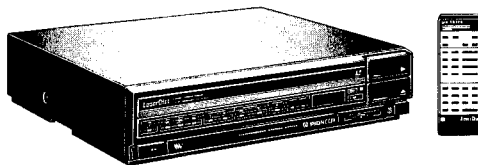


# Service Manual

**PIONEER®**



**ORDER NO.  
VRT-057-0**

## LASERVISION PLAYER **LD-707** (BK) S/G



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# 1. DISASSEMBLY

## [BONNET]

- Remove 2 side screws  
Ⓐ (BMZ40P100FZK).
- Remove 2 rear screws  
Ⓑ (BBZ30P060FZK).

## [BOTTOM BOARD]

- Remove 2 screws  
Ⓒ (BBZ30P050FMC).
- Remove 4 screws  
Ⓓ (BPZ30P080FZK).

## [DISC TABLE]

- Remove the bonnet.
- Turn the POWER switch ON, press the EJECT key, and the disc table is ejected.
- Remove 2 rivets Ⓔ (VEC-219).
- Draw out the disc table.
- Remove a lock roller.

→ When the main power cannot be turned ON or the disc table cannot be drawn out by the pressing EJECT key due to a fault, operate as follows.

- Remove the bottom board.
- Turn the pulley of the loading mechanism in the direction shown by the arrow.

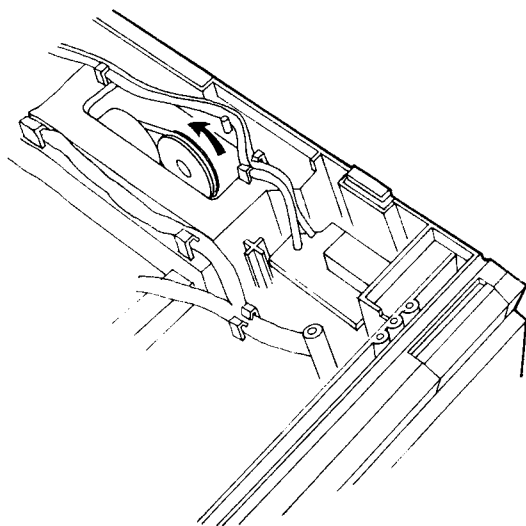
Note: When the disc is set, handle carefully while lightly pressing the disc.

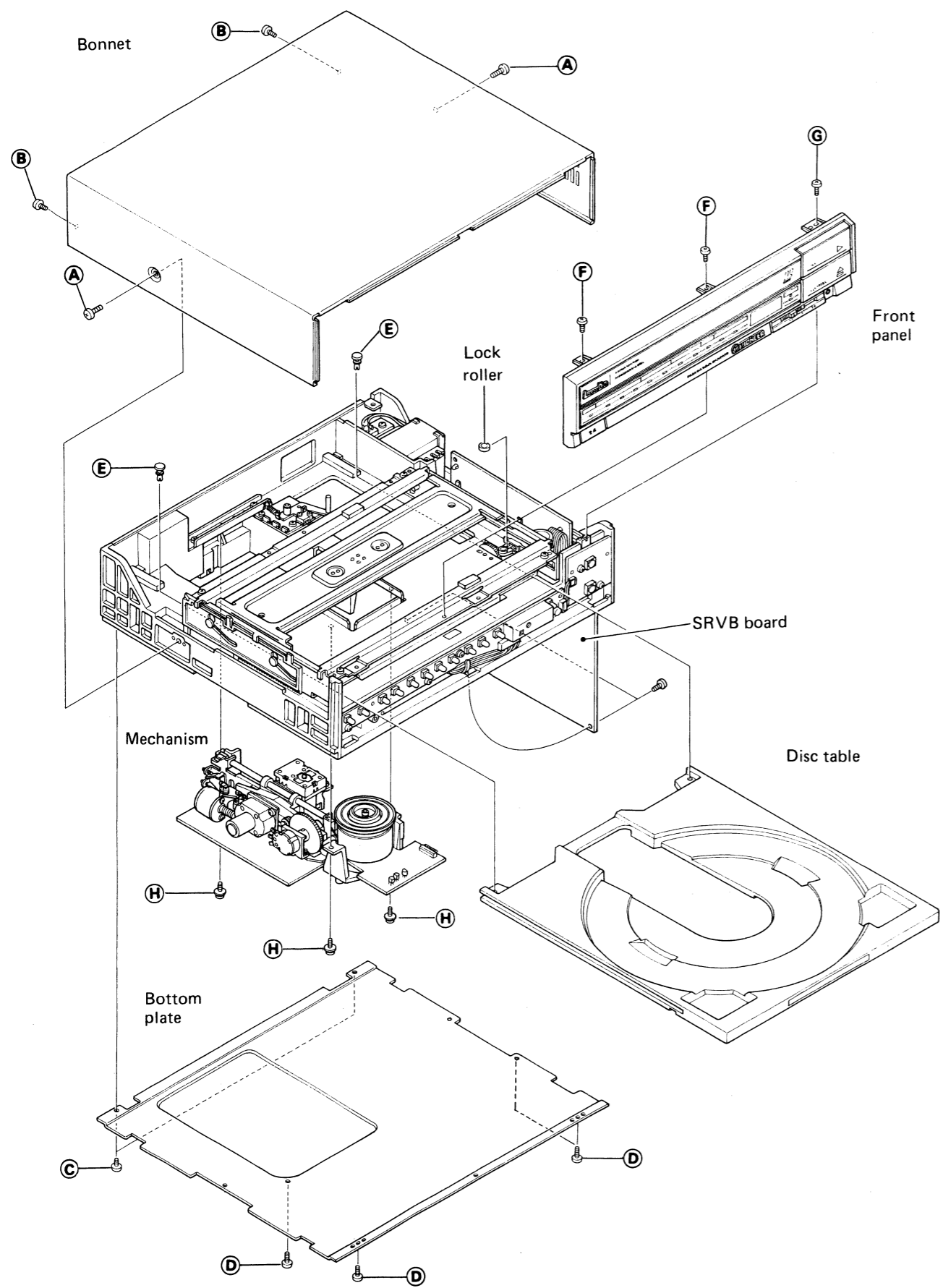
## [FRONT PANEL]

- Remove the bonnet and the bottom board.
- Remove 2 screws  
Ⓕ (BBZ30P050FMC).
- Remove a screw  
Ⓖ (BPZ30P080FZK).
- Disconnect the connector on the HEPB board, and the connector on the DRVB board connected to the DOOR switch.

## [MECHANISM]

- Remove the bottom board.
- Remove 2 screws which install SRVB board.
- Detach SRVB board and open it.
- Disconnect the connectors.  
4 connectors on PREB board and 1 on BLMB board.
- Remove 3 screws  
Ⓖ (BPZ30P080FZK).





# 2. SHEMATIC DIAGRAMS, PCB PATTERNS & PARTS LISTS

## 2-1. OVERALL CONNECTIONS

A

B

C

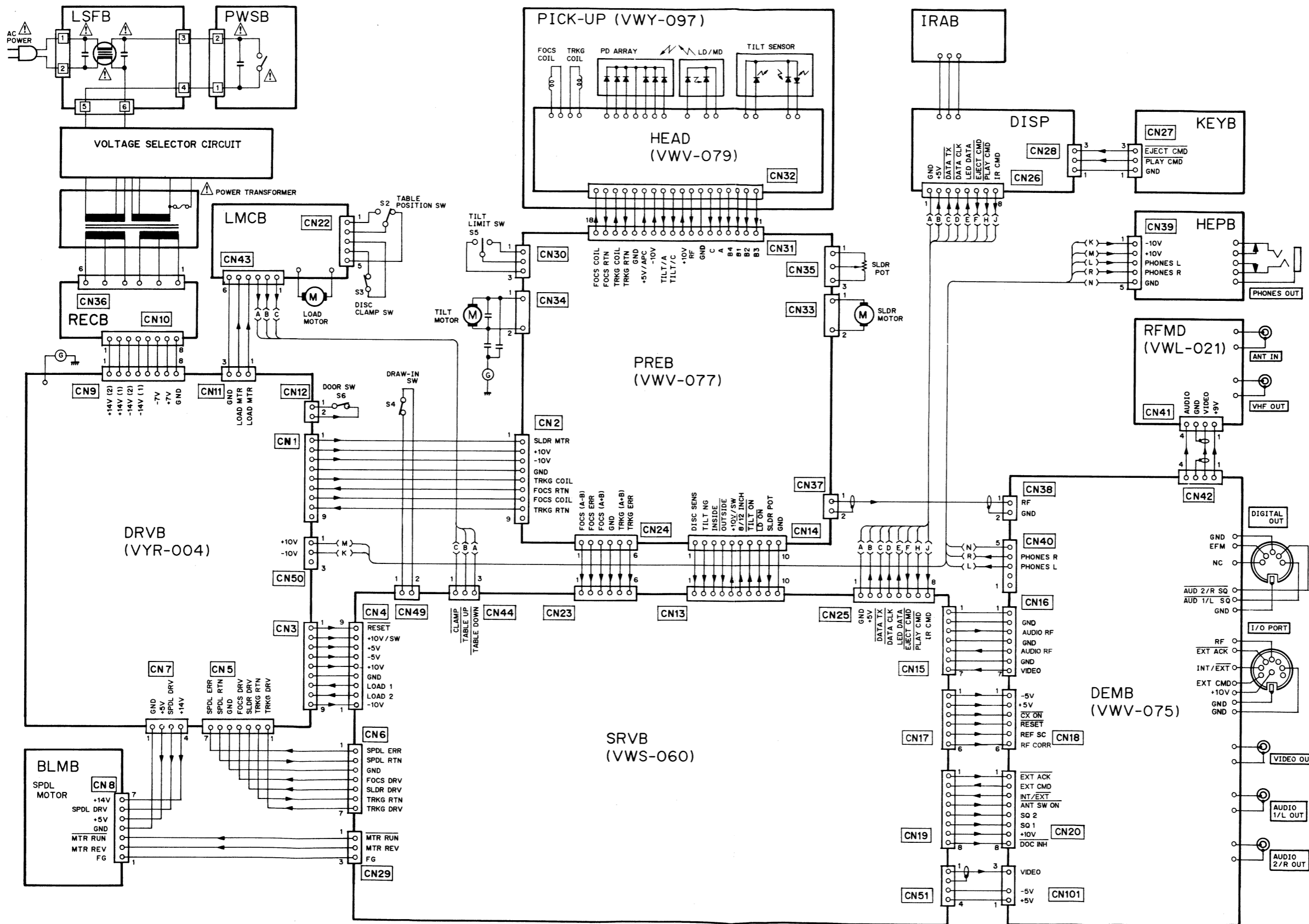
D

A

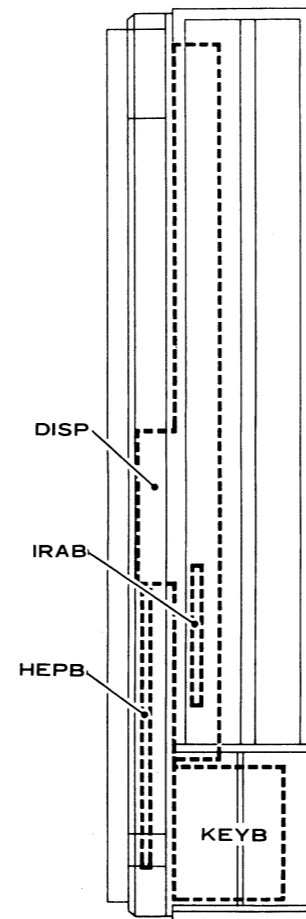
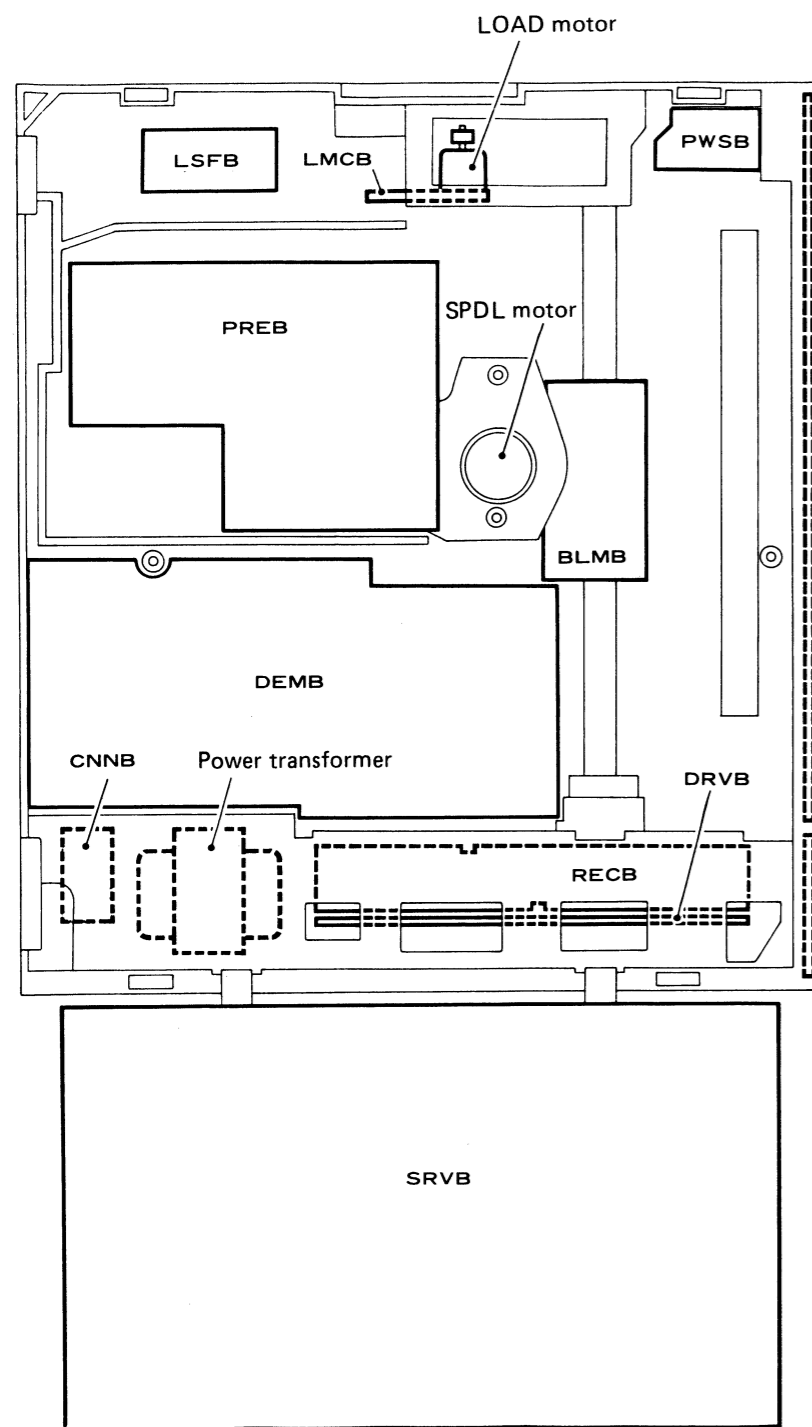
B

C

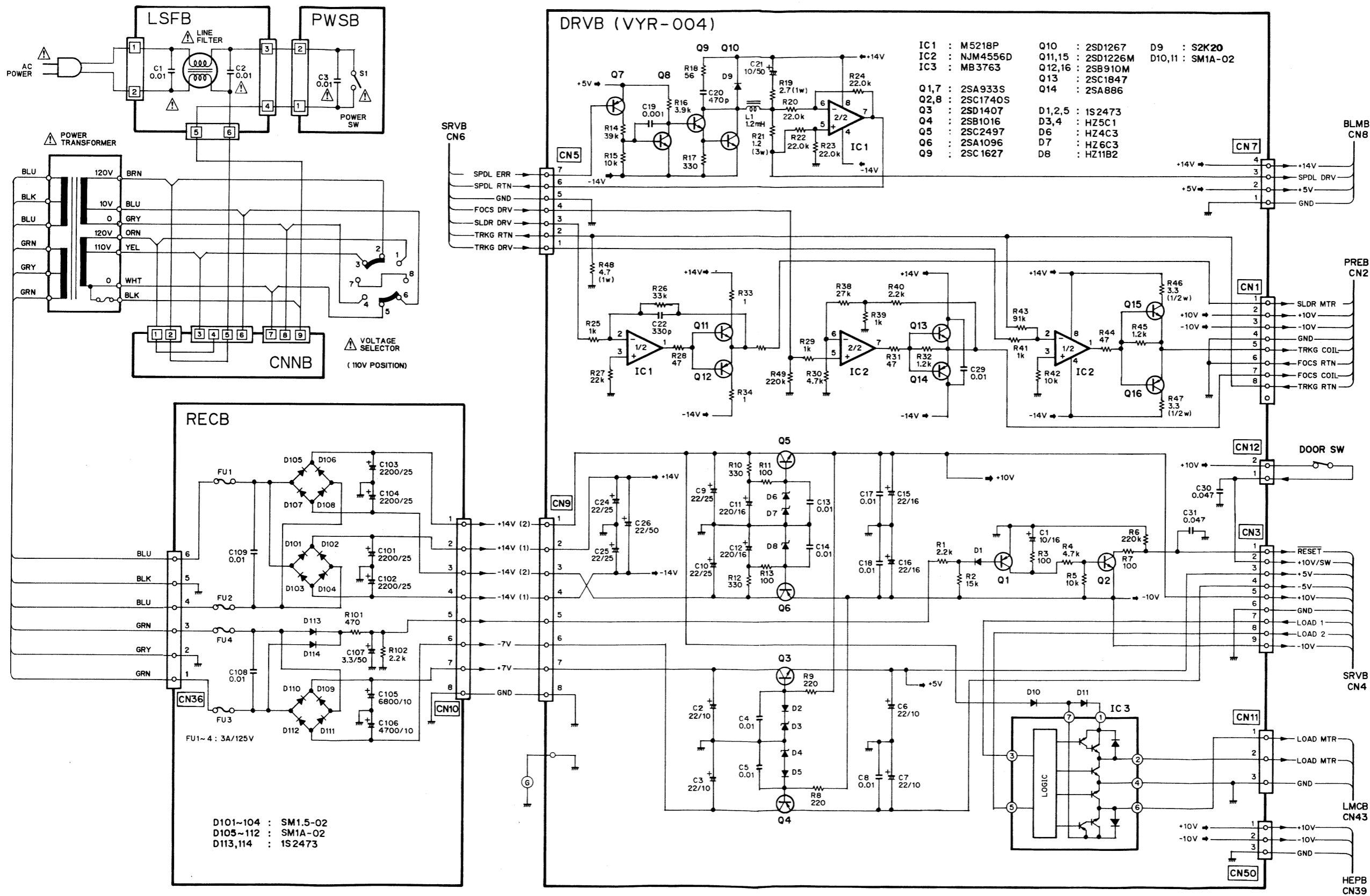
D



BOARDS LOCATION



2-2. POWER SUPPLY & SERVO UNIT DRIVERS CIRCUIT  
(LSFB, PWSB, CNNB, RECB & DRVB boards)



1

2

3

4

5

A

B

C

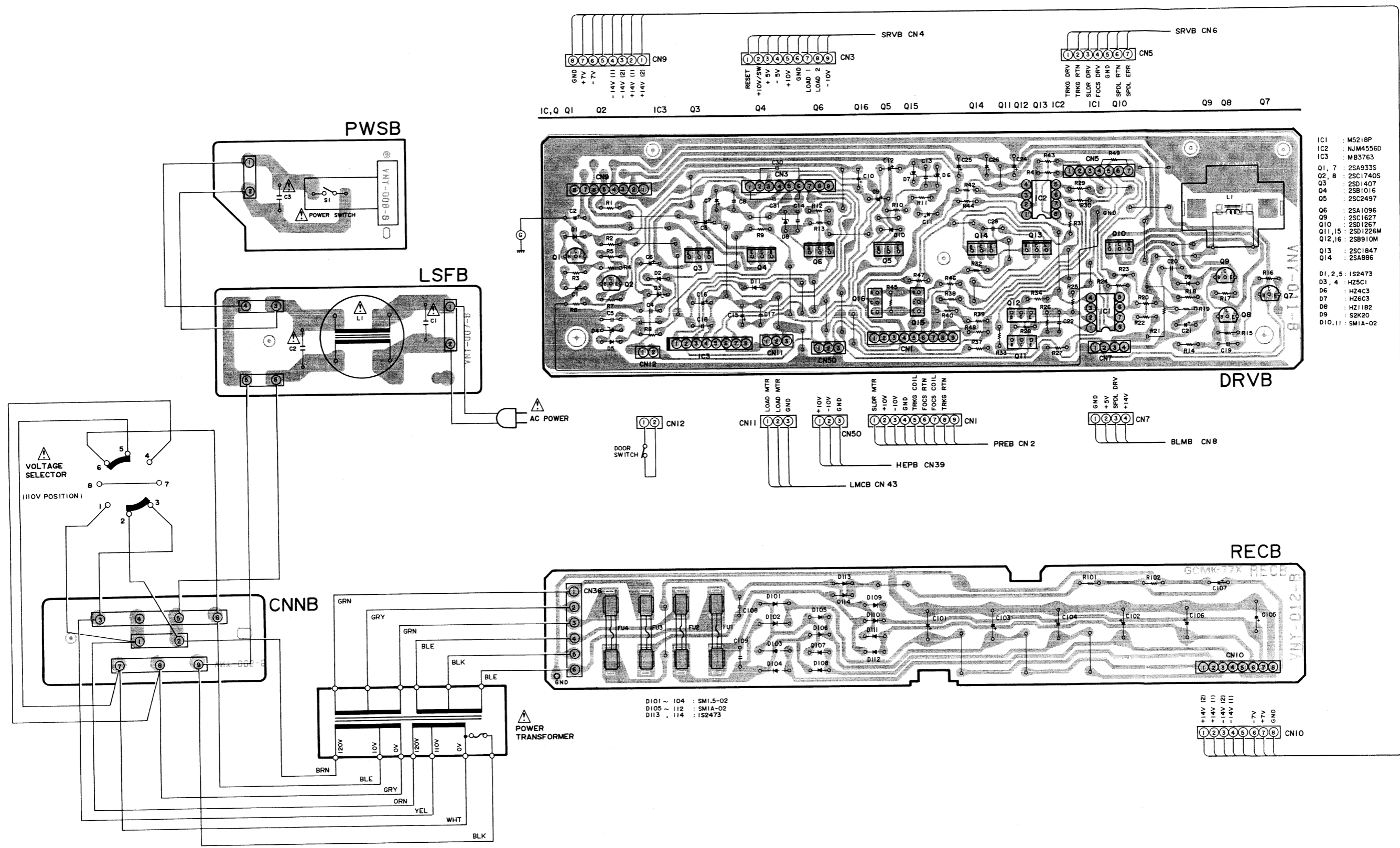
D

A

B

C

D



- IC1 : M5218P
- IC2 : NJM45560
- IC3 : MB3763
- Q1, 7 : 2SA933S
- Q2, 8 : 2SC1740S
- Q3 : 2SD1407
- Q4 : 2SB1016
- Q5 : 2SC2497
- Q6 : 2SA1096
- Q9 : 2SC1627
- Q10 : 2SD1267
- Q11, 15 : 2SD1226M
- Q12, 16 : 2SB910M
- Q13 : 2SC1847
- Q14 : 2SA886
- D1, 2, 5 : 1S2473
- D3, 4 : HZ5C1
- D6 : HZ4C3
- D7 : HZ6C3
- D8 : HZ11B2
- D9 : 5K20
- D10, 11 : SM1A-02

- D101 ~ 104 : SM1.5-02
- D105 ~ 112 : SM1A-02
- D113, 114 : 1S2473

1

2

3

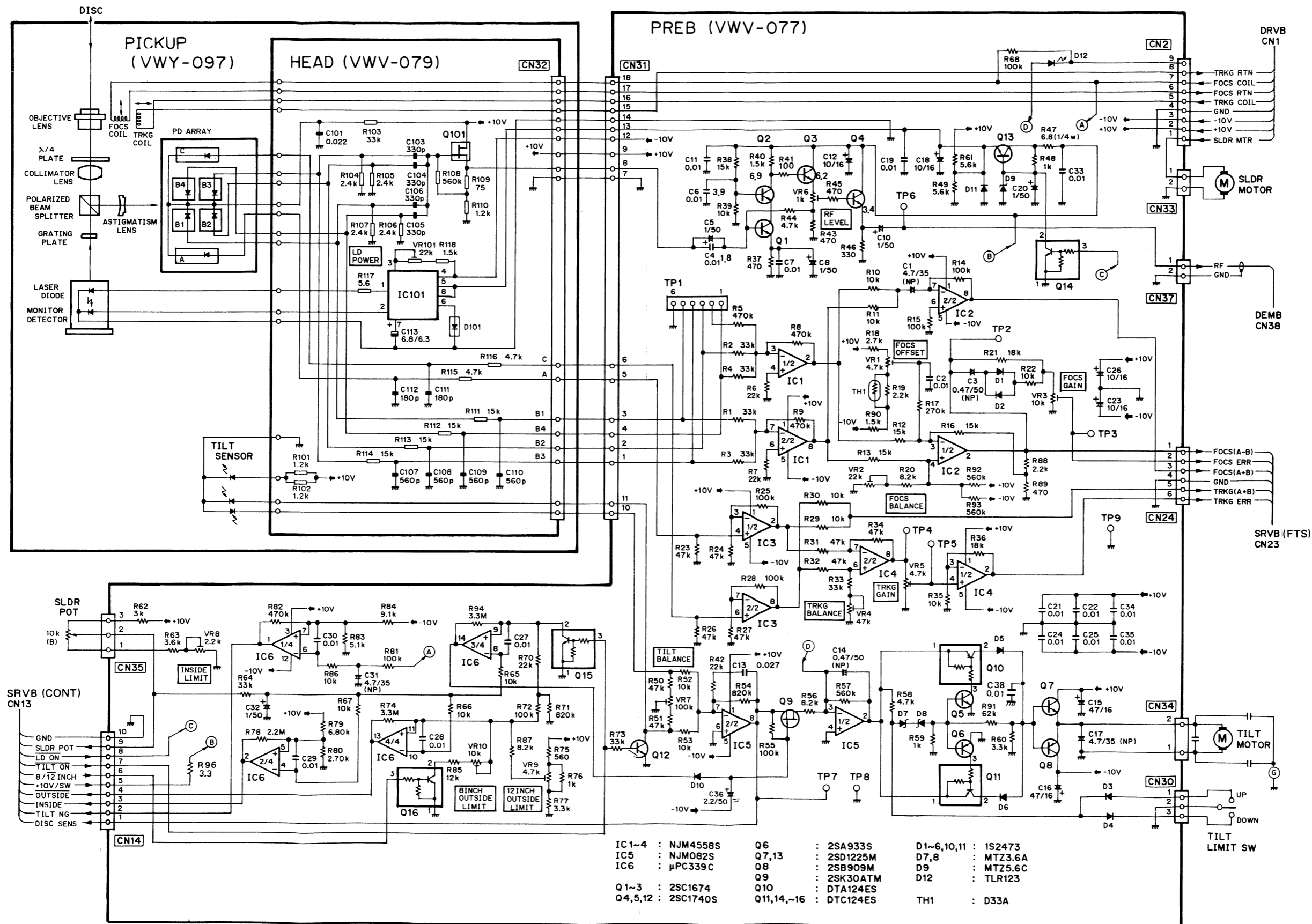
2-9

4

5

6

2.3. PICKUP CIRCUIT  
(HEAD & PREB boards)



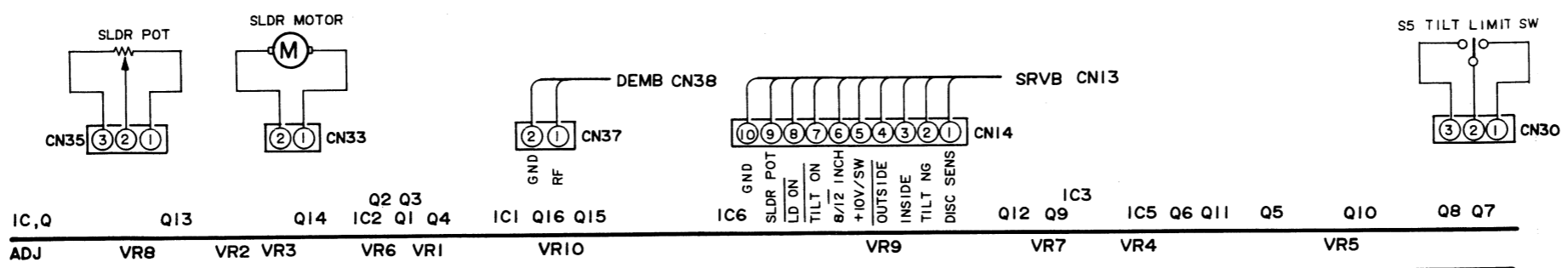
- |                    |                       |                     |
|--------------------|-----------------------|---------------------|
| IC1-4 : NJM4558S   | Q6 : 2SA933S          | D1-6,10,11 : 1S2473 |
| IC5 : NJM082S      | Q7,13 : 2SD1225M      | D7,8 : MTZ3.6A      |
| IC6 : μPC339C      | Q8 : 2SB909M          | D9 : MTZ5.6C        |
| Q1-3 : 2SC1674     | Q9 : 2SK30ATM         | D12 : TLR123        |
| Q4,5,12 : 2SC1740S | Q10 : DTA124ES        | TH1 : D33A          |
|                    | Q11,14,-16 : DTC124ES |                     |



