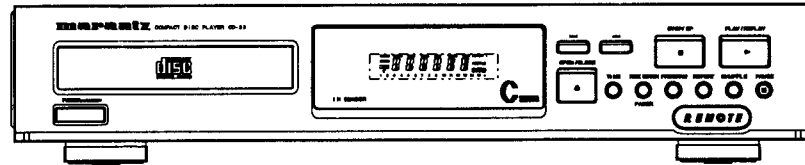


Service Manual

74 CD38/01B/02B/05B

Compact disc player



COMPACT
disc
DIGITAL AUDIO

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Please use this service manual with referring to the user guide (D.F.U) without fail.

marantz®

MARANTZ DESIGN AND SERVICE

Using superior design and selected high grade components, **MARANTZ** company has created the ultimate in stereo sound. Only original **MARANTZ** parts can insure that your **MARANTZ** product will continue to perform to the specifications for which it is famous.

Parts for your **MARANTZ** equipment are generally available to our National Marantz Subsidiary or Agent.

ORDERING PARTS :

Parts can be ordered either by mail or by Fax.. In both cases, the correct part number has to be specified.

The following information must be supplied to eliminate delays in processing your order :

1. Complete address
2. Complete part numbers and quantities required
3. Description of parts
4. Model number for which part is required
5. Way of shipment
6. Signature : any order form or Fax. must be signed, otherwise such part order will be considered as null and void.

USA

MARANTZ AMERICA, INC.
440 MEDINAH ROAD
ROSELLE, ILLINOIS 60172- 2330
USA
PHONE : 630 - 307 - 3100
FAX : 630 - 307 - 2687

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PICKERING, ONTARIO L1W 3K1
CANADA
PHONE : 416-831-6333
FAX : 416-831-6936

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5600 JB EINDHOVEN
THE NETHERLANDS
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MARANTZ PROFESSIONAL PRODUCTS
1000 CORPORATE BLVD., SUITE D
AURORA, ILLINOIS 60504 USA
PHONE : 630 - 820 - 4800
FAX : 630 - 820 - 8103

PROFESSIONAL CANADA

TC ELECTRONICS CANADA LTD
540 FIRING AVE.
BAIE D'URFÉ, QUEBEC H9X 3T2
CANADA
PHONE : 514 - 457 - 4044
FAX : 514 - 457 - 5524

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CEP 04698-970
Sao Paulo, SP, BRAZIL
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FAX : +55 11 534. 8988

THAILAND

MRZ STANDARD CO., LTD.
746 - 750 WANGBURAPA BANGKOK
10200 THAILAND
PHONE : +66 2222 9181
FAX : +66 2225 8871

HONG KONG

FORWARD INTERNATIONAL CORP.LTD.
15 TH FLOOR, REGENT CENTRE,
88 QUEEN'S ROAD, CENTRAL, H. K.
PHONE : +852 521 - 0883
FAX : +852 521 - 7835

TAIWAN

PAI-YUING CO., LTD.
6 TH FL NO, 148 SUNG KIANG ROAD,
TAIPEI, 10429, TAIWAN R.O.C.
PHONE : +886 (2) 5221304 - 8
FAX : +886 (2) 5630415

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UTAMA, 47400 PETALING JAYA
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PHONE : +60 3 - 7184666
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SINGAPORE

FORWARD MARKETING (SINGAPORE) PTE. LTD.
29, LENG KEE ROAD
SINGAPORE I 59099,
PHONE : +65 475 - 4555
FAX : +65 475 - 8623

SHOCK, FIRE HAZARD SERVICE TEST :

CAUTION : After servicing this appliance and prior to returning to customer, measure the resistance between either primary AC cord connector pins (with unit NOT connected to AC mains and its Power switch ON), and the face or Front Panel of product and controls and chassis bottom.

Any resistance measurement less than 1 Megohms should cause unit to be repaired or corrected before AC power is applied, and verified before it is return to the user/customer.

Ref. UL Standard N0. 1492.

In case of difficulties, do not hesitate to contact the Technical Department at above mentioned address.

TECHNICAL SPECIFICATIONS

General

1.Mains voltage	/01B	: 110-127V/220-240V
	/02B	: 220V-230V
	/04B(F B)	: 100V
	/05B	: 230-240V
	/06B(U BL)	: 120V
	/07B	: 230-240V
2.Mains frequency		: 50-60 Hz
3.Mains voltage selection only	/01B	: Voltage selector 2 positions
4.Power consumption mains	standby	: < 3W
	operated	: < 10W

Remote Control

Internal: RC5

Line output

1.Number of channels		: 2
2.Output voltage		: 2 Vrms \pm 3 dB
3.Unbalance left-right		: max. 1 dB
4.Output resistance		: 1 k Ω
5.Frequency response from 20 Hz to 20 kHz		: typ. \pm 0.3 dB
		: max. \pm 0.6 dB
		: with de-emphasis \pm 2 dB
6.Phase non-linearity	from 20 Hz to 16 kHz	: max. 7.0°
	from 16 kHz to 20 kHz	: max. 32°
7.Out-band attenuation		: min. 35 dB above 40 kHz
8.Signal to noise ratio	from 20 Hz to 20 kHz	: typ. 95 dB(min. 90 dB)
	with digital silence	: typ. 110 dB (min. 100 dB)
	A-weighted	: typ. 98 dB
9.Dynamic range (-60 dB)	1 kHz	: typ. -94 dB(min. -90 dB)
	from 20 Hz to 20 kHz	: min. -85 dB
10.Total harmonic distortion + noise	1 kHz	: typ. -85 dB(min. -78 dB)
	from 20 Hz to 20 kHz	: min. -75 dB
11.Channel separation	1 kHz	: typ. 95 dB(min. 86 dB)
	from 20 Hz to 20 kHz	: min. 82 dB
	with digital silence detection	: typ. 110 dB(min. 100 dB)
12Automatic switched deemphasis with time constant 15/50 μ s		

Variable headphone (CD46 only)

1.Output voltage		: max. 5 Vrms \pm 3 dB
2.Unbalance left-right		: max. \pm 1.2 dB
3.Output resistance		: 120 Ω
4.Load impedance range		: 32 Ω to 600 Ω load
5.Output power		: 0 to 30 mW into 30 Ω load
		: 0 to 50 mW into 150 Ω load
		: 0 to 30 mW into 600 Ω load
6.Signal to noise ratio		: typ. 80 dB (1 kHz)
7.Dynamic range		: min. 70 dB (20 Hz -20 kHz)
8.Total harmonic distortion		: min. 60 dB (20 Hz - 20 kHz)
9.Channel separation		: min. 70 dB (1 kHz)
		: min. 65 dB (31.5 Hz - 16 kHz)

Dimensions and weight

1.Apparatus tray closed		: WxDxH 435 x 260 x 90 mm
2.Apparatus tray open		: WxDxH 435 x 405 x 90 mm
3.Weight		: 3 kg

Optical read-out system

1.Laser type		: Semiconductor AlGaAs
2.Wavelength		: 780 nm \pm 20 nm
3.Light output (c.w.)		: max. 0.5 mW

(GB) WARNING

All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically.

When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance. Keep components and tools also at this potential.

ESD**(NL) WAARSCHUWING**

Alle IC's en vele andere halfgeleiders zijn gevoelig voor electrostatische ontladingen (ESD).

Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen verminderen. Zorg ervoor dat u tijdens reparatie via een polsband met weerstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat.

Houd componenten en hulpmiddelen ook op ditzelfde potentiaal.

(F) ATTENTION

Tous les IC et beaucoup d'autres semi-conducteurs sont sensibles aux décharges statiques (ESD).

Leur longévité pourrait être considérablement écourtée par le fait qu'aucune précaution n'est prise à leur manipulation.

Lors de réparations, s'assurer de bien être relié au même potentiel que la masse de l'appareil et enfiler le bracelet serti d'une résistance de sécurité.

Veiller à ce que les composants ainsi que les outils que l'on utilise soient également à ce potentiel.

(D) WARNUNG

Alle ICs und viele andere Halbleiter sind empfindlich gegen elektrostatische Entladungen (ESD).

Unvorsichtige Behandlung bei der Reparatur kann die Lebensdauer drastisch vermindern. Sorgen sie dafür, dass Sie im Reparaturfall über ein Pulsarmband mit Widerstand mit dem Massepotential des Gerätes verbunden sind. halten Sie Bauteile und Hilfsmittel ebenfalls auf diesem Potential.

(I) AVVERTIMENTO

Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statiche (ESD).

La loro longevità potrebbe essere fortemente ridotta in caso di non osservazione della più grande cauzione alla loro manipolazione. Durante le riparazioni occorre quindi essere collegato allo stesso potenziale che quello della massa dell'apparecchio tramite un braccialetto a resistenza.

Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo potenziale.

(GB)

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used.

(NL)

Veiligheidsbepalingen vereisen, dat het apparaat in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen, identiek aan de gespecificeerde worden toegepast.

(D)

Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Originalzustand des Geräts darf nicht verändert werden für Reparaturen sind Original-Ersatzteile zu verwenden.

(I)

Le norme di sicurezza esigono che l'apparecchio venga rimesso nelle condizioni originali e che siano utilizzati pezzi di ricambio identici a quelli specificati.

(F)

Les normes de sécurité exigent que l'appareil soit remis à l'état d'origine et que soient utilisées les pièces de rechange identiques à celles spécifiées.



**CAUTION
VARO!
WARNING
ADVERSEL
DANGER
VORSICHT**

INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO BEAM.

AVATTAESSA OLET ALTTIINA NÄKYMÄTTÖMÄLLE LASER SÄTTEILYLLE ÄLÄ KATSO SÄTTEESEN.

OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD BETRakta EJ STRÅLEN.

USYNLIG LASERSTRÅLING VED ÅBNING. UNDGÅ UNSAETTELSE FOR STRÅLING.

INVISIBLE LASER RADIATION WHEN OPEN. AVOID DIRECT EXPOSURE TO BEAM.

UNSICHTBARE LASERSTRAHLUNG WENN ABDECKUNG GEÖFFNET. NICHT DEM STRAHL AUSSETZEN.

SHOCK, FIRE HAZARD SERVICE TEST:

CAUTION: After servicing this appliance and prior to returning to customer, measure the resistance between either primary AC cord connector pins (with unit NOT connected to AC mains and its Power switch ON), and the face or Front Panel of product and controls and chassis bottom.

Any resistance measurement less than 1 Megohms should cause unit to be repaired or corrected before AC power is applied, and verified before return to user/customer.

Ref. UL Standard NO.1492.

NOTE ON SAFETY:

Symbol Fire or electrical shock hazard. Only original parts should be used to replace any part marked with symbol Any other component substitution (other than original type), may increase risk of fire or electrical shock hazard.

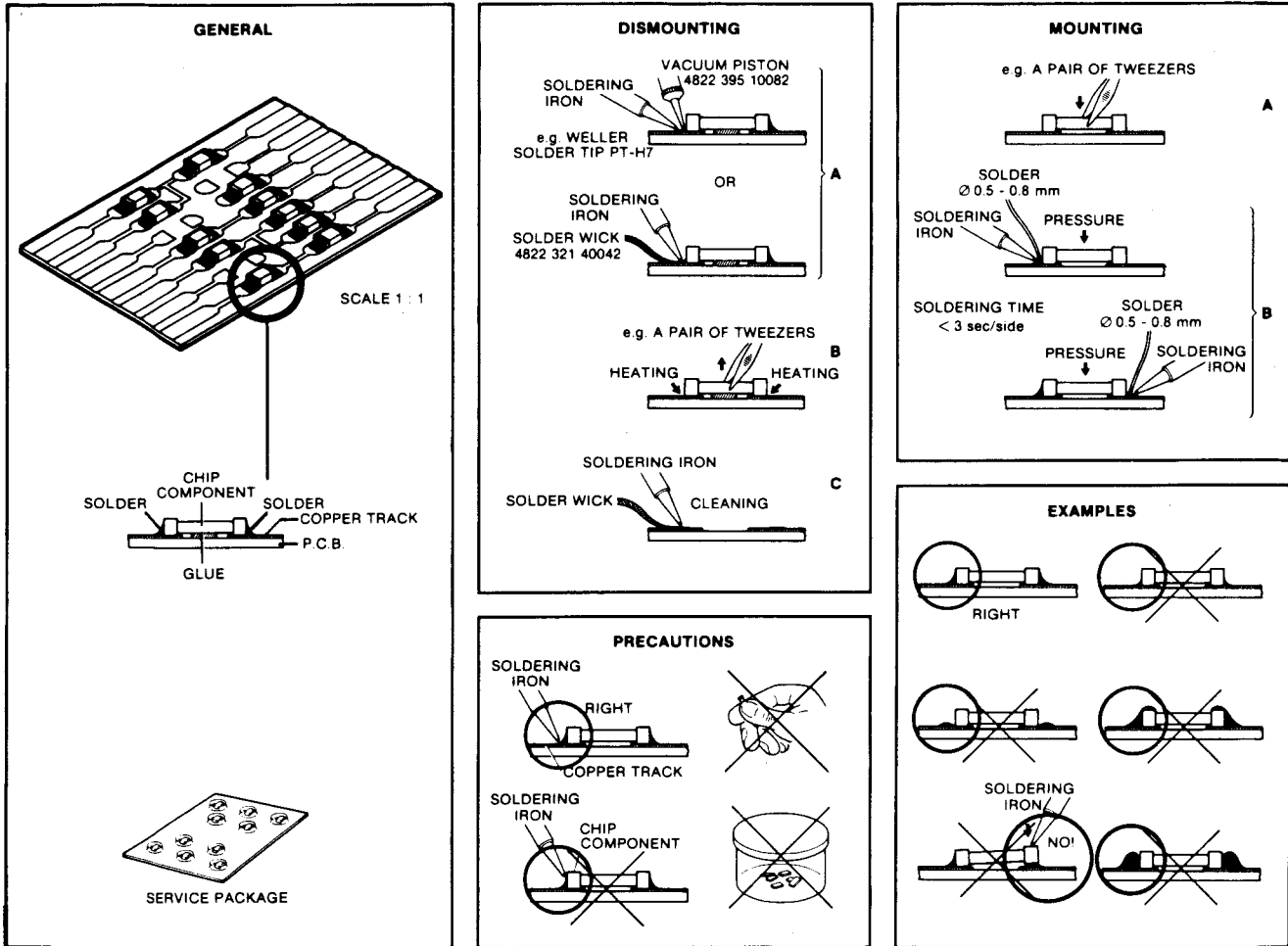
"Pour votre sécurité, ces documents doivent être utilisés par des spécialistes agréés, seuls habilités à réparer votre appareil en panne"

**CLASS 1
LASER PRODUCT**

312 110 03420

SERVICING HINTS

In the set chip components have been applied. For disassembly and assembly of chip components see the figure below.



27 012C12

SERVICE TOOLS

- Audio signals disc
- Disc without errors(SBC444) +
- disc with DO errors,black spots and fingerprints(SBC444A)
- Disc(65 min 1 kHz) without no pause
- Max. diameter disc(58.0 mm)
- Torx screwdrivers
 - Set(straight)
 - Set(square)
- 13th order filter

