

CD RECEIVER

KDC-9007/9008/7007 7008/7050R

SERVICE MANUAL

KENWOOD

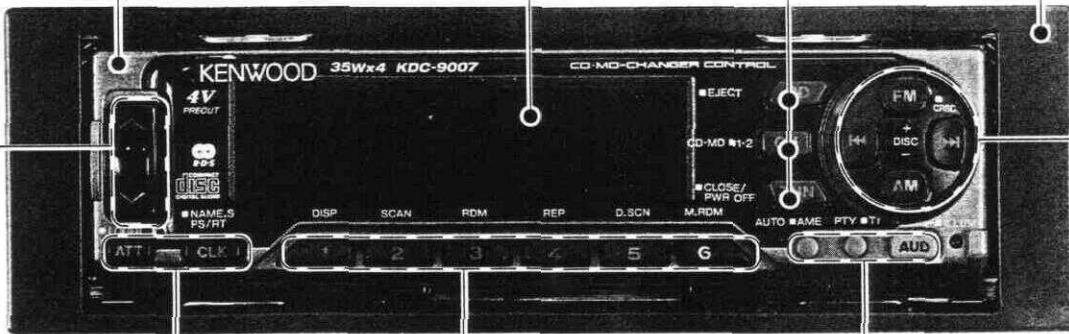
© 1997-2 PRINTED IN JAPAN
B51-7128-00 (N) 3610

Panel ass'y
(A64-1041-02) : K
(A64-1043-02) : K2
(A64-1044-02) : M1
(A64-1046-02) : M3
(A64-1048-02) : E2

Front glass
(B10-1753-01) : K
(B10-1755-01) : K2
(B10-1756-01) : M1
(B10-1758-01) : M3
(B10-1760-01) : E2

Knob (MODE)
(K25-0798-03)

Escutcheon
(B07-2087-12)



Knob (VOL.)
(K25-0794-03)

Knob (ATT)
(K25-0799-03)

Knob (1, 2, 3, 4, 5, 6)
(K25-0795-03)

Knob (AUD)
(K25-0797-03) : K
(K25-0803-03) : K2, M1, M3, E2

Knob (FM, AM)
(K25-0796-13)

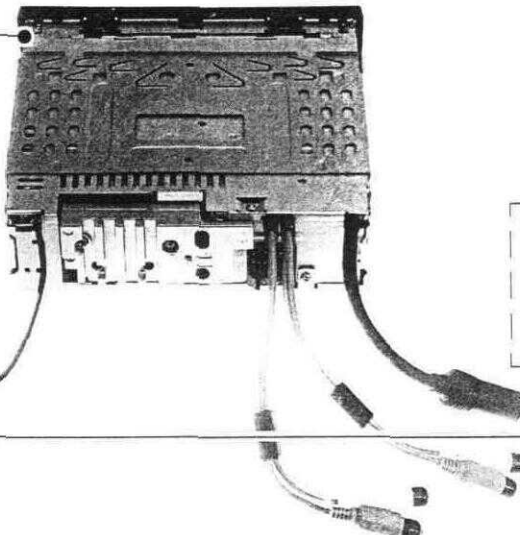
Mounting hardware ass'y
(J21-7630-33)

Lever
(D10-4067-04)

Stay
(J54-0606-04)

Screw set
(N99-1622-05)

Bracket
(J19-4720-04) : K, K2, M1, M3
(J19-4721-04) : K, K2, M1, M3



Remote controller ass'y
(A70-0860-05)

Cord with plug (ANT)
(E30-4452-05)

DC cord
(E30-4436-05) : K, K2
(E30-4437-05) : M1, M3
(E30-4439-05) : E2

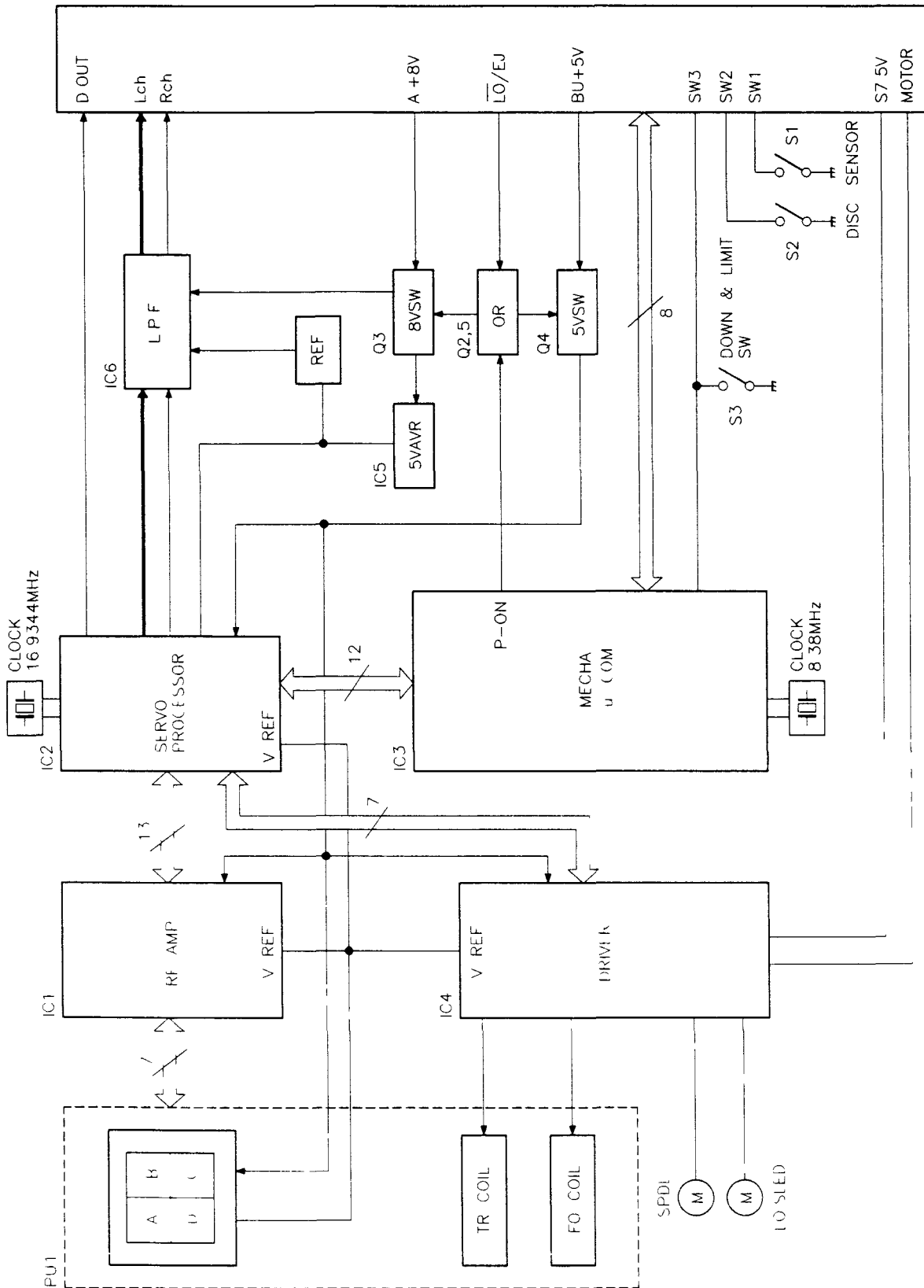
Escutcheon
(B07-2096-02) : K, K2, M1, M3

**Extension cord for service
(W05-0618-00) 22P**

Photo is KDC-9007.
K=KDC-9007, M1=KDC-9008, K2=KDC-7007
M3=KDC-7008, E2=KDC-7050R

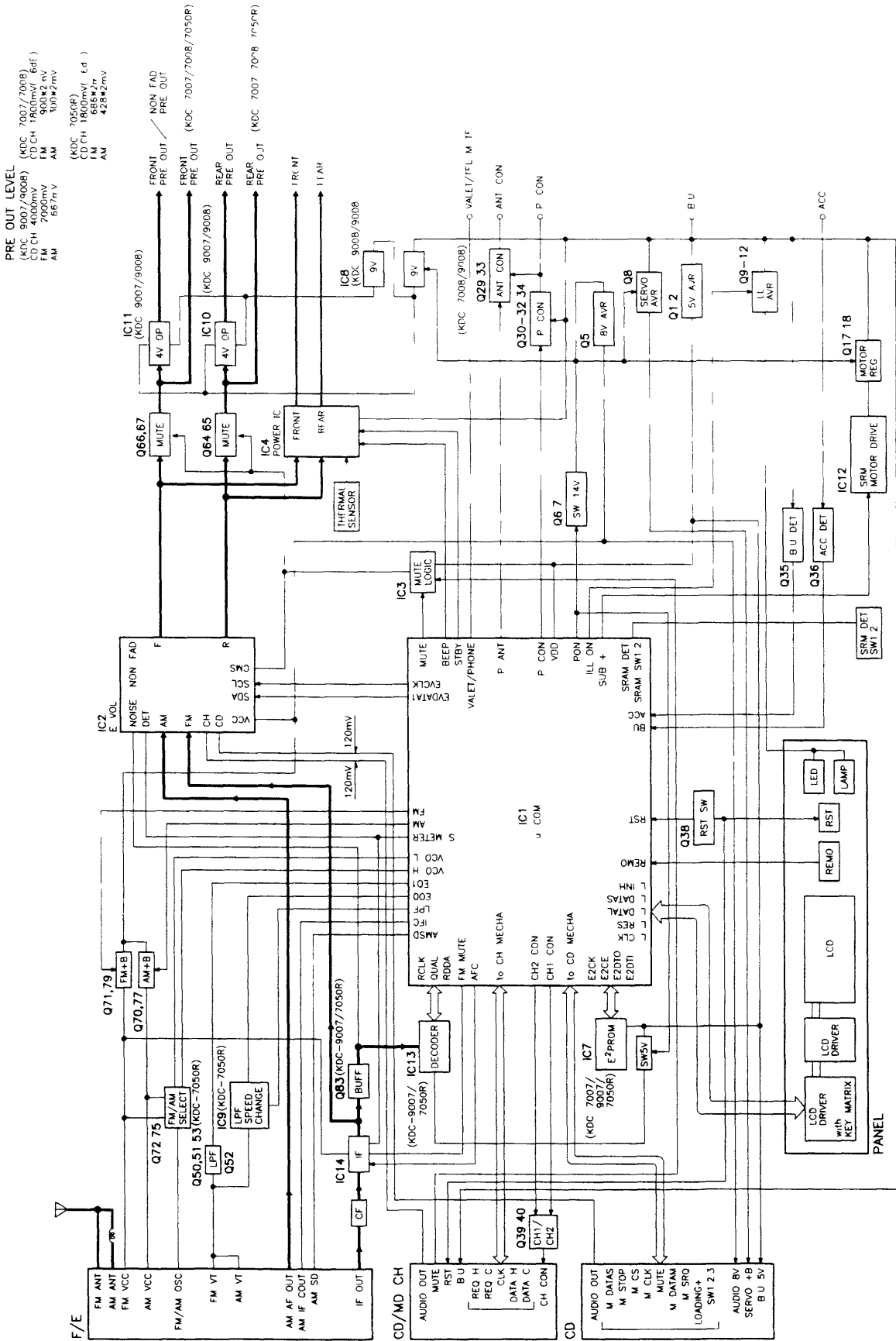
KDC-9007/7050R

BLOCK DIAGRAM : MECHANISM



KDC-9007/7050R

BLOCK DIAGRAM: UNIT



KDC-9007/7050R

CIRCUIT DESCRIPTION

Microprocessor : μ PD178016GC (IC1, X25-)

Terminal description

No.	Pin name	I/O	Port name	Function	Active
1	ANI0	I	NOISE	FM noise detection analog input	
2	ANI1	I	SMETER	FM S-meter detection analog input	
3	ANI2	I	VALET (K, M)	Valet/demonstration input	< 1V Valet, > 4V Demonstration
			PHONE (E)	Phone/Navigation muting input	< 1V Phone, > 4V Navigation muting
4	P13	I	SRM SW1	Position detection input 1 from SRM	"H" ON
5	P14	O	MOTOR	Motor control output	"H" Loading, "L" Eject
6	P15	I/O	LO/EJ	Loading/Ejection switching output	'L' Loading, "H" Eject, Input Stop
7	SI1	I	L DATAL	Data input from LCD driver	
8	SO1	O	L DATAS	Data output to LCD driver	
9	SCK1	O	L CLK	Clock output to LCD driver	
10	P23	O	L CE	CE output to LCD driver	
11	P24	O	L INH	Reset output to LCD driver	"L" RESET
12	SI0	I	DATA C	Data input from changer	
13	SO0	O	DATA H	Data output to changer	
14	SCK0	I	CH CLK	Clock input from changer	
15	P132	O	M CS	Handshake request to CD mechanism controller	"L" Requested
16	P33	O	NC	Not used	
17	P33	O	IFC	AM IF count control output	"L" ON
18	P40	I	CD SW1	Loading detection switch	"L" ON
19	P41	I	CD SW2	12cm disc detection switch	"L" 12cm disc ON
20	P42	I	CD SW3	Down and Limit switch	"L" Chucking
21	GND	-	GND	GND	
22	VDD	-	VDD	5V	
23	P43	I	QUAL	RDS reception quality	
24	P44	I	R DATA	RDS data input	
25	P45	I	NC	Not used	
26	P46	I	NC	Not used	
27	P47	I	FM MUTE	Band muting detection input	"L" Station detected
28	AMIFC	-	AM IFC	AM IF count input	
29	FMIFC	-	FM IFC	FM IF count input	
30	VDDPLL	-	VDD	5V	
31	VCOH	-	FM IN	FM OSC input	
32	VCOL	-	AM IN	AM OSC input	
33	GNDPLL	-	GND	GND	
34	EO0	-	EO0	PLL error output 0	
35	EO1	-	EO1	PLL error output 1	
36	IC (VPP)	-	VPP	GND	
37	P50	O	LPF (E)	Low-pass filter switching output	'L" ON
38	P51	O	AFC	AFC output	'L" ON
39	P52	O	SRM SUB-	Storage motor driver control terminal	
40	P53	O	SRM SUB+	Storage motor driver control terminal	

