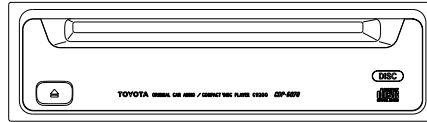


Service Manual

PIONEER
The Art of Entertainment
TOYOTA



ORDER NO.
CRT2262

CAR COMPACT DISC PLAYER

CDS-9036ZT ES

COMPACT
disc
DIGITAL AUDIO

VEHICLE	DESTINATION	PRODUCED AFTER	TOYOTA PART No.	ID No.	PIONEER MODEL No.
Not specified	THAILAND	August 1998	08601-00894	—	CDS-9036ZT/ES

- The CDS-9036ZT/ES is a genuine model of option from TOYOTA MOTOR CORPORATION.
- The CDS-9036ZT/ES uses AVC-LAN for bus.
- See the separate manual CX-597(CRT1829) for the CD mechanism description, disassembly and circuit description.
- The CD mechanism employed in this model is one of S7 series.

CONTENTS

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PIONEER ELECTRONIC CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153-8654, Japan
PIONEER ELECTRONICS SERVICE INC. P.O.Box 1760, Long Beach, CA 90801-1760 U.S.A.
PIONEER ELECTRONIC [EUROPE] N.V. Haven 1087 Keetberglaan 1, 9120 Melsele, Belgium
PIONEER ELECTRONICS ASIACENTRE PTE.LTD. 501 Orchard Road, #10-00, Wheelock Place, Singapore 238880

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● **CD Player Service Precautions**

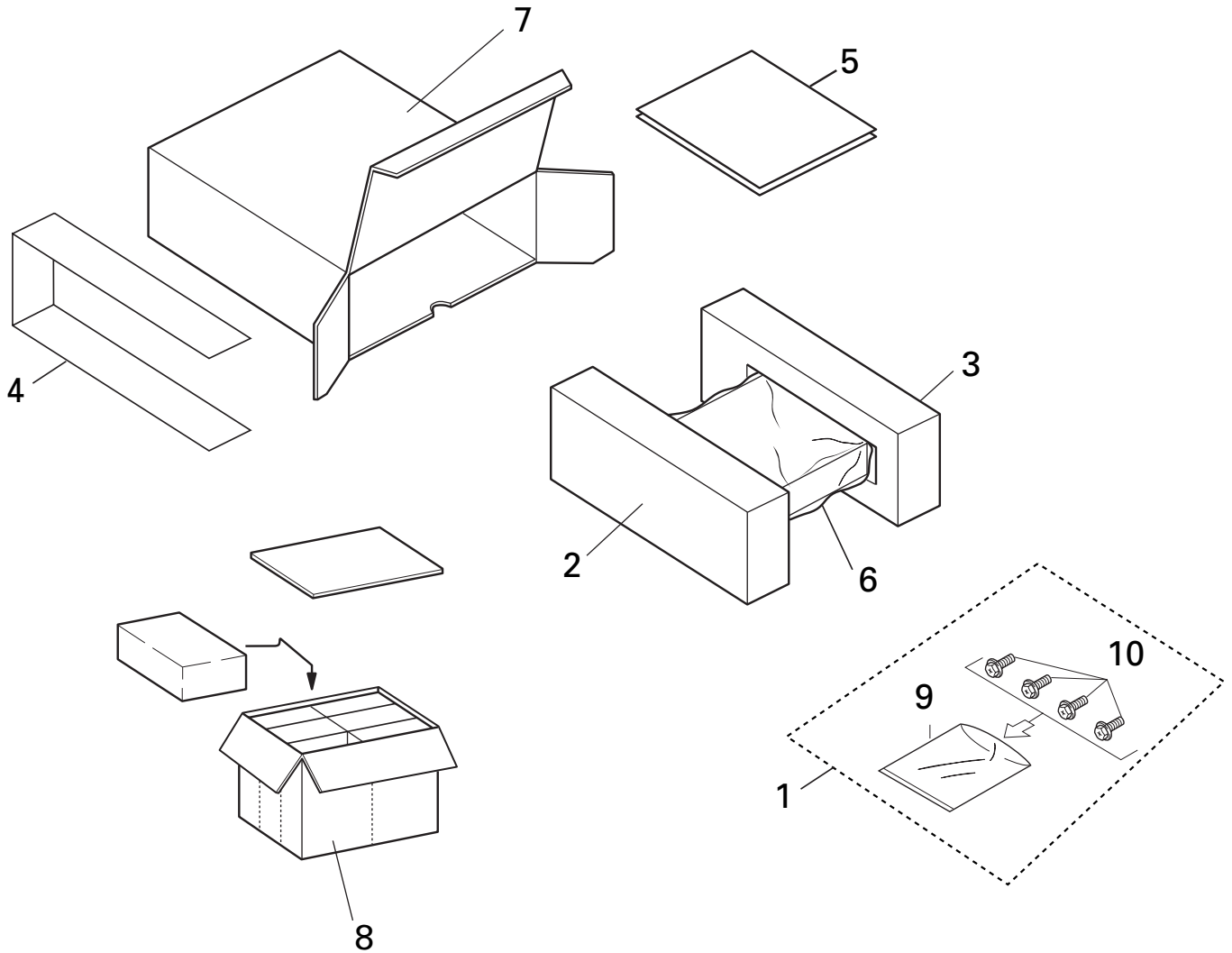
1. For pickup unit(CXX1231) handling, please refer to "Disassembly"(CX-597 Service Manual CRT1829).
During replacement, handling precautions shall be taken to prevent an electrostatic discharge(Protection by a short pin).
2. During disassembly, be sure to turn the power off since an internal IC might be destroyed when a connector is plugged or unplugged.
3. Please check the grating after changing the service pickup unit(see page 31).

1. SAFETY INFORMATION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual. Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely; you should not risk trying to do so and refer the repair to a qualified service technician.

2. EXPLODED VIEWS AND PARTS LIST

2.1 PACKING



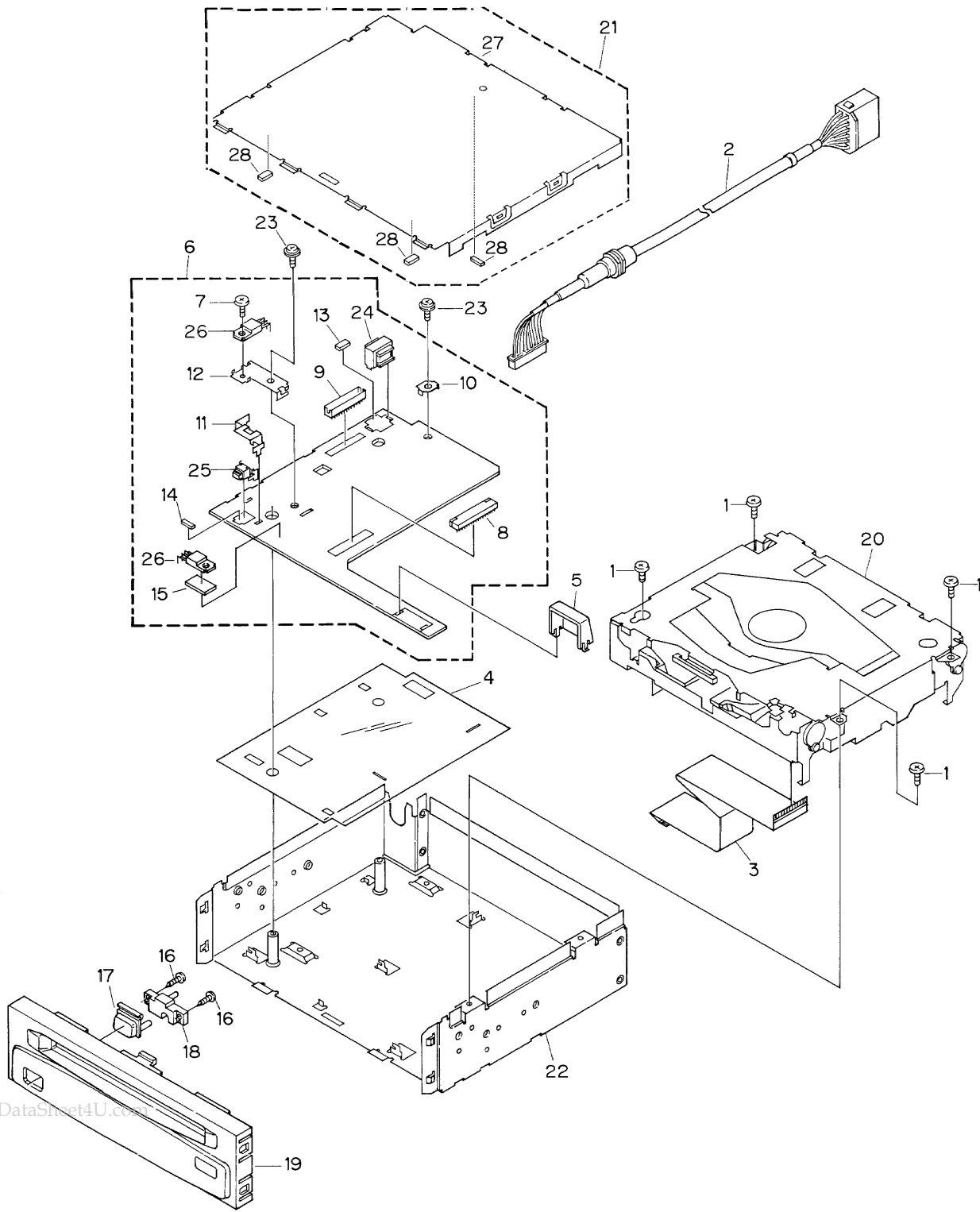
NOTE:

- Parts marked by "*" are generally unavailable because they are not in our Master Spare Parts List.
- Screws adjacent to ▽ mark on the product are used for disassembly.

● PACKING SECTION PARTS LIST

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Screw Assy	CEA1854	*	6 Polyethylene Bag	E36-609
2	Protector	CHP1944	7	Carton	CHA2424
3	Protector	CHP1945	8	Contain Box	CHL3594
*	4 Sheet	CHW1645	*	9 Polyethylene Bag	CEG-127
	5 Owner's Manual (English,Thai)	CRD2796	10	Screw	HMF50P080FMC

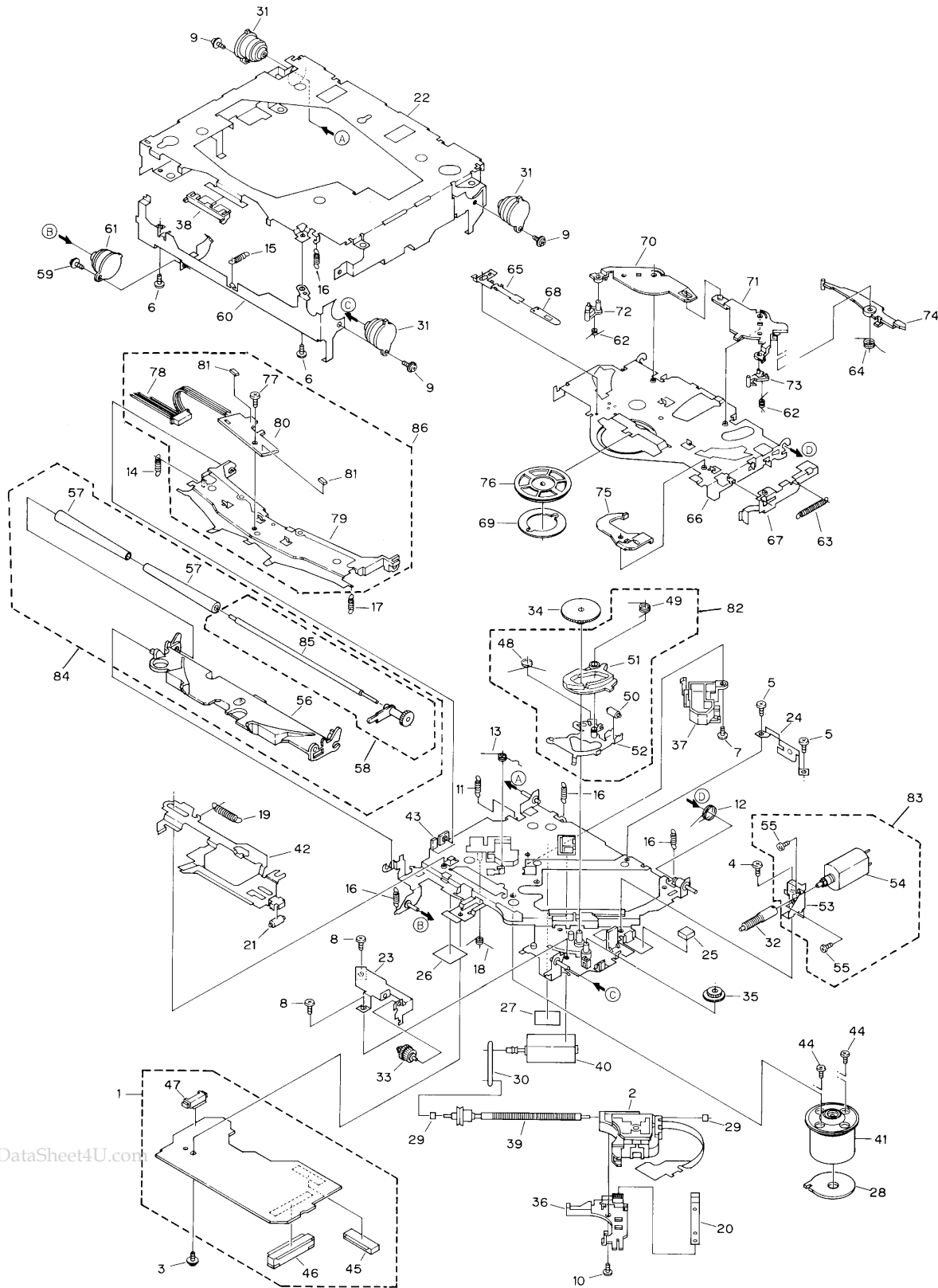
2.2 EXTERIOR



● EXTERIOR SECTION PARTS LIST

Mark No.	Description	Part No.
1	Screw	BMZ26P050FMC
2	Cord Assy	CDE5259
3	Connector	CDE5447
4	Insulator	CNM5365
5	Holder	CNV5014
6	Control Unit	CWM5461
7	Screw	BMZ26P050FMC
8	Connector(CN601)	CKS2228
9	Plug(CN901)	CKS2721
10	Holder	CNC2218
11	Holder	CNC6071
12	Holder	CNC7188
13	Spacer	CNM2683
14	Spacer	CNM4676
15	Spacer	CNM5523
16	Screw	BPZ20P080FMC
17	Button(Eject)	CAC5244
18	Lighting Conductor	CNV5013
19	Grille Unit	CXB1803
20	CD Mechanism Module	CXK5020
21	Case Unit	CXB2146
22	Chassis Unit	CXB1552
23	Screw	IMS30P050FMC
24	Choke Coil(L901)	CTH1129
25	Push Switch(S601)	CSG1065
26	Transistor(Q704, 911)	2SB1185
27	Case	CNB2203
28	Cushion	CNM5473

2.4 CD MECHANISM MODULE



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● CD MECHANISM MODULE SECTION PARTS LIST

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Control Unit(S7)	CWX2332	46	Connector(CN701)	CKS2774
2	Pickup Unit(Service)	CXX1231	47	Connector(CN801)	CKS2196
3	Screw	IMS26P035FMC	48	Spring	CBH1832
4	Screw	BMZ20P025FMC	49	Spring	CBH1833
5	Screw	BMZ20P040FMC	50	Roller	CLA2627
6	Screw	BSZ20P040FMC	51	Arm	CNV4136
7	Screw(M2×3)	CBA1077	52	Arm Unit	CXA8565
8	Screw(M2×2)	CBA1250	53	Bracket	CNC6056
9	Screw(M2×5)	CBA1296	54	Load Motor Unit(M3)	CXA8702
10	Screw(M2×3.85)	CBA1362	55	Screw	JFZ20P025FMC
11	Spring	CBH1724	56	Arm	CNV4120
12	Spring	CBH1729	57	Roller	CNV4509
13	Spring	CBH1730	58	Gear Unit	CXA8701
14	Spring	CBH1731	59	Screw(M2×5)	CBA1455
15	Spring	CBH1732	60	Frame	CNC5797
16	Spring	CBH1745	61	Damper	CNV3974
17	Spring	CBH1848	62	Spring	CBH1736
18	Spring	CBH1849	63	Spring	CBH1863
19	Spring	CBH1939	64	Spring	CBH1945
20	Spring	CBL1214	65	Spring	CBL1269
21	Roller	CLA2627	66	Arm	CNC5799
22	Frame	CNC5796	67	Lever	CNC6054
23	Bracket	CNC5871	68	Spacer	CNM3315
* 24	Bracket	CNC6376	69	Sheet	CNM4849
25	Cushion	CNM3917	70	Arm	CNV5436
26	Sheet	CNM4873	71	Arm	CNV4123
* 27	Sheet	CNM5116	72	Arm	CNV4124
28	PCB	CNP4230	73	Arm	CNV4125
29	Bearing	CNR1415	74	Arm	CNV4138
30	Belt	CNT1071	75	Arm	CNV4139
31	Damper	CNV3974	76	Clamper	CNV4140
32	Gear	CNV4128	77	Screw(M2×2)	CBA1250
33	Gear	CNV4129	78	Connector	CDE4576
34	Gear	CNV4857	79	Arm	CNC7383
35	Gear	CNV4131	* 80	Gathering PCB	CNX2533
36	Holder	CNV4663	81	Photo-transistor(Q1, 2)	CPT-230S-X
37	Holder	CNV5071	82	ELBO Arm Assy	CXA8889
38	Guide	CNV4484	83	Load Motor Assy	CXA8891
39	Screw Unit	CXA8699	84	LO Arm Assy	CXA8892
40	CRG Motor Unit(M2)	CXB3043	85	Shaft	CLA3133
41	Motor Unit(M1)	CXA8912	86	Guide Arm Assy	CXB1851
42	Lever Unit	CXA9300			
43	Chassis Unit	CXB2574			
44	Screw	JFZ20P025FMC			
45	Connector(CN101)	CKS1953			

