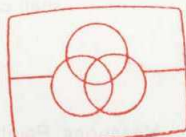


AIWA® SERVICE MANUAL

S/M Code No. 85-045

DATE OF ISSUE 10/1985-S



Free service manuals

Gratis schema's

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TYPE. HB,UB,CB,EB,KB,GB

MODEL NO.

**COMPACT DISC
PLAYER**

DX-770



MODEL NO.

**COMPACT DISC
PLAYER**

DX-1500



Follow the instructions carefully, which will allow the user to optimise the products' performance and give many years of service.

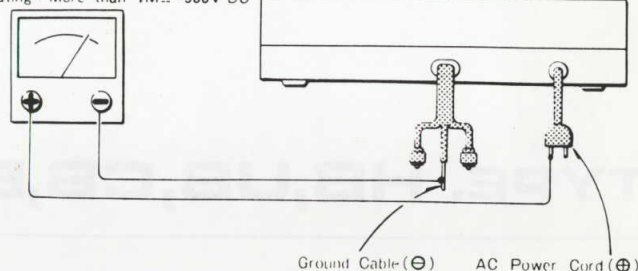
1. No scratch and melting shall be made to covered lead-wires of an a.c. primary circuit including mains leads.
2. No illegibility shall be given to the specification plate, the caution labels, the fuse labels and others.
3. When, on pattern sides of circuit boards, additional repair-parts have been made up, the parts shall be firmly glued to circuit boards or other components, unless the parts can be attached firmly.
4. The following matters shall be maintained as they are, when repairing.
 - 1) Soldering of lead-wire ends
 - * Care should be taken of the space distance in an a.c. primary circuit as well as soldering.
 - 2) Wiring and holding of lead-wires with wire-clips and binders
 - 3) Materials of lead-wires
 - * e.g.; For UL models, lead-wires to be used shall be approved or accepted by the UL.
 - 4) Location of all kinds of insulators
 - 5) Setting of voltage selector switch
 - * Set the Voltage Selector Switch to 240V, 220V, or 120V, According to your Local Voltage.
5. After repaired, the insulation resistance or leakage current shall be measured with $500 \pm 5V$ D.C and shall be not less than $1M\Omega$.

6. General instructions for mechanism repair

- 1) E-rings and poly slider washers shall be replaced with new ones, if once those have been removed. — No re-utilization due to unreliability.
- 2) Regular spare-parts shall always be used for repair, because using irregular parts and tampering with the products shall cause deterioration, malfunction and damage.

Measuring Point

Rating : More than $1M\Omega$ / 500V DC



SPECIFICATIONS

Type:	Compact disc digital audio system
Disc:	Compact disc
Scanning method:	Non contact optical scanner (semiconductor laser application)
Laser:	Semiconductor laser ($\lambda=780$ nm)
Rotation speed:	Approx. 500 rpm — 200 rpm (CLV)
Error correction:	Cross Interleave, Read Solomon Code
No. of channels:	2 channels
D-A conversion:	16-bit linear
Frequency response:	2 Hz—20 kHz ± 1.0 dB
Harmonic distortion:	0.004%
Dynamic range:	90 dB or more
Channel separation:	over 90 dB
Wow/Flutter:	Unmeasurable
Output terminal:	Terminal type: Pin jack
(LINE OUT)	Maximum output level: 2V (50k Ω) Load impedance: 10k Ω or more
Headphones:	0 — 12mW (0dB/32 Ω)(DX-1500 ONLY)

Disc specifications

Playing time:	Approx. 60 minutes (max. 74 minutes)
Dimensions:	Diameter 120 mm, thickness 1.2 mm
Track pitch:	1.6 μ m
Sampling frequency:	44.1 kHz

Remote controller (DX-1500 ONLY)

Clock frequency:	38 kHz
Power source:	3V (SUM-3, R6P)
Power consumption:	30 mA or less (average during transmission) 10 μ A (non-operating)
Transmission angle:	$\pm 40^\circ$
Transmission distance:	Approx. 7 m
Maximum external dimensions:	50(W) $\times$ 18(H) $\times$ 160(D)mm
Weight:	100 g (including batteries)

Power and Miscellaneous

Power supply:

DX-1500H
AC 120V/220V/240V,
50/60 Hz
DX-1500E, Z
AC 220V, 50/60 Hz
DX-1500K, G
AC 240V, 50/60 Hz
DX-1500U, C
AC 120V, 60 Hz

DX-770H
AC 120V/220V/240V,
50/60 Hz
DX-770E, Z
AC 220V, 50/60 Hz
DX-770K, G
AC 240V, 50/60 Hz
DX-770U, C
AC 120V, 60 Hz

Power consumption:	DX-1500H, E, Z 12W
	DX-1500K, G 12W
	DX-1500U 16W
	DX-1500C 16W

Power consumption:	DX-770H, E, Z 12W
	DX-770K, G 12W
	DX-770U 16W
	DX-770C 16W

Dimensions: 330(W) $\times$ 74(H) $\times$ 306.5(D)mm

Weight: 3.4 kg

Accessories: Stereo pin cord (1)
Synchro-recording cord (1)

• Design and specifications are subject to change without notice.

PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs a laser. Therefore, be sure to follow carefully the instructions below when servicing.

WARNING !!

WHEN SERVICING, DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY. IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION, BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 30 cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.

1. Laser Diode Properties

- Material: GaAlAs
- Wavelength: 780 nm
- Emission Duration: continuous
- Laser Output: max. 0.6 mW*

* This output is the value measured at a distance of about 1.6 mm from the objective lens surface on the Optical Pick-up Block.

- Classification: Class IIIb

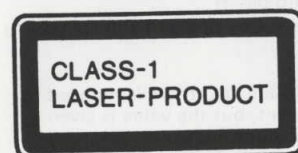
2. During service, do not take the Optical Pick-up Block apart, and do not adjust the APC circuit. If there is a breakdown in the APC circuit (including laser diode), replace the entire Optical Pick-up Block (including APC board).

LASER WARNING LABELS

The labels shown below are affixed.

1. Protective Housing Label

WARNING Label 1 (E,K model)



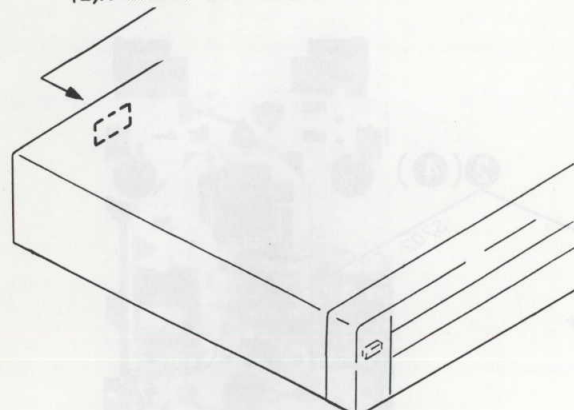
2. WARNING Label 4 (E,K,G model)

LASER APERTURE

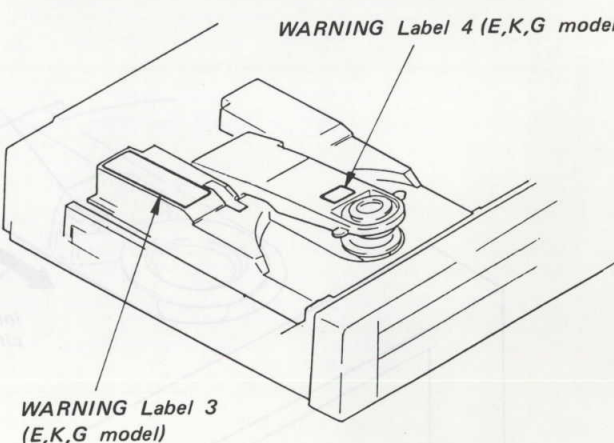
3. WARNING Label 3 (E,K,G model)

CAUTION : INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCKS DEFEATED. AVOID EXPOSURE TO BEAM.
ADVARSEL : USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHEDSÅFBRYDERE ER UDE AF FUNKTION. UNDGÅ UDSÆTTELSE FOR STRÅLING.

WARNING Label 1
(E,K model)



WARNING Label 4 (E,K,G model)



WARNING Label 3
(E,K,G model)

The power SW is provided at the secondary side. Accordingly, all the works should be conducted with the AC cord being disconnected.

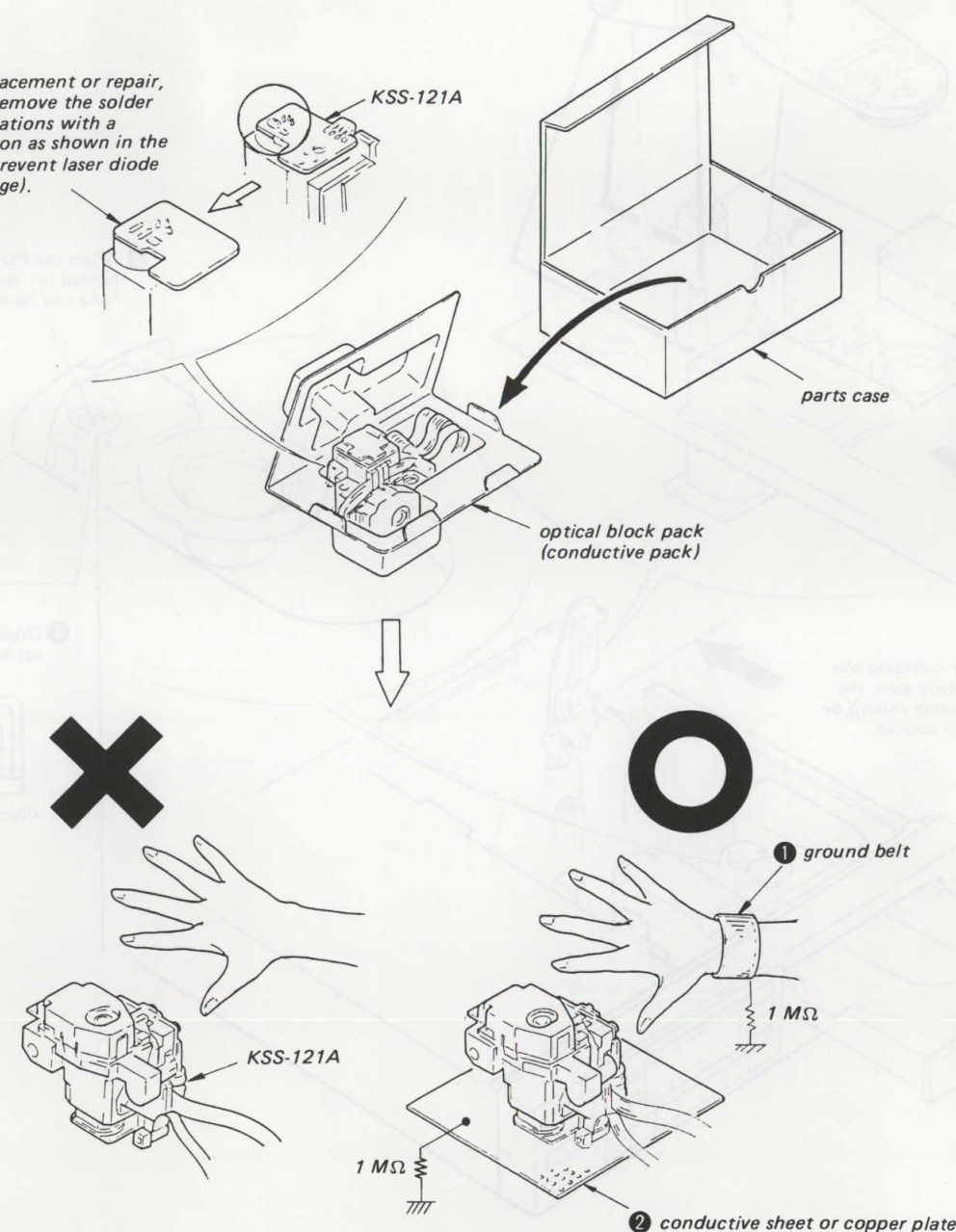
NOTES ON HANDLING THE OPTICAL BLOCK (KSS-121A)

The laser diode inside the optical block may be damaged by static electricity in clothes or the human body.