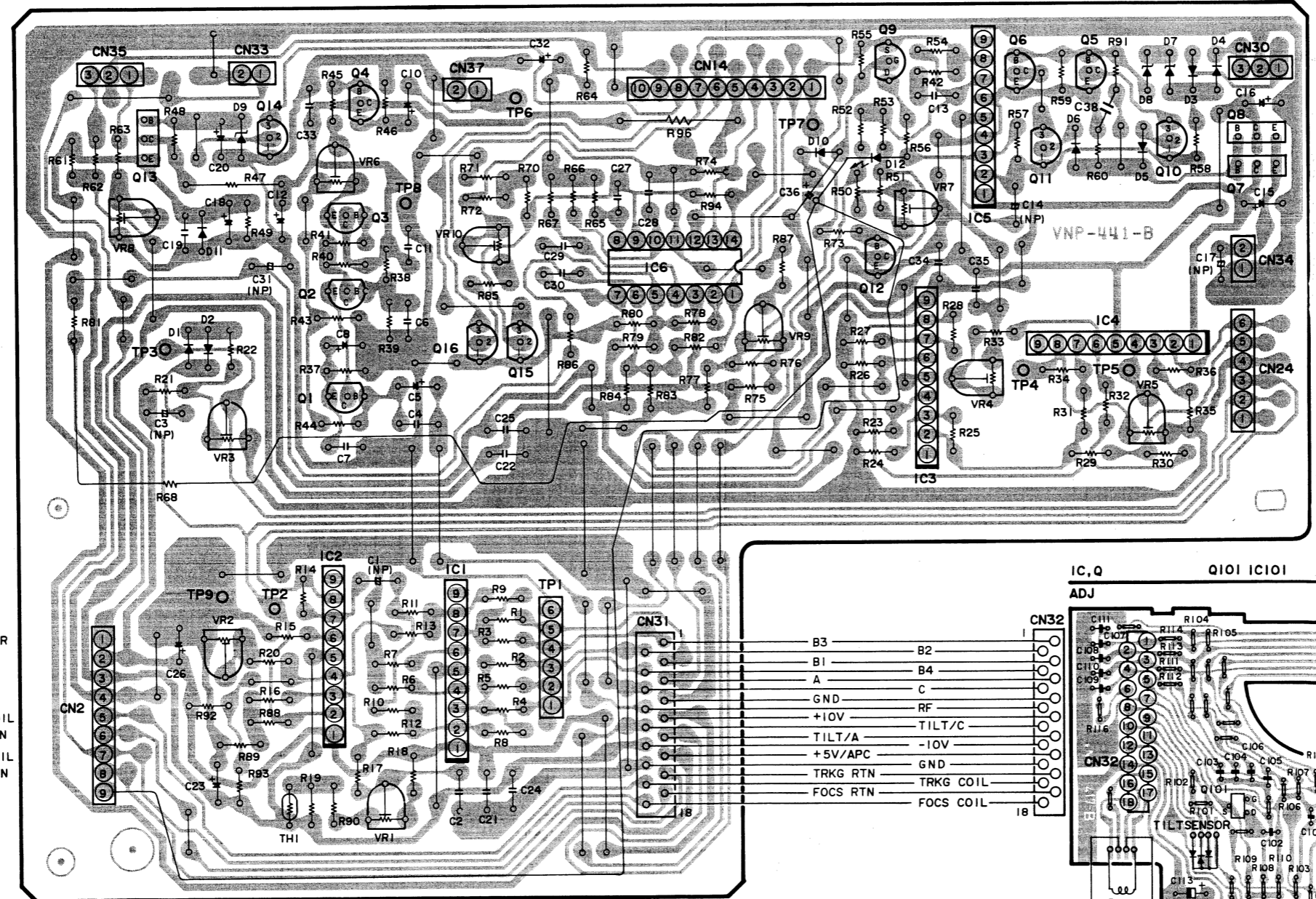
1 | 2 | 3 | 4 | 5

• INDEX

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CNNB	2-7	PREB	2-11
DEMB	2-31	PWSB	2-7
DISP	2-35	RECB	2-7
DRVB	2-7	RMTC	2-36
HEAD	2-11	SRVB (CONT)	2-15
HEPB	2-31	SRVB (FTS)	2-19
IRAB	2-35	SRVB (SPDL)	2-23
KEYB	2-35	SRVB (TBC)	2-27
LMCB	2-15		

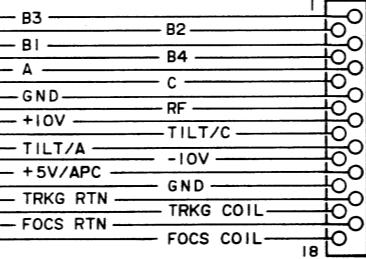
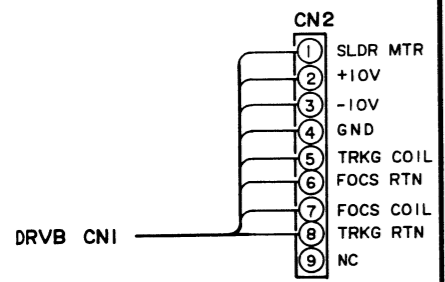
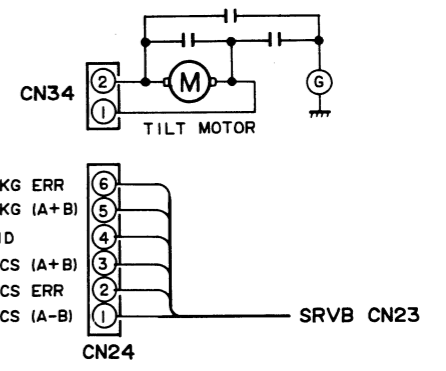


IC,Q Q13 Q14 IC2 Q1 Q4 IC1 Q16 Q15 IC6 SLDR POT LD ON TILT ON 8/12 INCH +10V/SW OUTSIDE INSIDE TILT NG DISC SENS Q12 Q9 IC3 IC5 Q6 Q11 Q5 Q10 Q8 Q7  
 ADJ VR8 VR2 VR3 VR6 VR1 VR10 VR9 VR7 VR4 VR5



PREB

HEAD



IC1 ~ 4 : NJM4558S IC5 : NJM082S IC6 : uPC339C  
 Q1 ~ 3 : 2SC1674 Q4, 5, 12 : 2SC1740S Q6 : 2SA933S Q7, 13 : 2SD1225M Q8 : 2SB909M Q9 : 2SK30ATM  
 Q10 : DTA124ES Q11, 14 ~ 16 : DTC124ES  
 D1 ~ 6, 10, 11 : 1S2473 D7, 8 : MTZ3.6A D9 : MTZ5.6C D12 : TLR123

1 | 2 | 3 | 4 | 5 | 6 | 2-14

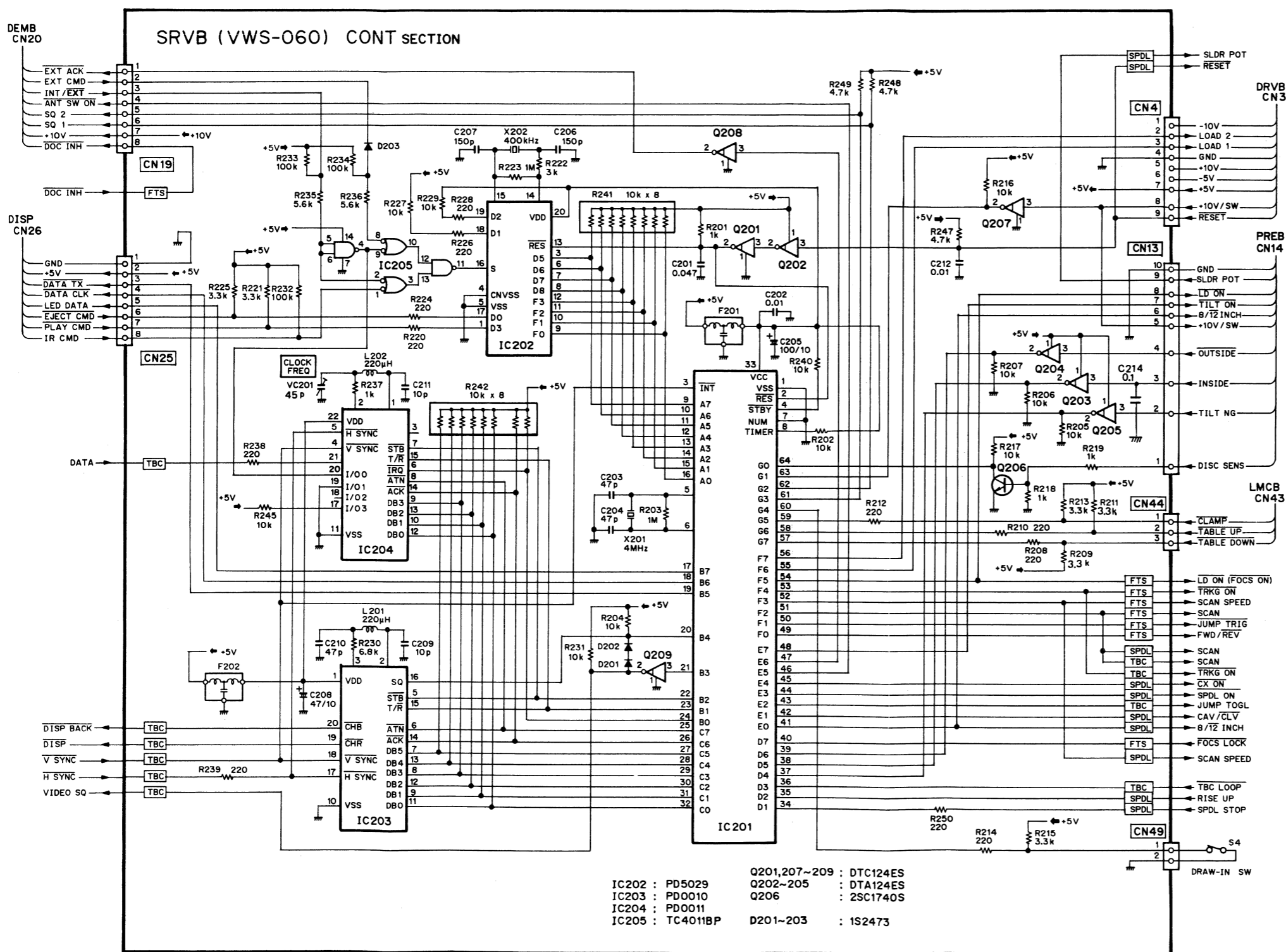
24. CONTROL CIRCUIT  
(CONT section of SRVB boards & LMCB boards)

• INDEX

BLMB	2-23	LSFB	2-7
CNNB	2-7	PREB	2-11
DEMB	2-31	PWSB	2-7
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DRVB	2-7	RMTC	2-36
HEAD	2-11	SRVB (CONT)	2-15
HEPB	2-31	SRVB (FTS)	2-19
IRAB	2-35	SRVB (SPDL)	2-23
KEYB	2-35	SRVB (TBC)	2-27
LMCB	2-15		

A  
B  
C  
D

A  
B  
C  
D



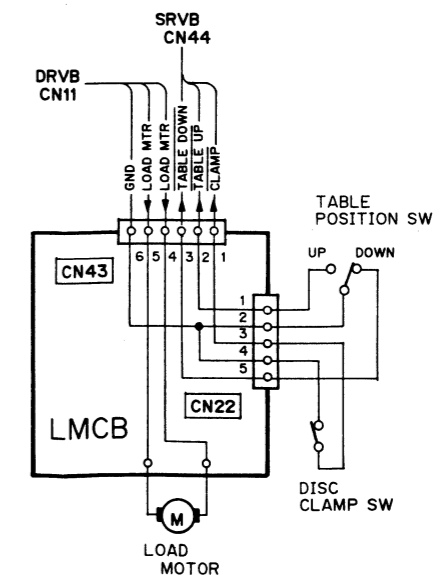
- IC202 : PD5029
- IC203 : PD0010
- IC204 : PD0011
- IC205 : TC4011BP
- Q201,207~209 : DTC124ES
- Q202~205 : DTA124ES
- Q206 : 2SC1740S
- D201~203 : 1S2473

IC201, MAIN CPU

Depending on the time of manufacture of the LD-707, the IC used for the main CPU (IC201 on the SRVB board) may be either a PD3049, PD3054 or PD3060.

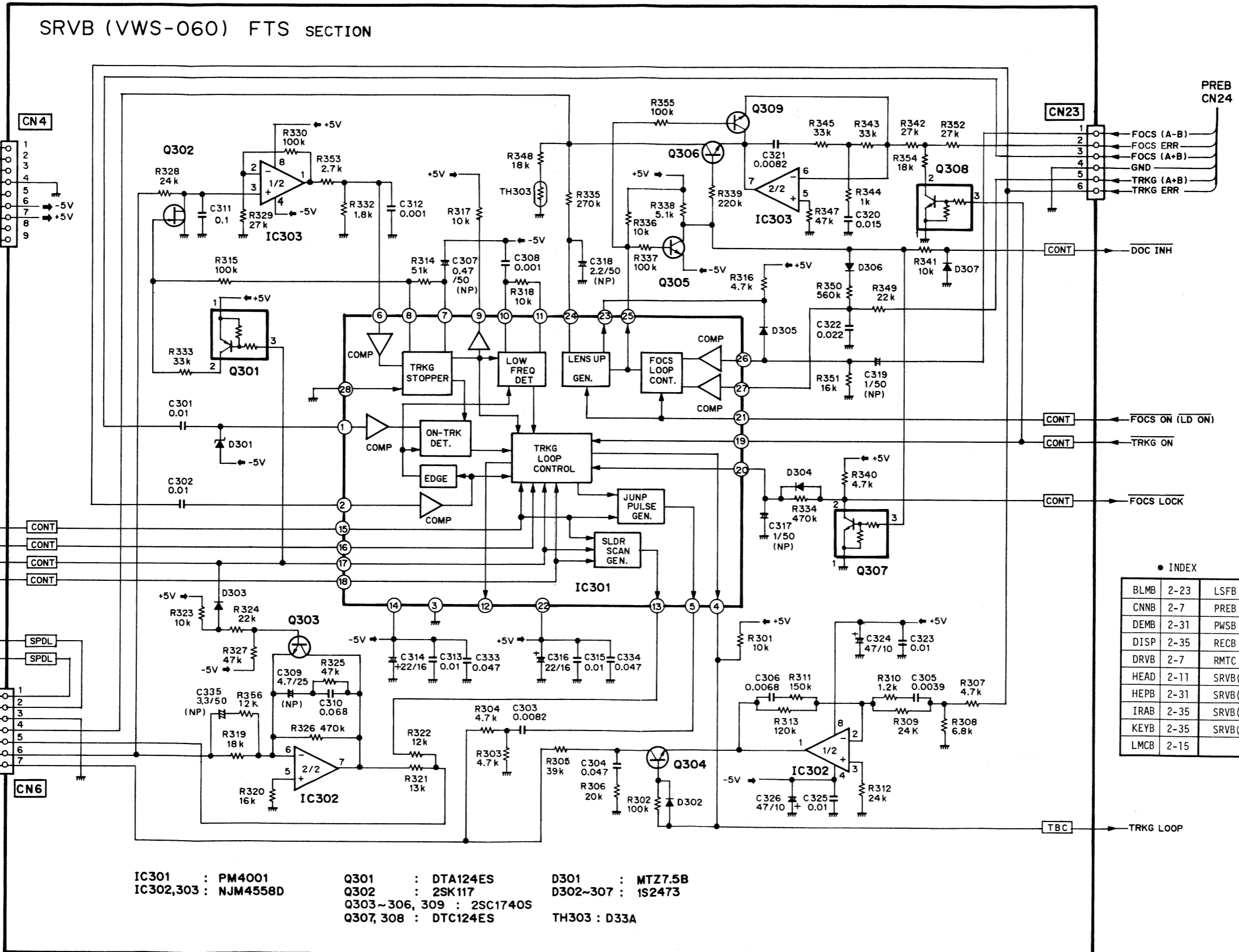
If the CPU is a PD3049, its functions are supplemented by the installation of an additional CDCR board, and if the CPU is a PD3054, its functions are supplemented by an INIB board.

The PD3049, PD3054, CDCR board and INIB board are not supplied as service parts, so when replacement is required, replace the main CPU with a PD3060, and remove the CDCR or INIB board, and the cables connecting it to the SRVB board.





2-5. SERVO CIRCUIT 1  
(FTS section of SEVB board)



IC301 : PM4001  
 IC302,303 : NJM4558D  
 Q301 : DTA124ES  
 Q302 : 2SK117  
 Q303~306, 309 : 2SC1740S  
 Q307, 308 : DTC124ES  
 D301 : MTZ7.5B  
 D302~307 : 1S2473  
 TH303 : D33A

• INDEX

BLMB	2-23	LSFB	2-7
CNNB	2-7	PREB	2-11
DEMB	2-31	PWSB	2-7
DISP	2-35	RECB	2-7
DRVB	2-7	RMTC	2-36
HEAD	2-11	SRVB(CONT)	2-15
HEPB	2-31	SRVB(FTS)	2-19
IRAB	2-35	SRVB(SPDL)	2-23
KEYB	2-35	SRVB(TBC)	2-27
LMCB	2-15		

A  
B  
C  
D

A  
B  
C  
D

1

2

3

4

5

A

A

B

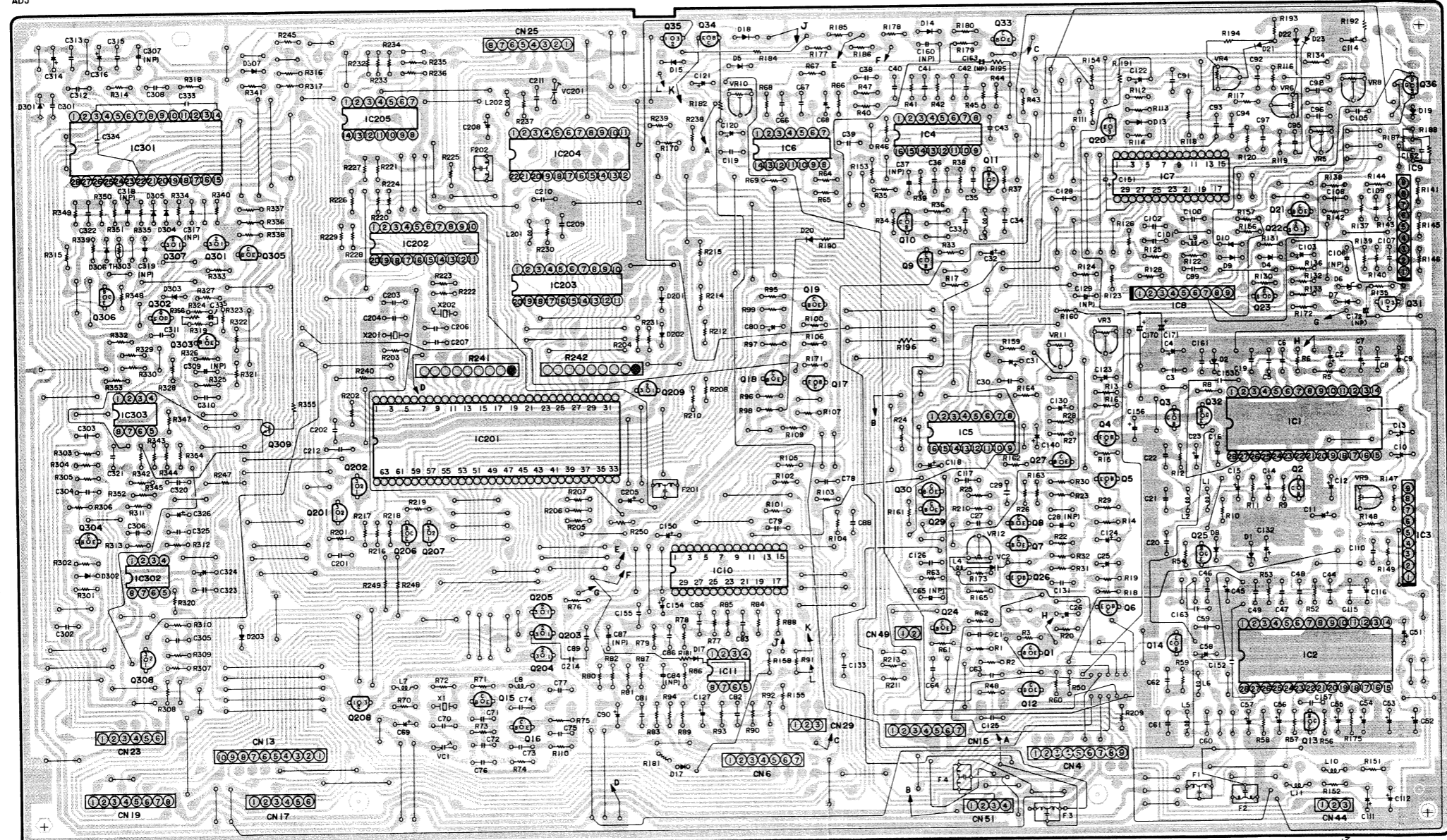
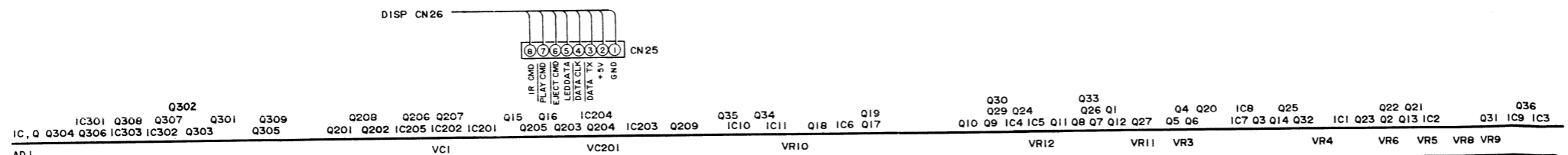
B

C

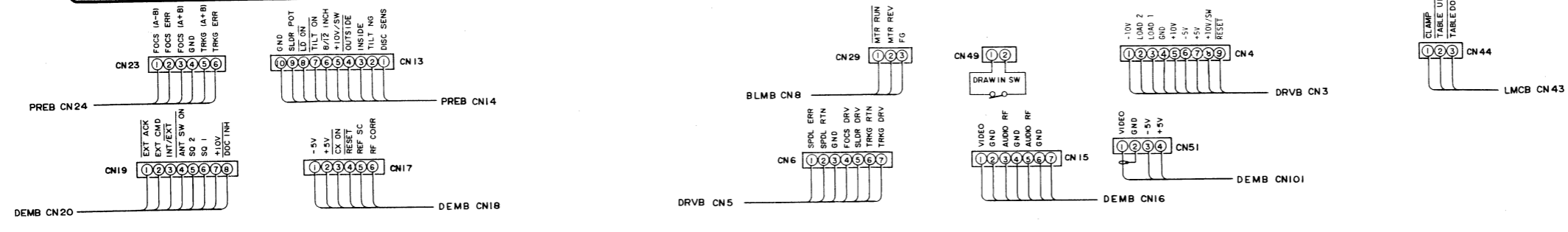
C

D

D



- SRVB
- IC1, 2 TL8614P
  - IC3 PA0017
  - IC4 PA0009
  - IC5 PA9003
  - IC6 PA0018
  - IC7 PA5009
  - IC8, 9, 302, 303 NJM4558S
  - IC10 PM2001
  - IC11 μPC4558C
  - IC202 PD5029
  - IC203 PD0010
  - IC204 PD0011
  - IC205 TC4011BP
  - IC301 PM4001
  - Q1, 3 ~ 16, 19, 24, 26, 29, 30, 32, 33, 306, 303 ~ 306, 309 : 2SC1740S
  - Q2, 17, 18, 21, 27, 34 : 2SA933S
  - Q20, 22, 31, 35, 201,
  - Q207 ~ 209, 307, 308 : DTC124ES
  - Q23, 36, 302 : 2SK117
  - Q25 : 2SC1627
  - Q202 ~ 205, 301 : DTA124ES
  - D1 : HZ12A3
  - D2 : HZ9B1
  - D4, 5, 7 ~ 10, 13 ~ 15, 17 ~ 23, D201 ~ 203, 302 ~ 307 : 1S2473
  - D6 : HZ3B3
  - D301 : MT27.5B



1

2

3

2-21

4

5

6

2-22

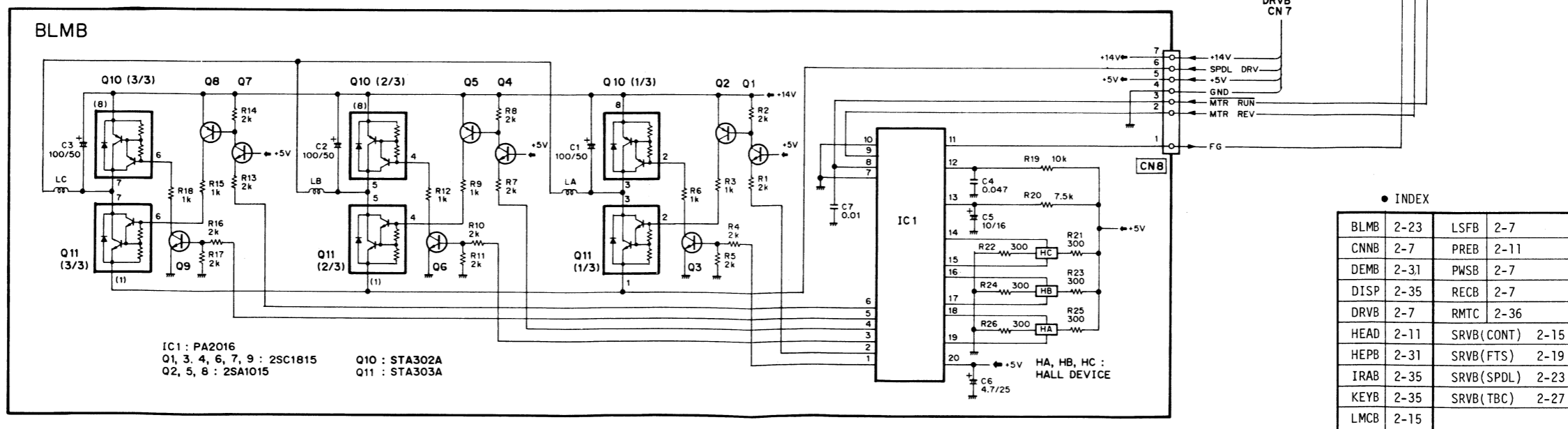
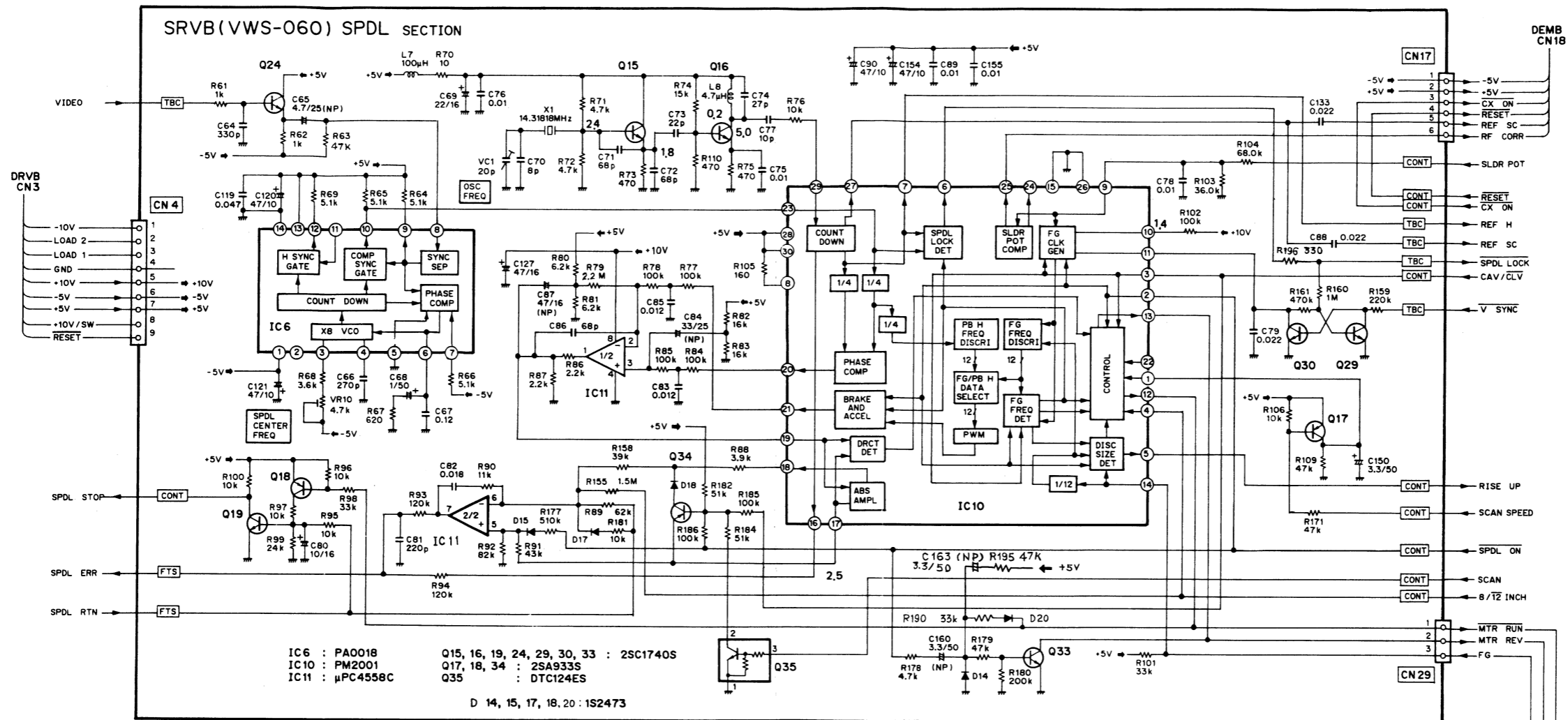
2-6. SERVO CIRCUIT 2  
(SPDL section of SRVB board & BLMB board)

A

B

C

D



• INDEX

BLMB	2-23	LSFB	2-7
CNNB	2-7	PREB	2-11
DEMB	2-31	PWSB	2-7
DISP	2-35	RECB	2-7
DRVB	2-7	RMTC	2-36
HEAD	2-11	SRVB(CONT)	2-15
HEPB	2-31	SRVB(FTS)	2-19
IRAB	2-35	SRVB(SPDL)	2-23
KEYB	2-35	SRVB(TBC)	2-27
LMCB	2-15		