3. SCHEMATIC DIAGRAM

3.1 OVERALL CONNECTION DIAGRAM

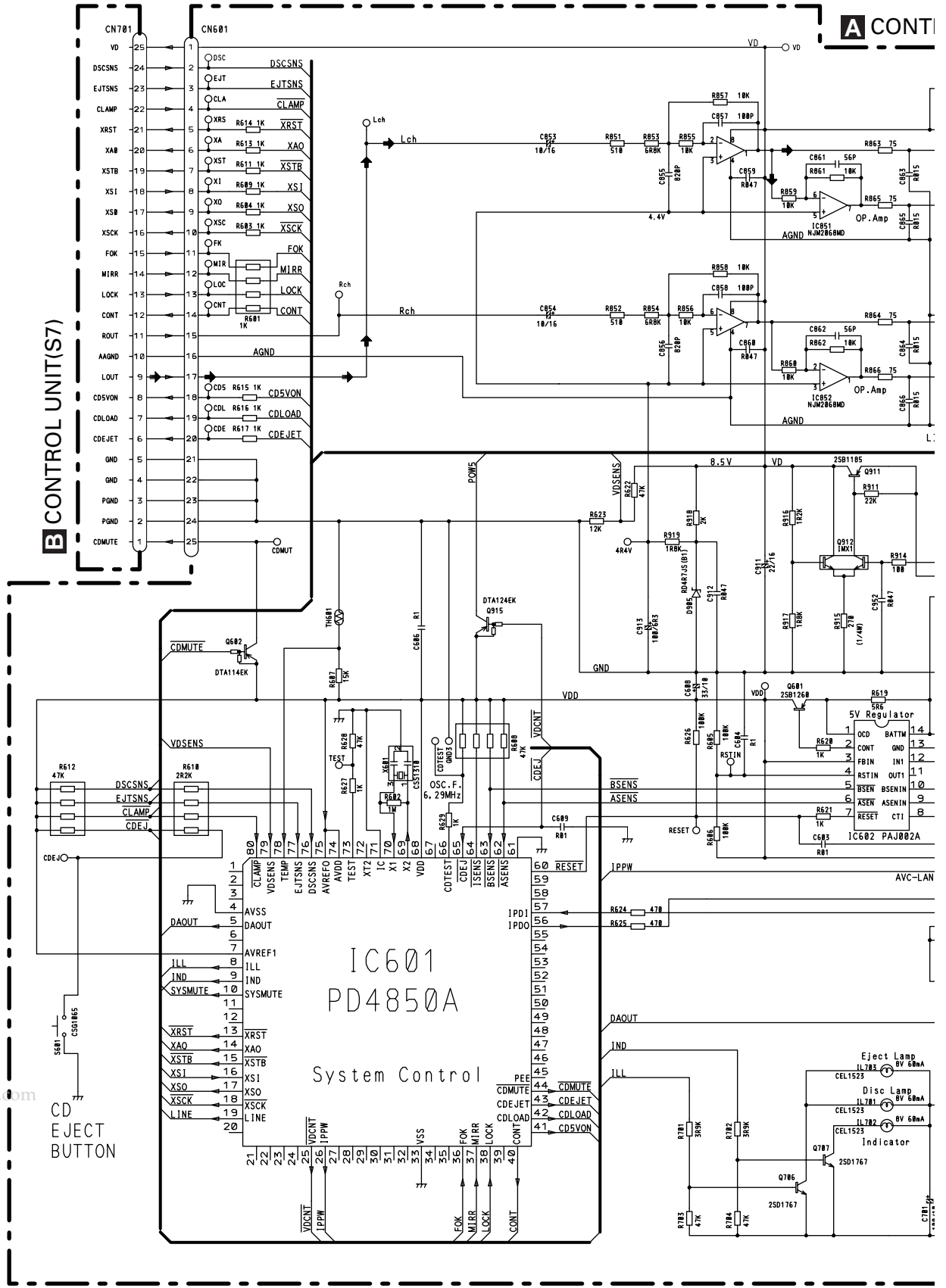
Note: When ordering service parts, be sure to refer to "EXPLODED VIEWS AND PARTS LIST" or "ELECTRICAL PARTS LIST".

A

B

C

D



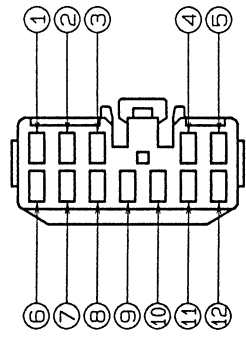
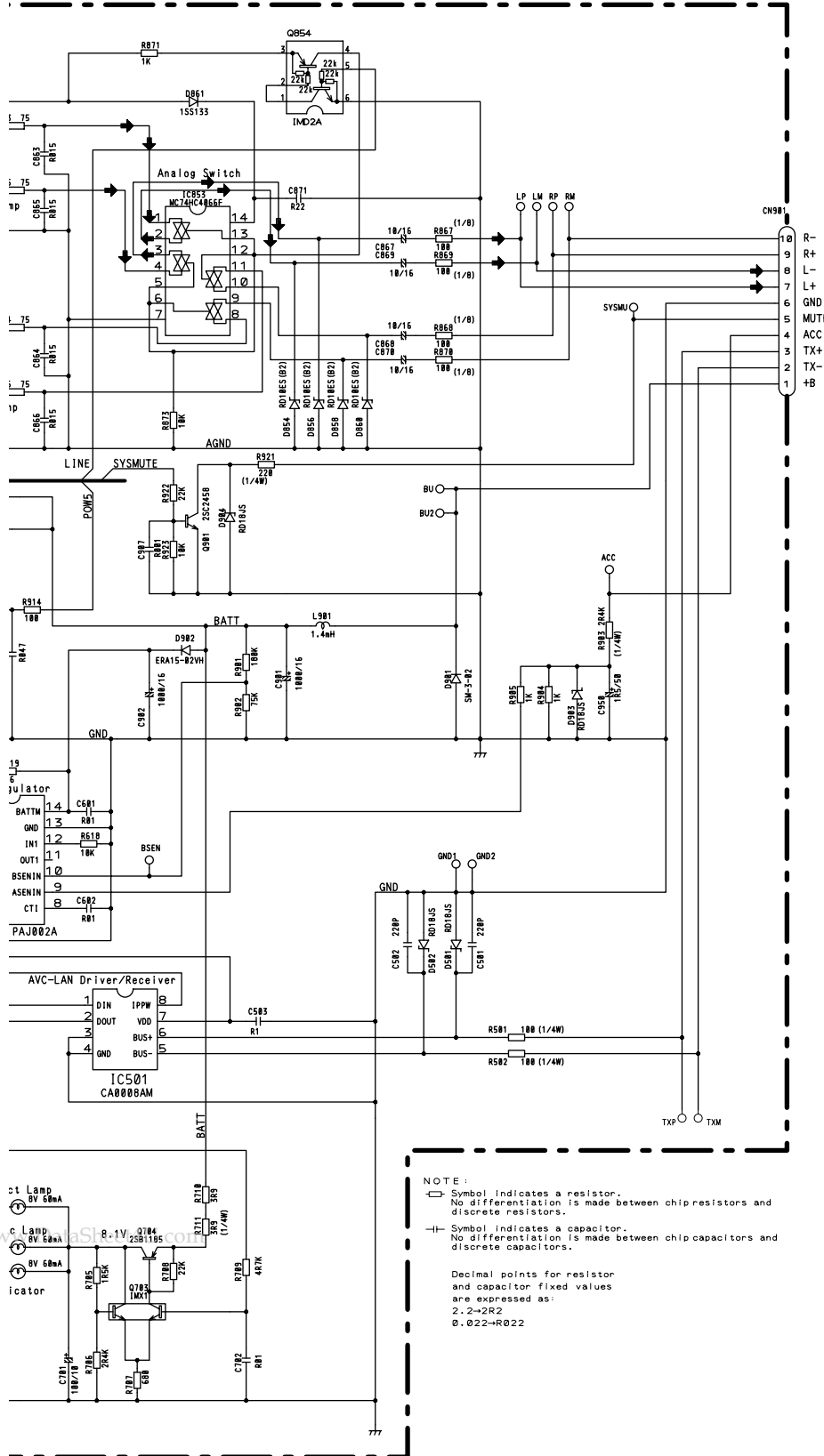
A CONT

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CONTROL UNIT



Connector No	Description
1	R+
2	L+
3	SGND
4	MUTE
5	+B
6	R-
7	L-
8	GND
9	TX-
10	TX+
11	NC
12	ACC

NOTE:

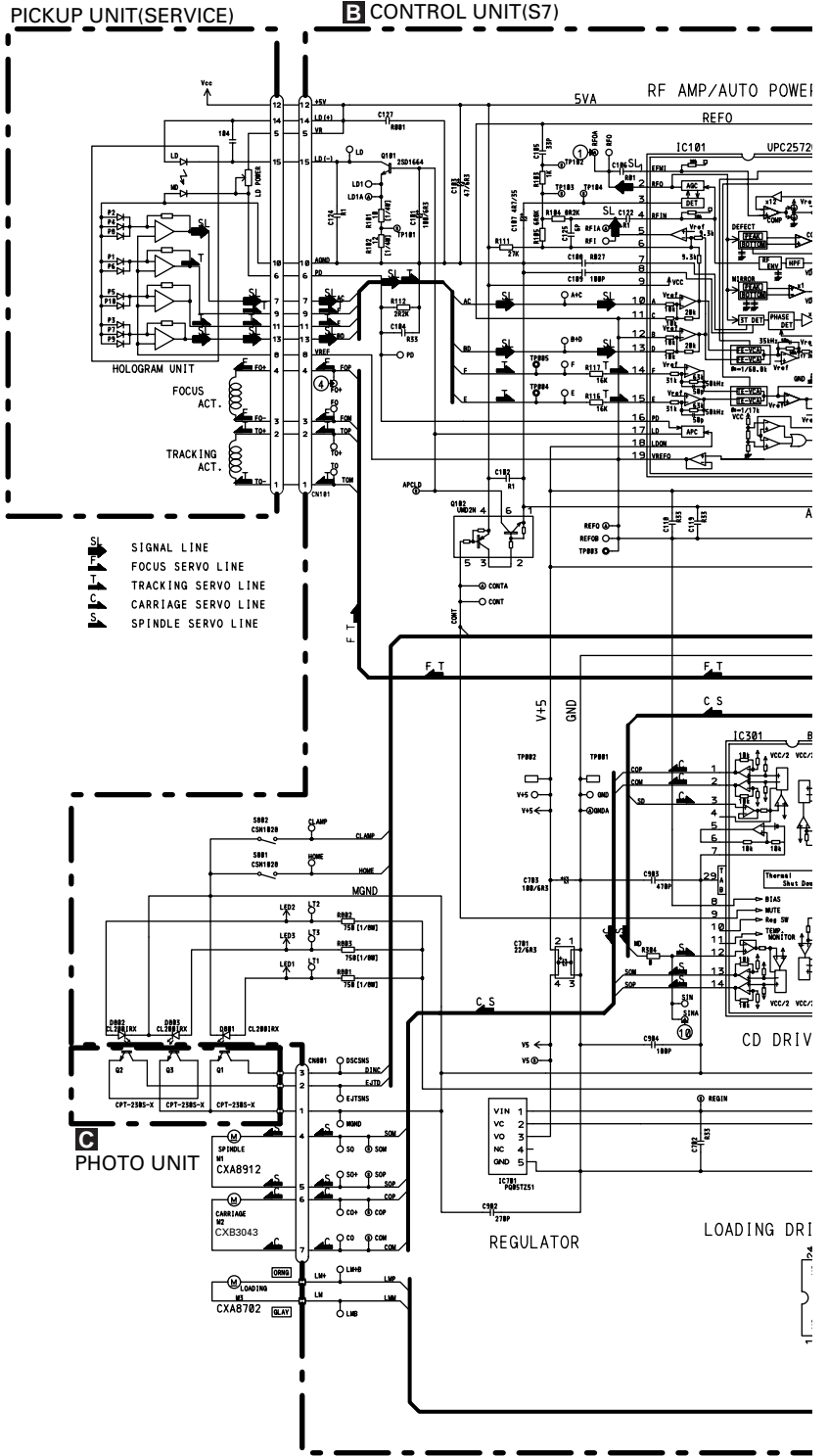
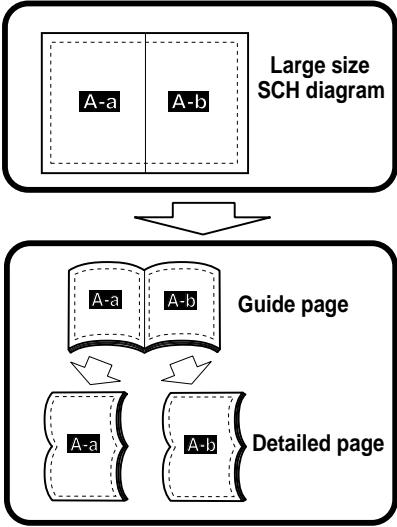
- Symbol indicates a resistor. No differentiation is made between chip resistors and discrete resistors.
- ⊖ Symbol indicates a capacitor. No differentiation is made between chip capacitors and discrete capacitors.

Decimal points for resistor and capacitor fixed values are expressed as:
 2.2→2R2
 0.022→R022

