

SERVICE MANUAL

8 TRACK HOME STEREO DECK

H-22 -02 KU, KC



 **PIONEER®**

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1. SPECIFICATIONS

SEMI-CONDUCTORS	4 transistors, 3 diodes
CONTROL	Program selector
POWER SOURCE	AC 120V, 50/60Hz
POWER CONSUMPTION	Less than 20W
CARTRIDGE	Any 8-track cartridges
TAPE SPEED	9.5cm/sec (3-3/4 in./sec)
WOW AND FLUTTER	Less than 0.25% (WRMS)
PROGRAM SELECTION SYSTEM	Automatic and manual selection system
FREQUENCY RESPONSE	40 ~ 12,000Hz
TOTAL HARMONIC DISTORTION	Less than 3%
CHANNEL SEPARATION	More than 40dB
CROSSTALK	More than 40dB
SIGNAL TO NOISE RATIO	More than 40dB
OUTPUT LEVEL	240mV
OUTPUT IMPEDANCE	Less than 10k Ω
DIMENSIONS (W x H x D)	199 x 120 x 297mm (8 x 4-3/4 x 11-5/8in.)
WEIGHT	3.1kg (6.8lbs)

2. PARTS LOCATION

● TOP VIEW

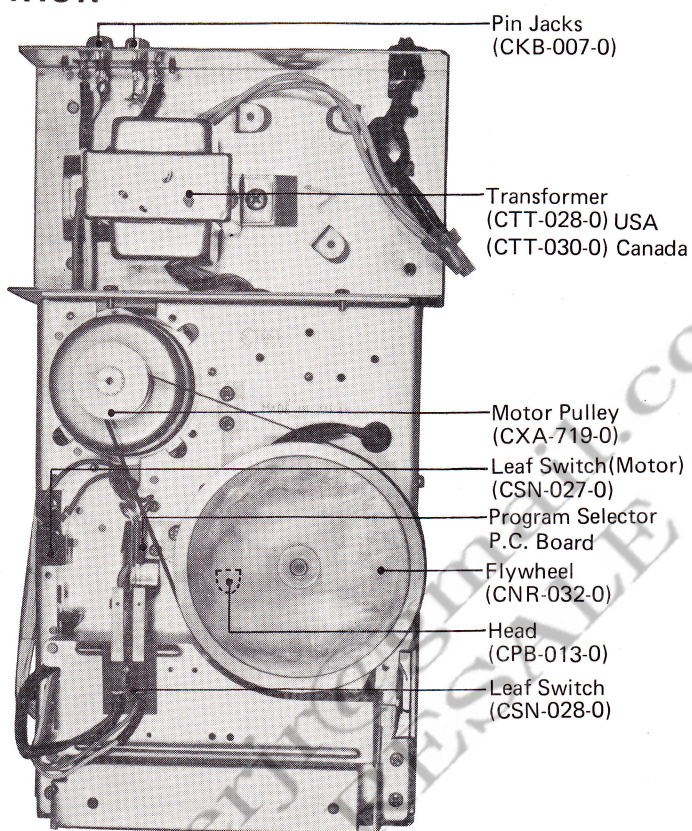


Fig. 1

● BOTTOM VIEW

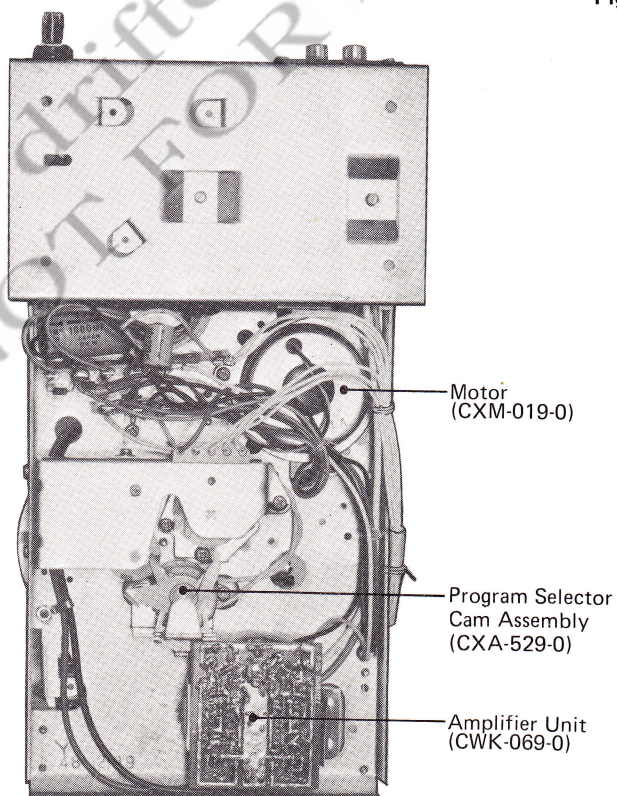


Fig. 2

3. CIRCUIT DESCRIPTION

This unit consists, as shown in Fig. 3, of the amplifier, the motor and the power supply section.

Transistors Q1 and Q2 (or Q3 and Q4) constitute the direct coupled amplifier circuit. When a 1kHz signal is transmitted to this amplifier, a value of 67dB is obtained. A portion, say 17dB, of this value is negative-feedback.

This done, NAB frequency features can be obtained by the equalizer elements. This output is then connected to the output jack, thus raising an overall value of -10dB (0dB = 0.775V, 1kHz).

For rectification, a full-wave rectifying system is adopted.