1

2

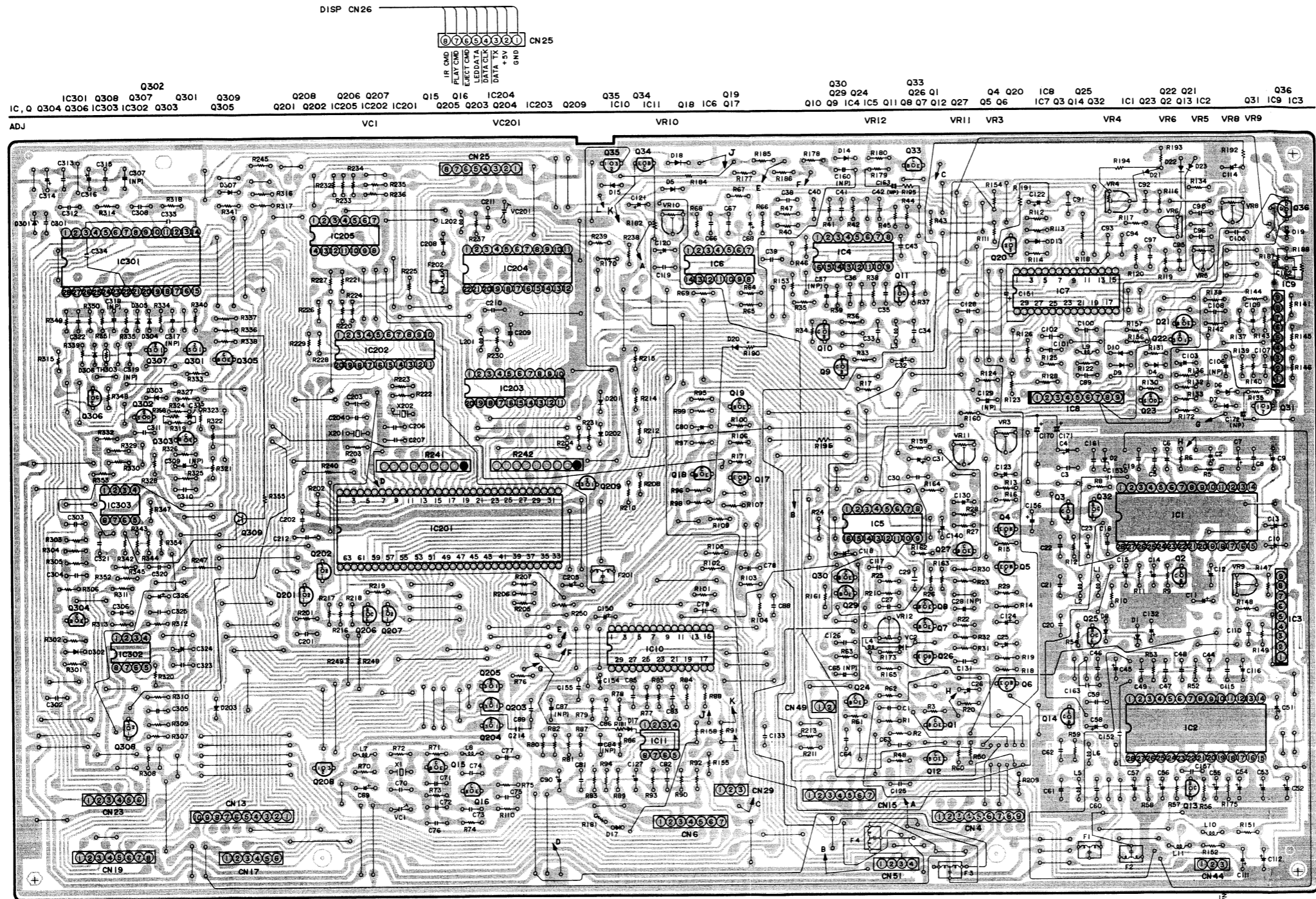
3

4

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A

A



SRVB

B

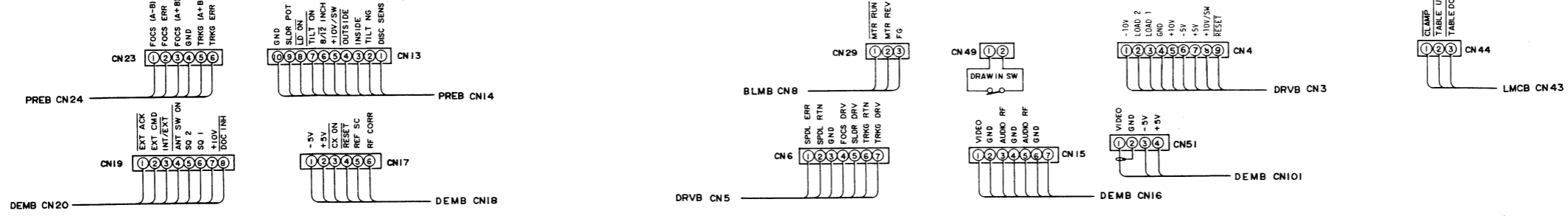
B

C

C

D

D



1

2

3

2-25

4

5

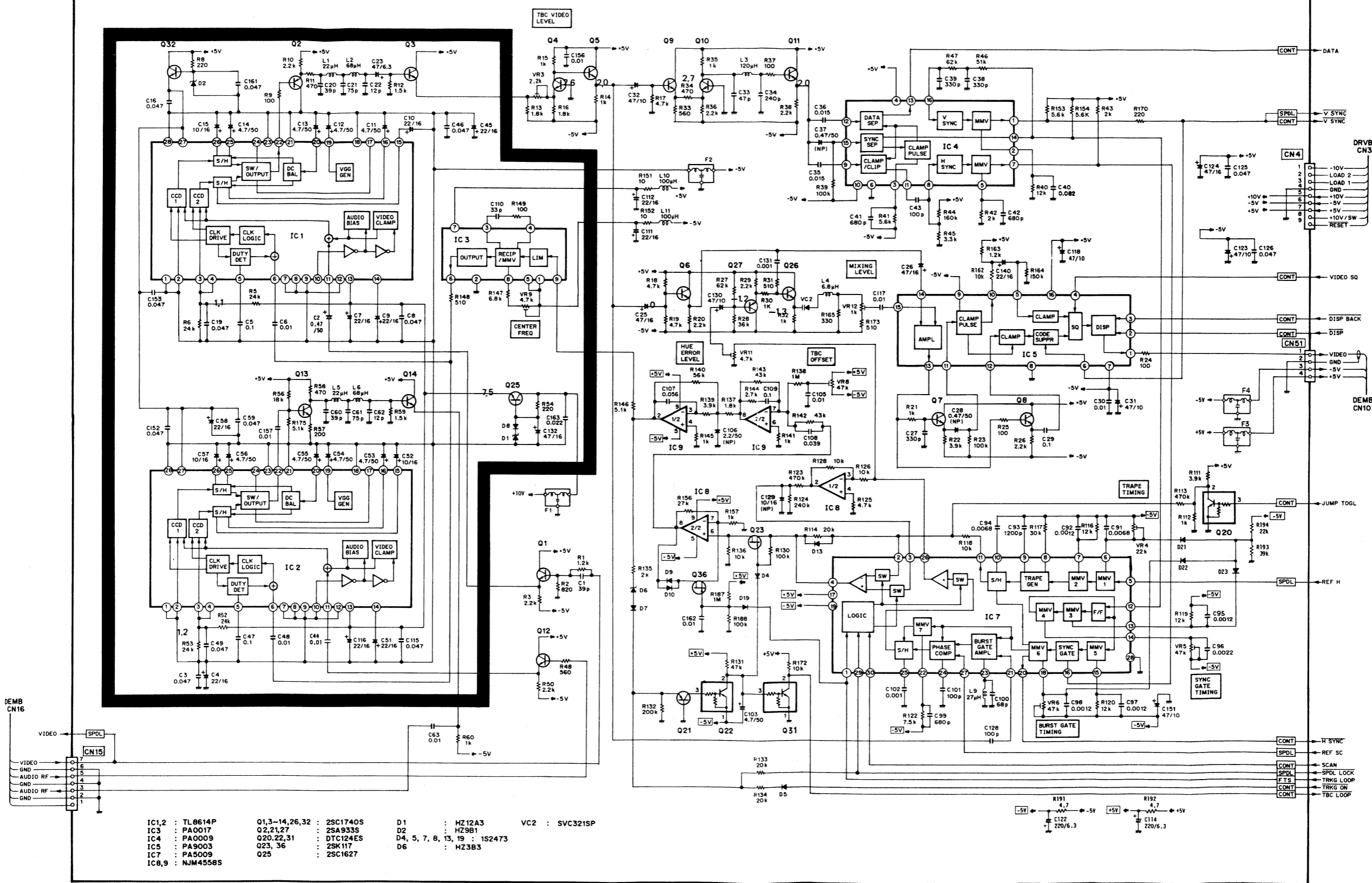
6

2-7. TIME BASE ERROR CORRECTION CIRCUIT  
(TBC section of SRVB board)

A  
B  
C  
D

A  
B  
C  
D

SRVB (VWS-060) TBC SECTION



- |                  |                          |                              |                |
|------------------|--------------------------|------------------------------|----------------|
| IC1,2 : TL8614P  | Q1,3-14,26,32 : 2SC1740S | D1 : HZ12A3                  | VC2 : SVC321SP |
| IC3 : PA0017     | Q2,21,27 : 2SA933S       | D2 : HZ9B1                   |                |
| IC4 : PA0009     | Q20,22,31 : DTC124ES     | D4, 5, 7, 8, 13, 19 : 1S2473 |                |
| IC5 : PA9003     | Q23, 36 : 2SK117         | D6 : HZ3B3                   |                |
| IC7 : PA5009     | Q25 : 2SK1627            |                              |                |
| IC8,9 : NJM4558S |                          |                              |                |



1

2

3

4

5

A

A

B

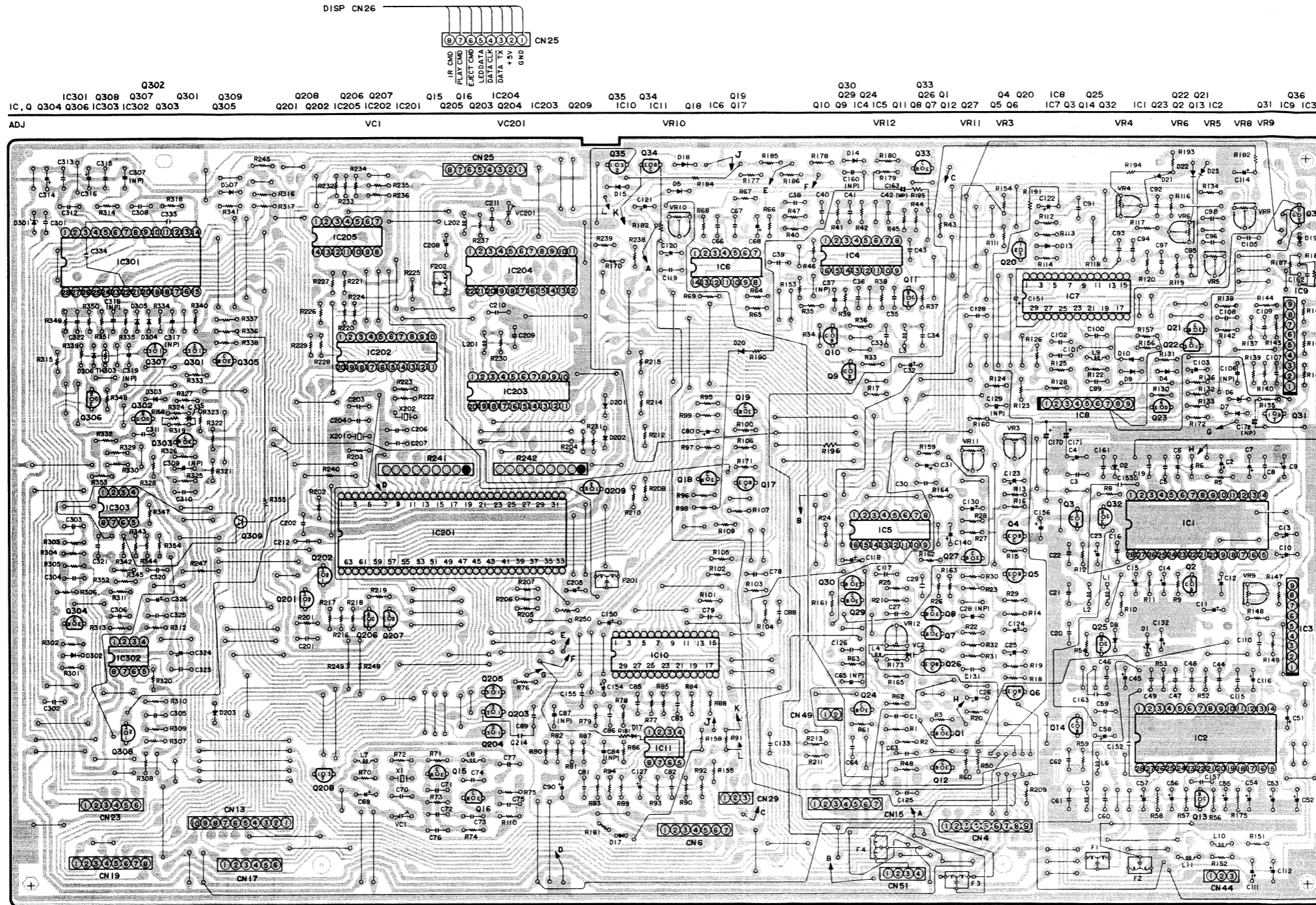
B

C

C

D

D



1

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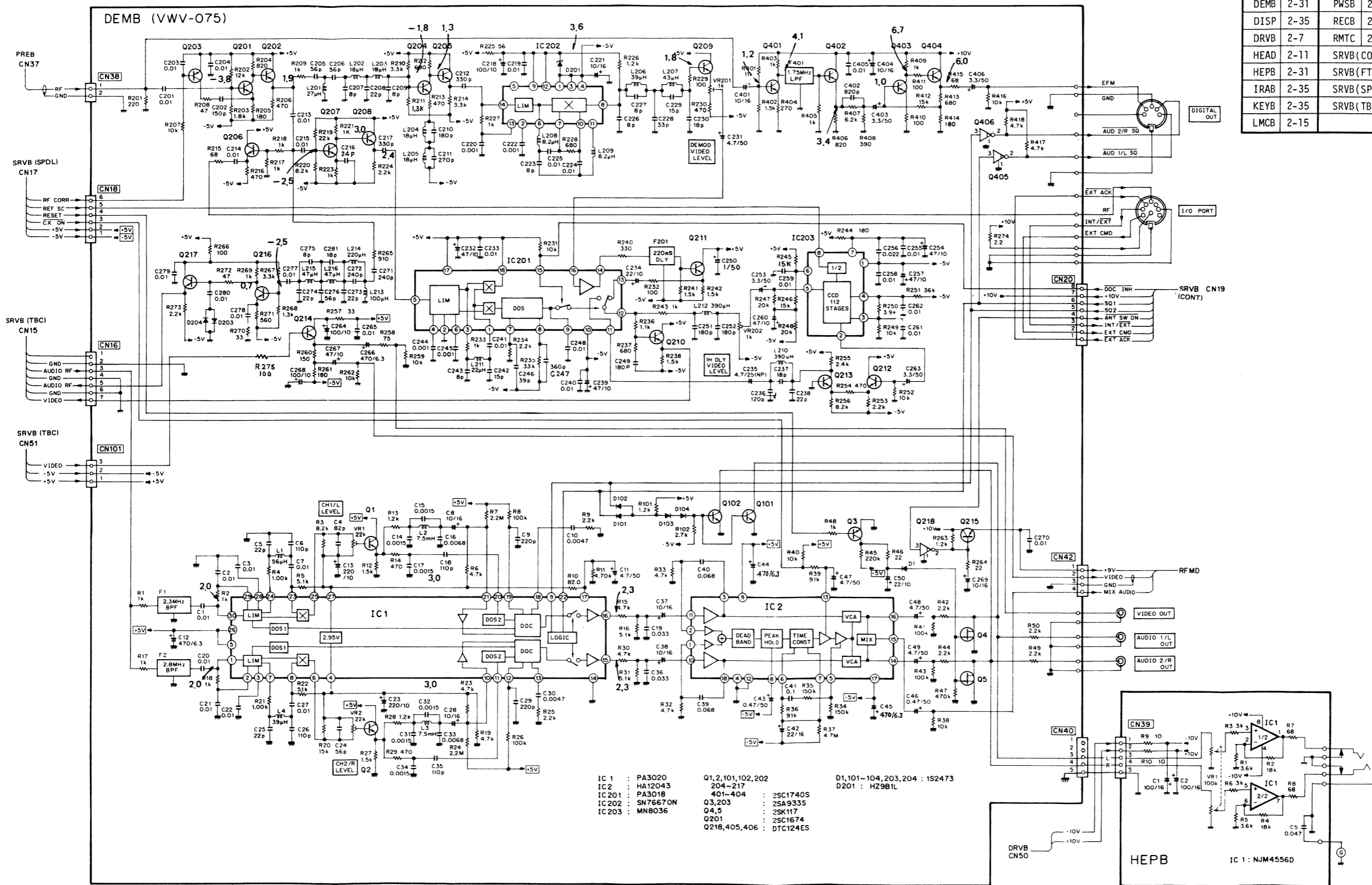
5

6

2-8. VIDEO & AUDIO DEMODUATION CIRCUIT  
(DEMB, HEPB board)

• INDEX

BLMB	2-23	LSFB	2-7
CNNB	2-7	PREB	2-11
DEMB	2-31	PWSB	2-7
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HEAD	2-11	SRVB(CONT)	2-15
HEPB	2-31	SRVB(FTS)	2-19
IRAB	2-35	SRVB(SPDL)	2-23
KEYB	2-35	SRVB(TBC)	2-27
LMCB	2-15		



A

B

C

D

A

B

C

D

1

2

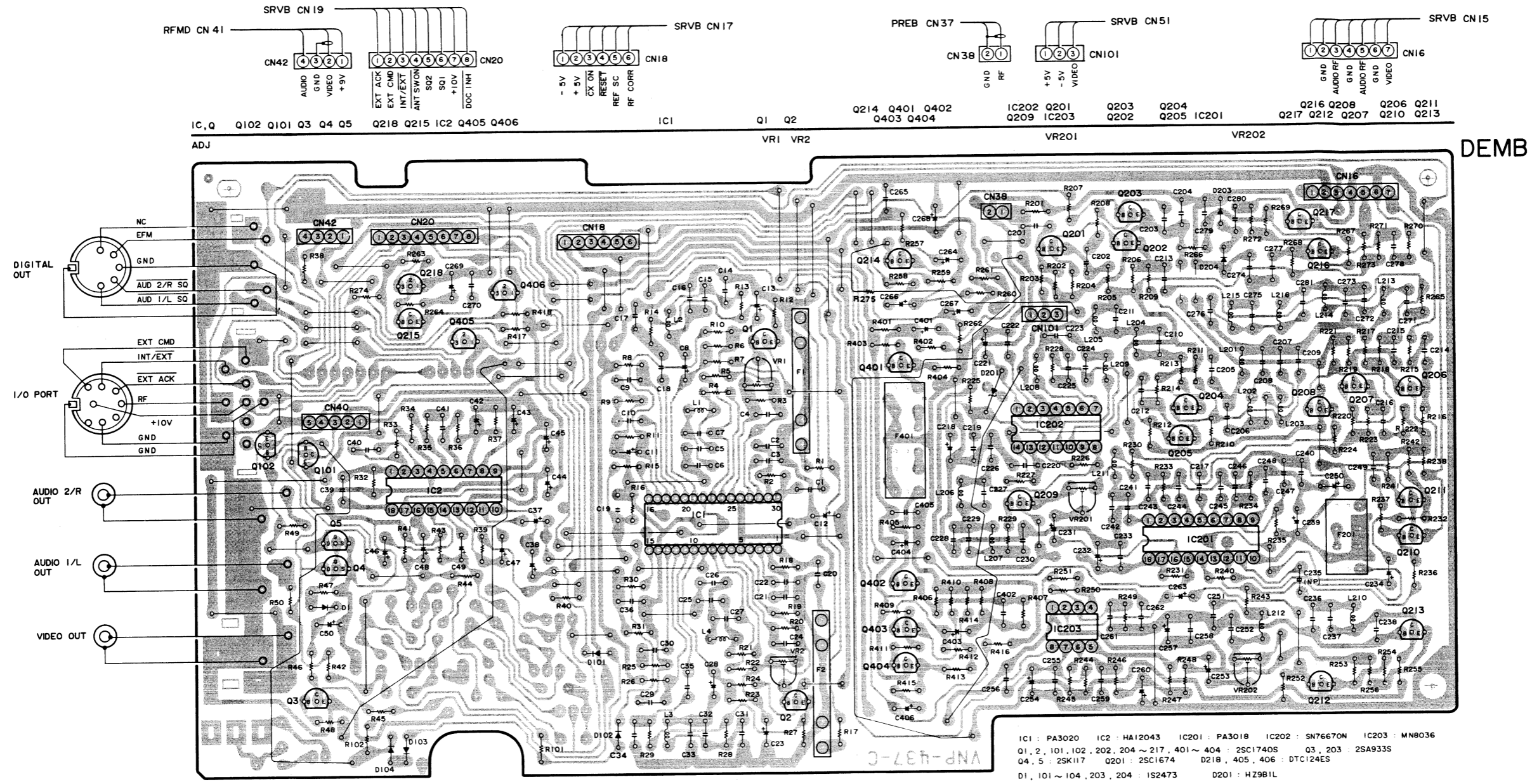
3

4

5

A

A



B

B

C

C

D

D

1

2

3

2-33

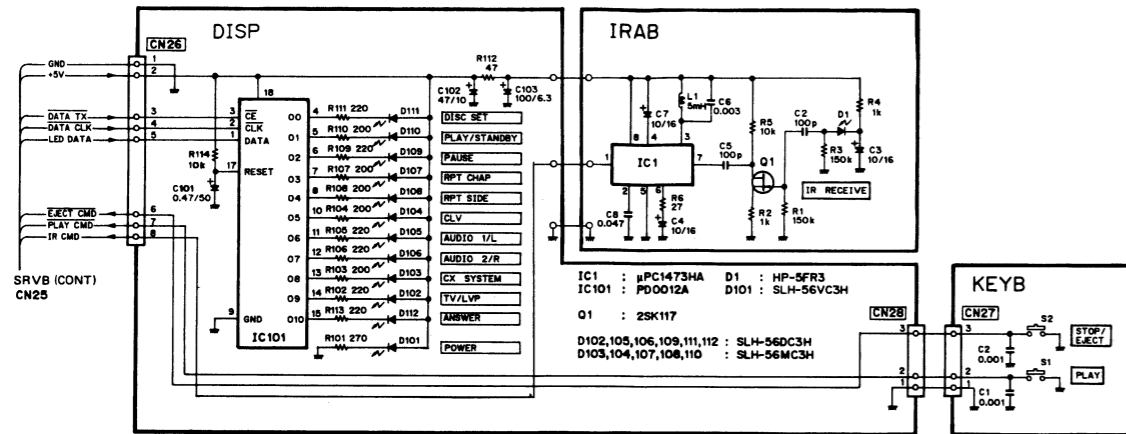
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5

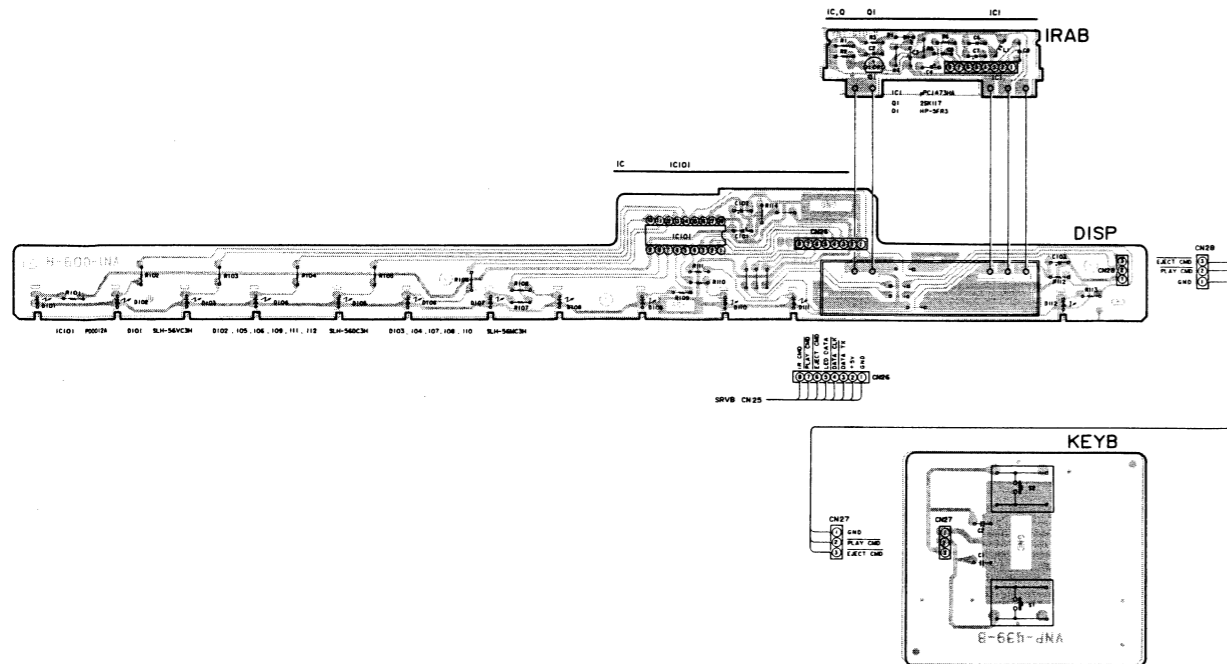
6

2-34

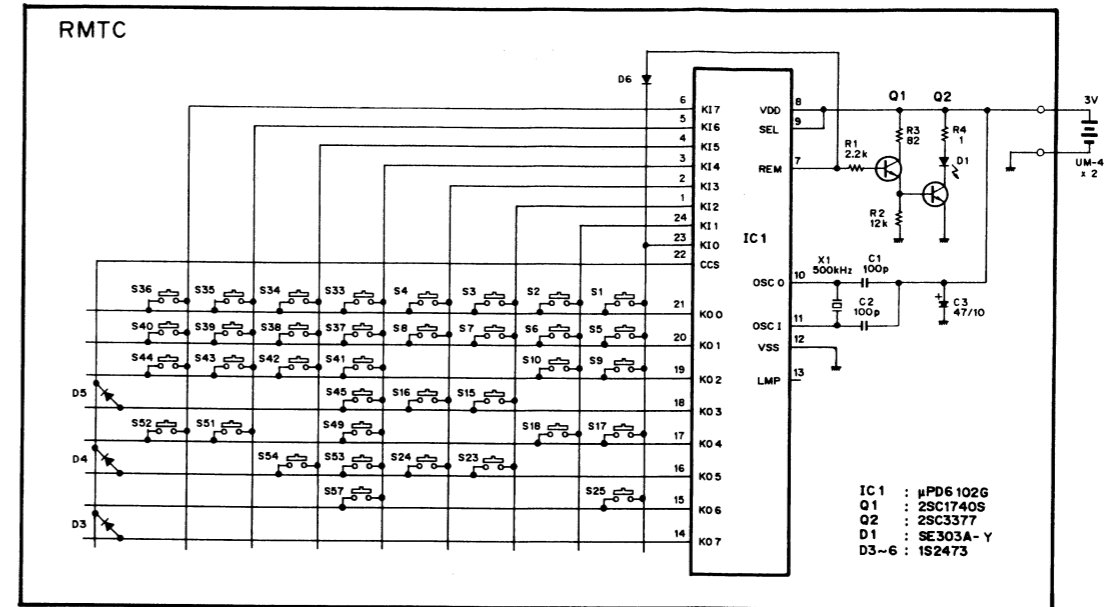
2-9. OPERATION & DISPLAY CIRCUIT  
(DISP, IRAB & KEYB boards)



D101	POWER	D106	AUDIO 2/R	D111	DISC SET
D102	TV/LVP	D107	REPEAT CHAPTER	D112	ANSWER
D103	CX SYSTEM	D108	REPEAT SIDE	S1	PLAY
D104	CLV	D109	PAUSE	S2	EJECT
D105	AUDIO 1/L	D110	PLAY/STANDBY		

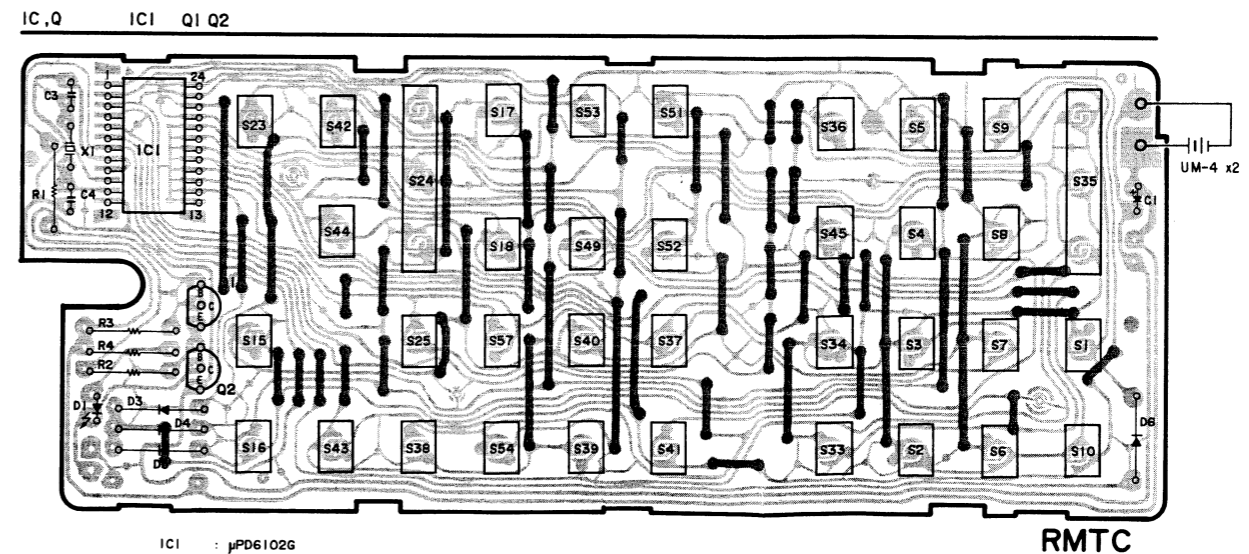


2-10. REMOTE CONTROL UNIT CIRCUIT  
(RMTC board)



S1	0	S6	5	S15	CX	S24	PLAY ▶	S36	DISPLAY
S2	1	S7	6	S16	TV/LVP	S25	PAUSE ■■	S37	REPEAT B
S3	2	S8	7	S17	SCAN ▶	S33	CHAPTER	S38	CLEAR
S4	3	S9	8	S18	SCAN ◀	S34	FRAME/TIME	S39	SPEED -
S5	4	S10	9	S23	EJECT	S35	SEARCH	S40	SPEED +