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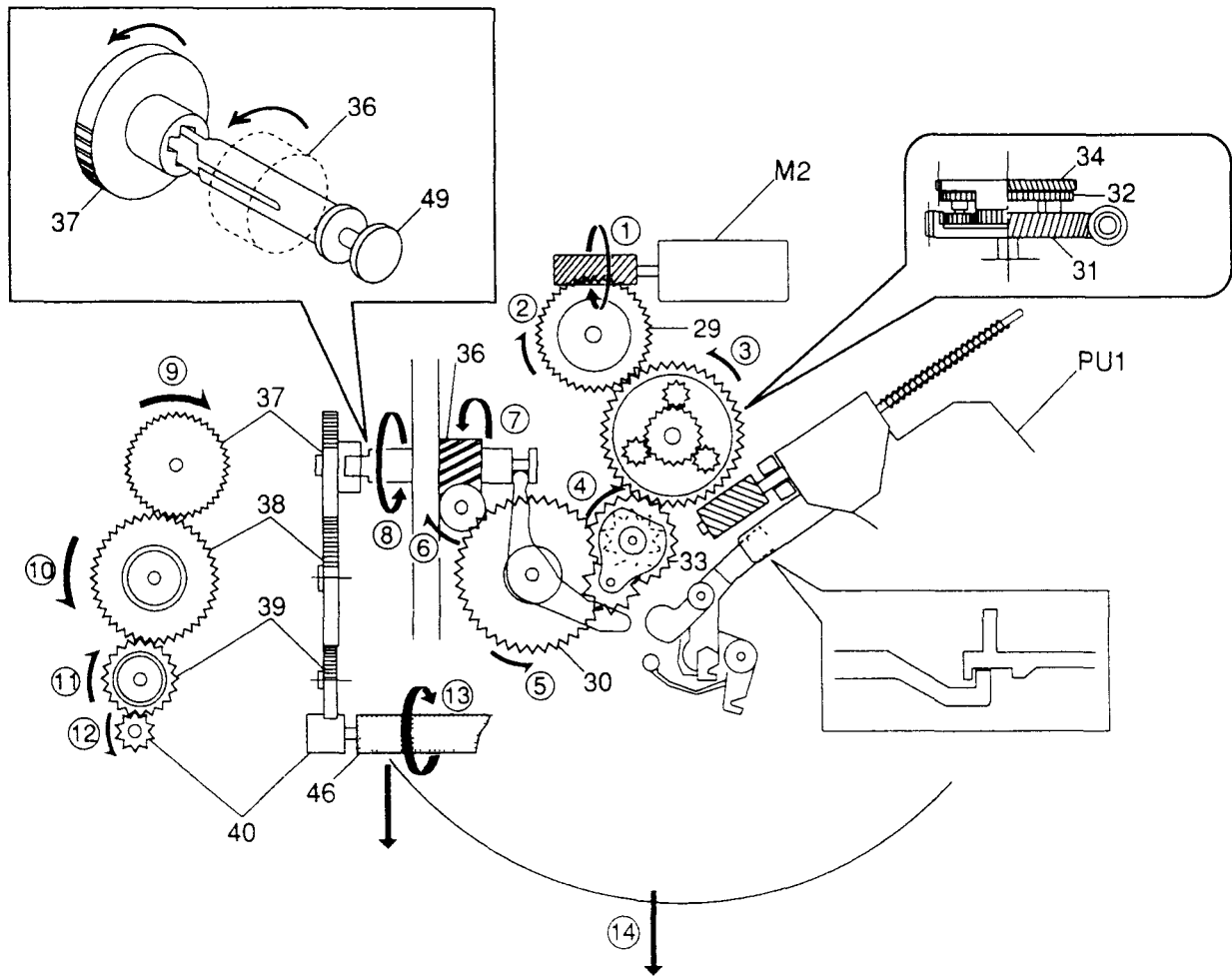
CIRCUIT DESCRIPTION

No.	Pin name	I/O	Port name	Function	Active
41	P54	I	AF SD	AM station detection input	"H" Station detected
42	P55	O	ANT CONT	Antenna control output	"H" ON
			LOCAL (E)	Local output	"H" ON
43	P56	O	FM+B	FM power supply output	"H" ON
44	P57	O	AM+B	AM power supply output	"H" ON
45	P60	O	SCK	Clock output to electronic volume	
46	P61	I/O	SDA	Data input/output to/from electronic volume	
47	P62	O	MUTE	Muting output	"H" Mute ON
48	P63	O	CRSC (K, M)	CRSC output	"H" ON
			AF MUTE (E)	AF muting output	"L" ON
49	P64	O	P STBY	Power amp standby output	"H" ON
50	P65	I	ACC	ACC detection input	"L" ON
51	P66	I	BU DET	Momentary power-down detection input	"H" Power-down
52	P67	O	TEST	High temperature protection circuit operation inhibition output	"H" Test mode
53	P30	O	P CON	Power control output	"H" ON
54	P31	O	P ON	μ-com and surrounding power control output	"H" ON
55	P32	O	ILL ON	Illumination output	"H" Lit
56	P33	O	CH CON2	Changer 2 control output	"H" CH2 ON
57	P34	O	CH CON1	Changer 1 control output	"H" CH1 ON
58	P35	O	REQ H	Handshake request to changers	"L" Request
59	BUZ	O	BEEP	Beep output	
60	P37	I	E2DTI	Data input from E2PROM	
61	P120	O	E2CE	CS output to E2PROM	
62	P121	O	MCLK/E2CK	Clock output to CD mechanism controller/E2PROM	
63	P122	I	DATA M	Data input from CD mechanism controller	
64	P123	O	DATA S/E2DIO	Data output to CD mechanism controller	
65	P124	I	SRM SW2	Position detection input 2 from SRM	"L" ON
66	P125	I	SRM DET	Storage mechanism detection	"L" SRM detected
67	INTP0	I	REMO	Remote control signal input	 Request
68	INTP1	I	R CLK	RDS clock input	
69	INTP2	I	REQ C	Handshake request from changer	"L" Request
70	INTP3	O	M RST	Reset output to CD mechanism controller	"L" Reset
71	P04	I	M MUTE	Muting request from CD mechanism controller	"L" Request
72	P05	I	M SRQ	Handshake request from CD mechanism controller	 Request
73	P06	O	M STOP	Stop request to CD mechanism controller	"L" Request
74	CPUREQ	-	VDD	5V	
75	GND	-	GND	GND	
76	X2	-	X2	X'tal oscillator connection	
77	X1	-	X1	X'tal oscillator connection	
78	OSCREG	-	VDD	Oscillator power supply	
79	VDD	-	VDD	Power voltage application terminal	
80	RESET	-	RESET	Reset input	

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MECHANISM OPERATION DESCRIPTION

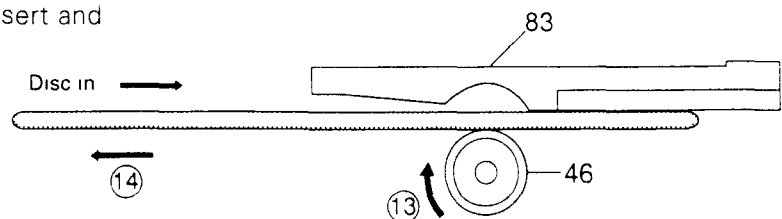
1. Disc out



(Bottom view)

The motor turn at first ① The motor will triggers the other gearS (29, 31, 33 - 40) to turn at the direction indicated Finally the roller will move the disc out ⑭

- The roller press the disc ⑬ when disc insert and take out time



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MECHANISM OPERATION DESCRIPTION

2. Disc in

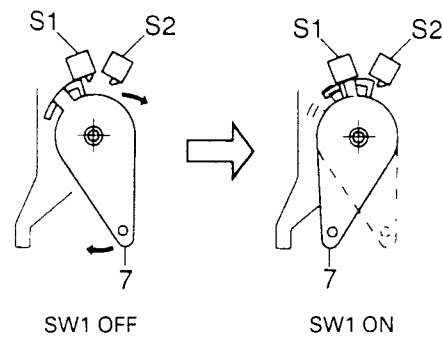
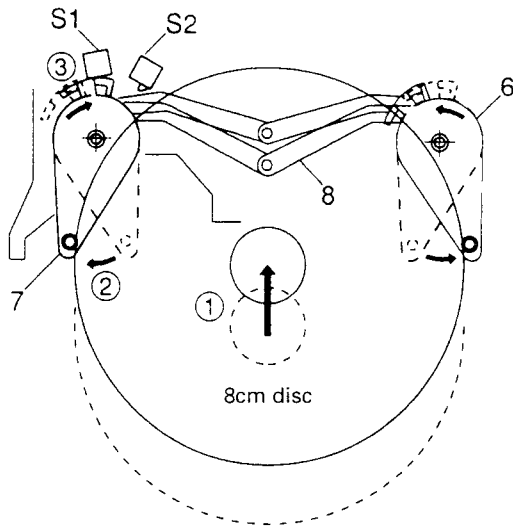
2-1. Roller movement (Disc detection)

Insert disc ①, the disc will push the guide pin ② of disc arm (6) and (7). Disc arm (7) in turn, will switch on the disc detection switch ③. The motor will turn when switch on, and triggered other gears to turn (refer to

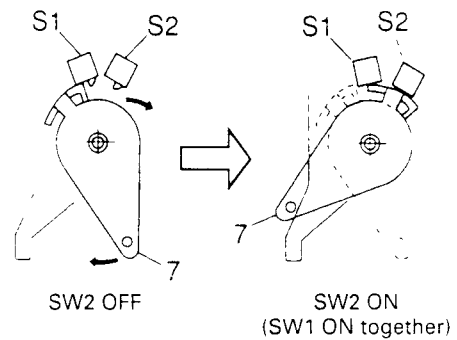
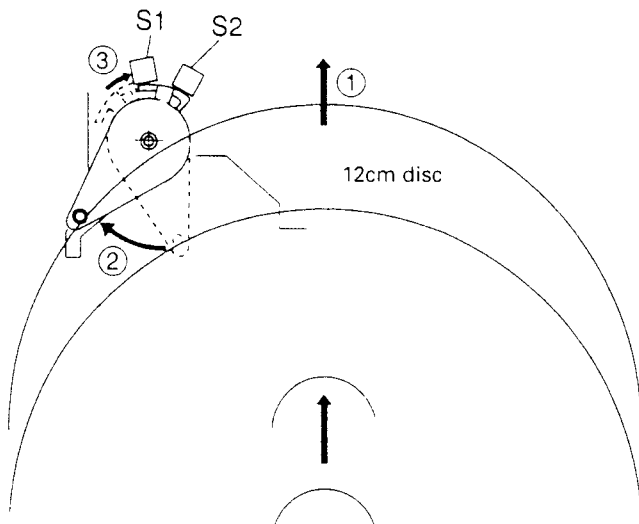
figure "1. Disc out"). Roller will turn toward "disc in" detection.

- Insert the 8cm disc, so the discarm (7) will push the S1.
- Insert the 12cm disc, so the disc arm (7) will push the S1 and S2 together.