● Circuit Block Diagram

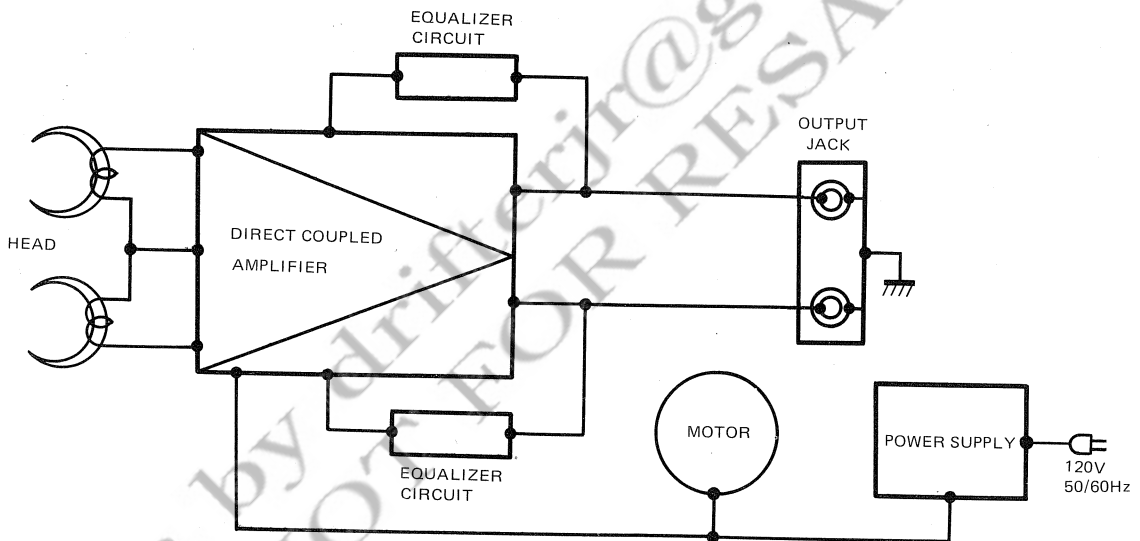


Fig. 3

4. DISASSEMBLY

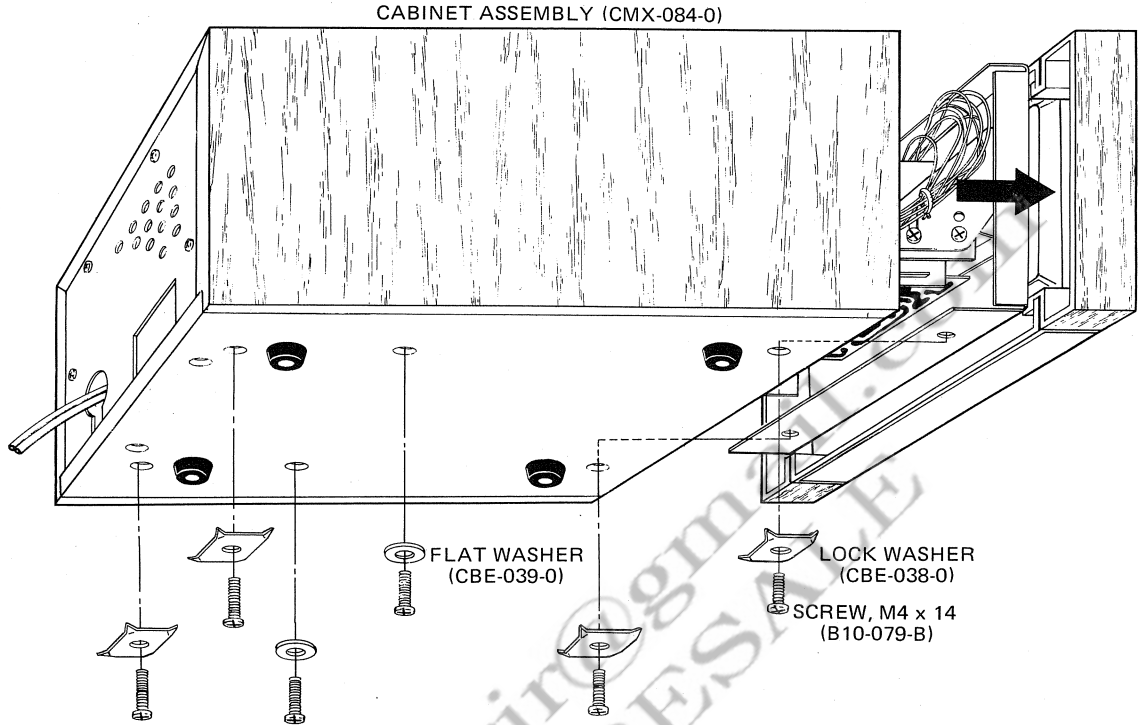


Fig. 4

5. ADJUSTMENT

Be sure to adjust for crosstalk and azimuth when replacing the head or cam, or changing their positions. Adjust alternately because they are closely related.

• Adjustment Tools and Measuring Instruments

1. VTVM
2. Test Tape (P-328, PST-4.2)
3. Screw Driver
4. Bond and Screw Lock

• Test Tape

Test Tape	P-328	PST-4.2
Item		
Recording Track	1,3,5,7	Full Tracks
Frequency	400 Hz	8 kHz
Level	0 dB	-13 dB
Application	Crosstalk	Azimuth

• Hook up Diagram

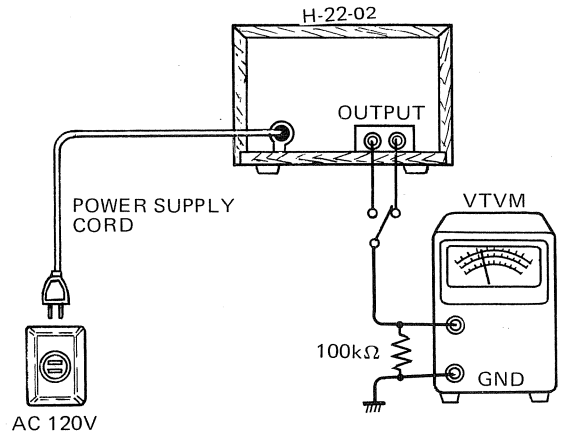


Fig. 5

5.1 CROSSTALK ADJUSTMENT

1. When the cartridge door is opened and a program is set to 1 visually, be sure the head is positioned almost at the same height as the positions of the upper end of the tape guide and the detection outlet (L side) of the head. (Fig. 6)
2. When a program is changed over to 4, be sure the position of the head is almost at the same height as those of the lower end of the tape running and the head detection outlet (R side). (Fig. 7)
3. Connect according to Fig. 5 and insert test tape P-328.
4. Change program to 2, and adjust by turning crosstalk adjusting screw (Fig. 8) so as to minimize VTVM needle vibration both in Lch and Rch. After adjustment, secure adjusting screw with bond and screw lock.