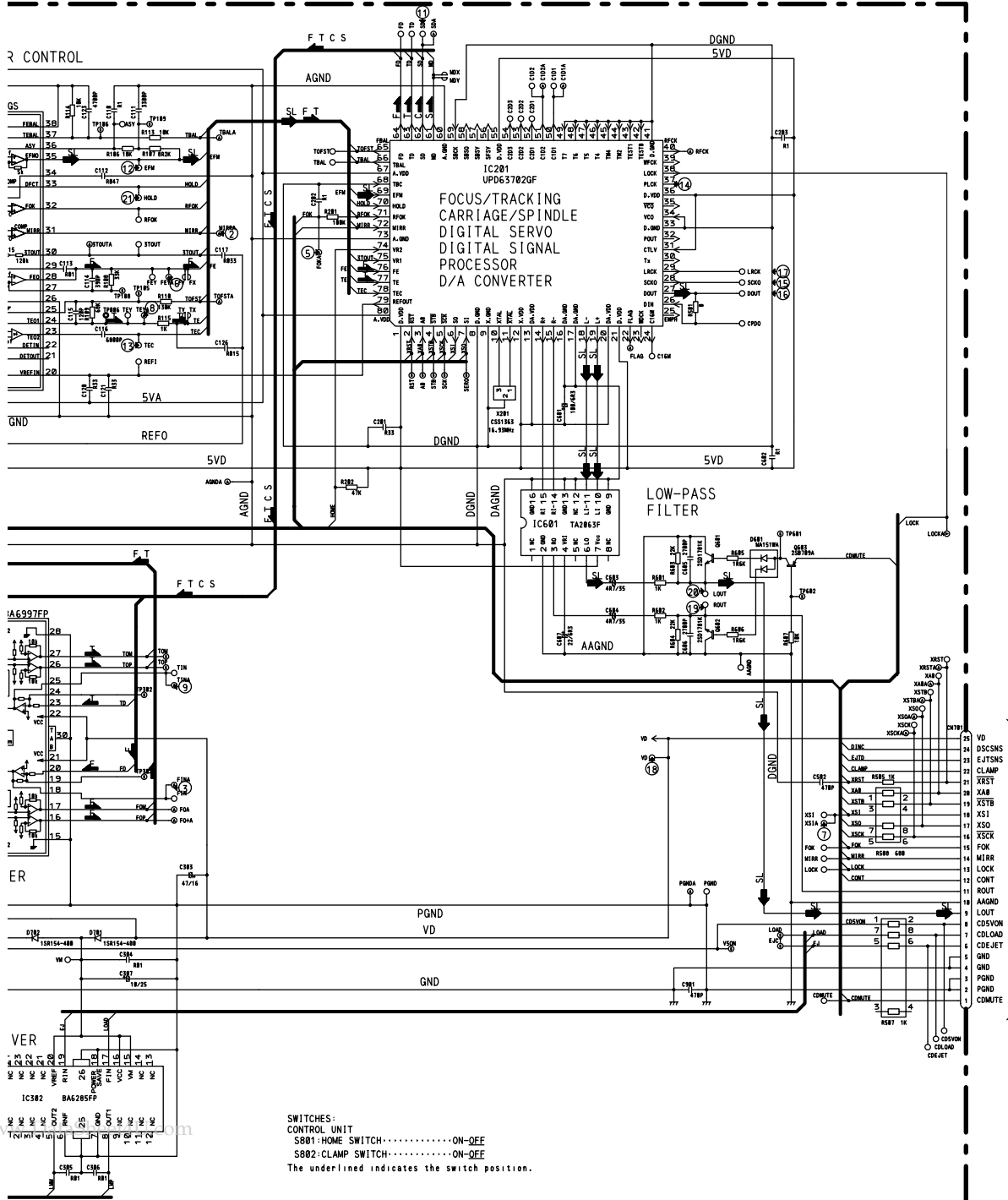


3.2 CD MECHANISM MODULE(GUIDE PAGE)

B-a



B-b

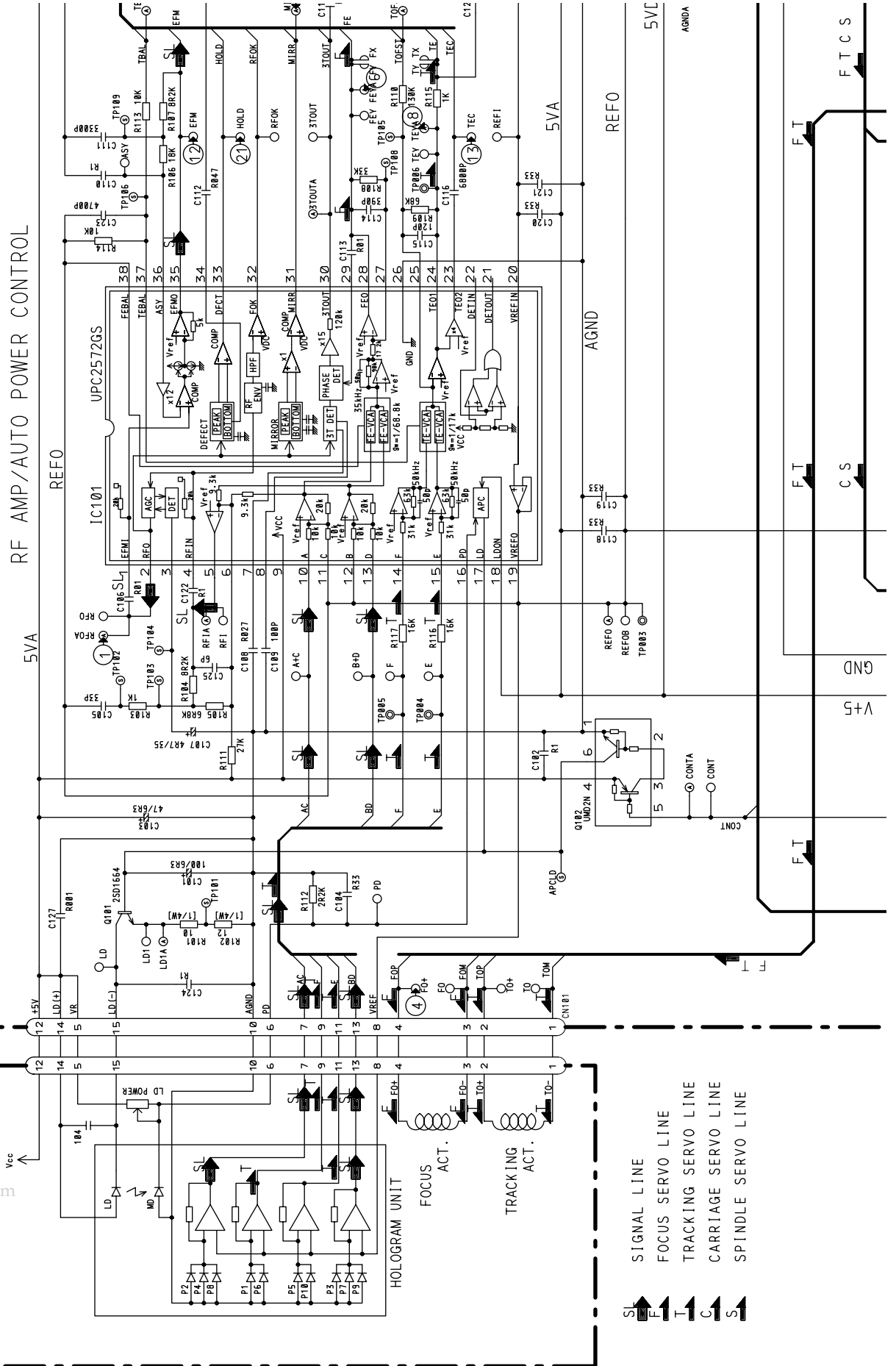


A CN601

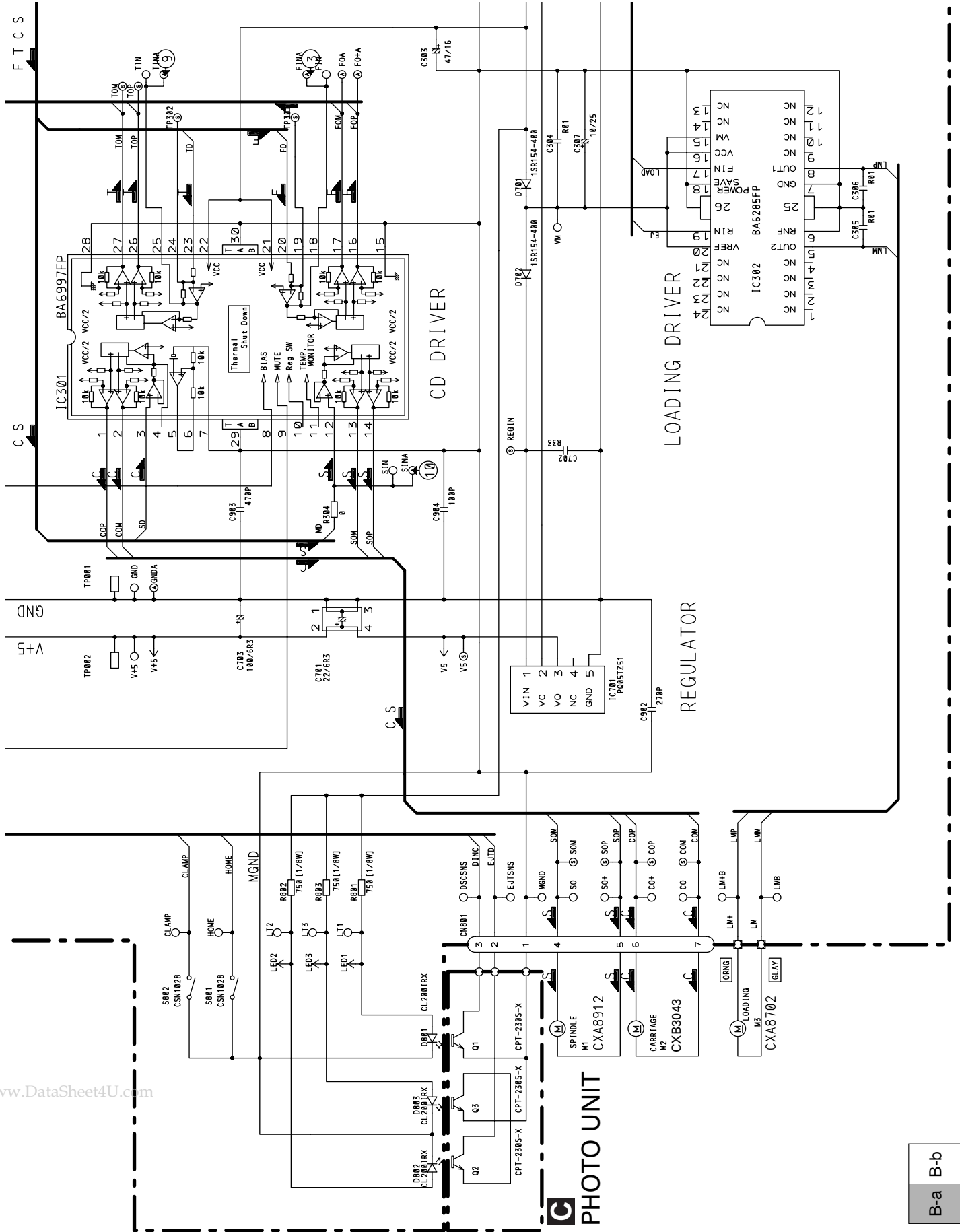


PICKUP UNIT(SERVICE)

B CONTROL UNIT(S7)



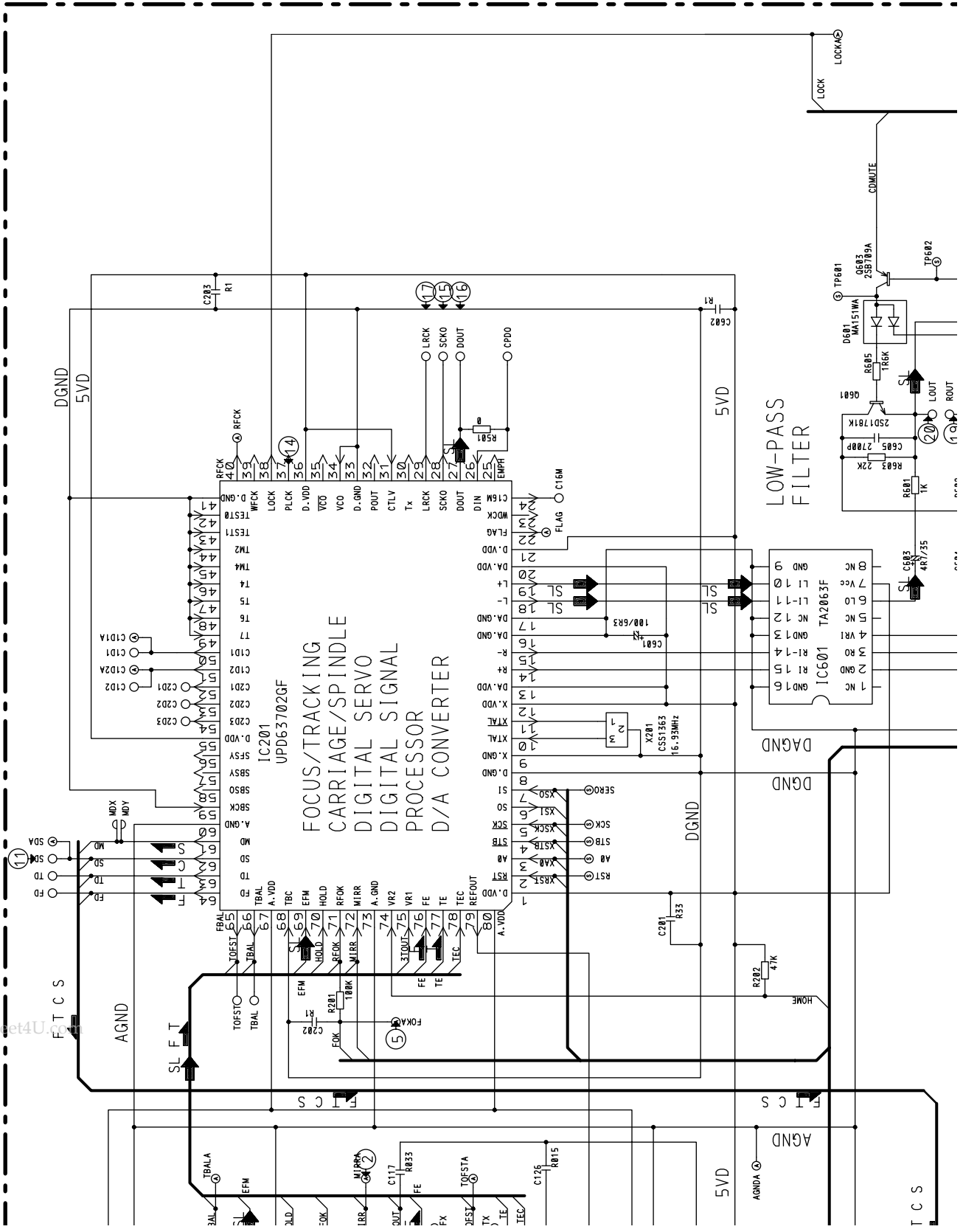
- SL SIGNAL LINE
- F FOCUS SERVO LINE
- T TRACKING SERVO LINE
- C CARRIAGE SERVO LINE
- S SPINDLE SERVO LINE



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B-a B-b

B-a B-b



FOCUS/TRACKING
 CARRIAGE/SPINDLE
 DIGITAL SERVO
 DIGITAL SIGNAL
 PROCESSOR
 D/A CONVERTER

LOW-PASS
 FILTER

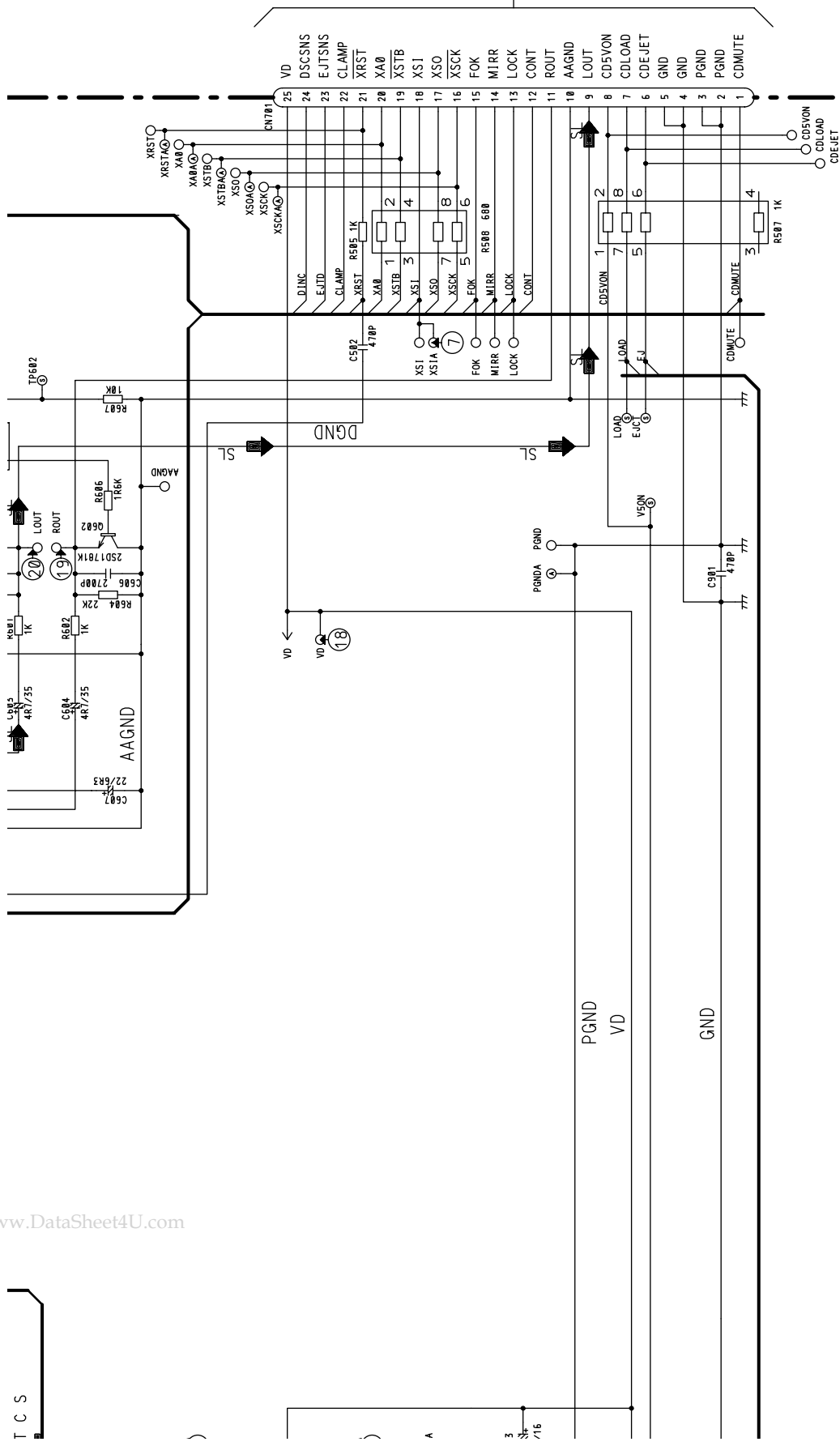
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B-b

LOGNO 

B-a B-b



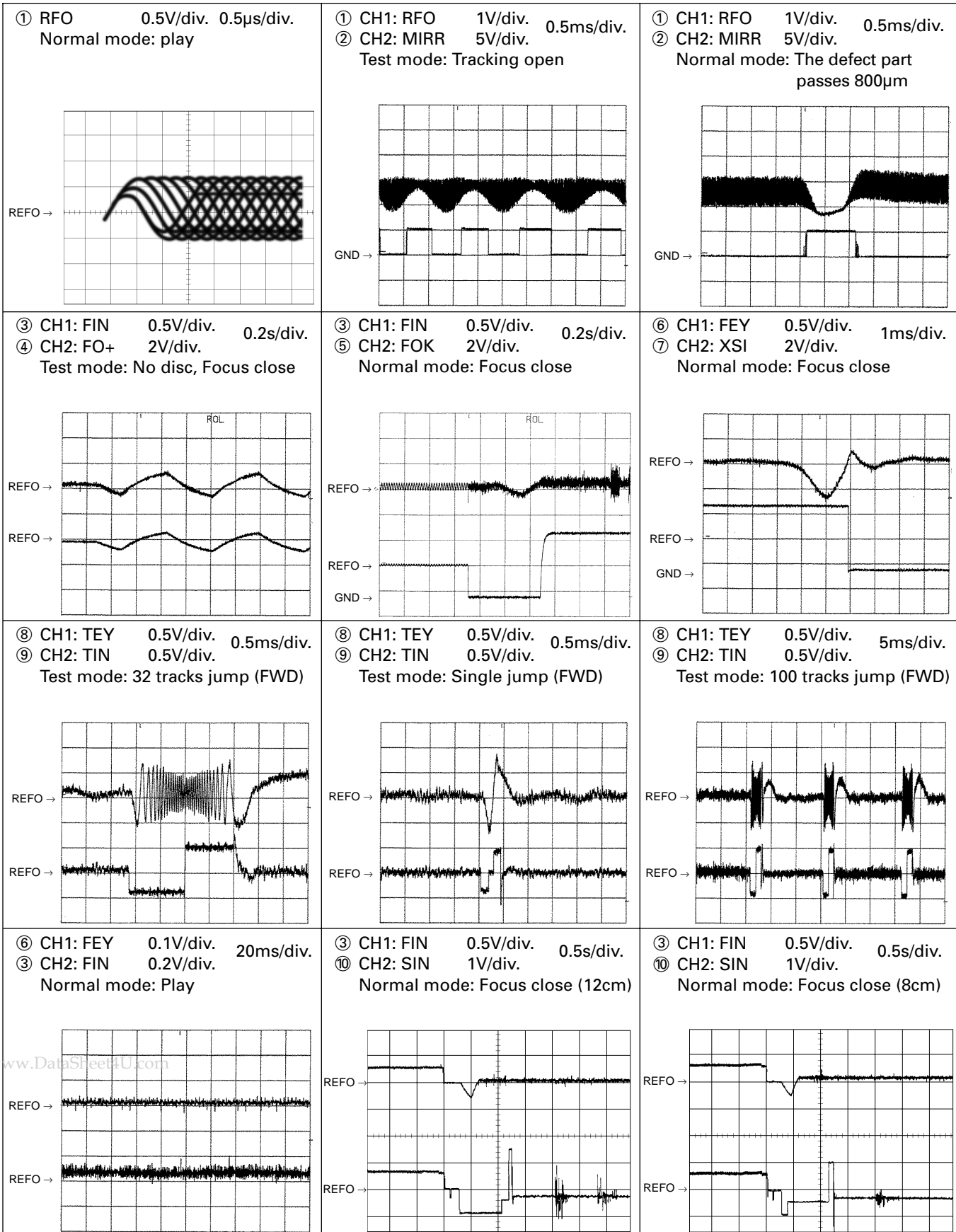
SWITCHES:
 CONTROL UNIT
 S801:HOME SWITCH.....ON-OFF
 S802:CLAMP SWITCH.....ON-OFF
 The underlined indicates the switch position.