• SW1 : detection of 8cm disc



• SW1 : detection of 12cm disc



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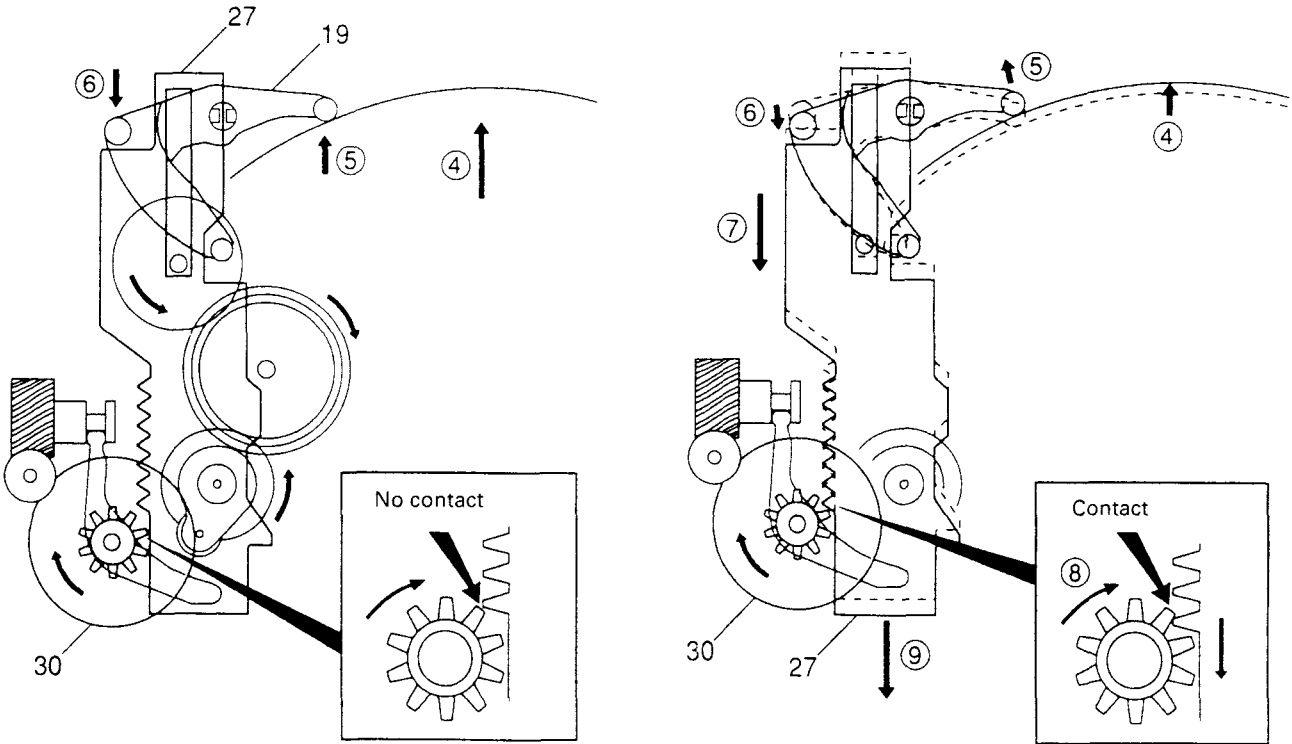
MECHANISM OPERATION DESCRIPTION

2-2. Push the lever

When disc insert to the end position (4), it will push away the lever pin (5). The lever (19) in turn, will push the Slider (27) by lever pin (6).

2-3. Slider movement

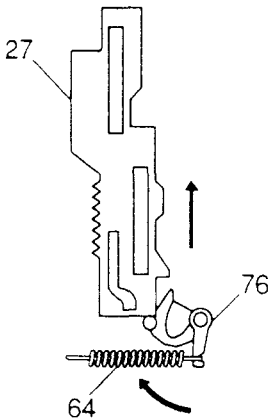
When slider push in (7), the rack gear of slider (27) will contact to helical gear (30) (8). Then two gears will move together (9).



(Bottom side view)

- Slider position of no disc condition**

Slider gear is off contact with helical gear (30) pushing by the Holder (76)'s spring (64) force. Rack gear of slider contact to helical gear (30) when the slider push by the lever (27).



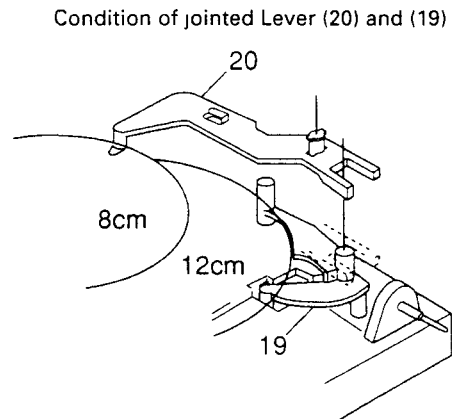
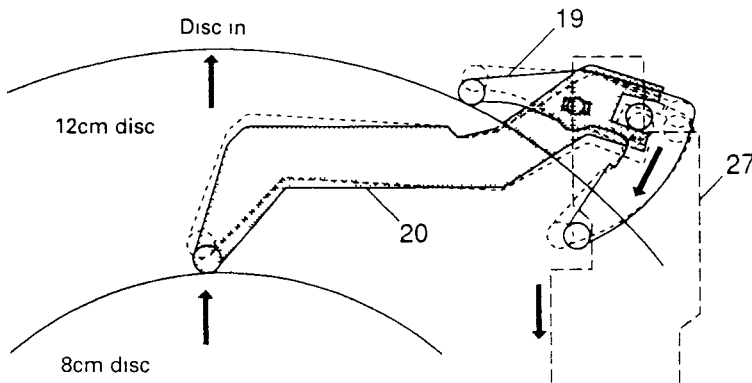
(Bottom view)

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MECHANISM OPERATION DESCRIPTION

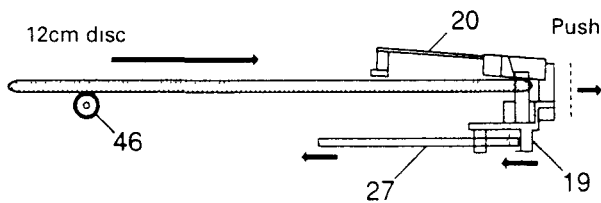
2-4. Structure of disc push the lever and slider movement

The Lever (20) is jointed to the lever (19)

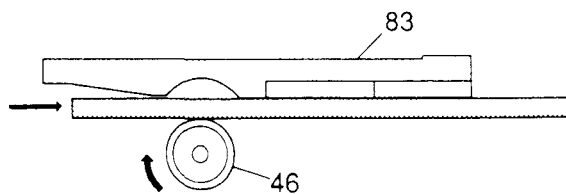


• 12cm disc

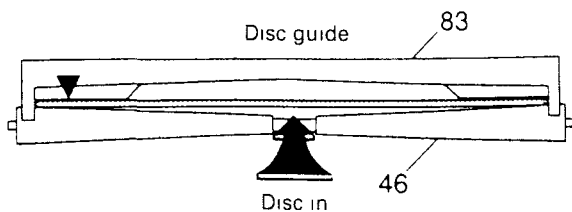
The disc will push the Lever (19). Pin of Lever (19) will push the Slider (27)



Disc guide's face support the disc when inserting.



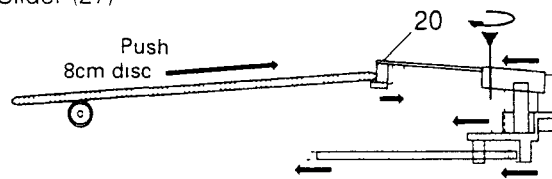
(Front view)



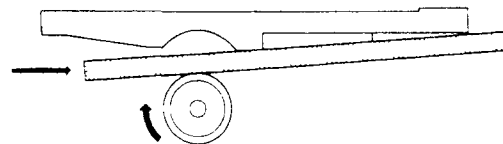
▼ ...disc touching the face

• 8cm disc

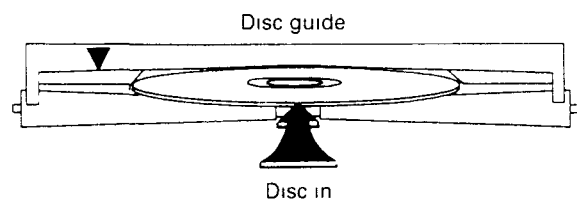
The disc will push the Lever (20). The Lever (19) will turn with the Lever (20). Pin of Lever (19) will push the Slider (27)



Disc guide's face support the disc when inserting.



(Front view)



▼ ...disc touching the face

MECHANISM OPERATION DESCRIPTION

3. Functions of slider movement

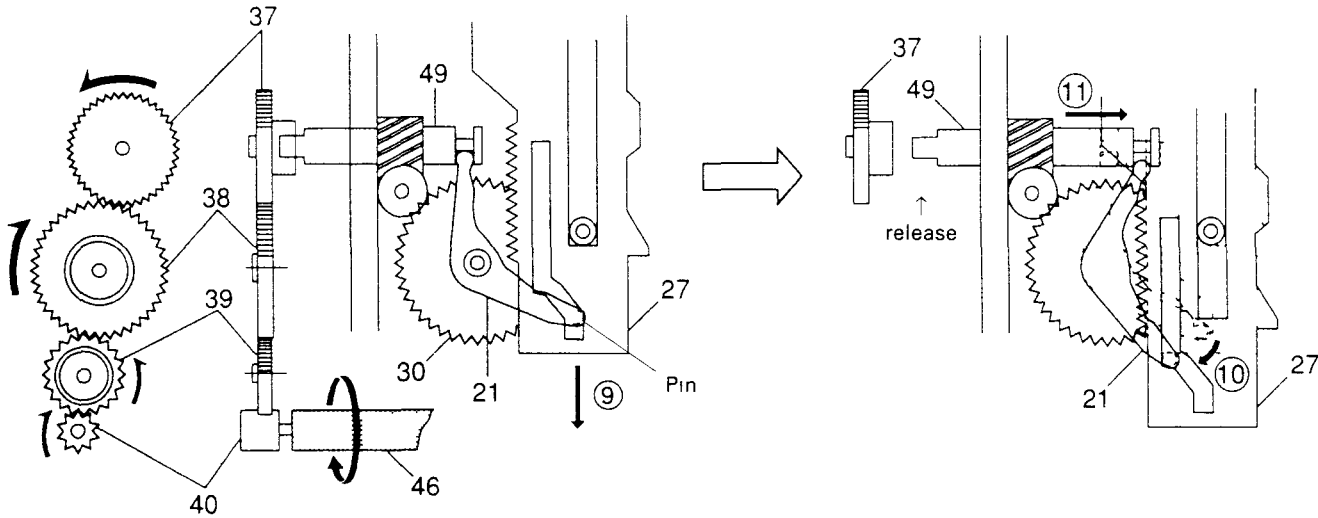
3-1. Stop the roller turning

(Slider move after the disc insert)

The roller (46) will turn toward disc in or out direction with jointed gears and joint shaft (49) by the motor

The roller turning will stop when joint shaft is off gear (37)

- 1 The Lever (21)'s pin joint with the groove of the slider (27)
- 2 Slider (27) will be move ⑨, after disc insert
- 3 The Lever (21) will move together slider ⑩
- 4 The joint shaft (49) will move together lever movement ⑪
- 5 The joint shaft (49) become off gear (37)
- 6 Gear (37) will stop so roller (46) will stop too



(Bottom view)

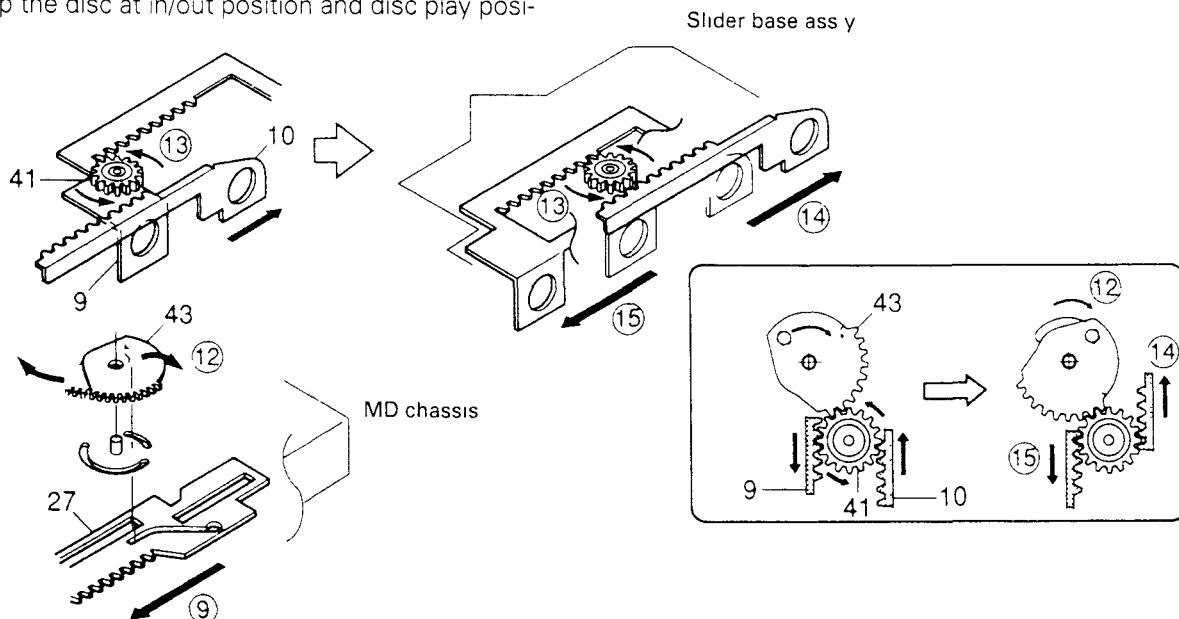
3-2. Mechanism of Slider base ass'y

Slider base ass'y have 3 types of functions when slide lock gear is moved

- 1 MD-ass'y clamp and release
To keep the disc at insert (and eject) position and disc play position
- 2 Clamper Chassis up and down
To clamp or release the disc
- 3 Roller ass'y up and down
To keep the disc at in/out position and disc play position

• Basic movement of Slider base ass'y

Pin of Fan-gear (43) is joint to the slider. Fan-gear will turn ⑫ when slider move ⑨. Jointed center gear (41) will turn with Fan-gear ⑬. Jointed slide lock gear (9, 10) move with center gear ⑭ ⑮.