4822 397 30184

4822 397 30245

4822 397 30155

4822 397 60141

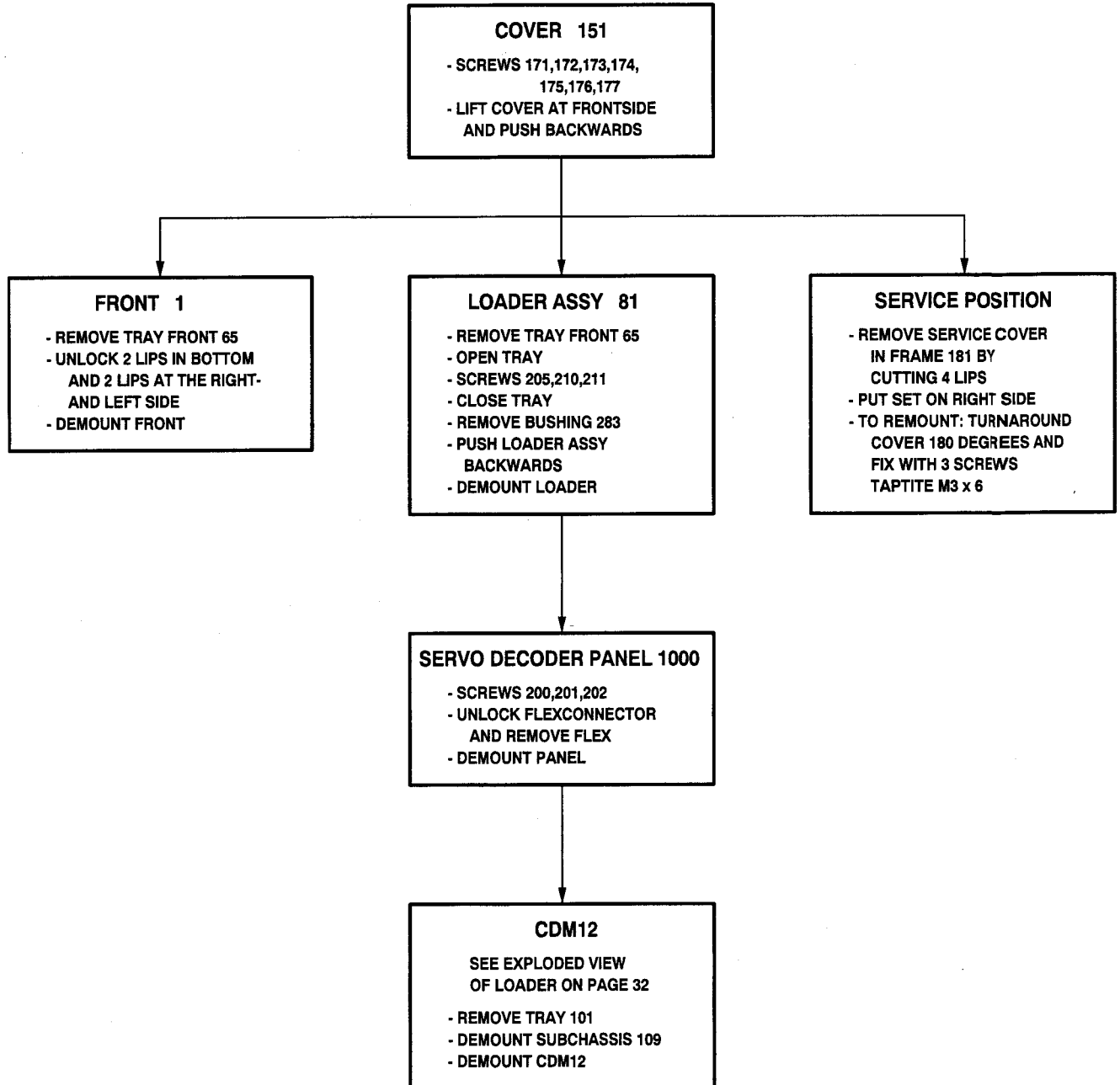
4822 395 50145

4822 395 50132

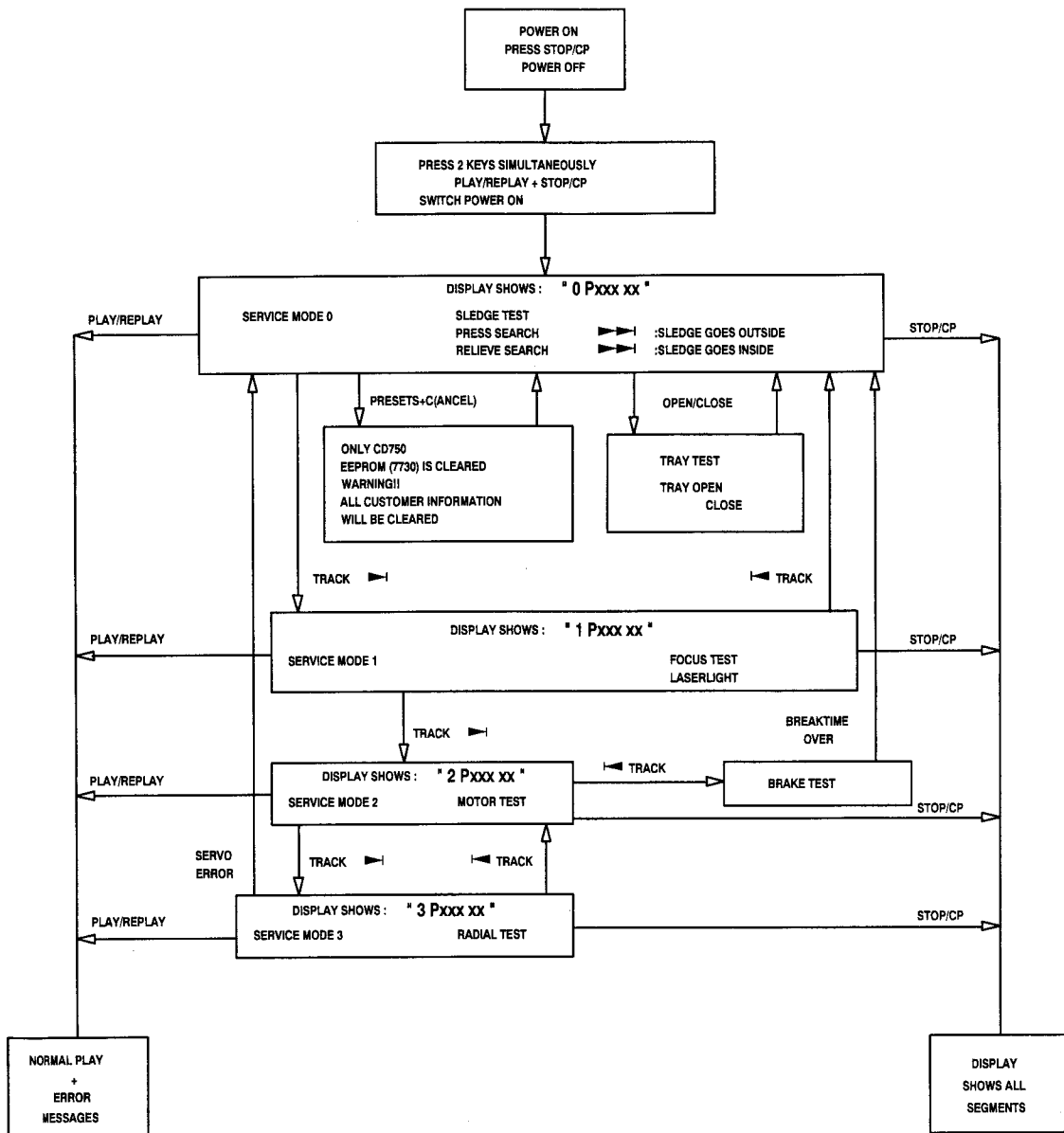
4822 395 30204

DISMANTLING INSTRUCTIONS

OPEN EXPLODED VIEW ON PAGE 33



SERVICE TEST PROGRAM



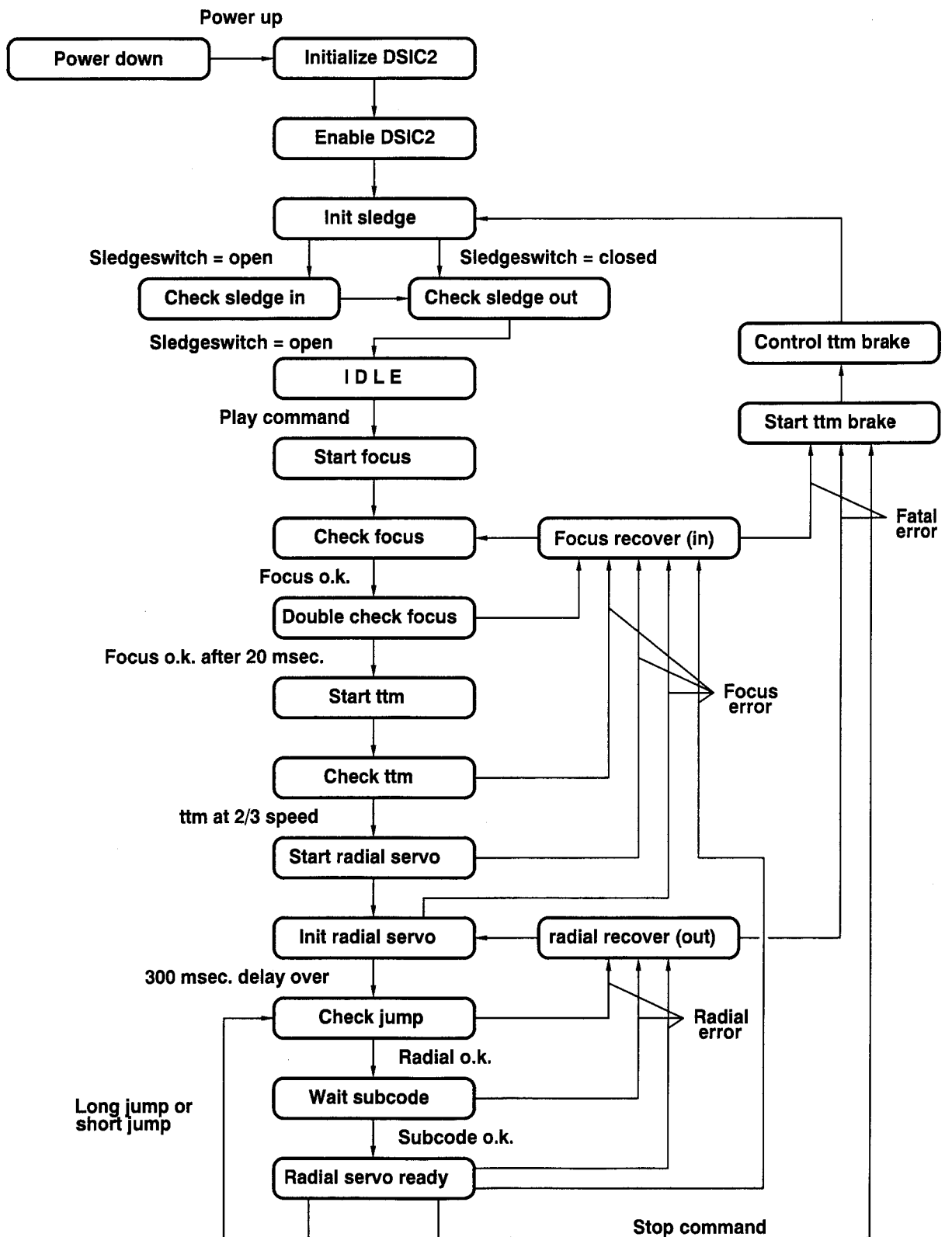
ERROR MESSAGES

- "SLEDGE ERROR"
- "FOCUS ERROR"
- "RADIAL ERROR"
- "MOTOR ERROR"
- "EEP ER"
- "EEP OK"

Pxxx = PROGRAM OF MICROPROCESSOR
xx = VERSION OF PROGRAM

HAS1120
9342

CDM 12.1 start up diagram.



FAULT FINDING GUIDE CDM 12.1

Main Fault Finding Guide CDM 12.1
System

Listen to kind of "scratching sound" while slowly turning the disc by hand.

Disc is turning clock wise at normal speed.

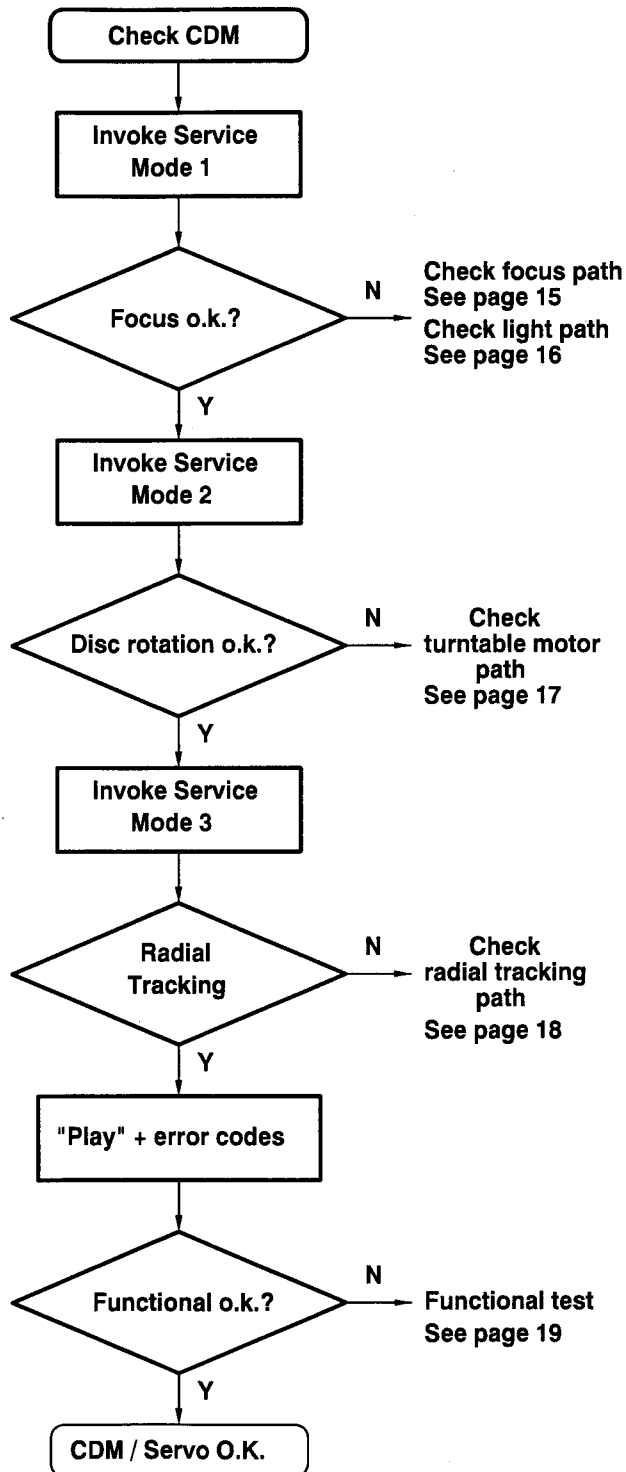
Activity on RAD+
(pin 4 connector 1052)

*After "play" starts at track 1 at time 0:00.

*Go to outer track and start again at time 0:00 after max. 6 seconds.

*Try search function.

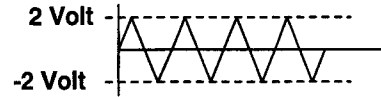
*When going from "Pauze" to "play" music has to restart at the same place.



1)-Turntable and disc free?
Audible and visible control.

2)-Actuator movement?
Visual control.

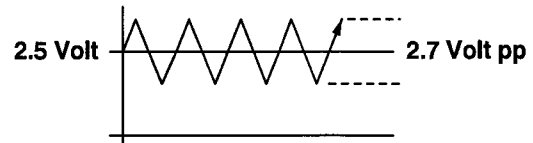
3)-Signals on actuator o.k.?
Triangle wave without disc.
See fig 1.



4)-Connections to actuator o.k.?
Check flex connector pin 2 and 3.

5)-Communication uP <-> IC7000.
SIDA activity (pin 27 of IC7000).

6)-Focus output o.k.?
See fig 2.
Measure with an 10k/3n3 low-pass filter.

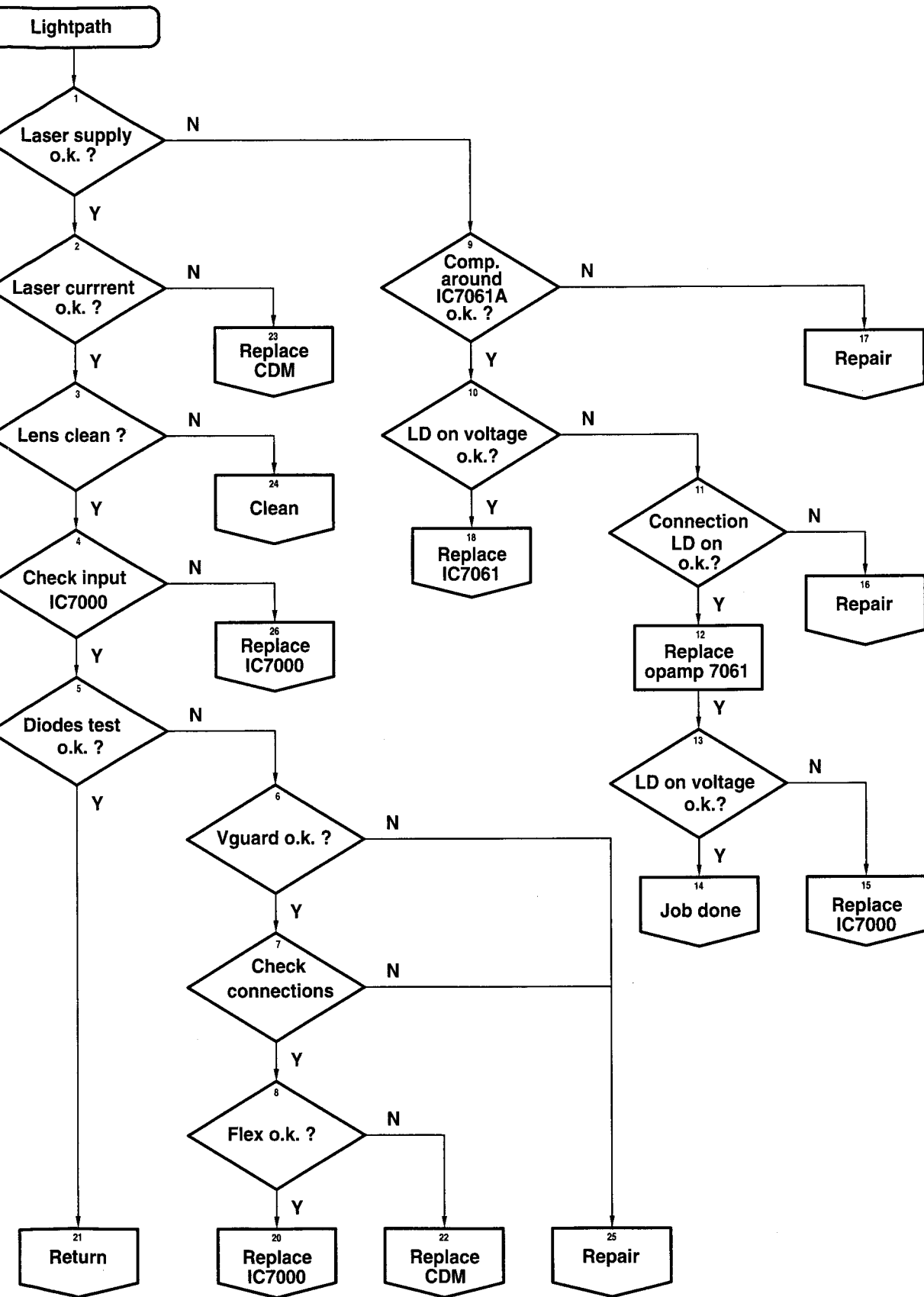


7)-Components o.k.?
Check components R3010,R3011
C2012,C2013
X-tal 1000

8)-Power supply for opamp o.k.?
Check components R3006,R3007
C2008,C2009,C2071,C2074

9)-Check components o.k.?
Check components R3074,R3075,R3076,R3077
R3078,R3079
C2075,C2076

10) & 11)-Pin 17 of IC7000: a frequency of 8.46MHz?



1)-Still in focus (focus o.k.?).
Voltage at pin 9 of connector 1052 > 15mV.

2)-HF-signal present.
VHFI (R3048) > 900mV pp. (testpoint 65).

3)-Check HF-amplifier.

* Supply 5V?

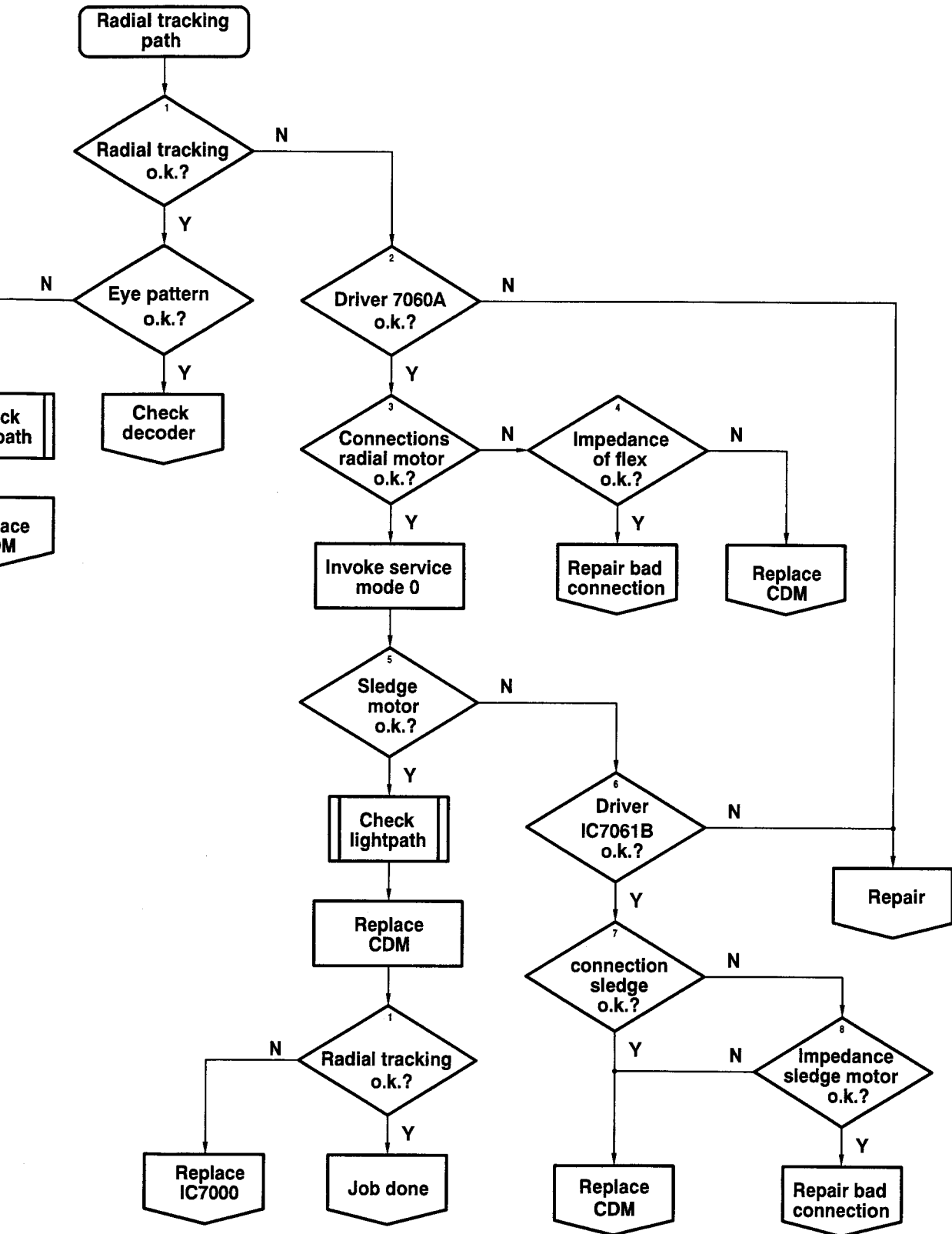
* Testpoint 17=1.4...1.9V DC?

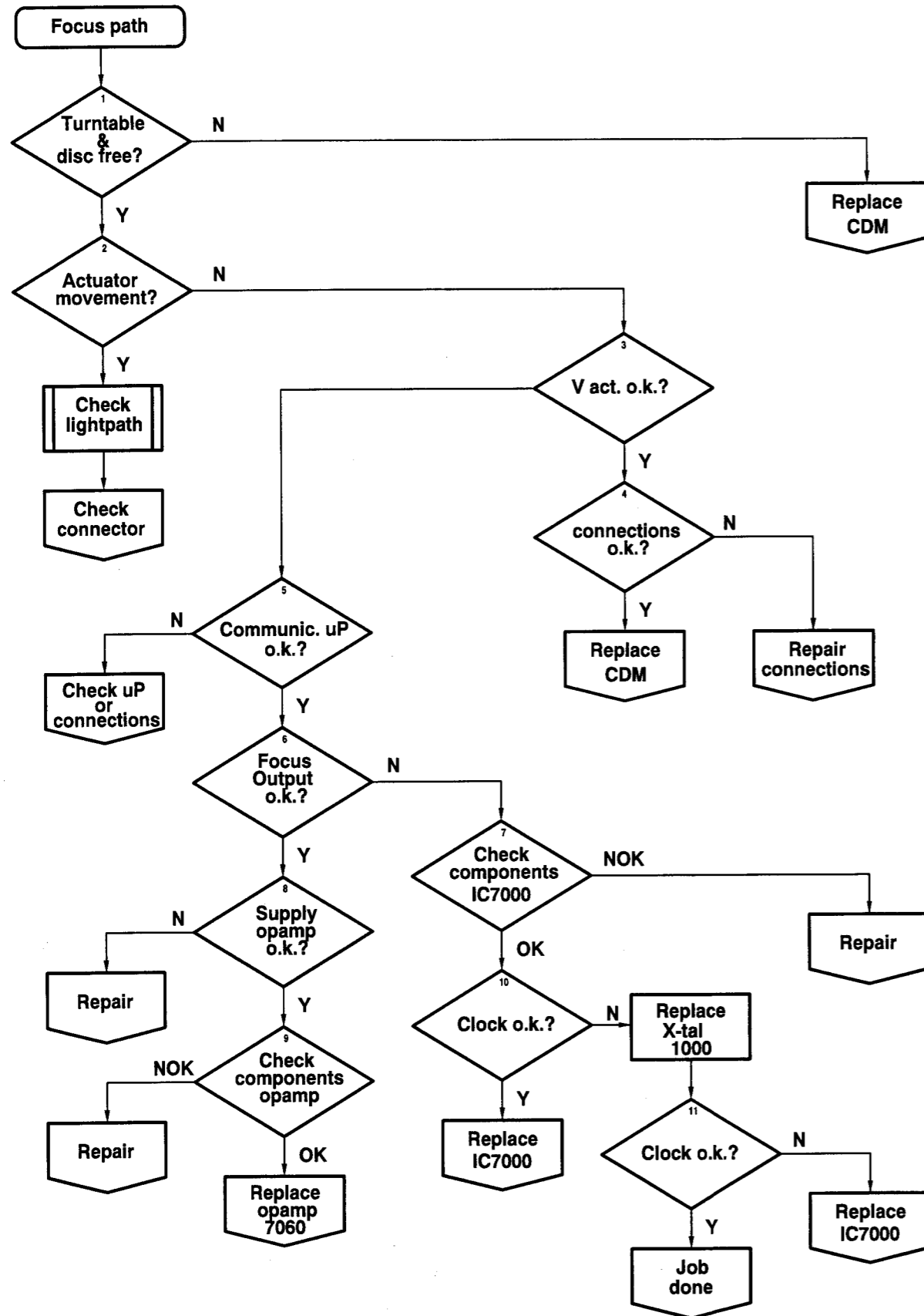
* VHFI DC =2.9...3.6V?

4)-V motor o.k.?

V motor < 2V: replace CDM.

V motor > 2V: check decoder part.





1)-Turntable and disc free?
Audible and visible control.

2)-Actuator movement?
Visual control.

3)-Signals on actuator o.k.?
Triangle wave without disc.
See fig 1.

4)-Connections to actuator o.k.?
Check flex connector pin 2 and 3.

5)-Communication uP <-> IC7000.
SIDA activity (pin 27 of IC7000).

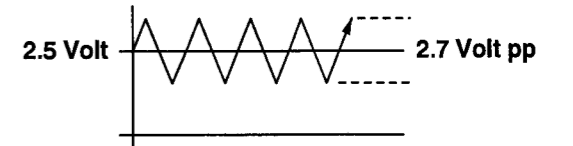
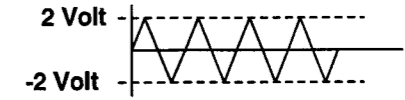
6)-Focus output o.k.?
See fig 2.
Measure with an 10k/3n3 low-pass filter.

7)-Components o.k.?
Check components R3010,R3011
C2012,C2013
X-tal 1000

8)-Power supply for opamp o.k.?
Check components R3006,R3007
C2008,C2009,C2071,C2074

9)-Check components o.k.?
Check components R3074,R3075,R3076,R3077
R3078,R3079
C2075,C2076

10) & 11)-Pin 17 of IC7000: a frequency of 8.46MHz?



WARNING !!! LASER DAMAGE !!!

For measurements on the laser (flexconnector pin 1052-6), certain conditions are absolutely necessary for precaution of laser damage.