S41	REPEAT A	S49	STILL/STEP ◀▶	S57	MULTISPEED ▶
S42	AUDIO 2/R	S51	CHAPTER SKIP ▶▶		
S43	STEREO	S52	CHAPTER SKIP ◀◀		
S44	AUDIO 1/L	S53	STILL/STEP ▶▶		
S45	PROGRAM	S54	MULTISPEED ◀		



IC1 : µPD6102G  
Q1 : 2SC1740S  
Q2 : 2SC3377  
D1 : SE303A-Y  
D3~6 : 1S2473

## PARTS LISTS OF BOARDS

## NOTES:

- Parts without part number cannot be supplied.
- The  $\Delta$  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

## LSFB Parts list 1

(MK)( PART No. )(IT)( REF Nos. &amp; DESCRIPTION )

$\Delta$ VCG-018	C	1, 2
$\Delta$ (VCG-033)		
$\Delta$ VTL-262		Line filter
$\Delta$ (VTL-263)		
$\Delta$ (VTL-264)		

## PWSB Parts list 1

(MK)( PART No. )(IT)( REF Nos. &amp; DESCRIPTION )

$\Delta$ VCG-018	C	3
$\Delta$ (VCG-033)		
$\Delta$ VSA-010		Power switch

## RECB Parts list 1

(MK)( PART No. )(IT)( REF Nos. &amp; DESCRIPTION )

SM1.5-02	D	101-104
SM1A-02	D	105-112
1S2473	D	113,114
RD1/6PS000J	R	101,102
CEA222M25	C	101-104
CEA682M10	C	105
CEA472M10	C	106
CEA3R3M50	C	107
CKDYF103Z50	C	108,109
VKR-002		Fuse holder

## DRVB ( VYR-004 ) Parts list 1

(MK)( PART No. )(IT)( REF Nos. &amp; DESCRIPTION )

MS218P	IC	1
NJM4556D	IC	2
MB3763	IC	3
2SA933S	Q	1, 7
(2SA1015)		
2SC1740S	Q	2, 8
(2SC1815)		
2SD1407	Q	3
2SB1016	Q	4
2SC2497	Q	5
2SA1096	Q	6
2SC1627	Q	9
2SD1267	Q	10
2SD1226M	Q	11, 15
2SB910M	Q	12, 16
2SC1847	Q	13
2SA886	Q	14
1S2473	D	1, 2, 5
HZ5C1	D	3, 4
HZ4C3	D	6
HZ6C3	D	7
HZ11B2	D	8
S2K20	D	9
SM1A-02	D	10, 11
RD1/6PS000J	R	1- 18, 25- 34, 38- 45, 49
VCN-100	R	19 2.7/1W
RN1/6PQ2202F	R	20, 22- 24
VCN-092	R	21 1.2/3W
RD1/2PMF220J	R	37
RD1/2VM3R3J	R	46, 47
VCN-099	R	48 4.7/1W
CEA100M16	C	1
CEA220M10	C	2, 3, 6, 7
CKDYF103Z50	C	4, 5, 8, 13, 14, 17, 18, 29
CEA220M25	C	9, 10, 24, 25
CEA221M16	C	11, 12
CEA220M16	C	15, 16
CKDYB102K50	C	19
CCDSL471J50	C	20
CEA100M50	C	21
CCDSL331J50	C	22
CEA220M50	C	26
CKDYX473M25	C	30, 31
CEA470M50	C	32
VTT-070	L	1 Choking coil
VNE-704		Heat sink

## NOTES:

- Parts without part number cannot be supplied.
- The  $\Delta$  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

## PREB ( VWV-077 ) Parts list 1

(MK)( PART No. )(IT)( REF Nos. &amp; DESCRIPTION )

NJM4558S	IC	1- 4
NJM082S	IC	5
JPC339C	IC	6
2SC1674	Q	1- 3
2SC1740S	Q	4, 5, 12
(2SC1815)		
2SA933S	Q	6
(2SA1015)		
2SD1225M	Q	7, 13
2SB909M	Q	8
2SK30ATM	Q	9
DTA124ES	Q	10
DTC124ES	Q	11, 14- 16
1S2473	D	1- 6, 10, 11, 13
MTZ3.6A	D	7, 8
MTZ5.6C	D	9
TLR123	D	12
HZ5C2	D	14
RD1/6PS000J	R	1- 46, 48- 68, 70- 78, 81- 95
RD1/4PM000J	R	47, 96
RN1/6PQ0000F	R	79, 80
VRTB6VS472	VR	1, 5, 9
VRTB6VS223	VR	2
VRTB6VS103	VR	3, 10
VRTB6VS473	VR	4
VRTB6VS102	VR	6
VRTB6VS104	VR	7
VRTB6VS222	VR	8
CEANP4R7M35	C	1, 17, 31
CKDYF103Z50	C	2, 4, 6, 7, 11, 19, 21, 22, 24, 25, 27- 30, 33- 35, 38
CEANPR47M50	C	3, 14
CELA010M50	C	5, 8, 10, 20, 32
CELA100M16	C	12, 18, 23, 26
CQMA273J50	C	13
CELA470M16	C	15, 16
CEA2R2M50	C	36
CKDYX473M25	C	37
D33A	TH	1
VKN-162		18P connector

NOTES:

- Parts without part number cannot be supplied.
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SRVB ( VWS-060 ) Parts list 1

(MK)	(PART No.)	(IT)	(REF Nos. & DESCRIPTION)
	TL8614P	IC	1, 2
	PA0017	IC	3
	PA0009	IC	4
	PA9003	IC	5
	PA0018	IC	6
	PA5009	IC	7
	NJM4558S	IC	8, 9
	PM2001	IC	10
	JPC4558C	IC	11
	See note.	IC	201
	PD5029	IC	202
	PD0010	IC	203
	PD0011	IC	204
	TC4011BP	IC	205
	PM4001	IC	301
	NJM4558D	IC	302,303
	2SC1740S	Q	1, 3-16, 19, 24, 26, 29,
	(2SC1815)		30, 32, 33, 206, 303-306, 309
	2SA933S	Q	2, 17, 18, 21, 27, 34
	(2SA1015)		
	DTC124ES	Q	20, 22, 31, 35, 201, 207-209,
			307, 308
	2SK117	Q	23, 36, 302
	2SC1627	Q	25
	DTA124ES	Q	202-205, 301
	HZ12A3	D	1
	HZ9B1	D	2
	1S2473	D	4, 5, 7-10, 13-15, 17-23,
			201-203, 302-307
	HZ3B3	D	6
	MTZ7.5B	D	301
	RD1/6PS000J	R	1-3, 6, 8-48, 50, 52-54,
			56-101, 104-106, 109, 110
	RD1/4VM000J	R	5, 153, 160, 161, 173, 187
	RN1/6PQ0000F	R	102, 103
	RD1/6PS000J	R	111-114, 116, 117, 119, 120, 122-126,
			128, 130-149, 151, 152, 154-159,
			162-165, 170-172, 175, 177-182,
			184-188, 201-239
	RD1/4PM000J	R	118, 190-194, 196, 243, 247-250,
			354
	VCN-125	R	241, 242 10k x8
	RD1/6PS000J	R	245, 301-330, 332-345, 347-353,
			356
	VRTB6VS222	VR	3
	VRTB6VS223	VR	4
	VRTB6VS473	VR	5, 6, 8
	VRTB6VS472	VR	9-11
	VRTB6VS102	VR	12
	CCDSL390J50	C	1, 20, 60
	CEJAR47M50	C	2
	CKDYX473M25	C	3, 8, 16, 19, 46, 49, 59, 115,
			119, 125, 126, 152, 153, 161, 201,
			333, 334
	CEJA220M16	C	4, 7, 9, 10, 45, 51, 58, 69,
			111, 112, 116, 140, 314, 316

SRVB ( VWS-060 ) Parts list 2

(MK)	(PART No.)	(IT)	(REF Nos. & DESCRIPTION)
	CQMA104K50	C	5, 29, 47, 109, 311
	CKDYF103Z50	C	6, 30, 44, 48, 63, 75, 76, 78,
			89, 105, 117, 155, 157, 202, 212,
			301, 302, 313, 315, 323, 325
	CEJA4R7M50	C	11-14, 53-56, 103
	CEJA100M16	C	15, 52, 57, 80, 156
	CCDSL750J50	C	21, 61
	CCDSL120J50	C	22, 62
	CEJANP470M6R3	C	23
	CEJA470M16	C	25, 132, 165
	CEJA470M10	C	26, 124
	CCDSL331J50	C	27, 38, 39, 64
	CEANPR47M50	C	28, 37, 307
	CEA470M10	C	31, 32, 90, 118, 120, 121, 123, 130,
			166, 167, 208, 324, 326
	CCDSL470J50	C	33, 203, 204, 210
	CCDSL241J50	C	34
	CQMA153J50	C	35, 36, 320
	CQMA823J50	C	40
	CKDYB681K50	C	41, 42, 99
	CCDSL101J50	C	43, 101, 128
	CEANP4R7M25	C	65, 309
	CQSA271J50	C	66
	CQMA124K50	C	67
	CEA010M50	C	68
	CCDCH080D50	C	70
	CCDCH680J50	C	71, 72
	CCDCH220J50	C	73
	CCDCH270J50	C	74
	CCDCH100D50	C	77, 209, 211
	CQMA223J50	C	79, 322
	CCDSL221J50	C	81
	CQMA183J50	C	82
	CQMA123J50	C	83, 85
	CEANP330M16	C	84
	CCDSL680J50	C	86, 100
	CEANP470M16	C	87
	CKDYF223Z50	C	88, 133, 163
	CQMA682J50	C	91, 94, 306
	CQMA122J50	C	92, 95, 97, 98
	CQSA122J50	C	93
	CQMA222J50	C	96
	CQMA102J50	C	102, 308
	CEANP2R2M50	C	106, 318
	CQMA563J50	C	107
	CQMA393J50	C	108
	CCDCH330J50	C	110
	CEA221M6R3	C	114, 122
	CEA470M16	C	127
	CEANP100M16	C	129
	CKDYB102K50	C	131, 312
	CEA3R3M50	C	150
	CEA470M10	C	151, 154
	CEANP3R3M25	C	160
	CQMA103J50	C	162

NOTES:

- Parts without part number cannot be supplied.
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SRVB ( VWS-060 ) Parts list 3

(MK)	(PART No.)	(IT)	(REF Nos. & DESCRIPTION)
	CEANP3R3M50	C	163, 168
	CEJA470M16	C	165
	CEA101M6R3	C	170
	CEJA220M16	C	171
	CEANP100M16	C	172
	CEA101M10	C	205
	CCDSL151J50	C	206, 207
	CQMA104J50	C	214
	CQMA822J50	C	303, 321
	CQMA473J50	C	304
	CQMA392J50	C	305
	CQMA683J50	C	310
	CEANP010M50	C	317, 319
	VCM-008	VC	1 20pF
	SVC321SP	VC	2
	(SVC321SPZ)		
	VCM-003	VC	201 45pF
	VTL-027	L	1, 5 22uH
	VTL-033	L	2, 6 68uH
	VTL-036	L	3 120uH
	VTL-021	L	4 6.8uH
	VTL-035	L	7, 10, 11 100uH
	VTL-019	L	8 4.7uH
	VTL-028	L	9 27uH
	VTL-039	L	201, 202 220uH
	VTH-005	F	1- 4, 201, 202
	VSS-043	X	1 14.3MHz
	VSS-018	X	201 4MHz
	(VSS-035)		
	VSS-041	X	202 400kHz
	D33A	TH	303
	VKH-029		IC socket 64P

BLMB Parts list 1

(MK)	(PART No.)	(IT)	(REF Nos. & DESCRIPTION)
	PA2016	IC	1
	STA302A	Q	10
	STA303A	Q	11

NOTES:

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DEMB ( VUV-075 ) Parts list 1

(MK)	PART No.	(IT)	REF Nos. & DESCRIPTION
	PA3020	IC	1
	HA12043	IC	2
	PA3018	IC	201
	SN76670N	IC	202
	MN8036	IC	203
	2SC1740S	Q	1, 2, 101, 102, 202, 204-217,
	(2SC1815)		401-404
	2SA933S	Q	3, 203
	(2SA1015)		
	2SK117	Q	4, 5
	2SC1674	Q	201
	DTC124ES	Q	218, 405, 406
	1S2473	D	1, 101-104, 203, 204, 301, 302
	HZ9B1L	D	201
	RD1/6PM000J	R	1- 3, 5- 9, 12- 20, 22- 36, 38- 40, 45- 48, 101, 102, 201-221, 223-238, 240-253
	RN1/6PQ0000F	R	4, 10, 11, 21
	RD1/4VM000J	R	37, 301
	RDR1/4PM000J	R	41- 44, 49, 50
	RD1/6PM000J	R	254-275, 401-418
	VRTB6VS223	VR	1, 2
	VRTB6VS102	VR	201, 202
	CKDYF103Z50	C	1- 3, 7, 20- 22, 27, 201, 203, 204, 213-215, 219, 224, 225, 233, 240, 241, 248, 255, 258, 259, 261, 262, 265, 270, 277-280, 301, 405
	CCDCH820J50	C	4
	CCDCH220J50	C	5, 25, 208, 238, 273, 274
	CCDCH111J50	C	6, 18, 26, 35
	CEA100M16	C	8, 28, 221, 250, 269, 401, 404
	CCDCH221J50	C	9, 29
	CKDYB472K50	C	10, 30
	CEA4R7M50	C	11, 47, 231
	VCH-036	C	12, 44, 45 470/6.3
	CEAS221M10	C	13, 23
	CQMA152J50	C	14, 15, 17, 31, 32, 34
	CQMA682J50	C	16, 33
	CQMA333J50	C	19, 36
	CCDCH560J50	C	24, 205, 206, 276
	VCH-037	C	37, 38 10/16
	CQMA683J50	C	39, 40
	CQMA104J50	C	41
	CEANL220K16	C	42
	CEANLR47K50	C	43
	CEAR47M50	C	46
	VCH-038	C	48, 49 4.7/50
	CEA220M10	C	50, 234
	CCDSL151J50	C	202
	CCDCH080D50	C	207, 209, 223, 226, 227, 243, 275
	CCDSL181J50	C	210, 249, 251, 252
	CCDSL271J50	C	211
	CCDSL331J50	C	212, 217
	CCDCH240J50	C	216

DEMB ( VUV-075 ) Parts list 2

(MK)	PART No.	(IT)	REF Nos. & DESCRIPTION
	CEAS101M10	C	218, 264, 268
	CKDYB102K50	C	220, 222, 244, 245
	CCDCH330J50	C	228, 230
	CCDCH150J50	C	229, 242
	CEA470M10	C	232, 239, 254, 257, 260, 267
	CEANP4R7M25	C	235
	CCDSL121J50	C	236
	CCDSL180J50	C	237
	CCDCH390J50	C	246
	CCDSL361J50	C	247
	CEA3R3M50	C	253, 263, 403, 406
	CKDYF223Z50	C	256
	CEAS471M6R3	C	266
	CCDSL241J50	C	271, 272
	CCDCH180J50	C	281
	CQSA821J50	C	402
	VTL-183	L	1 56uH
	VTL-268	L	2, 3 7.5mH
	VTL-182	L	4 39uH
	VTL-028	L	201 27uH
	VTL-026	L	202-205 18uH
	VTL-030	L	206 39uH
	VTL-051	L	207 43uH
	VTL-022	L	208, 209 8.2uH
	VTL-042	L	210, 212 390uH
	VTL-027	L	211 22uH
	VTL-245	L	213 100uH
	VTL-249	L	214 220uH
	VTL-242	L	215, 216 47uH
	VTF-051	F	1 2.3MHz B.P.F.
	VTF-052	F	2 2.8MHz B.P.F.
	VTF-016	F	201 220ns DLY
	VTF-057	F	401 1.75MHz L.P.F.
	VKN-149		8P DIN socket
	VKN-165		5P DIN socket

HEPB Parts list 1

(MK)	PART No.	(IT)	REF Nos. & DESCRIPTION
	NJM4556D	IC	1
	RD1/6PM000J	R	1- 10
	VCS-038	VR	1 100k
	CEJA101M16	C	1, 2
	CKDYX473M25	C	5
	VKN-174		Phones jack

**NOTES:**

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DISP	Parts list		1
(MK)	PART No.	(IT)	REF Nos. & DESCRIPTION
	PD0012A	IC	101
	SLH-56VC3H	D	101
	SLH-56DC3H	D	102,105,106,109,111,112
	SLH-56MC3H	D	103,104,107,108,110
	RD1/6PS000J	R	101-114
	CEJAR47M50	C	101
	CEJA470M10	C	102
	CEJA101M6R3	C	103

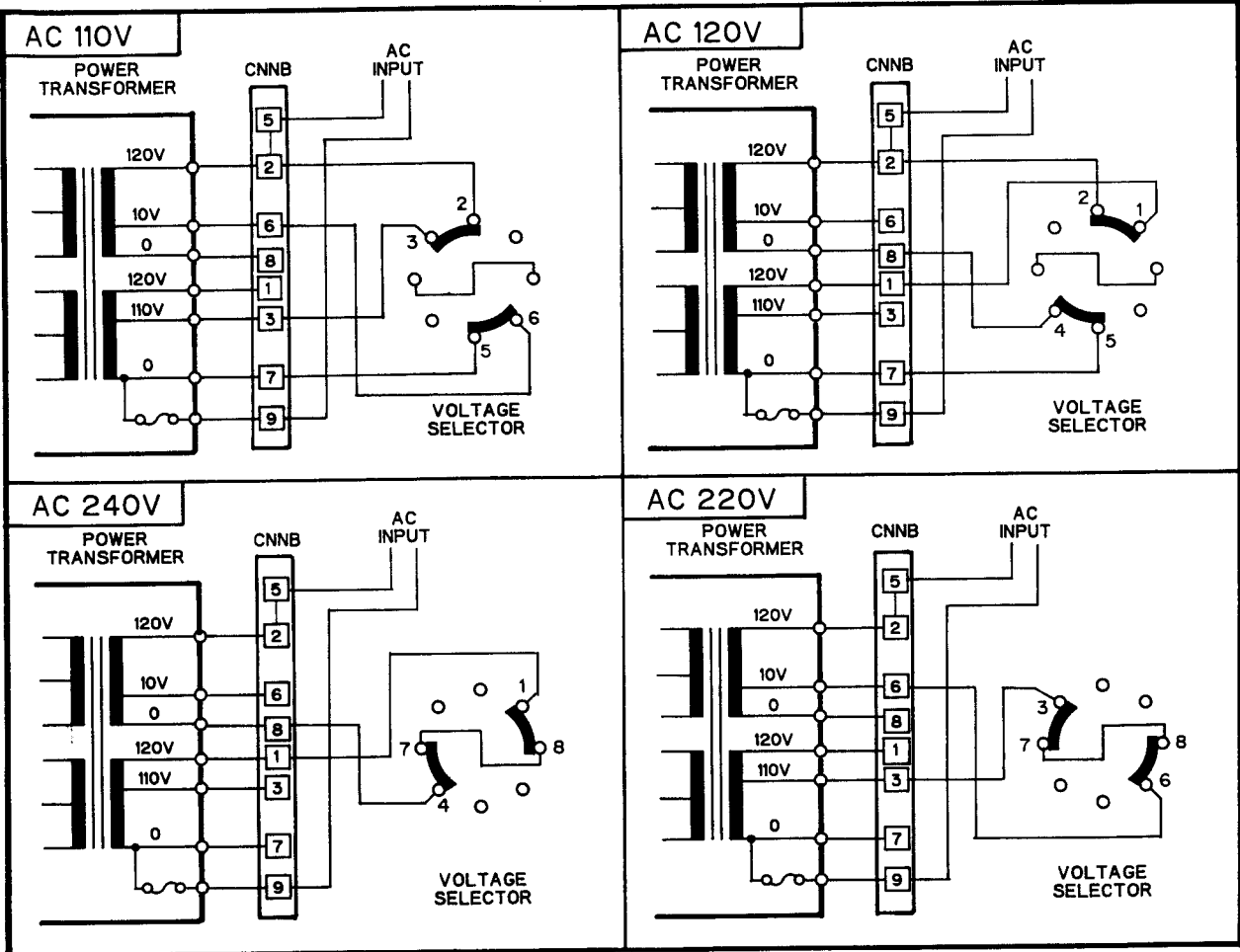
IRAB	Parts list		1
(MK)	PART No.	(IT)	REF Nos. & DESCRIPTION
	uPC1473HA	IC	1
	2SK117	Q	1
	HP-5FR3	D	1
	RD1/6PS000J	R	1- 6
	CCDSL101J50	C	2, 5
	CEJA100M16	C	3, 4, 7
	CQMA302J50	C	6
	CQMA473J50	C	8
	VTL-118	L	1 5mH

KEYB	Parts list		1
(MK)	PART No.	(IT)	REF Nos. & DESCRIPTION
	CKDYB102K50	C	1, 2
	VSC-011	S	1, 2 Switch

RMTC	Parts list		1
(MK)	PART No.	(IT)	REF Nos. & DESCRIPTION
	uPD6102G	IC	1
	2SC1740S	Q	1
	(2SC2021LN)		
	2SC3377	Q	2
	(2SC2673)		
	SE303A-Y	D	1
	1S2473	D	3- 6
	RD1/4PM000J	R	1- 4
	CEA470M10	C	1
	CCDSL101J50	C	3, 4
	VSS-031	X	1 500kHz
	(VSS-029)		
	AZK-005		Battery terminal
	AZK-006		Battery spring



VOLTAGE SELECTOR CIRCUIT



**ELECTRICAL PARTS LIST**

**NOTES:**

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(MK)	(KEY)	( PART NUMBER )	( DESCRIPTION )
		1 VYR-004	DRVB
		2 VWV-079	HEAD
		3 VWV-077	PREB
		4 VWS-060	SRVB
		5 VWV-075	DEMB
		6 VWL-021	RFMD
		7 VWY-097	Pickup ass'y
		8 VDG-034	Power cord
$\Delta$		9 VTT-063	Power transformer
$\Delta$		10 VSA-010	Power switch
$\Delta$		11 VSB-003	Voltage selector
		12 PSN-003	S2, S5
		13 VSK-010	S3
		14 VSK-011	S4
		15 VSK-012	S6
		16 VXM-054	LOAD motor
		17 VXM-060	TILT motor
		18 VXM-051	SPDL motor
		19 VXM-050	SLDR motor
		20 VCS-017	SLDR POT
		21 CKDYF473Z50	Capacitor (TILT M)
		22 VEK-018	3A/125V

**SRVB ; SeRVo circuit Board**

- CONT section ; CONTroller
  - : System controlling microcomputer, Data decoder, Character generator, Serial command signal decoder
- FTS section ; FOCS, TRKG and SLDR servo circuits
  - : Focus servo (FOCS), Tracking servo (TRKG), Slider servo (SLDR) circuits
- SPDL section ; SPDL servo circuit
  - : Spindle motor servo (SPDL) circuit
- TBC section ; Time Base error Correcting circuit
  - : Time base error detector, CCD (Charge Coupled Device) circuit, Sync signal separator, Video processor

**LMCB ; Loading Motor Connecting Board**

- : Connectors between DRVB board and LOAD motor, and, SRVB board and switches

**BLMB ; BrushLess Motor driver Board**

- : 3-phase switchers, rotation speed detector

**DEMB ; DEModulators Board**

- : Video and audio demodulators, Drop-out compensators, EFM signal processor, "VIDEO OUT" and "AUDIO OUT" terminals, "DIGITAL OUT" and "I/O PORT" terminals

**HEPB ; HEAd Phones output Board**

- : Audio signal amplifier for PHONES output, PHONES output terminal, PHONES LEVEL volume

**DISP ; DISPlay control board**

- : Indicators data decoder and driver

**IRAB ; InfraRed command receiver and Amplifier Board**

- : Infrared receiver and amplifier

**KEYB ; KEY Board**

- : PLAY and EJECT keys

**ABBR. & CONTENTS OF BOARDS**

**LSFB ; Line Surge Filter Board**

- : Line filter

**PWSB ; PoWer Switch Board**

- : Power switch

**CNNB ; CoNNecting Board**

- : Wrapping posts

**RECB ; RECTifying Board**

- : Rectifying circuits

**DRVB ; DRiVers Board**

- : Servo unit drivers (TRKG, FOCS, SLDR), SPDL motor driver, Voltage regulators, Reset signal generator, LOAD motor driver

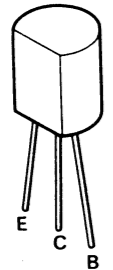
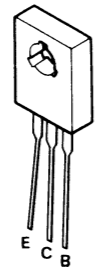
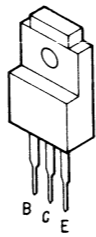
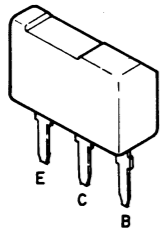
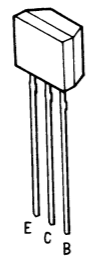
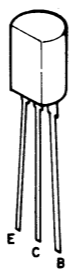
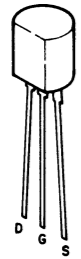
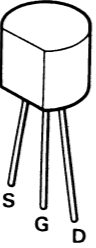
**HEAD ; HEAD amplifier board**

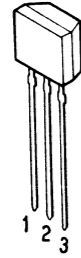
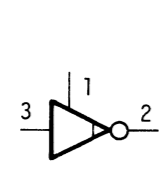
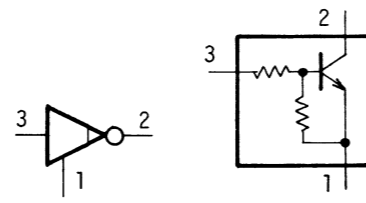
- : Pick-up signals amplifier, Power controller of Laser-diode emission

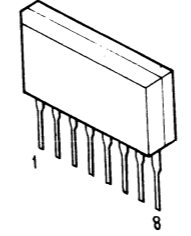
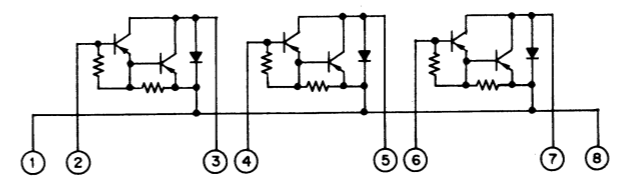
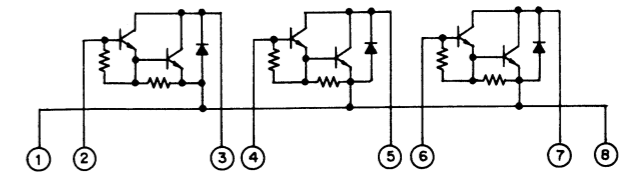
**PREB ; PRE-processing Board**