The following procedures are required when unpacking and repairing KSS-121A in order to avoid static electricity damage.

1. Body grounding
Be sure to wear a ground belt (less than $10^8 \Omega$) in order to release the static electricity stored in the body.
2. Workbench grounding
Place a conductive sheet (less than $10^9 \Omega$) or copper plate on the bench where KSS-121A is to be placed to ground it.
3. Static electricity in the clothing will not be released by the ground belt, so be careful not to let KSS-121A touch clothing.

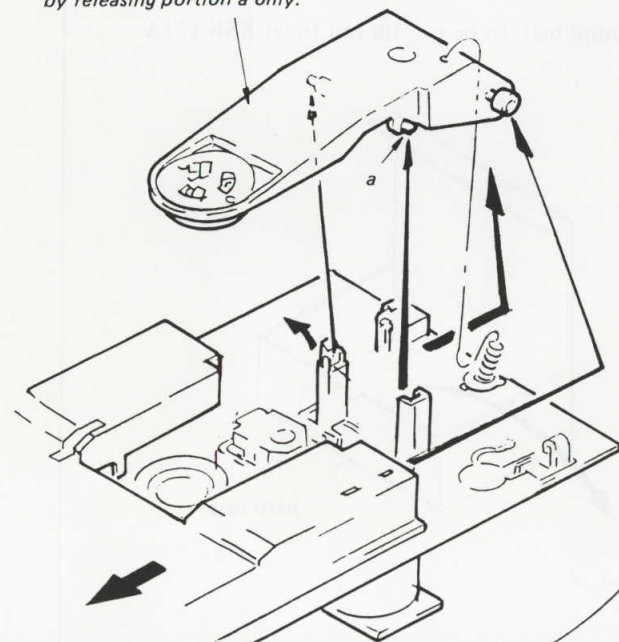
During replacement or repair, be sure to remove the solder at these locations with a soldering iron as shown in the figure (to prevent laser diode static damage).



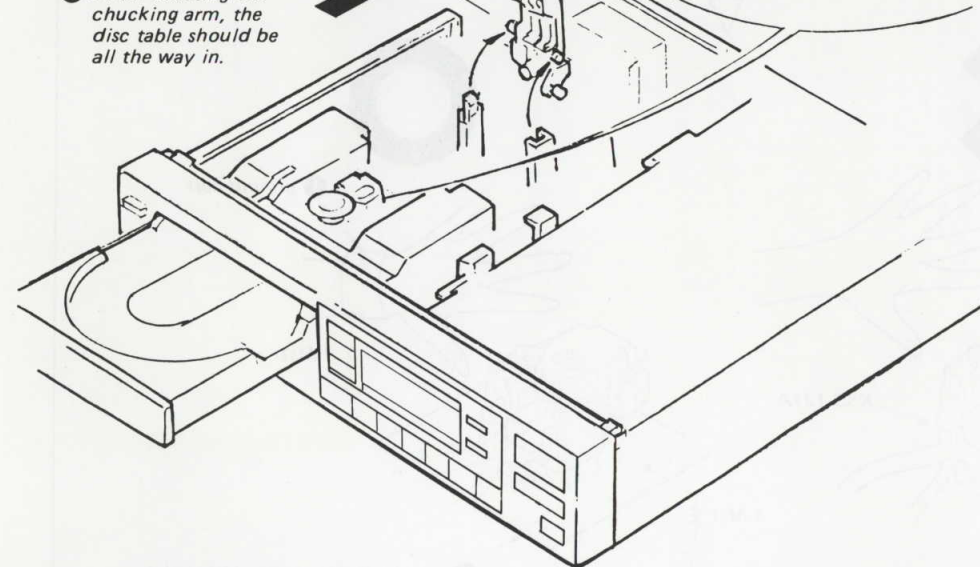
NOTES ON CHECKING LASER DIODE LIGHT EMISSION

The laser beam on this set is converged by the objective lens in the optical block so that it focuses on the disc reflective surface. Therefore, when checking light emission of the laser diode, be sure to keep the eyes more than 30 cm away from the objective lens.

- 1 Release chucking arm.
This figure shows the entire chucking arm released, but checking can be done by releasing portion a only.



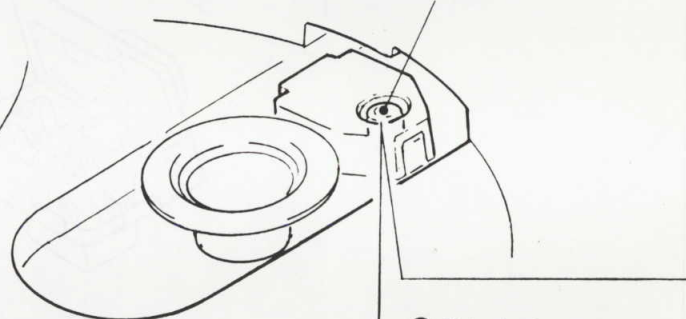
- 2 After releasing the chucking arm, the disc table should be all the way in.



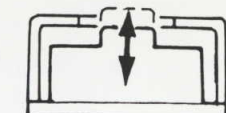
CHECKING LASER DIODE AND FOCUS SEARCH OPERATION

Check if the following operation is performed by looking at the objective lens after releasing the chucking arm and turning the POWER switch on. (Optical block should be at the innermost circumference when checking.)

- 3 When the POWER switch is turned on, diffused laser light can be seen.



- 4 Objective lens moves up and down (2 - 3 times)



objective lens side view

DIAGNOSIS OF OPTICAL BLOCK (KSS-121A) BREAKDOWN

1. Follow the procedure below to determine if the optical block has broken down.
When the judgement can not be made with [A], reconfirm with [B].

[A]

- 1 Check optical block connectors (CP101, 102, 201)

YES

Turn POWER switch ON.

YES

- 2 Check to see if the optical block is set at the innermost circumference. (When S702 is ON the optical block is at the innermost circumference.)

YES

[Sight Check]

Note: Do not look directly at the laser beam. Keep the eyes at least 30 cm away.

- 3 Is laser diode emitting light?
Is focus search operating?
(2 - 3 times)
See page 6 for operation confirmation.

YES

Optical block is not defective.

NO

[Electrical Check]

- 4 Laser switch (S701) should be on.
- 5 Laser diode (L.D) ON/OFF signal (IC106 pin 32) should be "H".
- 6 Voltage at both sides of R211 (22 Ω) should be -1.5 ± 0.4 V.

If steps 4 - 6 are OK, there is no need to measure laser current, but the value is given below for reference purposes.
Reference: laser current is 60 - 90 mA.

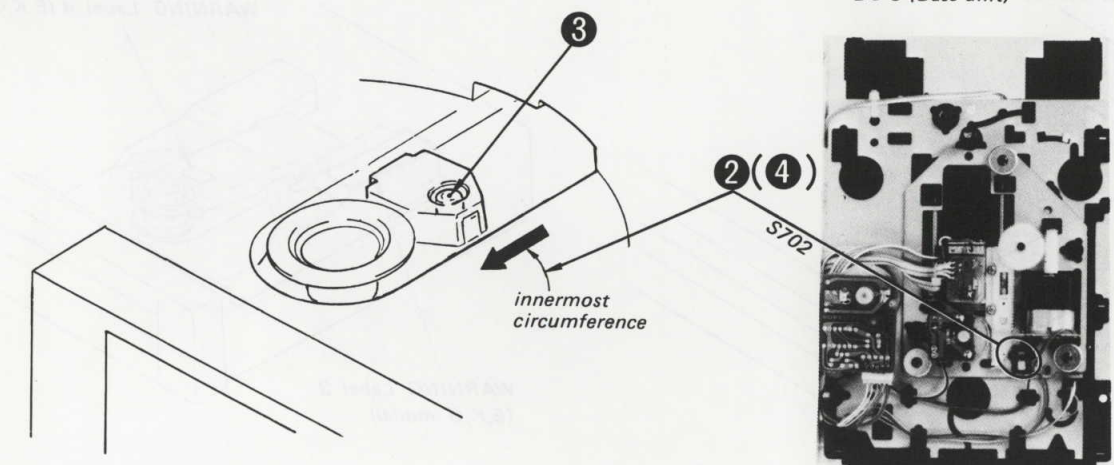
YES

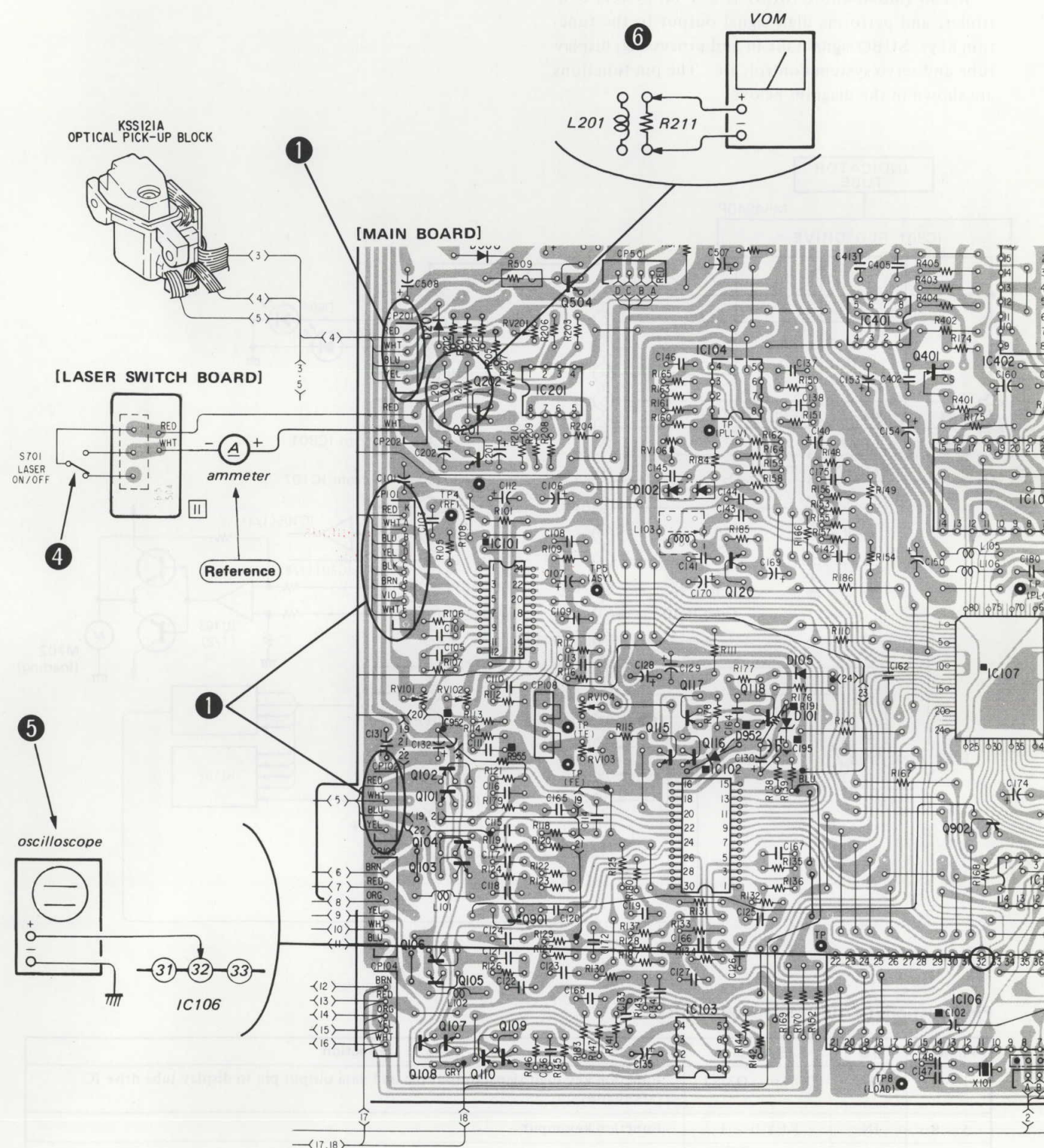
Optical block is defective.