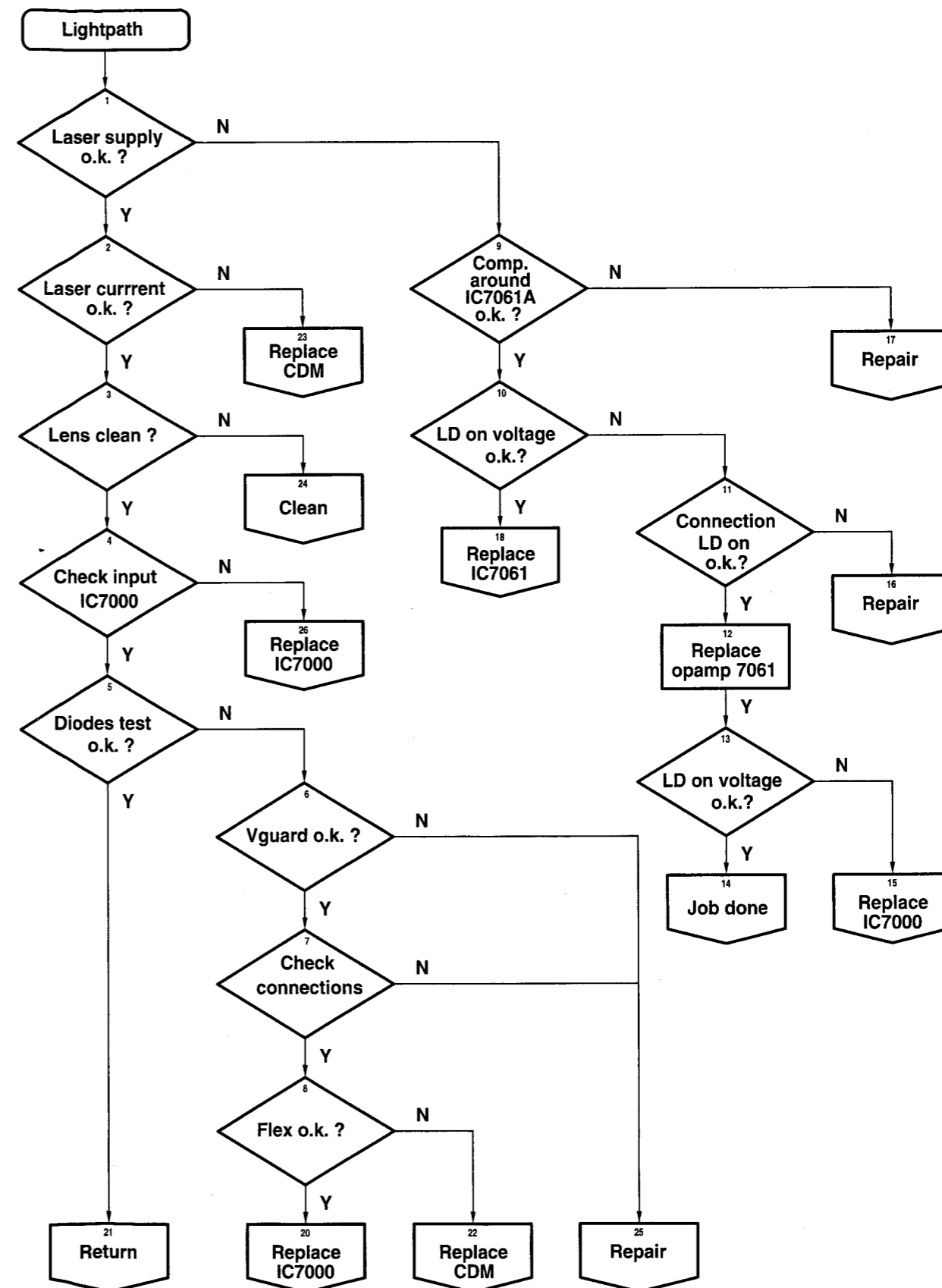
The instruction and sequence for measuring laser current is as follows:

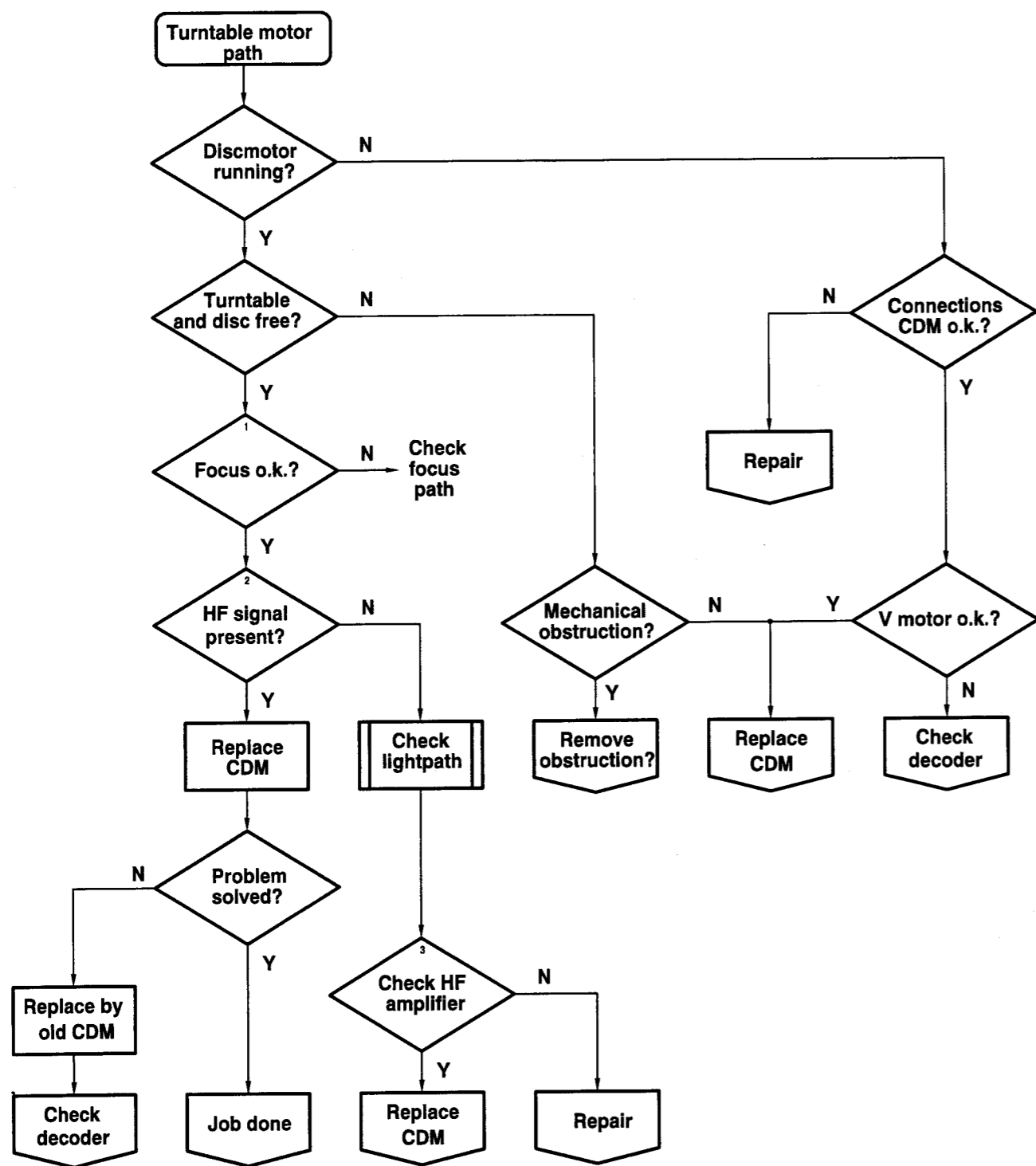
- turn off mains power.
- wait for > 1 second
- connect a multimeter (high input impedance, not grounded accross resistor 3022. (*)
- turn on mains power and go to play mode.
- reading of measurement value (current = reading/4R7) (**)
- go to stop and turn off mains power.
- disconnect the multimeter.

* In case of a laser voltage measurement, connect the multimeter accross elcap 2025, using the same procedure as mentioned above.

** If current is > 95 mA, you can be sure that the laser is defect; If the current is increasing during reading (within +/- 10 seconds), you can be sure that the laser is severely damaged.

- * 1)-Laser supply o.k.? Voltage accross C2025: 4...5V
- ** 2)-Laser current o.k.? Voltage accross R3022: 150...450mV
- 3)-Lens clean? Visual control. Check for dust,grease. Take attention for the blue coating.
- 4)-Check inputs. Switch back to service mode 0. Connect a 2.4 MOhm resistor from
 1052 - 9 to 5V: Voltage on pin 5 of IC7000 < 50mV.
 1052 - 10 to 5V: Voltage on pin 6 of IC7000 < 50mV.
 1052 - 12 to 5V: Voltage on pin 7 of IC7000 < 50mV.
 1052 - 11 to 5V: Voltage on pin 10 of IC7000 < 50mV.
 1052 - 8 to 5V: Voltage on pin 11 of IC7000 < 50mV.
- 5)-Diodes o.k.? Use IR LED of remote control. A half sine wave must be measured on the diodes (on pin 8,9,10,11,12 of conn. 1052) in the 10mV range.
- * 6)-V guard o.k.? Voltage accross C2025: 4...5V
- 7)-Check connections between main PCB and CDM
- 8)-Flex o.k.? Measure diode functions on CDM-flex
- 9)-Check components around IC7061 R3022,R3021,R3020 C2025,C2060,C2064
- 10)-LD ON voltage o.k.? Measure on pin 2 of IC7000:4...5V.





1)-Still in focus (focus o.k.?).
Voltage at pin 9 of connector 1052 > 15mV.

2)-HF-signal present.
VHFI (R3048) > 900mV pp. (testpoint 65).

3)-Check HF-amplifier.

* Supply 5V?

* Testpoint 17=1.4...1.9V DC?

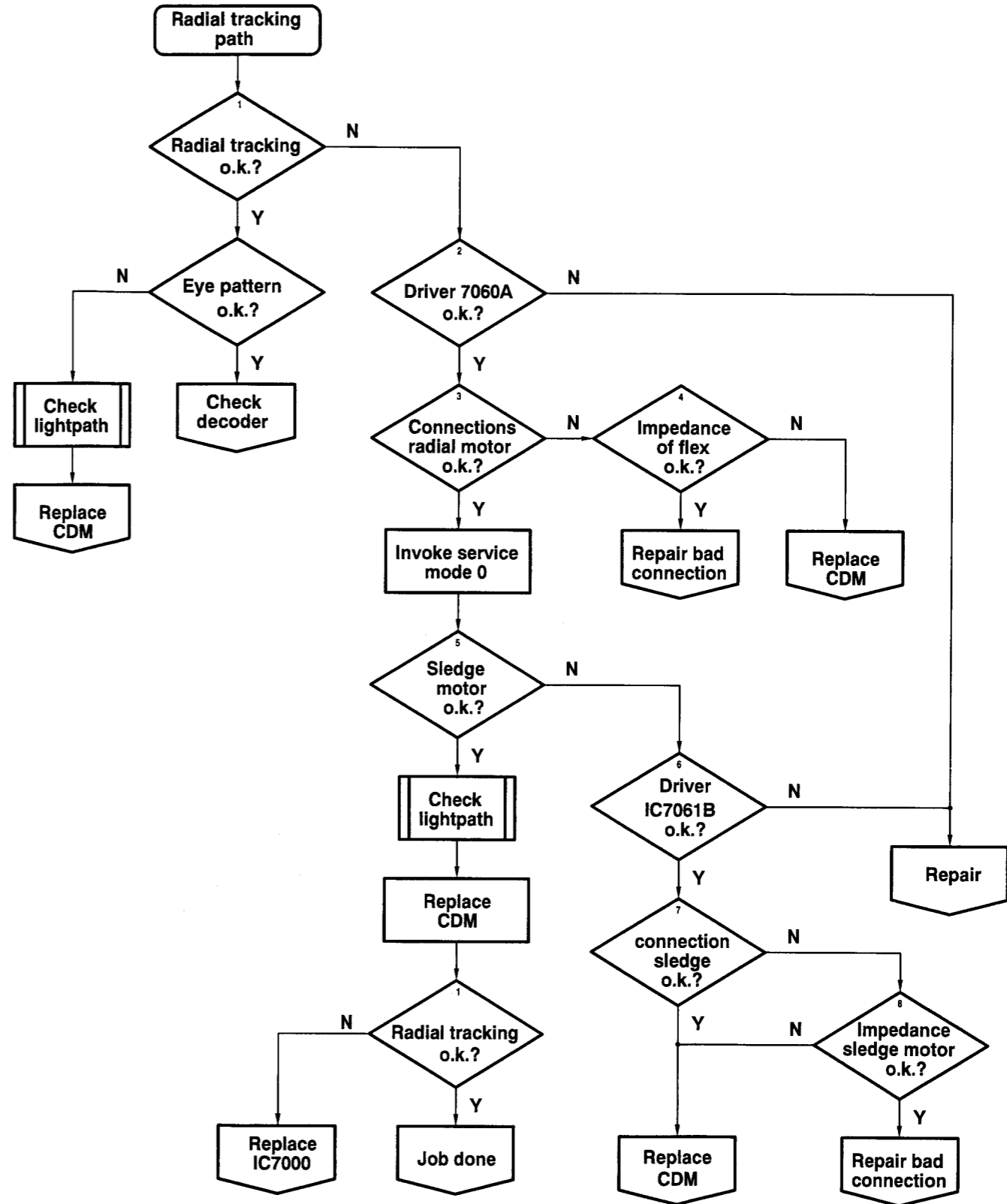
* VHFI DC =2.9...3.6V?

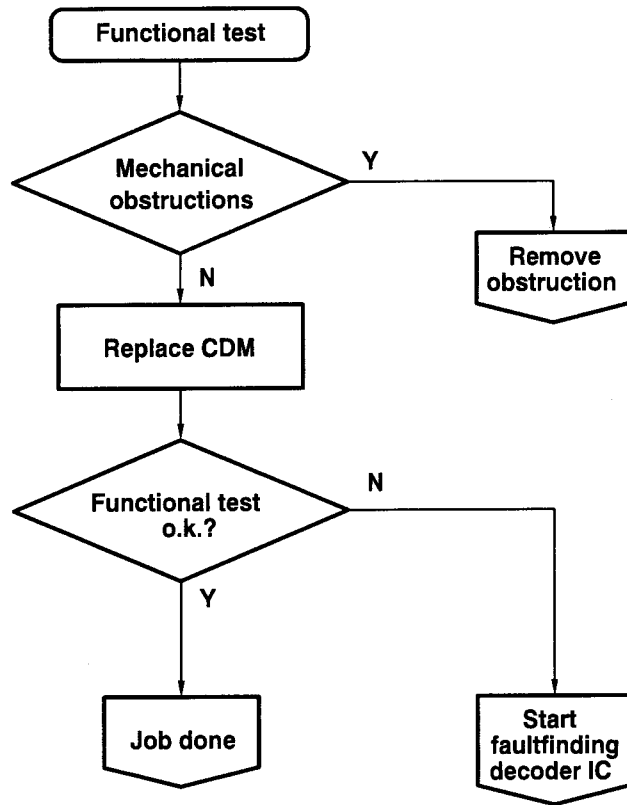
4)-V motor o.k.?

V motor < 2V: replace CDM.

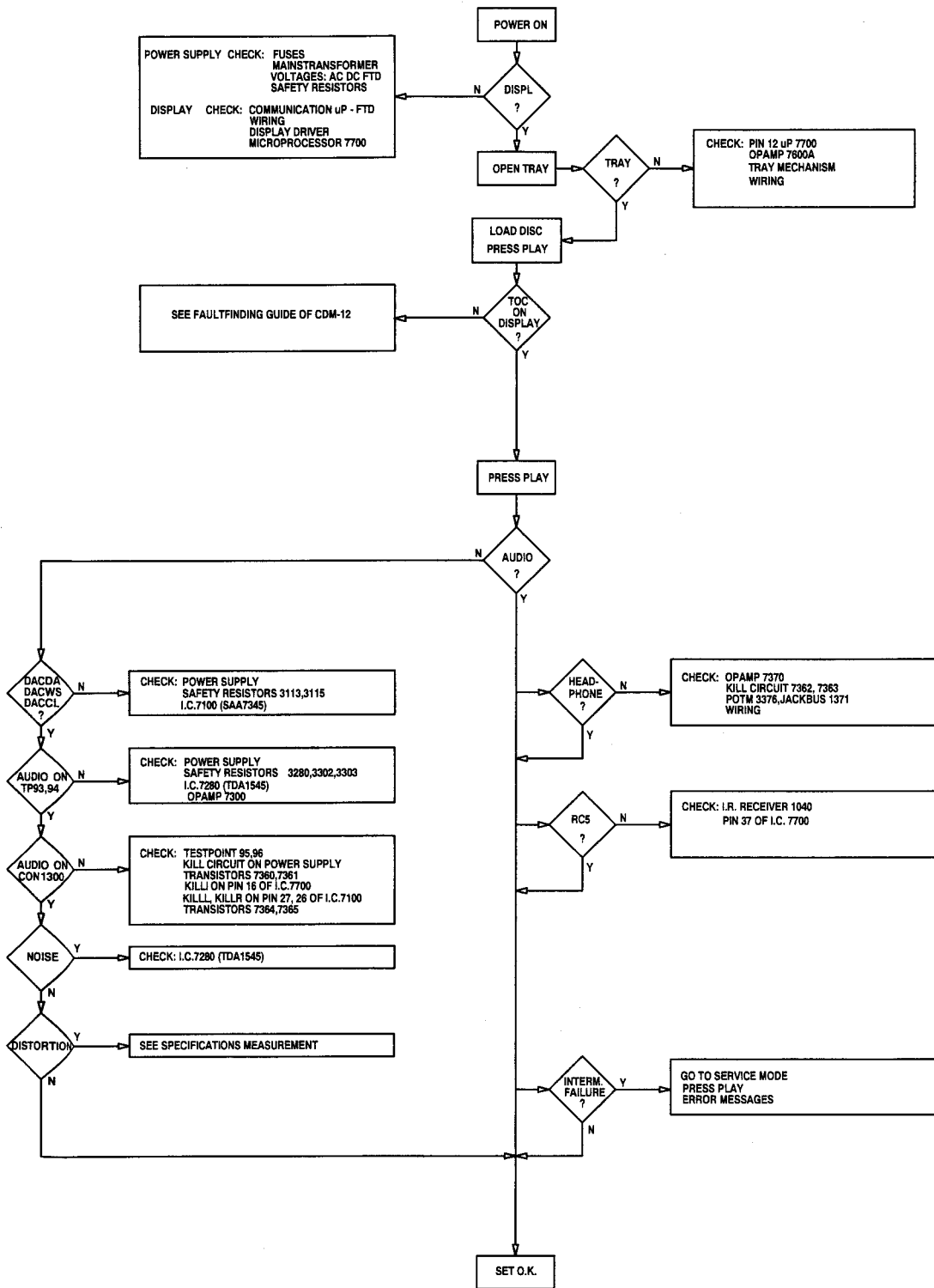
V motor > 2V: check decoder part.

- 1)-Radial tracking o.k.? No OTD (testpoint 67) activity.
- 2)-Check driver 7060A. Supply: C2071,C2074. Components: C2067,C2068,C2069,R3068,R3069,R3070,R3071,R3072,R3073.
- 3)-Check connections radial actuator. Switch power off. Measure impedance of 18 Ohm(+/-20%) between pin 1 and pin 4 of connector 1052.
- 4)-Check impedance on flex. Power off. Disconnect CDM-flex. Measure impedance of 18 Ohm(+/-20%) between pin 1 and pin 4 of connector 1052.
- 5)-Test sledge. Power on. Invoke service mode 0. Move sledge out (with search forward key). Sledge moves to init position after releasing key. Not o.k. if sledge doesn't move, doesn't reach the outer position or makes a rattling noise at the inner side.
- 6)-Check driver 7061B. Supply: C2060,C2064. Components: C2062,C2063,C2066,R3060,R3062,R3064,R3065,R3066,R3067.
- 7)-Check connections of sledge drive. Power off. Measure impedance of 11 Ohm(+/-20%) between pin 5 and pin 6 of connector 1070.
- 8)-Check sledge motor. Remove CDM. Measure impedance of 11 Ohm(+/-20%) between motor terminals.





