

# Service Manual

**COMPACT**  
**disc**  
DIGITAL AUDIO

**MASH\***  
multi-stage noise shaping

\*\*  
**DOLBY B NR**

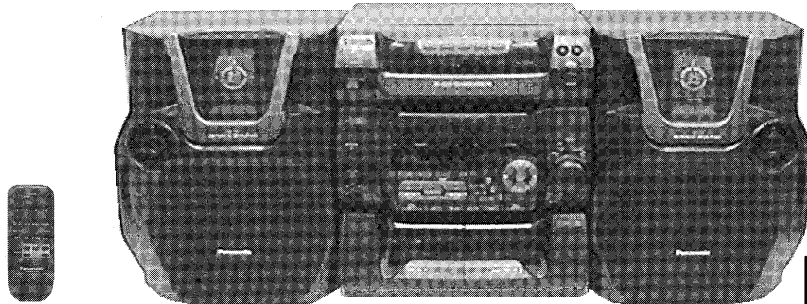
CD Stereo System  
**SA-AK40**

Colour

(K) ... Black Type

Area

Suffix for Model No.	Area	Colour
(PC)	Canada	(K)



Remote Control Transmitter

SB-AK40

SA-AK40

SB-AK40

System	Music Center	Speaker
SC-AK40 (PC)	SA-AK40 (PC)	SB-AK40 (P)

\* MASH is a trademark of NTT.

\*\* Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation. "Dolby" and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.

**TAPE SECTION : AR2 MECHANISM SERIES**  
**CD SECTION : RAE0150Z TRAVERSE DECK SERIES**

## Specifications

### Amplifier Section

Rated minimum sine wave RMS/FTS power output	
50 Hz - 12 kHz both channels driven	
0.9% total harmonic distortion	2 x 60W (6 Ω)
1kHz continuous power output, both channels driven 0.9% total harmonic distortion	2 x 70W (6 Ω)
Total harmonic distortion half power at 1 kHz	0.10% (6 Ω)
Frequency response	
CD, AUX	60 Hz - 20 kHz (-3 dB)
Input sensitivity	
AUX	250 mV (57 mV, IHF '66)
Input impedance	
AUX	57 kΩ
Tone Controls	
6 EQ SPACE	HEAVY, CLEAR, SOFT, DISCO, LIVE, HALL
Load impedance	6 Ω

### FM Tuner Section

Frequency range	87.5 - 108.0 MHz
Sensitivity	23.3 dBf (4.0 μV, IHF '58)
Total harmonic distortion	
MONO	0.3 %
STEREO	0.5 %
S/N (MONO)	60 dB
Image rejection at 98.1 MHz	35 dB
Stereo separation at 1 kHz	35 dB
Antenna terminal(s)	75 Ω (unbalanced)

### AM Tuner Section

Frequency range	520 - 1710 kHz
Sensitivity (For 500 mW)	250 μV/m

### CD Section

Sampling frequency	44.1 kHz
Decoding	16 bit linear
Beam source/wave length	Semiconductor laser / 780 nm
Number of channels	Stereo
S/N ratio	
CD UNIT OUT	95 dB (JIS A)
SP OUT	87 dB (JIS A)

Wow and flutter	Unmeasurable
Digital filter	8 fs
D/A converter	MASH (1 bit DAC)

### Cassette Deck Section

Track system	4 track, 2 channel
Heads	
Playback	Solid permalloy head (Rotary)
Record/Playback	Solid permalloy head (Rotary)
Erase	Double gap ferrite head
Motor	DC servo motor
Recording system	AC bias 100 kHz
Erasing system	AC erase, 100 kHz
Tape speed	4.8 cm/s (1 7/8 ips)
Frequency response	
NORMAL	35 Hz - 14 kHz
CrO <sub>2</sub>	35 Hz - 14 kHz
S/N ratio (CrO <sub>2</sub> type tape)	
Dolby NR off	50 dB (A weighted)
Dolby NR on	60 dB (CCIR)
Wow and flutter	0.18 % (WRMS)
Fast forward and rewind times	Approx. 120 seconds with C-60 cassette tape

### General

Power consumption	
System	110 W
Power OFF	9.1 W
Power supply	AC 120 V, 60 Hz
Dimensions (W x H x D)	270 x 330 x 339 mm (10 <sup>5</sup> / <sub>8</sub> " x 13" x 13 <sup>3</sup> / <sub>8</sub> " 7.3 kg (16.1 lb.)
Weight	

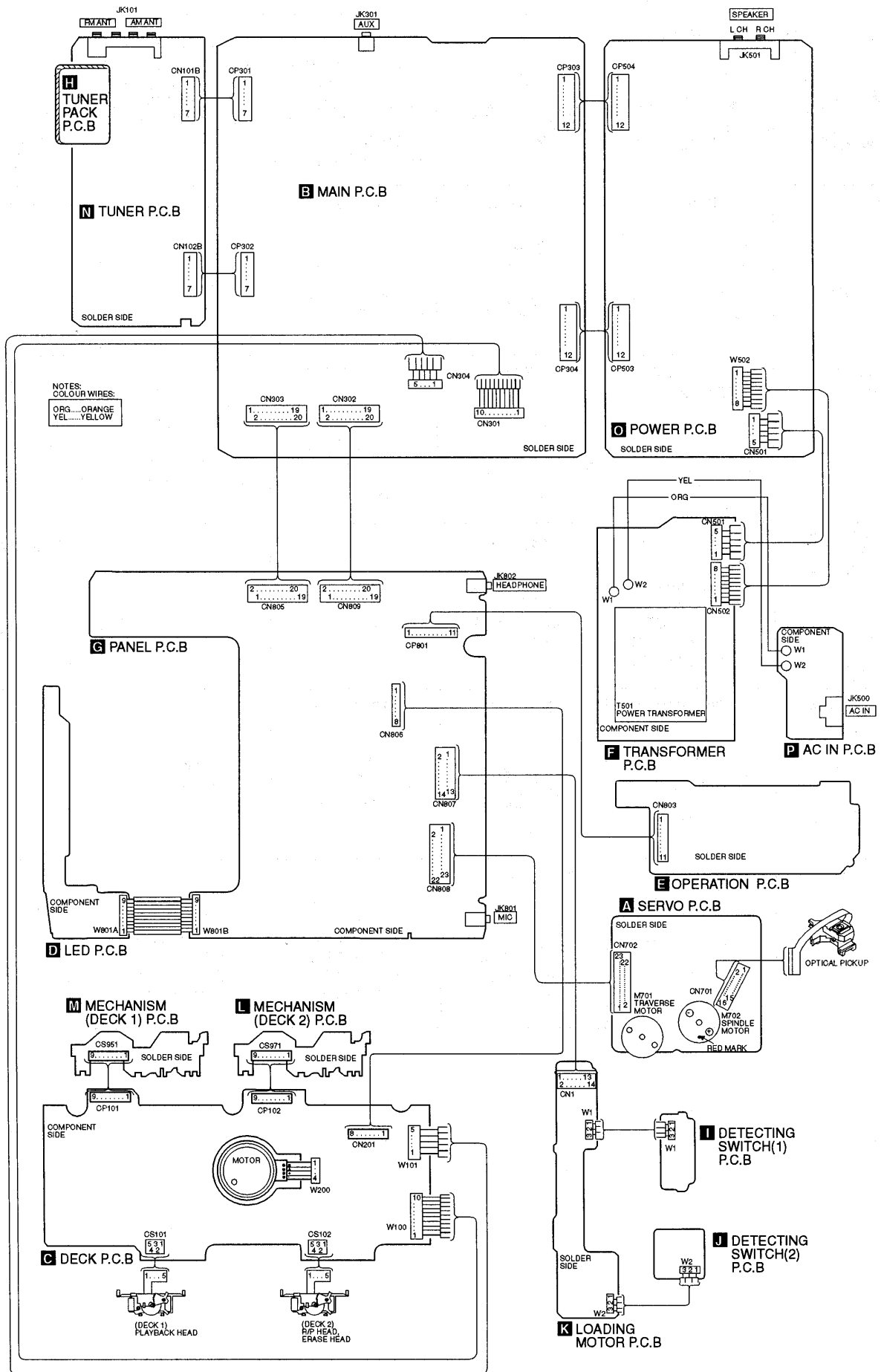
### Notes :