TAPE GUIDE
(CXA-526-0)

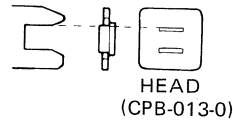


Fig. 6

TAPE GUIDE
(CXA-526-0)

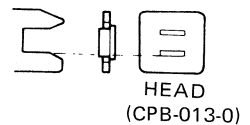


Fig. 7

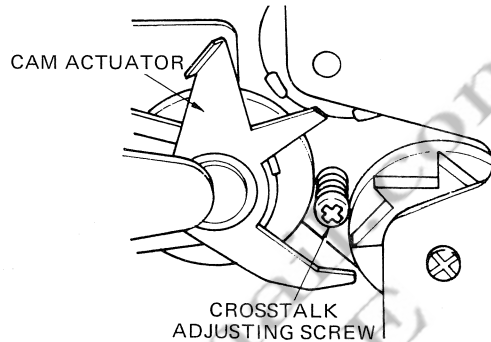


Fig. 8

5.2 AZIMUTH ADJUSTMENT

1. Connect according to Fig. 5 and insert test tape PST-4.2.
2. Change program to 3 and adjust by turning azimuth adjusting screw (Fig. 9) to secure maximum output reading on the VTVM in both Lch and Rch.

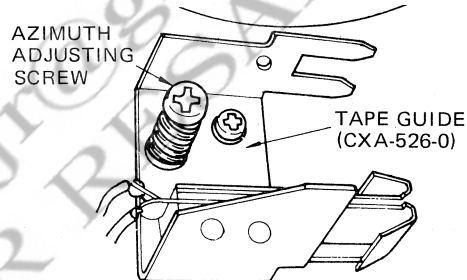


Fig. 9

5.3 ADJUSTMENT OF MOTOR PULLEY POSITION

1. When replacing motor pulley or motor, install as shown in Fig. 10, adjust position adjusting screws and leave a space of approx. 6.0mm between pulley and motor case.

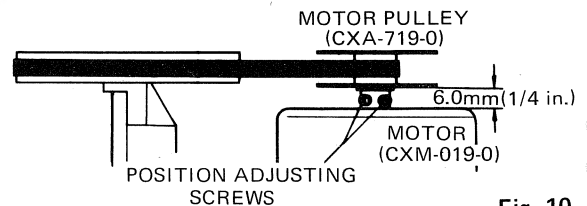


Fig. 10

5.4 ADJUSTMENT OF CARTRIDGE LOCK PRESSURE

1. Measure the end of the pressure roller with a tension gauge. (Fig. 11)
2. Adjust the installment position of the pressure spring so the pointer of the tension gauge will indicate approx. 1.4 kg (3.1 lbs).