FAULTFINDING GUIDE

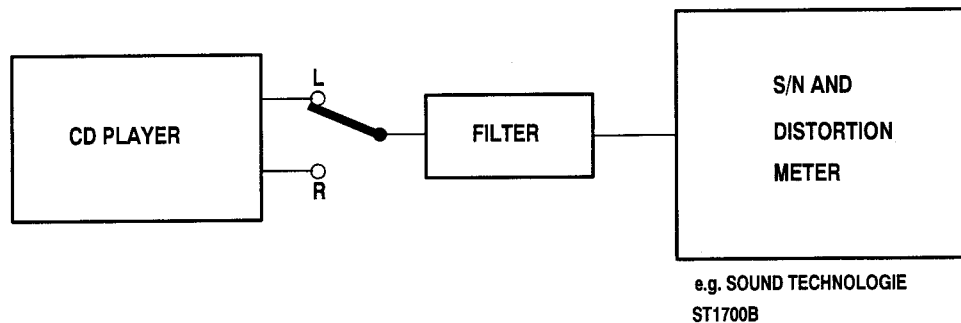


HAS1123
9345

SPECIFICATIONS MEASUREMENT

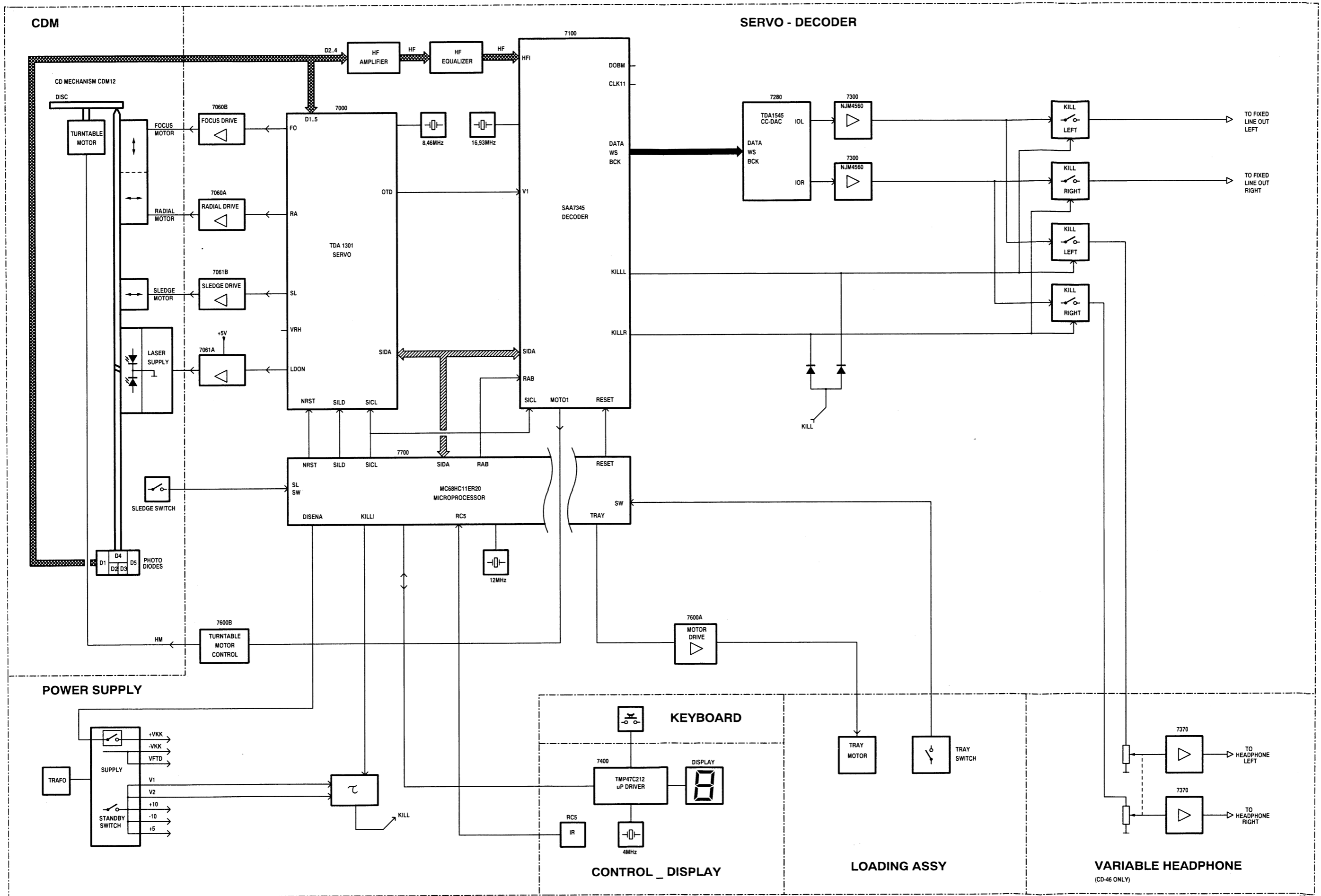
SIGNAL	AUDIO SIGNALS DISC 1	TESTPOINT	REMARKS
ANALOG OUT LEFT	TOTAL HARMONIC DISTORTION TRACKS 10 - 23	FILTER OUTPUT	SEE TECHNICAL DATA SEE DRAWING
ANALOG OUT RIGHT			
ANALOG OUT LEFT	SIGNAL-TO-NOISE RATIO TRACK 1 REFERENCE LEVEL TRACK 49	FILTER OUTPUT	SEE TECHNICAL DATA SEE DRAWING
ANALOG OUT RIGHT			

FILTER = 13TH ORDER FILTER 4822 395 30204

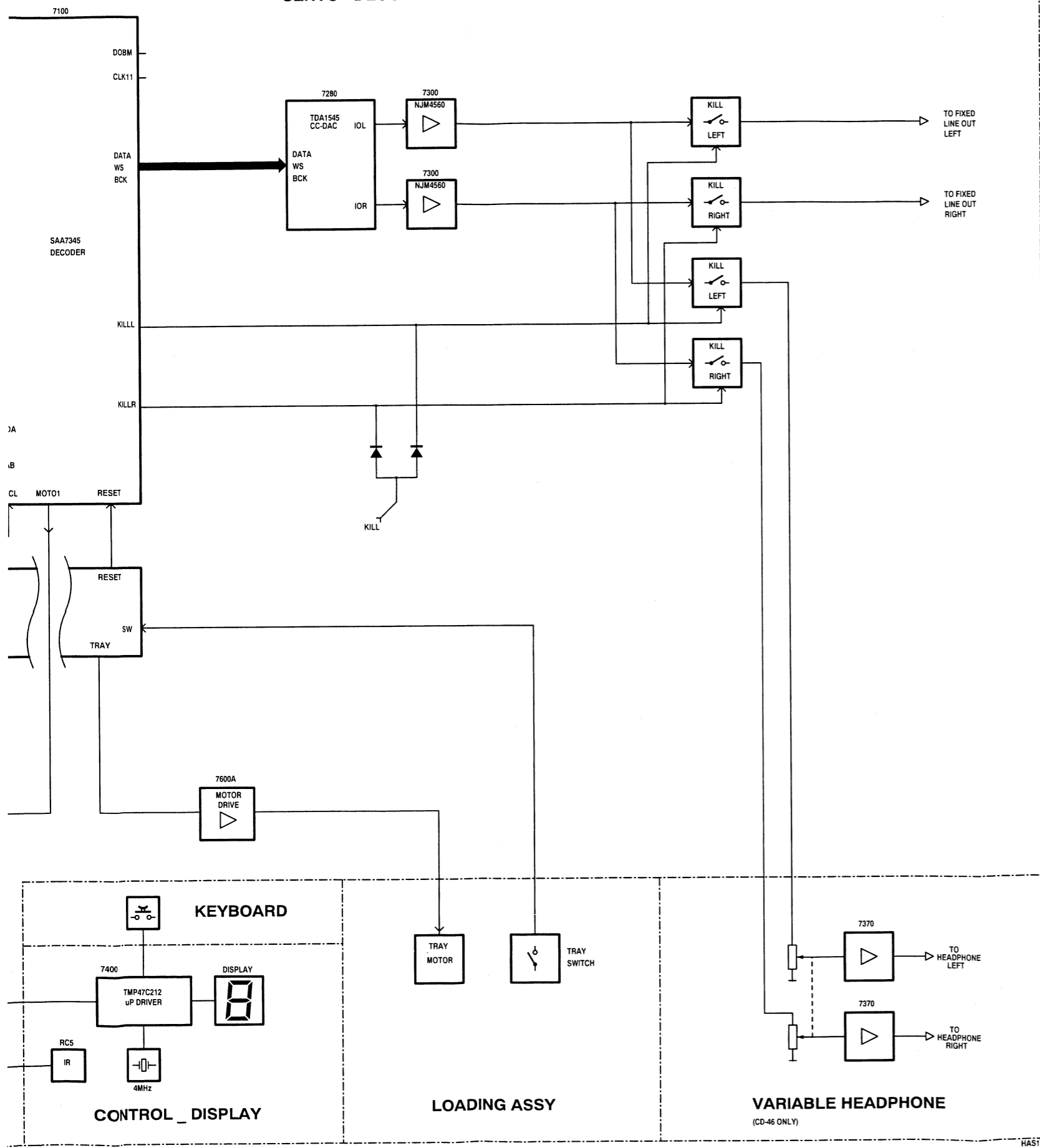


ABBREVIATIONS

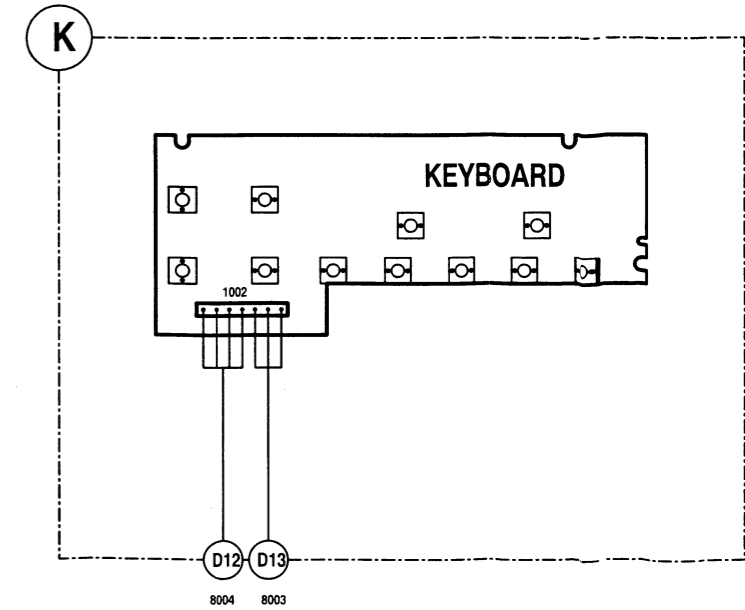
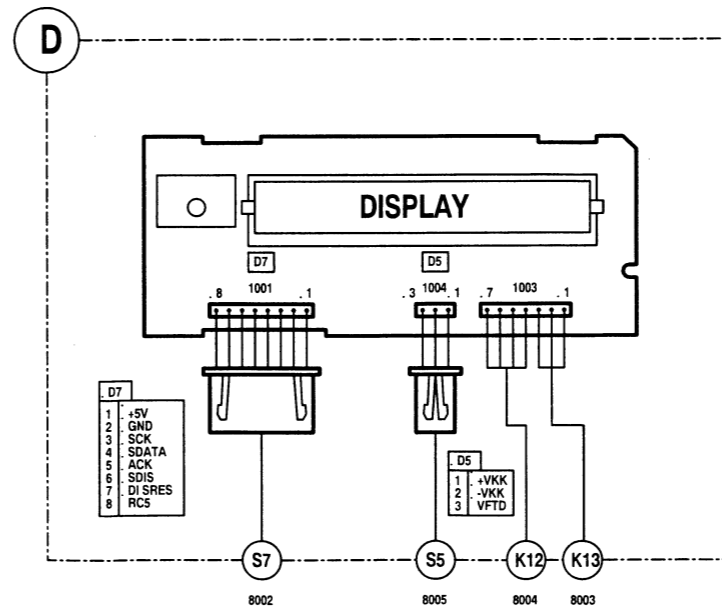
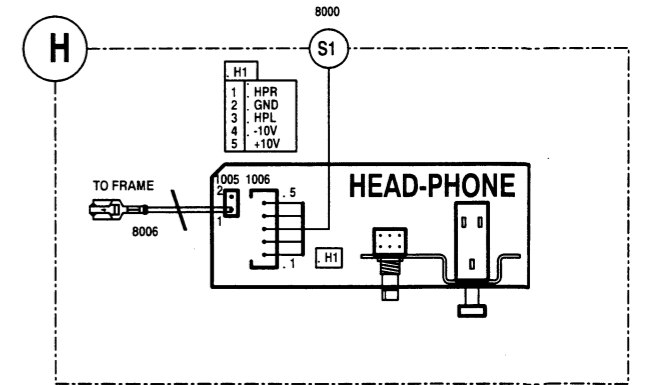
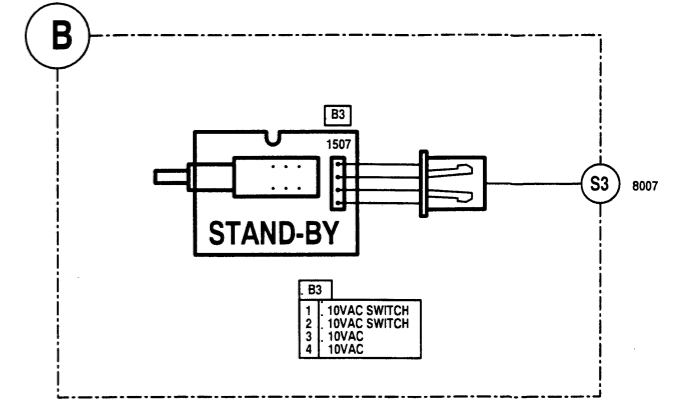
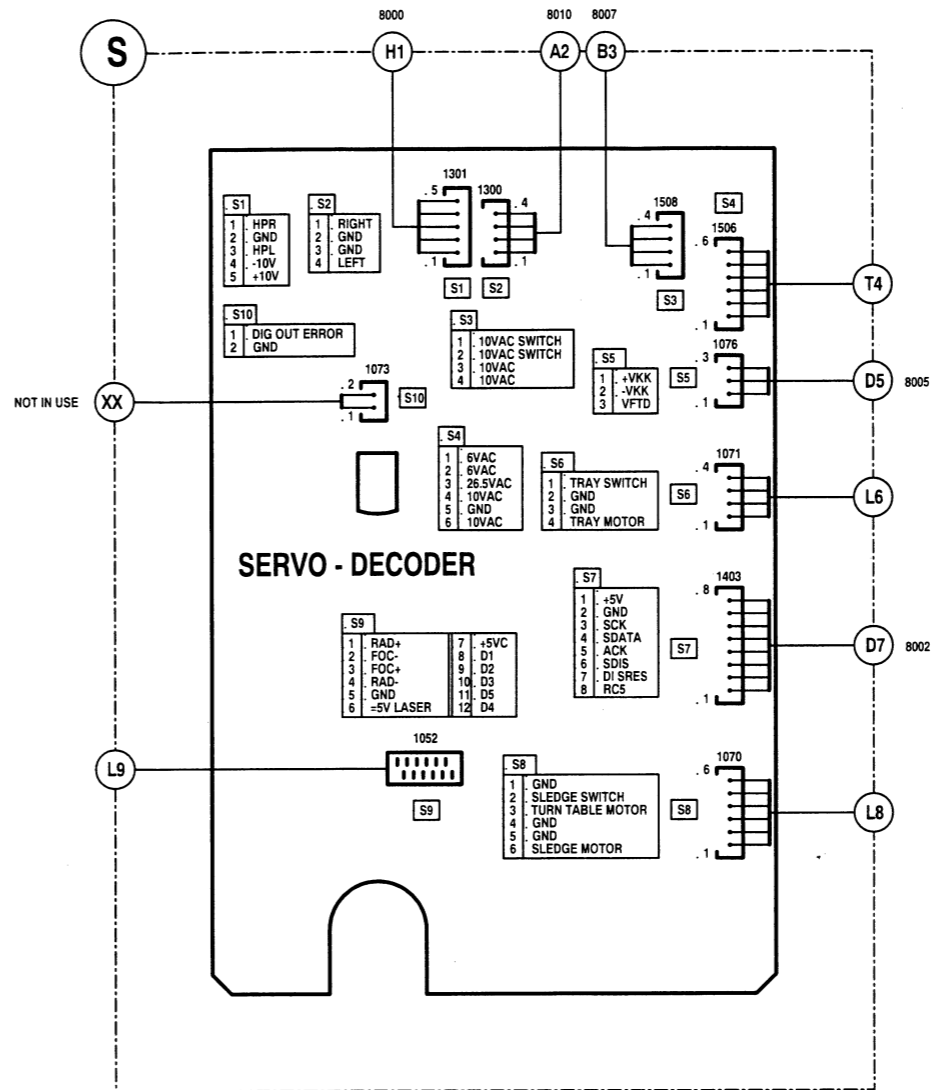
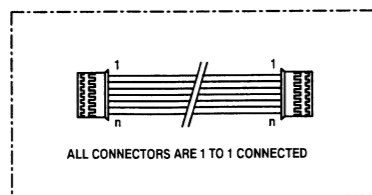
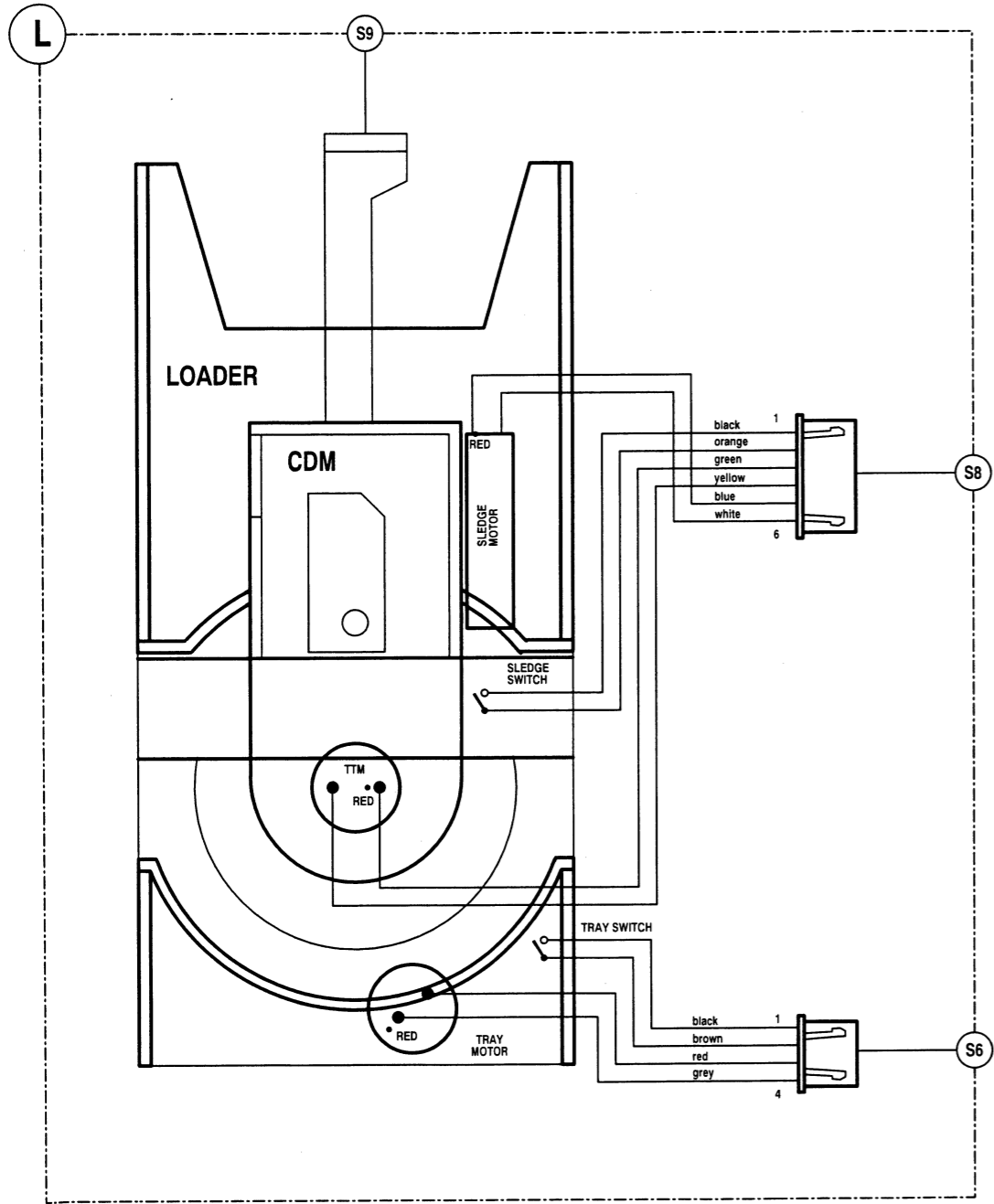
BCK	Bit clock input of CC-DAC TDA1545
CFLG	correction flag output
CL	interface clock input line
CL11	11.2896 MHz clock output
CL16	16.9344 MHz system clock output
CLA	4.2336 MHz microprocessor clock output
CLO	Clock output
CRIN	crystal/resonator input
CROUT	crystal/resonator output
D1-D4	Central diode input of TDA1301
D1-D5	Photodiode signals from CDM12 mechanism
DA	interface data I/O line
DACCL	Bit clock output of CD6 decoder SAA7345
DACDA	Data output of CD6 decoder SAA7345
DACWS	Word select output of CD6 decoder SAA7345
DATA	serial data output/Data input of CC-DAC TDA1545
DOBM	biphase mark output
FO	Focus actuator output
FOC+	+Connection of focus actuator
FOC-	Ground connection of focus actuator
HF	High-Frequency signal to decoder input
HFIN	comparator signal input
HFREF	comparator common-mode input
IOL	Left channel current output
IOR	Right channel current output
IREF	Reference current output
ISLICE	current feedback from data slicer
LDON	Laser drive on
MISC	general purpose DAC output
MOTO1	motor output 1
MOTO2	motor output 2
NRST	Reset input
OTD	Off track detector
PORE	power-on reset enable input(active low)
R1-R2	Satellite diode signal input
RA	Radial actuator output
RAB	interface R/W and acknowledge input
RAD+	+Connection of radial actuator
RAD-	Ground connection of radial actuator
SCLK	serial bit clock output
SICL	Serial interface clock
SIDA	Serial interface data
SILD	Serial interface load
SL OUT	+Connection of sledge motor
SL	Sledge output
TEST1	test input
TEST2	test input
TS1-TS2	Test inputs
V1-5	Versatile input pins
WCLK	Word clock output
WS	Word select input of CC-DAC TDA1545
XTLI	Oscillator input
XTLO	Oscillator output
XTLR	Oscillator reference