NO

APC circuit, micro-computer or other circuit on the main board is defective.

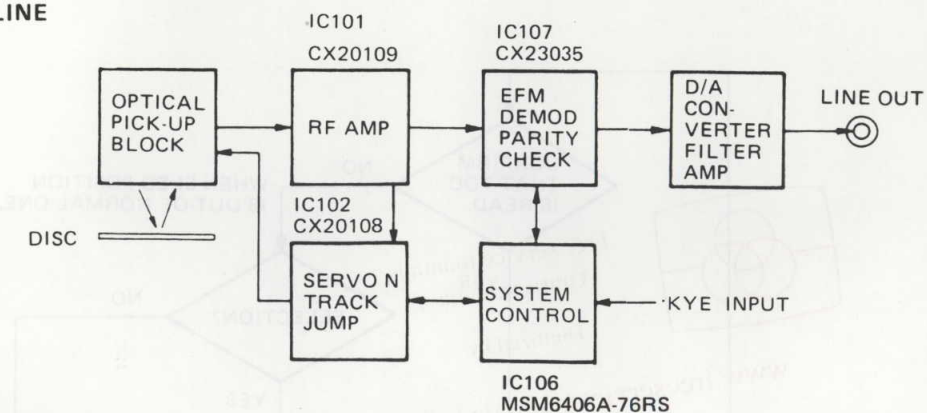
2. The checking locations listed above are shown here.





CIRCUIT DESCRIPTION

OUTLINE



Above block diagram shows configuration of this set. Master control IC106 serves as the center of all operation. System control IC assumes interface between man and machine like key input and remote control input.

For example, if PLAY button is pressed from key input, system control IC works in routine operation to make PLAY mode. It gives every kind of commands for IC102, 107 and they are in PLAY mode.

Through IC102 and IC107 use common data bus.

they distinguish a command for IC102 or IC107 by a higher rank 4 bit value of each command from system control IC106.

Command for IC102: higher rank 4 bit 0000-0011 (0-3 with hexadecimal number system) are used.

Command for IC107: higher rank 4 bit 1010-1110 (A-E with hexadecimal number system) are used.

IC102 controls servo (focus, tracking, sled) mainly. IC107 checks EFM demodulation and CRC.

Gratis schema's

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www.freeremotecontrols.info

SIGNAL FLOW

The compact disc player applies a laser beam to the pits on the compact disc, which represent recorded music information, and extracts the changes in the reflected light and converts them into analog signals.

The following is an explanation of the signal flow on this unit.

The changes in laser light reflection are extracted as current changes by the pick-up section photodiode. (The current flow changes according to the amount of light hitting the photodiode.) This signal is applied to IC101 RF amp. At the same time, tracking error and focus error detection is done by the photodiode, and those signals are also applied to the RF amp.

The signal is amplified at IC101 and output from pin 20. This signal is called the EFM signal, and besides music data, includes time and location data called the sync signal and Q data, as well as CRC check signal and others.

This signal is applied to IC107, and these signals are written in to the RAM all at once. Next the signals are read out from this RAM and divided into the different types of data mentioned above.

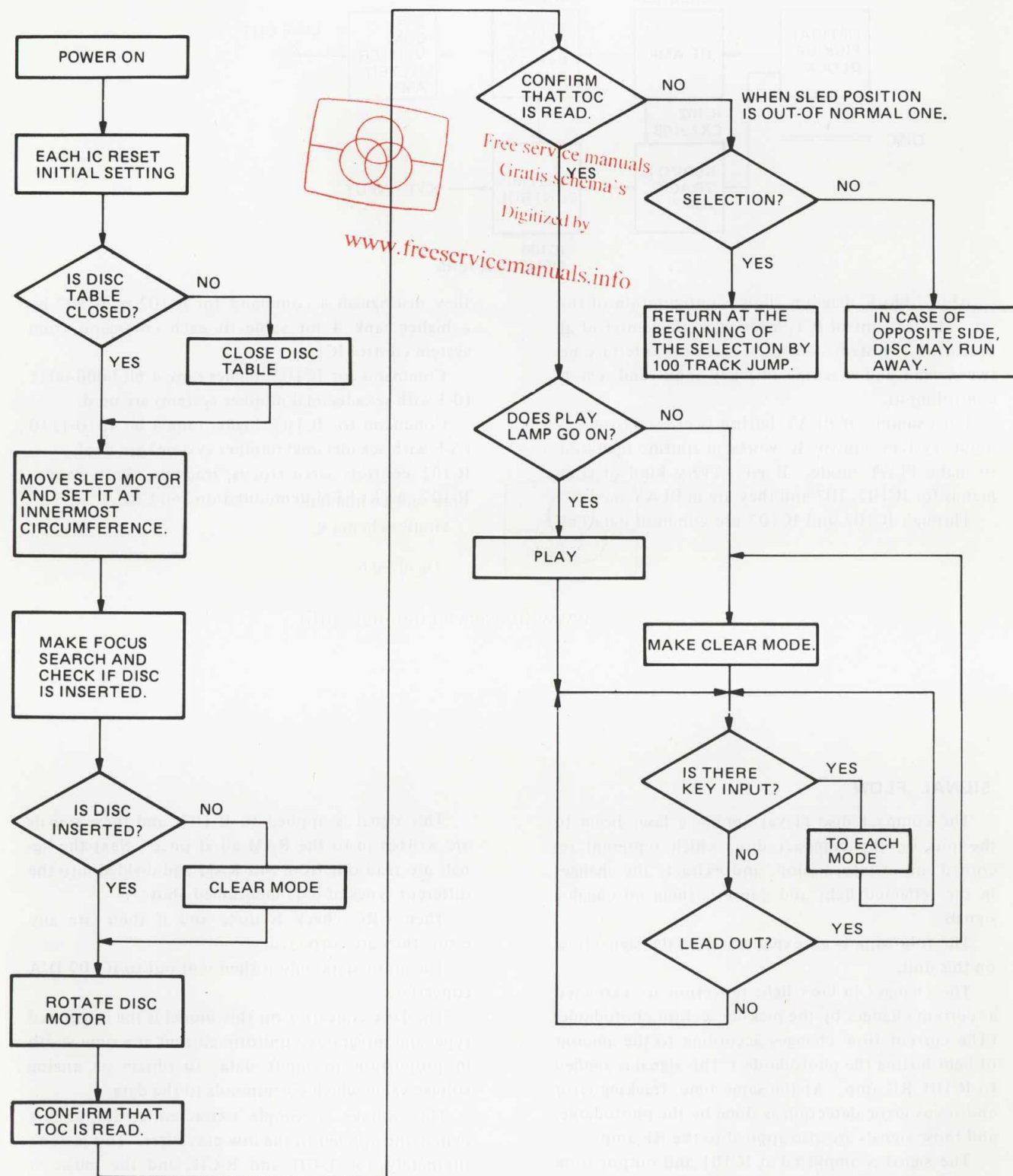
Then CRC check is done and if there are any errors they are corrected.

The music data only is then sent out to IC109 D/A converter.

The D/A converter on this model is the integrated type, and integrates a uniform current at a time width in proportion to input data, to obtain an analog voltage value which corresponds to the data.

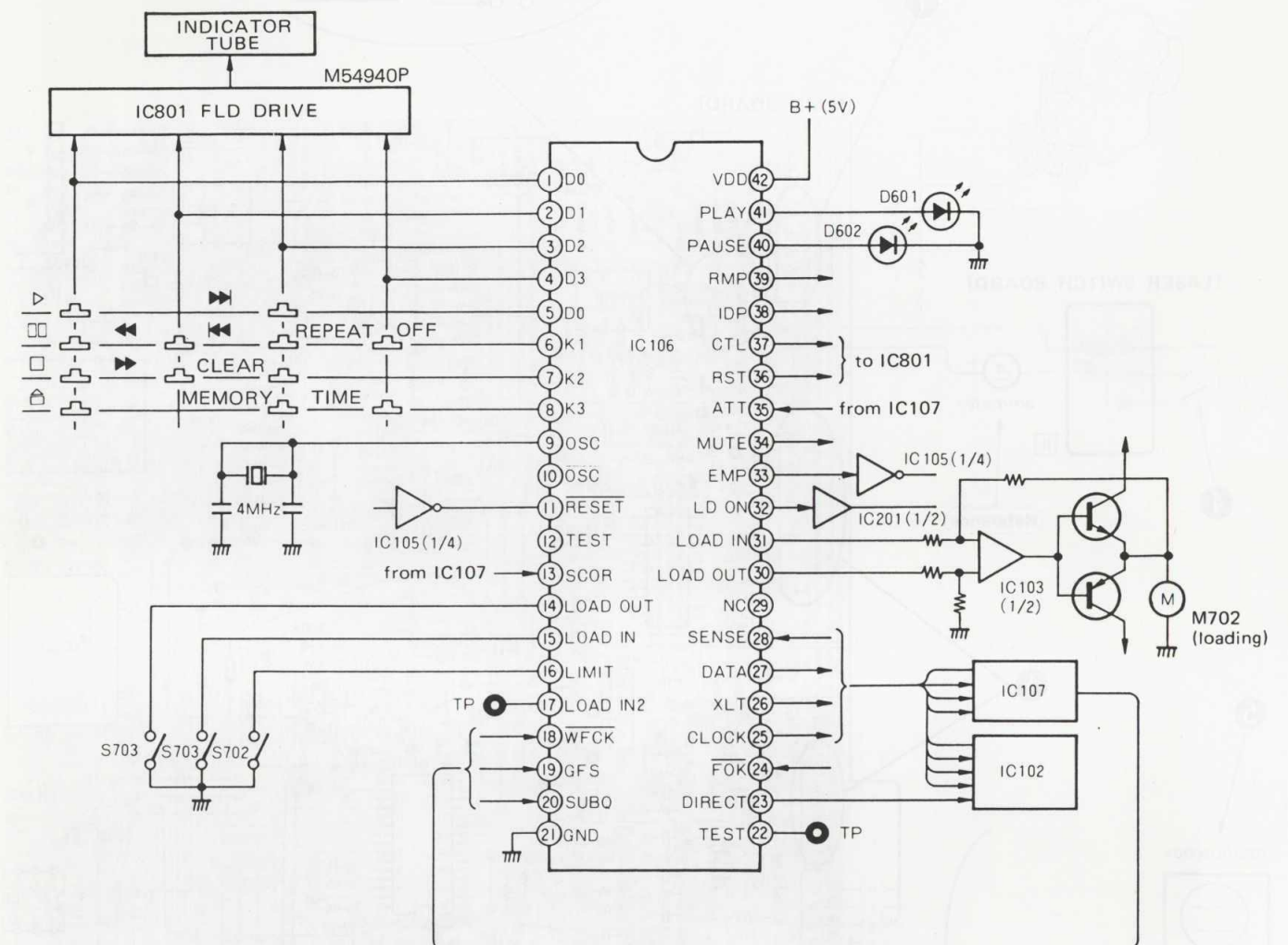
This voltage is sample extracted at the analog switch and applied to the low pass filter. This is done alternately for L-CH and R-CH, and the music is played.