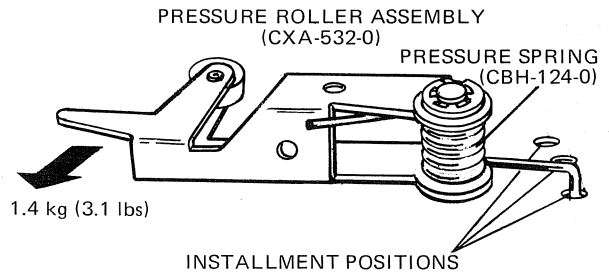


Fig. 11

6. CIRCUIT DIAGRAM SECTION

6.1 SCHEMATIC DIAGRAM

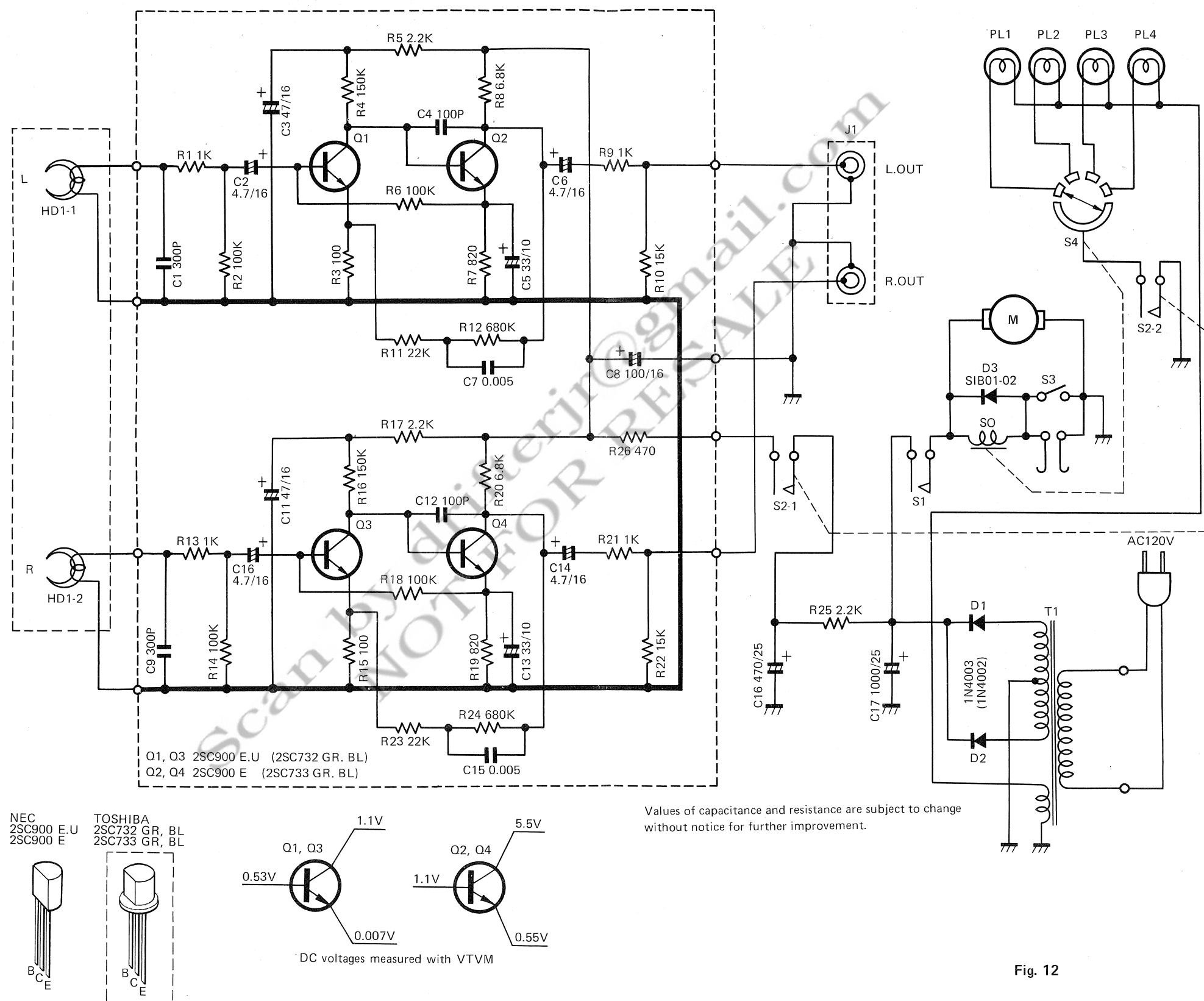


Fig. 12

6.2 AMPLIFIER UNIT

● Parts Connection

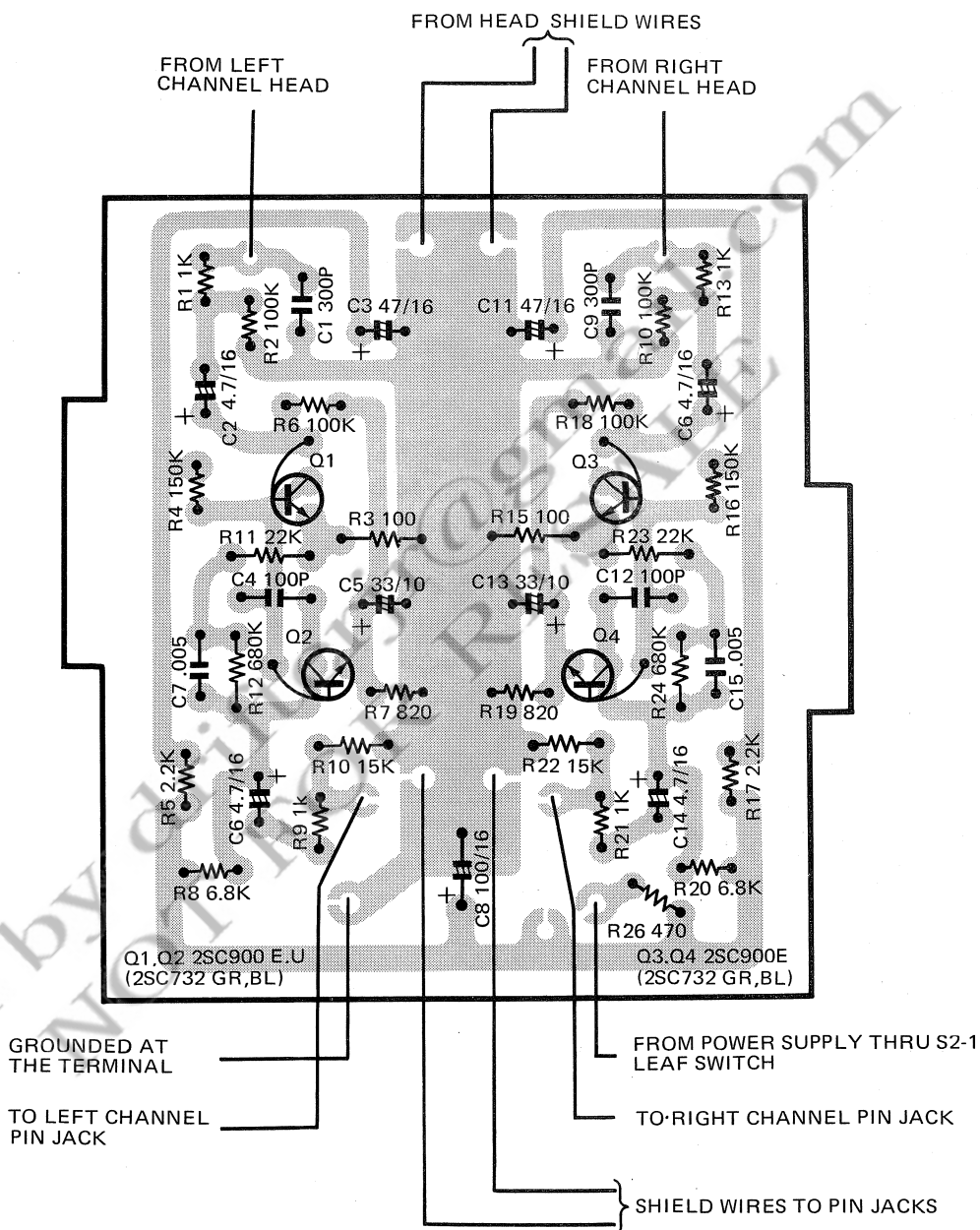


Fig. 13

6.3 PARTS LIST

CAPACITORS

Ref. Key	Parts No.	Description	Notes		
C1	C08-048-K	Capacitor, CCDSL301K50	300pF	±10%	50V
C2	C00-513-P	Capacitor, CEA4R7P16	4.7μF	+100% -10%	16V
C3	C00-533-P	Capacitor, CEA470P16	47μF	+100% -10%	16V
C4	C08-040-K	Capacitor, CCDSL101K50	100pF	±10%	50V
C5	C00-230-P	Capacitor, CEA330P10	33μF	+100% -10%	10V
C6	C00-513-P	Capacitor, CEA4R7P16	4.7μF	+100% -10%	16V
C7	C03-219-M	Capacitor, CQMA502M50	0.005μF	±20%	50V
C8	C00-542-P	Capacitor, CEA101P16	100μF	+100% -10%	16V
C9	C08-048-K	Capacitor, CCDSL301K50	300pF	±10%	50V
C10	C00-513-P	Capacitor, CEA4R7P16	4.7μF	+100% -10%	16V
C11	C00-533-P	Capacitor, CEA470P16	47μF	+100% -10%	16V
C12	C08-040-K	Capacitor, CCDSL101K50	100pF	±10%	50V
C13	C00-230-P	Capacitor, CEA330P10	33μF	+100% -10%	10V
C14	C00-513-P	Capacitor, CEA4R7P16	4.7μF	+100% -10%	16V
C15	C03-219-M	Capacitor, CQMA502M50	0.005μF	±20%	50V
C16	C01-753-P	Capacitor, CEB471P25	470μF	+100% -10%	25V
C17	C01-762-P	Capacitor, CEB102P25	1000μF	+100% -10%	25V