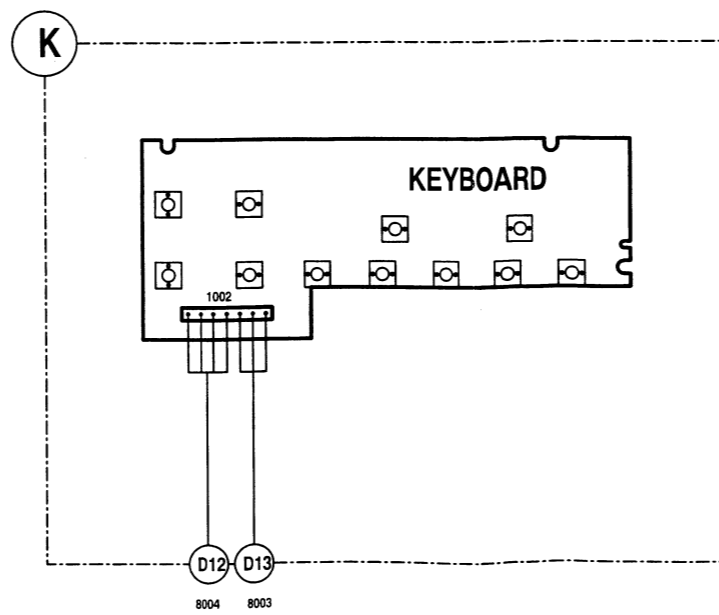
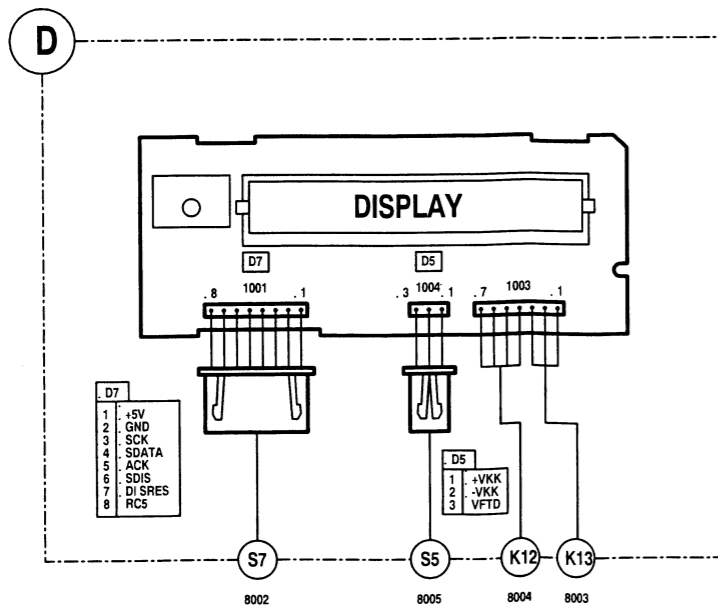
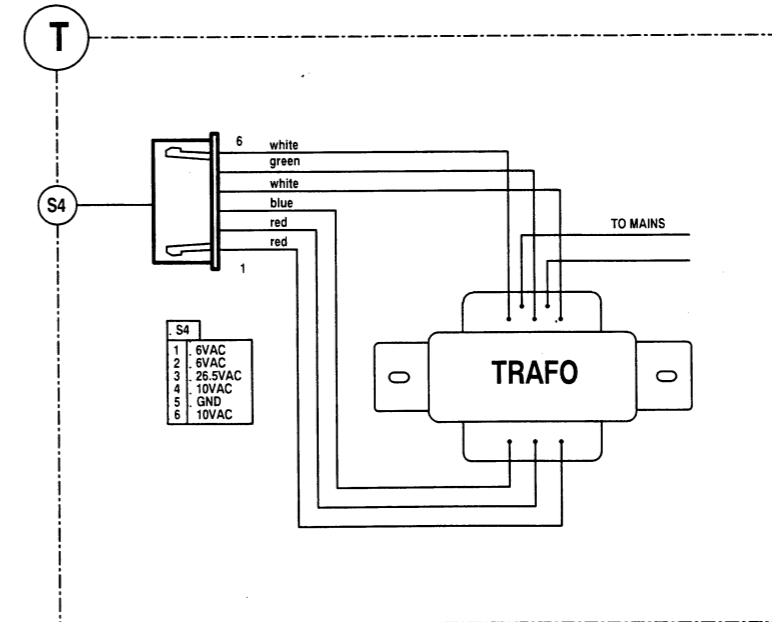
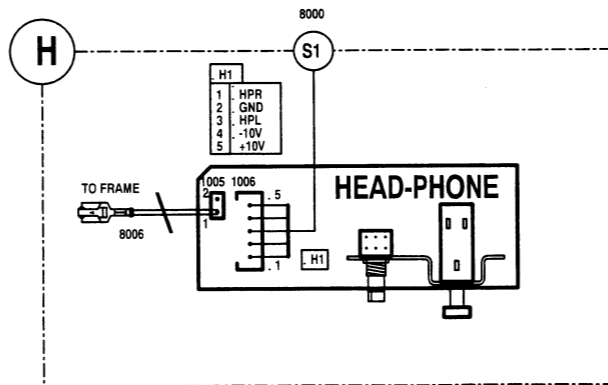
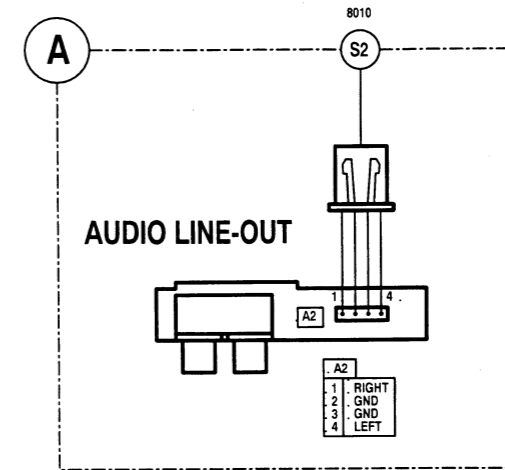
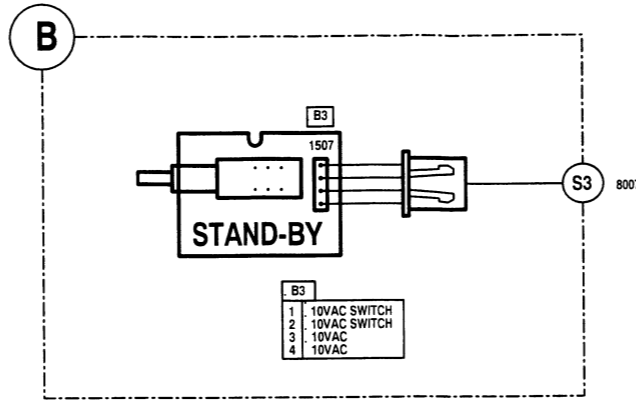
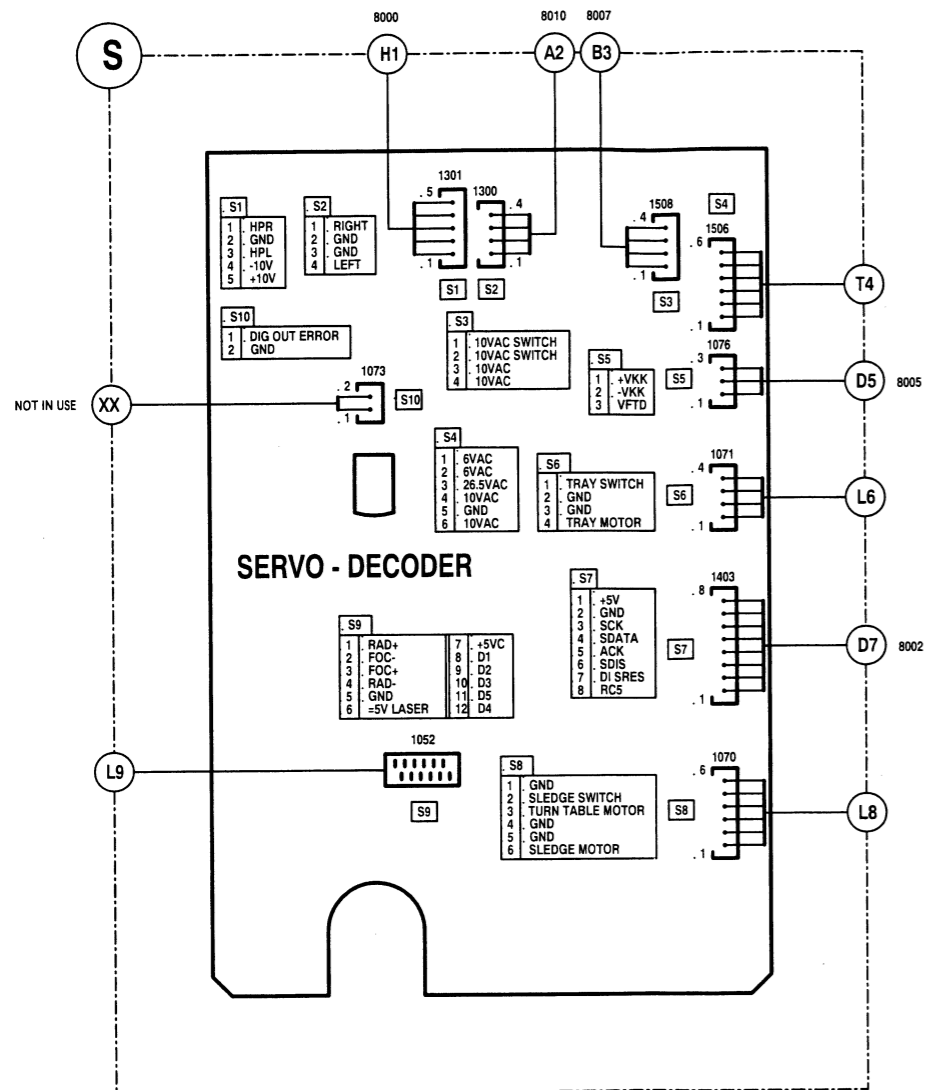


SERVO - DECODER

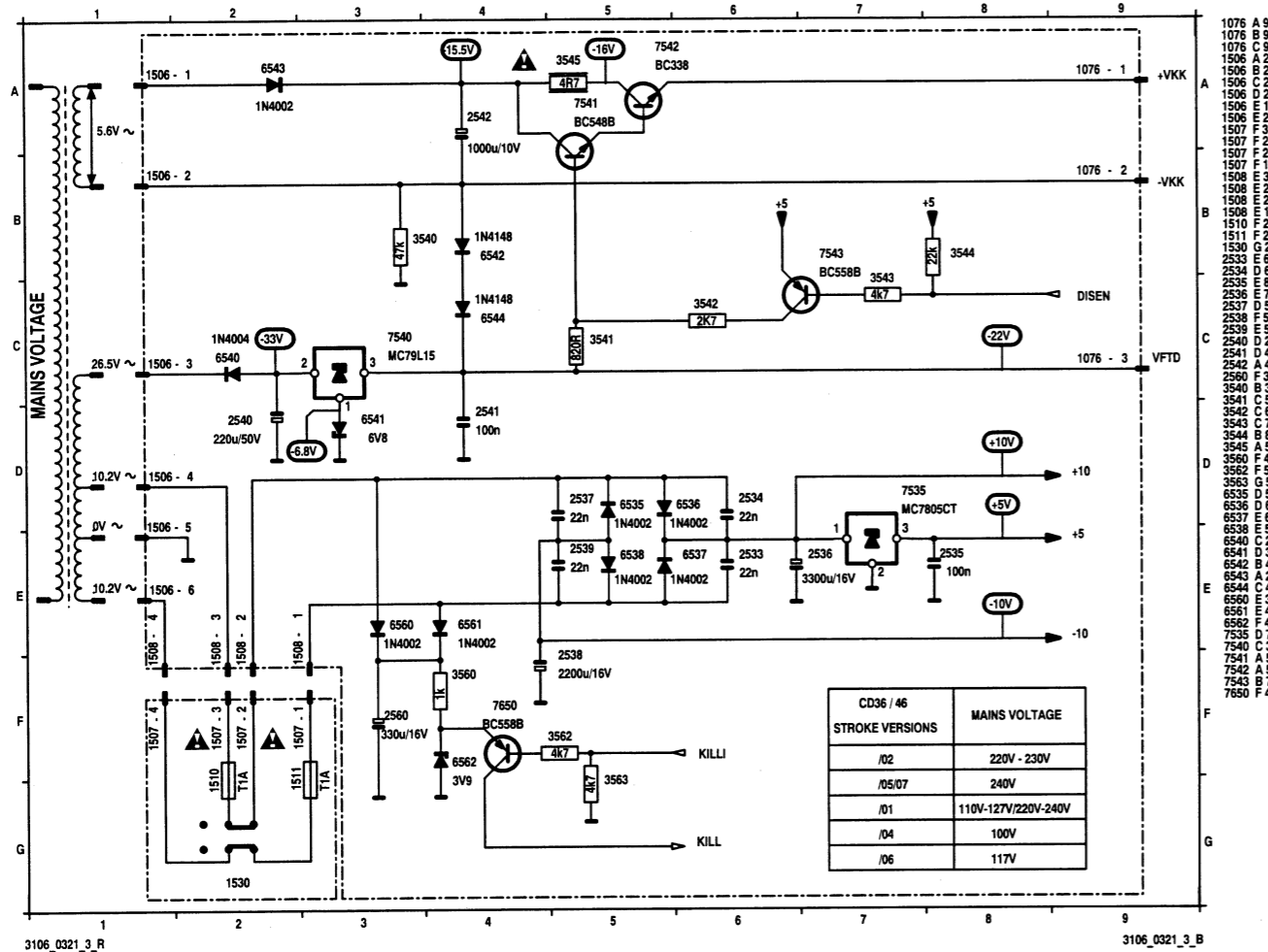


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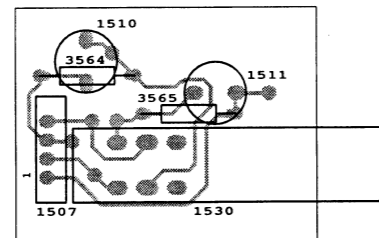




POWER SUPPLY CIRCUIT DIAGRAM

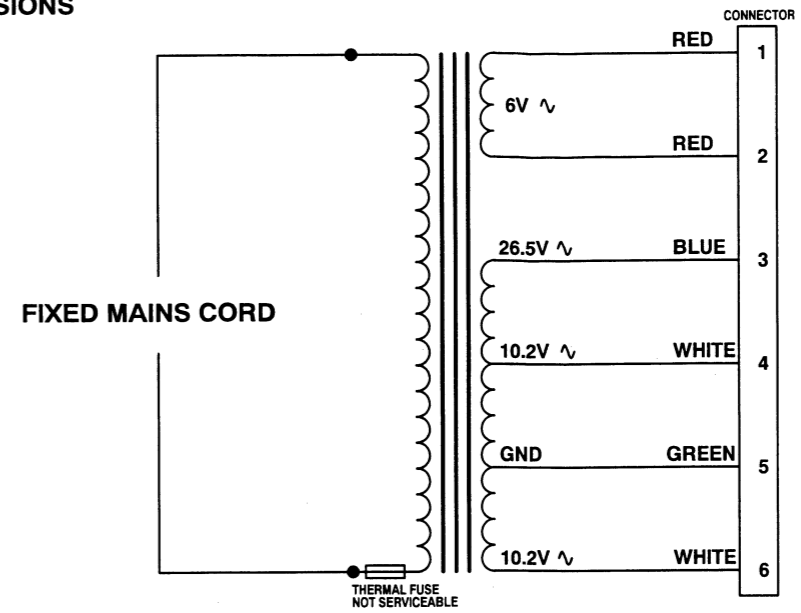


SWITCH PANEL



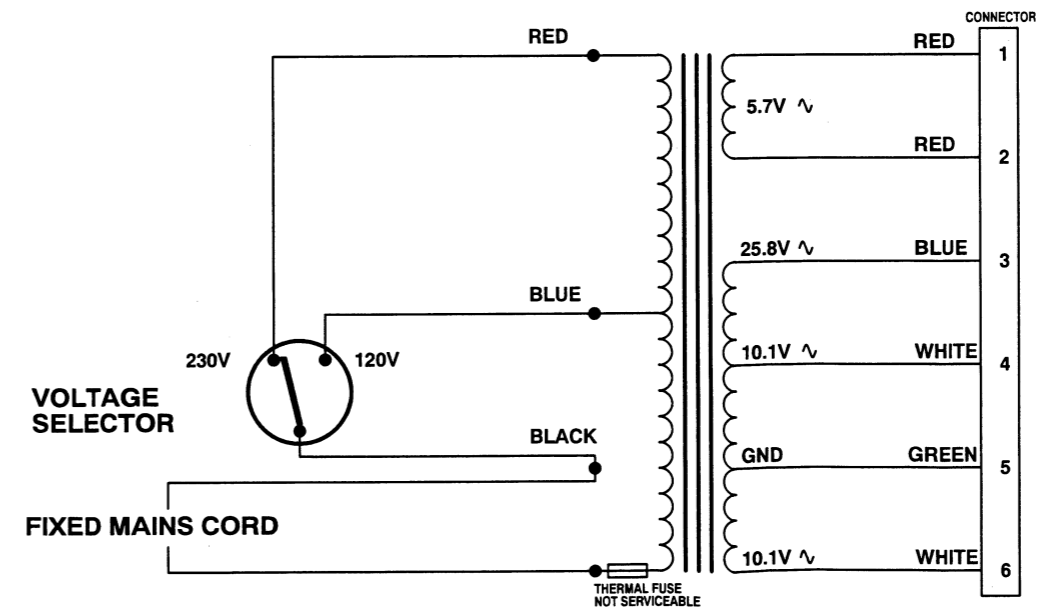
TRANSFORMER CONNECTIONS

/02/04/05/06/07 VERSIONS



VERSION	MAINS VOLTAGE	SERVICE CODE
/02	220V-230V	4822 146 31337
/05	240V	4822 146 31339
/04 (F)	100V	4822 146 31345
/06 (U)	117V	4822 146 31341
/07	240V	4822 146 21797

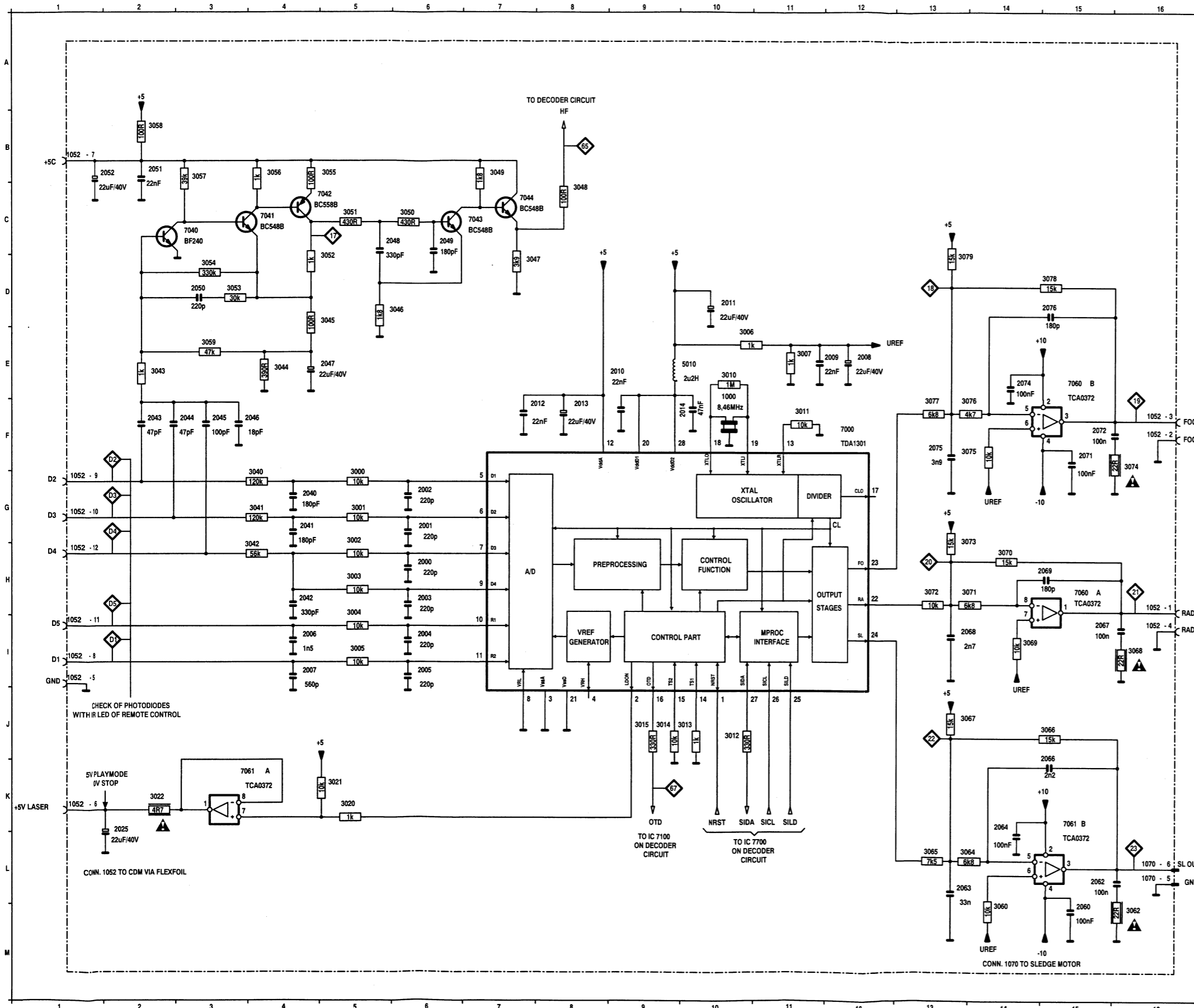
/01 VERSION



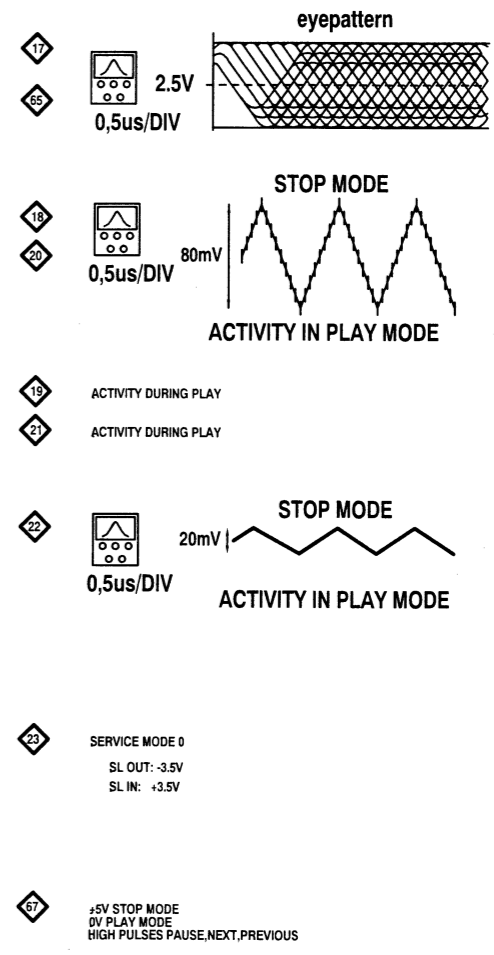
POSITION	MAINS VOLTAGE	SERVICE CODE
120V	110V-127V	4822 146 21796
230V	220V-240V	