- Specifications are subject to change without notice. Weight and dimensions are approximate.
- Total harmonic distortion is measured by the digital spectrum analyzer.

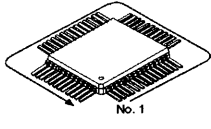
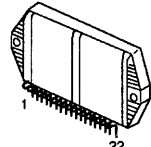
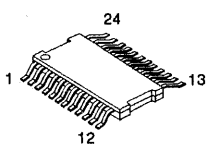
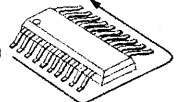
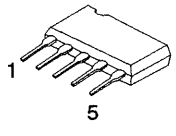
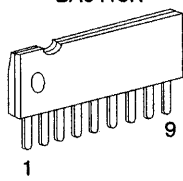
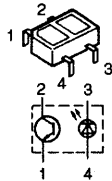
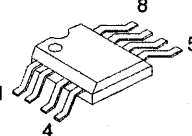
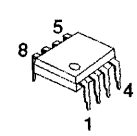
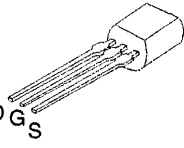
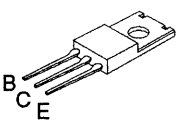
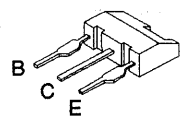
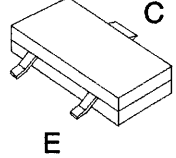
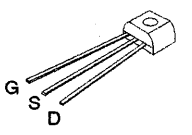
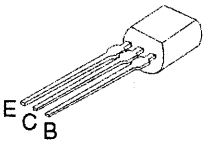
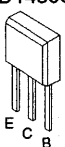
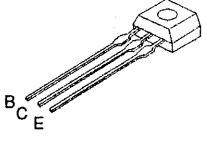
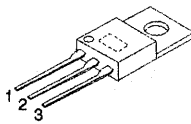
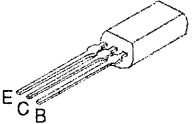

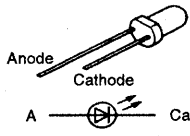
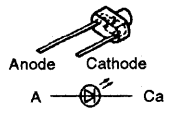
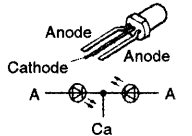
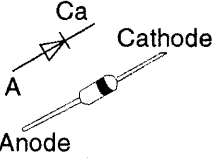
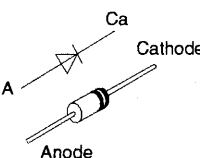
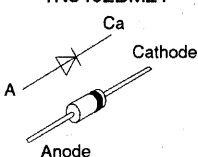
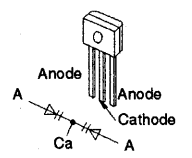
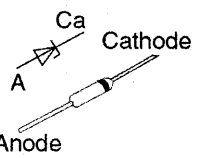
**Panasonic**®

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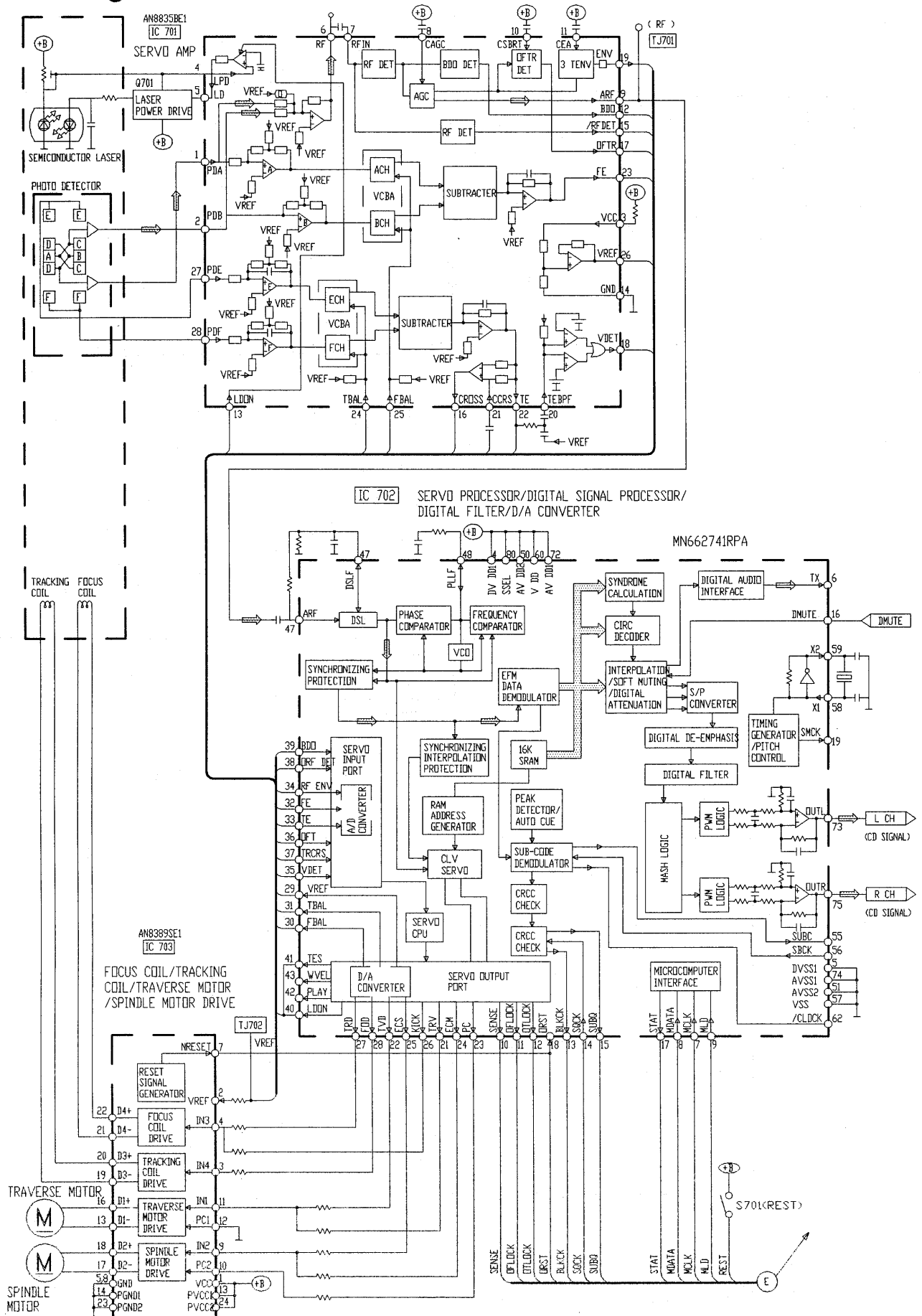
# Wiring Connection Diagram