The illustration below shows flow chart of simple operation after power is ON.



IC106

IC106 (MSM6406A-76RS) is a 4 bit system controller, and performs digit signal output to the function keys, SUBQ signal take-in and processing, display tube and servo system control, etc. The pin functions are shown in the diagram below.



Pin Functions (IC106, MSM6406A-76RS)

Pin No.	I/O	Symbol	Function
1 – 4	OUT	D0/S0 – D3/S3	Function key digit signal output pin and data output pin to display tube drive IC (M54940P).
5 – 8	IN	KEY 0 – 3	Function key input.
9 – 10	IN	OSC ₀ – OSC ₁	Clock input pin (crystal oscillator 4.0 MHz).
11	IN	RESET	Reset input pin. Input during power on and initializes.
12	–	TEST	Test pin when microcomputer is shipped. Normally open.
13	IN	SCOR	SUBQ sync signal input pin.
14	IN	OUT SW	Detects disc table open.

Pin No.	I/O	Symbol	Function
15	IN	IN SW	Detects disc table closed.
16	IN	LIMIT SW	Detects 2-axis device in start position.
17	—	ADJ SW	Prevents focus servo from being forced ON. Normally open, grounded when observing S curve, etc.
18	IN	WFCK	WFCK input pin.
19	IN	GFS	High is input here when CX23035 is reading data in correctly. When this pin goes low for more than 5 continuous seconds during play, the disc is judged as defective and is forcibly ejected. However this does not occur when pin (22) is low. Also, a low pulse is generated sometimes during play, but this is not a problem.
20	IN	SUBQ	SUBQ signal input pin.
21	—	GND	Ground.
22	—	VS/TRK	Normally open, but grounded when operating the CD player in adjustment mode. When open, the CLV-A (auto mode) CLV command is applied to CX23035, and when grounded, CLV-S (run-up mode) is applied. Also, when this pin is grounded, the disc is not ejected even when pin (19) GFS is low for more than 5 continuous seconds.
23	OUT	DIRECT	Output pin to CX20108. Used when track jump state is inverted.
24	IN	F.OK	Low is input here when the 2-axis device can read in data. Focusing is judged using this input and the F.Z.C. (focus zero cross) signal input to pin (28) SENSE and focus servo is turned on.
25	OUT	CLOCK	Clock output pin for sending commands to CX20108 and CX23035. Normally high level. 8 clocks are output for 1 command.
26	OUT	LATCH	Output for reporting the end of the command transmission to CX20108, CX23035. Normally high level.
27	OUT	DATA	Output pin for commands to CX20108, CX23035. Commands are composed of 8 bits, 4 address bits and 4 data bits.
28	IN	SENSE	Responses return here corresponding to the commands sent to CX20108 and CX23035 after the commands are executed.
29	—	NC	Empty pin. Normally open, but timer play is enabled by grounding this pin (option).
30	OUT	LOAD OUT	Output to open disc table.
31	OUT	LOAD IN	Output to close disc table.
32	OUT	LD. ON	Output to turn laser diode on.
33	OUT	EMPHASIS	Outputs and switches analog circuit by EMPHASIS signal within the SUBQ signal.
34	OUT	MUTE	Outputs digital mute to CX23035.
35	IN	CRCF	Results of matching SUBQ signal twice are input from CX23035. Goes high when matched, low when not matched. By using this pin, matching twice operation is not needed inside the microcomputer and access processing, etc. is easier.
36	OUT	RST	Reset output to display tube drive IC (M54940P).
37	OUT	CTL	Clock output to display tube drive IC (M54940P).
38	OUT	IDP	Output for character data lighting up to display tube driver IC (M54940P). This turns "DISC", "SCAN", etc. inside the display tube ON/OFF.
39	OUT	RMP	Function key display lamp output.
40	OUT	PAUSE	
41	OUT	PLAY	
42	—	Vcc	Power supply input pin.



2SA1015
2SC1815
2SC2878



2SA1175



2SB548
2SD414



2SB734
2SD774



2SB834



2SC2458
DTA144ES
DTC114ES
DTC143TS
DTC144ES



2SK152



2SK246

NOTES:

- 1) B (+) power supply
 B (-) power supply
- 2) Signal path
- 3) The voltage is the reference value measured with a tester (50k-ohms/V DC) when there are no signals. But () is with AM reception or recording.
- 4) Resistors with no designation have a rated power of 1/8W and a tolerance of $\pm 5\%$.
- 5) Capacitors with no designation have a dielectric strength of less than 50WV.
- 6) The only capacitor tolerance indicated are $\pm 5\%$ (J) and $\pm 10\%$ (K).
- 7) Ceramic capacitor symbols:
 For temperature compensation (SL)
 High dielectric constant system (YY)
 High dielectric constant system (YW, YP, YZ)
 Semiconductor ceramic
 For temperature compensation (SH)
- 8) Explanation of symbols
 Mylar capacitor
 Aluminum solid capacitor
 Polypropylene film capacitor
 Bi-polarized capacitor
 Low-leakage capacitor
 Tantalum capacitor
 Styrol capacitor
 TF capacitor (Mylar)
 Film capacitor
 Ceramic sol capacitor
 Ceramic capacitor (For temperature compensation)
No mark Ceramic capacitor
 Semiconductor capacitor
 Printed resistor
 Fuse resistor
 Nonflammable resistor
 Low noise resistor
 Metal resistor

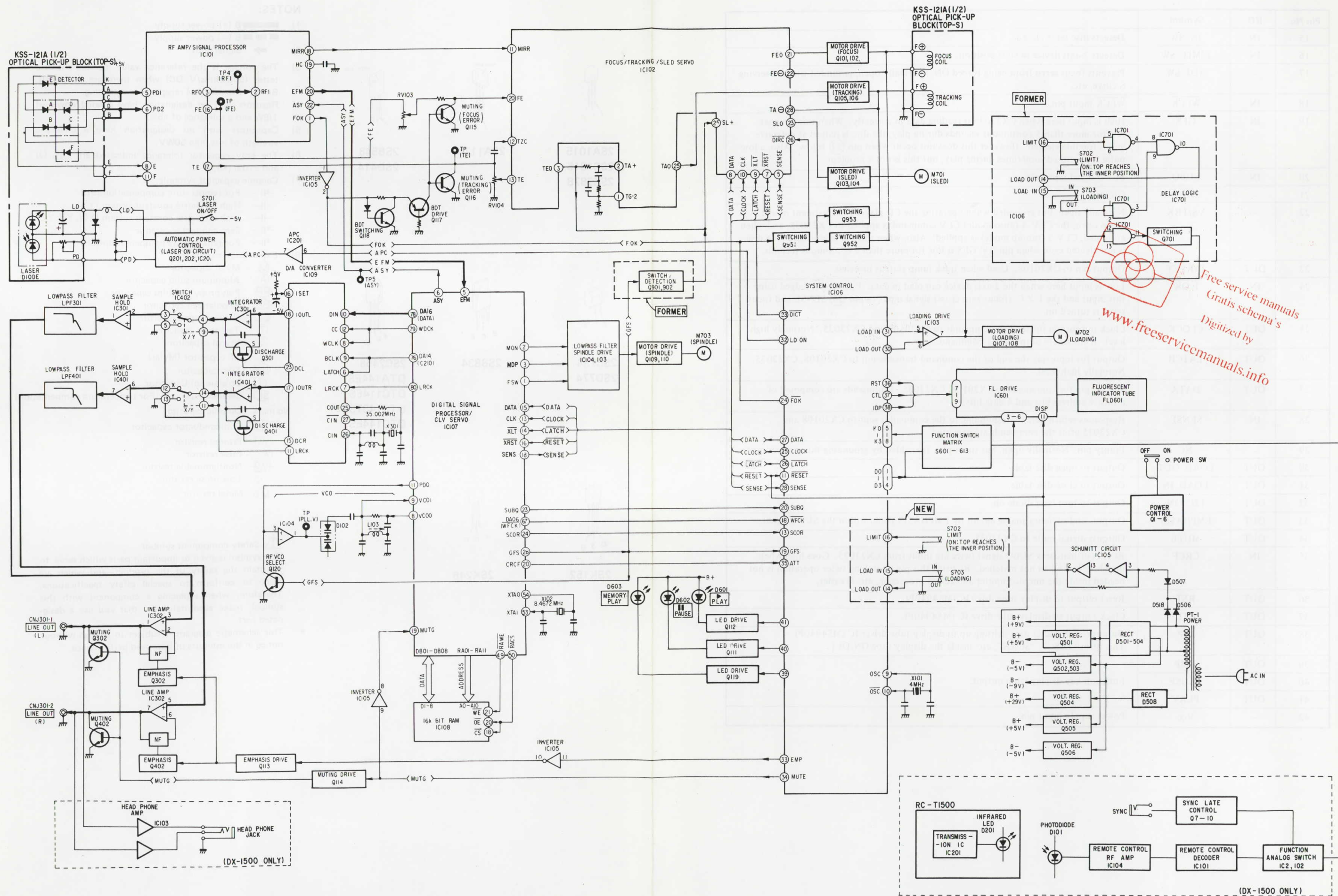


Safety component symbol

This symbol is given to important parts which serve to maintain the safety of the product, and which are made to conform to special safety specifications. Therefore, when replacing a component with this symbol, make absolutely sure that you use a designated part.

- This schematic diagram is subject to change without notice in the interests of improved performance.

BLOCK DIAGRAM

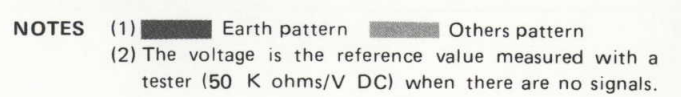


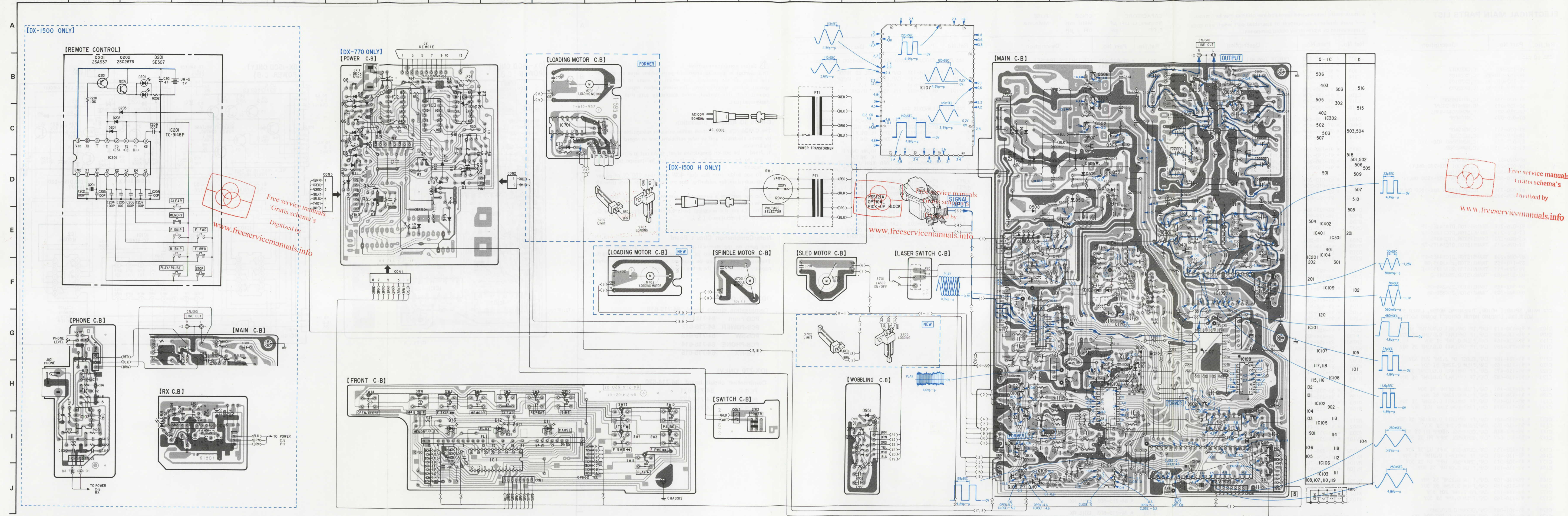
C8 = 87-018-131 CAP, CERA-SOL SS 1000P

(DX-770 ONLY)