TRANSFORMER AND VOLTAGE SELECTOR ARE ONE ASSEMBLY

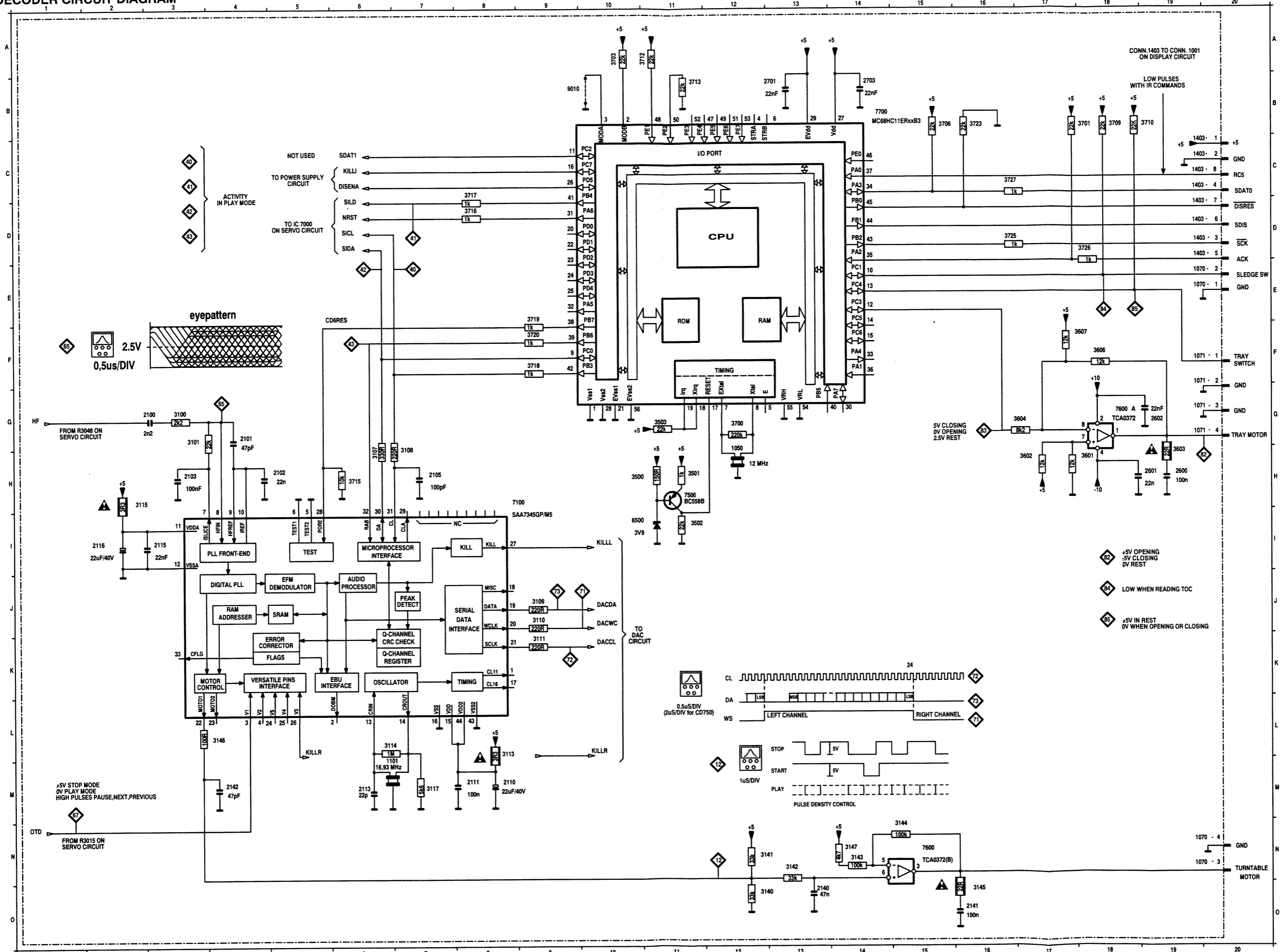
SERVO CIRCUIT DIAGRAM



- 1000 E10
- 1052 H16
- 1052 F16
- 1052 F16
- 1052 K1
- 1052 B1
- 1052 I1
- 1052 G1
- 1052 H1
- 1070 L16
- 2000 H6
- 2001 G6
- 2002 G6
- 2003 H6
- 2004 H6
- 2005 H6
- 2006 I4
- 2007 E12
- 2008 E12
- 2009 E12
- 2010 E9
- 2011 D10
- 2012 E8
- 2013 F8
- 2014 F10
- 2015 F2
- 2040 G4
- 2041 G4
- 2042 H4
- 2043 F2
- 2044 F3
- 2045 E3
- 2046 E4
- 2047 E5
- 2048 C6
- 2049 C6
- 2050 D3
- 2051 B2
- 2052 B2
- 2062 H15
- 2063 L13
- 2064 K14
- 2066 J15
- 2067 I15
- 2068 H15
- 2071 F15
- 2072 F15
- 2074 E14
- 2075 F13
- 2076 D15
- 3000 G5
- 3002 G5
- 3003 H5
- 3004 H5
- 3005 I5
- 3006 E10
- 3007 E11
- 3010 E10
- 3011 F11
- 3012 J10
- 3013 J10
- 3014 J9
- 3015 J9
- 3022 K2
- 3040 G4
- 3041 G4
- 3042 H4
- 3043 E2
- 3044 E4
- 3045 D5
- 3046 D6
- 3047 D7
- 3048 C8
- 3050 C6
- 3051 C5
- 3052 D5
- 3053 D3
- 3054 D3
- 3055 B5
- 3056 B4
- 3057 B3
- 3058 B2
- 3059 E3
- 3060 M14
- 3062 M16
- 3064 L14
- 3065 L13
- 3066 J15
- 3067 J14
- 3068 I16
- 3069 H14
- 3070 H14
- 3071 H14
- 3072 H13
- 3073 G14
- 3074 F16
- 3075 F14
- 3076 F14
- 3077 F13
- 3078 D15
- 3079 D13
- 5010 E10
- 7000 F12
- 7040 C3
- 7041 C4
- 7042 C4
- 7043 C7
- 7044 C7
- 7060 H15
- 7061 E15
- 7061 K4
- 7061 K15

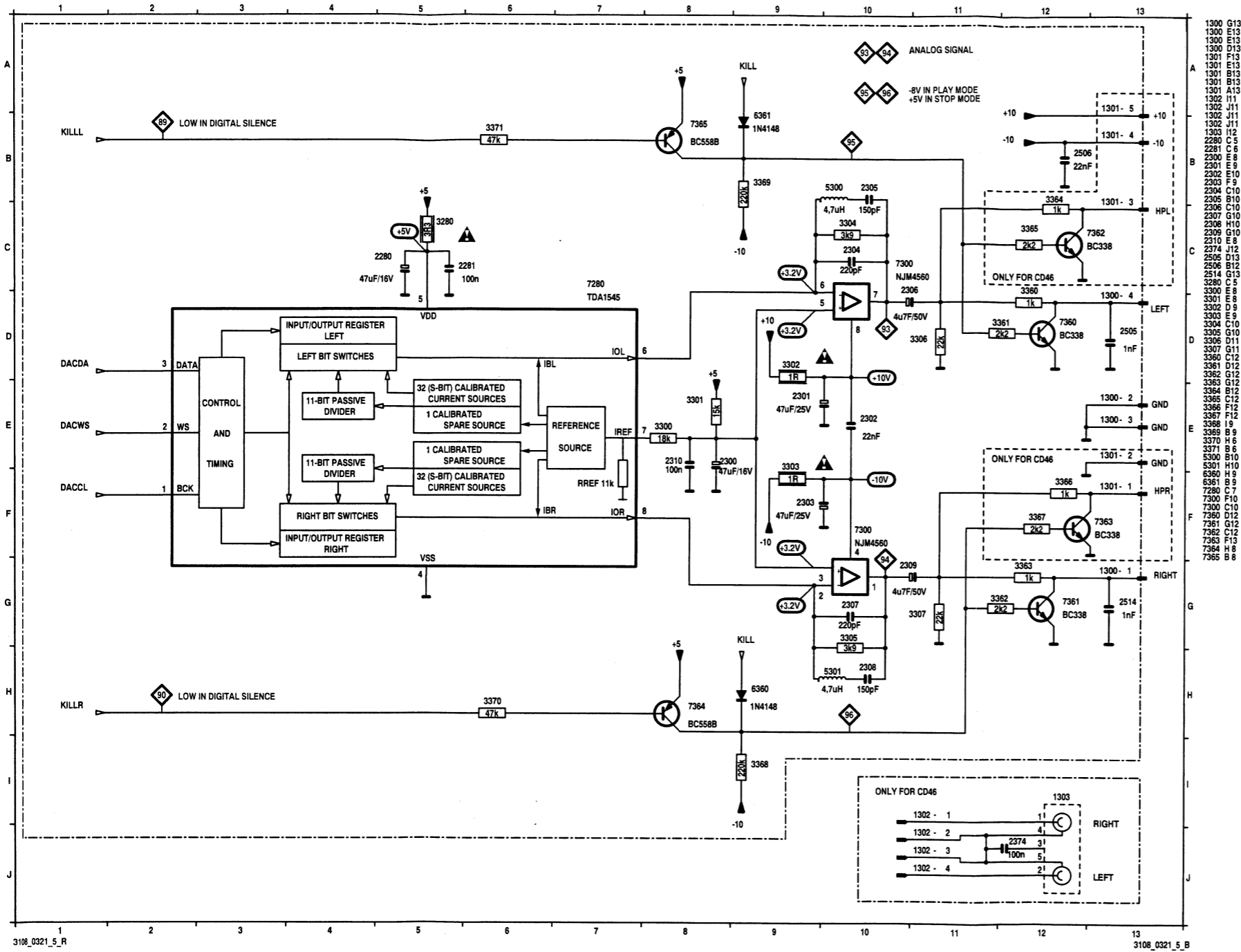


DECODER CIRCUIT DIAGRAM



- 1050 H12
- 1070 E19
- 1070 E19
- 1070 N19
- 1070 N19
- 1071 F19
- 1071 G19
- 1071 G19
- 1101 M 6
- 1403 C19
- 1403 C19
- 1403 D19
- 1403 D19
- 1403 D19
- 2100 G 2
- 2101 G 4
- 2102 H 5
- 2103 H 3
- 2105 H 7
- 2110 M 8
- 2111 M 8
- 2113 M 6
- 2115 I 3
- 2116 I 3
- 2140 O13
- 2141 O16
- 2142 M 4
- 2500 H19
- 2501 H19
- 2602 G19
- 2701 B13
- 2703 B14
- 3100 G 3
- 3101 G 3
- 3107 H 6
- 3108 H 7
- 3109 J 9
- 3110 J 9
- 3111 K 9
- 3113 L 8
- 3114 L 6
- 3115 H 2
- 3117 M 7
- 3140 O12
- 3141 N12
- 3142 N13
- 3143 N14
- 3144 N15
- 3145 O16
- 3146 L 4
- 3147 N14
- 3500 H10
- 3501 H11
- 3502 I11
- 3503 G11
- 3501 H18
- 3502 H17
- 3503 H19
- 3504 G16
- 3506 F18
- 3507 F17
- 3700 G12
- 3701 B18
- 3703 A10
- 3706 B15
- 3709 B18
- 3710 A11
- 3711 H 6
- 3712 A11
- 3713 B11
- 3715 H 6
- 3716 D 8
- 3717 C 8
- 3718 E 9
- 3720 F 9
- 3723 B16
- 3725 D16
- 3726 D18
- 3727 C16
- 5500 I10
- 1100 H 8
- 7500 H11
- 7800 G18
- 7800 N15
- 7700 B14
- 9010 B 9

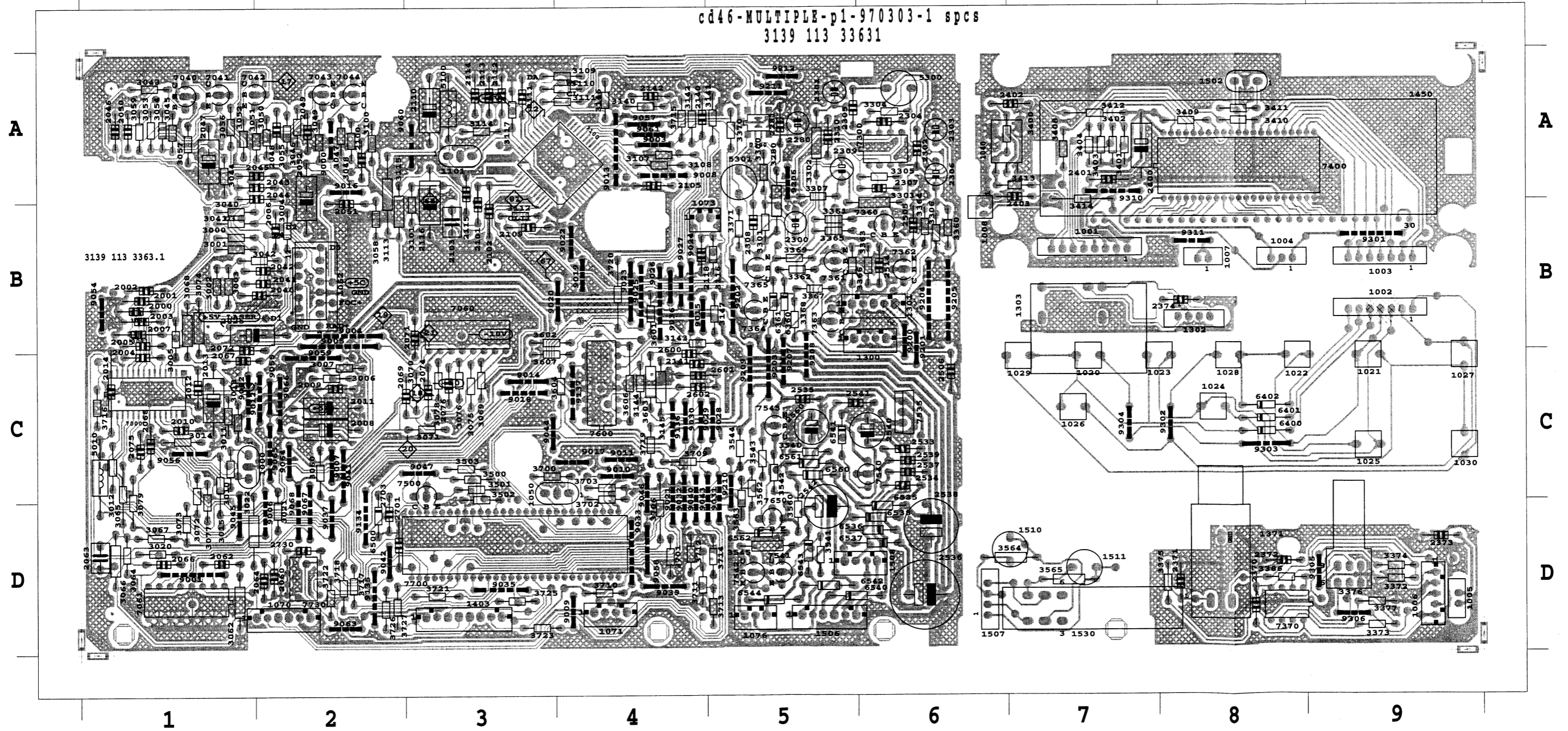
DAC CIRCUIT DIAGRAM



- 1300 G13
- 1300 E13
- 1300 D13
- 1301 F13
- 1301 E13
- 1301 B13
- 1301 B13
- 1301 A13
- 1302 I11
- 1302 J11
- 1302 J11
- 1303 I12
- 2280 C 5
- 2281 C 6
- 2300 E 8
- 2301 E 8
- 2302 E10
- 2303 F 9
- 2304 C10
- 2305 B10
- 2306 C10
- 2307 G10
- 2308 H10
- 2309 G10
- 2310 E 8
- 2314 J12
- 2506 D13
- 2506 B12
- 2514 G13
- 3280 C 5
- 3300 E 8
- 3301 E 8
- 3302 D 9
- 3303 E 8
- 3304 C10
- 3305 G10
- 3306 D11
- 3307 G11
- 3360 C12
- 3361 D12
- 3362 G12
- 3363 G12
- 3364 B12
- 3365 C12
- 3366 F12
- 3367 F12
- 3368 9
- 3369 B 9
- 3370 H 6
- 3371 B 6
- 5300 B10
- 5301 H10
- 6360 H 8
- 6361 B 9
- 7280 C 7
- 7300 F10
- 7300 C10
- 7360 D12
- 7361 G12
- 7362 C12
- 7363 F13
- 7364 H 8
- 7365 B 8