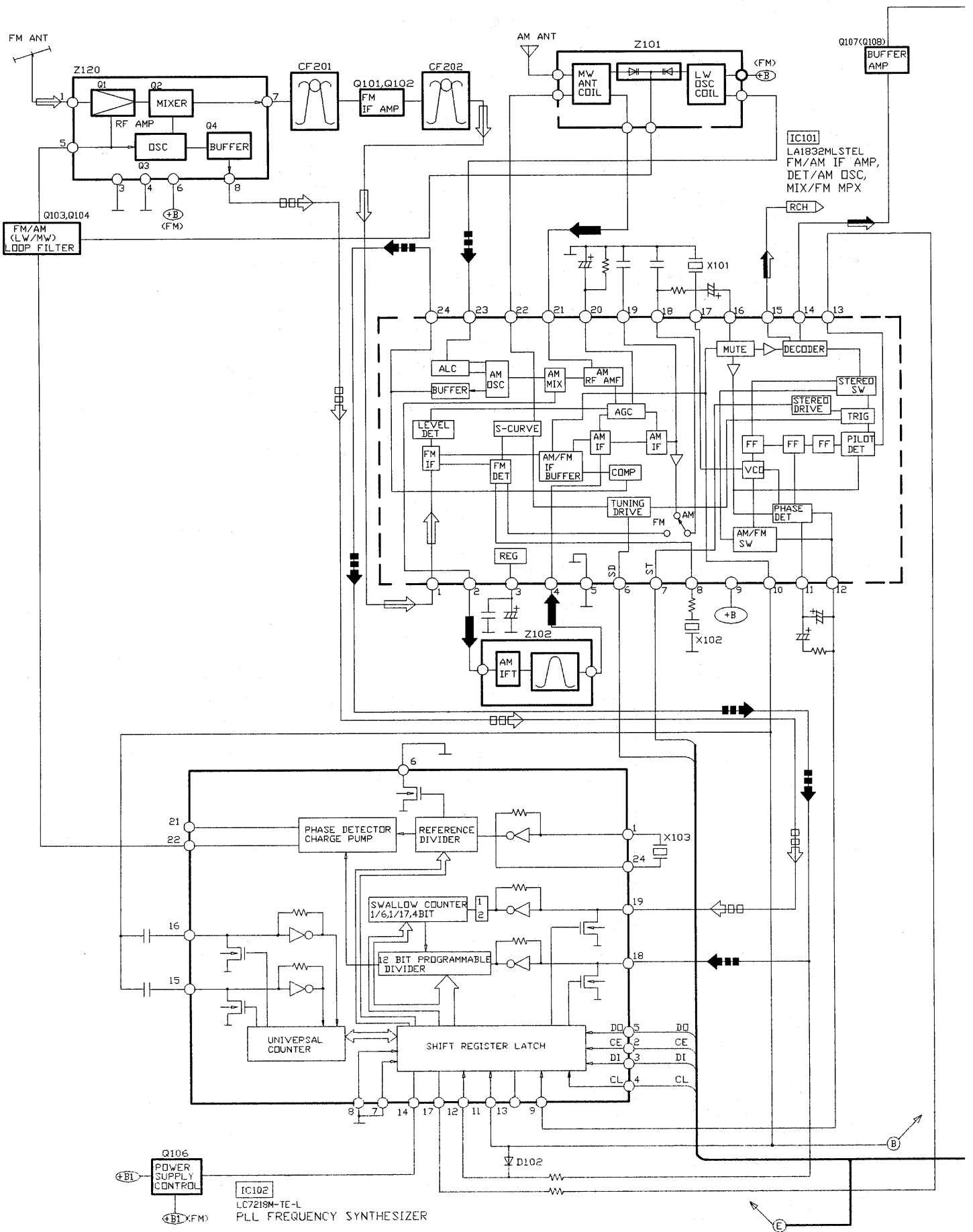


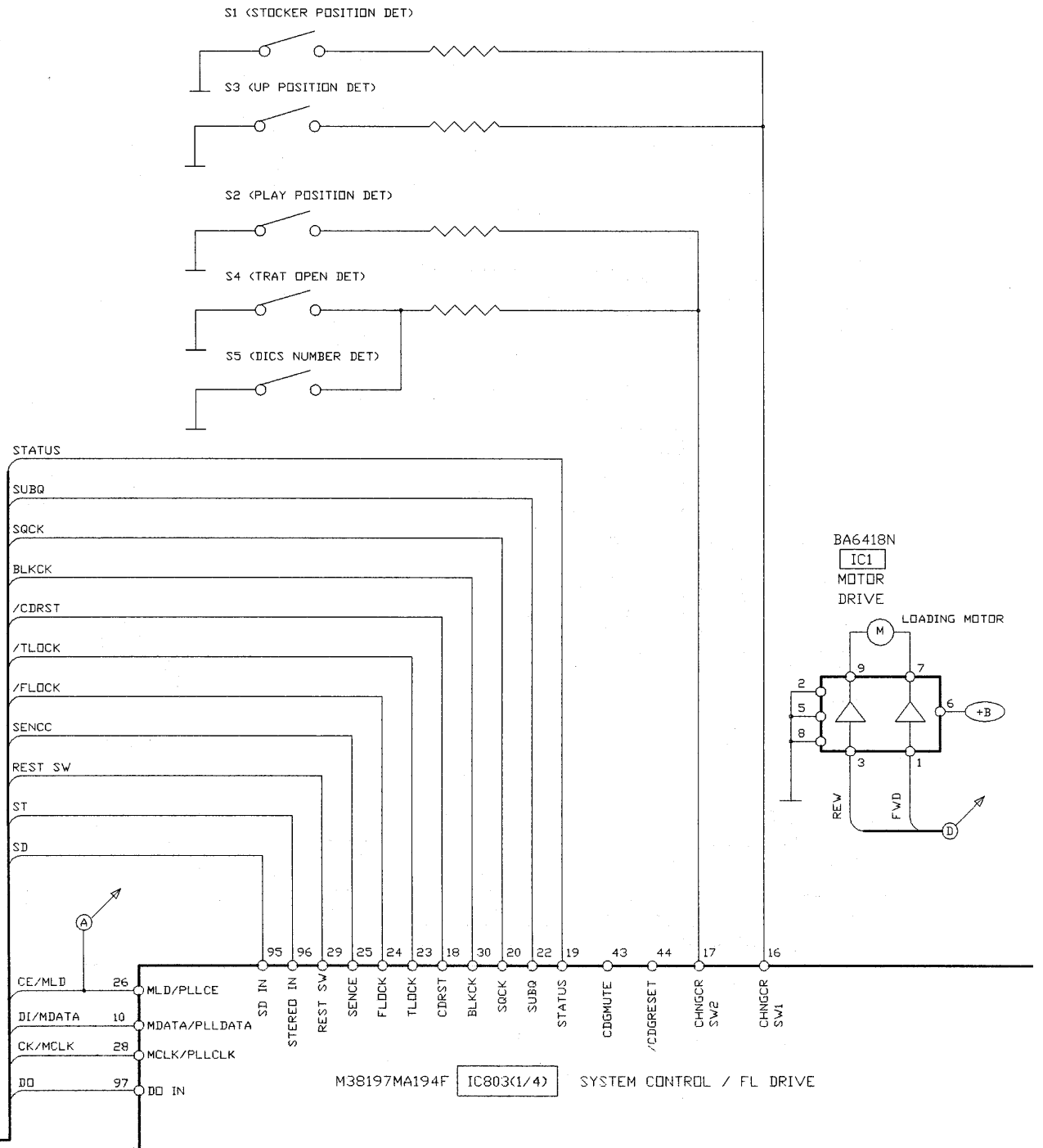
## Terminal Guide of ICs, Transistors and Diodes

<p>M38197MA194F(100P) MN662741RPA(80P)</p>  <p>No. 1</p>	<p>RSN308M24-P</p>  <p>1 22</p>	<p>AN8389SE1</p>  <p>1 12 13 24</p>	<p>BA3835F-E2(18P)      BA3838FE2(16P)            AN8835SBE1(28P)      BU4066BCF-E2(14P)            BU2040F-E2(16P)      CXA1102M-T2(16P)            BU2090F-E2(16P)      LA1832MLSTEL(24P)            BU4052BCF-E2(16P)      LC7218M-TE-L(24P) No. 1            M51167BFP-TB(36P)            BH3854AFS-E2(32P)</p> 		
<p>BA7755A</p>  <p>1 5</p>	<p>BA6418N</p>  <p>1 9</p>	<p>ON2180RLC</p>  <p>1 2 3 4</p>	<p>BA4558FE2</p>  <p>1 4 5 8</p>	<p>M5218AP</p>  <p>1 4 5 8</p>	<p>2SK301QTA</p>  <p>D G S</p>
<p>2SD2395E 2SB1566E</p>  <p>B C E</p>	<p>2SB1238Q 2SD1859QRTV2</p>  <p>B C E</p>	<p>2SB709S</p>  <p>B C E</p>	<p>2SK544F-AC</p>  <p>G S D</p>	<p>2SC1684RTA 2SC2001KTA 2SB621RTA 2SD1302STA 2SD965RTA KSD471ACYGTA</p>  <p>E C B</p>	
<p>2SC2784FTA BA1A4MTA 2SD1450STA</p>  <p>E C B</p>	<p>2SA933SSTA RVTDTA143XST 2SC1740SLNET RVTDTC144TST 2SC1740SSTA RVTDTA114EST RVTDTC144EST</p>	<p>2SC2786MTA 2SC2785FTA 2SC2787LTA 2SC2787FL1TA 2SD1020HTA BA1A4ZTA</p>  <p>B C E</p>		<p>AN78M05AB</p>  <p>1 2 3</p>	<p>2SC3940AQSTA</p>  <p>E C B</p>
<p>2SJ164QRTA</p>  <p>S G D</p>	<p>SLR325DCT31</p>  <p>Anode Cathode A Ca</p>	<p>SLR-325MC</p>  <p>Anode Cathode A Ca</p>	<p>SPR505MDTT</p>  <p>Anode Anode Cathode Cathode A Ca A</p>	<p>1SS254TA 1SS291TA MA165TA</p>  <p>Ca Cathode A Anode</p>	
<p>RK306LFU1</p>  <p>Ca Cathode A Anode</p>	<p>1D3E 1N5402BM21</p>  <p>Ca Cathode A Anode</p>	<p>SVC211SPA-AL</p>  <p>Anode Anode Cathode Cathode Ca A</p>	<p>MTZJ11CTA MTZJ24DTA MTZJ3R6BTA MTZJ4R7BTA MTZJ5R1BTA MTZJ36ATA</p> <p>MTZJ16ATA MTZJ5R1CTA MTZJ5R6BTA MTZJ6R8BTA MTZJ8R2BTA MTZJ9R1CTA</p>  <p>Ca Cathode A Anode</p>		