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MECHANISM OPERATION DESCRIPTION

3-3. Connection of Slider movement with LOCK PIN

(Jointing condition of MD-Chassis ass'y and Main-Chassis ass'y)

• This mechanism have 2 main components

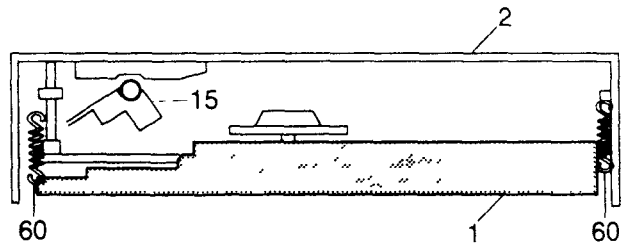
MD Chassis ass'y (1)

This unit have many gears and motor for basic movement, and Optical pick-up ass'y for pick up of the disc signal

Main Chassis ass'y (2)

This unit consist of metal body frame and Roller ass'y for disc insert and eject movement

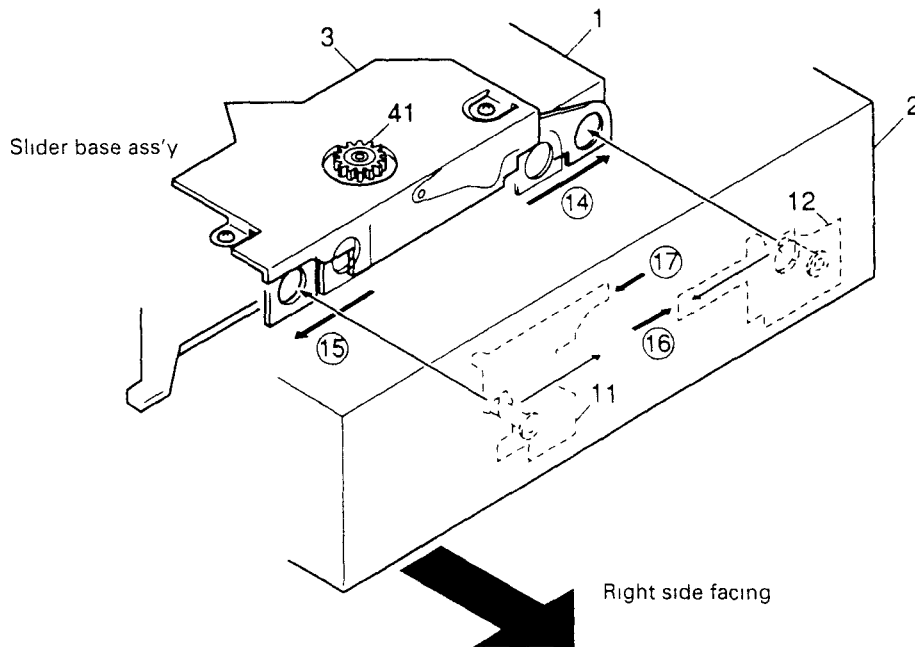
MD Chassis ass'y (1) was hung by spring (60) of Main Chassis ass'y (2)



• **Slider base ass'y was assembled in MD Chassis**

Lock plate (11, 12) was assembled in Main Chassis Pin of lock plate will joint to the hole of slide lock gear, and it move with the slide lock gear (14), (15)

*At both side of Main Chassis have lock plate unit (16), (17) Left side lock plate unit move together with the right side through joined roller ass'y (15)



MECHANISM OPERATION DESCRIPTION

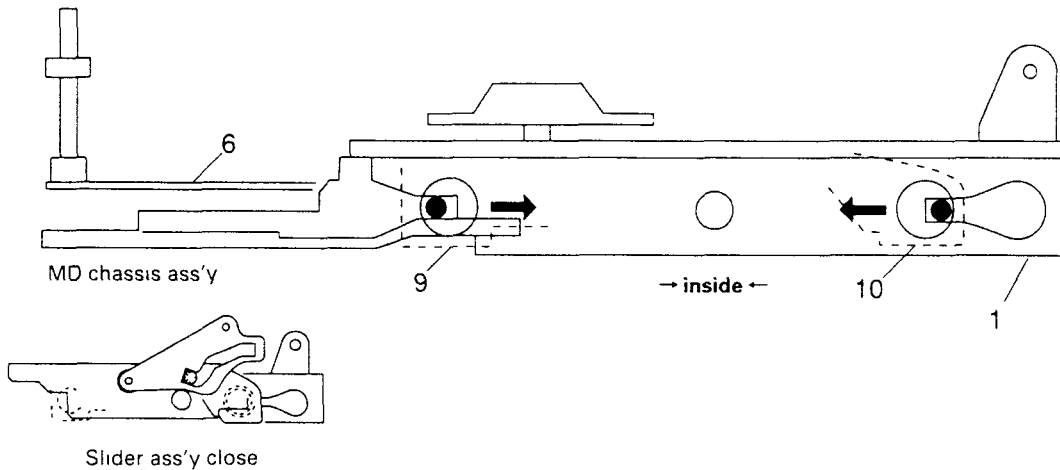
3-4. MD Chassis hold and release

Roller will move the disc toward insert or eject direction by roller turning. MD Chassis ass'y (6) and Main Chassis ass'y (1) must lock for the disc passage fix.

When disc in play back condition, disc can not play by vibration of car running if MD Chassis is locked. Therefore there is need for MD Chassis to release from Main Chassis for guard of vibration (condition of support the spring tension only).

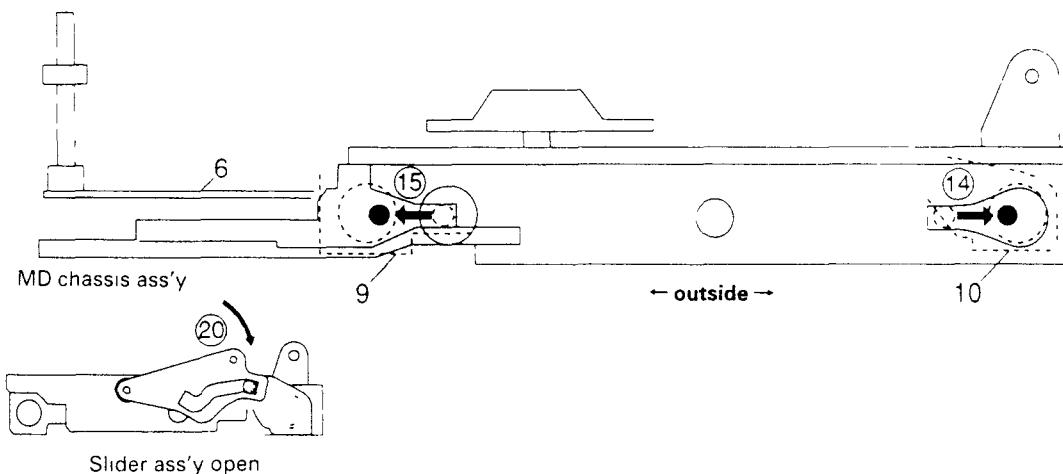
• MD Chassis lock condition

The pin of lock plate is insert to the groove of MD Chassis at both side



• MD Chassis release condition

MD Chassis is in free condition when pin is remove to outside (14), (15)

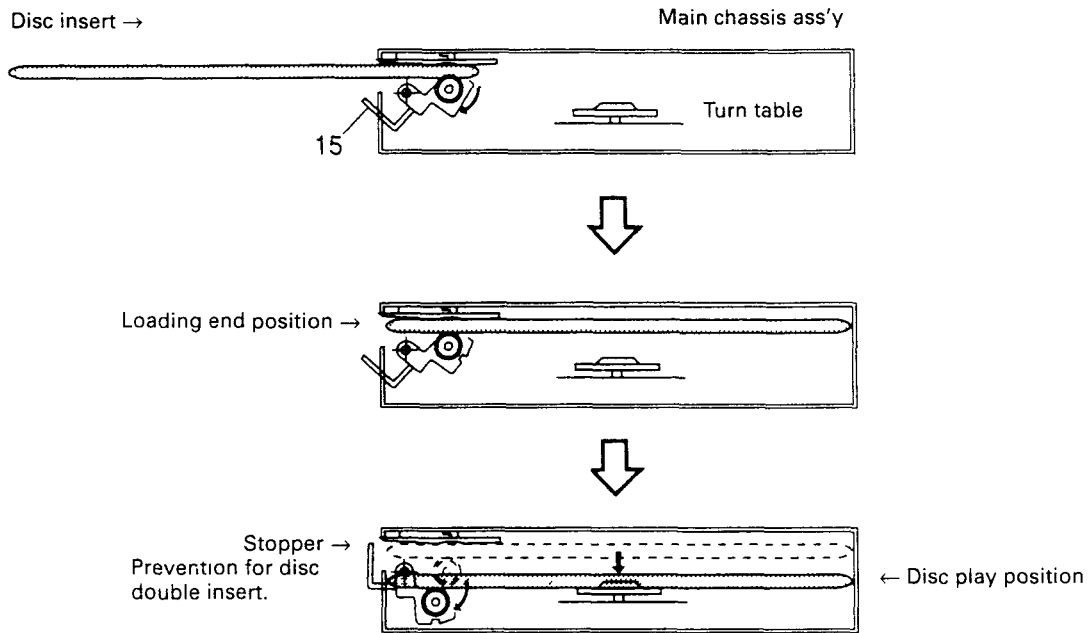


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MECHANISM OPERATION DESCRIPTION

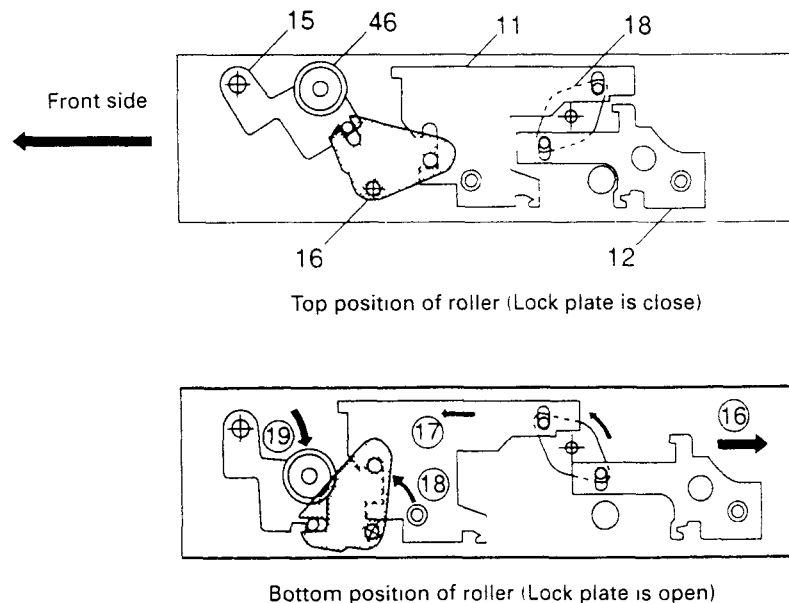
3-5. Movement of Roller ass'y

Roller (46) will stop turning when disc is inserted. Roller ass'y (15) will move to down side for the disc to sit onto the Turn Table. Roller ass'y will move to upper side in order to catch the disc when disc eject.



• Structure of roller ass'y movement

Roller ass'y (15) will move up and down with joined LINK (16) by lock plate's (11, 12) movement (16 ~ 19).