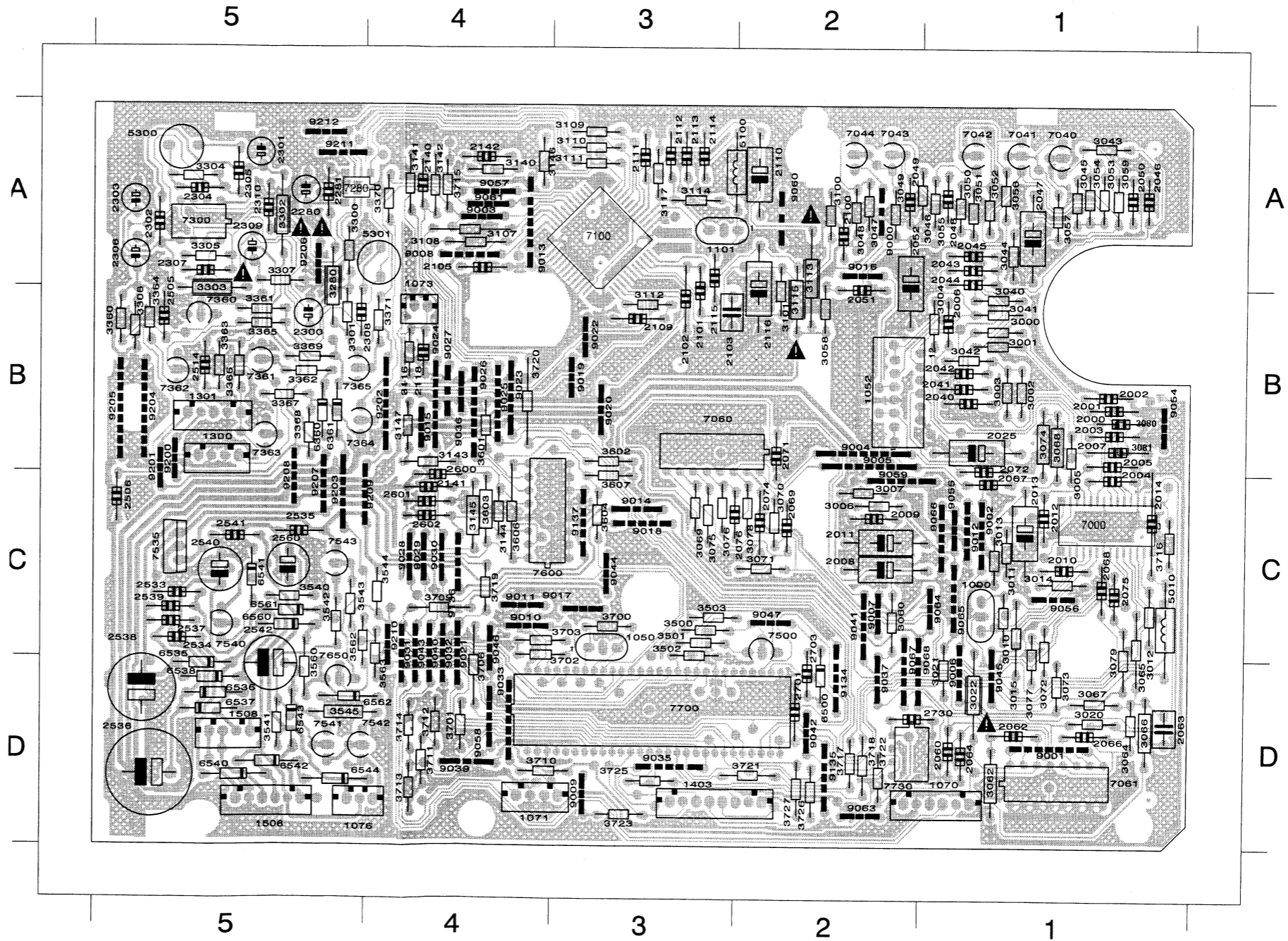
MONO BOARD LAYOUT

1000 C 1	2010 C 1	2052 A 2	2105 A 4	2730 D 2	3040 B 1	3058 B 2	3078 C 3	3141 A 5	3701 D 4	3723 D 3	7700 D 3	9018 C 3	9037 D 2	9067 D 2	2280 A 5	2534 C 6	3307 A 5	3545 D 5	6544 D 5	9200 B 6	1005 D 9	1502 A 8	3402 A 7	9304 C 7
1050 C 4	2011 C 2	2060 D 2	2109 B 3	3000 B 1	3041 B 1	3059 A 1	3079 C 1	3142 A 4	3702 C 4	3725 D 3	7730 D 2	9019 B 4	9039 D 4	9068 D 2	2281 A 5	2535 C 5	3360 B 6	3560 D 5	6560 C 5	9201 B 6	1006 D 9	1504 A 7	3403 A 7	9305 D 9
1052 B 2	2012 C 1	2062 D 1	2110 A 3	3001 B 1	3042 B 2	3060 C 2	3080 B 1	3143 B 4	3703 C 4	3726 D 2	9000 A 2	9020 B 4	9040 C 4	9134 D 2	2300 B 5	2536 D 6	3361 B 5	3562 C 5	6561 C 5	9202 B 5	1007 B 8	1505 A 7	3404 A 7	9306 D 9
1070 D 2	2013 C 1	2063 D 1	2111 A 3	3002 B 1	3043 A 1	3062 D 1	3081 B 1	3144 C 4	3706 D 4	3727 D 2	9001 D 1	9021 C 4	9041 C 2	9135 D 2	2301 A 5	2537 C 6	3362 B 5	3563 C 5	6562 D 5	9203 C 5	1008 B 6	1508 B 6	3408 A 7	9310 A 7
1071 D 4	2014 C 1	2064 D 2	2112 A 3	3003 B 1	3044 A 1	3064 D 1	3100 A 2	3145 C 4	3709 C 4	5010 C 1	9002 C 1	9022 B 4	9042 D 2	9136 C 4	2302 A 6	2538 D 6	3363 B 6	3564 D 7	7280 A 5	9204 B 6	1020 C 7	2371 D 8	3409 A 8	9311 B 8
1073 B 4	2025 B 1	2066 D 1	2113 A 3	3004 B 2	3045 A 1	3065 C 1	3101 B 3	3146 A 4	3710 D 4	5100 A 3	9003 A 4	9023 B 4	9043 C 5	9137 C 4	2303 A 6	2539 C 6	3364 B 6	3565 D 7	7300 A 6	9205 B 6	1021 C 9	2372 D 8	3410 A 8	
1101 A 3	2040 B 2	2067 C 1	2114 A 3	3005 B 1	3046 A 2	3066 D 1	3107 A 4	3147 B 5	3711 D 4	6500 D 2	9004 B 2	9024 B 4	9044 C 3	----	2304 A 6	2540 C 6	3365 B 5	3500 A 6	7360 B 6	9206 A 5	1022 C 8	2373 D 9	3411 A 8	3080 B 1
1403 D 3	2041 B 2	2068 C 1	2115 A 3	3006 C 2	3047 A 2	3067 D 1	3108 A 4	3500 C 3	3712 D 4	7000 C 1	9005 B 2	9025 B 4	9045 D 1	1076 D 5	2305 A 5	2541 C 5	3366 B 5	3501 A 5	7361 B 5	9207 C 5	1023 C 8	2400 A 7	3412 A 7	3081 B 1
2000 B 1	2042 B 2	2069 C 3	2116 B 3	3007 C 2	3048 A 2	3068 B 1	3109 A 4	3501 C 3	3713 D 5	7040 A 1	9006 D 2	9026 B 4	9046 C 4	1300 B 6	2306 A 6	2542 D 5	3367 B 5	3502 A 5	7362 B 6	9208 C 5	1024 C 8	2401 A 7	3413 A 7	7000 C 1
2001 B 1	2043 A 2	2071 B 3	2118 B 4	3010 C 1	3049 A 2	3069 C 3	3110 A 4	3502 C 3	3714 D 5	7041 A 1	9007 C 2	9027 B 4	9047 C 3	1301 B 6	2307 A 6	2560 C 5	3368 B 5	3503 A 5	7363 B 5	9209 C 5	1025 C 9	3372 D 9	3414 A 7	7100 A 4
2002 B 1	2044 A 2	2072 B 1	2140 A 4	3011 C 1	3050 A 2	3070 C 3	3111 A 4	3503 C 3	3715 A 4	7042 A 2	9008 A 4	9028 C 5	9055 C 2	1302 B 8	2308 B 5	3280 B 5	3369 B 5	3504 B 5	7364 B 5	9210 C 5	1026 C 7	3373 D 9	3415 A 7	
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2006 B 2	2048 A 2	2100 A 2	2601 C 4	3015 C 1	3054 A 1	3074 B 1	3115 B 2	3604 C 4	3719 C 4	7061 D 1	9012 C 2	9032 C 4	9063 D 2	1508 D 6	2505 B 6	3303 B 6	3541 D 5	6540 D 5	7541 D 5	1001 B 7	1030 C 9	3377 D 9	3419 A 7	
2007 B 1	2049 A 2	2101 B 3	2602 C 4	3020 D 1	3055 A 2	3075 C 3	3116 B 5	3606 C 4	3720 B 4	7100 A 4	9014 C 3	9033 D 4	9064 C 2	1511 D 7	2506 C 6	3304 A 6	3542 C 5	6541 C 5	7542 D 5	1002 B 9	1040 A 6	3386 D 8	3420 A 7	
2008 C 2	2050 A 1	2102 B 3	2701 D 2	3021 D 2	3056 A 1	3076 C 3	3117 A 3	3607 C 3	3721 D 3	7500 C 3	9015 B 4	9035 D 3	9065 C 2	1510 D 7	2514 B 6	3305 A 6	3543 C 5	6542 D 5	7543 C 5	1003 B 9	1371 D 8	3400 A 7	3402 C 8	
2009 C 2	2051 B 2	2103 B 3	2703 D 2	3022 D 1	3057 A 1	3077 C 1	3140 A 4	3700 C 3	3722 D 2	7600 C 4	9016 A 2	9036 B 4	9066 C 2	1530 D 7	2533 C 6	3306 B 6	3544 C 5	6543 D 5	7650 D 5	1004 B 8	1450 B 8	3401 A 7	3403 C 8	

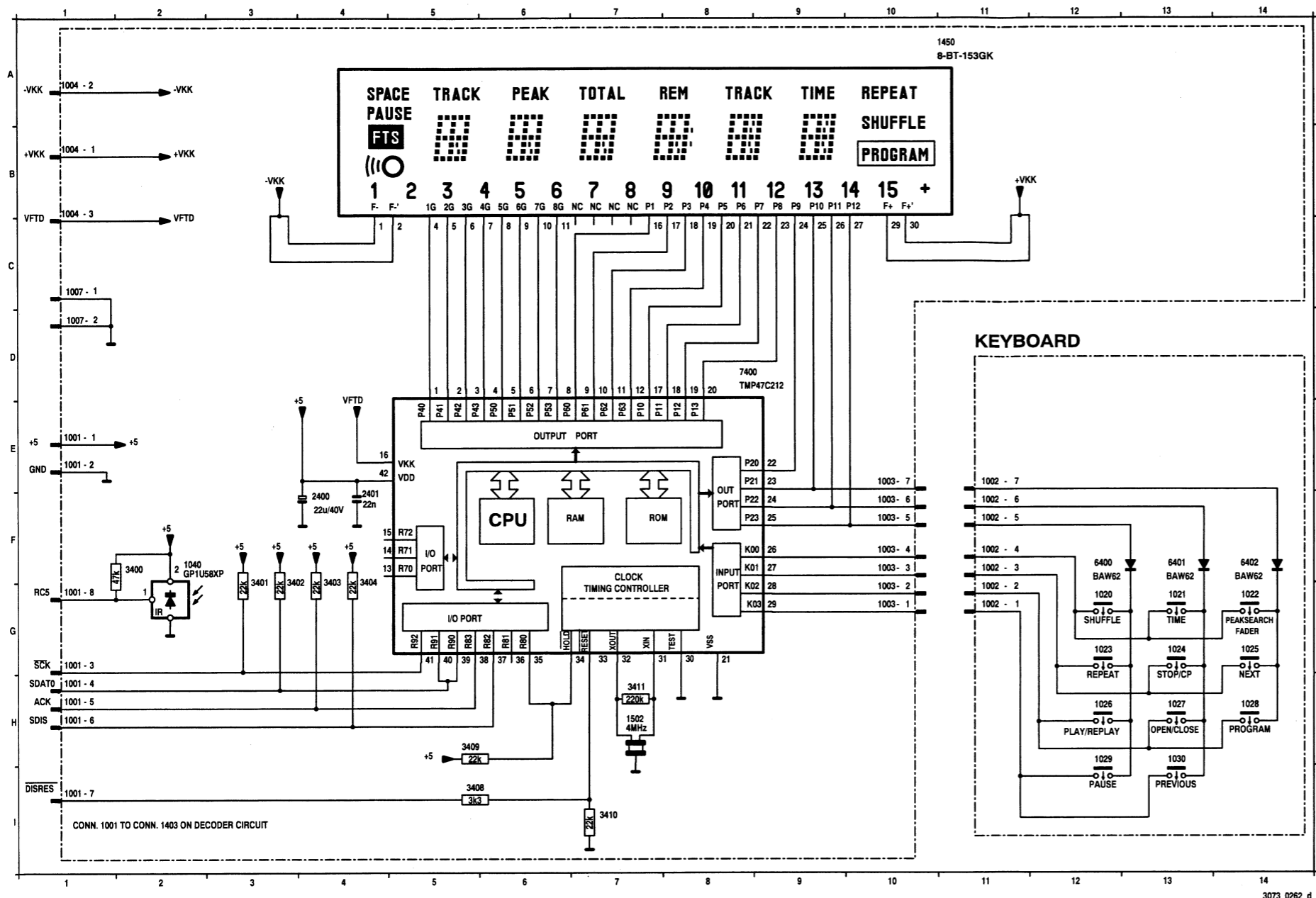


MAIN PANEL SOLDER SIDE

9203 C 5	6560 C 5	3542 C 5	3302 A 5	2308 B 5	9134 D 2	9042 D 2	9020 B 3	9000 A 2	3723 D 3	3607 C 3	3115 B 2	3072 C 1	3050 A 1	3007 C 2	2114 A 3	2064 D 1	2012 C 1	1000 C 1
9204 B 5	6561 C 5	3543 C 5	3303 B 5	2309 A 5	9135 D 2	9043 C 4	9021 C 4	9001 D 1	3725 D 3	3700 C 3	3116 B 4	3073 D 1	3051 A 1	3010 C 1	2115 A 3	2066 D 1	2013 C 1	1050 C 3
9205 B 5	6562 D 5	3544 C 4	3304 A 5	2310 A 5	9136 C 4	9044 C 3	9022 B 3	9002 C 1	3726 D 2	3701 D 4	3117 A 3	3074 B 1	3052 A 1	3011 C 1	2116 B 3	2067 C 1	2014 C 1	1052 B 2
9206 A 5	7280 A 5	3545 D 5	3305 A 5	2505 B 5	9137 C 3	9045 D 1	9023 B 4	9003 A 4	3727 D 2	3702 C 4	3140 A 4	3075 C 3	3053 A 1	3012 C 1	2118 B 4	2068 C 1	2025 B 1	1070 D 1
9207 C 5	7300 A 5	3560 D 5	3306 B 5	2506 C 5	9046 C 4	9024 B 4	9004 B 2	5010 C 1	3703 C 4	3141 A 4	3076 C 3	3054 A 1	3013 C 1	2140 A 4	2069 C 2	2040 B 1	1071 D 4
9208 C 5	7360 B 5	3562 C 5	3307 A 5	2514 B 5	1076 D 5	9047 C 2	9025 B 4	9005 B 2	5100 A 3	3706 D 4	3142 A 4	3077 C 1	3055 A 1	3014 C 1	2141 C 4	2071 B 2	2041 B 1	1073 B 4
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9210 C 4	7362 B 5	5300 A 5	3361 B 5	2534 C 5	1301 B 5	9055 C 1	9027 B 4	9007 C 2	7000 C 1	3710 D 4	3144 C 4	3079 C 1	3057 A 1	3020 D 1	2600 C 4	2074 C 2	2043 A 1	1403 D 3
9211 A 5	7363 B 5	5301 A 4	3362 B 5	2535 C 5	1506 D 5	9056 C 1	9028 C 4	9008 A 4	7040 A 1	3711 D 4	3145 C 4	3080 B 1	3058 B 2	3021 D 1	2601 C 4	2075 C 1	2044 A 1	2000 B 1
9212 A 5	7364 B 5	6360 B 5	3363 B 5	2536 D 5	1508 D 5	9057 A 4	9029 C 4	9009 D 3	7041 A 1	3712 D 4	3146 A 4	3081 B 1	3059 A 1	3022 D 1	2602 C 4	2076 C 3	2045 A 1	2001 B 1
7365 B 5	6361 B 5	3364 B 5	2537 C 5	2280 A 5	9058 D 4	9058 D 4	9030 C 4	9010 C 4	7042 A 1	3713 D 4	3147 B 4	3100 A 2	3060 C 2	3040 B 1	2701 D 2	2100 A 2	2046 A 1	2002 B 1
7535 C 5	6535 D 5	3365 B 5	2538 D 5	2281 A 5	9059 C 2	9059 C 2	9031 C 4	9011 C 4	7043 A 2	3714 D 4	3500 C 3	3101 B 2	3062 D 1	3041 B 1	2703 D 2	2101 B 3	2047 A 1	2003 B 1
7540 C 5	6536 D 5	3366 B 5	2539 C 5	2300 B 5	9060 A 2	9060 A 2	9032 C 4	9012 C 1	7044 A 2	3715 A 4	3501 C 3	3107 A 4	3064 D 1	3042 B 1	2730 D 2	2102 B 3	2048 A 1	2004 C 1
7541 D 5	6537 D 5	3367 B 5	2540 C 5	2301 A 5	9061 A 4	9061 A 4	9033 D 4	9013 A 4	7060 B 3	3716 C 1	3502 C 3	3108 A 4	3065 C 1	3043 A 1	3000 B 1	2103 B 3	2049 A 2	2005 B 1
7542 D 5	6538 D 5	3368 B 5	2541 C 5	2302 A 5	9062 D 2	9062 D 2	9035 D 3	9014 C 3	7061 D 1	3717 D 2	3503 C 3	3109 A 3	3066 D 1	3044 A 1	3001 B 1	2105 A 4	2050 A 1	2006 B 1
7543 C 5	6540 D 5	3369 B 5	2542 D 5	2303 A 5	9063 C 1	9063 C 1	9036 B 4	9015 B 4	7100 A 3	3718 D 2	3601 B 4	3110 A 3	3067 D 1	3045 A 1	3002 B 1	2109 B 3	2051 B 2	2007 B 1
7650 D 5	6541 C 5	3370 A 4	2560 C 5	2304 A 5	9064 C 1	9064 C 1	9037 D 2	9016 A 2	7500 C 2	3719 C 4	3602 B 3	3111 A 3	3068 B 1	3046 A 1	3003 B 1	2110 A 2	2052 A 2	2008 C 2
9200 B 5	6542 D 5	3371 B 4	3280 B 5	2305 A 5	9065 C 1	9065 C 1	9039 D 4	9017 C 3	7600 C 4	3720 B 4	3603 C 4	3112 B 3	3069 C 3	3047 A 2	3004 B 1	2111 A 3	2060 D 1	2009 C 2
9201 B 5	6543 D 5	3540 C 5	3300 A 5	2306 A 5	9067 D 2	9067 D 2	9040 C 4	9018 C 3	7700 D 3	3721 D 2	3604 C 3	3113 A 2	3070 C 2	3048 A 2	3005 B 1	2112 A 3	2062 D 1	2010 C 1
9202 B 4	6544 D 5	3541 D 5	3301 B 5	2307 A 5	9068 D 1	9068 D 1	9041 C 2	9019 B 3	7730 D 2	3722 D 2	3606 C 4	3114 A 3	3071 C 2	3049 A 2	3006 C 2	2113 A 3	2063 D 1	2011 C 2

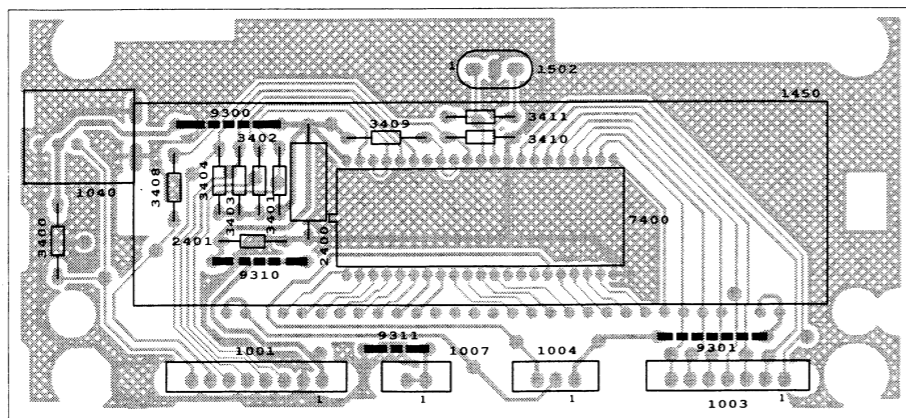


CONTROL AND DISPLAY CIRCUIT DIAGRAM

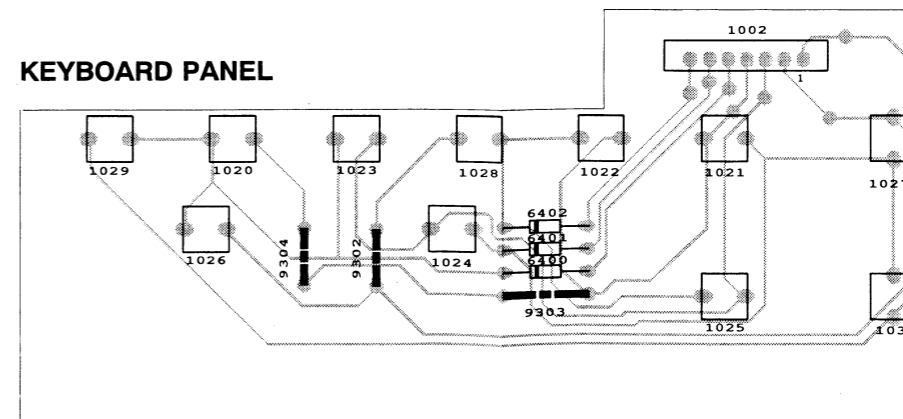


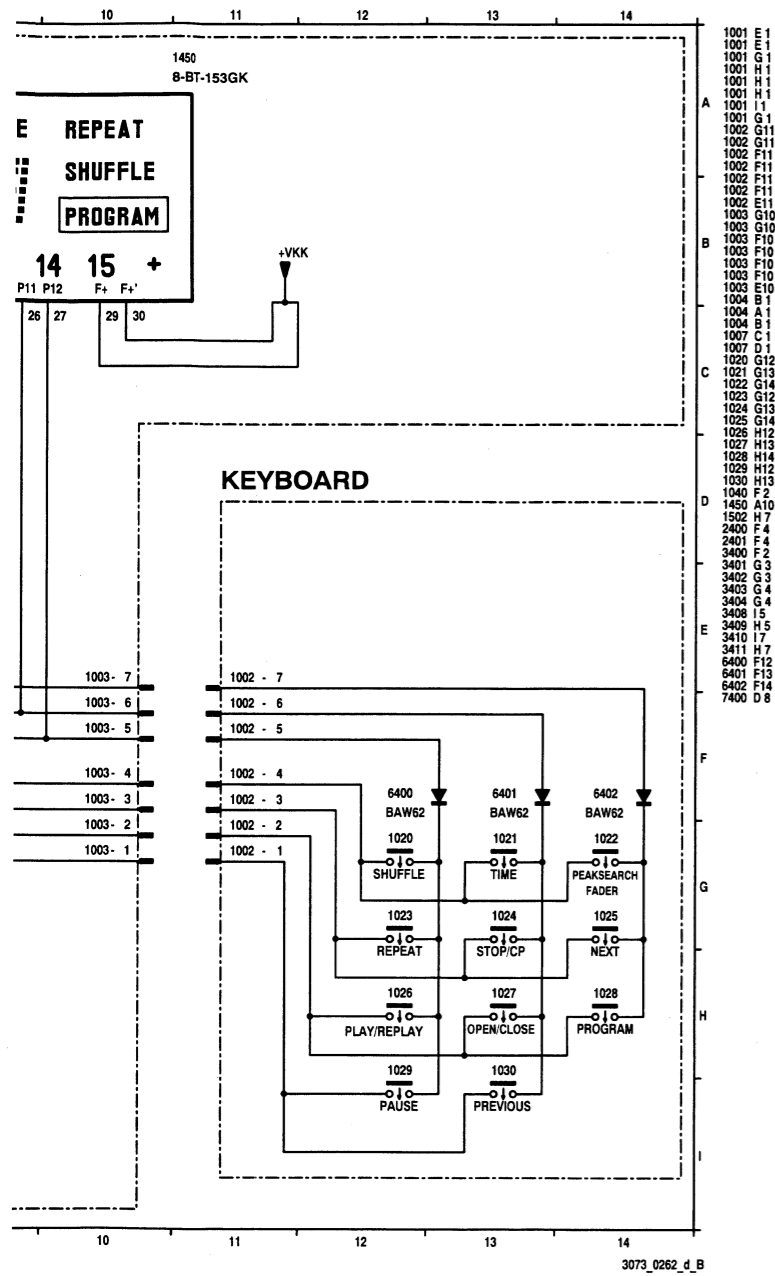
- 1001 E 1
- 1001 E 1
- 1001 G 1
- 1001 H 1
- 1001 H 1
- 1001 H 1
- 1001 I 1
- 1001 G 1
- 1002 G11
- 1002 G11
- 1002 F11
- 1002 F11
- 1002 F11
- 1002 E11
- 1003 G10
- 1003 G10
- 1003 F10
- 1003 F10
- 1003 E10
- 1004 B 1
- 1004 A 1
- 1007 C 1
- 1007 D 1
- 1020 G12
- 1021 G13
- 1022 G14
- 1023 G12
- 1024 G13
- 1025 G14
- 1026 H12
- 1027 H13
- 1028 H14
- 1029 H12
- 1030 H13
- 1040 F 2
- 1450 A10
- 1522 H 7
- 2400 F 4
- 2401 F 4
- 3400 F 2
- 3401 G 3
- 3402 G 3
- 3403 G 4
- 3404 G 4
- 3408 I 5
- 3409 H 5
- 3410 I 7
- 3411 H 7
- 6400 F12
- 6401 F13
- 6402 F14
- 7400 D 8

DISPLAY PANEL



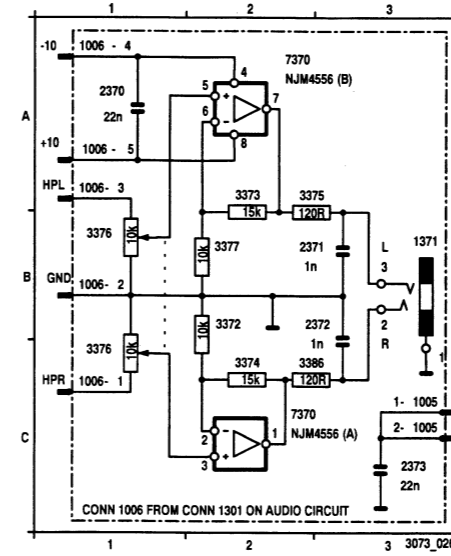
KEYBOARD PANEL



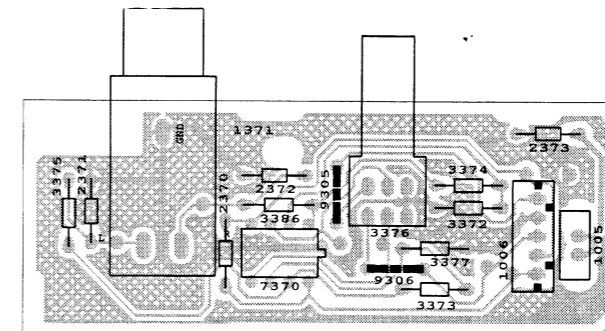


HEADPHONE CIRCUIT DIAGRAM(CD46 only)