RESISTORS

Ref. Key	Parts No.	Description	Notes		
R1	Y05-287-J	Resistor, RD1/4VS102J	1kΩ	±5%	1/4W
R2	Y05-346-J	Resistor, RD1/4VS104J	100kΩ	±5%	1/4W
R3	Y05-258-J	Resistor, RD1/4VS101J	100Ω	±5%	1/4W
R4	Y05-349-J	Resistor, RD1/4VS154J	150kΩ	±5%	1/4W
R5	Y05-293-J	Resistor, RD1/4VS222J	2.2kΩ	±5%	1/4W
R6	Y05-346-J	Resistor, RD1/4VS104J	100kΩ	±5%	1/4W
R7	Y05-284-J	Resistor, RD1/4VS821J	820Ω	±5%	1/4W
R8	Y05-310-J	Resistor, RD1/4VS682J	6.8kΩ	±5%	1/4W
R9	Y05-287-J	Resistor, RD1/4VS102J	1kΩ	±5%	1/4W
R10	Y05-320-J	Resistor, RD1/4VS153J	15kΩ	±5%	1/4W
R11	Y05-323-J	Resistor, RD1/4VS223J	22kΩ	±5%	1/4W
R12	Y05-368-J	Resistor, RD1/4VS684J	680kΩ	±5%	1/4W
R13	Y05-287-J	Resistor, RD1/4VS102J	1kΩ	±5%	1/4W
R14	Y05-346-J	Resistor, RD1/4VS104J	100kΩ	±5%	1/4W
R15	Y05-258-J	Resistor, RD1/4VS101J	100Ω	±5%	1/4W
R16	Y05-349-J	Resistor, RD1/4VS154J	150kΩ	±5%	1/4W
R17	Y05-293-J	Resistor, RD1/4VS222J	2.2kΩ	±5%	1/4W
R18	Y05-346-J	Resistor, RD1/4VS104J	100kΩ	±5%	1/4W
R19	Y05-284-J	Resistor, RD1/4VS821J	820Ω	±5%	1/4W
R20	Y05-310-J	Resistor, RD1/4VS682J	6.8kΩ	±5%	1/4W
R21	Y05-287-J	Resistor, RD1/4VS102J	1kΩ	±5%	1/4W
R22	Y05-320-J	Resistor, RD1/4VS153J	15kΩ	±5%	1/4W
R23	Y05-323-J	Resistor, RD1/4VS223J	22kΩ	±5%	1/4W
R24	Y05-368-J	Resistor, RD1/4VS684J	680kΩ	±5%	1/4W
R25	Y03-293-J	Resistor, RD1/4PS222J	2.2kΩ	±5%	1/4W
R26	Y05-274-J	Resistor, RD1/4VS471J	470Ω	±5%	1/4W

SEMI-CONDUCTORS

Ref. Key	Parts No.	Description	Notes
Q1	G06-003-E,G or G05-012-F,G	Transistor, 2SC900E,U or Transistor, 2SC732GR, BL	
Q2	G06-003-E,G or G05-411-C,D	Transistor, 2SC900E or Transistor, 2SC733GR, BL	
Q3	G06-003-E,G or G05-012-F,G	Transistor, 2SC900E,U or Transistor, 2SC732GR, BL	
Q4	G06-003-E,G or G05-411-C,D	Transistor, 2SC900E or Transistor, 2SC733GR, BL	
D1	G00-546-A or G00-545-A	Diode, 1N4003 or Diode, 1N4002	
D2	G00-546-A or G00-545-A	Diode, 1N4003 or Diode, 1N4002	
D3	G00-543-A	Diode, SIB01-02	

MISCELLANEOUS

Ref. Key	Parts No.	Description	Notes
HD1	CPB-013-0	Head	
J1	CKB-007-0	Pin Jacks	Output Terminals
PL1	CEL-027-0	Pilot Lamp 6.3V 50mA	Program
PL2	CEL-027-0	Pilot Lamp 6.3V 50mA	Program
PL3	CEL-027-0	Pilot Lamp 6.3V 50mA	Program
PL4	CEL-027-0	Pilot Lamp 6.3V 50mA	Program
S1	CSN-027-0	Leaf Switch	Motor Switch
S2	CSN-028-0	Leaf Switch	Indicator Lamps & Amplifier Switch
S3	CSG-039-0	Push Switch	Program Selector
S4	CXA-529-0	Cam Assembly	Program Selector
SO	CXP-010-0	Solenoid Assembly	
T1	CTT-028-0	Transformer	Power Supply for USA
	CTT-030-0	Transformer	Power Supply for Canada