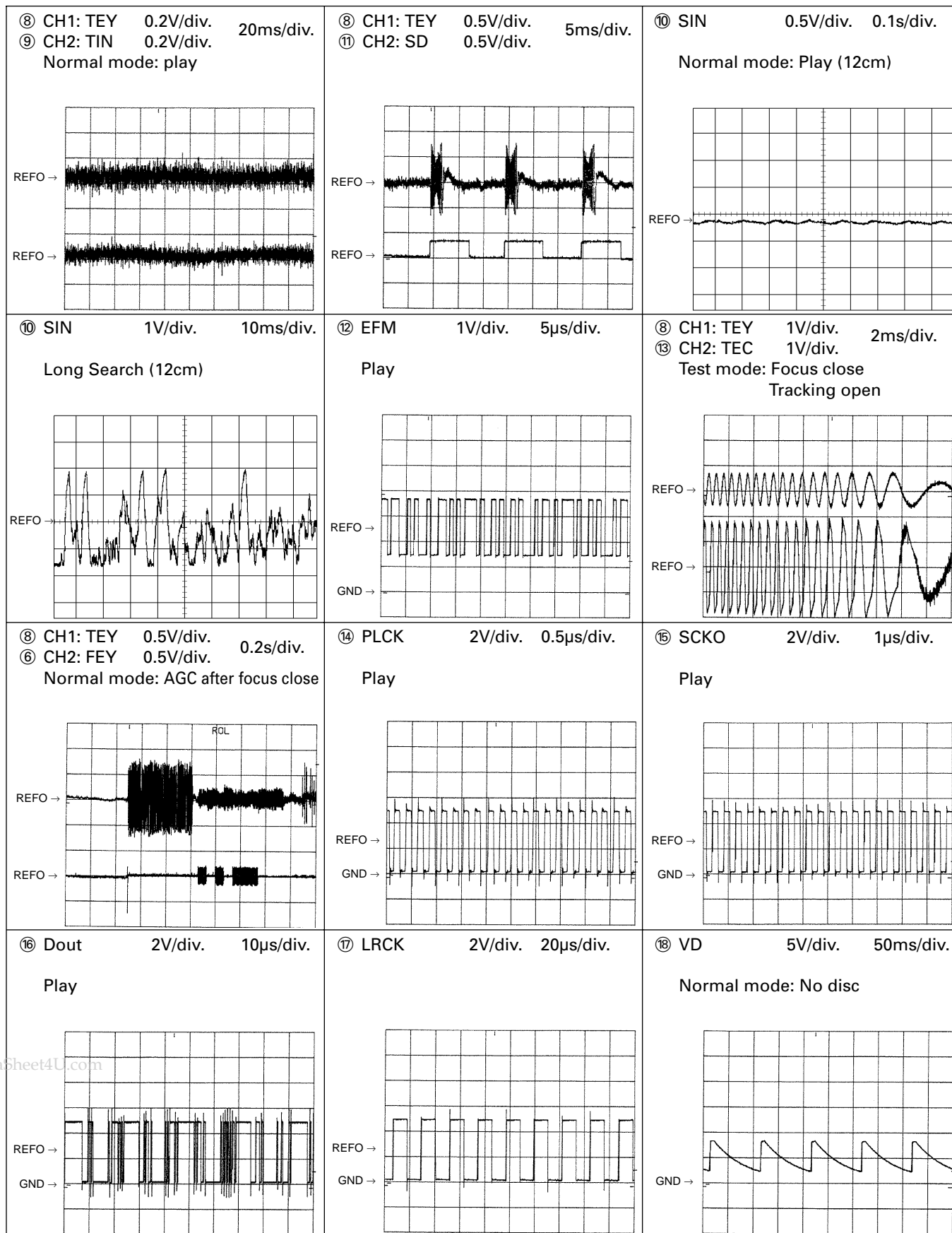
Note:1. The encircled numbers denote measuring pointes in the circuit diagram.

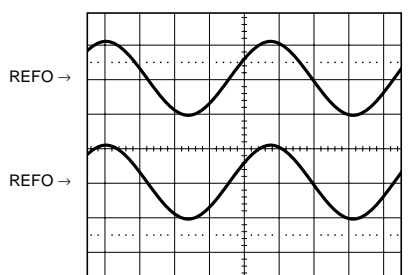
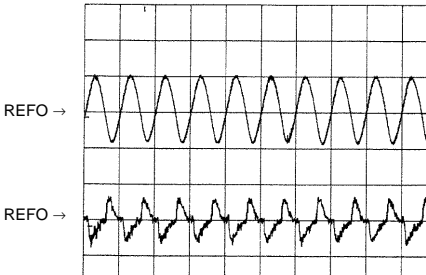
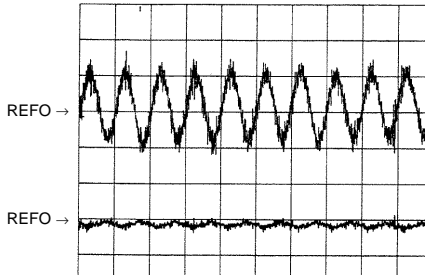
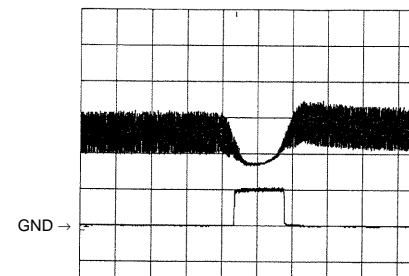
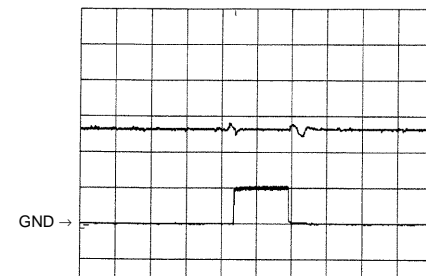
2. Reference voltage

REFO:2.5V

● Waveforms





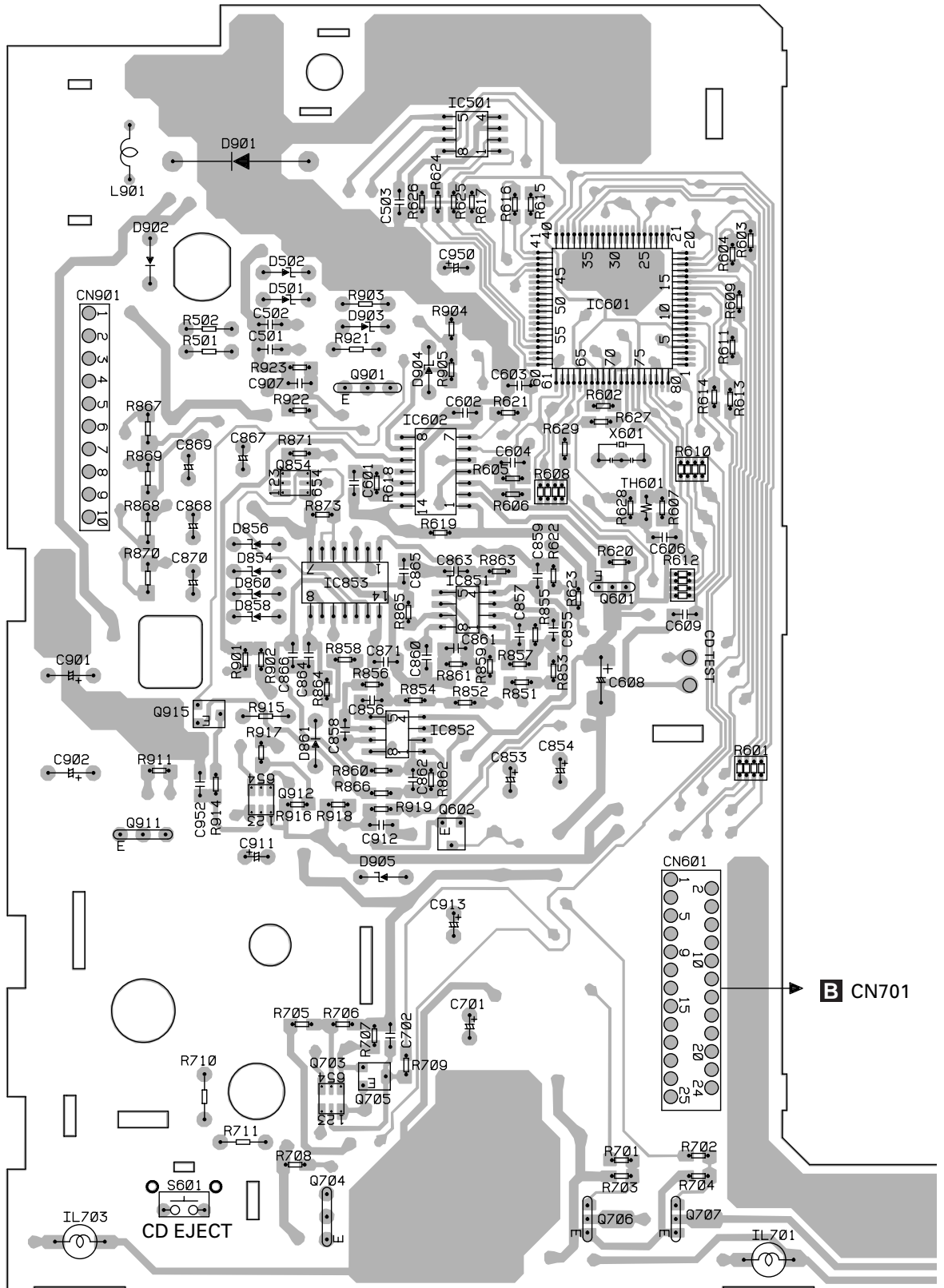
<p>⑱ CH1: R OUT 1V/div. 0.2ms/div. ⑳ CH2: L OUT 1V/div. 0.2ms/div. Normal mode: Play (1kHz 0dB)</p> 	<p>⑥ CH1: FEY 0.2V/div. 1ms/div. ③ CH2: FIN 0.5V/div. 1ms/div. Normal mode: During AGC</p> 	<p>⑧ CH1: TEY 0.2V/div. 1ms/div. ⑨ CH2: TIN 0.5V/div. 1ms/div. Normal mode: During AGC</p> 
<p>① CH1: RFO 1V/div. 0.5ms/div. ② CH2: HOLD 5V/div. 0.5ms/div. Normal mode: The defect part passes 800μm</p> 	<p>③ CH1: FIN 1V/div. 0.5ms/div. ② CH2: HOLD 5V/div. 0.5ms/div. Normal mode: The defect part passes 800μm</p> 	
<p>www.DataSheet4U.com</p>		

4. PCB CONNECTION DIAGRAM

4.1 CONTROL UNIT

A CONTROL UNIT

- IC. Q
- IC501
- IC601
- Q901
- IC602
- Q854
- IC853
- IC851
- Q601
- Q915
- IC852
- Q912
- Q911
- Q602
- Q703
- Q705
- Q704
- Q706
- Q707



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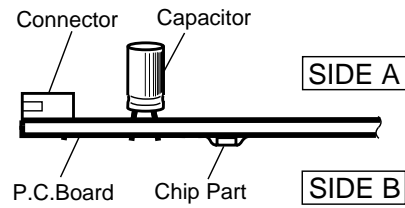
SIDE A

NOTE FOR PCB DIAGRAMS

1. The parts mounted on this PCB include all necessary parts for several destination.

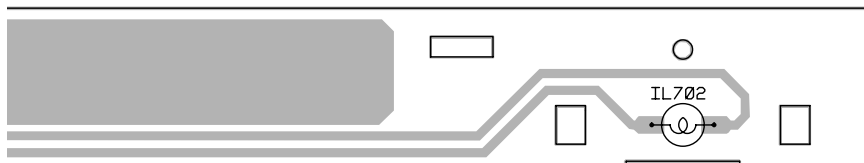
For further information for respective destinations, be sure to check with the schematic diagram.

2. Viewpoint of PCB diagrams



701

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A CONTROL UNIT

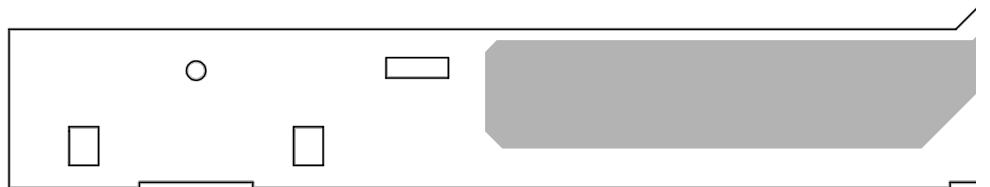
A

B

C

D

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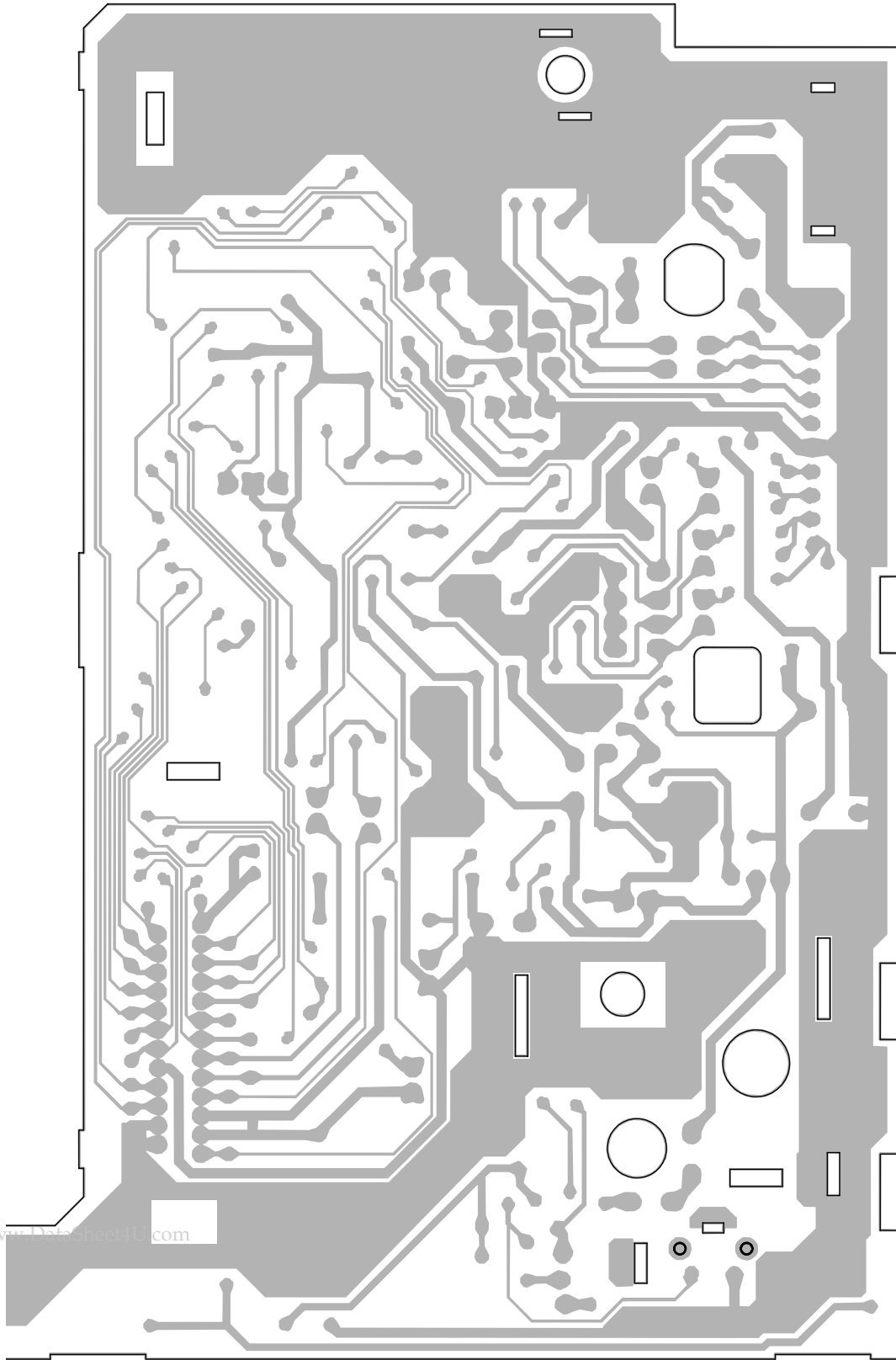
SIDE B

