
XRST
-5V
+5V
-20V
F1
F2

R304 10k
R305 10k
R306 10k
R307 10k

C301 10/16
C302 0.01

IC405 HDI4053BP
IC405(1/3)
IC405(2/3) HDI4053BP
IC405(3/3) HDI4053BP

IC406 M5218P
IC406(1/2) M5218P
IC406 (2/2)
IC407 M5218
IC407 (2/2)

LF 401
LE 402
SHILD

TR401 2SA933
TR402 2SA933
TR403 2SC2878
TR404 2SC2878

L-CH OUTPUT
R-CH OUTPUT

IC408 (1/2)
IC408 (2/2)
KU-5941-3
H/P JACK
CB112

IC302 PCM54HP
BIT1 BIT2 BIT3 BIT4 BIT5 BIT6 BIT7 BIT8 BIT9 BIT10 BIT11 BIT12 BIT13 BIT14 BIT15 BIT16
VPUT ADJ Vcc Vcc COM BPO IOUT SUM IB VOUT
C306 0.1
C308 100/16
C309 100/16
R332 560
R333 1M
VR301 100KB

IC401 NE5532
IC402 TC4053BP
IC403(1/2) NE5532
IC403 (2/2) NE55-32
IC404 (1/2) NE5532
IC404 (2/2)
IC402 (2/3) TC4053BP
IC402 (3/3) TC40538P

R401 10k
R402 3.3K
R403 820
R404 820
R405 2k
R406 2k
R407 2k
R408 2k
R410 2k
C401 100/10
C402 100/16
C403 620p
C404
C405 390p
C407 0.01
C409 0.01

APTL
APTR

TPI02
HF
IOP
C2FL
SWOP
SWCL

TPI01
FEO
FEI
TEO
FOK
TE I

IC102 CX20108
D102 HZ5C-3
R129 1k
R130 18k
C124 10/16
C125 4.7/35
R153 100k
R154 10k
R132 10k
R131 10k
R156 10k
SICH
MIRR
ISET
ATSC
CLK
XLT
DATA
X'RST
C OUT
SENS
DIRC

TR405 RN2202
TR406 RN1202
D201 HZ5C-3
R453 1k
R455 820
R343 56

IC604
IC601 NJM78M05
IC602 NJM78M05 or NJM7805

R413 22k
R411 3.3k
R413 0.0033
R417 4.7k
R423 4.7k
R425 5.6k
R427 13k
R429 3.3k
C411 0.0022
C413 0.0033
C415 0.0068
C419 0.01
C421 0.0056
C423 100p
C425 22/16
C435 560p
R419 1M
R421 1.8k
R431 10k
R433 10k
C417 0.01