Block Diagram

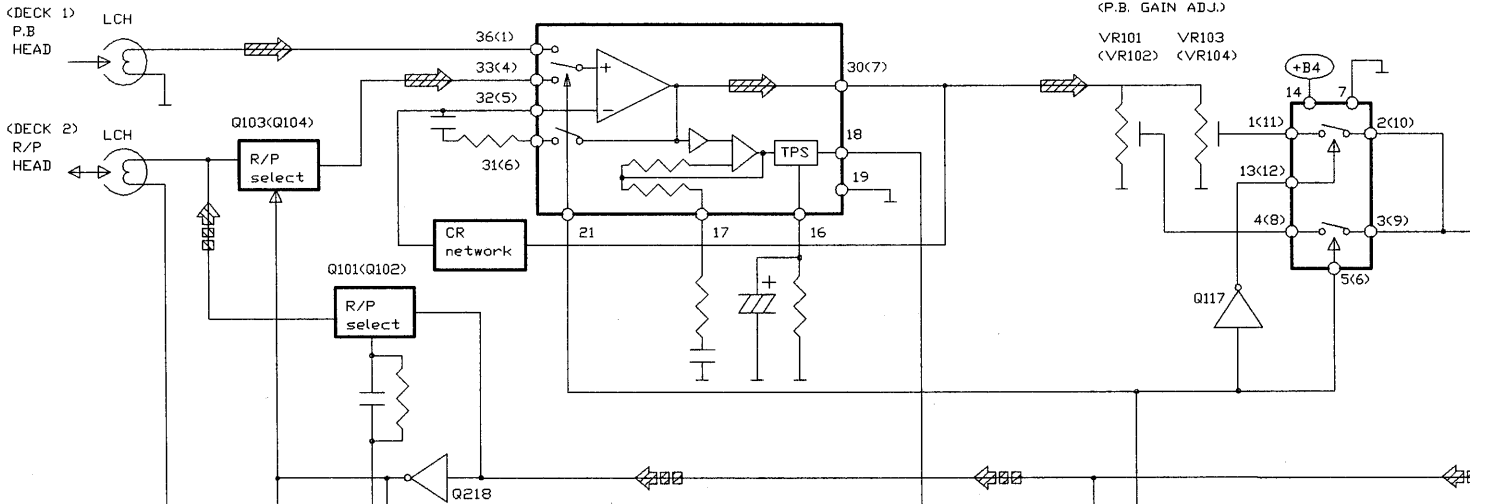






M51167BFP-TB  
 IC101(1/2)  
 P.BEQ/TPS AMP

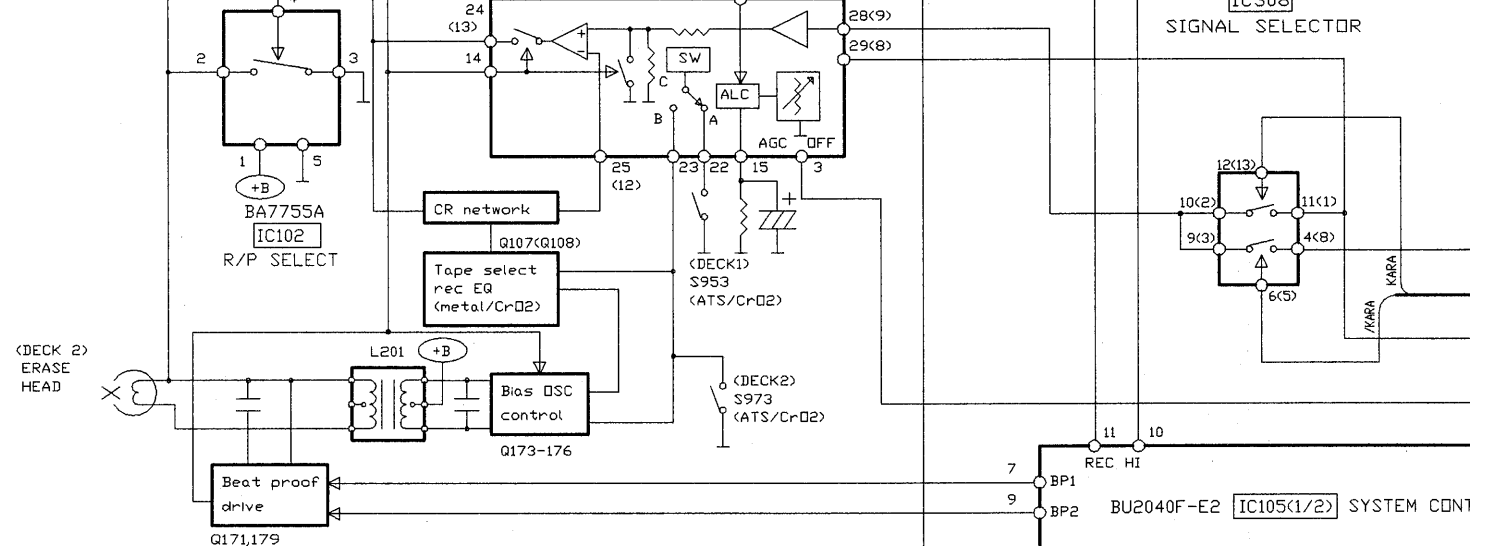
BU4066BCF-E2  
 IC104  
 DECK 1/2 SELECIOR



(P.B. GAIN ADJ.)  
 VR101 (VR102) VR103 (VR104)

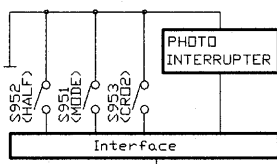
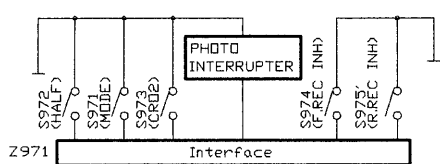
M51167BFP-TB  
 IC101(1/2)  
 REC AMP/ALC

BU4066BCF-E2  
 IC308  
 SIGNAL SELECTOR

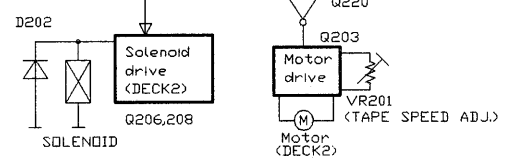


DN2180RLC  
 IC971  
 (DECK2)

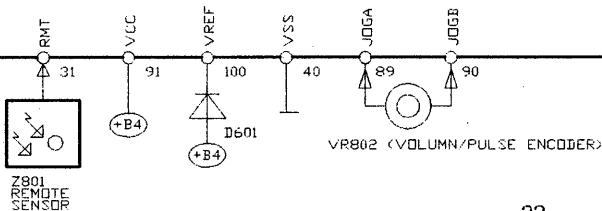
DN2180RLC  
 IC951  
 (DECK1)