A

B

C

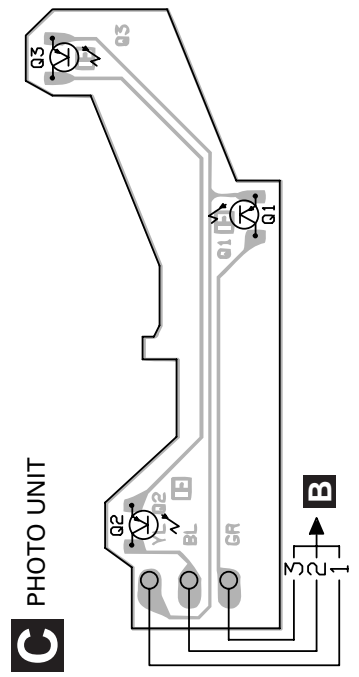
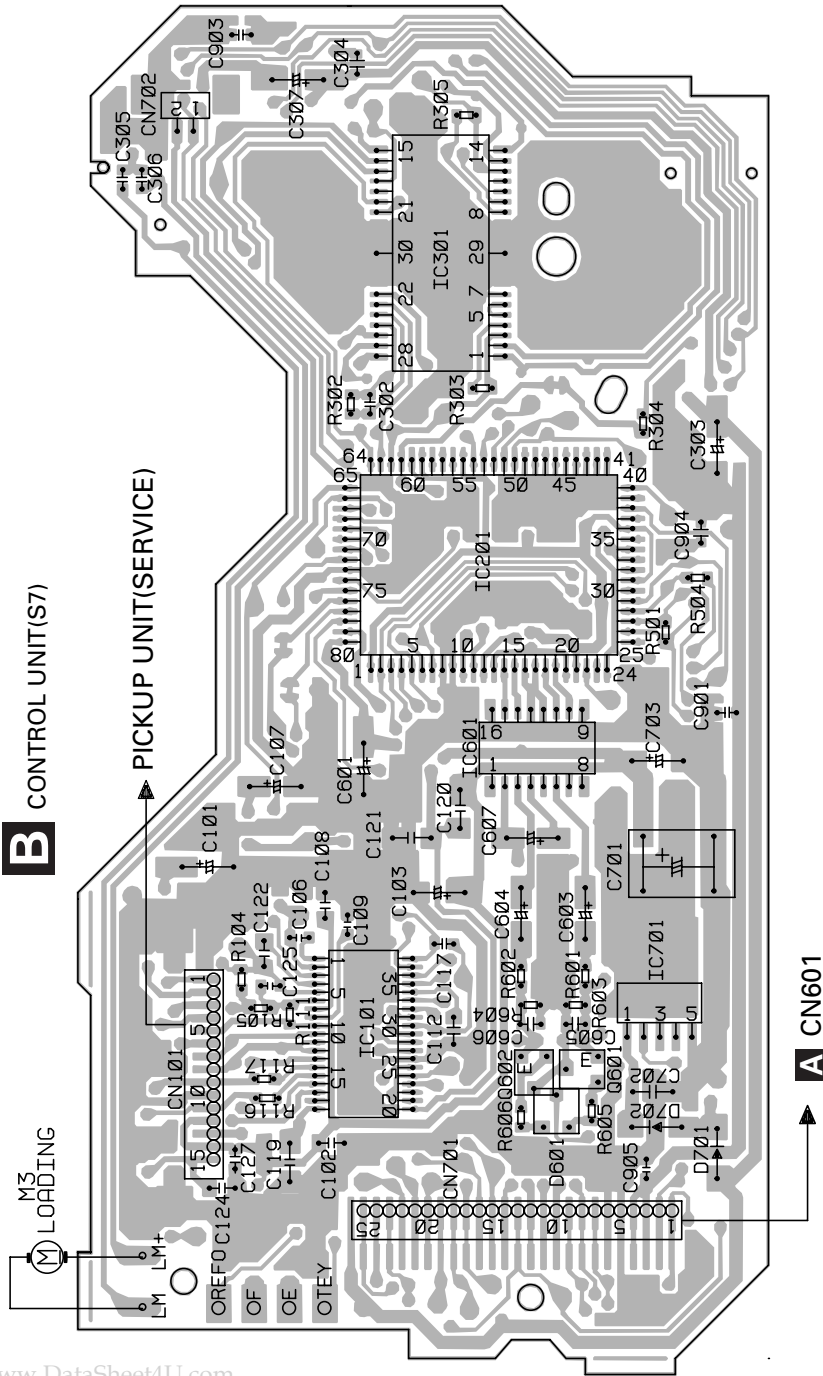
D



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4.2 CONTROL UNIT(S7),PHOTO UNIT

SIDE A

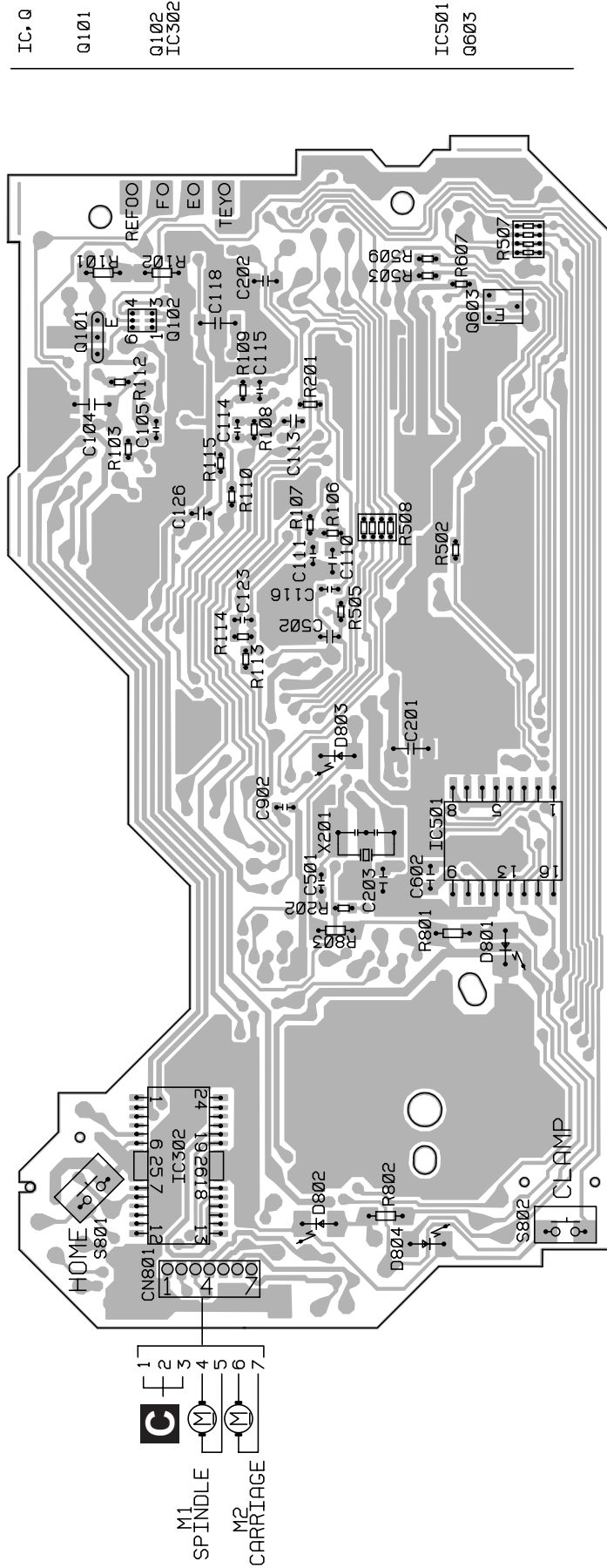


IC, Q	IC101	IC301	IC201	Q602	Q601	IC701
	IC601					

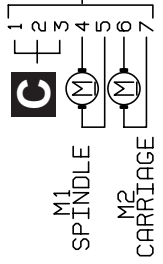
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SIDE B



B CONTROL UNIT(S7)



IC-0
Q101
Q102
IC302
IC501
Q603

5. ELECTRICAL PARTS LIST

NOTES:

● Parts whose parts numbers are omitted are subject to being not supplied.

● The part numbers shown below indicate chip components.

Chip Resistor

RS1/OSOOOJ,RS1/OOSOOOJ

Chip Capacitor (except for CQS.....)

CKS....., CCS....., CSZS.....

====Circuit Symbol and No.====Part Name -----	Part No. -----	====Circuit Symbol and No.====Part Name -----	Part No. -----
B Unit Number :CWX2332 Unit Name :Control Unit(S7)		R 605	RS1/16S162J
IC 101 IC	UPC2572GS	R 606	RS1/16S162J
IC 201 IC	UPD63702GF	R 607	RS1/16S103J
IC 301 IC	BA6997FP	R 801	RS1/8S751J
IC 302 IC	BA6285FP	R 802	RS1/8S751J
IC 601 IC	TA2063F	R 803	RS1/8S751J
IC 701 IC	PQ05TZ51	CAPACITORS	
Q 101 Transistor	2SD1664	C 101	CEV101M6R3
Q 102 Transistor	UMD2N	C 102	CKSQYB104K16
Q 601 Transistor	2SD1781K	C 103	CEV470M6R3
Q 602 Transistor	2SD1781K	C 104	CKSYB334K16
Q 603 Transistor	2SB709A	C 105	CCSRCH330J50
D 601 Chip Diode	MA151WA	C 106	CKSRYB103K25
D 701 Diode	1SR154-400	C 107	CEV4R7M35
D 702 Diode	1SR154-400	C 108	CKSQYB273K50
D 801 Chip LED	CL200IRX	C 109	CCSRCH101J50
D 802 Chip LED	CL200IRX	C 110	CKSQYB104K16
D 803 Chip LED	CL200IRX	C 111	CKSRYB332K50
X 201 Ceramic Resonator 16.93MHz	CSS1363	C 112	CKSQYB473K16
S 801 Switch(Home)	CSN1028	C 113	CKSRYB103K25
S 802 Switch(Clamp)	CSN1028	C 114	CKSRYB391K50
		C 115	CCSRCH121J50
RESISTORS		C 116	CKSRYB682K25
R 101	RS1/8S100J	C 117	CKSRYB333K16
R 102	RS1/8S120J	C 118	CKSYB334K16
R 103	RS1/16S102J	C 119	CKSYB334K16
R 104	RS1/16S822J	C 120	CKSYB334K16
R 105	RS1/16S682J	C 121	CKSYB334K16
R 106	RS1/16S183J	C 122	CKSQYB104K16
R 107	RS1/16S822J	C 123	CKSRYB472K50
R 108	RS1/16S333J	C 124	CKSQYB104K16
R 109	RS1/16S683J	C 125	CCSRCH6R0D50
R 110	RS1/16S134J	C 126	CKSRYB153K25
R 111	RS1/16S273J	C 127	CCSRCH102J25
R 112	RS1/16S222J	C 201	CKSYB334K16
R 113	RS1/16S103J	C 202	CKSQYB104K16
R 114	RS1/16S103J	C 203	CKSQYB104K16
R 115	RS1/16S102J	C 303	CEV470M16
R 116	RS1/16S163J	C 304	CKSRYB103K25
R 117	RS1/16S163J	C 305	CKSRYB103K25
R 201	RS1/16S104J	C 306	CKSRYB103K25
R 202	RS1/16S473J	C 307	CEV100M25
R 304	RS1/16S0R0J	C 502	CKSRYB471K50
R 501	RS1/16S0R0J	C 601	CEV101M6R3
R 505	RS1/16S102J	C 602	CKSQYB104K16
R 507	RA4C102J	C 603	CEV4R7M35
R 508	RA4C681J	C 604	CEV4R7M35
R 601	RS1/16S102J	C 605	CKSRYB272K50
R 602	RS1/16S102J	C 606	CKSRYB272K50
R 603	RS1/16S223J	C 607	CEV220M6R3
R 604	RS1/16S223J	C 701	CCH1233
		C 702	CKSYB334K16
		C 703	CEV101M6R3
		C 901	CCSRCH471J50

22µF/6.3V

====Circuit Symbol and No.====Part Name	Part No.	====Circuit Symbol and No.====Part Name	Part No.
C 902	CCSRCH271J50	R 621	RS1/10S102J
C 903	CCSRCH471J50	R 622	RS1/10S473J
C 904	CCSRCH101J50	R 623	RS1/10S123J
		R 624	RS1/10S471J
		R 625	RS1/10S471J
A Unit Number :CWM5461			
Unit Name :Control Unit			
MISCELLANEOUS			
IC 501 IC	CA0008AM		
IC 601 IC	PD4850A		
IC 602 IC	PAJ002A	R 702	RS1/10S392J
IC 851 IC	NJM2068MD	R 703	RS1/10S473J
IC 852 IC	NJM2068MD	R 704	RS1/10S473J
IC 853 IC	MC74HC4066F	R 705	RS1/10S152J
Q 601 Transistor	2SB1260	R 706	RS1/10S242J
Q 602 Transistor	DTA114EK	R 707	RS1/10S681J
Q 703 Transistor	IMX1	R 708	RS1/10S223J
Q 704 Transistor	2SB1185	R 709	RS1/10S472J
Q 706 Transistor	2SD1767	R 710	RD1/4PU3R9J
Q 707 Transistor	2SD1767	R 711	RD1/4PU3R9J
Q 854 Transistor	IMD2A	R 851	RS1/10S511J
Q 901 Transistor	2SC2458	R 852	RS1/10S511J
Q 911 Transistor	2SB1185	R 853	RS1/10S682J
Q 912 Transistor	IMX1	R 854	RS1/10S682J
Q 915 Transistor	DTA124EK	R 855	RS1/10S103J
D 501 Diode	RD18JS	R 856	RS1/10S103J
D 502 Diode	RD18JS	R 857	RS1/10S103J
D 854 Zener Diode	RD10ES(B2)	R 858	RS1/10S103J
D 856 Zener Diode	RD10ES(B2)	R 859	RS1/10S103J
D 858 Zener Diode	RD10ES(B2)	R 860	RS1/10S103J
D 860 Zener Diode	RD10ES(B2)	R 861	RS1/10S103J
D 861 Diode	1SS133	R 862	RS1/10S103J
D 901 Diode	SM-3-02	R 863	RS1/10S750J
D 902 Diode	ERA15-02VH	R 864	RS1/10S750J
D 903 Diode	RD18JS	R 865	RS1/10S750J
D 904 Diode	RD18JS		
D 905 Diode	RD4R7JS(B1)	R 866	RS1/10S750J
L 901 Choke Coil 1.4mH	CTH1129	R 867	RS1/8S101J
TH 601 Thermistor	CCX1015	R 868	RS1/8S101J
X 601 Ceramic Resonator 6.29MHz	CSS1310	R 869	RS1/8S101J
		R 870	RS1/8S101J
S 601 Switch(CD Eject)	CSG1065		
IL 701 Lamp 8V60mA	CEL1523	R 871	RS1/10S102J
IL 702 Lamp 8V60mA	CEL1523	R 873	RS1/10S103J
IL 703 Lamp 8V60mA	CEL1523	R 901	RS1/10S184J
		R 902	RS1/10S753J
		R 903	RD1/4PU242J
RESISTORS			
R 501	RD1/4PU101J	R 904	RN1/10SE1001D
R 502	RD1/4PU101J	R 905	RS1/10S102J
R 601	RA4C102J	R 911	RS1/10S223J
R 602	RS1/10S105J	R 914	RS1/10S101J
R 603	RS1/10S102J	R 915	RD1/4PU271J
R 604	RS1/10S102J		
R 605	RS1/10S104J	R 916	RS1/10S122J
		R 917	RS1/10S182J
R 606	RS1/10S104J	R 918	RS1/10S202J
R 607	RS1/10S153J	R 919	RS1/10S182J
R 608	RA4C473J	R 921	RD1/4PU221J
R 609	RS1/10S102J		
R 610	RA4C222J	R 922	RS1/10S223J
		R 923	RS1/10S103J
R 611	RS1/10S102J		
R 612	RA4C473J	CAPACITORS	
R 613	RS1/10S102J	C 501	CKSQYB221K50
R 614	RS1/10S102J	C 502	CKSQYB221K50
R 615	RS1/10S102J	C 503	CKSQYB104K50
		C 601	CKSQYB103K50
R 616	RS1/10S102J	C 602	CKSQYB103K50
R 617	RS1/10S102J		
R 618	RS1/10S103J	C 603	CKSQYB103K50
R 619	RS1/10S5R6J	C 604	CKSQYB104K50
R 620	RS1/10S102J	C 606	CKSQYB104K50
		C 608	CSZST330M10
		C 609	CKSQYB103K50

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====Circuit Symbol and No.====	Part Name	Part No.
C 701		CEJA101M10
C 702		CKSQYB103K50
C 853		CEJA100M16
C 854		CEJA100M16
C 855		CCSQCH821J50
C 856		CCSQCH821J50
C 857		CCSQCH101J50
C 858		CCSQCH101J50
C 859		CKSQYB473K50
C 860		CKSQYB473K50
C 861		CCSQCH560J50
C 862		CCSQCH560J50
C 863		CKSQYB153K50
C 864		CKSQYB153K50
C 865		CKSQYB153K50
C 866		CKSQYB153K50
C 867		CEJANP100M16
C 868		CEJANP100M16
C 869		CEJANP100M16
C 870		CEJANP100M16
C 871		CKSQYB224K16
C 901	1000μF/16V	CCH1149
C 902	1000μF/16V	CCH1149
C 907		CKSQYB102K50
C 911		CEJA220M16
C 912		CKSQYB473K50
C 913		CEJA101M6R3
C 950		CEJA1R5M50
C 952		CKSQYB473K50

C Unit Number :
Unit Name :Photo Unit

Q 1	Photo-transistor	CPT-230S-X
Q 2	Photo-transistor	CPT-230S-X
Q 3	Photo-transistor	CPT-230S-X

Miscellaneous Parts List

M 1	Pickup Unit(Service)	CXX1231
M 2	Motor Unit(Spindle)	CXA8912
M 3	CRG Motor Unit(S7)(Carriage)	CXB3043
M 3	Load Motor Unit(S7)(Loading)	CXA8702

6. ADJUSTMENT

6.1 CD

1)Precautions

- This unit uses a single power supply (+5V) for the regulator. The signal reference potential, therefore, is connected to REFO(approx. 2.5V) instead of GND. If REFO and GND are connected to each other by mistake during adjustments, not only will it be impossible to measure the potential correctly, but the servo will malfunction and a severe shock will be applied to the pick-up. To avoid this, take special note of the following.