Combination circuit board 84-714-620

PCB-Front	84-714-621
PCB-POWER	84-714-622
PCB-SW	84-714-623





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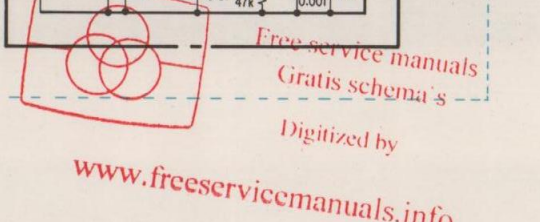
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Q - IC	D
506	516
403	303
505	302
402	302
502	303,504
503	503,504
507	507
501	501
508	508
504	IC402
IC401	IC301
401	IC301
IC201	IC104
202	301
201	IC109
IC109	102
120	102
IC101	101
IC107	105
117,118	101
115,116	IC108
102	IC102
101	902
104	113
103	IC105
901	114
106	119
105	IC106
108,107,110,119	IC103

CD-209KIT

NOTES (1) Earth pattern Others pattern
(2) The voltage is the reference value measured with a tester (50 K ohms/V DC) when there are no signals.



ELECTRICAL ADJUSTMENTS

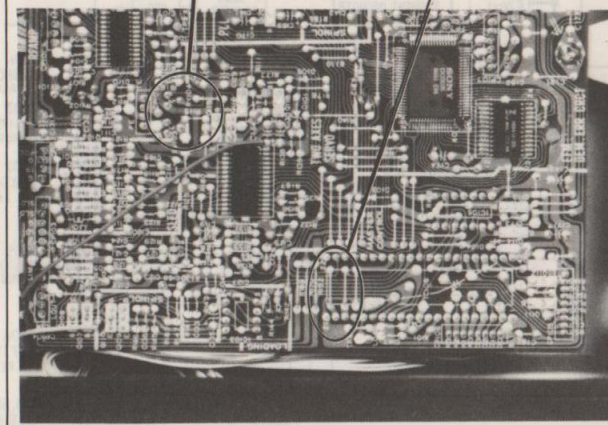
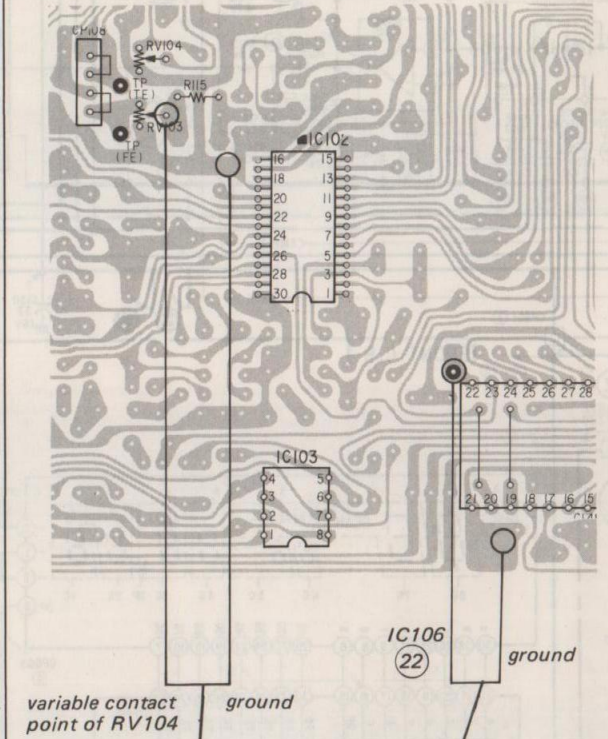
1. Perform adjustments in the order given.
2. Use YEDS-1 disc unless otherwise indicated.
3. Use the oscilloscope with more than 10 MΩ impedance.

Adjustment Mode

- Laser power adjustment (1), (3) and focus bias adjustment
... Ground IC106 pin ②② (TEST) on main board.
- E-F balance adjustment
... Ground IC106 pin ②② (TEST) and the variable contact point of RV104 (T.E) on main board.

Note: After adjustment, be sure to remove the lead wires connected above.

Adjustment Location: main board

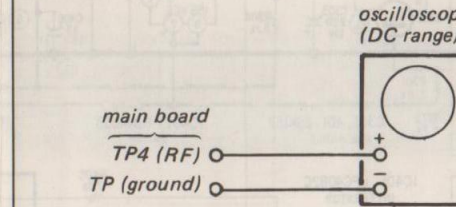


- Adjustment should be made in order of Laser power (1), Focus bias and Laser power (2).

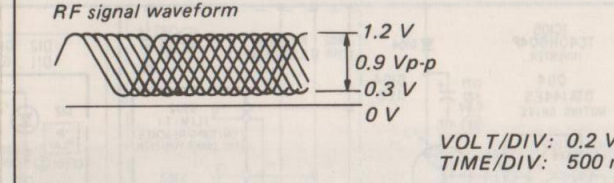
Laser Power Adjustment (1)

This adjustment should be made when replacing TOP (T-type Optical Pick-up).

Procedure:

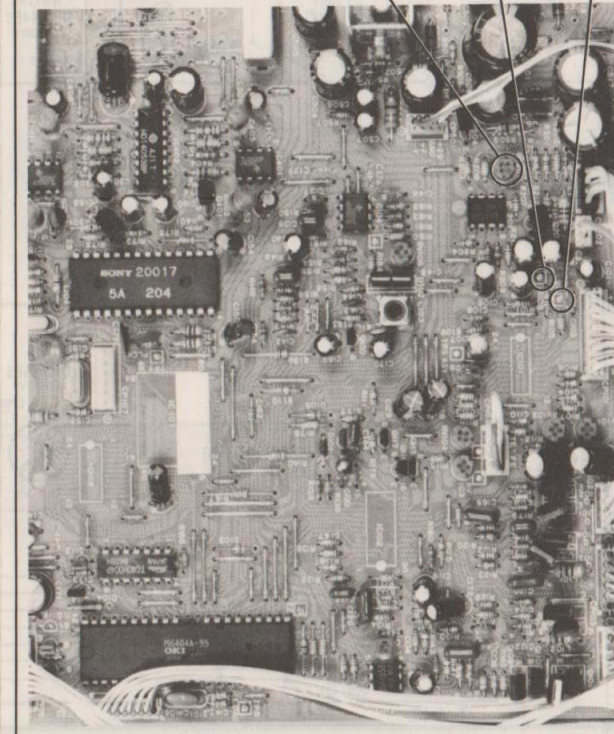


1. Connect oscilloscope to test points TP4 (RF) and TP (ground).
2. Put set into adjustment mode. (See page 29.)
3. Turn POWER switch on.
4. Put disc (YEDS-1) in and press ▷ button.
5. Adjust RV201 so that the waveform is as shown in the figure below.



Adjustment Location: main board

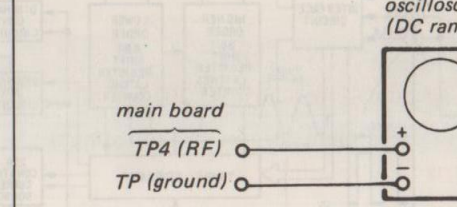
(Component side) RV201 TP (ground) TP4 (RF)



Focus Bias Adjustment

This adjustment should be made when replacing TOP (T-type Optical Pick-up).

Procedure:

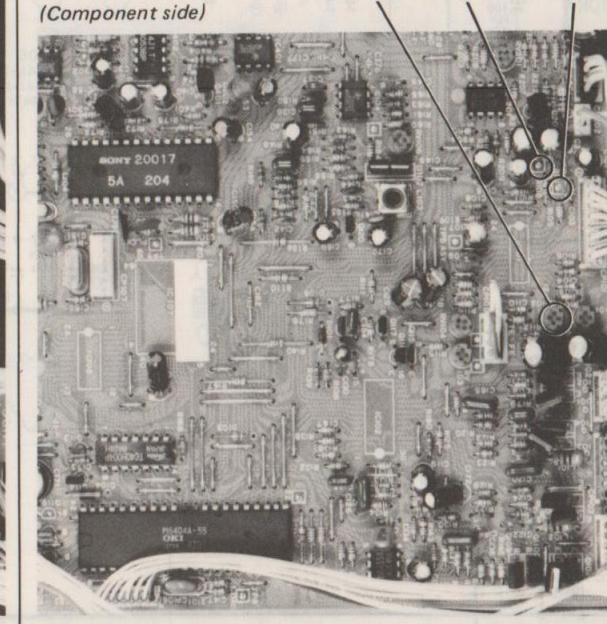


1. Connect oscilloscope to test points TP4 (RF) and TP (ground).
2. Put set into adjustment mode. (See page 29.)
3. Turn POWER switch on.
4. Put disc (YEDS-1) in and press ▷ button.
5. Adjust RV102 for an optimum waveform eye pattern or so that the peak is maximum. Optimum eye pattern means that shape "◇" can be clearly distinguished at the center of the waveform.



Adjustment Location: main board

(Component side) RV102 TP (ground) TP4 (RF)



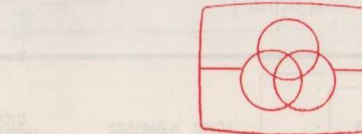
Laser Power Adjustment (2)

This adjustment should be made when replacing TOP (T-type Optical Pick-up).

After laser power adjustment (1) and focus bias adjustment (2), check laser power again.

1. Check the waveform by the same procedure of laser power adjustment (1) on page 30.
2. If it is out of specification, adjust RV201 again.
3. After check or adjustment, cancel the adjustment mode. (See page 30.)

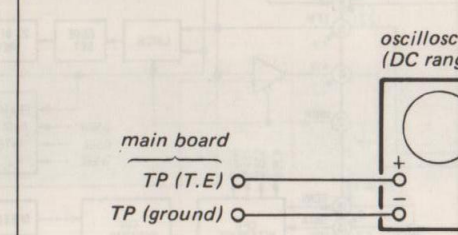
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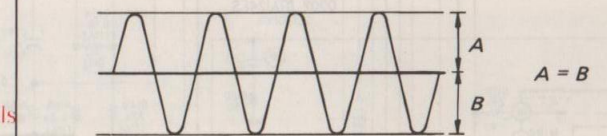
E-F Balance Adjustment

This adjustment should be made when replacing TOP (T-type Optical Pick-up).