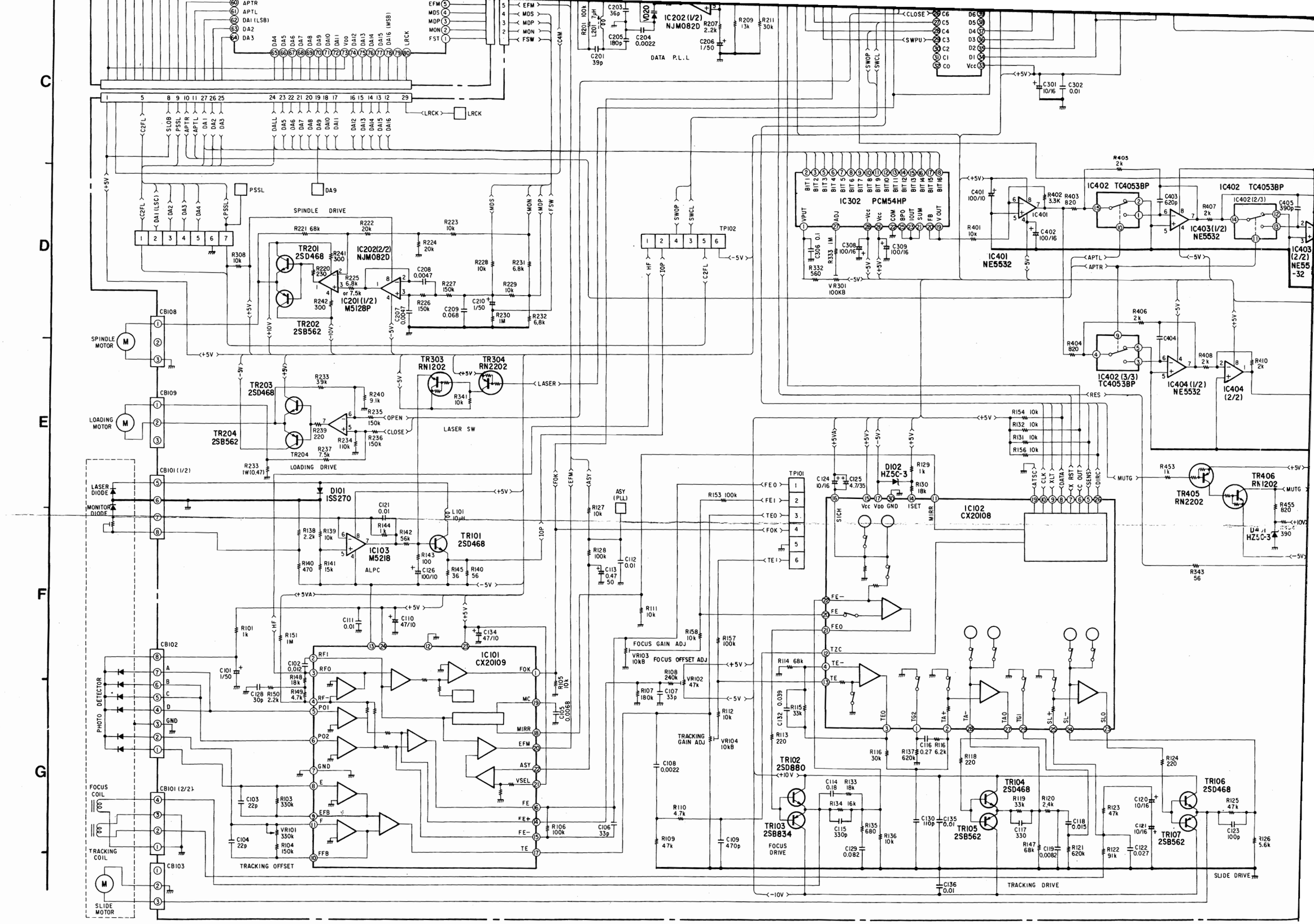
R414 22k
R412 3.3k
C414 0.0033
C412 0.0022
R418 4.7k
R424 4.7k
R426 5.6k
R428 13k
R430 3.3k
C420 0.01
C422 0.0056
C424 100p
C426 22/16
C436 560p
C416 0.0068
R420 1M
R422 1.8k
R432 10k
R434 10k
C418 0.01
R450 430