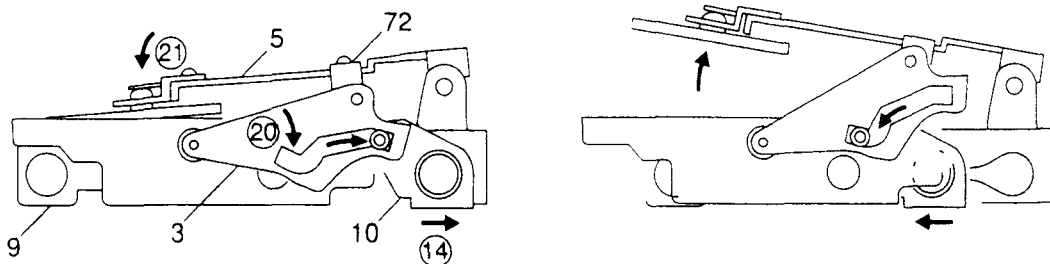
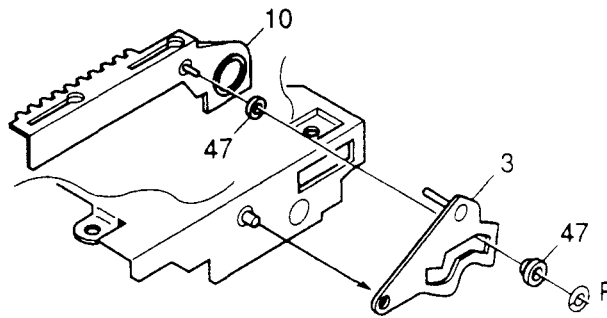
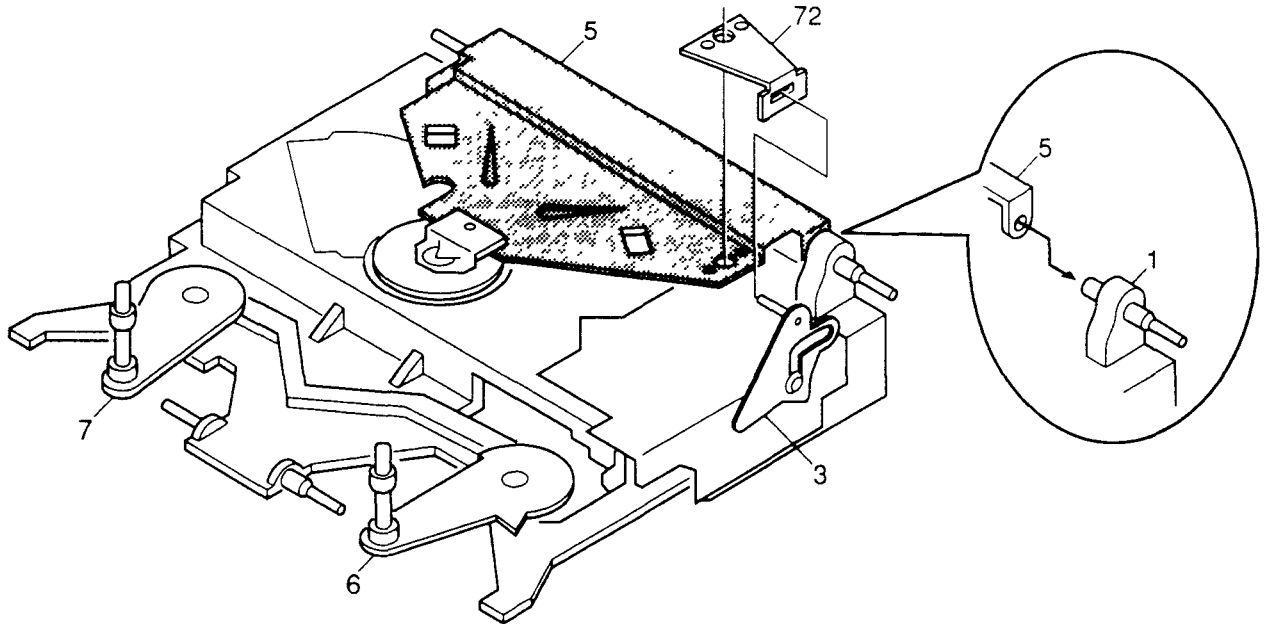
KDC-9007/7050R

MECHANISM OPERATION DESCRIPTION

3-6. Movement of Clamper Chassis ass'y

Clamper must press down the disc when disc playing (21), and it must release during disc inserting and eject

Clamper Chassis will connect with pin of arm ass'y in slider ass'y (3) by Flat plate (72) (20). Arm ass'y will join to slide lock gear (10). Clamper Chassis will move together slide lock gear



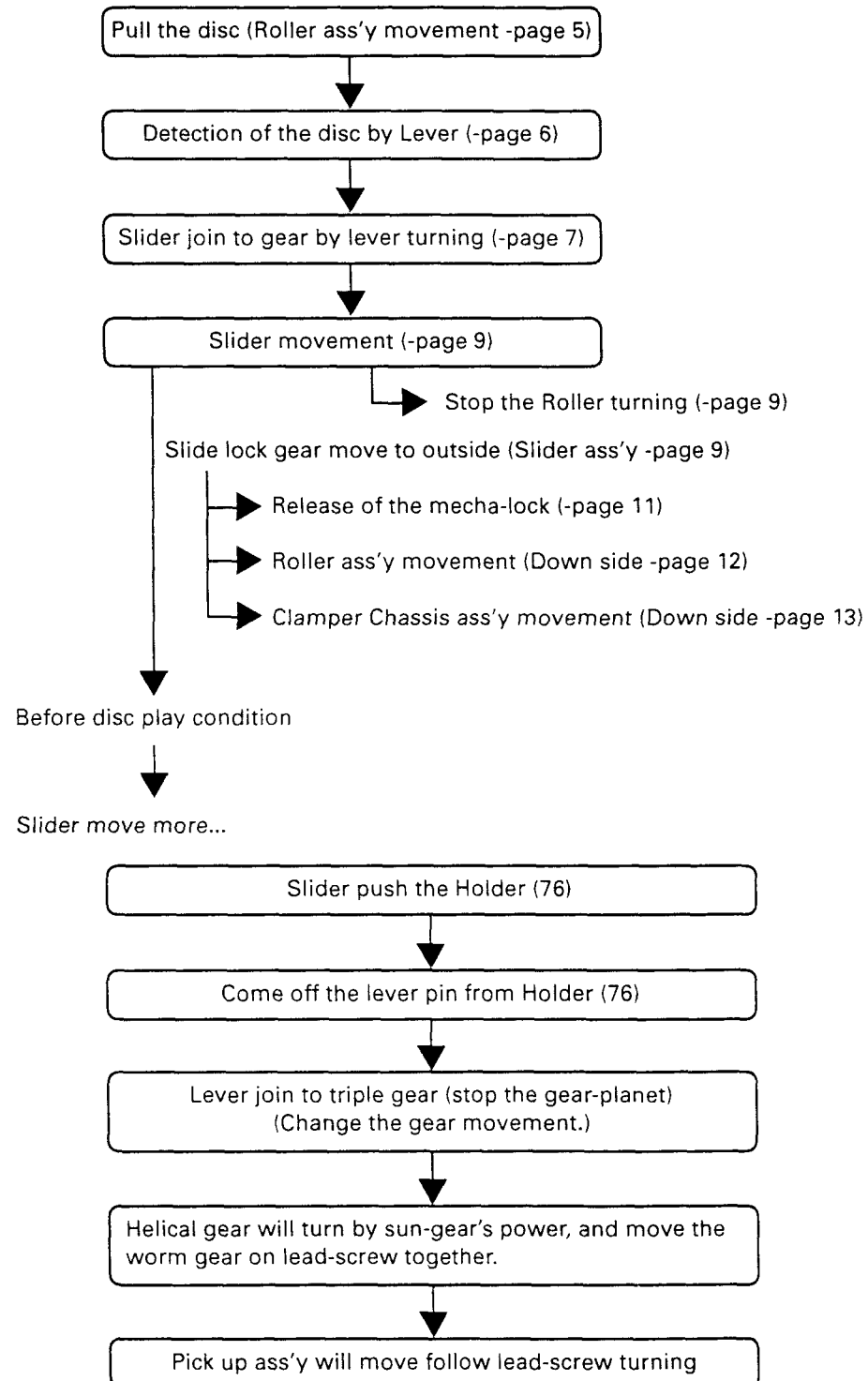
KDC-9007/7050R

MECHANISM OPERATION DESCRIPTION

4. Slide movement of Pick-up ass'y

4-1. Flow chart for lead to Pick up ass'y movement

Flow

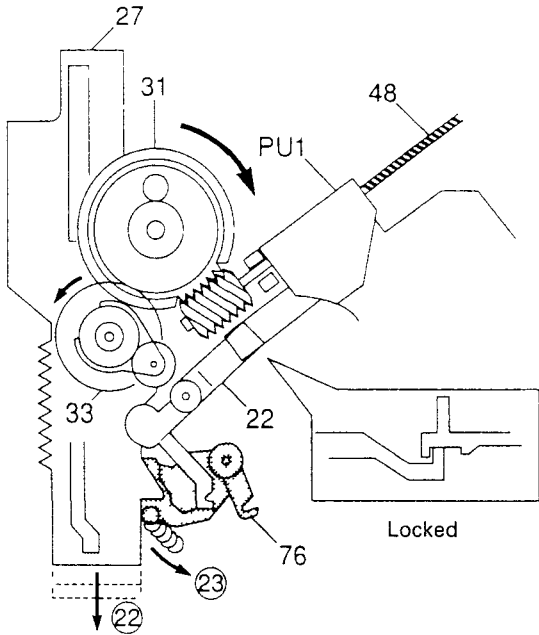


MECHANISM OPERATION DESCRIPTION

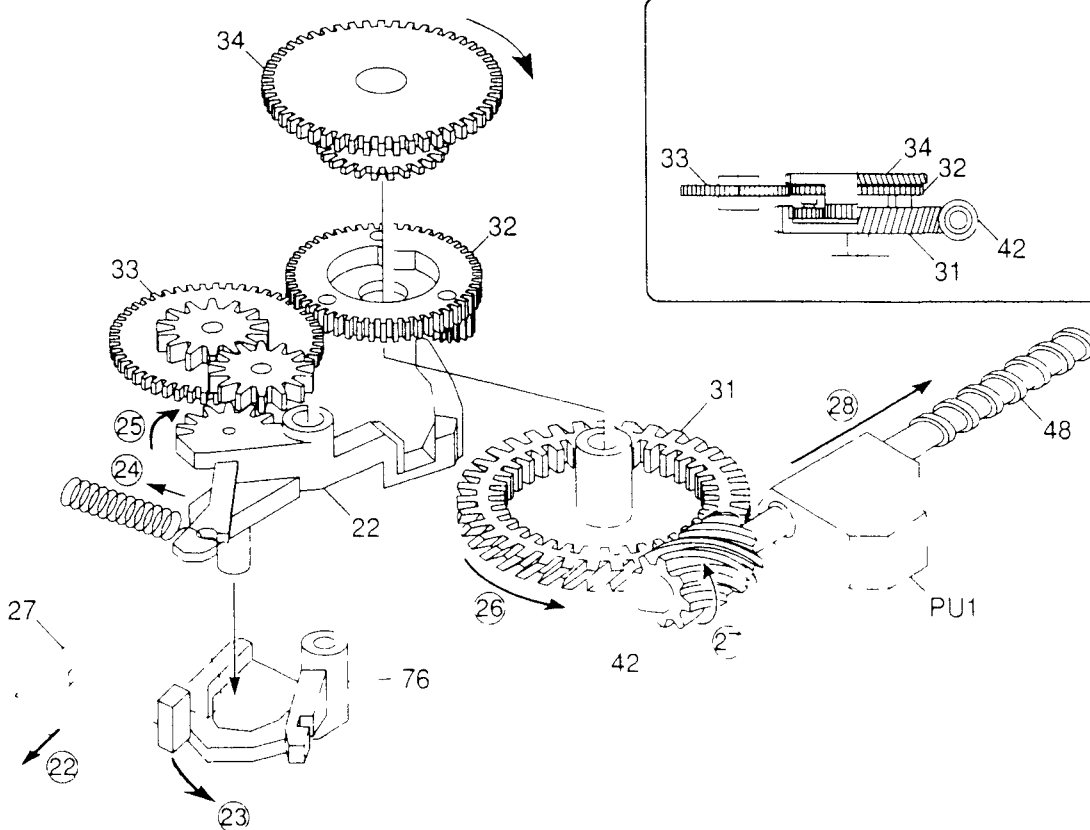
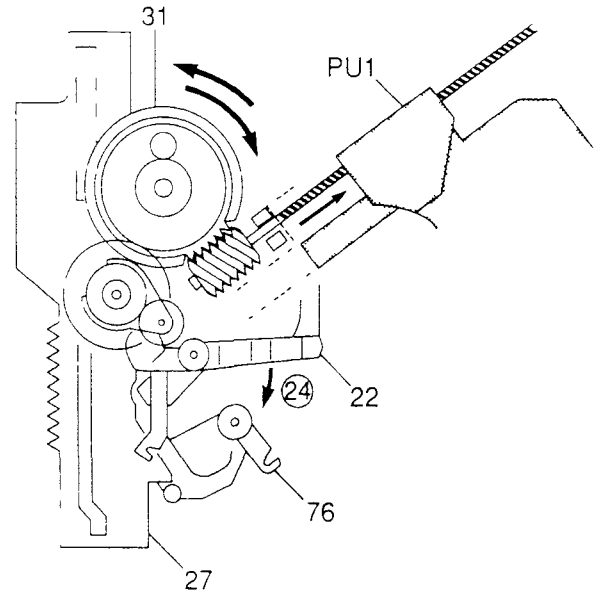
4-2. Illustration of Pick up ass'y movement