7. EXPLODED VIEW

7.1 CABINET & CHASSIS

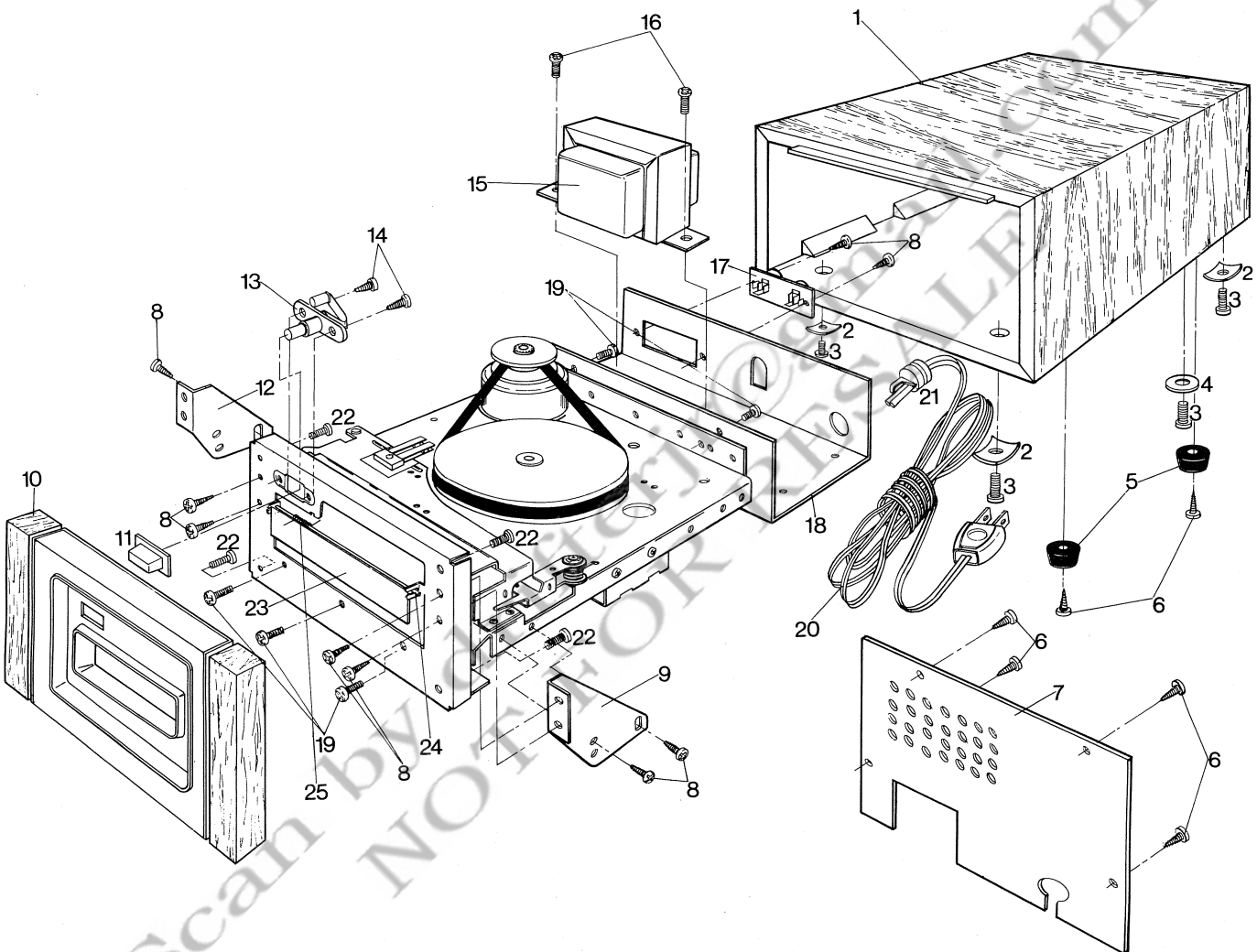


Fig. 14

- Parts List

NOTICE: Any parts asterisked (*) are subject to being not supplied.

Ref. Key	Parts No.	Description	Notes
1	CMX-084-0	Cabinet Assembly	
2	CBE-038-0	Lock Washer	
3	B10-079-B	Screw, Machine M4 x 14	
4	CBE-039-0	Flat Washer M4	
5	CNV-247-0	Foot	
6	B02-013-B	Screw, Wood M3.1 x 10	
7	CNS-141-0	Backboard	
8	B08-227-B	Screw, Tapping M3 x 6	
9*	CNC-889-0	Support Bracket B	
10	CXA-717-0	Escutcheon Assembly	
11	CAC-075-0	Program Selector Button	
12*	CNC-888-0	Support Bracket A	
13	CSG-039-0	Push Switch	Program Selector
14	B08-230-B	Screw, Tapping M3 x 12	
15	CTT-028-0	Transformer	Power Supply for USA
	CTT-030-0	Transformer	Power Supply for Canada
16	B10-874-B	Screw, Machine M4 x 5	
17	CKB-007-0	Pin Jacks	Output Terminals 2-P
18*	CNC-890-0	Mounting Bracket	Transformer and Pin Jacks
19	B10-263-B	Screw, Machine M3 x 4	
20	CDG-012-0	Power Supply Cord	
21	CNV-245-0	Cord Strain Relief	
22	B08-228-B	Screw, Tapping M3 x 8	
23	CAT-013-0	Cartridge Door	
24	CLA-298-0	Shaft	Cartridge Door
25	CBH-177-0	Spring	Cartridge Door Shaft