Do not connect the negative probe of the measuring equipment to REFO and GND together. It is especially important not to connect the channel 1 negative probe of the oscilloscope to REFO with the channel 2 negative probe connected to GND.

Since the frame of the measuring instrument is usually at the same potential as the negative probe, change the frame of the measuring instrument to floating status.

If by accident REFO comes in contact with GND, immediately switch the regulator or power OFF.

- Always make sure the regulator is OFF when connecting and disconnecting the various filters and wiring required for measurements.
- Before proceeding to further adjustments and measurements after switching regulator ON, let the player run for about one minute to allow the circuits to stabilize.
- Since the protective systems in the unit's software are rendered inoperative in test mode, be very careful to avoid mechanical and /or electrical shocks to the system when making adjustment.
- Disc detection during loading and eject operations is performed by means of a photo transistor in this unit. Consequently, if the inside of the unit is exposed to a strong light source when the outer casing is removed for repairs or adjustment, the following malfunctions may occur.
 - *During PLAY, even if the eject button is pressed, the disc will not be ejected and the unit will remain in the PLAY mode.
 - *The unit will not load a disc.
 - When the unit malfunctions this way, either re-position the light source, move the unit or cover the photo transistor.
- When loading and unloading discs during adjustment procedures, always wait for the disc to be properly clamped or ejected before pressing another key. Otherwise, there is a risk of the actuator being destroyed.

- Turn power off when pressing the button /FF or the button REV key for focus search in the test mode. (Or else lens may stick and the actuator may be damaged.)

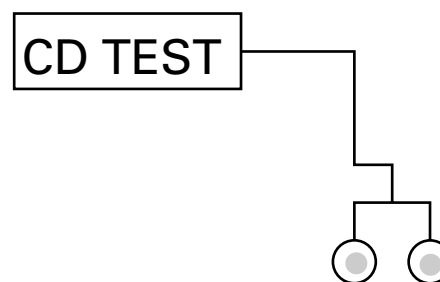
2)Test Mode

The CDS-9036ZT/ES is used together with a CD control unit(KEH-M8276ZT/X1N/ES) to make adjustment. For adjustment, keys of the CD control unit are used. For your reference, how to enter Test mode and operate keys when using a CD control unit are shown below. The keys mentioned in the explanation of adjustment are of a CD control unit(KEH-M8276ZT/X1N/ES).

• Entering Test mode

Short-circuit the probes indicated as "CD TEST" on the substrate of the CDS-9036ZT/ES, then set ACC or BACK UP to ON.

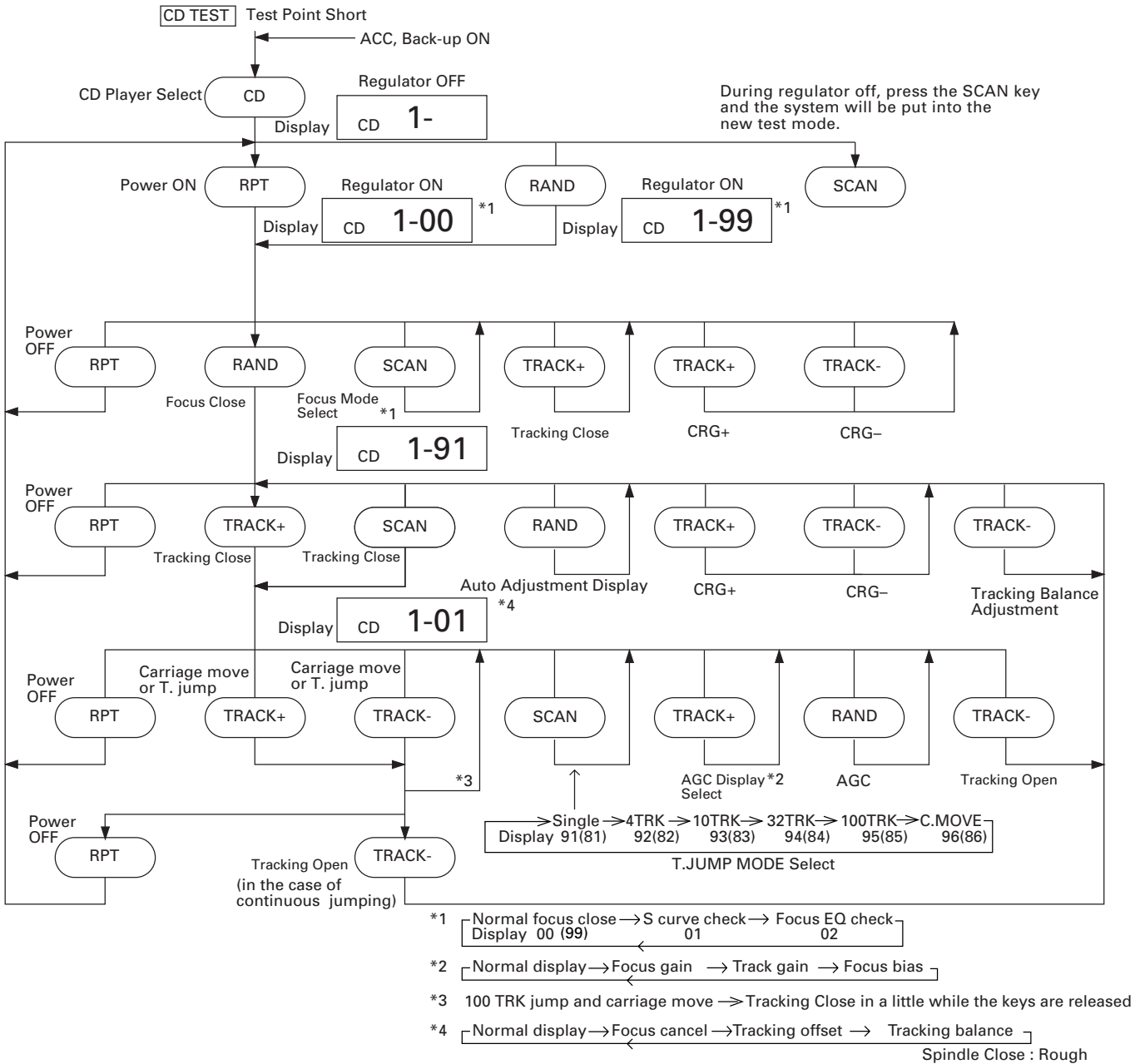
CONTROL UNIT(SIDE A)



Short-circuit these two probes.

- Cancelling Test mode
 - Set ACC or BACK UP to OFF.
- SINGLE/4TRK/10TRK/32TRK will continue to operate even after the key is released. Tracking is closed the moment C-MOVE is released.
- JUMP MODE resets to SINGLE as soon as power is switched OFF.

● Flow Chart



6.2 CHECKING THE GRATING AFTER CHANGING THE PICKUP UNIT

- **Note :**

Unlike previous CD mechanism modules the grating angle of the pickup unit cannot be adjusted after the pickup unit is changed. The pickup unit in the CD mechanism module is adjusted on the production line to match the CD mechanism module and is thus the best adjusted pickup unit for the CD mechanism module. Changing the pickup unit is thus best considered as a last resort. However, if the pickup unit must be changed, the grating should be checked using the procedure below.

- **Purpose :**

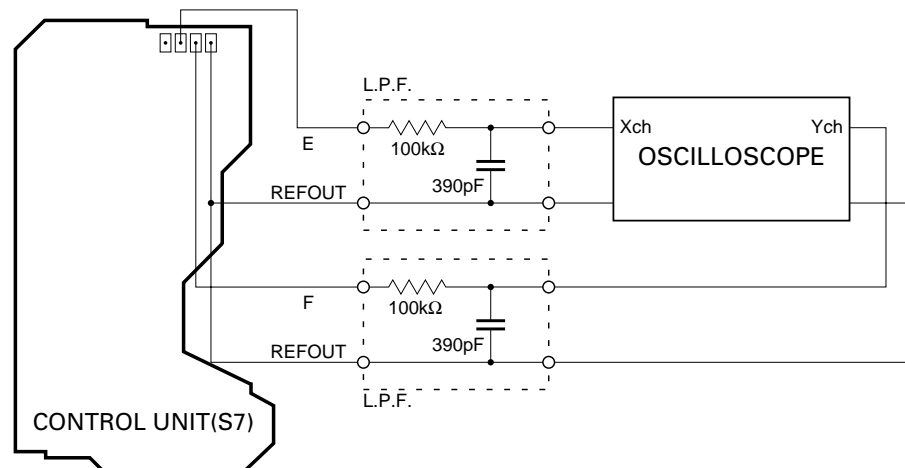
To check that the grating is within an acceptable range.

- **Symptoms of Mal-adjustment :**

If the grating is off by a large amount symptoms such as being unable to close tracking, being unable to perform track search operations, or track searching taking a long time, may appear.

- **Method :**

- | | |
|-----------------------|----------------------------|
| • Measuring Equipment | • Oscilloscope, Two L.P.F. |
| • Measuring Points | • E, F, REFOUT |
| • Disc | • ABEX TCD-784 |
| • Mode | • TEST MODE |



- **Checking Procedure**

1. In test mode, load the disc and switch the 5V regulator on.
2. Using the **TRACK+** and **TRACK-** buttons, move the pickup unit to the innermost track.
3. Press key **RAND** to close focus, the display should read "91". Press key **TRACK-** to implement the tracking balance adjustment the display should now read "8x". Press key **RAND** 4 times. The display will change, returning to "8x" on the fourth press.
4. As shown in the diagram above, monitor the LPF outputs using the oscilloscope and check that the phase difference is within 75° . Refer to the photographs supplied to determine the phase angle.
5. If the phase difference is determined to be greater than 75° try changing the PU unit to see if there is any improvement. If, after trying this a number of times, the grating angle does not become less than 75° then the mechanism should be judged to be at fault.

- **Note**

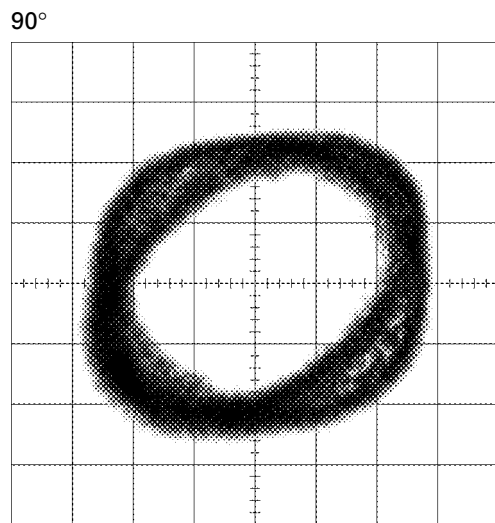
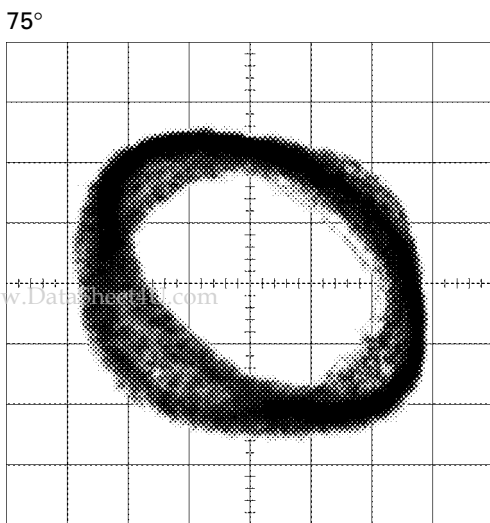
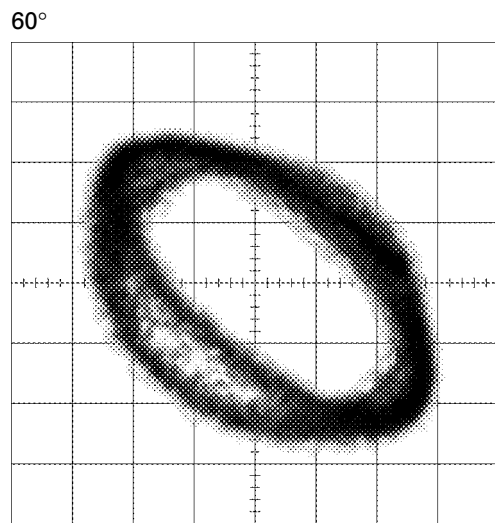
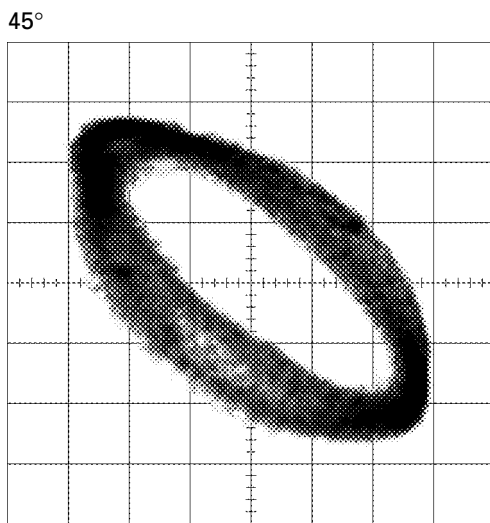
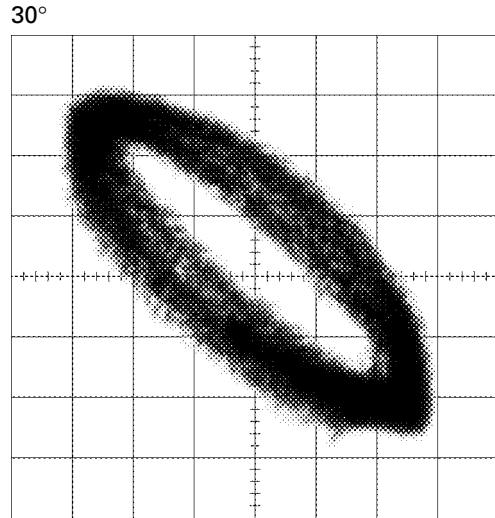
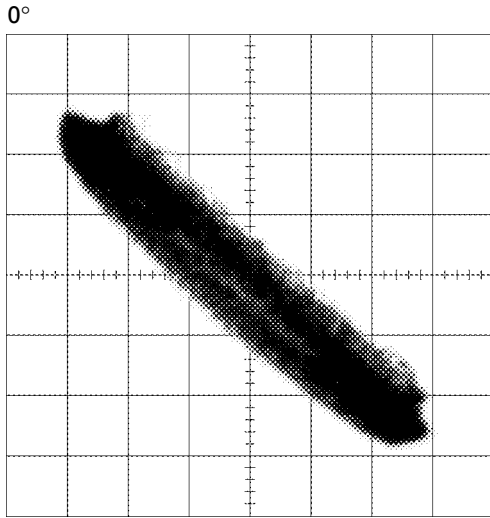
Because of eccentricity in the disc and a slight misalignment of the clamping center the grating waveform may be seen to "wobble" (the phase difference changes as the disc rotates). The angle specified above indicates the average angle.

- **Hint**

Reloading the disc changes the clamp position and may decrease the "wobble".