- 1 Slider push the holder (76) ②②, ②③.
- 2 The pin will release from holder ②④
(Come off the lock between lever and Pick up ass'y)
- 3 Lever join to triple gear Triple gear and planet gear ass'y (32) will stop ②⑤

- 4 Change the gear movement.
- 5 Helical gear (31) will turn ②⑥, and gear worm (42) will turn ②⑦
- 6 Pickup ass'y (PU1) will move ②⑧



(Bottom view)



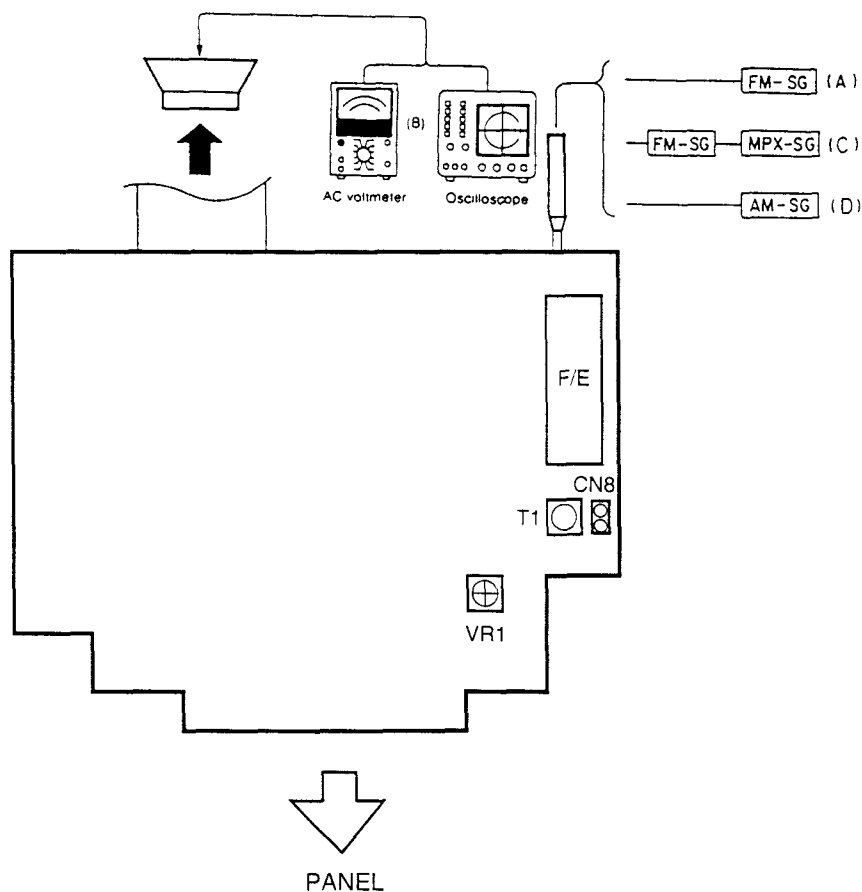
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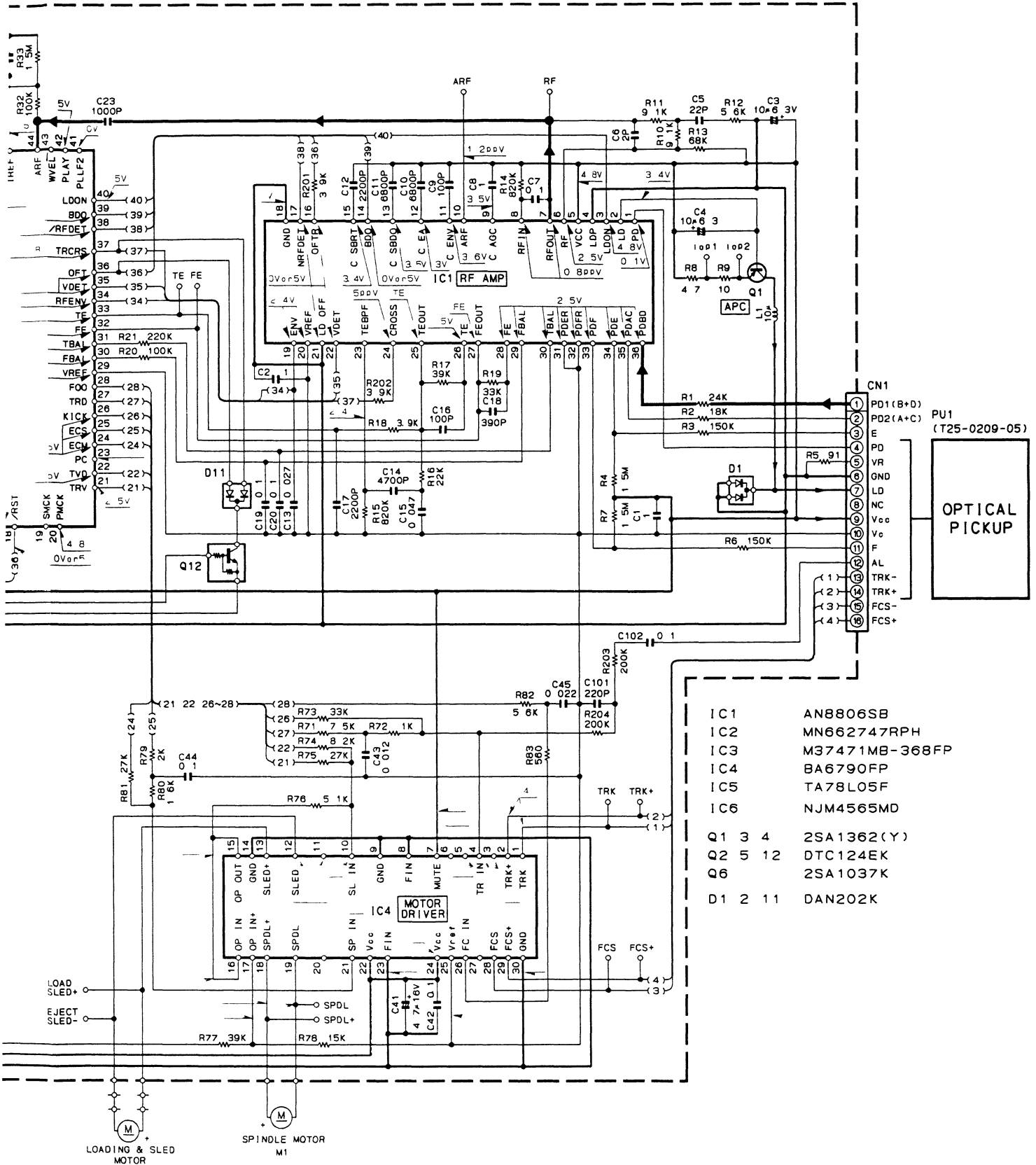
ADJUSTMENT

No.	ITEM	INPUT SETTING	OUTPUT SETTING	TUNER (RECEIVER)	ALIGNMENT POINTS	ALIGNING FOR	FIG.
FM section							
1	DISCRIMINATOR	(A) 98 1MHz 0dev 60dB μ (ANT input)	Connect a DC voltmeter to CN8	FM 98 1MHz	T1	0V	(a)
2	ANRC	* (C) 98 1MHz 1kHz, \pm 67kHz dev Pilot \pm 7.5kHz dev Selector L or R 35dB μ (ANT input)	(B)	FM 98 1MHz	VR1	Separation 10dB	

*KDC-7050R

(C)
98 1MHz
1kHz, \pm 40kHz dev
Pilot \pm 6kHz dev





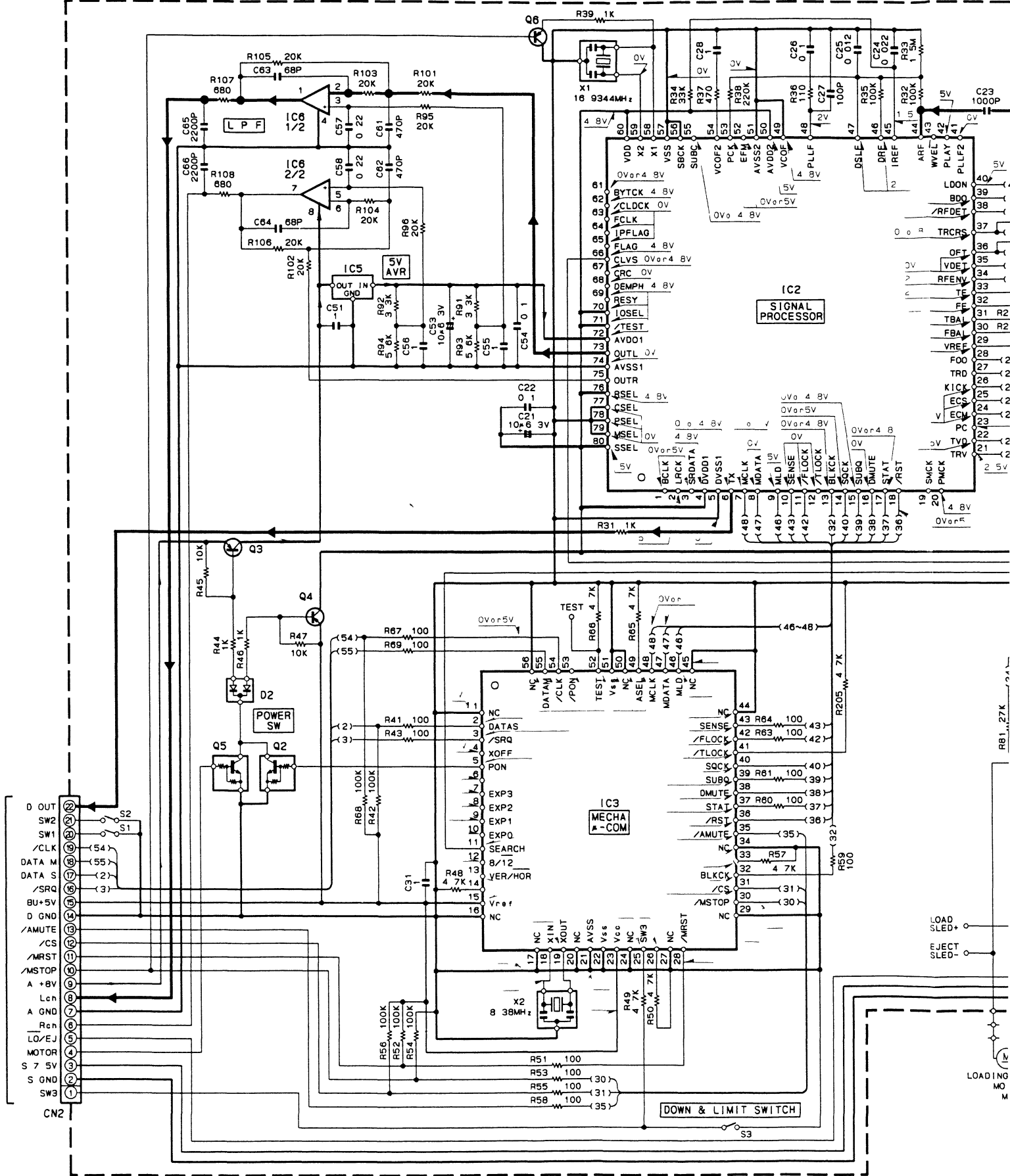
- IC1 AN8806SB
- IC2 MN662747RPH
- IC3 M37471MB-368FP
- IC4 BA6790FP
- IC5 TA78L05F
- IC6 NJM4565MD
- Q1 3 4 2SA1362(Y)
- Q2 5 12 DTC124EK
- Q6 2SA1037K
- D1 2 11 DAN202K

——— SIGNAL LINE
 ——— GND LINE
 ——— +B LINE
 - - - - - -B LINE

KDC-9007/7050R

KENWOOD

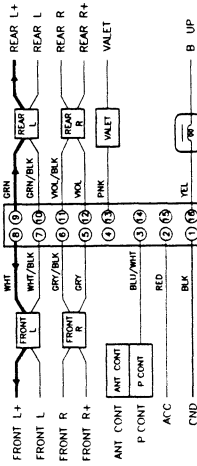
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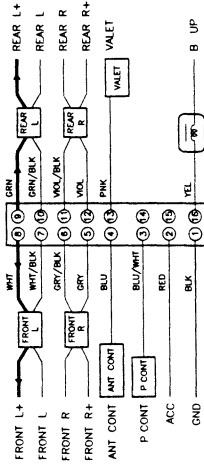
CAUTION

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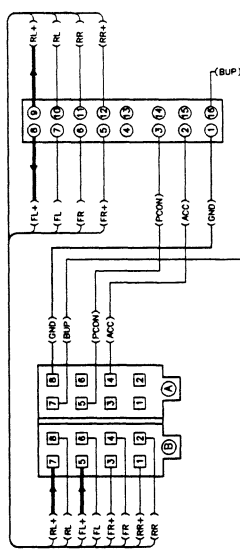
DC CORD
KDC-9007(K)/KDC-7007(K)
(E30-4436-05)