7.2 MECHANISM

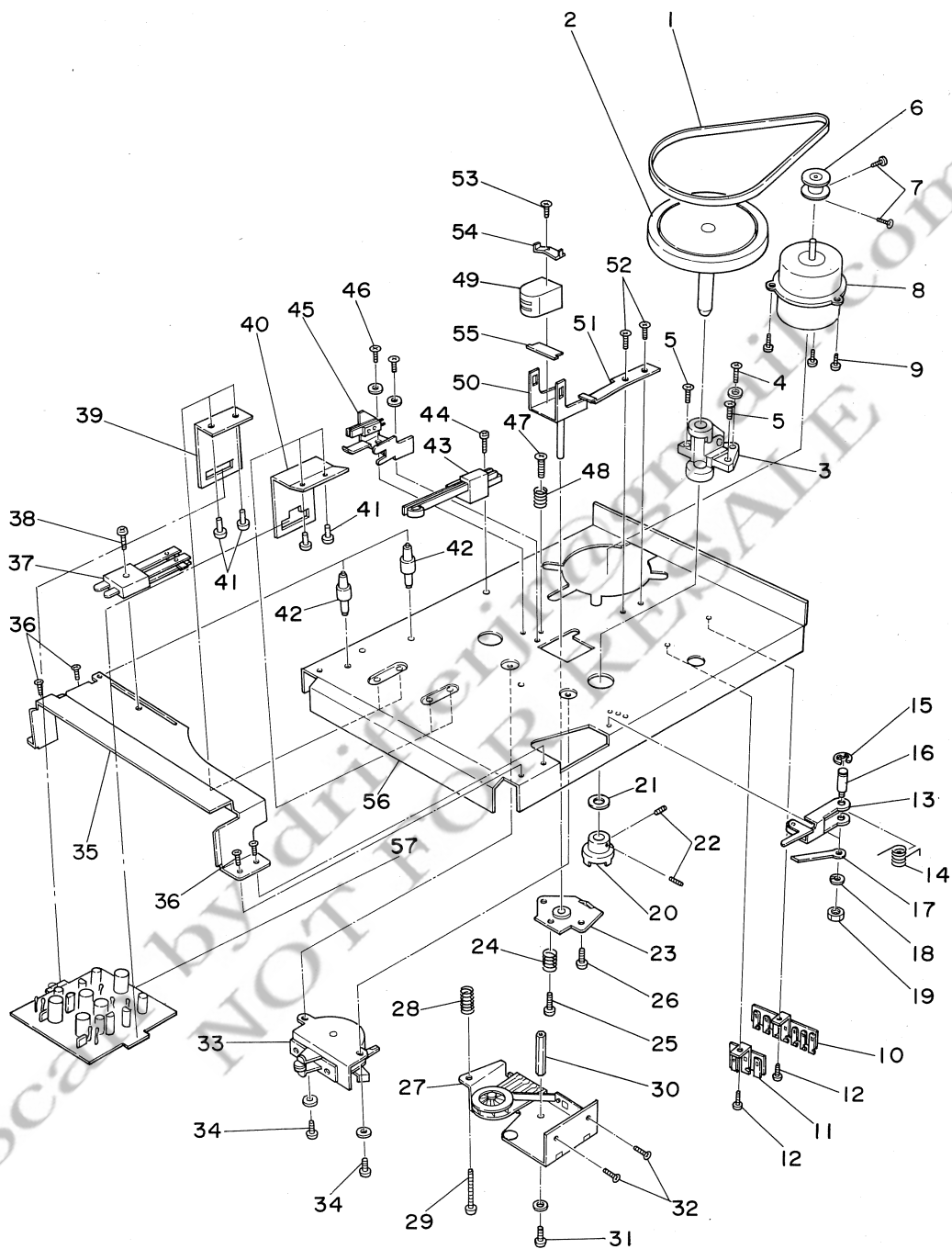


Fig. 15

● Parts List

NOTICE: Any parts asterisked (*) are subject to being not supplied.

Ref. Key	Parts No.	Description	Notes
1	CNT-035-0	Drive Belt	
2	CNR-032-0	Flywheel	
3	CNR-029-0	Flywheel Holder	
4	B06-113-B	Screw, Machine M2.6 x 10	
5	B08-229-B	Screw, Tapping M2.6 x 10	
6	CXA-719-0	Motor Pulley	
7	B10-203-B	Screw, Machine M2 x 5	
8	CXM-019-0	Motor	
9	B08-227-B	Screw, Tapping M3 x 6	
10	CKC-019-0	Lug Terminal	7-P
11	CKC-018-0	Lug Terminal	3-P
12	B08-227-B	Screw, Tapping M3 x 6	
13	CXA-532-0	Pressure Roller Assembly	
14	CBH-124-0	Spring	Pressure
15	B20-107-0	E Type Washer	
16	CLA-212-0	Shaft	
17	CNC-661-0	Cord Binder	
18	B20-012-B	Spring Lock Washer M3	
19	B70-003-B	Nut M3	
20	CNV-183-0	Channel Selector Cam	
21	CBF-037-0	Nylon Washer	
22	B90-014-E	Screw, Set M4 x 5	
23	CXA-531-0	Head Base Assembly	
24	CBH-122-0	Spring	Head Base
25	B10-265-B	Screw, Machine M3 x 10	Head Height Adjusting
26	B10-267-B	Screw, Machine M3 x 14	
27	CXA-529-0	Cam Assembly	Program Selector
28	CBH-123-0	Spring	Cam Height
29	B10-270-B	Screw, Machine M3 x 20	
30	CLA-214-0	Mounting Stud	
31	B06-111-B	Screw, Machine M2.6 x 6	
32	B10-227-B	Screw, Tapping M3 x 20	
33	CXP-010-0	Solenoid Assembly	Channel Selector
34	B06-162-B	Screw, Machine M3 x 5	
35*	CNC-660-0	Cartridge Guide	
36	B08-227-B	Screw, Tapping M3 x 6	
37	CSN-028-0	Leaf Switch	Indicator Lamps & Amplifier Switch
38	B10-004-B	Screw, Machine M2 x 6	
39*	CNC-663-0	Bracket A	Amplifier P.C. Board Support
40*	CNC-664-0	Bracket B	Amplifier P.C. Board Support
41*	B04-330-R	Aluminum Rivet M3 x 5	
42	CNV-181-0	Cartridge Guide Roller	
43	CSN-027-0	Leaf Switch	Motor Switch
44	B08-228-B	Screw, Tapping M3 x 8	
45	CXA-526-0	Tape Guide Assembly	
46	B06-109-B	Screw, Machine M2.6 x 4	
47	B10-265-B	Screw, Machine M3 x 10	Head Azimuth Adjusting
48	CBH-122-0	Spring	Head Azimuth Adjusting
49	CPB-013-0	Playback Head	
50	CXA-528-0	Head Holder Assembly	
51	CBL-046-0	Spring	Tension
52	B08-227-B	Screw, Tapping M3 x 6	
53	B10-211-B	Screw, Machine M2.6 x 6	
54	CNC-659-0	Head Locking Bar	
55	CNC-658-0	Spacer	Head Height
56*	CNA-062-0	Chassis	
57	CWK-069-0	Amplifier Unit	

Cam Assembly (CXA-529-0)

• Parts List

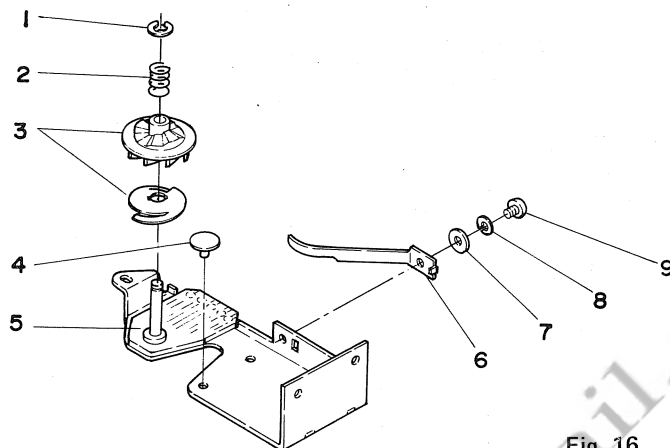


Fig. 16

NOTICE: Any parts asterisked (*) are subject to being not supplied.