Grating waveform

Ech → Xch 20mV/div, AC
Fch → Ych 20mV/div, AC



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7. GENERAL INFORMATION

7.1 IC

● Pin Functions(PD4850A)

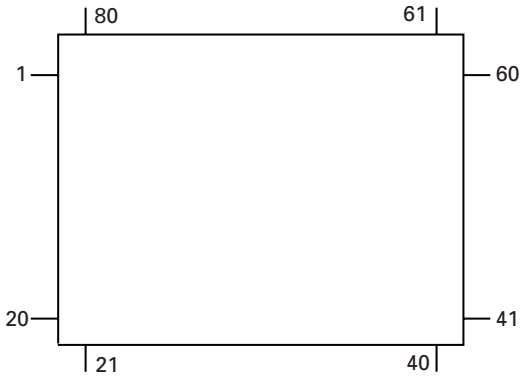
Pin No.	Pin Name	I/O	Format	Function and Operation
1-3	NC			Not used
4	AVSS			GND
5	DAOUT	O		Luminance adjustment output
6	NC			Not used
7	AVREF1	I		D/A converter reference voltage input
8	ILL	O	C	Key illumination output
9	IND	O	C	Indicator output
10	MUTE	O	C	System mute output
11, 12	NC			Not used
13	$\overline{\text{XRST}}$	O	C	LSI reset output for CD
14	XA0	O	C	LSI data identification control signal output for CD
15	XSTB	O	C	LSI strobe output for CD
16	XSI/TSI	I		LSI serial data input for CD
17	XSO/TSO	O	C	LSI serial data output for CD
18	$\overline{\text{XSCK/TCK}}$	O	C	LSI serial clock output for CD
19	LINE	O	C	Audio line output (analog SW)
20-24	NC			Not used
25	VDCNT	O	C	VD (CD module power) control output
26	IPPW	O	C	IP-Bus driver power control output
27-32	NC			Not used
33	VSS			GND
34, 35	NC			Not used
36	FOK	I		Focus OK input
37	MIRR	I		Mirror detector input
38	LOCK	I		Spindle lock detector input
39	NC			Not used
40	CONT	O	C	Servo driver power control output
41	CD5VON	O	C	CD 5V power supply control output
42	CDLOAD	O	C	Load motor load control output
43	CDEJET	O	C	Load motor eject control output
44	CDMUTE	O	C	CD mute output
45-55	NC			Not used
56	IPDO	O		Data output for IP-Bus controller
57	IPDI	I		Data input for IP-Bus controller
58, 59	NC			Not used
60	$\overline{\text{RESET}}$	I		Reset
61	NC			GND
62	$\overline{\text{ASENS}}$	I		ACC sense input
63	$\overline{\text{BSENS}}$	I		BACK UP sense input
64	$\overline{\text{ISENS}}$	I		Illumination sense input
65	CDEJ	I		CD eject SW input
66	$\overline{\text{TESTCD}}$			CD test
67	NC			Not used
68	VDD			Microcomputer power supply
69	X2	O		Oscillator output
70	X1	I		Oscillator input
71	IC			Connect to GND
72	XT2			Open
73	TEST/TEN	I		Test mode/Test mode enable
74	AVDD	I		A/D converter analog power supply
75	AVREF0	I		A/D converter reference voltage input

Pin No.	Pin Name	I/O	Format	Function and Operation
76	DSCSNS	I		Disc detect input
77	EJTSNS	I		Disc eject sense input
78	TEMP	I		Temperature detector input
79	VDSSENS	I		VD overvoltage, ground-fault sensing input
80	CLAMP	I		Disc clamp sense input

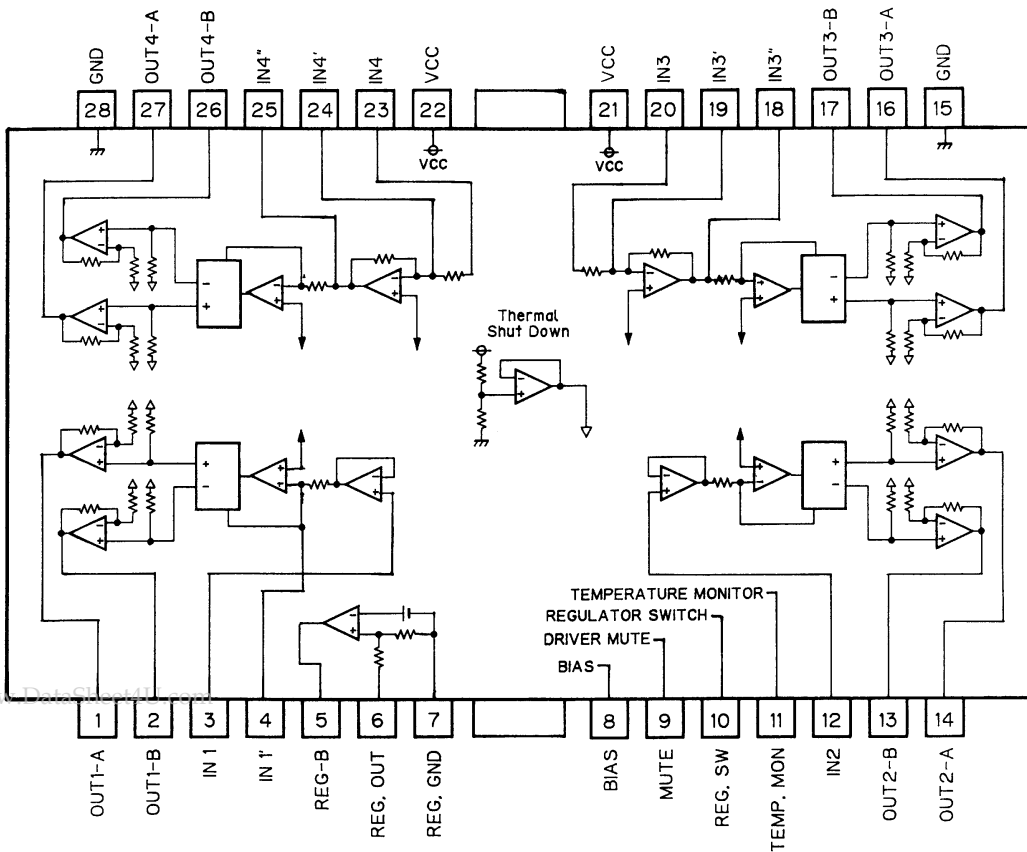
*PD4850A

IC's marked by* are MOS type.

Be careful in handling them because they are very liable to be damaged by electrostatic induction.



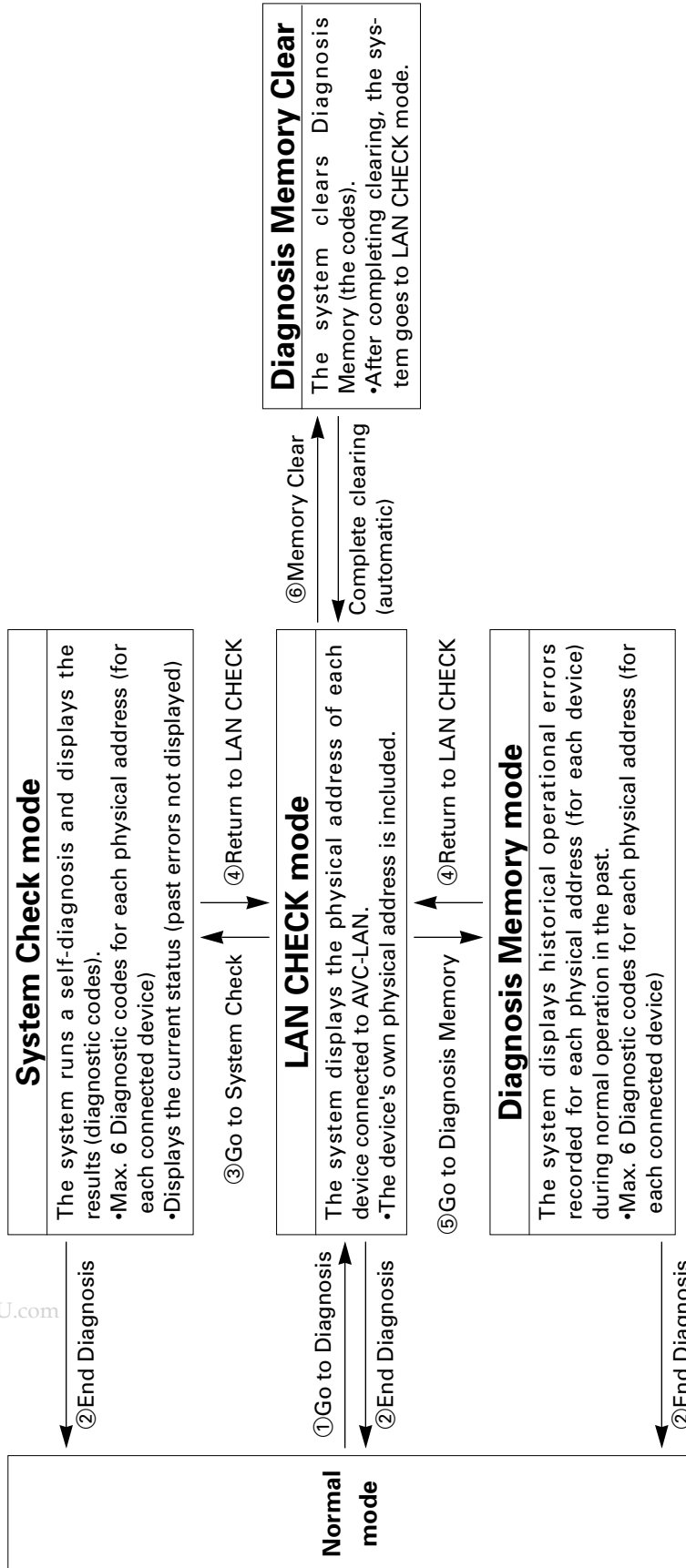
BA6997FP



7.2 DIAGNOSIS

7.2.1 SELF-DIAGNOSTIC FUNCTION

- AVC-LAN Diagnosis Mode
- Flowchart and Functions



- Operation Specifications

	KEH-M8276ZT/X1N/ES
① Go to Diagnosis	Press the AM/SW key three times, while holding down CH1 or CH6.
② End Diagnosis	AM/SW key (Press and hold for 1.7 seconds.) ACC OFF/ON
③ Go to System Check	CH1
④ Return to LAN CHECK	CH6
⑤ Go to Diagnosis Memory	CH2
⑥ Memory Clear	CH5 (Press and hold for 1.7 seconds.)
•Page up	TRACK+
•Page down	TRACK-

● Physical Address Assignment

② →

③ →

Display	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
① 1	M.DISP computer			AV machine	1DIN -TV	EMV		Audio ECU	Audio H/U		Rear seat TV	Rear control SW		CD-CH commander	
0											Display with SW			MD-CH commander	
8							CD-ROM navigation								
1-8 A-F															
① 2	Navigation computer	ATIS	TV tuner	CD-CH with video						A	B	C	D	E	F
0		FM multiple													
1-F															
① 3	Radio	Cassette	Radio/cassette with-out CH controller	CD-P	CD-CH			MD-P		A	B	C	D	E	F
0										MD-CH		DAT		DCC	
8															TEL ECU
1-7 9-F															
① 4	Equalizer			DSP						A	B	C	D	E	F
0								H.W AMP							
1-F															
① 5	GPS receiver	ATIS decoder		CD-CH		MD-CH				A	B	C	D	E	F
0		FM multiplex decoder						CD-ROM -CH		MD-ROM -CH					
1-F															
① 6	A/C computer									A	B	C	D	E	F
0								Body computer							
1-F															

Serial No. Physical address

Example: 2—190

The second device connected is an "audio H/U."

① Device groups

- 1 : Controllers
- 2 : Video output devices
- 3 : Audio output devices
- 4 : Audio processing devices
- 5 : Information output devices
- 6 : Vehicle devices

● Assignment of Diagnostic Codes



Serial No. Diagnostic code
 Example: 3—D2

The third content of Diagnosis is "No response to periodical communications."

NOTES:

*1 Instruction to check for an error in periodical communications is interrupted.

● Items corresponding each model

<During Diagnosis Memory mode>

- CDS-9036ZT/ES(CD-P) D1, D4, 60

<During System Check mode>

- CDS-9036ZT/ES(CD-P)

No Diagnostic code assigned 00

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	
0	NO ERR	+B error	Microprocessor error			Cassette deck error	CD deck or CD-CH error	MD deck or MD-CH error	Amplifier error	EQ error	Switch error	AUDIO ECU error		No response to communications			
1		ACC error	ROM error	AM tuner error		Cassette deck EJT failure	CD, CH EJT failure	MD, CH						Communications failure			
2		MUTE error	RAM error	FM tuner error		Tape entangled in the cassette deck	Dirt, scar and upside-down in CD, CH	MD, CH						No response to periodical communications			
3						Dirt in cassette deck head	Detected P.U temperature in CD, CH	MD, CH									
4						Broken cassette deck belt	Detected overcurrent in CD, CH	MD, CH						*1			
5								MD, CH recording function error									
6																	
7							CH tray error										
8							CH elevator error	CH	DSP error	LCD error	Antenna error						
9							CD, CH clamp error	MD, CH			Main antenna error						
A											Sub antenna error						
B											TV antenna error						
C											Antenna selector error						
D/E																	
F																	No response to Diagnosis

Common Diagnostic code among devices

Diagnostic code specific to a particular device

Diagnostic code for communications

● Go to Diagnosis (Beep and Display)

	LAN-CHECK mode	System Check mode	Diagnosis Memory mode
Beep	<ul style="list-style-type: none"> The system beeps three times when starting up Diagnosis. 	<ul style="list-style-type: none"> The system beeps three times when changing to another mode. The system beeps once every time a physical address is displayed. 	<ul style="list-style-type: none"> The system beeps three times when changing to another mode. The system beeps once every time a physical address is displayed.
Display	<ul style="list-style-type: none"> The system displays the physical address of each device connected to AVC-LAN in sequence from the lowest address. <p>Example: 1 — 1E0</p> <p>Serial No. Physical address (CD commander)</p>	<ul style="list-style-type: none"> When changing to another mode <p>Blinking "SYS" is displayed.</p> <ul style="list-style-type: none"> After completing System Check <p>Displays a physical address.</p> <ul style="list-style-type: none"> Identifies the device. <p>Example: H 150</p> <p>Physical address (1DIN-TV) Distinguishes from LAN-CHECK.</p> <p>Displays a Diagnostic code.</p> <ul style="list-style-type: none"> Identifies the type of error. <p>Example: 1 — d2</p> <p>Serial No. Diagnostic code (no response to periodical communications) Max. 6 for each physical address</p> <p>Displays an auxiliary code</p> <ul style="list-style-type: none"> Identifies the device involved in the error. <p>Example: 1 — 360</p> <p>Serial No. Physical address (CD-CH)</p> <p>1DIN-TV has recorded an error indicating there is no response to periodical communications in CD-CH.</p> <p>1 — — — — When there is no physical address:</p> <p>Displays a physical address. The next lowest physical address</p> <ul style="list-style-type: none"> When there is no Diagnostic code after completion of System Check <p>00</p> <p>The system changes as shown above, as this unit does not include System Check.</p>	<ul style="list-style-type: none"> When changing to another mode <p>Blinking "CODE" is displayed.</p> <ul style="list-style-type: none"> Then, "Latest periodical communications number" is displayed. Elapsed time at the current point is displayed. <p>Example: — 1F</p> <p>Elapsed time (31 minutes)</p> <ul style="list-style-type: none"> The system displays a number from 00 to FF (increases a digit every minute). When 256 minutes are reached, the system returns to 00. <ul style="list-style-type: none"> Displays the details of Diagnosis. <p>Displays a physical address. (Same as the left.)</p> <p>Displays a periodical communications number.</p> <ul style="list-style-type: none"> Displays the time when the error occurred. <p>Example: 1 — 02</p> <p>Serial No. Elapsed time (2 minutes)</p> <p>Displays Diagnostic code. (Same as the left.)</p> <p>Displays an auxiliary code. (Same as the left.)</p> <p>Displays a physical address.</p> <ul style="list-style-type: none"> When there is no Diagnostic data: — 00

7.2.2 DISASSEMBLY

● Removing the Case(Not shown)

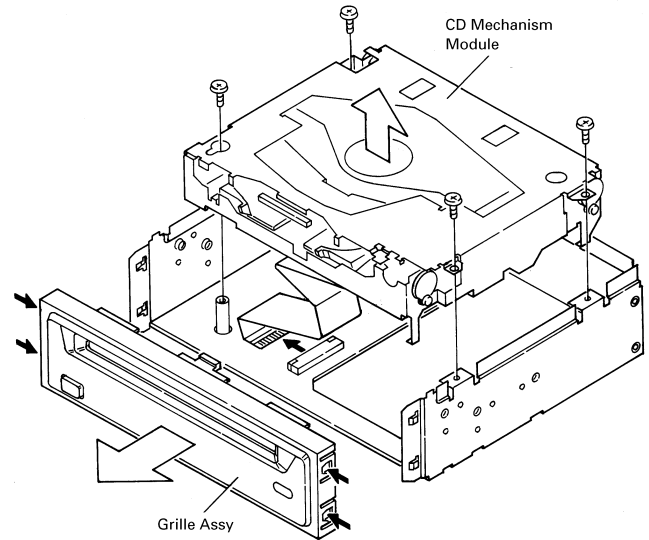
1. Insert and turn a flat screwdriver to remove the case.

● Removing the CD Mechanism Module

1. Remove the four screws.
2. Disconnect the connector.
3. Remove the CD Mechanism Module.

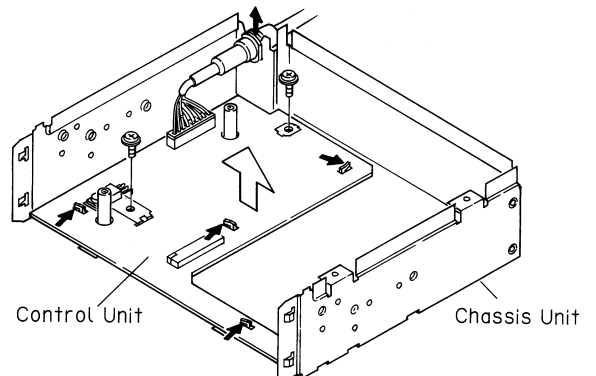
● Removing the Grille Assy

1. Disconnect the four stoppers indicated by arrows, and then remove the Grille Assy.



● Removing the Control Unit

1. Remove the two screws.
2. Stretch the four claws, and then remove the Control Unit.



7.2.3 TEST MODE

● **Error Number Indication**

If the CD should fail to operate in CD multi player or if an error has taken place during the operation and resulted in an error, the player will enter into the error mode. And the cause of such error is numerically indicated.