Procedure:

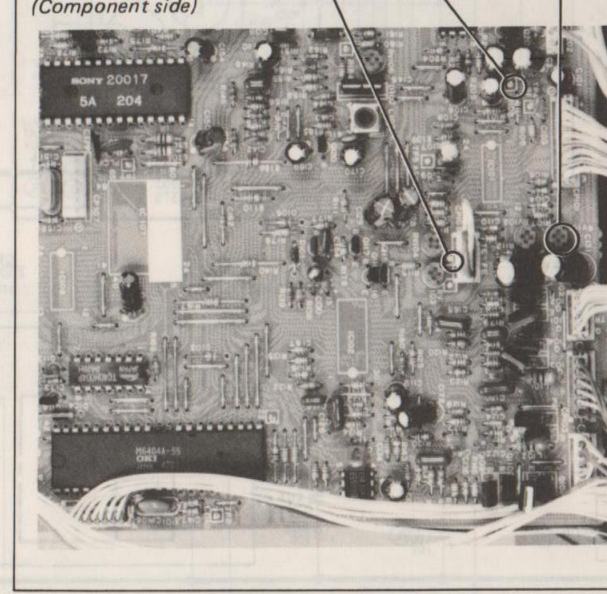


1. Connect oscilloscope to test point TP (T.E) and TP (ground).
2. Put set into adjustment mode. (See page 29.)
3. Turn POWER switch on.
4. Put disc (YEDS-1) in and press ▷ button.
5. Adjust RV101 so that the traverse waveform is symmetrical above and below.
6. After adjustment, cancel the adjustment mode. (See page 27.)



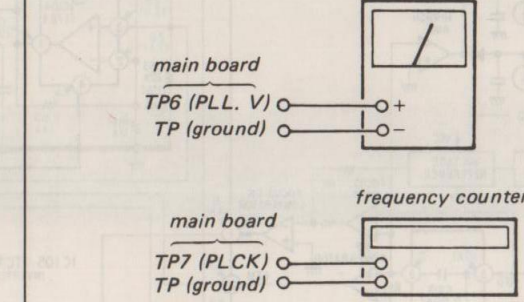
Adjustment Location: main board

(Component side) TP (T.E) TP (ground) RV101



RF PLL Frequency Adjustment / Lock Frequency Check

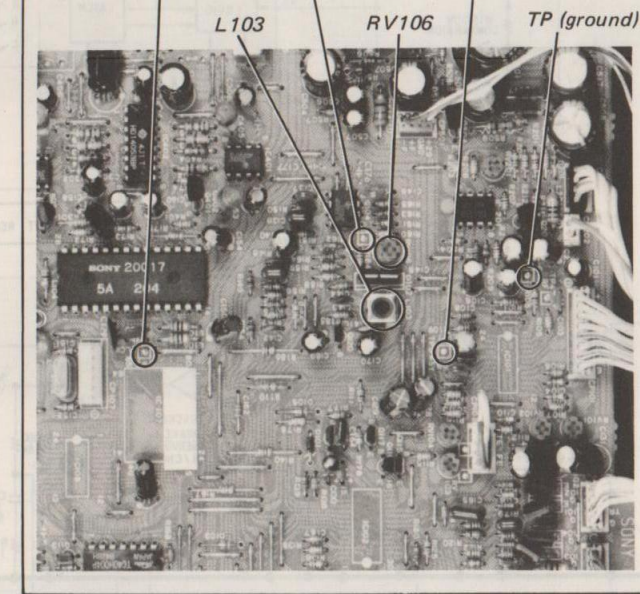
Procedure:



1. Ground test point TP5 (ASY).
2. Connect VTM to test points TP6 (PLL.V) and TP (ground).
3. Turn POWER switch on.
4. Adjust RV106 so that the reading on VTM is 0 ± 50 mV.
5. Connect the frequency counter to test points TP7 (PLCK) and TP (ground).
6. Adjust L103 so that the reading on frequency counter is 4.2818 MHz.
7. Remove lead wire connecting TP5 (ASY) and ground.
8. Put disc (YEDS-1) in and press ▷ button.
9. Confirm that the reading on frequency counter is 4.3218 MHz.

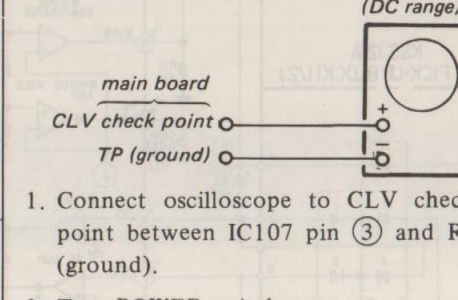
Adjustment Location: main board

(Component side) TP7 (PLCK) TP (PLL.V) TP5 (ASY) TP (ground)

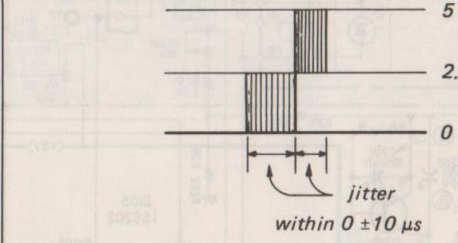


CLV Phase Lock Check

Procedure:

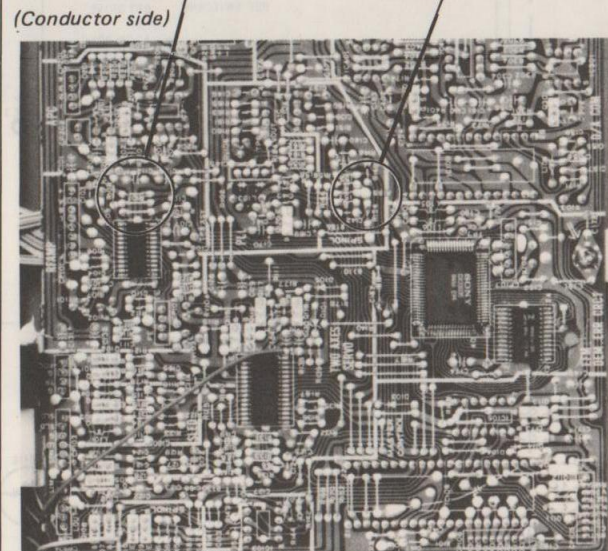
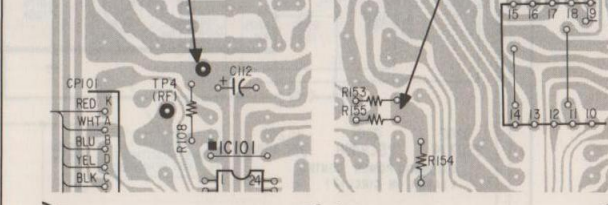


1. Connect oscilloscope to CLV check point (the point between IC107 pin ③ and R154) and TP (ground).
2. Turn POWER switch on.
3. Put disc (YEDS-1) in and press ▷ button.
4. Check the waveform is as shown in the figure below.

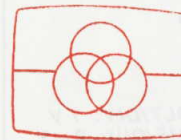
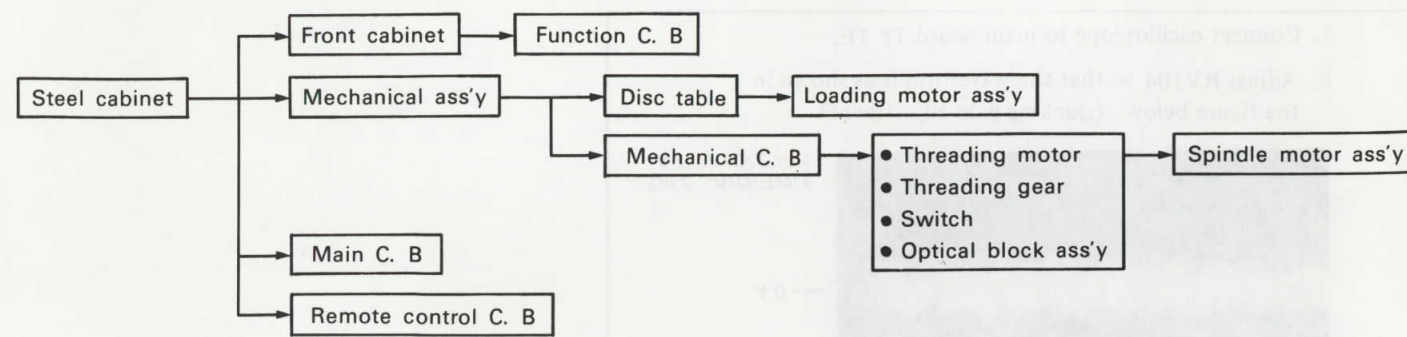


Adjustment Location: main board

TP (ground) CLV check point



DISASSEMBLY INSTRUCTIONS



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1. Removal of Mechanism A'ssy

- 1) Remove 3 screws.

2. Removal of Disc Table

- 1) Remove a chucking spring.
- 2) Remove a chucking arm while releasing the lock by pushing the claw. (See Figure-1)

- 3) Remove the disc table while releasing the claws at six positions. (See Figure-2)

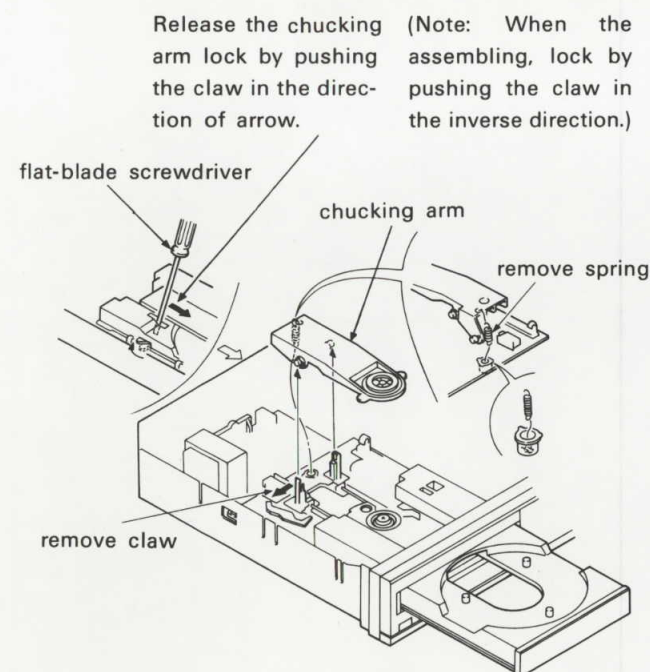


Fig-1

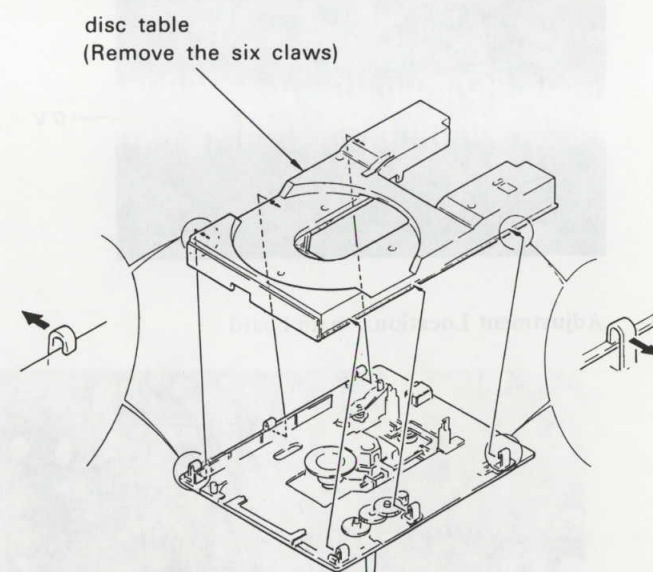


Fig-2

3. Removal of Loading Motor A'ssy

- 1) Remove 2 screws. (See Figure-3)