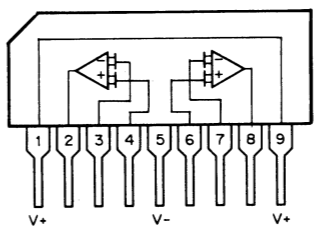
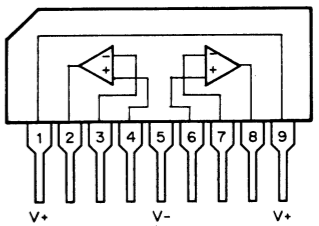
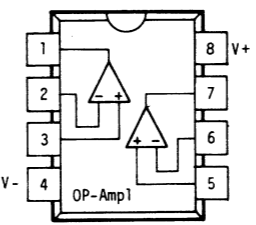
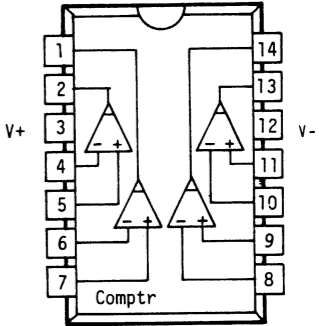
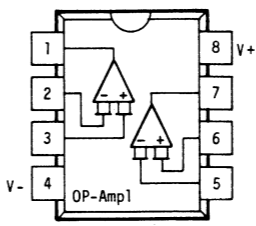
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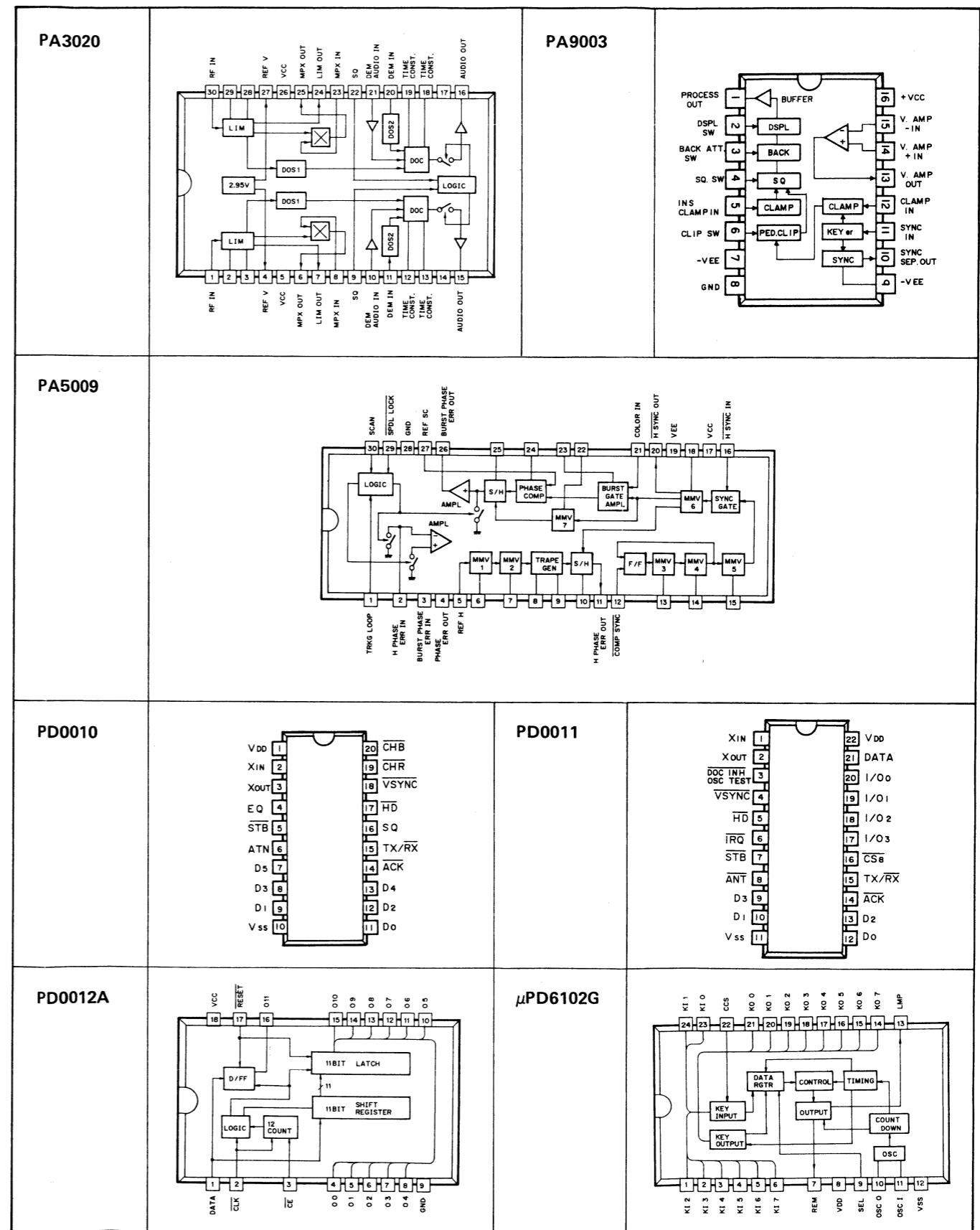
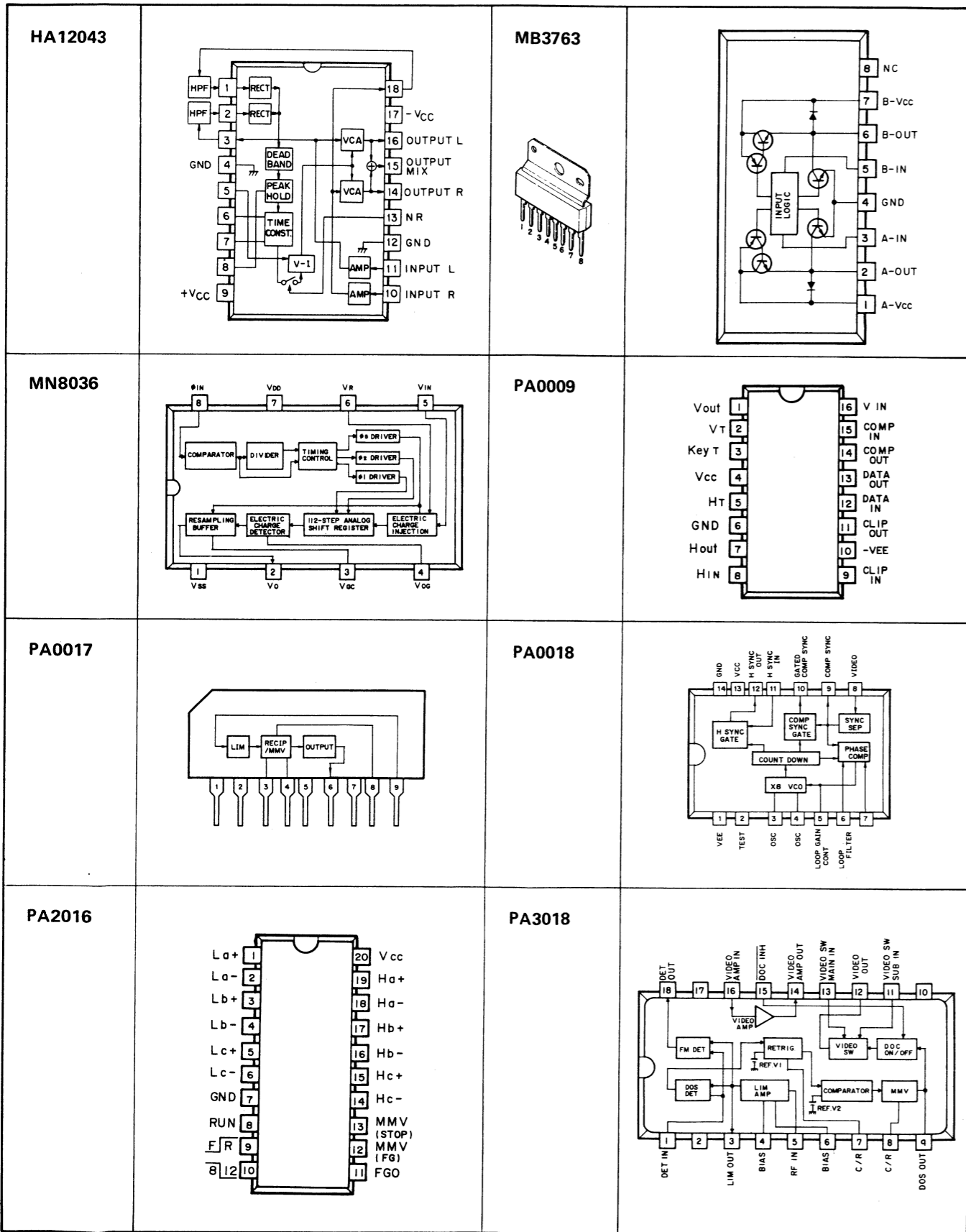
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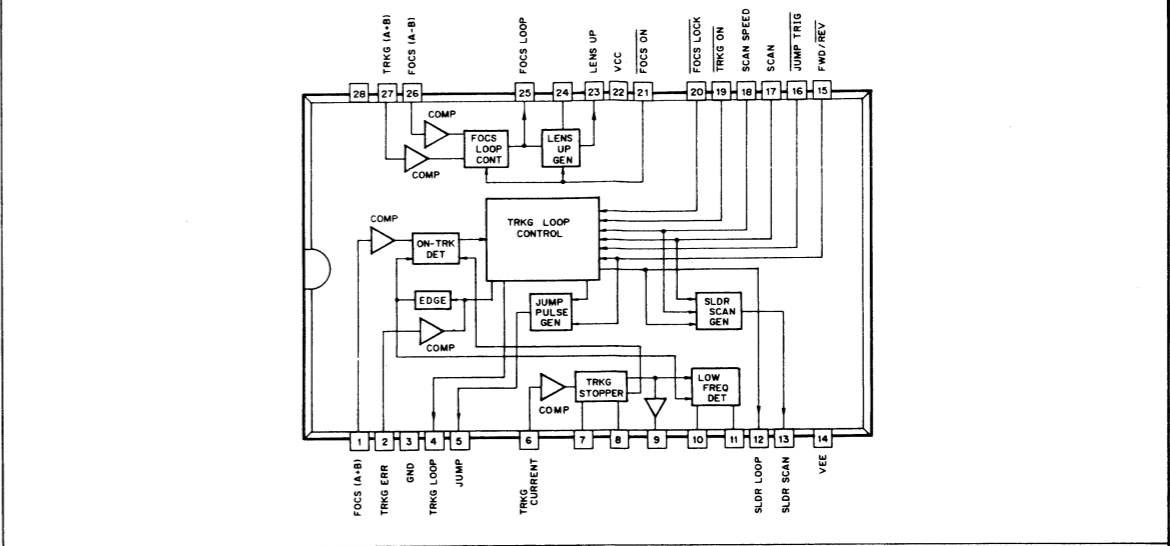
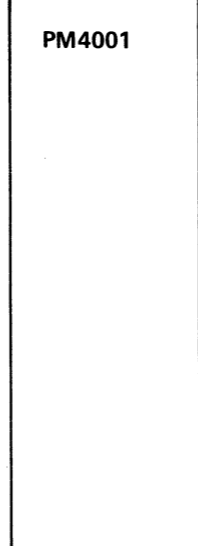
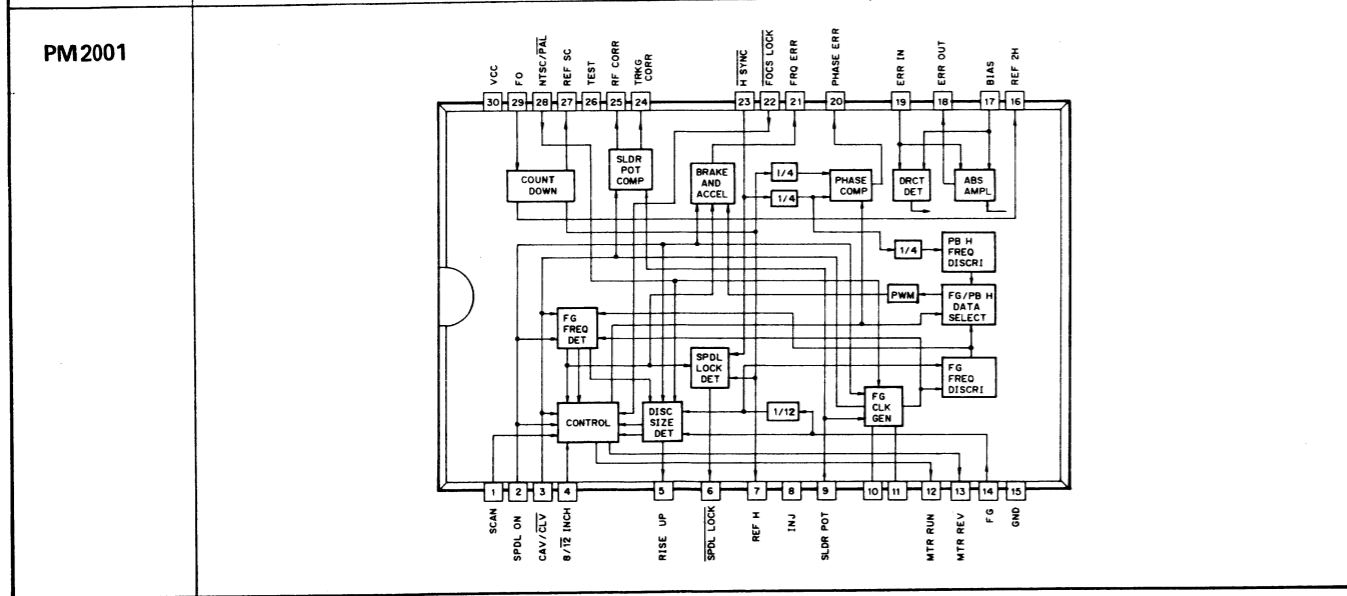
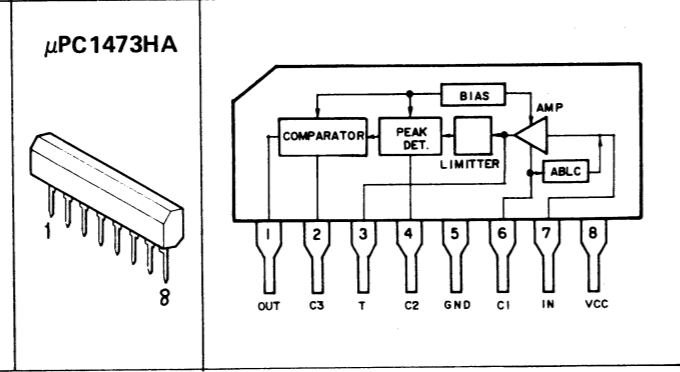
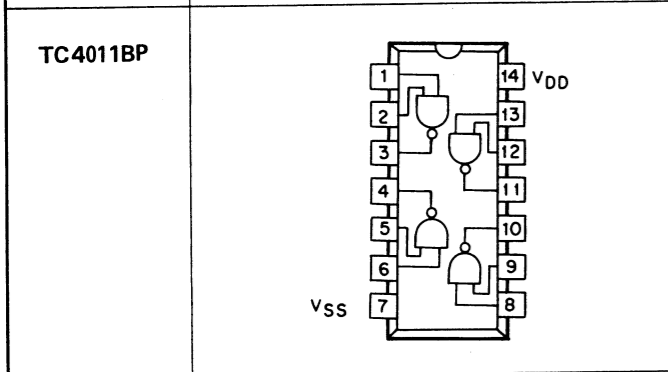
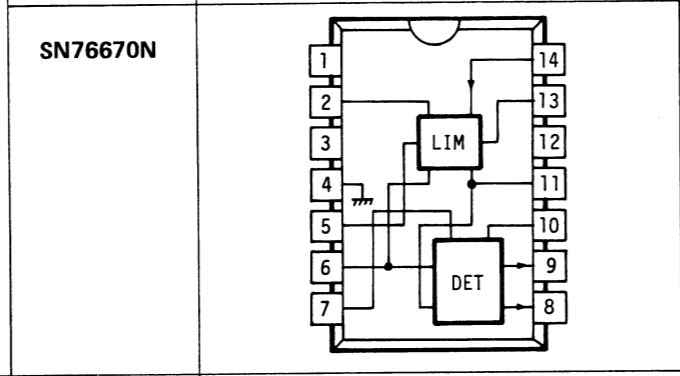
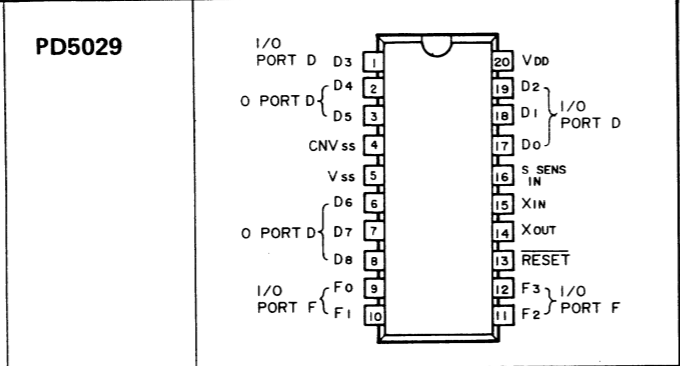
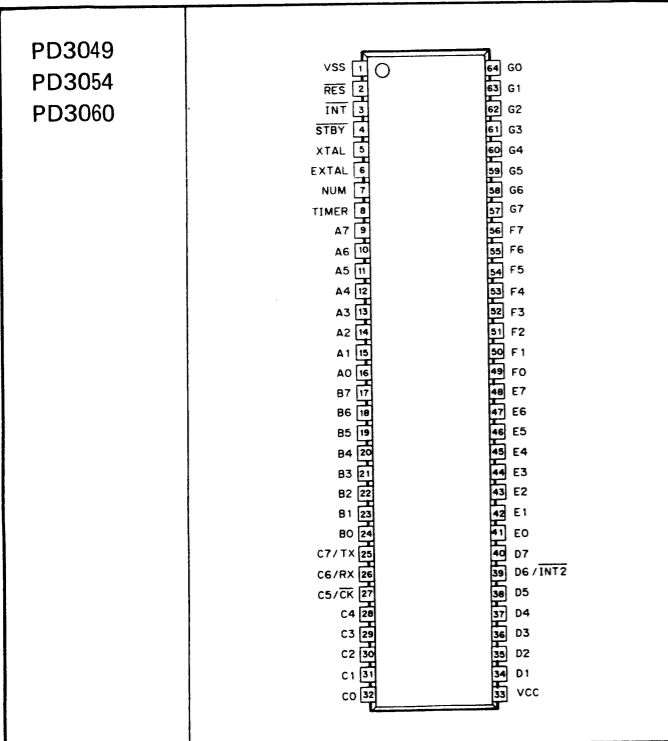
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<p>2SB909M 2SB910M 2SD1225M 2SD1226M</p> 	<p>2SA933S 2SC1740S</p> 	<p>2SA1283 2SC3243</p> 
<p>2SK117</p> 	<p>2SK30ATM</p> 	

<p>DTA124ES DTC124ES</p> 	<p>DTA124ES</p> 	<p>DTC124ES</p> 
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<p>STA302A STA303A</p> 	
<p>STA302A</p> 	<p>STA303A</p> 

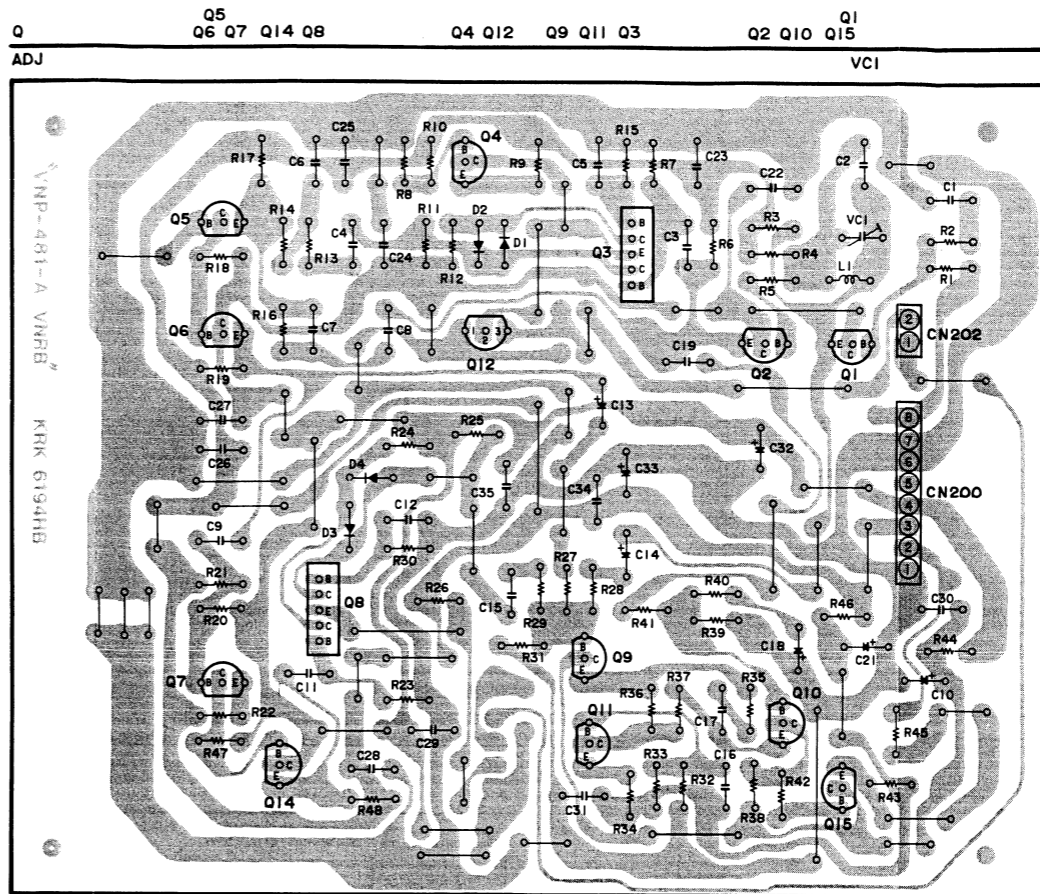
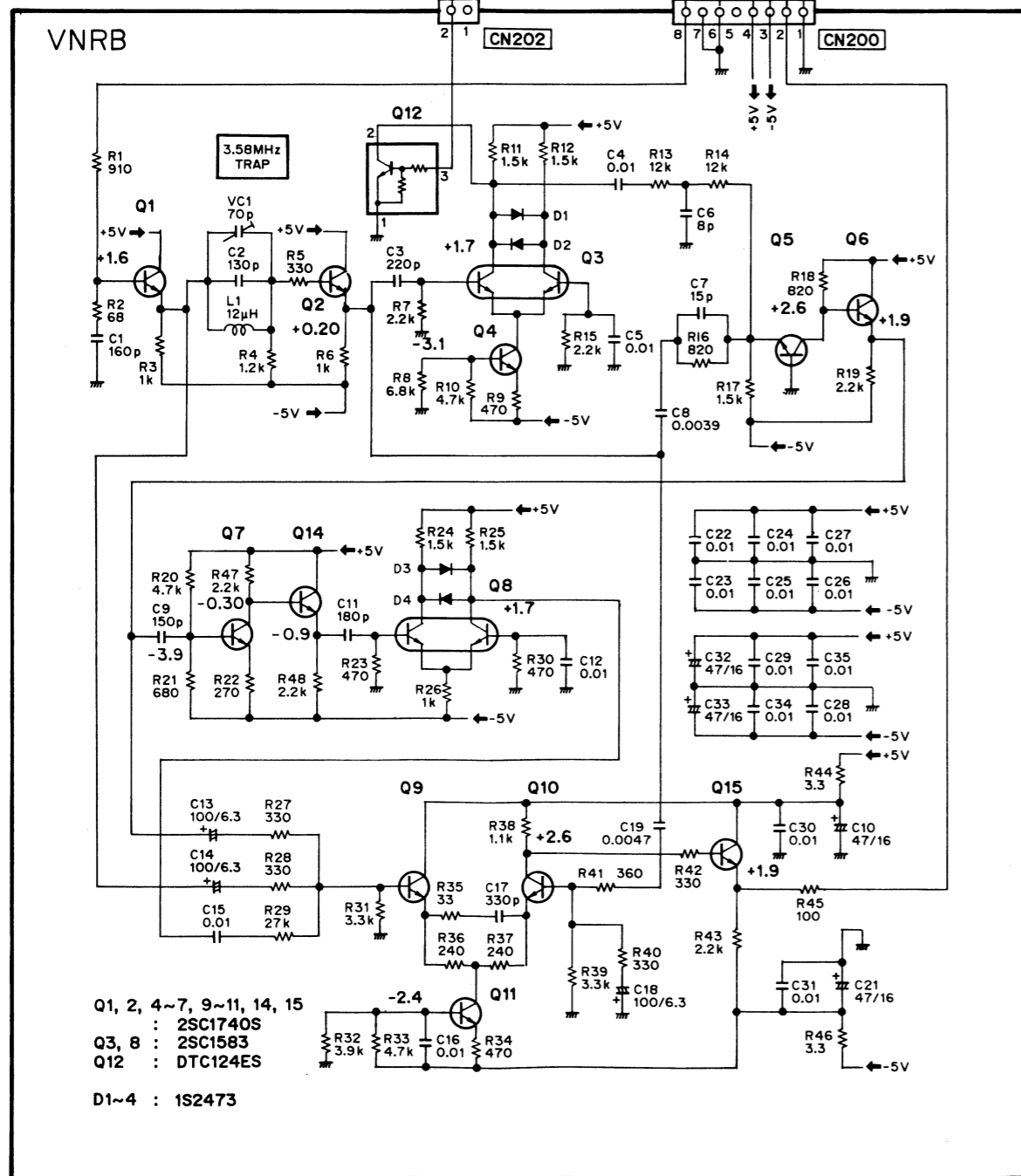
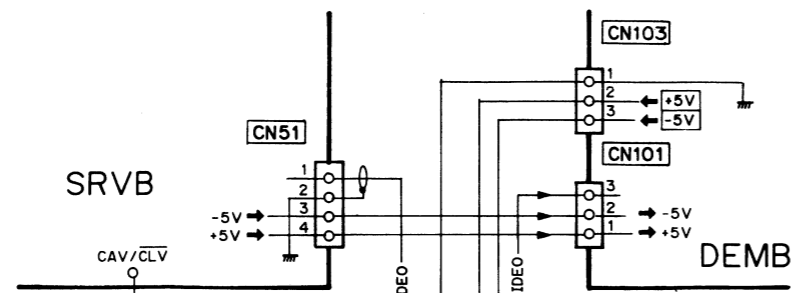
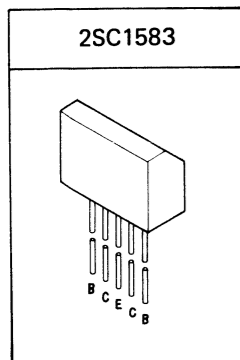
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<p>M5218P NJM4556D NJM4558D μPC4558C</p> 	<p>μPC339C</p> 
<p>NJM072DE NJM082D</p> 	





### 4. VNRB, FMPB, INIB & CDCR BOARD

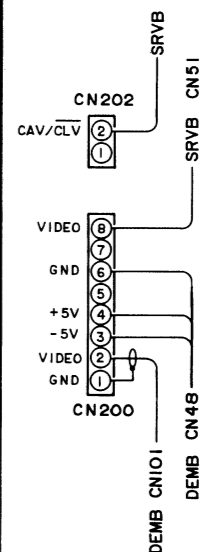
#### 4.1 VNRB BOARD



Q1, 2, 4~7, 9~11, 14, 15 : 2SC1740S    Q3, 8 : 2SC1583    Q12 : DTC124ES  
D1~4 : 1S2473

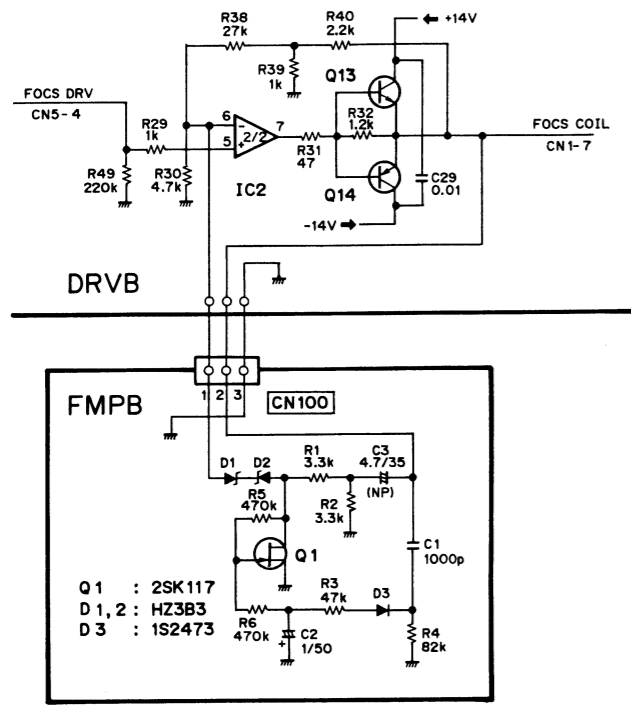
VNRB Parts list		1	
(MK)	(PART No.)	(IT)	(REF Nos. & DESCRIPTION)
	2SC1740S	Q	1, 2, 4- 7, 9- 11, 14, 15
	2SC1583	Q	3, 8
	DTC124ES	Q	12
	1S2473	D	1- 4
	RD1/6PS000J	R	1- 48
	CCDSL161J50	C	1
	CQSA131J50	C	2
	CCDSL221J50	C	3
	CKDYF103Z50	C	4, 5, 12, 15, 16, 22- 31, 34, 35
	CCDCH080D50	C	6
	CCDCH150J50	C	7
	CKDYB392K50	C	8
	CCDSL151J50	C	9
	GELA470M16	C	10, 21, 32, 33
	CCDSL181J50	C	11
	CELA101M6R3	C	13, 14, 18
	CCDSL331J50	C	17
	CKDYB472K50	C	19
	VCM-009	VC	1      70pF

VNRB

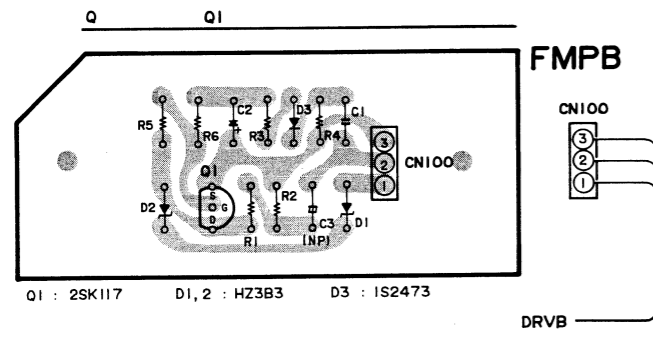


4.2 FMPB BOARD

A



B



C

FMPB Parts list 1

(MK)	PART No.	(IT)	REF Nos. & DESCRIPTION
	2SK117	Q	1
	HZ3B3	D	1, 2
	1S2473	D	3
	RD1/4VM000J	R	1- 6
	CQMA102J50	C	1
	CEA010M50	C	2
	CEANP4R7M35	C	3

D

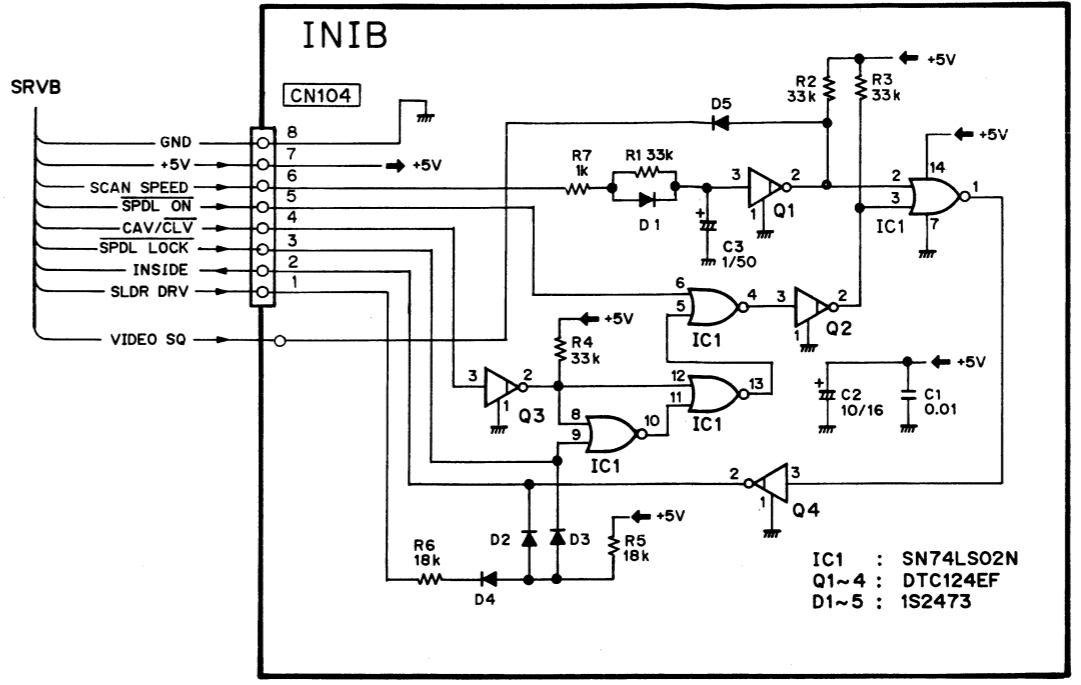
4.3 INIB BOARD

INIB Parts list 1

(MK)	PART No.	(IT)	REF Nos. & DESCRIPTION
	SN74LS02N	IC	1
	DTC124EF	Q	1- 4
	1S2473	D	1- 5
	RD1/6PM000J	R	1- 7
	CKDYF103Z50	C	1
	CEA100M16	C	2
	CEA010M50	C	3
	VEC-244		Spacer

INIB & CDCR BOARDS

Depending on the time of manufacture of the LD-707, the IC used for the main CPU (IC201 on the SRVB board) may be either a PD3049, PD3054 or PD3060. If the CPU is a PD3049, its functions are supplemented by the installation of an additional CDCR board, and if the CPU is a PD3054, its functions are supplemented by an INIB board. The PD3049, PD3054, CDCR board and INIB board are not supplied as service parts, so when replacement is required, replace the main CPU with a PD3060, and remove the CDCR or INIB board, and the cables connecting it to the SRVB board.