This is aimed at assisting an analysis or repair.

Error mode Mode (A), Mode (B)

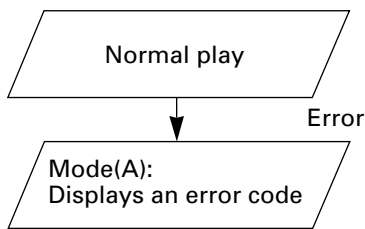
(1) Examples of Display

- Mode (A) ErrX
- Mode (B) ErrXX

(2) Error Codes

*1	*2	Classification	Description	Cause/Detail
3	10	ELECTRIC	Carriage home failure	Carriage doesn't move to or from the innermost position →Home switch failed and/or carriage immobile
1	11	ELECTRIC	Focus failure	Focus failed →Defects, disc upside-down, severe vibration
	12	ELECTRIC	SETUP failure Subcode failure	Spindle failed to lock or subcode unreadable →Spindle defective, defect, severe vibration
	14	ELECTRIC	Mirror failure	Unrecorded CD-R The disc is upside-down, defects, vibration
	17	ELECTRIC	Set up failure	AGC protect failed →Defects, disc upside-down, severe vibration
	30	ELECTRIC	Search time out	Failed to reach target address →Carriage/tracking defective and/or defects
4	A0	SYSTEM	Power failure	Power overvoltage or short circuit detected →Switching transistor defective and/or power abnormal

- *1 Mode (A) error code
- *2 Mode (B) error code
- CDS-9036ZT/ES : Mode (B)(Not used)



● **New Test Mode(aging operation and setup analysis)**

The single CD player plays in normal mode. After being set up, it will display FOK (focus), LOCK (spindle), subcode, sound skip, protection against a mechanical error or the like, occurrence of an error, cause and time of an expiry, if any, (and disc number).

During the setup, the CD software operation status (internal RAM and C-point)is displayed.

(1) How to enter NEW TEST Mode

See the test mode flow chart Page 30.

(2) Relations of keys between TEST and NEW TEST Modes

Keys	Test Mode		New Test Mode	
	Regulator OFF	Regulator ON	PLAY in progress	Error Occurred, Protection Activated
RPT	Regulator ON	Regulator OFF	RPT	Time of occurrence / cause of error select
TRACK+/FF	—	FWD-KICK	TRACK+/FF	—
TRACK-/REV	—	REV-KICK	TRACK-/REV	—
TRACK+	—	TRACKING CLOSE	TRACK+	—
TRACK-	—	TRACKING OPEN	TRACK-	—
RAND	—	FOCUS CLOSE	RAND	—
SCAN	To New Test Mode Select	FOCUS MODE	SCAN	—

Operations, such as EJECT, CD ON/OFF, etc. are performed normally.

(3) Error Cause (Error Number) Code

Error Code	Classification	Mode	Description	Cause	Detail
40	ELECTRIC	PLAY	FOK=L 100ms	Put out of focus	Scratch, Stain, Vibration, Servo defect, etc...
41	ELECTRIC	PLAY	LOCK=L 100ms	Spindle unlock	
42	ELECTRIC	PLAY	Subcode unacceptable 500ms	Failed to read subcode	
43	ELECTRIC	PLAY	Sound skipped	Last address memory operated	

(4) Indicating an Operation Status During Setup

Status No.	Description	Protection operation
01	Carriage home mode started	None
02	Carriage moving inwards	10-second time out, Home switch failed
03	Carriage moving outwards	10-second time out, Home switch failed
05	Carriage moving outwards	None
11	Setup started	None
12	Spindle turn/Focus search started	None
13	Waiting for focus closure (XSI=L)	Failure to close focus
10,14	Waiting for focus closure (FOK=H)	Failure to close focus
15, 16, 17	Focus closed, Tracking open	Focus disrupted
18	During focus AGC Subcode waiting	Focus disrupted
19	During tracking AGC	Disrupted focus
20	Waiting for MIRR, LOCK or subcode read Carriage closed, SPINDLE=ADAPTIVE	Focus disrupted, MIRR NG, Failure to lock, Failed to read subcode

(5) Example of Display.

- SET UP in progress



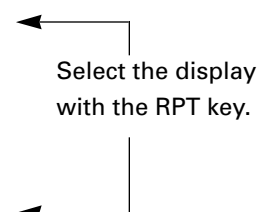
- Operation (PLAY, SEARCH, etc.) in progress perfectly identical with that in the normal mode.

- Protection/Error upon occurrence

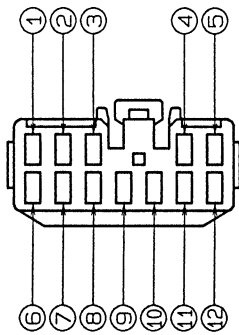
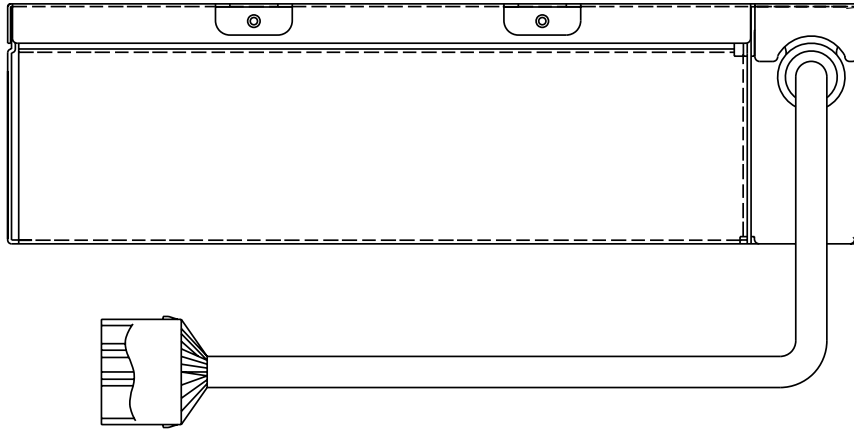
(a) Error number indicated



(b) Track number and absolute time indicated

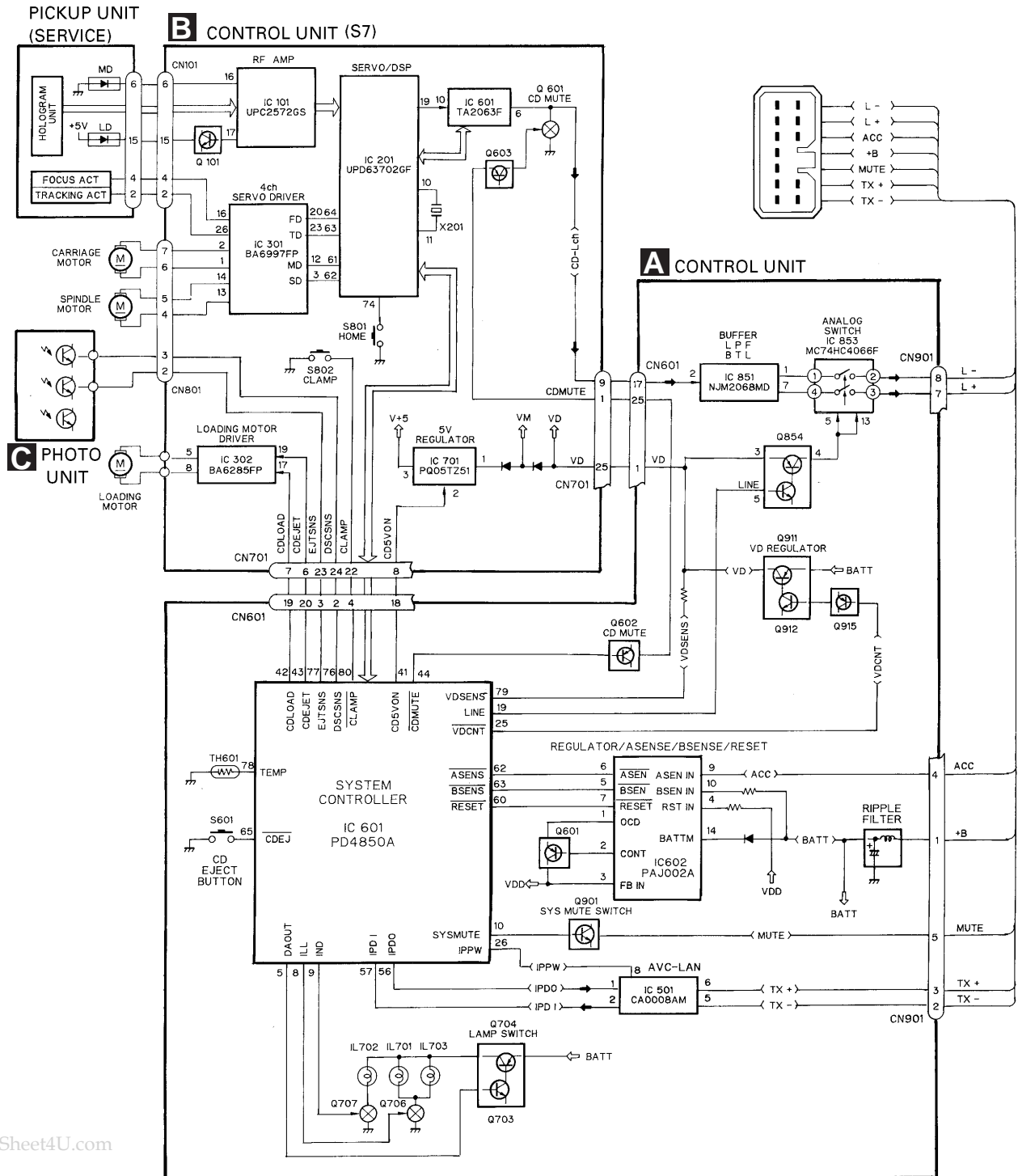


7.2.4 CONNECTOR FUNCTION DESCRIPTION



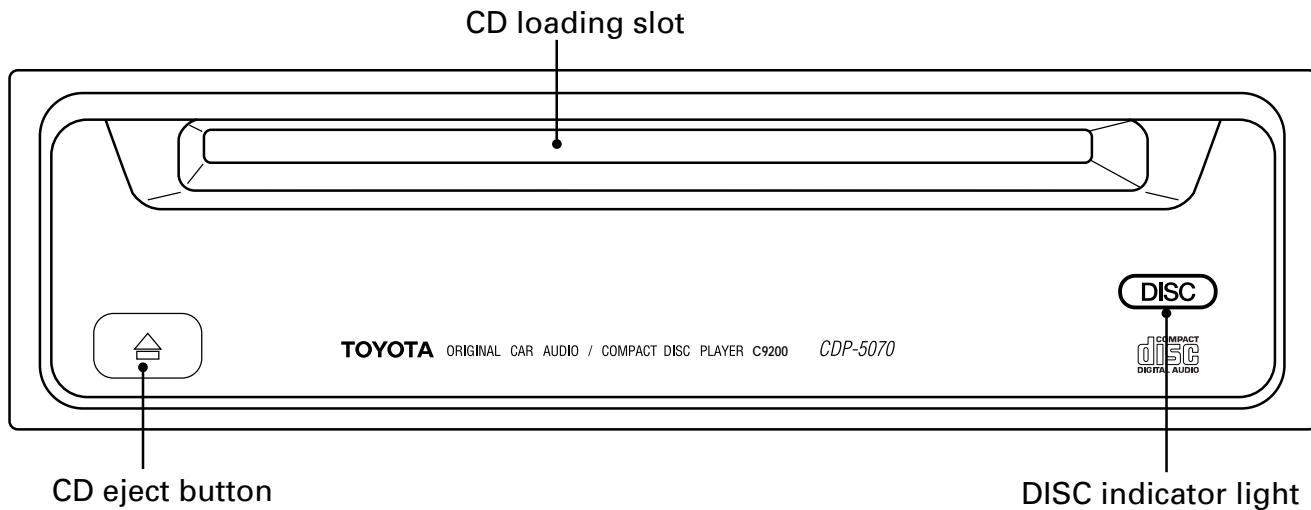
Connector No	Description
1	R \oplus
2	L \oplus
3	SGND
4	MUTE
5	+B
6	R \ominus
7	L \ominus
8	GND
9	TX \ominus
10	TX \oplus
11	NC
12	ACC

7.3 BLOCK DIAGRAM

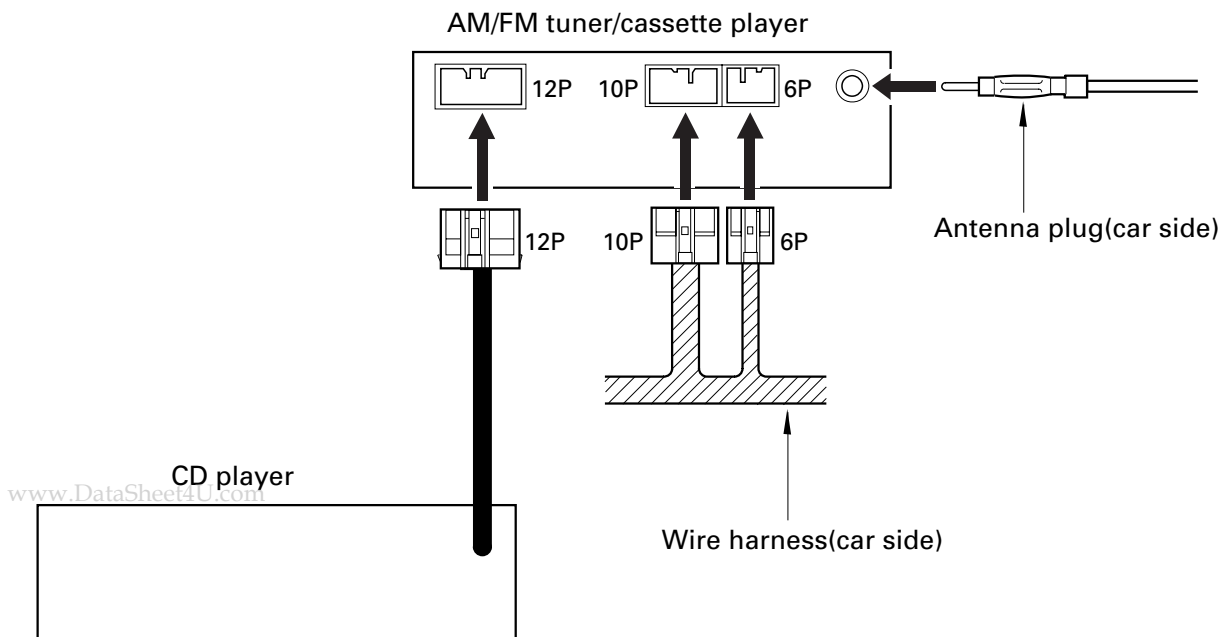


8. OPERATIONS AND SPECIFICATIONS

8.1 OPERATIONS



Connection diagram



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8.2 SPECIFICATIONS

Power source 13.2 V DC (10.5 – 16.0 V allowable)
Grounding system Negative type
Dimensions 180 (W) x 50 (H) x 160 (D) mm
System Compact disc audio system
Usable discs Compact disc
Signal format Sampling frequency: 44.1 kHz
..... Number of quantization bits: 16; linear
Frequency characteristics 5 – 20,000 Hz (± 1 dB)
Number of channel 2 (stereo)

Service Manual

Pioneer

TOYOTA

ORDER NO.
CRT2677

CAR COMPACT DISC PLAYER

CDS-9036ZT

X1N/ES

COMPACT
disc
DIGITAL AUDIO

VEHICLE	DESTINATION	PRODUCED AFTER	TOYOTA PART No.	ID No.	PIONEER MODEL No.
Not specified	THAILAND	March 2001	08601-00894	C9200	CDS-9036ZT/X1N/ES

- This service manual should be used together with the manual(s) listed below.
For the parts numbers, adjustments, etc. which are not shown in this manual, refer to the following manual(s).

Model No.	Order No.	Mech. Module	Remarks
CDS-9036ZT/ES	CRT2262		
CX-597	CRT1829	S7	CD Mech. Module:Circuit Description, Mech.Description, Disassembly

EXPLODED VIEWS AND PARTS LIST

PACKING(Page 3)

● PACKING SECTION PARTS LIST

* : Non spare part

Mark No.	Symbol and Description	Part No.	
		CDS-9036ZT/ES	CDS-9036ZT/X1N/ES
*	4 Sheet	CHW1645	CHW1892
	5 Owner's Manual	CRD2796	CRD3421
	6 Polyethylene Bag	* E36-609	CEG1297
	7 Carton	CHA2424	CHG4349
	8 Contain Box	CHL3594	CHL4350

EXTERIOR(Page 4)

● EXTERIOR SECTION PARTS LIST

Mark No.	Symbol and Description	Part No.	
		CDS-9036ZT/ES	CDS-9036ZT/X1N/ES
	3 Connector	CDE5447	CDE6667
	4 Insulator	CNM5365	CNM7321
	13 Spacer	CNM2683	CNM7319
	14 Spacer	CNM4676	CNM7320
	15 Spacer	CNM5523	CNM7322
	Insulator	CNM6305	CNM7323

PIONEER CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153-8654, Japan
PIONEER ELECTRONICS SERVICE INC. P.O.Box 1760, Long Beach, CA 90801-1760 U.S.A.
PIONEER EUROPE N.V. Haven 1087 Keetberglaan 1, 9120 Melsele, Belgium
PIONEER ELECTRONICS ASIACENTRE PTE.LTD. 253 Alexandra Road, #04-01, Singapore 159936

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