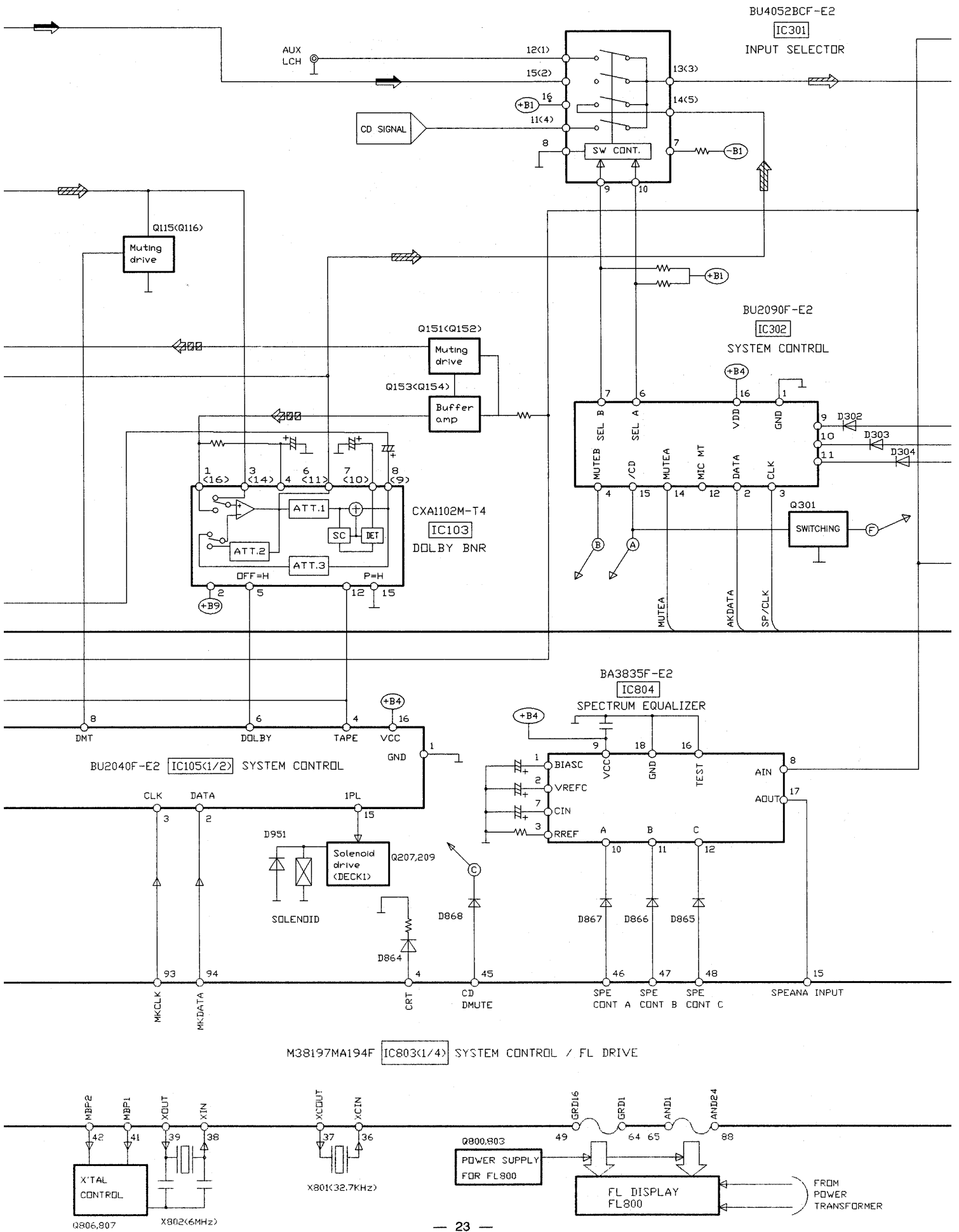


Interface (Q118-Q121)