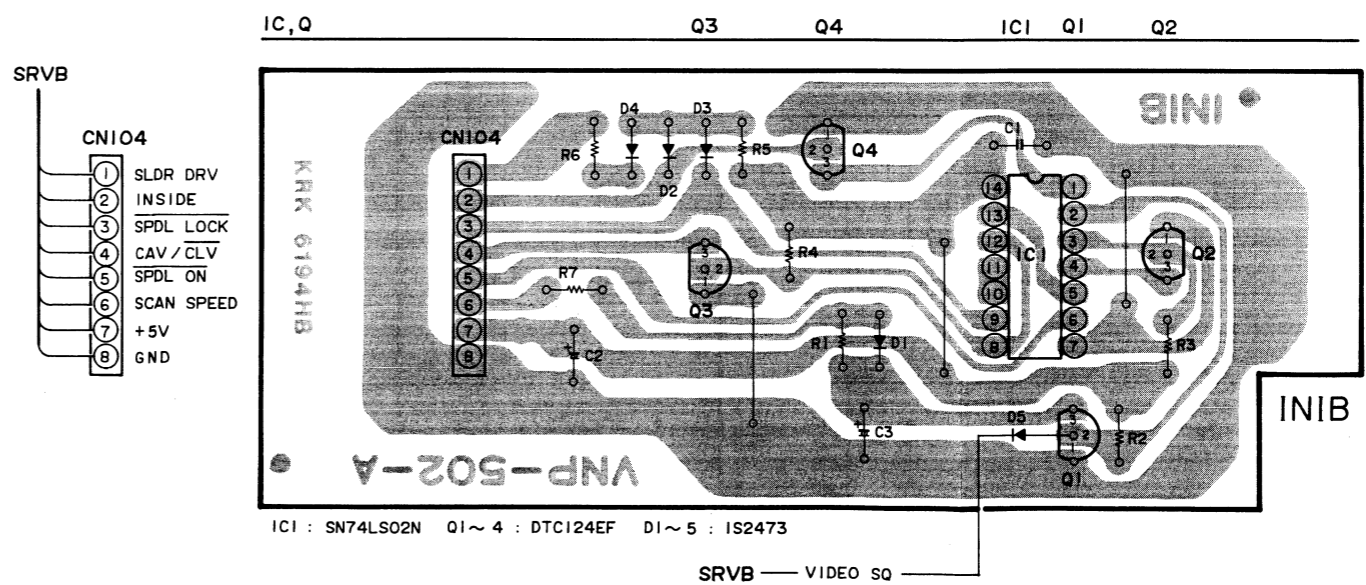


A

B

C

D



SRVB

CN104	Signal
1	SLDR DRV
2	INSIDE
3	SPDL LOCK
4	CAV / CLV
5	SPDL ON
6	SCAN SPEED
7	+5V
8	GND

IC1 : SN74LS02N Q1~4 : DTC124EF D1~5 : 1S2473

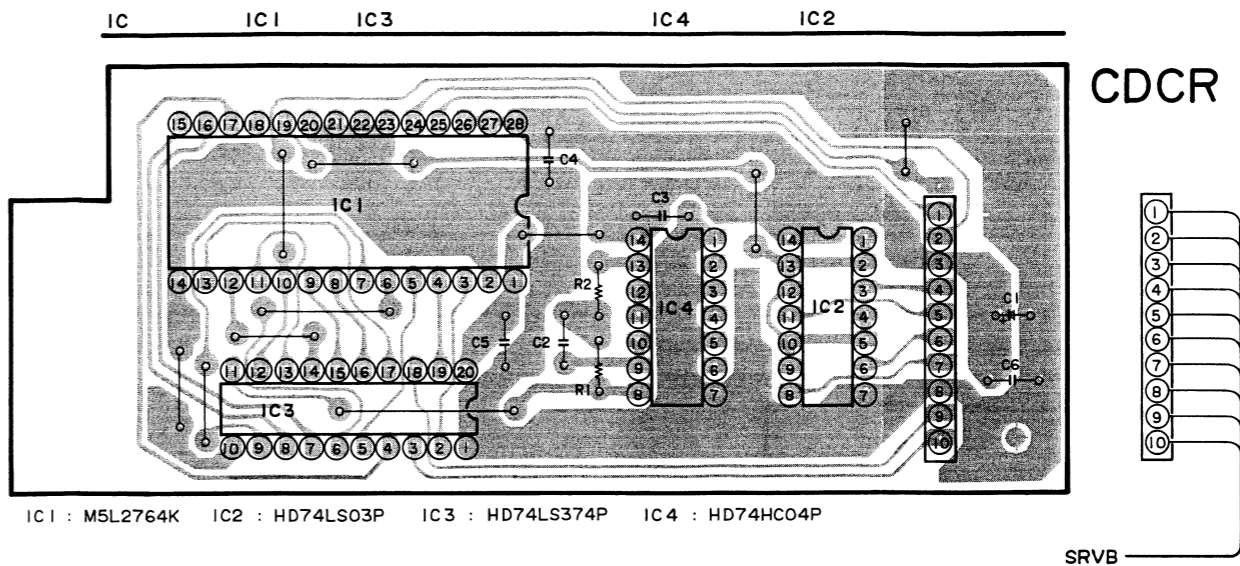
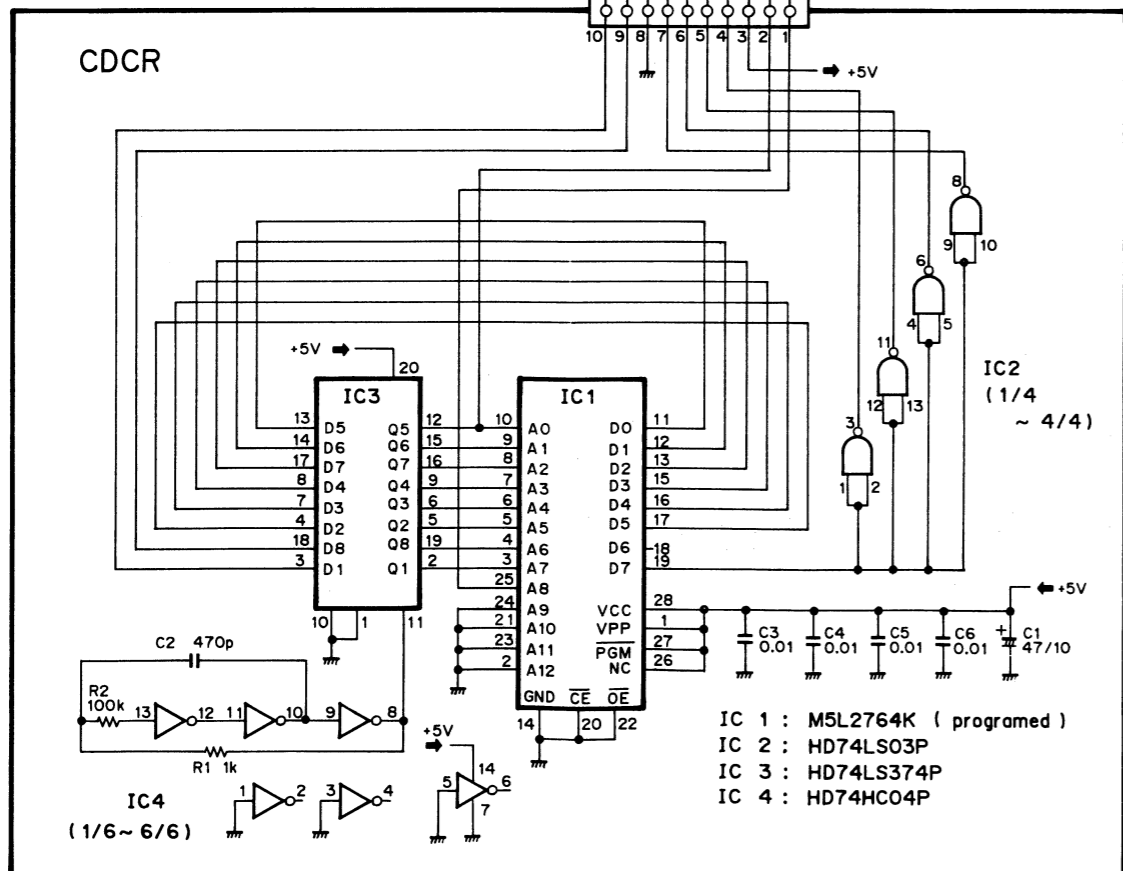
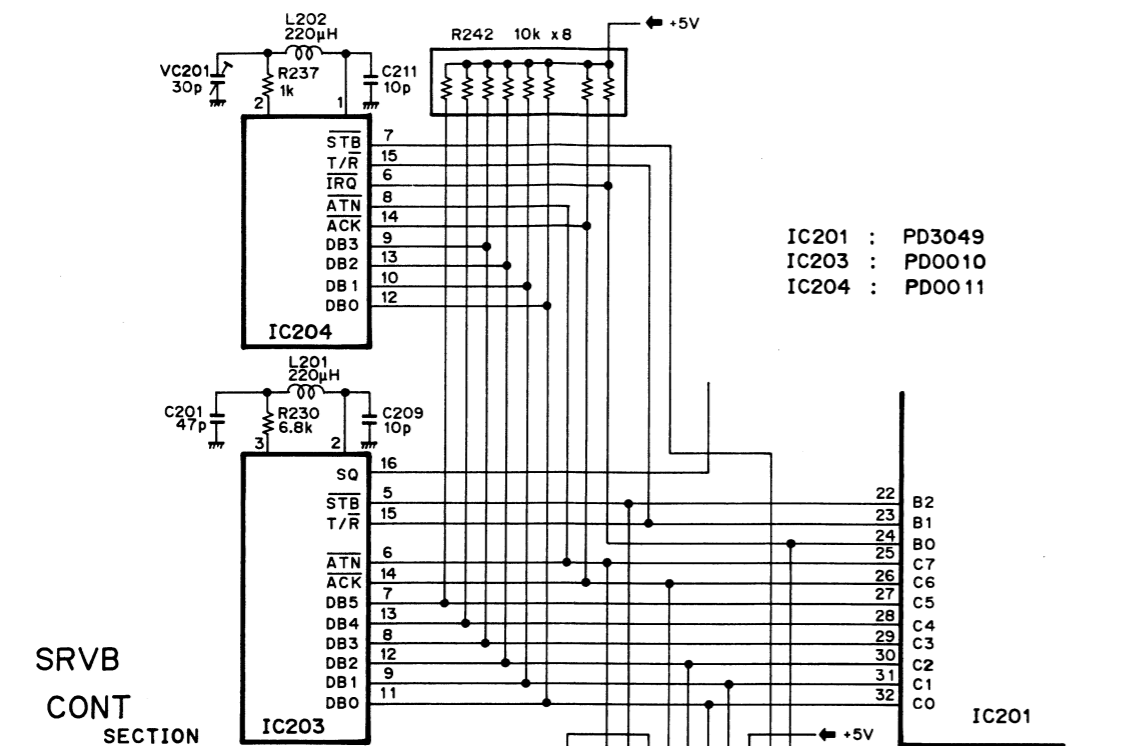
SRVB — VIDEO SQ

A

B

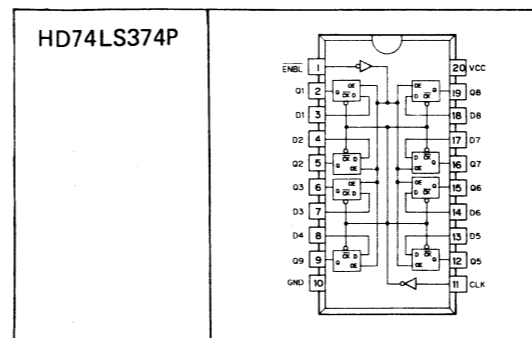
C

D



CDCR Parts list 1

(MK)	PART No.	(IT)	REF Nos. & DESCRIPTION
	HD74LS03P	IC	2
	HD74LS374P	IC	3
	HD74HC04P	IC	4
	RD1/4VM000J	R	1, 2
	CEA470M10	C	1
	CCDSL471J50	C	2
	CKDYF103Z50	C	3- 6





## 5. ADJUSTMENTS

### 5.1 ADJUSTMENT PREPARATIONS

The measuring instruments and jigs which are listed below are required for the adjustments:

- Dual-trace oscilloscope (0 – 35MHz)
- Oscillator
- Frequency counter (6 or more digits)
- TV monitor and connecting cord
- Remote control unit, CU-707
- Test disc (F1 – F4)
- L-type eccentric driver (GGV-129)
- Low-pass filter (LPF)

Note: Test disc in good condition and without warpage, scratches and other marks should be used.

For carrying out the adjustments, follow the sequence below to position the player as shown in the figure.

- (1) Remove the bottom plate (6 screws).  
Do not remove the bonnet. This is to safeguard the TILT circuit from the effects of extraneous light.
- (2) Stand the player in the erect position as in the figure.
- (3) Remove the screws securing the SRVB board and disengage the three pawls supporting the board.
- (4) Remove the CDCR board and INIB board if they are provided on the player.
- (5) Connect the TV monitor to the video output connector on the rear panel.

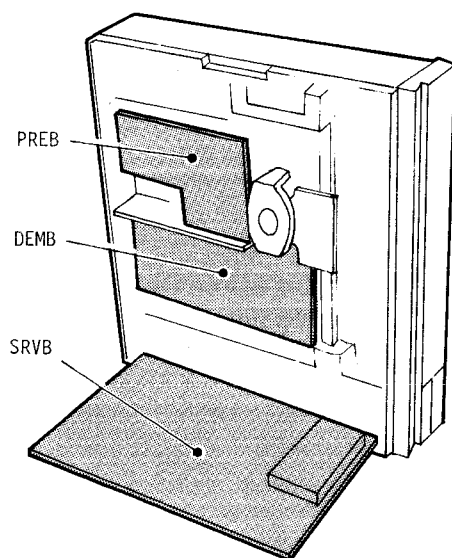


Fig. 5.1 Player before adjustments

### 5.2 CAUTIONS FOR ADJUSTMENT

- Discs must be installed in and removed from the player with the player placed either horizontally or at an angle of less than 45 degrees. When a disc is installed in the LD-707, the player is automatically set to the play mode and so when it is positioned perpendicularly, press the EJECT key on the remote control unit once to set the player to the stop mode and then proceed with the adjustments.
- Do not press the disc EJECT (  $\triangle$  ) key on the front panel with the player in the perpendicular position. When this key is pressed, the spindle motor will stop and the disc will be ejected. The disc will drop down inside the player when the disc clamber is raised by placing the player in the perpendicular position.
- In order to open the TRKG servo, connect pin ⑳ of IC301 (PM4001) on the SRVB board to pin ⑳ (+5V). If the pick-up moves by opening this servo, disconnect the slider motor connector (CN33).

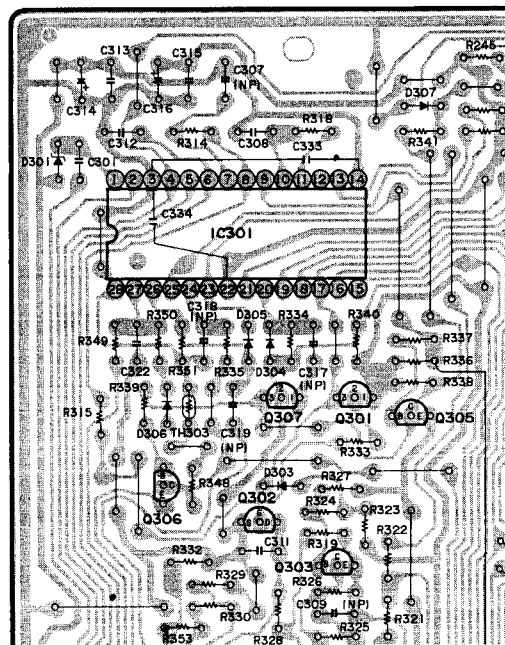


Fig. 5.2 IC301 on the SRVB board

- When a search operation is conducted with the TRKG servo open, the pick-up will travel as far as the vicinity of the target position but since this servo is open, it will not be possible to locate the target frame or chapter, and the search will not be completed. In a case like this, the search operation can be completed and the desired picture can be located by pressing the

CLEAR key on the remote control unit.

- If the adjustment is insufficient and the search still cannot be conducted, use the SCAN key to move the pick-up as far as the target frame.

### 5.3 PREB, GRATING and TILT mechanism adjustments

Notes: The PREB board is connected by a flexible cable to the HEAD board inside the pick-up. When disconnecting this cable, disconnect it from the PREB board and, in order to prevent electrostatic damage, short-circuit the end of the cable with the shorting connector or aluminum foil.

- : Do not touch VR7 on the PREB board when it need not be adjusted.

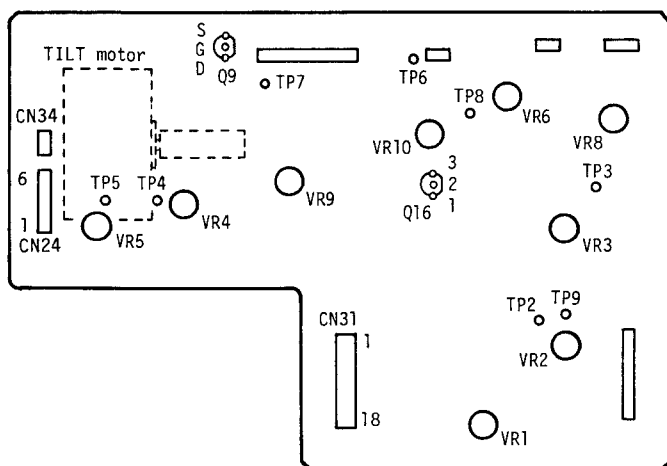


Fig. 5.3 Adjustment points of PREB board

#### 1. FOCUS OFFSET adjustment (VR1)

- Set the power switch to ON and place the player in the standby mode.
- Adjust VR1 so that the TP2 (FOCUS ERROR) voltage is made 0V.

#### 2. Inside position detection adjustment (VR8)

Notes: If VR8 is adjusted too far toward the inner circumference, it will no longer be possible to play discs. In cases like this, therefore, proceed with the adjustment after having set VR8 to its mechanical center.

If it is hard to obtain a picture when a disc is being played, press the clear key, obtain the picture and then proceed with the adjustment.

- : If the adjustment point of VR8 has been moved, VR9 and VR10 must also be adjusted.

- The adjustments for detecting the inside and outside positions differ according to whether a player is or is not provided with the INIB board. Therefore, proceed as follows:

#### a) Procedure for player with INIB board

- Disconnect the INIB board connector (CN104).
- Play the test disc.
- Press the DISPLAY key on the remote control unit to indicate the frame number on the screen.
- Rotate VR8 clockwise as far as it will go.
- Search frame #500 and set the player to the STILL mode.
- Gradually rotate VR8 counterclockwise and stop rotating it at the point where the frame number disappears from the screen.
- The player is automatically set to the play mode and then shortly afterwards, it is transferred to the STILL mode. Check that the point at which the player is set to the STILL mode is between frame #500 and frame #1200.

#### b) Procedure for player without INIB board

- Play the test disc.
- Observe the screen, and adjust VR8 so that a return is made to between Nos. ⑰ and ⑱ of the lead-in area when the SCAN REV (←) key is kept depressed in the vicinity of the disc's innermost circumference.

Note: When the inside adjustment shifts toward the external circumference, the frame number will not appear during the SCAN REV operation toward the inner circumference from the inside setting position.

### 3. 12-inch outside position detection adjustment (VR9)

Notes: Make sure that the inside position detection adjustment has been performed before proceeding with this adjustment.

- : VR10 must also be adjusted if the adjustment point of VR9 has been moved.

#### a) Procedure for player with INIB board

- Disconnect the INIB board connector (CN104).
- Search frame #45050 and set the player to the still-picture mode.
- Observe the voltage of the D10 anode on the PREB board and adjust VR9 to the point (low) at which its level switches from high (0V) to low (-10V).
- Use the SCAN REV (←) key to return to the point where the D10 anode voltage is set high, play the disc from that point, and at the point where the voltage is set low again, press the STILL/STEP key to set the player to the STILL mode.

Now check that this point is between frame #44332 and 45050.

#### b) Procedure for player without INIB board

- Search frame #50000 and keep the SCAN FWD key (▶) depressed. Now adjust VR9 so that a return is made between 1:30:20 and 1:30:25 of the lead-out area.

#### 4. 8-inch outside position detection adjustment (VR10)

Note: Make sure that the detection of the 12-inch outside position has been adjusted under 3 before proceeding with this adjustment.

##### a) Procedure for player with INIB board

- Proceed with the adjustment once the INIB board connector (CN104) has been disconnected.
- Search frame #19220 and set the player to the STILL mode.
- Connect pin ② of Q16 (DTC124ES) on the PREB board to pin ① (GND) and activate the 8-inch outside detection circuit.
- Observe the voltage of the D10 anode on the PREB board and adjust VR10 to the point (low) at which its level switches from high (0V) to low (-10V).
- Use the SCAN REV (◀) key to return to the point where the D10 anode voltage is set high, play the disc from that point, and at the point where the voltage is set low again, press the STILL/STEP key to set the player to the STILL mode.

Now check that this point is between frame #18580 and 19220.

- Connect the INIB board connector (CN104).
- Disconnect Q16 pin ② and pin ①.

##### b) Procedure for player without INIB board

- Connect pin ② of Q16 on the PREB board to pin ① (GND) and activate the 8-inch outside detection circuit.
- Search frame #20000.
- Adjust VR10 so that a return is made between frame #24200 to 24600 when the SCAN FWD key (▶) is kept depressed.
- Disconnect Q16 pin ② and pin ①.

#### 5. Coarse adjustment of GRATING

- Search frame #15000.
- Connect pin ⑳ of IC301 (PM4001) to pin ㉔ and set the TRKG servo to open.
- Mount the L-type eccentric driver onto the grating, as shown in the figure.
- Observe the TRKG error signal at TP4 of PREB board and adjust the grating to a position where

its amplitude is at the minimum and the waveform envelope becomes smooth. (See Photo 1)

- Now gradually rotate the driver in the arrowed direction from this position and adjust the grating to the position where the error signal amplitude is first brought to its maximum. (See Photo 2)
- Adjust VR4 on the PREB board so that the center of the waveform amplitude is made 0V.
- Disconnect IC301 (PM4001) pin ㉔ and pin ㉔ and close the TRKG servo.

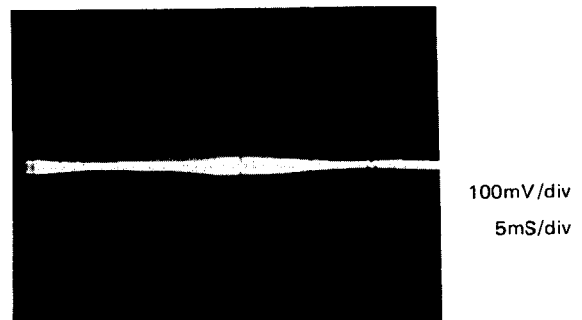


Photo 1. TRKG error waveform (at the minimum, with OPEN loop)

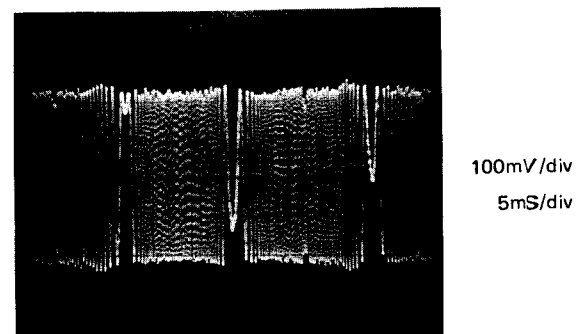


Photo 2. TRKG error waveform (at the maximum, with OPEN loop)

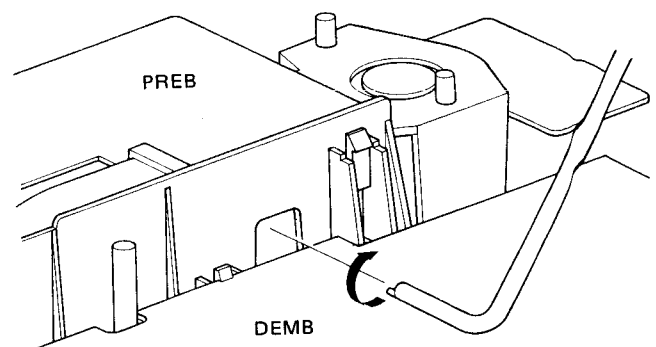


Fig. 5.4 GRATING adjustment

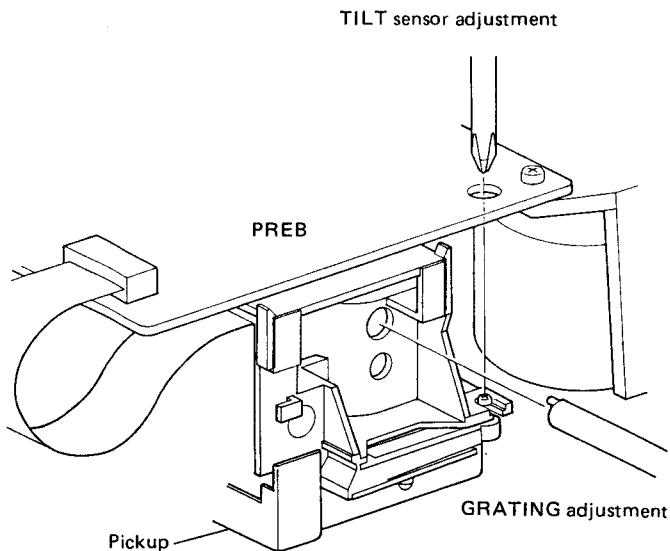
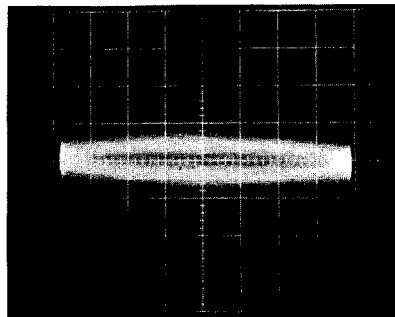


Fig. 5.5 Adjustment points of Pickup

F1: 3.0kHz, 1.5Vp-p  
 F2: 3.7kHz, 1.5Vp-p  
 F4: 4.1kHz, 1.5Vp-p

- Adjust VR5 so that the Lissajous waveform is made horizontal.



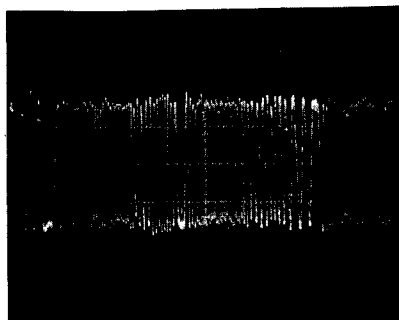
X : 200mV/div  
 Y : 100mV/div

X : Oscillator output signal  
 Y : TRKG error signal (PREB, TP4)

Photo 4. Lissajous waveform

**6. TRKG error balance adjustment (VR4)**

- Search frame #20000 and set the TRKG servo to open.
- Observe TP4 (TRKG error signal) and adjust VR4 so that the center of the waveform amplitude is made 0V.
- Close the TRKG servo.



PREB, TP4

200mV div  
 5mS div

Photo 3. TRKG error waveform (with OPEN loop)

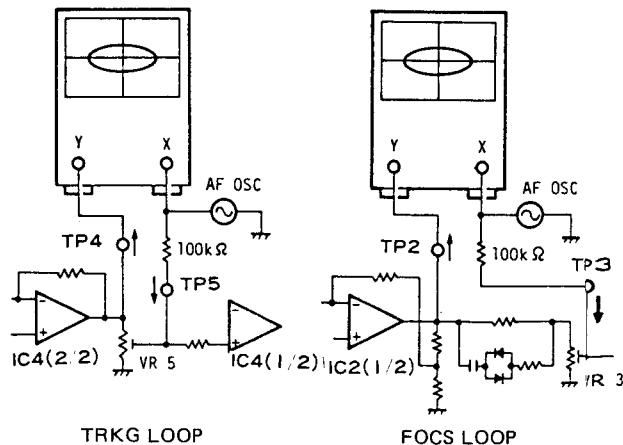


Fig. 5.6 Servo loop gain adjustments

**7. TRKG loop gain adjustment (VR5)**

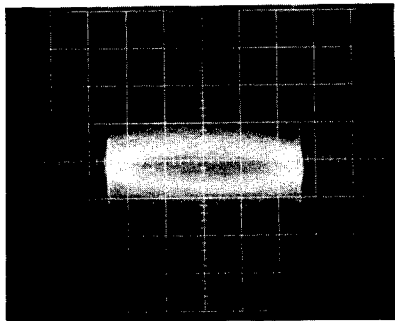
- Connect the oscillator and oscilloscope to TP4 and TP5, as shown in the figure. Set the oscilloscope to the X-Y mode. Set the oscillator output to the minimum.
- Search frame #15000.
- Set the oscillator output to the values below, depending on the test disc used:

**8. FOCS loop gain adjustment (VR3)**

- Connect the oscillator and oscilloscope to TP2 and TP3 as shown in the figure. Set the oscilloscope output to its minimum.
- Search frame #15000.
- Set the oscillator output to the values below, depending on the test disc used.

F1: 2.1kHz, 500mVp-p  
 F2: 1.6kHz, 500mVp-p  
 F4: 2.0kHz, 500mVp-p

- Adjust VR3 so that the Lissajous waveform is made horizontal.



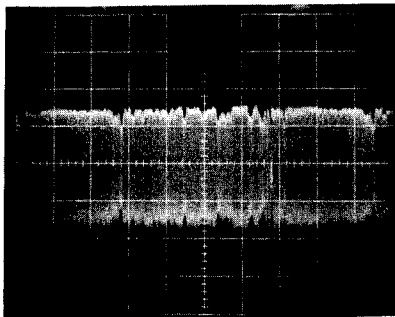
X : 100mV/div  
Y : 200mV/div

X : Oscillator output signal  
Y : FOCS error signal (PREB, TP2)

Photo 5. Lissajous waveform

### 9. RF level adjustment (VR6)

- Search frame #15000.
- Observe the TP6 RF signal and adjust VR6 so that its amplitude is made 300mVp-p.