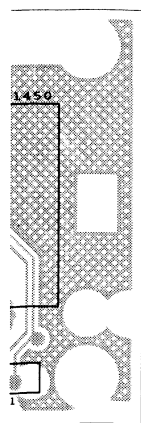
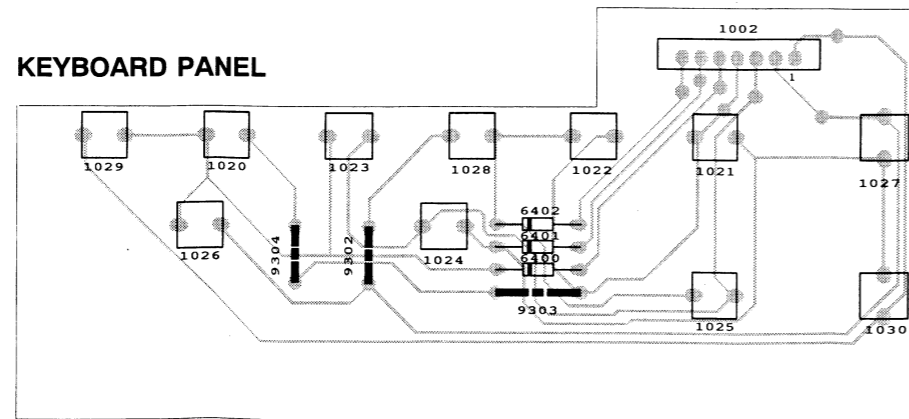
1005 C3	1006 A1	2372 B3	3375 A3	7370 C2
1005 C3	1006 A1	2373 C3	3376 C1	7370 A2
1006 C1	1371 B3	3372 B2	3376 B1	
1006 B1	2370 A1	3373 A2	3377 B2	
1006 A1	2371 B2	3374 C2	3386 C3	



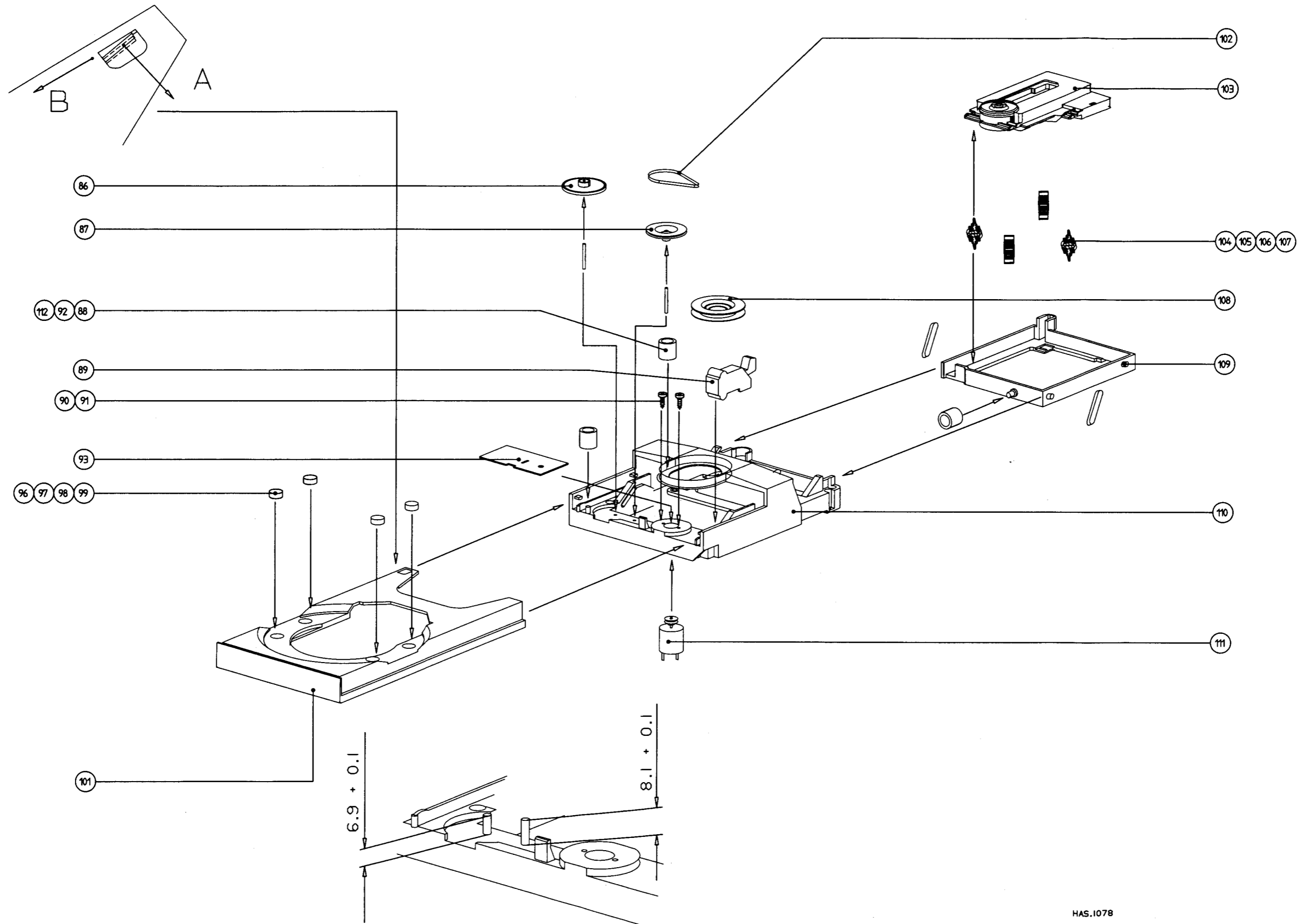
HEADPHONE PANEL(CD46 only)



KEYBOARD PANEL



DETAIL I



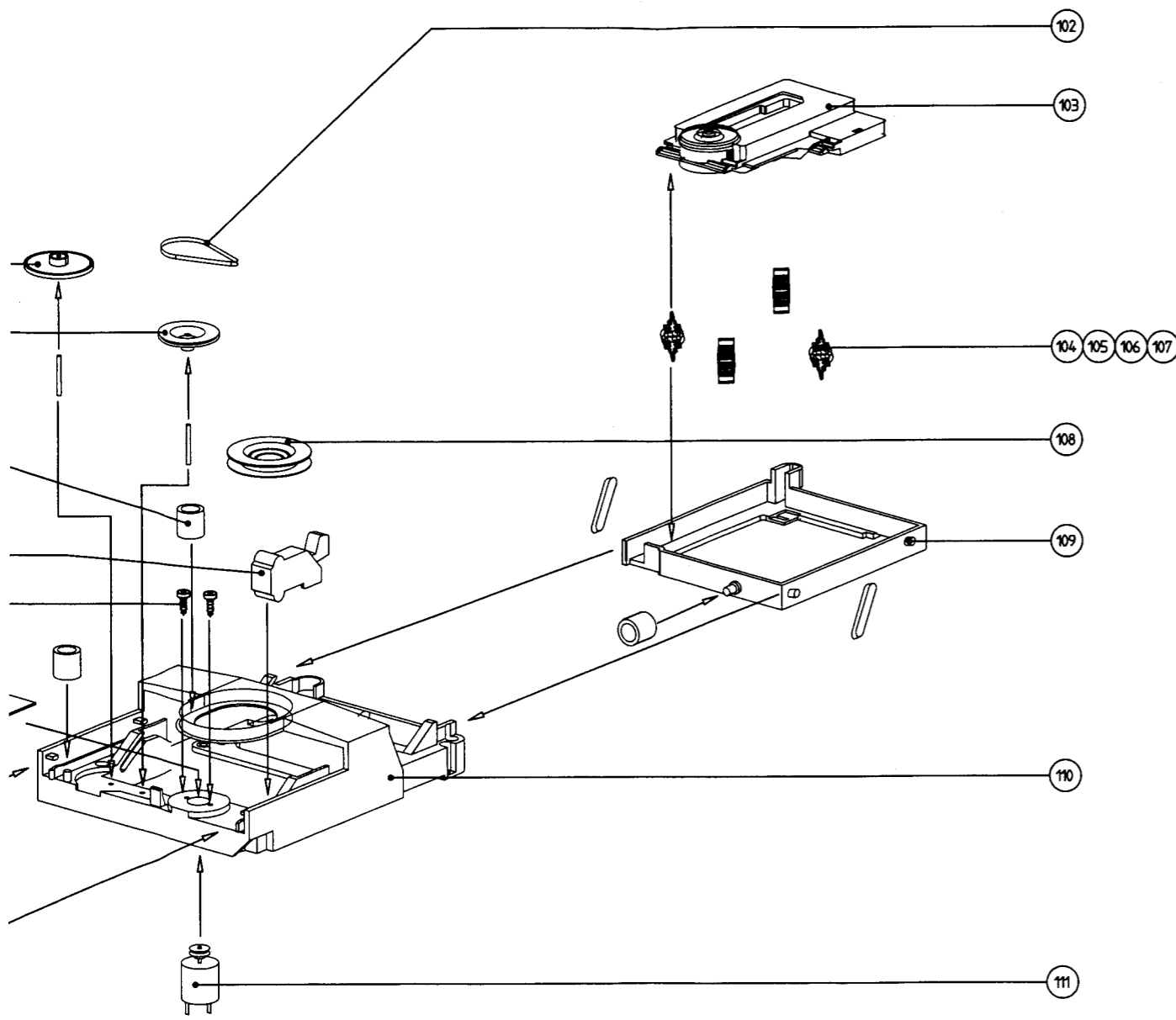
PARTSLIS

- 86
- 87
- 88,92,112
- 89
- 93
- 96,97,98,99
- 101
- 102
- 103
- 104,105,106,107
- 108
- 109
- 110
- 111

Screws

- 90,91

HAS.1078

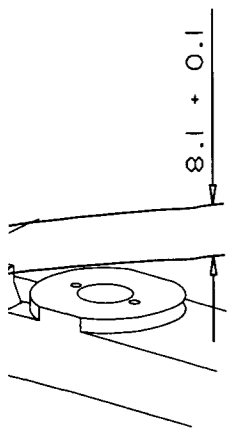


PARTSLIST LOADER

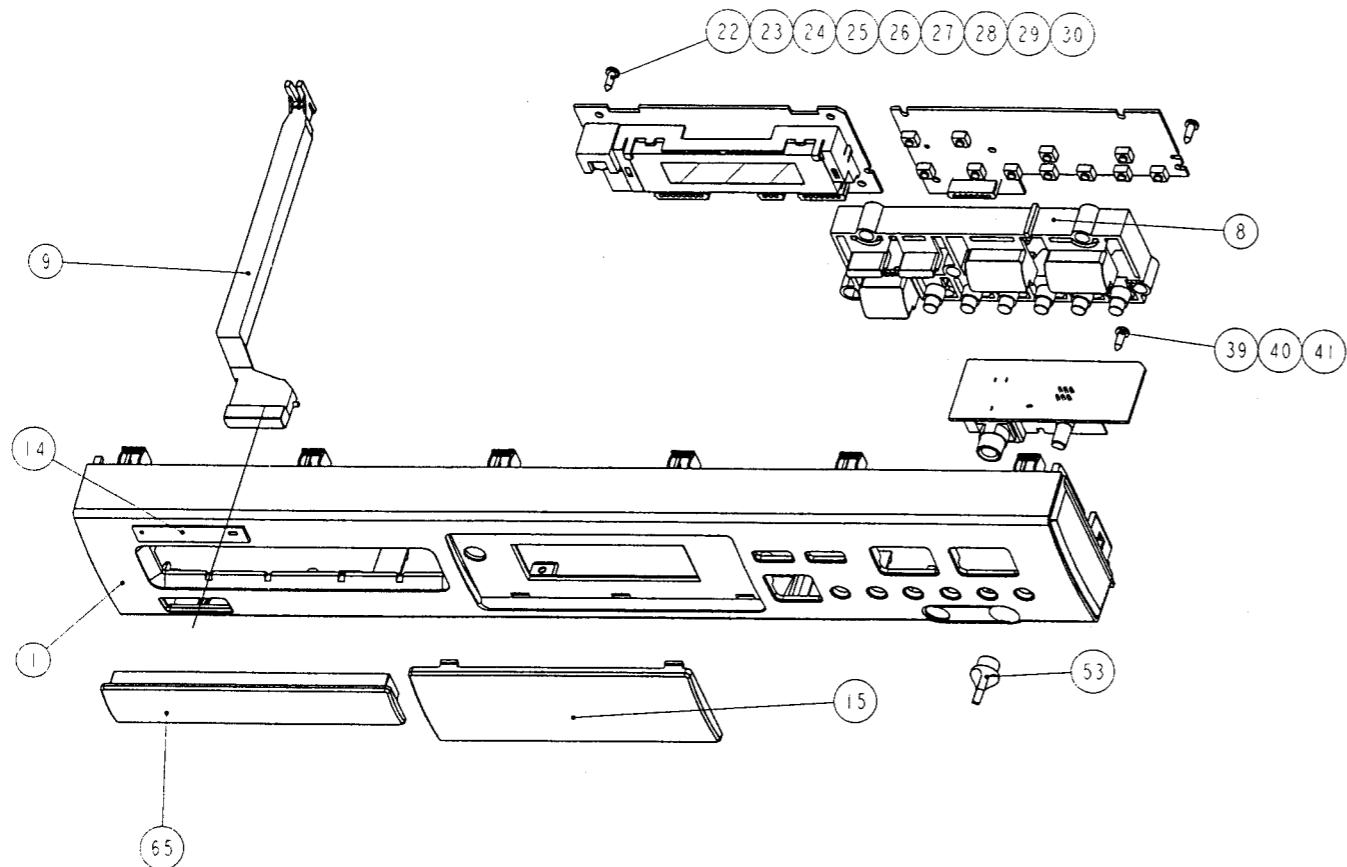
86	4822 528 81464	DRIVE PINION
87	4822 528 81465	PULLEY
88,92,112	4822 325 60379	DAMPING GROMMET
89	4822 276 13222	SWITCH
93	4822 444 60816	COVER PLATE
96,97,98,99	4822 325 80511	ORNAMENTAL TULE
101	4822 444 50679	SLIDE
102	4822 358 31168	BELT
103	4822 691 30278	CDM12.1 MECHANISM
104,105,106,107	4822 325 50215	SUSPENSION
108	4822 402 61412	CLAMPER ASSY
109	4822 464 50895	SUBCHASSIS
110	4822 464 50678	CHASSIS
111	4822 361 21492	MOTOR

Screws

90,91 selftapping screw 2,2 x 4

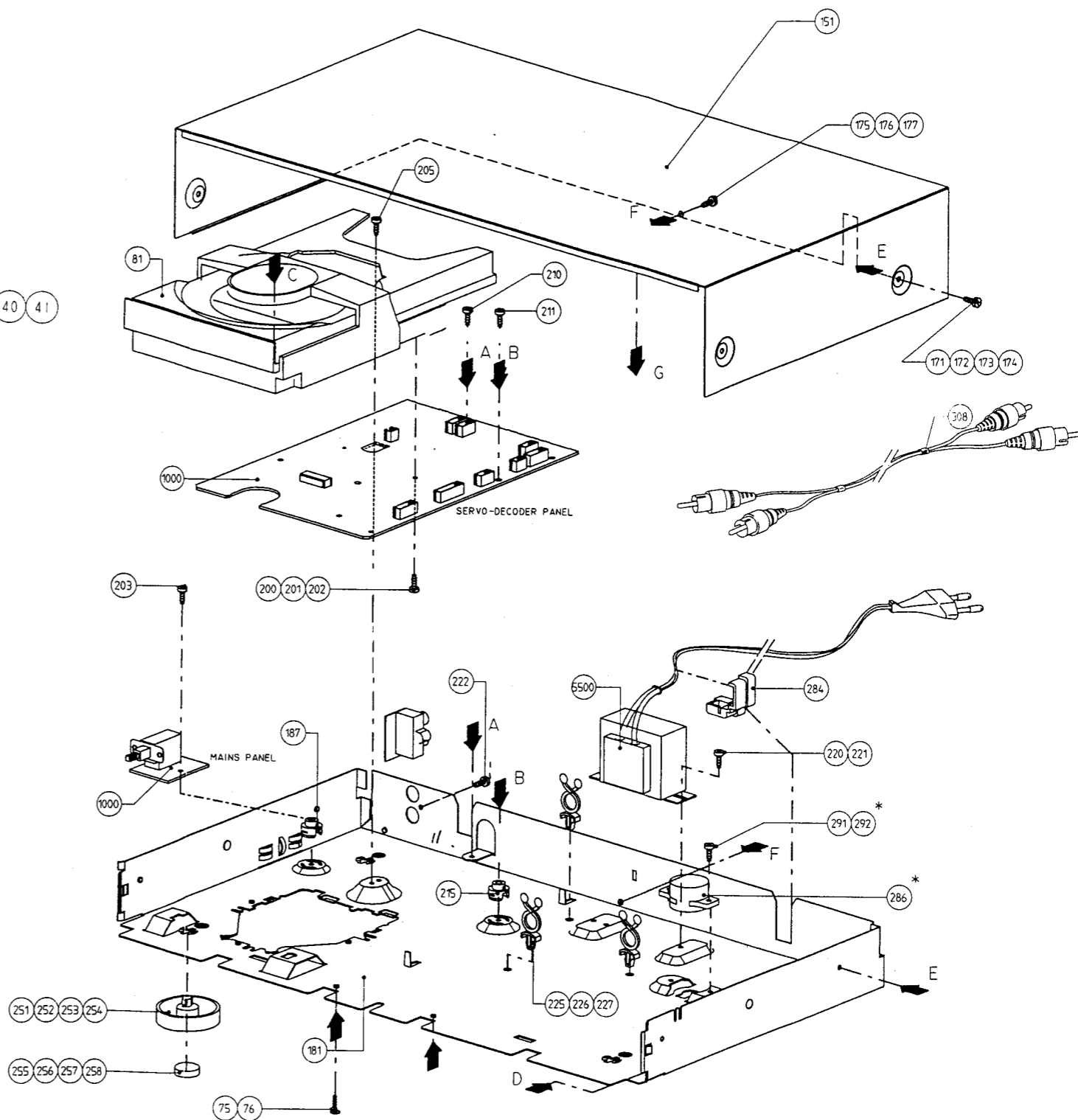


EXPLODED VIEW



(VERS. :VERSION, U:U.S.A, F:JAPAN, K:FAR EAST, **:EUROPE)

POS. NO	VERS. COLOR	PART NO. (FOR EUROPE)	DESCRIPTION	PART NO. (USA/JAPAN)
1		4822 459 04604	FRONT PANEL	QP45904604
8		4822 410 63683	KNOB UNIT ASSY	QP41063683
9		4822 402 61557	POWER LINK	QP40261557
14		4822 454 11825	MARANTZ BADGE	185J251012
15		4822 450 62406	WINDOW ASSY	QP45062406
65		4822 444 50738	TRAY FRONT ASSEMBLY	QP44450738
151		4822 444 61045	COVER ASSY	QP44461045
251				
		4822 462 42163	FOOT ASSY	QP46242163
254				
255				
		4822 462 40683	PLATE (FOOT)	QP46240683
258				
284		4822 532 60948	BUSH, AC CORD	QP53260948
340	/01/02/05	4822 736 15446	USERS GUIDE CD38	QP73615446
365		4822 218 10538	REMOTE CONTROL RD6843	QP21810538



8. ELECTRICAL PARTS LIST

(VERS.:VERSION, U:U.S.A, F:JAPAN, K:FAR EAST, **:EUROPE)

Table with 5 columns: POS. NO., VERS. COLOR, PART NO. (FOR EUROPE), DESCRIPTION, PART NO. (USA/JAPAN). Rows include miscellaneous parts like display holders and resonators, and capacitors like 220PF 10% 50V.

Table with 5 columns: POS. NO., VERS. COLOR, PART NO. (FOR EUROPE), DESCRIPTION, PART NO. (USA/JAPAN). Rows include resistors like 100NF +80-20% 50V and 10K 5% 0.5W.

(VERS.:VERSION, U:U.S.A, F:JAPAN, K:FAR EAST, **:EUROPE)

Table with 5 columns: POS. NO., VERS. COLOR, PART NO. (FOR EUROPE), DESCRIPTION, PART NO. (USA/JAPAN). Rows include resistors like 1K00 1% 0.4W and various other electronic components.

Table with 5 columns: POS. NO., VERS. COLOR, PART NO. (FOR EUROPE), DESCRIPTION, PART NO. (USA/JAPAN). Rows include coils like 2.2UH and diodes like 1N4148.

(VERS. :VERSION, U:U.S.A, F:JAPAN, K:FAR EAST, **:EUROPE)

POS. NO	VERS. COLOR	PART NO. (FOR EUROPE)	DESCRIPTION	PART NO. (USA/JAPAN)
6402		4822 130 30613	BAW6Z	QP13030613
6500		4822 130 31981	BZX79-B3V9	QP13031981
6535				
I		5322 130 30684	1N4002RL	QQ13030684
6538				
6540		4822 130 83362	1N4004GP	QP13083362
6541		4822 130 34278	BZX79-B6V8	QP13034278
6542		4822 130 30621	1N4148	QP13030621
6543		5322 130 30684	1N4002RL	QQ13030684
6544		4822 130 30621	1N4148	QP13030621
6560		5322 130 30684	1N4002RL	QQ13030684
6561		5322 130 30684	1N4002RL	QQ13030684
6562		4822 130 31981	BZX79-B3V9	QP13031981
			TRANSISTORS & IC'S	
7000		4822 209 31064	TDA1301T/N2	QP20931064
7040		4822 130 40902	BF240	QP13040902
7041		4822 130 40959	BC547B	QP13040959
7042		4822 130 44568	BC557B	QP13044568
7043		4822 130 40959	BC547B	QP13040959
7044		4822 130 40959	BC547B	QP13040959
7060		4822 209 72587	TCA0372DP2	QP20972587
7061		4822 209 72587	TCA0372DP2	QP20972587
7100		4822 209 33339	SAA7345GP/S5	QP20933339
7280		4822 209 33164	TDA1545AT/N2	QP20933164
7300		4822 209 83274	NJM4560D	QP20983274
7360		4822 130 44121	BC338	QP13044121
7361		4822 130 44121	BC338	QP13044121
7364		4822 130 44568	BC557B	QP13044568
7365		4822 130 44568	BC557B	QP13044568
7400		4822 209 30249	TMP47C212AN-3312	QP20930249
7500		4822 130 44568	BC557B	QP13044568
7535		4822 209 80817	L7805CV	QP20980817
7540		5322 209 62115	MC79L15ACP	QQ20962115
7541		4822 130 40959	BC547B	QP13040959
7542		4822 130 44121	BC338	QP13044121
7543		4822 130 44568	BC557B	QP13044568
7600		4822 209 72587	TCA0372DP2	QP20972587
7650		4822 130 44568	BC557B	QP13044568
7700		4822 209 33249	MC68HC11ER20/P159.08	QP20933249
			MAINS VOLTAGE	
▲ 5500	/01	4822 146 21796	MAINS TRANS.	QP14621796
▲ 5500	/02	4822 146 31337	MAINS TRANS.	QP14631337
▲ 5500	/05	4822 146 31339	MAINS TRANS.	QP14631339