DC CORD
KDC-9008(M)/KDC-7008(M)
(E30-4437-05)



DC CORD
KDC-7050R(E)
(E30-4439-05)

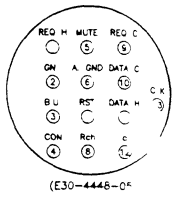
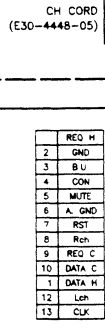
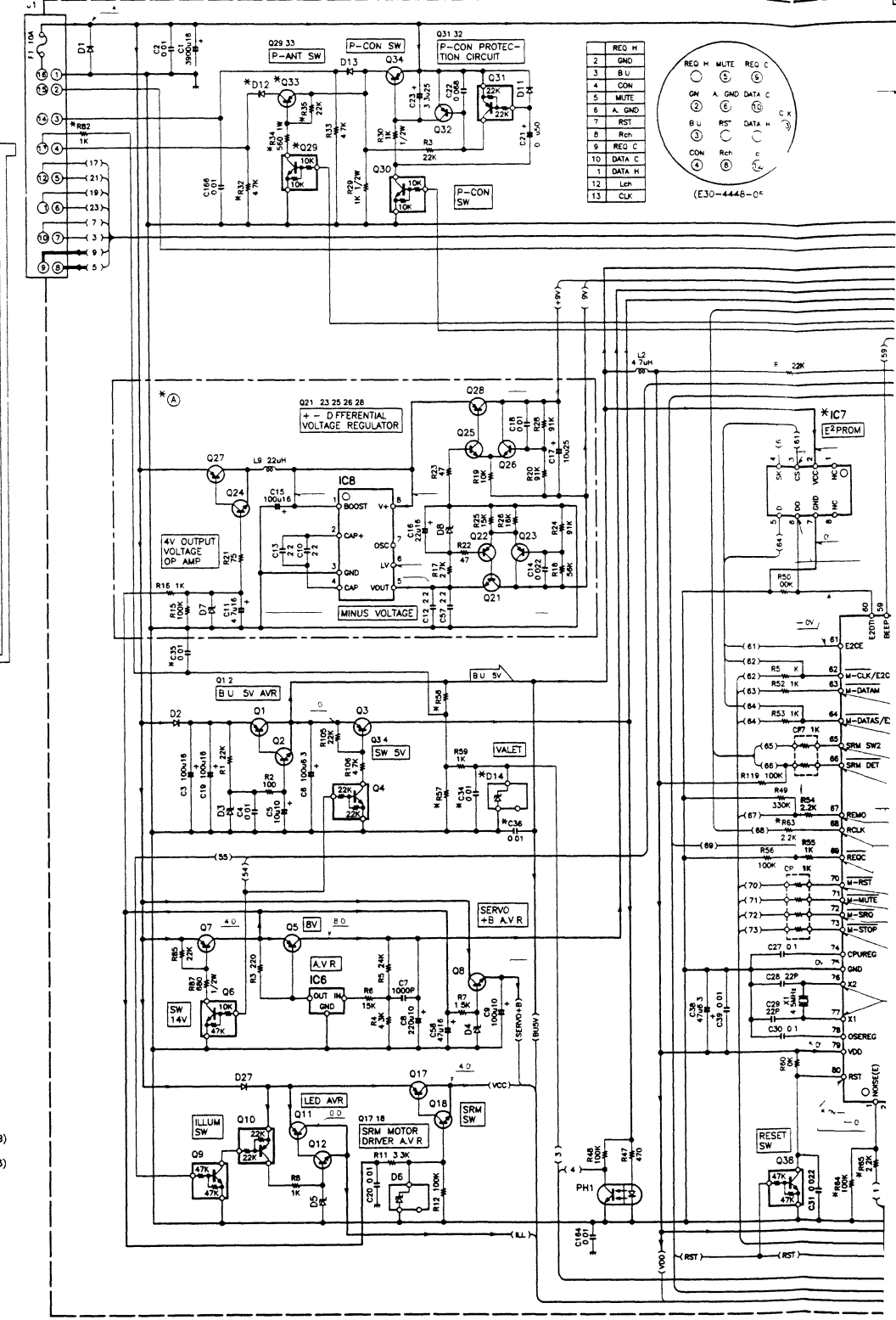


- IC1 *
- IC2 TDA7420
- IC3 HD74HC27FP
- IC4 TDA7384A
- IC6 M5237ML
- IC7 KK201F
- IC8 TC7660S
- IC9 TC4W66F
- IC10 11 NJM4565M-TE2
- IC12 BA6219FP-Y
- IC13 SAA6579T
- IC14 LA1145M

- Q1 2SB1565F(E F)
- Q2 12 18 21 24-26 35 36 61
- Q3 22 23 28 32 51
- Q4 39 41 60 70 71 76
- Q5 2SB1184
- Q6 DTC114YK
- Q7 17 27
- Q8 2SD2396F40
- Q9 38 50
- Q10 31 37 40 42 74
- Q11 2SB1565(E F)
- Q12 DTC114EK
- Q13 34 77 79
- Q14 53
- Q15 64-67
- Q16 84
- Q17 DTC114YK
- Q18 DTB123YK
- Q19 DTA144EK

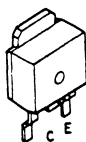
- D1 RM102LF
- D2 12 13 27
- D3 8 15 16
- D4 UZL-6(M1)
- D5 UZL-9(L1)
- D6 UZL-11(S)(B)
- D7 MA3220-H
- D8 UZL-11(M3)
- D9 10 30
- D10 DA204K
- D11 ISS133
- D12 MA3047-M
- D13 DAN202K
- D14 UZMA6 2F
- D15 22 50 51 55 61
- D16 18-21
- D17 UZMA6 8F
- D18 D31
- D19 UZMA6 8F
- D20 DAP202K
- D21 D53 54 60

ELECTRIC UNIT
(X25-781X-XX)

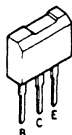


- DTA114EK
- DTA124EK
- DTA144EK
- DTB123YK
- DTC114EK
- DTC114TK
- DTC114YK

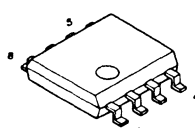
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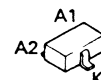
2SB1277
2SB1443



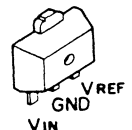
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NJM4565MD



DAN202K



TA78L05F



DA204K



B C E

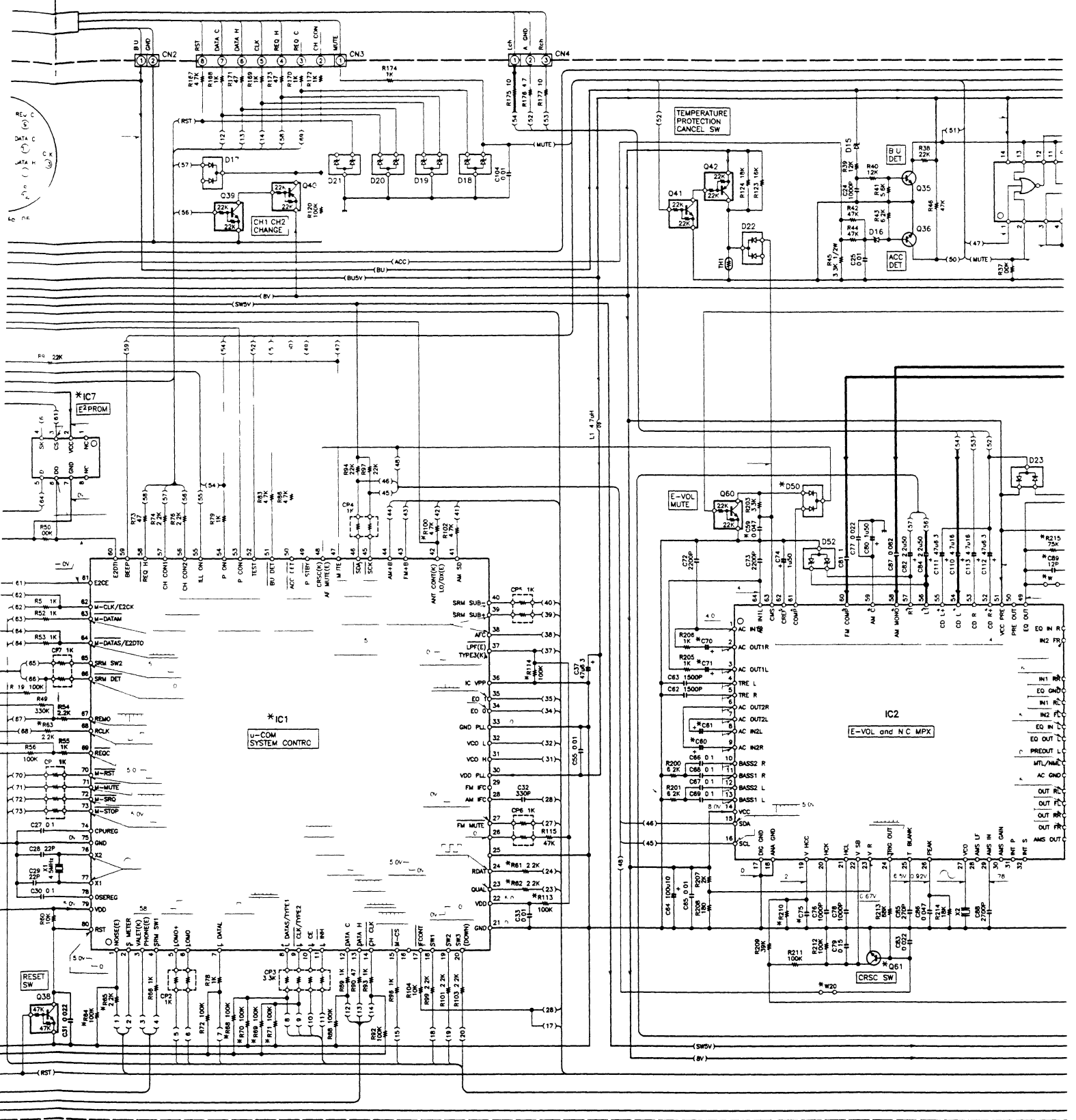
B C E

B C E

A1
A2 K

VIN
GND
VREF

1 2



DA204K

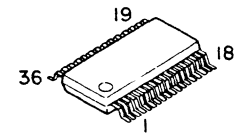
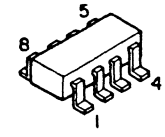
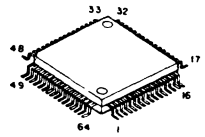
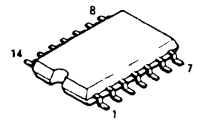
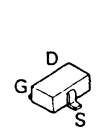
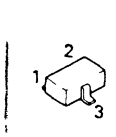
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SAA6579T

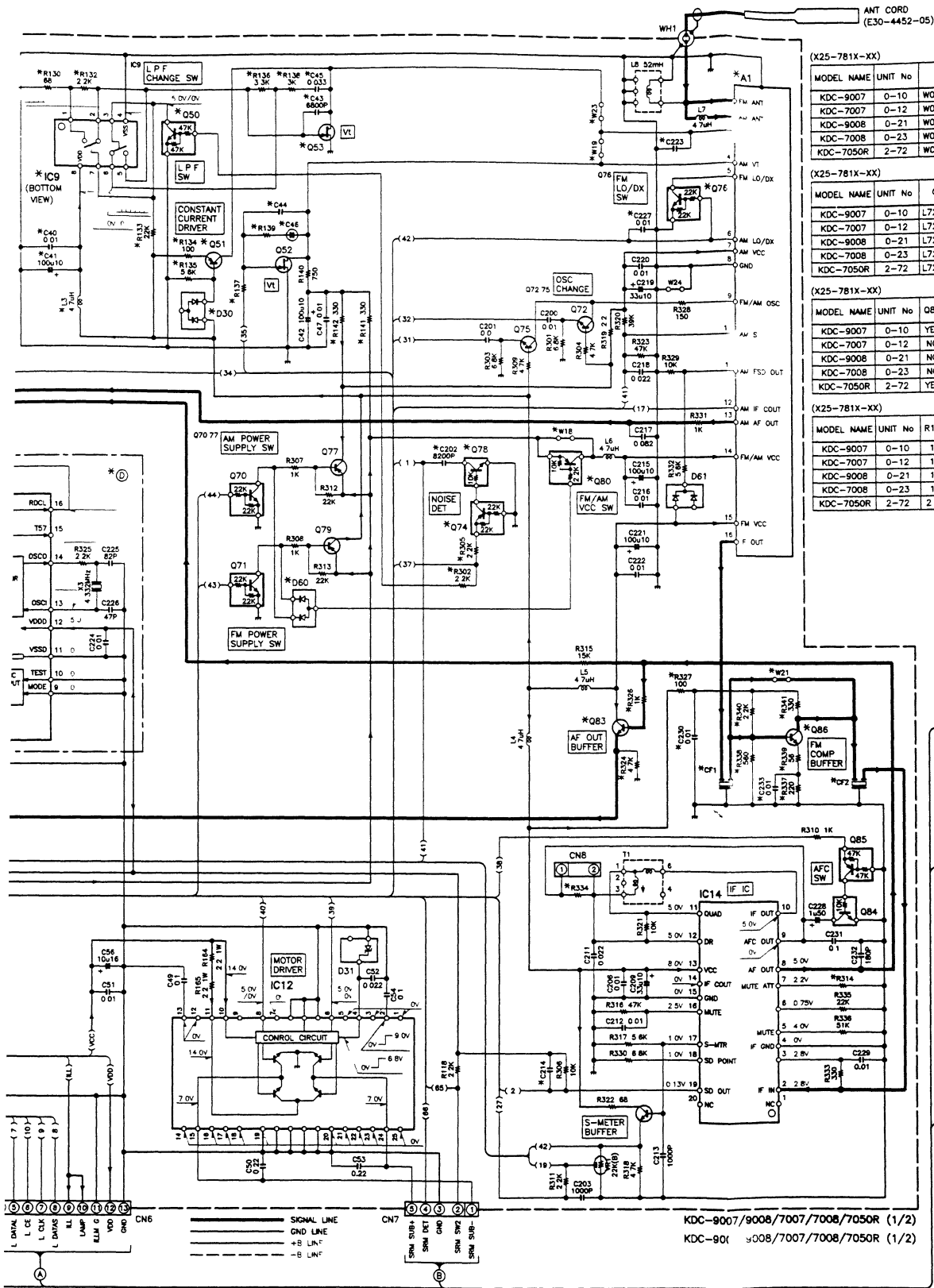
TDA7420

TC4W66F

M5237ML



/REF



(X25-781X-XX)