PREB, TP6

100mV/div  
5mS/div

Photo 6. RF signal waveform

### 10. FOCS error balance adjustment (VR2)

- Search frame #104.
- Adjust VR2 so that the striped pattern, caused by the effects of crosstalk on the screen left and right, is reduced to the minimum.

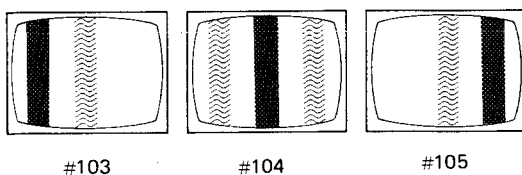


Fig. 5.7 Influence of Crosstalk

Note: In the figure, the influence of crosstalk is exaggerated.

### 11. Fine adjustment of GRATING

- Connect TP4 to the oscilloscope X input and CN24-5 [TRKG (A+B)] to the Y input. Set the oscilloscope to the X-Y mode.
- On condition that the input mode of the oscilloscope is in "GND", and adjust X and Y beam position volume of the oscilloscope, so that the beam is in the center of CRT.
- Search frame #15000 and set the TRKG servo to open.
- Use the L-type eccentric driver to finely adjust the grating so that the Lissajous waveform becomes a single horizontal line.
- Make sure that the positive amplitude is equal to the negative, if not, adjust VR4.
- Close the TRKG servo.

## 5.4 DEMB BOARD ADJUSTMENTS

### 1. Demodulated video level adjustment (VR201)

- Search chapter 15 (composite test pattern).
- Adjust VR201 so that the amplitude from the sync tip of the video signal at IC201 (PA3018) pin ⑬ to the white level is made 2Vp-p.

### 2. 1H-delayed video level adjustment (VR202)

- Search chapter 15 (composite test pattern).
- Adjust VR202 so that the amplitude from the sync tip of the video signal at IC 201 (PA3018) pin ⑪ to the white level is made 2Vp-p.

### 3. Audio signal level adjustment (VR1, VR2)

- Search chapter 9 (frame #7201) (1/L channel: 1kHz, 40% modulation), and set the player to the PLAY mode.
- Connect a vacuum-tube voltmeter to pin ⑪ of IC2 (HA12043) and adjust the audio output level to the value below.
- Search chapter 10 (frame #8101) (2/R channel: 1kHz, 40% modulation), and set the player to the PLAY mode.
- Connect the vacuum-tube voltmeter to pin ⑩ of IC2 (HA12043) and adjust so that the audio output level is set to the following values:

L channel	R channel
-----------	-----------

F1	70mVrms(198mVp-p)	72mVrms(204mVp-p)
F2	65mVrms(184mVp-p)	65mVrms(184mVp-p)
F4	65mVrms(184mVp-p)	65mVrms(184mVp-p)

Figures in parentheses apply when the oscilloscope is used.

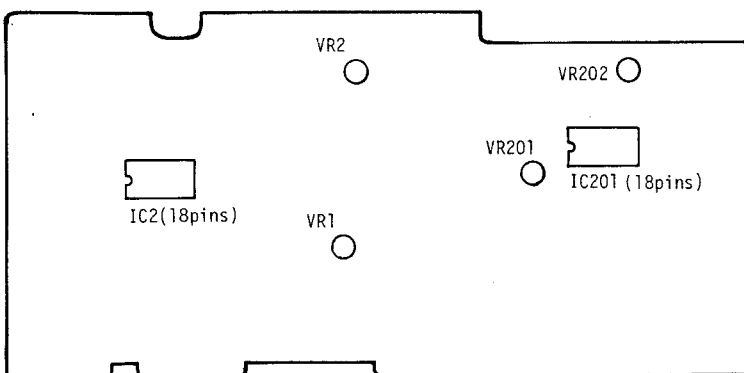


Fig. 5.8 Adjustment points of DEMB board

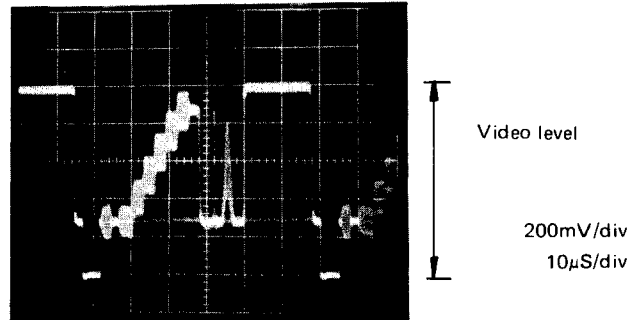


Photo 7. Composite test signal waveform (at "VIDEO OUT" terminal)

## 5.5 SRVB BOARD ADJUSTMENTS

Note: The SRVB board adjustments can be made without having to remove the shielding case.

### 1. Time base corrector (TBC) offset adjustment (VR8)

- Set the power switch to ON and, with the player in the standby mode, adjust VR8 so that the voltage of IC9 (NJM4558S) pin ② is set to DC 0V.

If noise makes it impossible to check the DC voltage, connect a low-pass filter between pin ② and the oscilloscope, as shown in the figure.

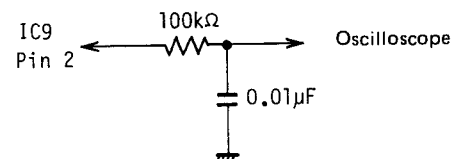


Fig. 5.9 Low-pass filter

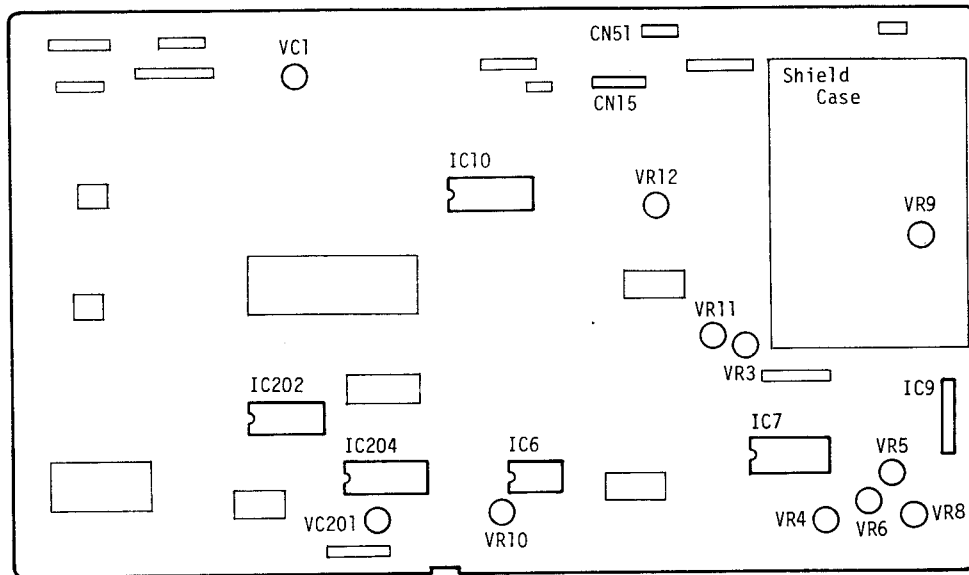


Fig. 5.10 Adjustment points of SRVB board

## 2. TBC video level adjustment (VR3)

Note: Make sure that the 1. Demodulated Video Level Adjustment under the DEMB board has been completed before proceeding with this adjustment.

- Search chapter 15 (composite test pattern).
- Adjust VR3 so that the amplitude from the sync tip of the CN51-1 video signal to the white level is set to 2Vp-p.

## 3. VCO center frequency adjustment (VR9)

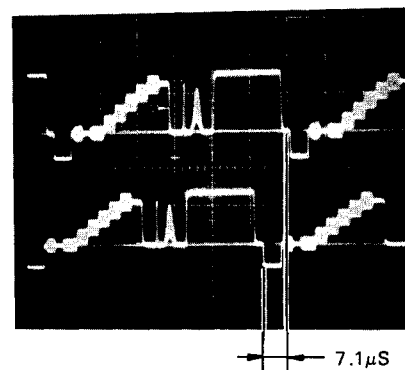
- Connect IC201 (PD3049) pin ③⑥ to GND.
- Connect IC3 (PA0017) pin ⑨ (R146 connected) to GND.

⇒ Forcibly set the time base error signal to 0 with an input to the CCD circuit.

- Adjust VR9 so that the CN51-1 video signal is delayed 7.1  $\mu$ sec from the CN15-7 video signal.

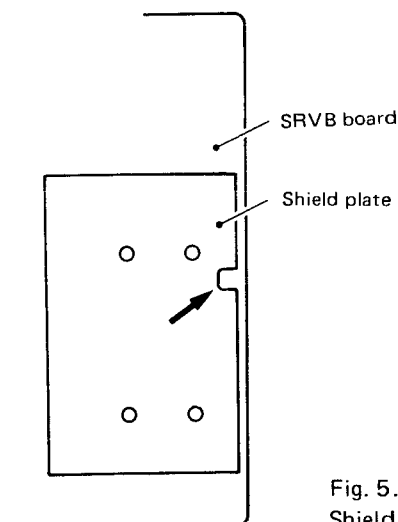
⇒ The video signal which is input from CN15-7 is delayed by the CCD circuit and output to CN51-1.

When the time base error is 0, the delay time will be 70.7  $\mu$ sec (1H + 7.1  $\mu$ sec).



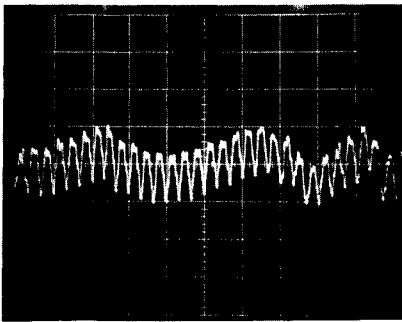
Upper:  
CN51-1  
IV/div  
Lower:  
CN15-7  
1V/div  
10 $\mu$ S/div

Photo 8. VCO center frequency adjustment

Fig. 5.11  
Shield plate on SRVB board

#### 4. Time base error detection adjustment (VR4)

- Proceed with the adjustments using the connections for 3. VCO Center Frequency Adjustment.
- Observe the time base error signal which is detected from the sync signal of IC7 (PA5009) pin ⑪ and adjust VR4 so that the waveform amplitude center is set to DC 0V.
- Disconnect the connections made between IC3 (PA0017) pin ⑨ and GND and between IC201 pin ⑳ and GND.



SRVB  
IC7, ⑪

200mV/div  
0.1 S/div

Photo 9. Time base error detection adjustment

#### 5. VCO circuit center frequency adjustment (VR10)

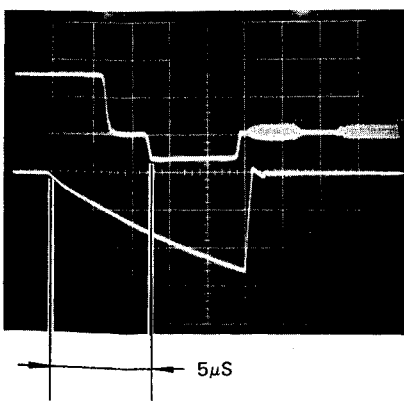
- Adjust VR10 so that the IC6 (PA0018) pin ⑥ voltage is set to the same value as that of pin ②.

#### 6. Master oscillator frequency adjustment (VC1)

- Connect the frequency counter to IC10 (PM2001) pin ⑳ and adjust VC1 so that the frequency is made  $3579545 \pm 5\text{Hz}$ .

#### 7. Sync gate timing adjustment (VR5)

- Adjust VR5 so that the CN51-1 video signal and IC7 (PA5009) pin ⑮ waveform have the timing as shown in the figure.

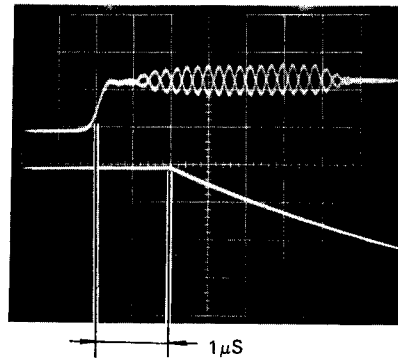


Upper:  
CN51-1  
1V/div  
Lower:  
IC7, ⑮  
1V/div  
2μS/div

Photo 10. Sync gate timing adjustment

#### 8. Burst gate timing adjustment (VR6)

- Adjust VR6 so that the CN51-1 video signal and IC7 (PA5009) pin ⑳ waveform have the timing as shown in the figure.



Upper:  
CN51-1  
500mV/div  
Lower:  
IC7, ⑳  
1V/div  
0.5μS/div

Photo 11. Burst gate timing adjustment

#### 9. Hue compensation circuit adjustment (VR12, VR11)

- Search chapter 20 (magenta pattern).
- Rotate VR11 clockwise as far as it will go.
- Observe the CN51-1 video signal and adjust VR12 to bring the waveform to a position where it stabilizes.
- Adjust VR11 so that the magenta color shading on the TV screen is reduced to its minimum.

#### 10. PD0011 clock frequency check (VC201)

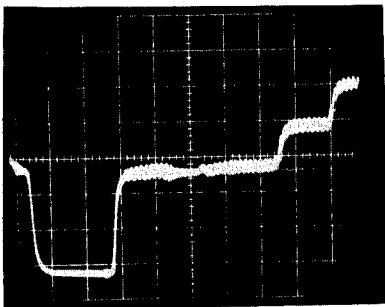
- Install a 12-inch CLV disc and play it.
- Search time #0:40 from the time #0:10 play mode and measure the time required to do this.
- Conversely, measure the search time from time #0:40 to time #0:10.
- Check that the search is completed in either case within 12 seconds.
- If the search takes far too long or if it is not completed successfully (play starts at a number other than the target number), adjust VC201 a little at a time and set it so that the above search time rating is satisfied.



## 5.6 VNRB BOARD ADJUSTMENT

Note: Refer to 4. VNRB, FMPB and INIB boards.

- Return the SRVB, CDCR and PREB boards to their original positions and re-attach the bottom plate.
- Remove the bonnet and install the player horizontally.
- Remove the screws securing the VNRB board and stand the board perpendicularly.
- Play a test disc and search chapter 15 (composite test pattern).
- Observe the Q2 emitter waveform.  
A video signal with the color signal removed is output to the Q2 emitter.
- Adjust VC1 so that the residual color burst signal component is brought to its minimum.



200mV/div  
2μS/div

↓ Photo 12.

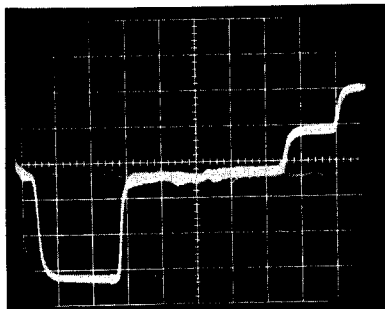


Photo 13.  
3.58 MHz suppression

## 5.7 OTHER ADJUSTMENTS

### Disc clamp switch position adjustment

- ⇒ When the DISC CLAMP switch is not pressed even though the disc is clamped, the DISC SET indicator on the front panel does not light and the disc table which was pulled back in is now immediately advanced. In cases like this, try adjusting the position of the switch as follows. Incidentally, the DISC CLAMP switch is located on the left side as seen from the front panel of the player.
- Remove the bonnet.
  - Place an ordinary screwdriver in the adjustment slot and raise the switch position by a slight rotation in the clockwise direction.
  - Send in the disc table with the disc installed on it and check that the disc starts to rotate normally.

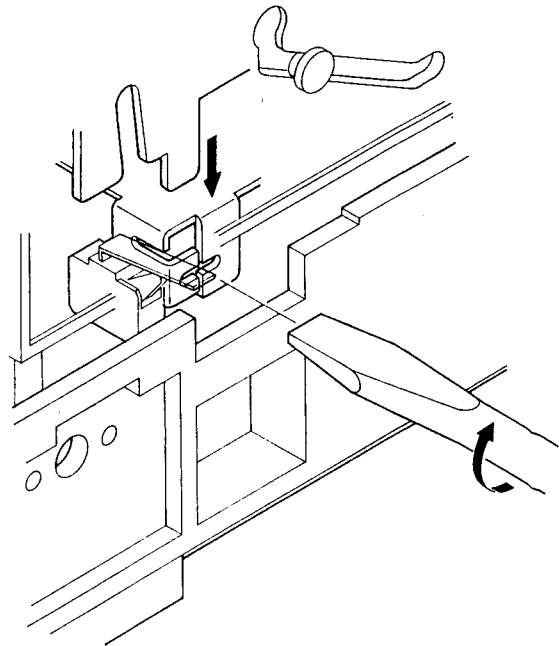
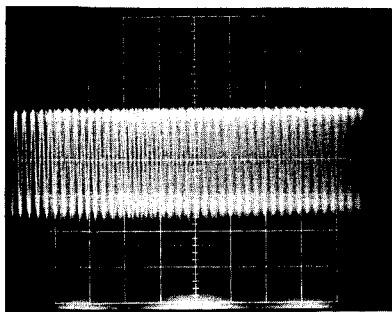


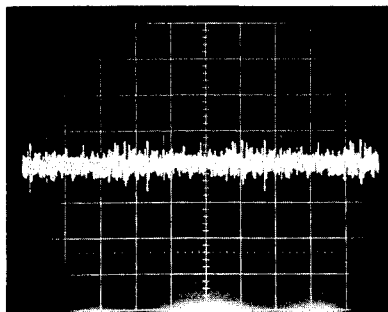
Fig. 5.12 Disc clamp switch position adjustment

# WAVEFORMS

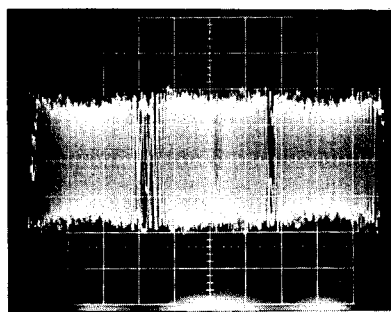
PREB TP6 (Frame#15000)  
100mV/div, 0.5 $\mu$ S/div



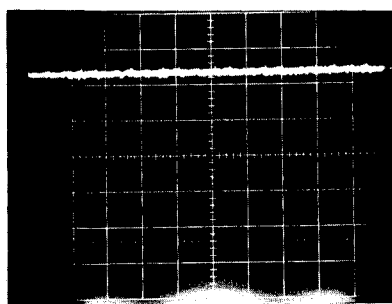
PREB TP2  
500mV/div, 10mS/div



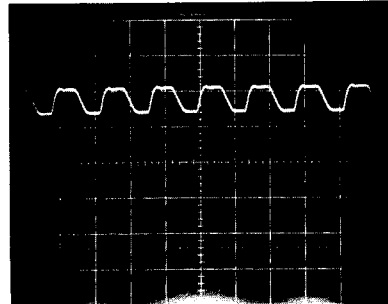
PREB TP4 (TRKG Loop open)  
500mV/div, 5mS/div



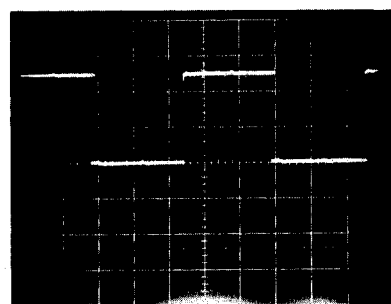
PREB CN24-5  
1V/div, 5mS/div



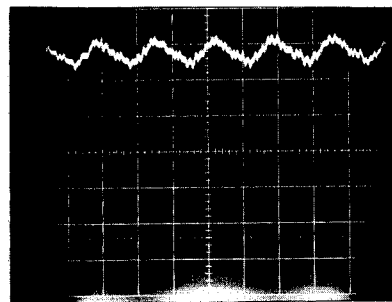
SRVB IC10 ⑳  
2V/div, 0.2 $\mu$ S/div



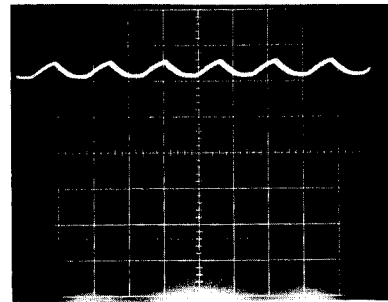
SRVB IC10 ㉑  
2V/div, 50 $\mu$ S/div



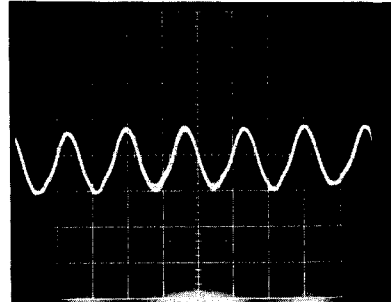
SRVB IC10 ㉒  
1V/div, 20mS/div



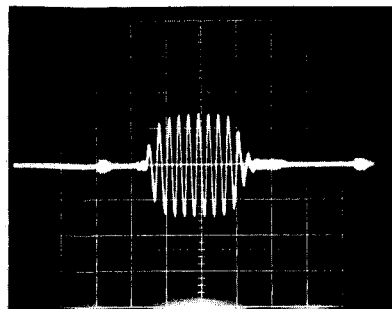
SRVB CN6-1  
2V/div, 20 $\mu$ S/div



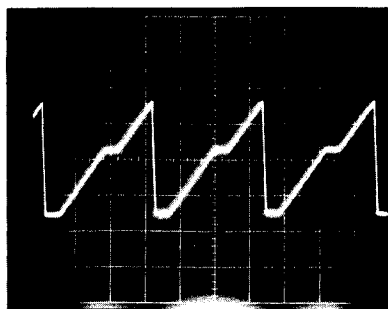
SRVB IC9 ㉓  
500mV/div, 20mS/div



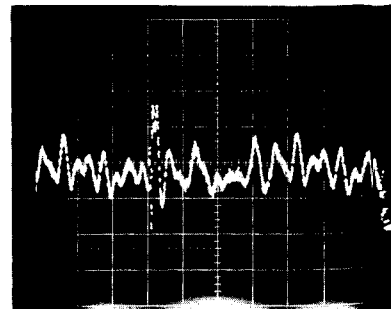
SRVB IC7 ㉔  
200mV/div, 1 $\mu$ S/div

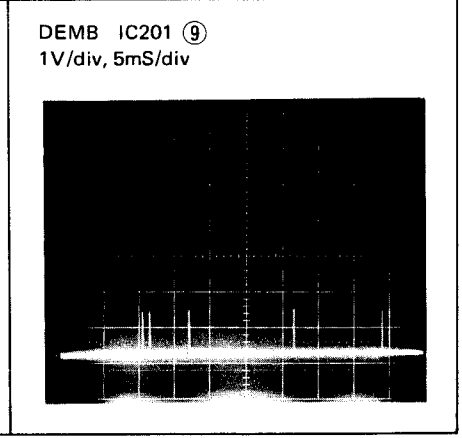
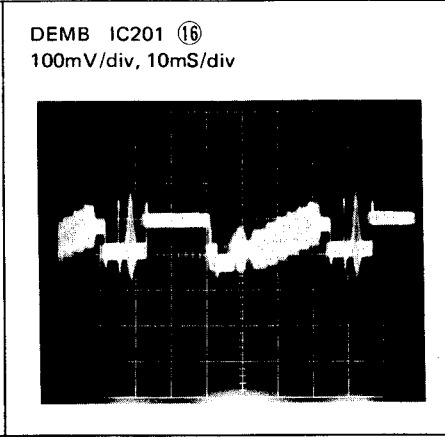
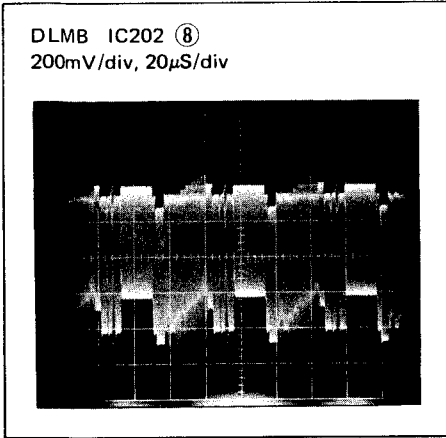


SRVB IC7 ㉕  
2V/div, 20 $\mu$ S/div



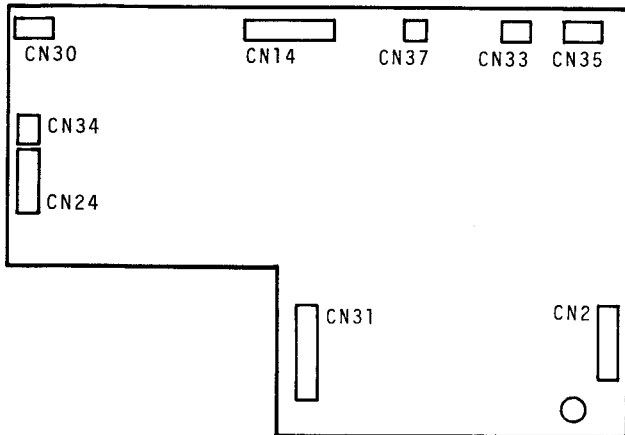
SRVB IC7 ㉖  
2V/div, 5mS/div



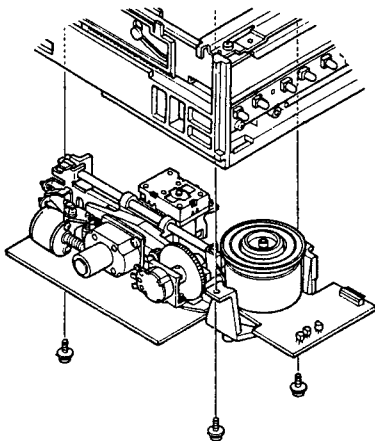


## HOW TO REPLACE THE PICK-UP

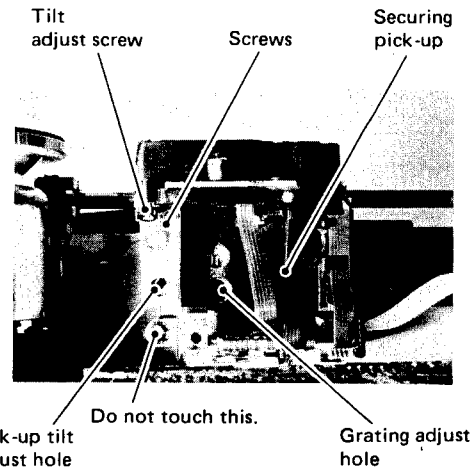
- (1) Remove the bottom plate.
- (2) Disconnect the four PREB board connectors and the BLMB board connector.  
PREB: CN2, CN14, CN24, CN37;  
BLMB: CN8



- (3) Take out the mechanical chassis assembly (hereafter called the mech. ass'y) from the player (by unscrewing the 3 screws).

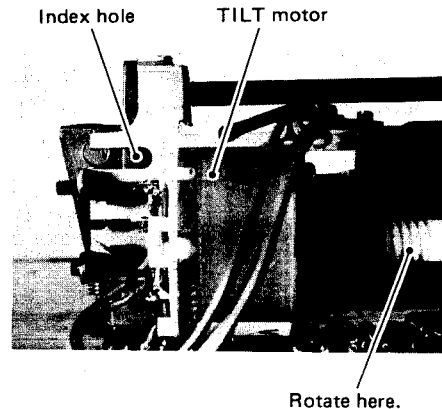


- (4) Take out the pick-up from the mech. ass'y (by unscrewing the 2 screws).  
Note: Since the pick-up cannot be removed when it is inside, it must therefore be moved to the outer circumference for removal.
- (5) Disconnect at the PREB board side the flexible cable which connects the pick-up with the PREB board.  
In order to prevent electrostatic damage, short-circuit the end of the flexible cable with a shorting connector or with aluminum foil.
- (6) Connect the flexible cable of the new pick-up to the PREB board and mount it onto the



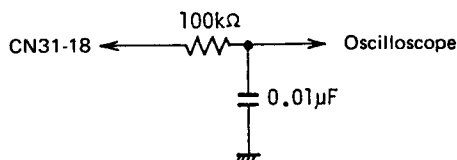
slider base. Rotate the pick-up clockwise as far as it will go and tighten the screws securing the pick-up moderately.

- (7) Disconnect the CN34 connector linking the tilt motor with the PREB board.
- (8) Rotate the tilt motor gear with your fingers and adjust it so that the index hole is positioned at the center of the cutout.



- (9) Mount the mech. ass'y onto the player and connect the connectors (four for PREB board and one for BLMB board). Keep the tilt motor connector CN34 disconnected.
- (10) Remove the 3 screws securing the PREB board.
- (11) Load the test disc, and press the PLAY key. In the event the front panel STAND BY lamp merely flashes without playback starting due to excessive misadjustment of the grating, perform coarse adjustment of the grating according to the following procedures:
  1. Press the PLAY key.
  2. When the spindle has begun accelerating, set the TRKG servo loop to open.
  3. Press the remote control unit's CLEAR key.