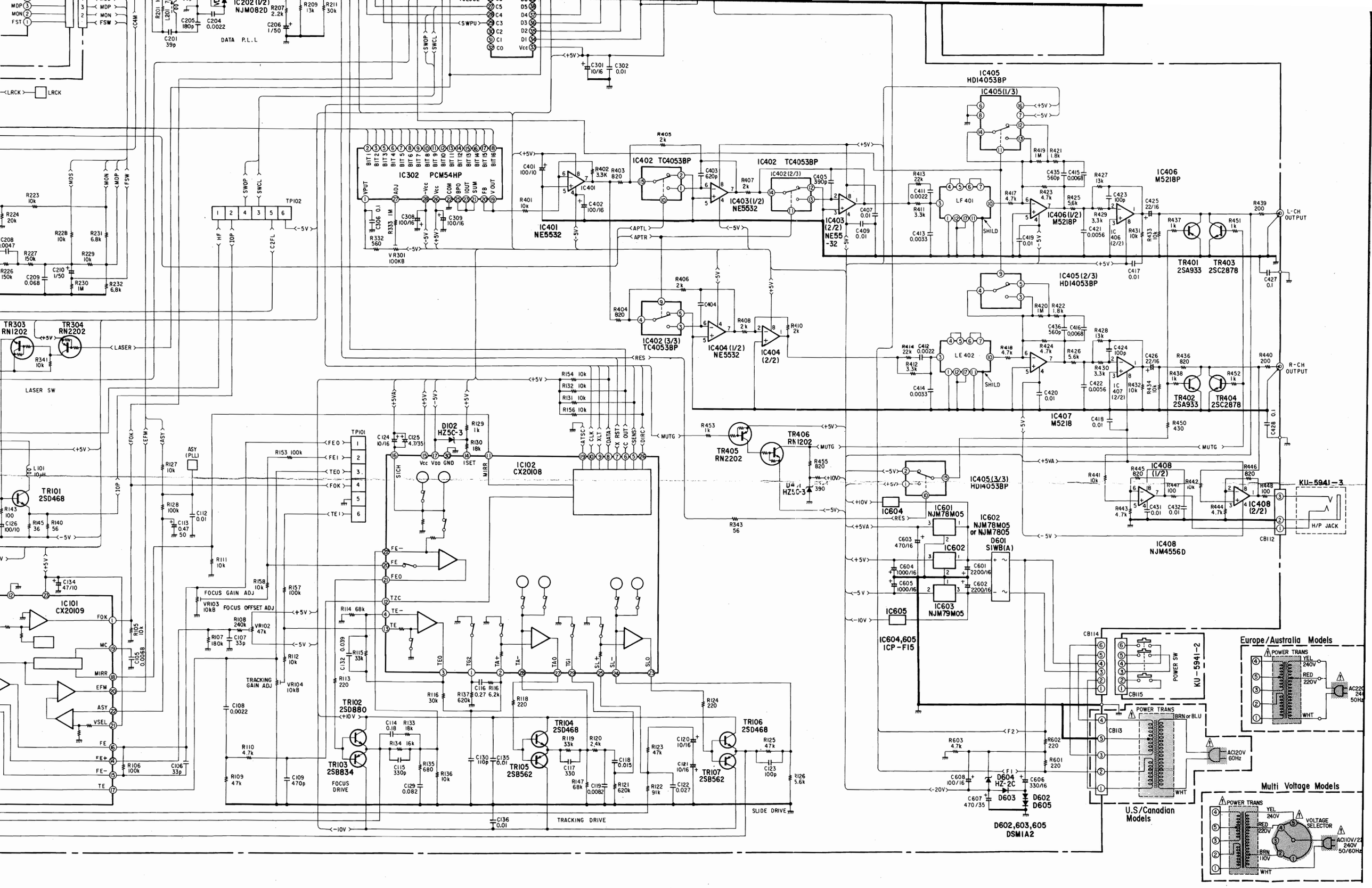
R441 10k
R443 4.7k
R444 4.7k
R445 820
R446 820
R447 100
R448 100
R442 10k
C431 0.01
C432 0.01

R436 820
R438 1k
R440 200
R437 1k
R439 200
R451 1k
R452 1k
C427 0.1
C428 0.1

R202 100k
R203 100k
R204 1k
R205 4.7k
R206 33k
R207 2.2k
R208 91k
R209 13k
R210 30k
R211 30k
C202 0.0022
C203 36p
C204 0.0022
C205 180p
C206 1/50
VD20 KV1260
IC202(1/2) NJM082D
DATA P.L.L

C112 0.01
C113 0.47/50
ASY (PLL)


IC202(1/2) NJM082D
DATA P.L.L
IC302 PCM54HP
IC401 NE5532
IC402 TC4053BP
IC403(1/2) NE5532
IC403(2/2) NE55-32
IC404(1/2) NE5532
IC404 (2/2)
IC402 (3/3) TC4053BP
IC201(1/2) M5128P
IC202(2/2) NJM082D
IC101 CX20109
IC102 CX20108
IC103 M5218
TR101 2SD468
TR102 2SD880
TR103 2SB834
TR104 2SD468
TR105 2SB562
TR106 2SD468
TR107 2SB562
TR201 2SD468
TR202 2SB562
TR203 2SD468
TR204 2SB562
TR303 RN1202
TR304 RN2202
TR405 RN2202
TR406 RN1202
D101 1SS270
D102 HZ5C-3
SPINDLE DRIVE
LOADING DRIVE
LASER SW
FOCUS GAIN ADJ
FOCUS OFFSET ADJ
TRACKING GAIN ADJ
TRACKING OFFSET
TRACKING DRIVE
FOCUS DRIVE
SLIDE DRIVE
ALPC
SPINDLE MOTOR
LOADING MOTOR
SLIDE MOTOR
LASER DIODE
MONITOR DIODE
PHOTO DETECTOR
FOCUS COIL
TRACKING COIL
CB101(1/2)
CB101(2/2)
CB102
CB103
CB108
CB109
TP101
TP102



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DENON

NIPPON COLUMBIA CO., LTD.
No. 14-14, 4-CHOME AKASAKA,
MINATO-KU, TOKYO 107 JAPAN
TEL. 03-584-8111
TLX. JAPANOLA J22591
CABLE. NIPPONCOLUMBIA TOKYO

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