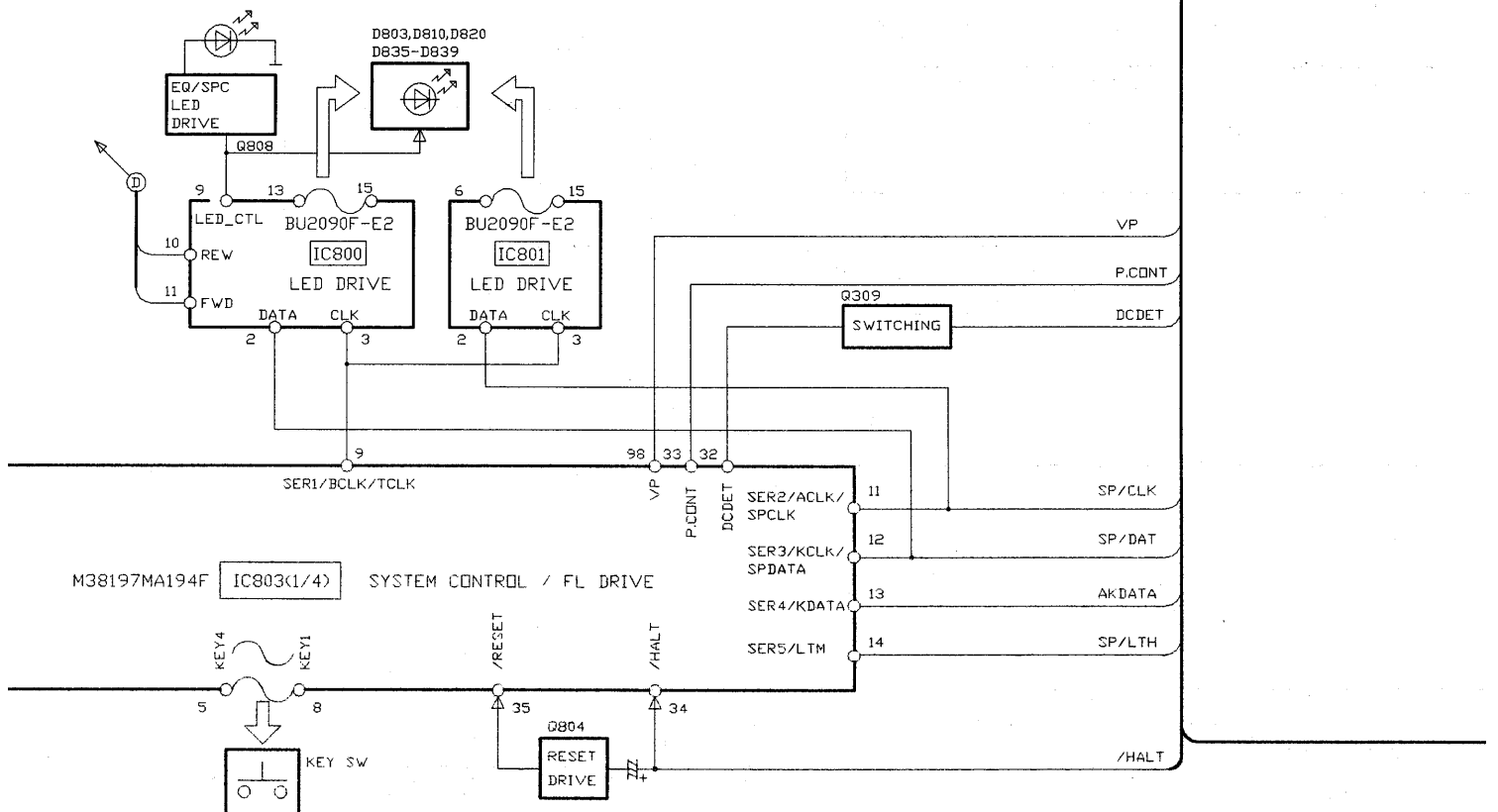
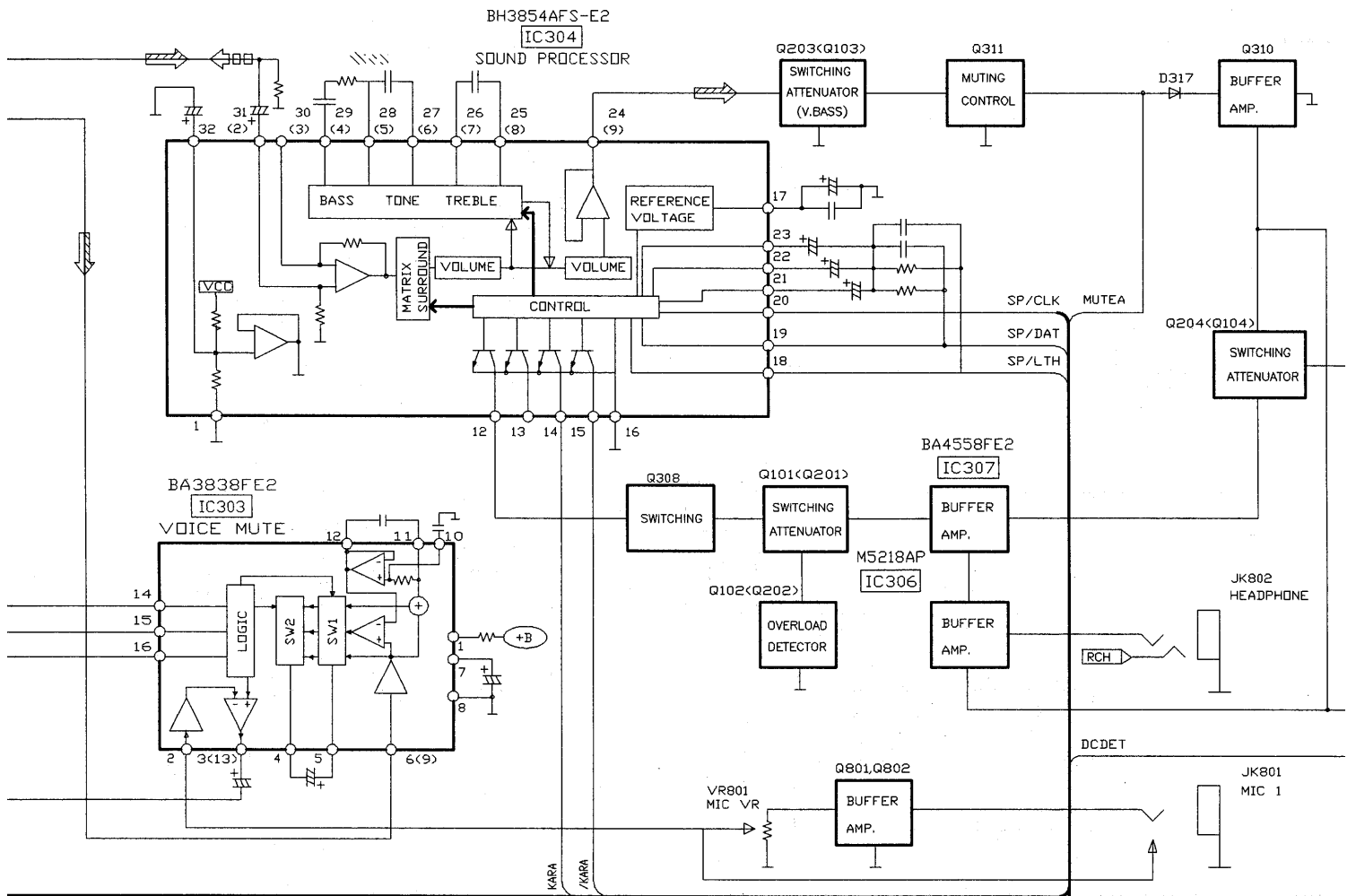