	Parts No.	Description	Notes
1	B20-104-B	E Type Washer	
2	CBH-125-0	Spring	
3	CNT-028-0	Cam	
4	CNV-184-0	Capstan Holder	
5*	CNP-227-0	P.C. Board	
6	CBL-047-0	Flat Spring	
7	B20-002-B	Flat Washer M2.6	
8	B20-011-B	Spring Washer M2.6	
9	B10-209-B	Screw, Machine M2.6 x 4	

Solenoid Assembly (CXP-010-0)

• Parts List

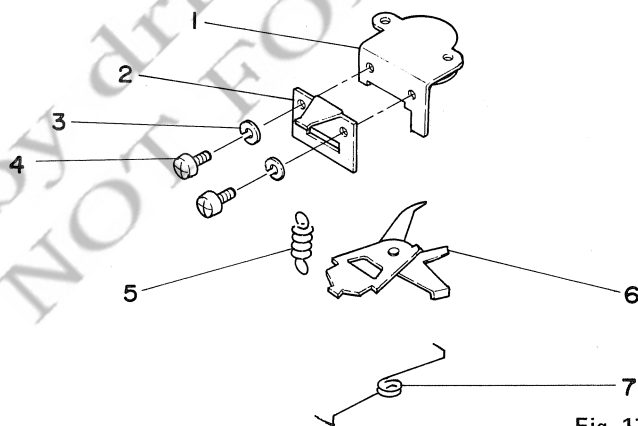


Fig. 17

NOTICE: Any parts asterisked (*) are subject to being not supplied.

Ref. Key	Parts No.	Description	Notes
1	CXP-011-0	Solenoid Unit	Channel Selector
2*	CNC-665-0	Holder	Cam Lever
3	B20-011-B	Spring Washer M2.6	2 Used
4	B10-209-B	Screw, Machine M2.6 x 4	2 Used
5	CBH-126-0	Spring	Return
6	CXA-535-0	Cam Lever	
7	CBH-127-0	Spring	Cam Lever Return

8. PACKING METHOD

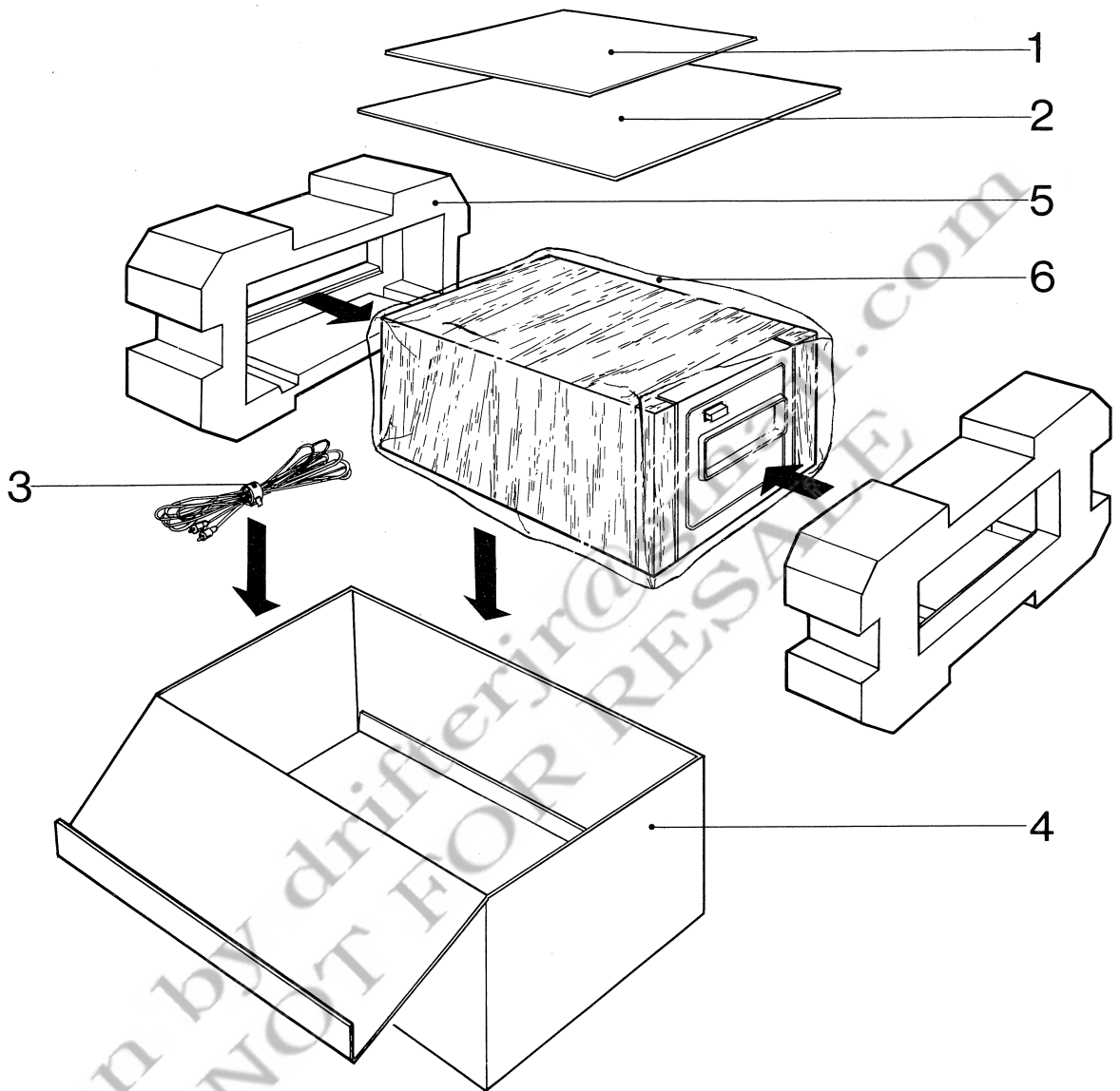


Fig. 18

• Parts List

NOTICE: Any parts asterisked (*) are subject to being not supplied.

Ref. Key	Parts No.	Description	Notes
1*	CRY-002-A	Registration Card	1 Pair for Set
2	CRB-086-0	Owners Manual	
3	CDE-094-0	Patch Cord	
4	CHA-415-0	Packing Case	
5	CHA-416-0	Styrofoam	
6	CEG-013-0	Polyethylene Bag	

- Prior for the cross talk and azimuth adjustments, clean the head and capstan shaft with swab or soft cotton moistened with a little alcohol or head cleaning fluid.

- This unit is adopting a DC motor in its mechanism that can be operated by both 50Hz and 60Hz power source and the conversion for the appropriate frequency of the AC power source or adjustment is therefore unnecessary to this unit.

Scan by drifterjr@gmail.com
NOT FOR RESALE

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