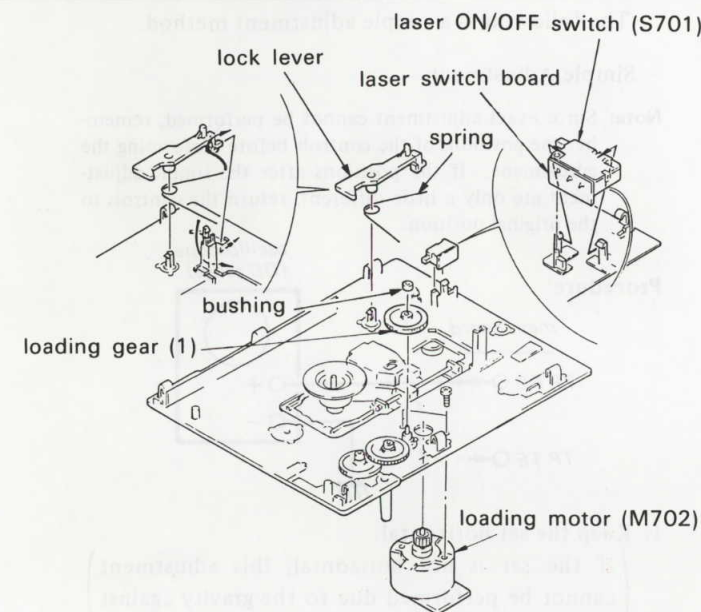


Fig-3

4. Removal of Mechanical Board

- 1) Remove 3 screws. (See Figure-4)

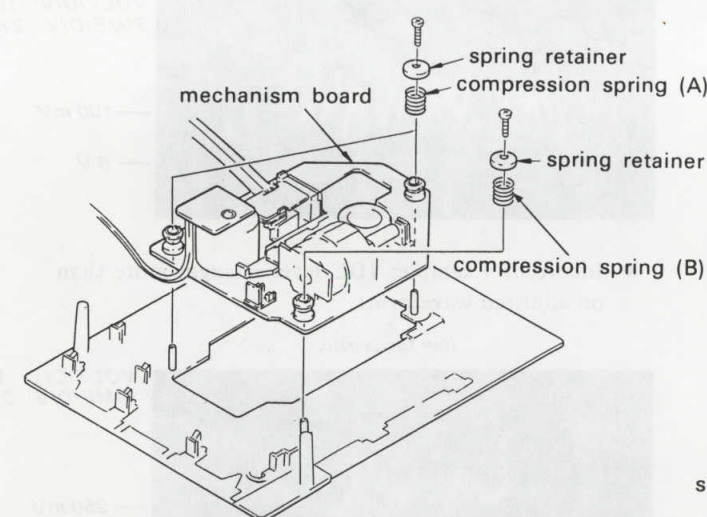


Fig-4

5. Removal of Thread Motor

- 1) Remove a screw and remove claws at 2 positions. (See Figure-5)

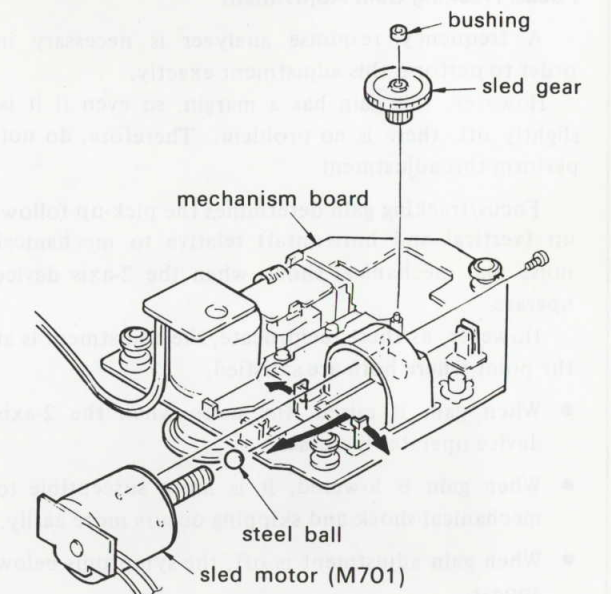


Fig-5

6. Removal of Optical Block Ass'y

- 1) Remove 2 pieces of slide shafts while pushing the claw. (See Figure-6)

Note Remove the rack a'ssy which is on the optical block a'ssy, and mount it again after replacement of the optical block a'ssy has been completed.

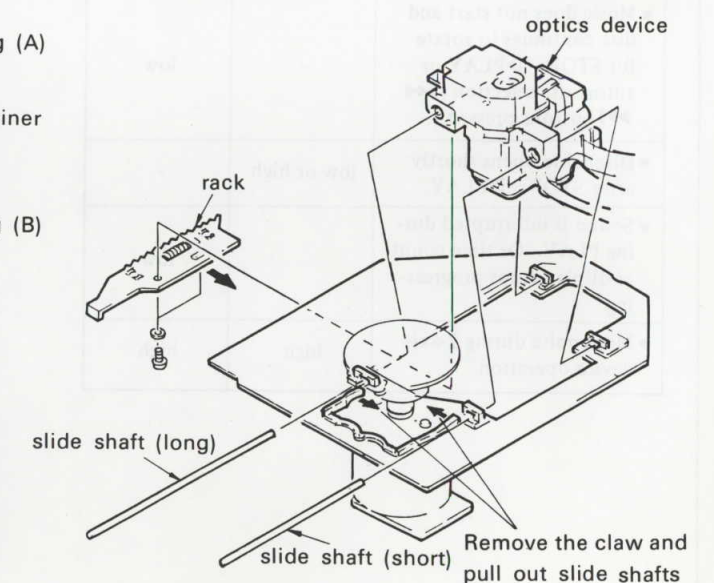


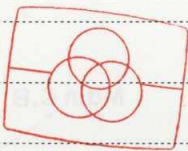
Fig-6

7. Removal of Spindle Motor A'ssy

- 1) Remove the mechanical board. (See Figure-4)
- 2) Remove the thread motor, optical block a'ssy, thread gear, and switch. (See Figure-5 and 6)

Note Be sure to mount these parts again after the spindle motor a'ssy has been replaced.

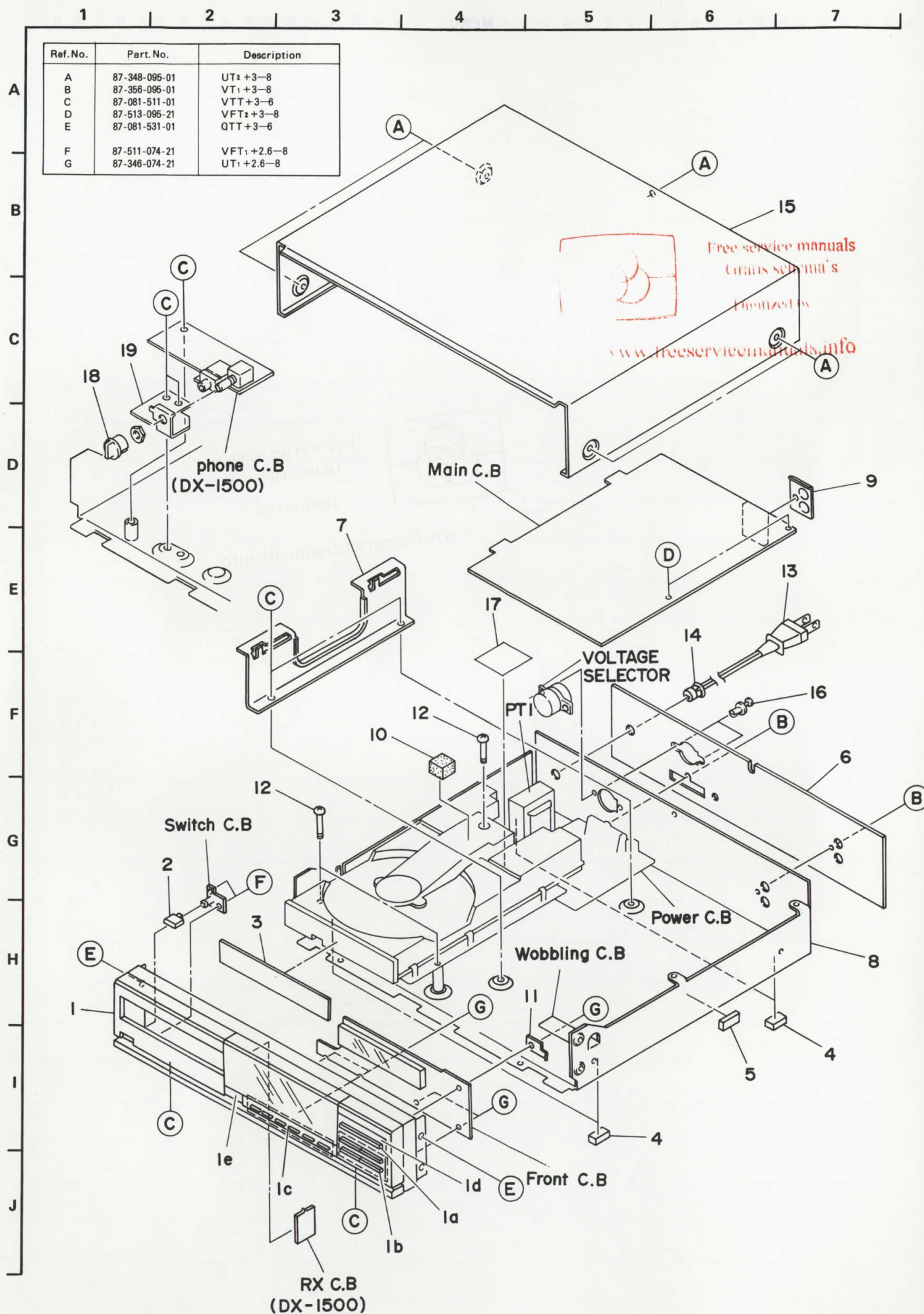
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EXPLODED VIEW-1