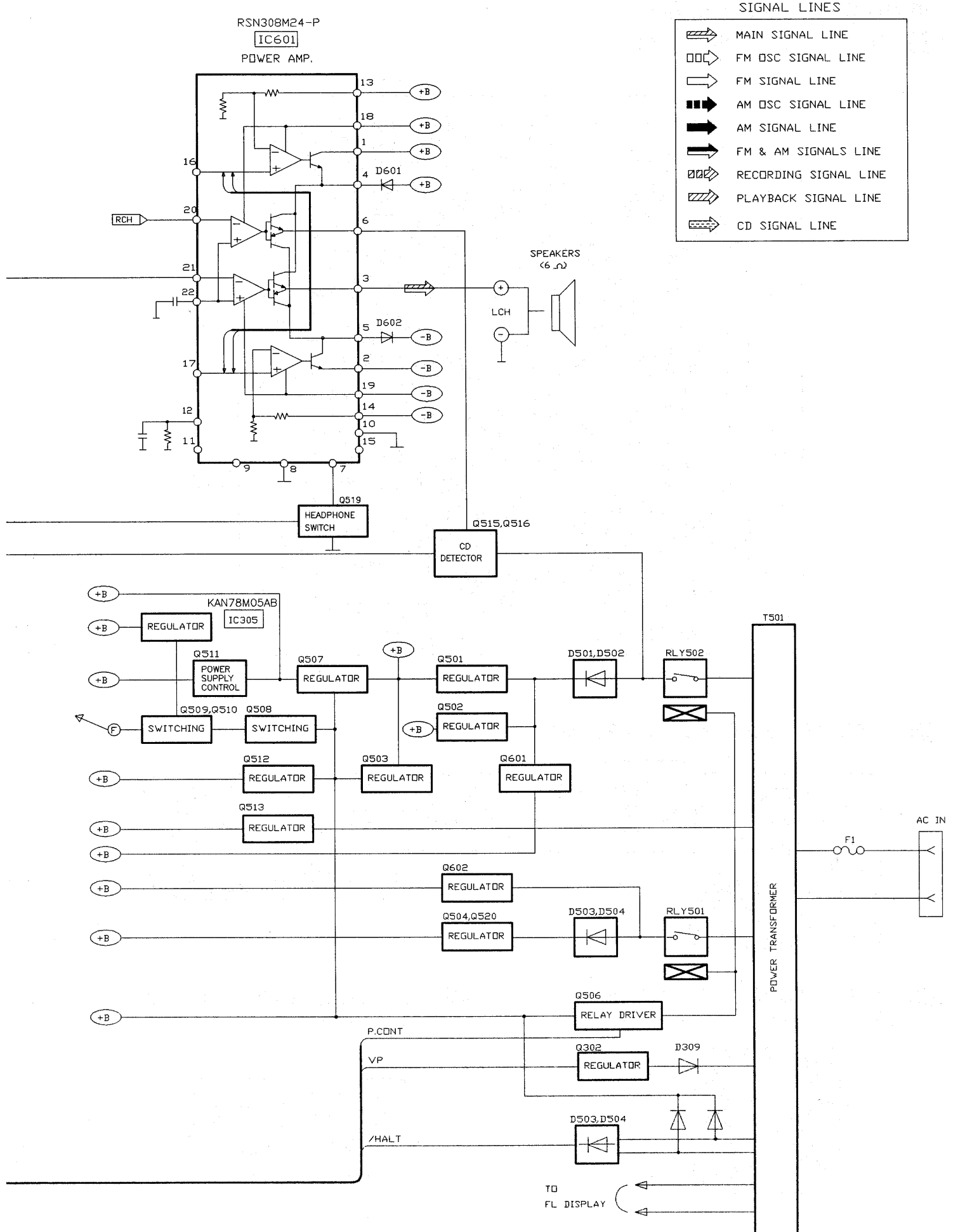
M38197MA194F IC803(1/4) SYSTEM CONTROL / FL DRIVE