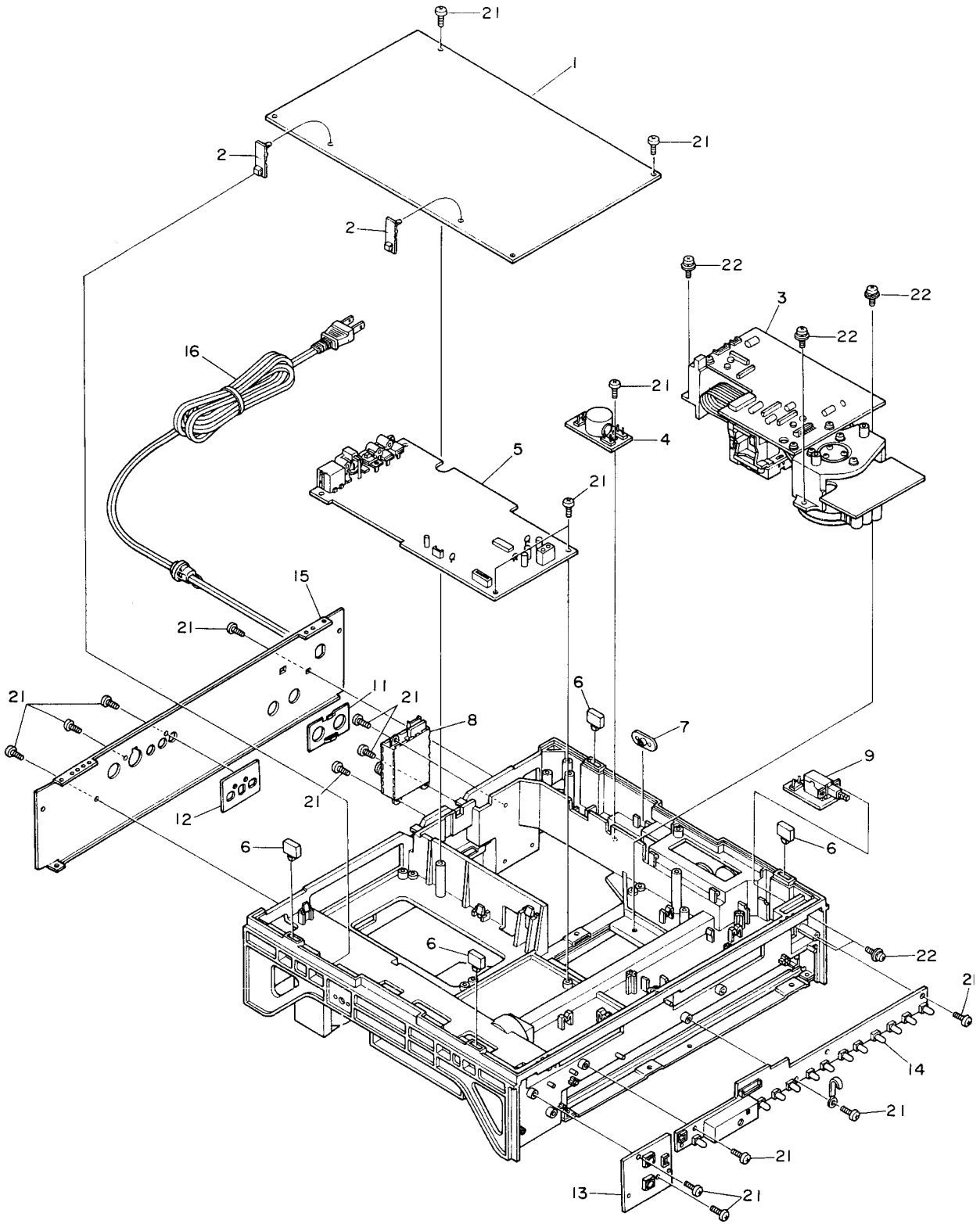
4. Press the remote control unit's DISPLAY key to display the frame number on the TV screen.
5. Using the remote control unit's SCAN FWD key, move the pick-up to the vicinity of frame #15000.
6. Perform coarse adjustment of the grating. For coarse adjustment of the grating, refer to the adjustment procedures "5. Coarse Adjustment of GRATING".
7. Set the TRKG servo loop to close.
- (12) Search frame #18914.
- (13) Hold up the PREB board and insert the L-type eccentric driver (GGV-129) into the pick-up tilt adjust hole.
- (14) Adjust the angle of the pick-up using the L-type eccentric driver so that the crosstalk is minimized.
- (15) Connect the oscilloscope through a low-pass filter to pin 18 of connector CN31 on the PREB board.  
Set the oscilloscope to the DC mode.
- (24) Mount the mech. ass'y onto the player. Keep connector CN34 still disconnected.
- (25) Play the test disc and check that there is no crosstalk at frame #104 and 18914.
- (26) Check that the voltage at TP7 on the PREB board is  $0 \pm 50\text{mV}$  at frame #104. If necessary, adjust it using the tilt adjust screw.
- (27) Adjust VR7 finely so that the voltage at TP7 on the PREB board is set to 0V.
- (28) Connect connector CN34.
- (29) Check that there is no crosstalk at frame #104 and 42314.
- (30) Tighten the 3 screws securing the PREB board.
- (31) Perform the electrical adjustments for the PREB board.



- (16) Search frame #17000 and make a note of the DC level on the oscilloscope.
- (17) Search frame #100 and check that the DC level on the oscilloscope is within  $\pm 90\text{mV}$  of the value noted above.
- (18) If the value does not meet the rating, observe the DC level on the oscilloscope at frame #100, rotate the tilt motor with your fingers and adjust so that the DC level is made identical to the DC level at frame #17000.
- (19) Check that there is no crosstalk at frame #104 and #18914. If necessary, search frame #18914 and adjust the pick-up tilt using the L-type eccentric driver (GGV-129).
- (20) Bring VR7 on the PREB board to its mechanical center point.
- (21) Search frame #104.
- (22) Adjust the tilt sensor adjust screw so that the voltage at TP7 on the PREB board is set to  $0 \pm 50\text{mV}$ .
- (23) Remove the mech. ass'y again and tighten up

# 6. EXPLODED VIEWS & PARTS LISTS

## 6.1 ENCLOSURES



**NOTES:**

- Parts without part number cannot be supplied.
- The  $\Delta$  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

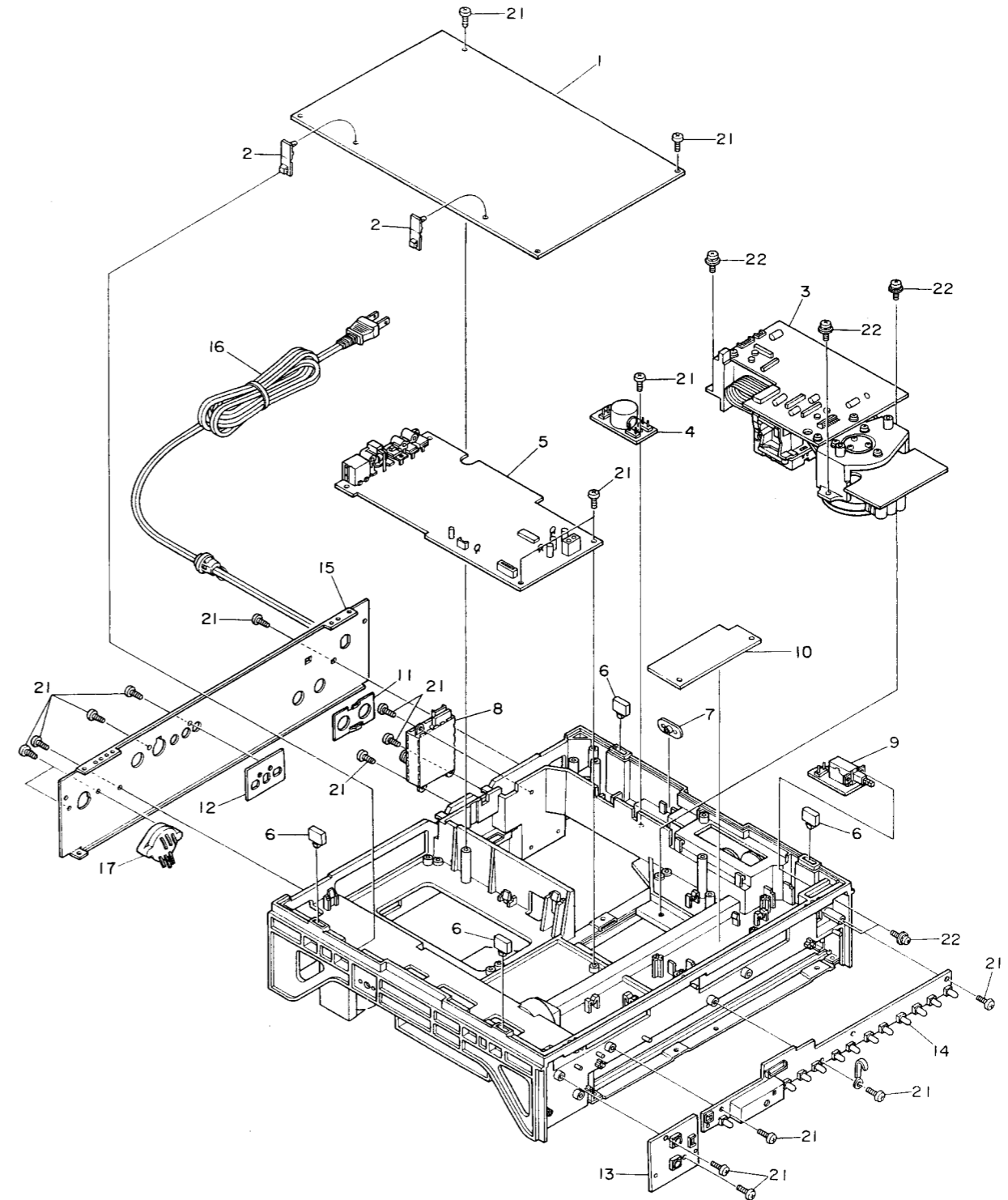
LD-707(BK)/S/G ( encl ) Parts list 1  
(MK) (KEY) ( PART NUMBER ) ( DESCRIPTION )

1	VNA-070	Bonnet
2	VNK-496	Knob blind
3	VNK-495	Volume knob
4	N.S.P.	HEPB
5	VSK-012	Switch
6	VNE-718	Switch holder
7	VBH-145	Door spring
8	VXX-425	Front panel ass'y
9	VXA-361	Button ass'y
10	vacant	
11	VBH-146	Spring
12	VAC-294	Power button
13	VXX-426	Front door ass'y
14	VEC-219	Plastic rivet
15	VNL-493	Lock roller
16	VXA-397	Carry ass'y
17	VRW-499	Carry label
18	N.S.P.	Bottom plate ass'y
19	vacant	
20	vacant	
21	BBZ30P050FMC	
22	BPZ30P060FUC	
23	BMZ20P080FMC	
24	BPZ30P080FZK	
25	BMZ40P100FZK	
26	APZ30P080FZK	

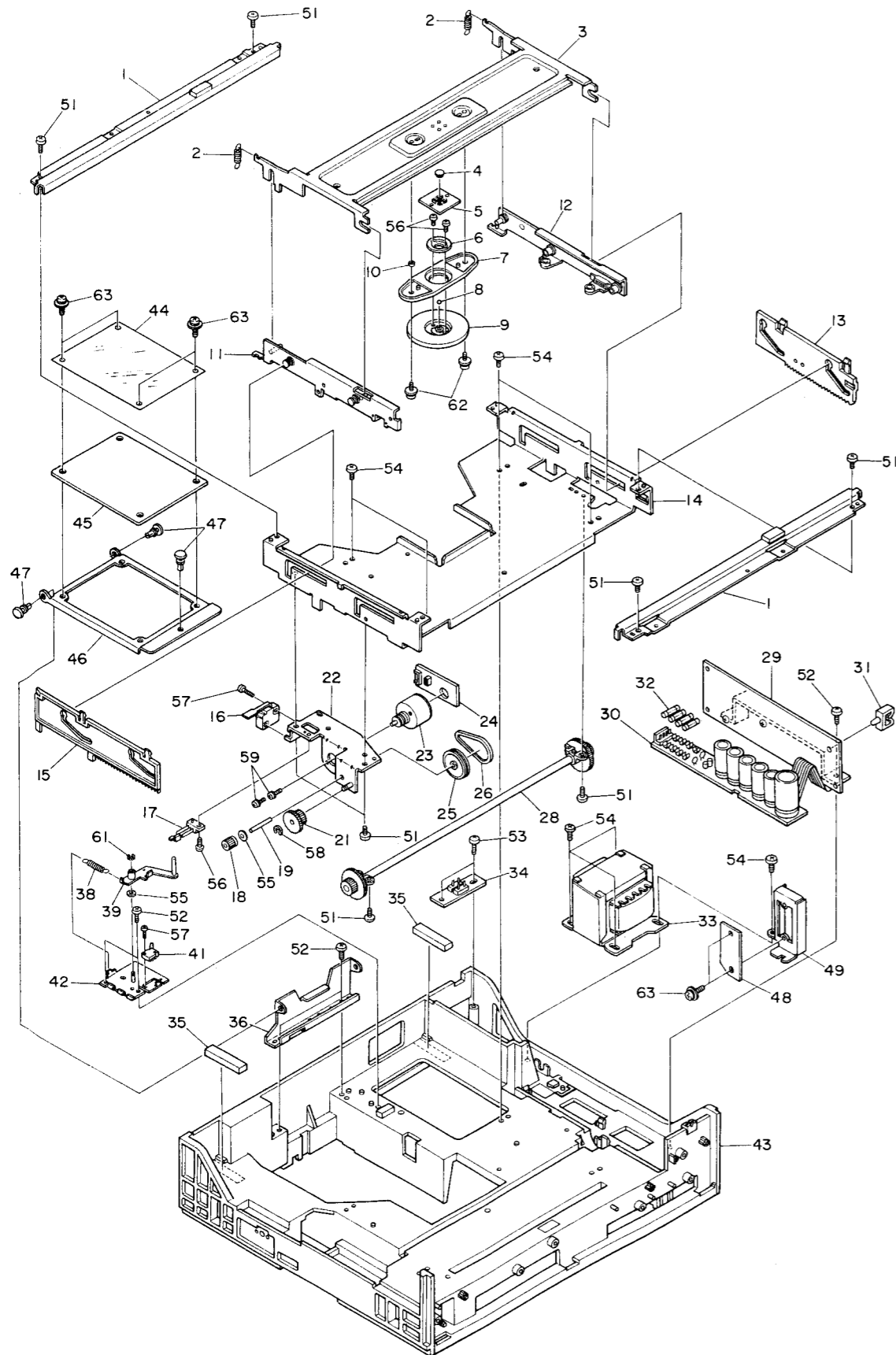
LD-707(BK)/S/G ( bott ) Parts list 1  
(MK) (KEY) ( PART NUMBER ) ( DESCRIPTION )

1	VWS-060	SRVB
2	N.S.P.	PCB hinge
3	vacant	
4	N.S.P.	LSFB
5	VWV-075	DEMB
6	VEB-108	Foot
7	VCN-005	Nut
8	VWL-024	RFMD
9	N.S.P.	PWSB
10	N.S.P.	INIB
11	VNE-748	RF plate
12	VNE-749	AV plate
13	N.S.P.	KEYB
14	N.S.P.	DISP,IRAB
15	N.S.P.	Rear panel
$\Delta$ 16	VDG-034	Power cord
$\Delta$ 17	VSB-003	Voltage selector
18	vacant	
19	vacant	
20	vacant	
21	BPZ30P080FZK	
22	PMB30P080FMC	

**6.2 BOTTOM VIEW**



6.3 TOP VIEW



NOTES:

- Parts without part number cannot be supplied.
- The  $\Delta$  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

LD-707(BK)/S/G ( top ) Parts list 1

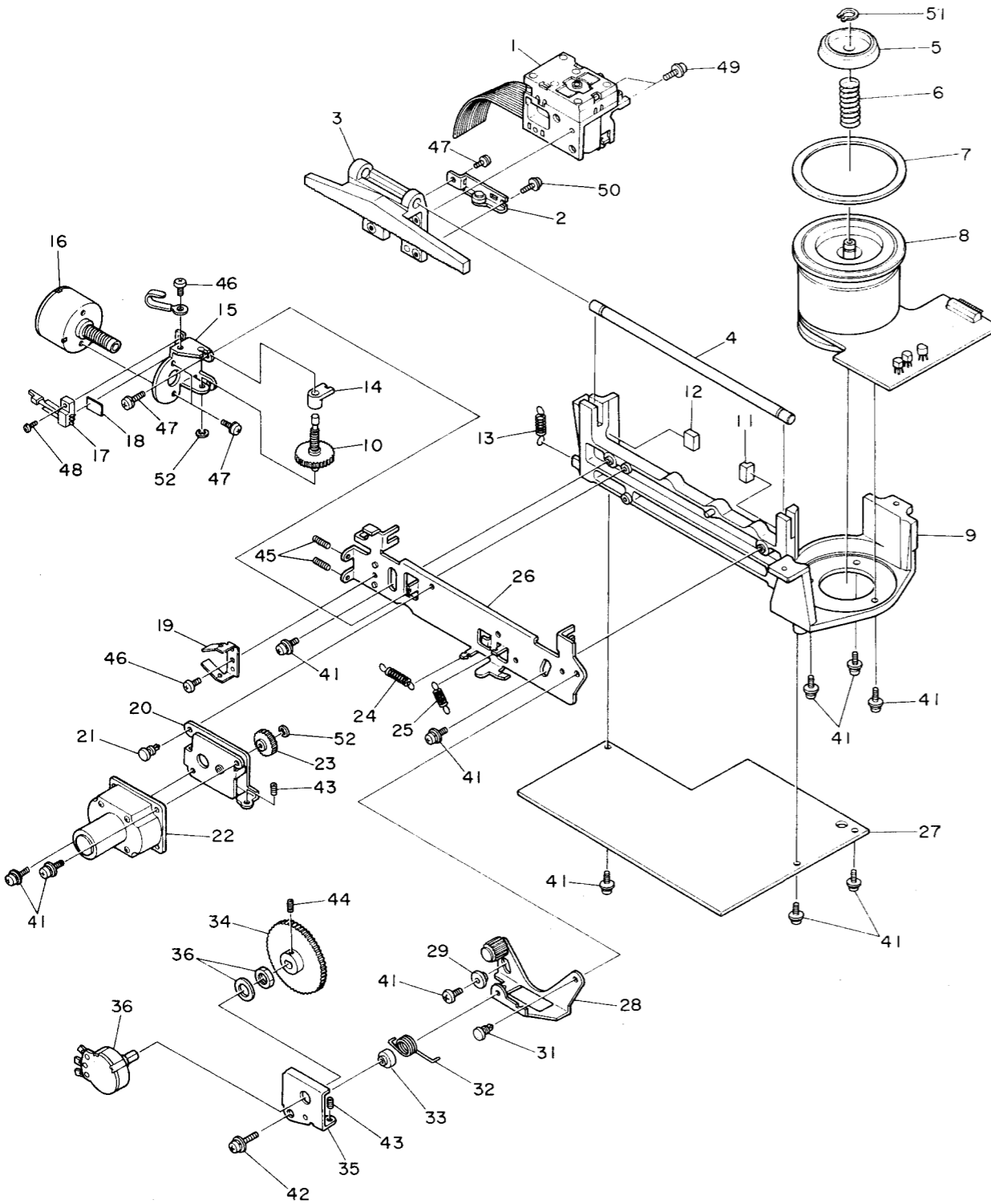
(MK)	(KEY)	( PART NUMBER )	( DESCRIPTION )
		1	N.S.P. Bridge
		2	VBH-143 Clamper spring
		3	N.S.P. Clamper holder
		4	VLL-282 Ball holder
		5	VNE-689 Holder plate
		6	VNL-500 Clamper head
		7	VNL-612 Clamper base
		8	vacant
		9	VNL-499 Disc clamper
		10	N.S.P. Spacer
		11	VXA-385 Roll plate L ass'y
		12	VXA-325 Roll plate R ass'y
		13	VNL-490 Rack gear R
		14	N.S.P. Sub-chassis
		15	VNL-489 Rack gear L
		16	VSK-010 Switch
		17	PSN-003 Switch
		18	VNL-149 Gear A
		19	VLL-303 Gaer A shaft
		20	vacant
		21	VNL-496 Gear B
		22	VXA-326 Motor holder ass'y
		23	VXM-054 LOAD motor
		24	N.S.P. LMCB
		25	VNL-494 Pulley
		26	VEB-112 Belt
		27	vacant
		28	VXA-327 Synchronized gear
		29	VYR-004 DRVb
		30	N.S.P. RECB
		31	N.S.P. Wire clip
		32	VEK-018 Fuse 3A/125V
		33	VTT-063 Power transformer
		34	N.S.P. CNNB
		35	N.S.P. Carry cushion A
		36	N.S.P. Chassis holder
		37	vacant
		38	VBH-148 SW lever spring
		39	VXA-343 SW lever ass'y
		40	vacant
		41	VSK-011 Switch
		42	VXA-342 SW base ass'y
		43	N.S.P. Base
		44	N.S.P. Sheet
		45	N.S.P. VNRB
		46	N.S.P. VNRB holder
		47	VEC-143 Plastic rivet
		48	N.S.P. FMPB
		49	N.S.P. FMPB holder
		50	vacant
		51	BBZ30P060FMC
		52	BPZ30P080FZK
		53	BPZ30P080FZK
		54	APZ30P080FMC
		55	WA32D060D025

LD-707(BK)/S/G ( top ) Parts list 2

(MK)	(KEY)	( PART NUMBER )	( DESCRIPTION )
		56	PMZ20P050FMC
		57	BMZ20P080FMC
		58	YE30FUC
		59	PMA26P040FMC
		60	vacant
		61	WT26D060D025
		62	PMB30P050FUC
		63	PMB30P060FMC



6.4 MECHANISM



NOTES:

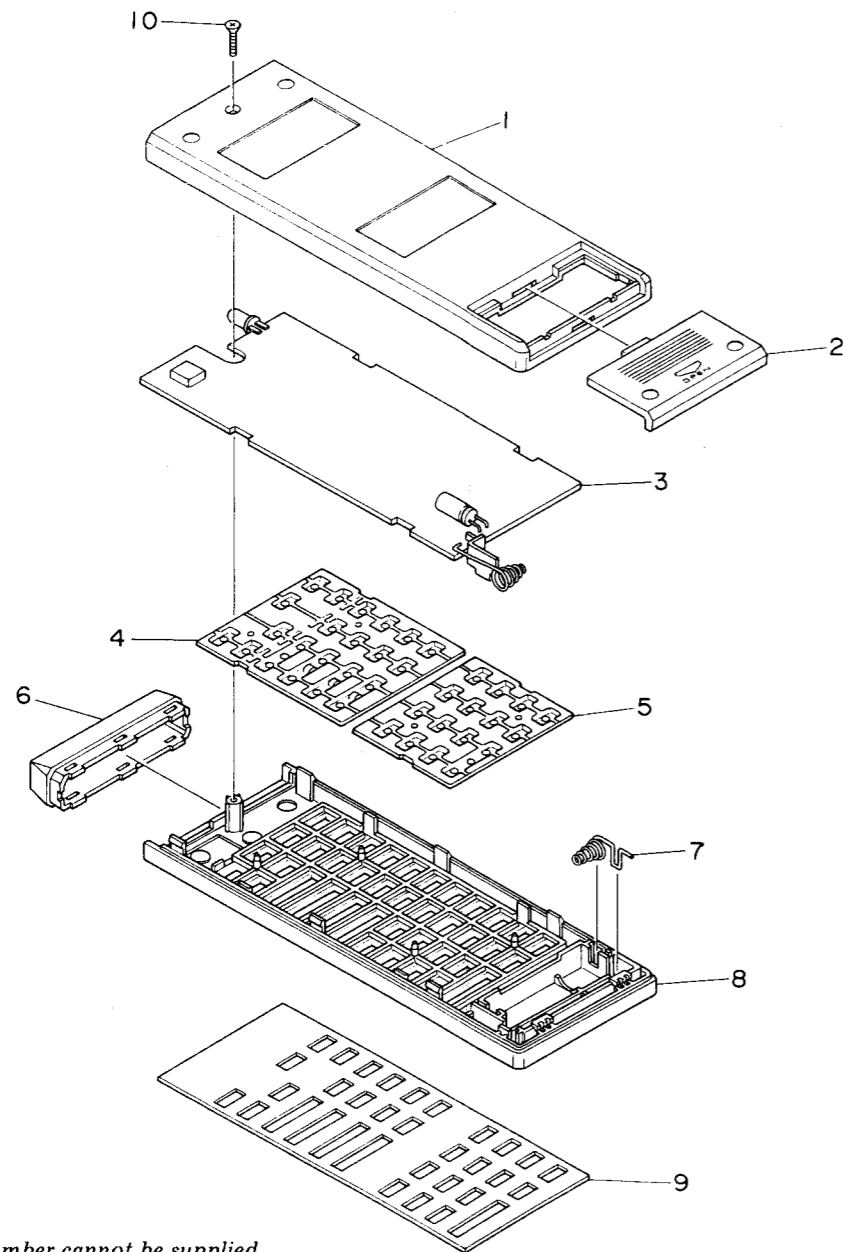
- Parts without part number cannot be supplied.
- The  $\Delta$  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

LD-707(BK)/S/G ( mech ) Parts list 1

(MK) (KEY) ( PART NUMBER ) ( DESCRIPTION )

1	VWY-097	Pick up ass'y
2	VXA-394	Roller arm ass'y
3	VNL-486	Slider
4	VLL-308	Shaft
5	VNV-037	Centering hab
6	VBH-141	Centering spring
7	VEB-111	Rubber spacer
8	VXM-051	SPDL motor
9	N.S.P.	Mech. chassis
10	VXA-387	Tilt shaft ass'y
11	N.S.P.	Cushion rubber A
12	N.S.P.	Cushion rubber B
13	VBH-142	Tilt spring
14	VNV-036	Tilt nut
15	N.S.P.	Tilt holder
16	VXM-060	TILT motor
17	PSN-003	Switch
18	N.S.P.	Spacer
19	VNE-701	Switch actuator
20	N.S.P.	Motor holder ass'y
21	VEC-143	Plastic rivet
22	VXM-050	SLDR motor
23	VNL-505	Slider pinion
24	VBH-138	SLDR motor spring
25	VBH-139	SLDR POT spring
26	N.S.P.	Tilt base
27	VWV-077	PREB
28	VXA-321	SLDR POT holder
29	VLL-311	Washer
30	vacant	
31	VEC-143	Plastic rivet
32	VBH-140	Torsion spring
33	VLL-310	Washer
34	VNL-508	SLDR POT pinion B
35	N.S.P.	SLDR POT support
36	VCS-017	SLDR POT
37	vacant	
38	vacant	
39	vacant	
40	vacant	
41	PMB30P080FMC	
42	PMB30P100FMC	
43	ZMD30H080FBT	
44	ZMD30H060FBT	
45	ZMD30H120FBT	
46	BBZ30P060FMC	
47	PMA26P040FMC	
48	PMZ20P050FMC	
49	PMB26P060FMC	
50	AMZ26P070FMC	
51	YC60FBT	
52	YE20FUC	

## 6.5 REMOTE CONTROL UNIT



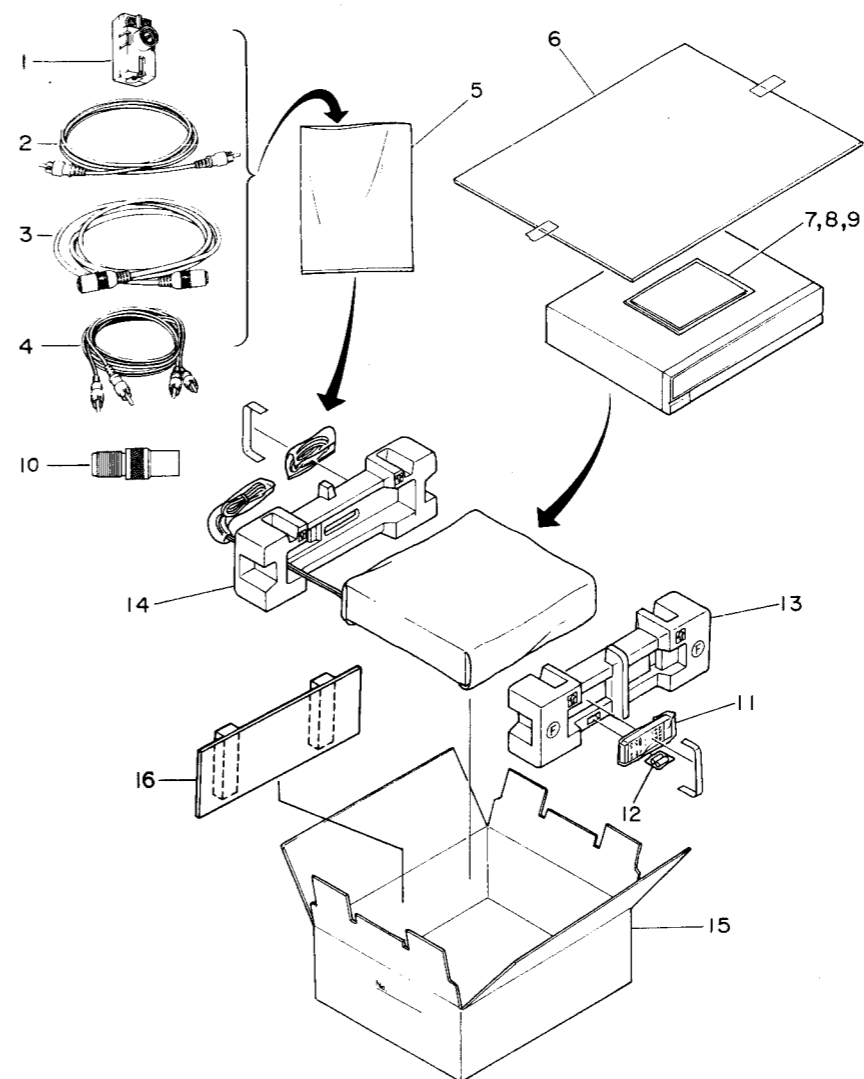
### NOTES:

- Parts without part number cannot be supplied.
- The  $\Delta$  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

CU-707(BK) (expl) Parts list 1  
 (MK) (KEY) ( PART NUMBER ) ( DESCRIPTION )

1	PNY-435	Case B
2	VNK-548	Cover
3	N.S.P.	RMTC
4	N.S.P.	Rubber sheet B
5	N.S.P.	Rubber sheet A
6	PNY-436	Filter
7	AZK-007	Battery spring
8	VNK-630	Case A
9	VAH-151	Al plate
10	CRZ20P080FZK	

## 7. PACKING



### NOTES:

- Parts without part number cannot be supplied.
- The  $\Delta$  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

LD-707(BK)/S/G ( pack ) Parts list 1  
 (MK) (KEY) ( PART NUMBER ) ( DESCRIPTION )

1	VKX-019	Antenna adapter
2	VDE-014	Video cable
3	VDE-039	Antenna cable
4	VDE-010	Connection cord
5	N.S.P.	Bag
6	VHL-032	Bag
7	VRB-046	Op. instructions
8	vacant	
9	N.S.P.	Caution card
10	VKX-017	F-IEC plug
11	VXX-415	CU-707
12	N.S.P.	Battery AAA
13	VHA-110	Pad F
14	VHA-131	Pad R
15	VHG-148	Packing case
16	VHA-129	Sub pad

### Pad R and Sub-pad

Among the LD-707-(BK)/S/G units manufactured in the initial period, there are some which make use of VHA-III for Pad R.

In such cases, use can not be made of the Sub-pad currently supplied as a service part. When replacement of the Sub-pad is necessary, simultaneously replace Pad R with VHA-130, or when Pad R needs to be replaced, simultaneously also replace the Sub-pad (VHA-129).