MODEL NAME	UNIT No	A1	C34 35 58	C36	C40 41 43 45 89-101 145-152 202 227 230 233	C44	C46	C60
KDC-9007	0-10	W02-1534	YES	YES	NO	0.1	2.2u35	4.7u
KDC-7007	0-12	W02-1534	YES	YES	NO	0.1	2.2u35	2.2u
KDC-9008	0-21	W02-1534	YES	NO	NO	0.1	2.2u35	4.7u
KDC-7008	0-23	W02-1534	YES	NO	NO	0.1	2.2u35	2.2u
KDC-7050R	2-72	W02-1523	NO	YES	YES	0.068	0.47u50	2.2u

(X25-781X-XX)

MODEL NAME	UNIT No	CF1 2	D12	D14	D30 50 51	D60	IC1	IC7	IC9	Q29 33	Q50 51 74 76
KDC-9007	0-10	L72-0719	NO	YES	NO	YES	178016BGC519	YES	NO	NO	NO
KDC-7007	0-12	L72-0719	NO	YES	NO	YES	178016BGC519	YES	NO	NO	NO
KDC-9008	0-21	L72-0719	YES	YES	NO	NO	178016BGC519	NO	NO	YES	NO
KDC-7008	0-23	L72-0719	YES	YES	NO	NO	178016BGC519	NO	NO	YES	NO
KDC-7050R	2-72	L72-0720	NO	NO	YES	NO	178018BGC514	YES	YES	NO	NO

(X25-781X-XX)

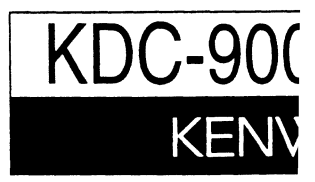
MODEL NAME	UNIT No	Q83	R32 34 35 71	R57	R58	R61-63 324 326	R64 82 141	R65 100 110 130 132-136 138 1 215-226 302 305 327 337-34
KDC-9007	0-10	YES	NO	100K	100K	YES	YES	NO
KDC-7007	0-12	NO	NO	100K	100K	NO	YES	NO
KDC-9008	0-21	NO	YES	100K	100K	NO	YES	NO
KDC-7008	0-23	NO	YES	100K	100K	NO	YES	NO
KDC-7050R	2-72	YES	NO	22K	47K	YES	NO	YES

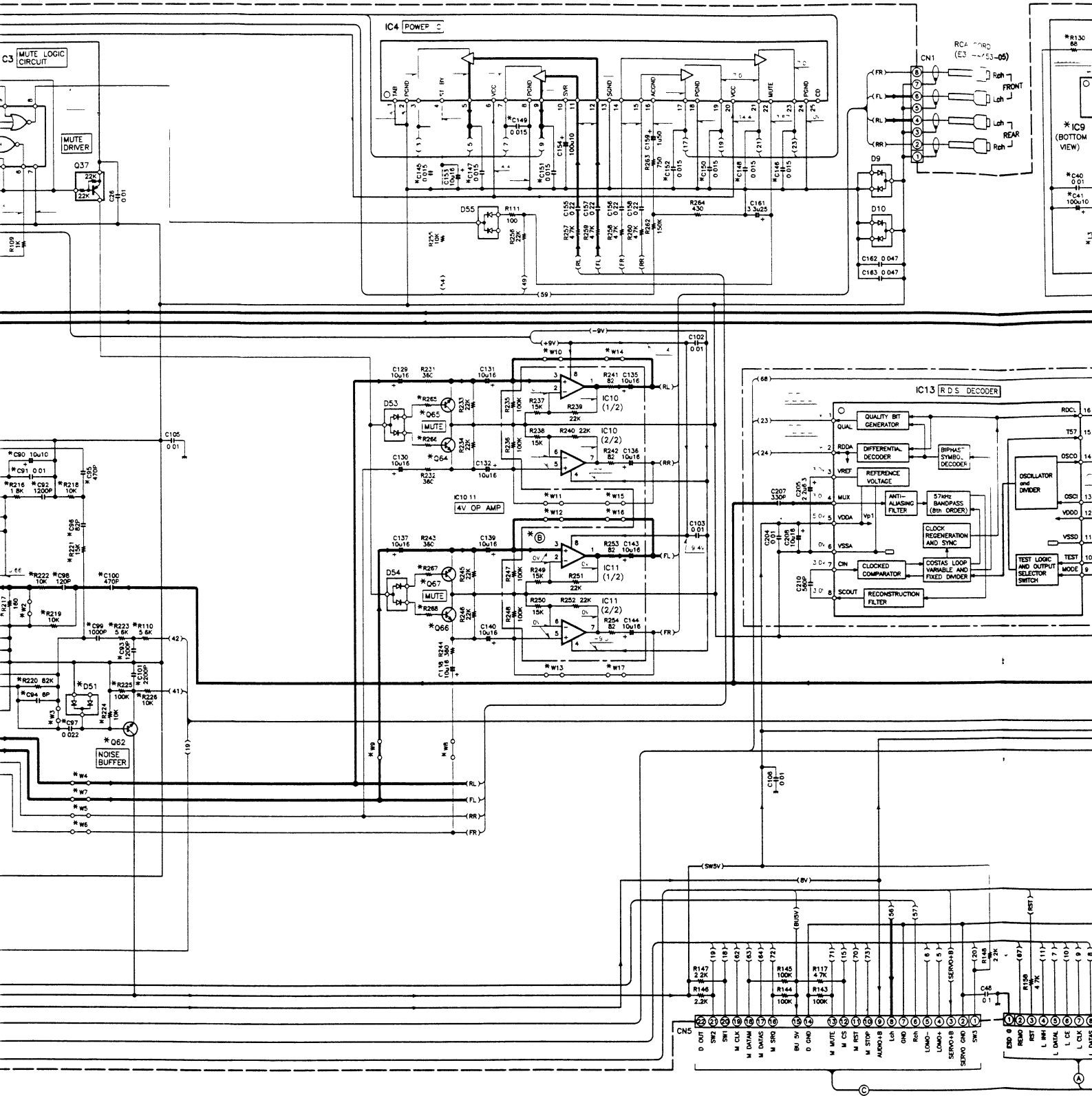
(X25-781X-XX)

MODEL NAME	UNIT No	R137	R139	R210	R265-268	R314	R334	W1-3 19-21	W10-17	W18	W23	(A)
KDC-9007	0-10	1K	560	150K	22K	18K	15K	YES	NO	NO	NO	YES
KDC-7007	0-12	1K	560	150K	4.7K	18K	15K	YES	YES	NO	NO	N
KDC-9008	0-21	1K	560	150K	22K	18K	15K	YES	NO	YES	NO	YE
KDC-7008	0-23	1K	560	150K	4.7K	18K	15K	YES	YES	YES	NO	N
KDC-7050R	2-72	2.2K	4.7K	180K	4.7K	20K	47K	NO	YES	YES	YES	N

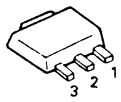
CAUTION: For continued safety replace safety critical components only with manufacturer's recommended parts (refer to parts list). Δ Indicates safety critical components. For continued protection against risk of fire, replace only with same type and rating fuse(s). To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

The DC voltage is an actual reading measured with a high impedance type voltmeter. The measurement value may vary depending on the measuring instruments used or on the product.



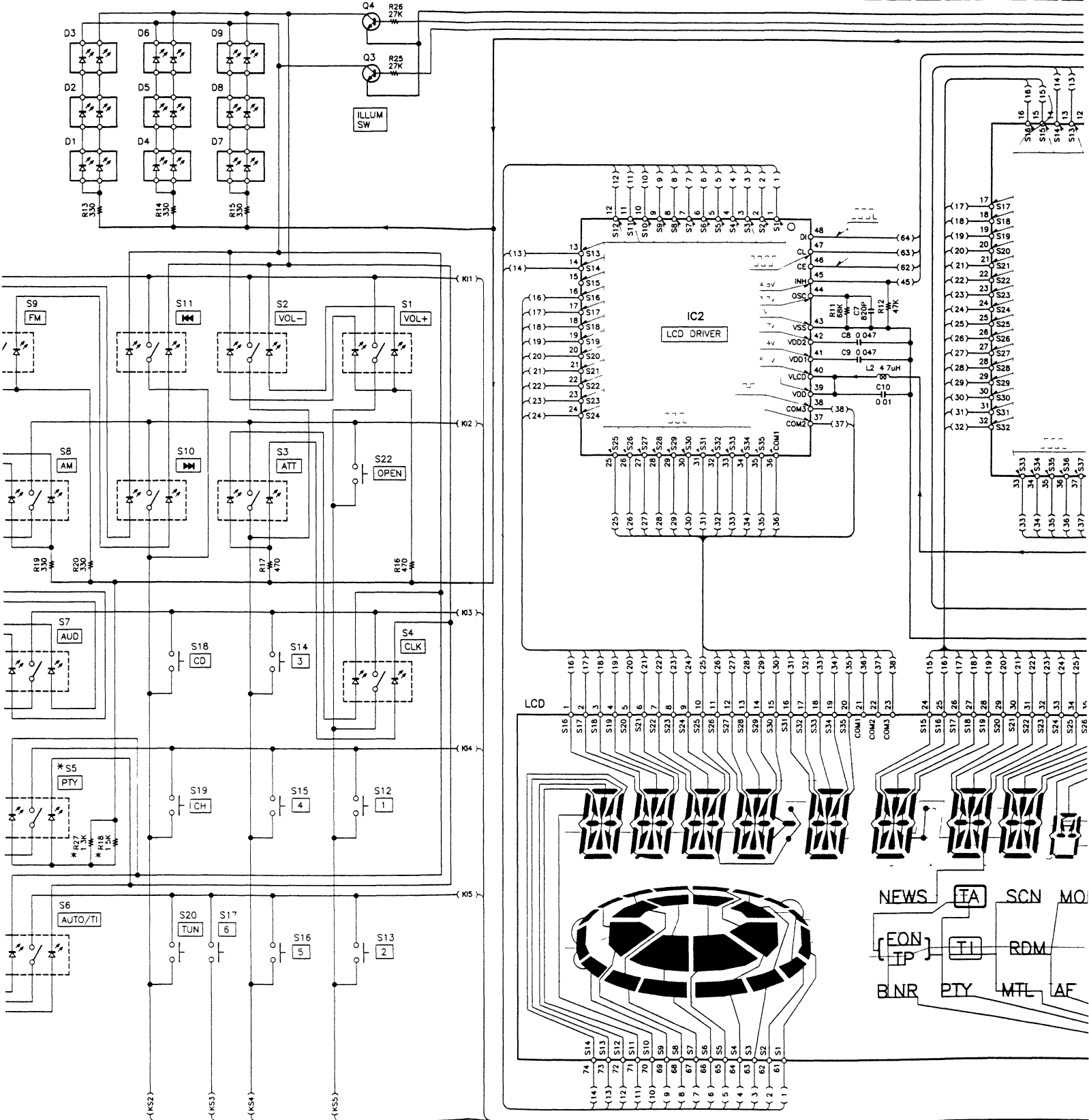


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CAUTION
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- 5853NE Q1 2 DTA114EK
 - 5833E Q3 4 2SD2114K
 - B06B1FE Q1-9 830-1349-05
- GND LINE