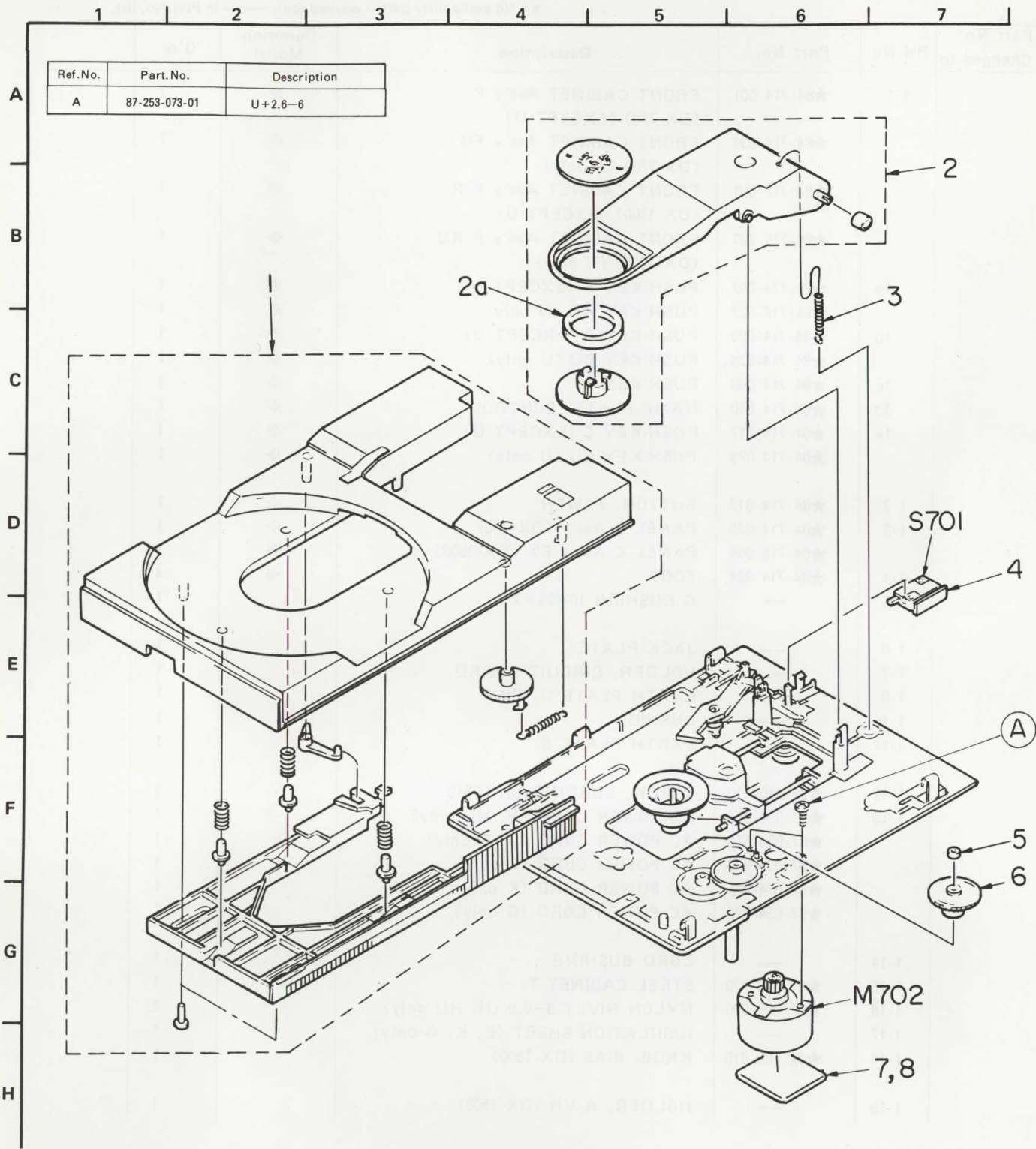


MECHANICAL PARTS LIST

- * -mark in this part list shows exclusive part.
- * -mark means less required items and availabilities may be limited.
- No availability part is marked with — in Part No. list.

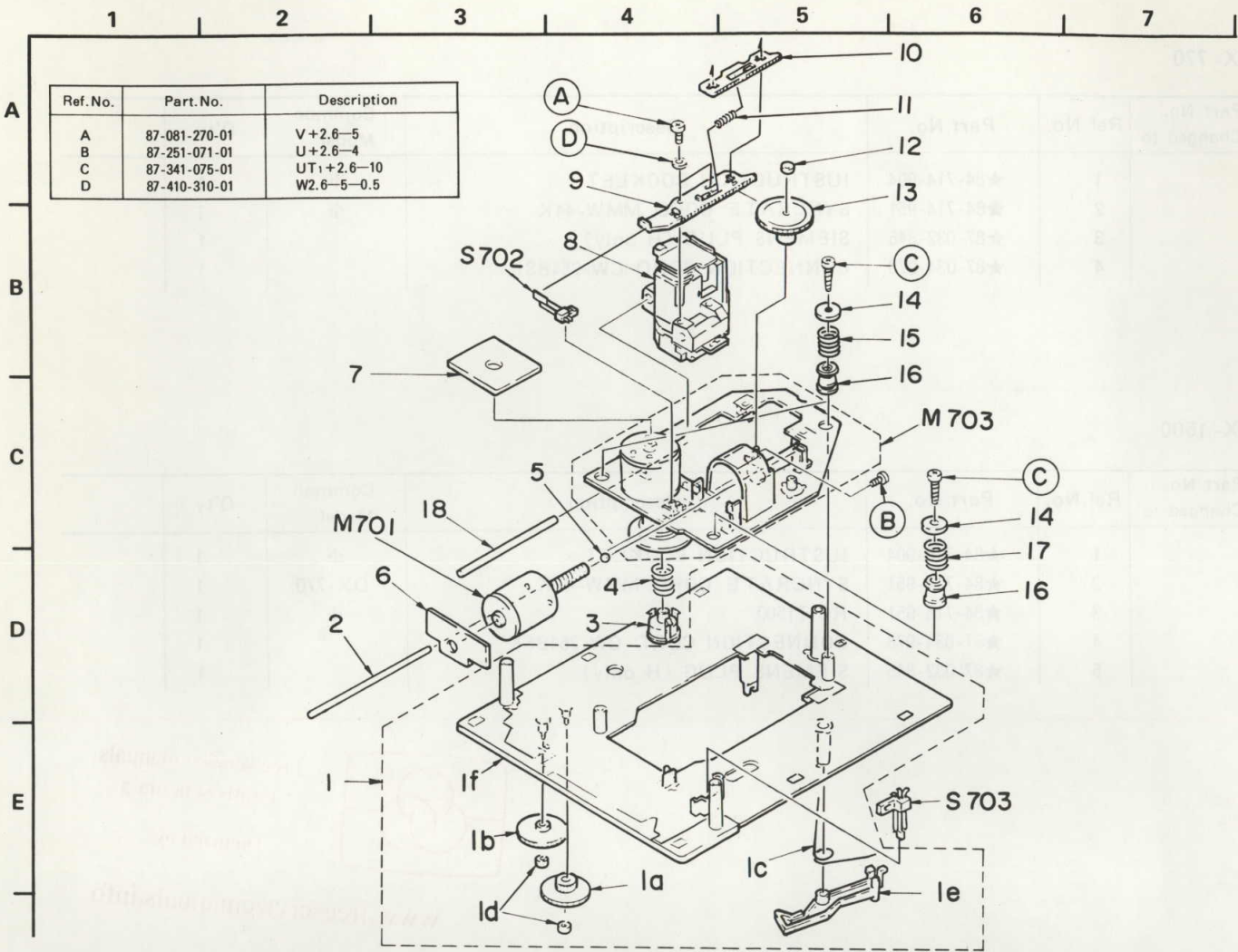
Part No. Changed to	Ref.No.	Part No.	Description	Common Model	Q'ty	
	1-1	★84-714-001	FRONT CABINET Ass'y F (DX-770) (EXCEPT U)	※	1	
		★84-714-030	FRONT CABINET Ass'y FU (DX-770) (U only)	※	1	
		★84-715-001	FRONT CABINET Ass'y F R (DX-1500) (EXCEPT U)	※	1	
		★84-715-207	FRONT CABINET Ass'y F RU (DX-1500) (U only)	※	1	
	1a	★81-714-007	PUSH-KEY A (EXCEPT U)	※	1	
		★81-714-027	PUSH-KEY AU (U only)	※	1	
	1b	★84-714-008	PUSH-KEY B (EXCEPT U)	※	1	
		★84-714-028	PUSH-KEY BU (U only)	※	1	
	1c	★84-714-009	PUSH-KEY D	※	1	
	1d	★84-714-010	NAME PLATE, CONTROL	※	1	
	1e	★84-714-017	PUSH-KEY C (EXCEPT U)	※	1	
		★84-714-029	PUSH-KEY CU (U only)	※	1	
	1-2	★84-714-013	BUTTON, POWER	※	1	
	1-3	★84-714-025	PANEL C Ass'y (DX-770)	※	1	
		★84-715-004	PANEL C Ass'y EX (DX-1500)	※	1	
	1-4	★84-714-024	FOOT	※	4	
	1-5	—	G CUSHION 10×25×3		1	
	1-6	—	JACK PLATE		1	
	1-7	—	HOLDER, CIRCUIT BOARD		1	
	1-9	—	EARTH PLATE D, PIN		1	
	1-10	—	CNSHION		1	
	1-11	—	EARTH PLATE E		1	
	1-12	★94-910-416	SCREW, LOADING CHASSIS		3	
	1-13	★87-034-958	AC POWER CORD (H, HU only)		1	
		★87-034-578	AC POWER CORD (U, C only)		1	
		★87-034-877	AC POWER CORD (E only)		1	
		★87-034-975	AC POWER CORD (K only)		1	
		★87-034-892	AC POWER CORD (G only)		1	
	1-14	—	CORD BUSHING		1	
	1-15	★81-748-020	STEEL CABINET T		1	
	1-16	★87-085-090	NYLON RIVET 3-6.5 (H, HU only)		2	
	1-17	—	INSULATION SHEET (E, K, G only)		1	
	1-18	★82-100-015	KNOB, BIAS (DX-1500)		1	
	1-19	—	HOLDER, A VR (DX-1500)		1	

EXPLODED VIEW-2



Part No. Changed to	Ref.No.	Part No.	Description	Common Model	Q'ty	
	2-1	★8X-491-041	DISC TABLE Ass'y		1	
	2-2	★9A-460-414	CHUCKING ARM Ass'y		1	
	2a	★01-452-340	MAGNET		1	
	2-3	★04-910-428	TENSION SPRING, CHUCKING		1	
	2-4	—	PC BOARD, LD SWITCH		1	
	2-5	★04-910-418	BUSHING φ4		1	
	2-6	★04-910-497	GEAR 1, LOADING		1	
	2-7	—	PC BOARD, LO MOTOR		1	
	2-8	—	MOUNTED PCB, LOADING MOTOR		1	

EXPLODED VIEW-3



Part No. Changed to	Ref.No.	Part No.	Description	Common Model	Q'ty
	3-1	★9X-491-040	LOADING CHASSIS Ass'y		1
	1a	94-910-402	GEAR 2, LOADING		1
	1b	94-910-403	GEAR 3, LOADING		1
	1c	★94-910-412	SPRING, LOCK LEVER		1
	1d	★94-910-418	BUSHING φ4		2
	1e	★94-910-434	LOCK LEVER		1
	1f	—	LOADING CHASSIS, OUTSERT		1
	3-2	—	SHAFT, SLIDE		1
	3-3	★94-910-437	CAP, CENTER RING		1
	3-4	★94-910-427	SPRING, COMPRESSION		1
	3-5	★87-073-008	STEEL BALL 2.5		1
	3-6	—	PC BOARD, SL MOTOR		1
	3-7	—	PC BOARD, SP MOTOR		1
	3-8	98-848-023	DEVICE, OPTICS		1
	3-9	★94-910-425	RACK A		1
	3-10	★94-910-442	RACK B		1
	3-11	★94-910-462	SPRING, COMPRESSION		1
	3-12	★94-910-418	BUSHING φ4		1
	3-13	★94-910-432	GEAR, SLED		1
	3-14	★94-910-414	SPRING BEARING		3
	3-15	★94-910-423	COMPRESSION SPRING, FLOATING A		2
	3-16	★94-910-498	RUBBER, FLOATING		3
	3-17	★94-910-463	COMPRESSION SPRING, FLOATING B		1
	3-18	—	SHAFT, SLIDE		1

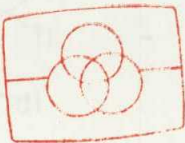
ACCESSORIES/PACKAGE LIST

DX- 770

Part No. Changed to	Ref.No.	Part.No.	Description	Common Model	Q'ty	
	1	★84-714-904	IUSTRUCTION BOOKLET	※	1	
	2	★84-714-951	SYNCRATE CORD MMW-44K	※	1	
	3	★87-032-845	SIEMENS PLUG (H only)		1	
	4	★87 034-978	CONNECTION CORD CW-254BSK		1	

DX- 1500

Part No. Changed to	Ref.No.	Part.No.	Description	Common Model	Q'ty	
	1	★84-715-904	IUSTRUCTION BOOKLET	※	1	
	2	★84-714-951	SYNCRATE CORD MMW-44K	DX-770	1	
	3	★84-715-951	RC-T1500	※	1	
	4	★87-034-978	CONNECTION CORD CW-254BSK		1	
	5	★87-032-845	SIEMENS PLUG (H only)		1	



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