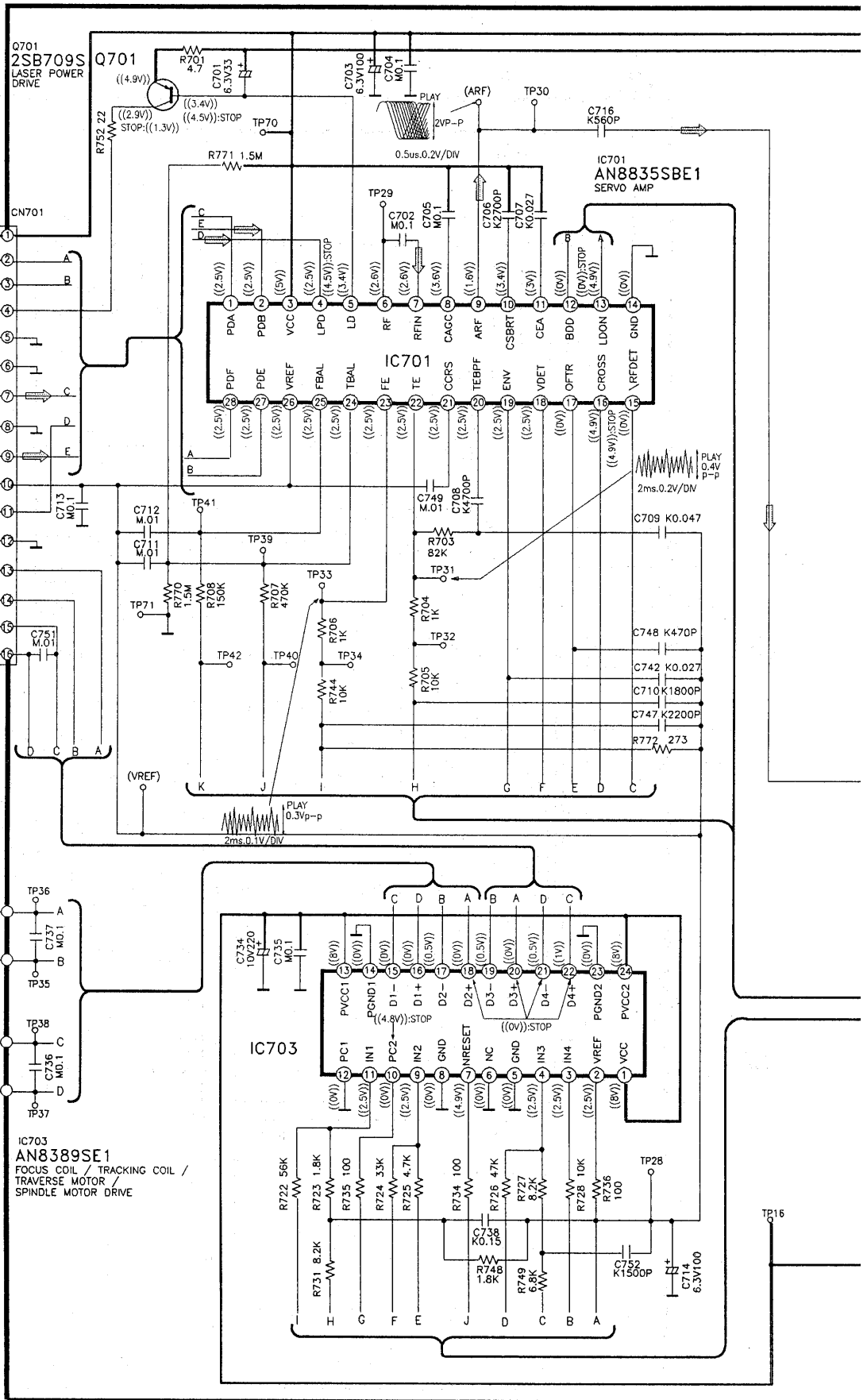
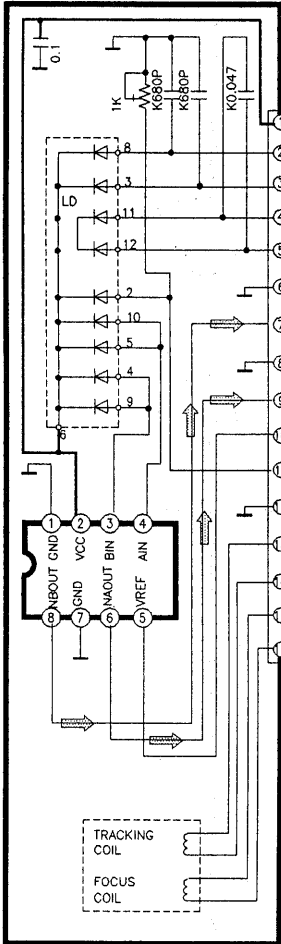


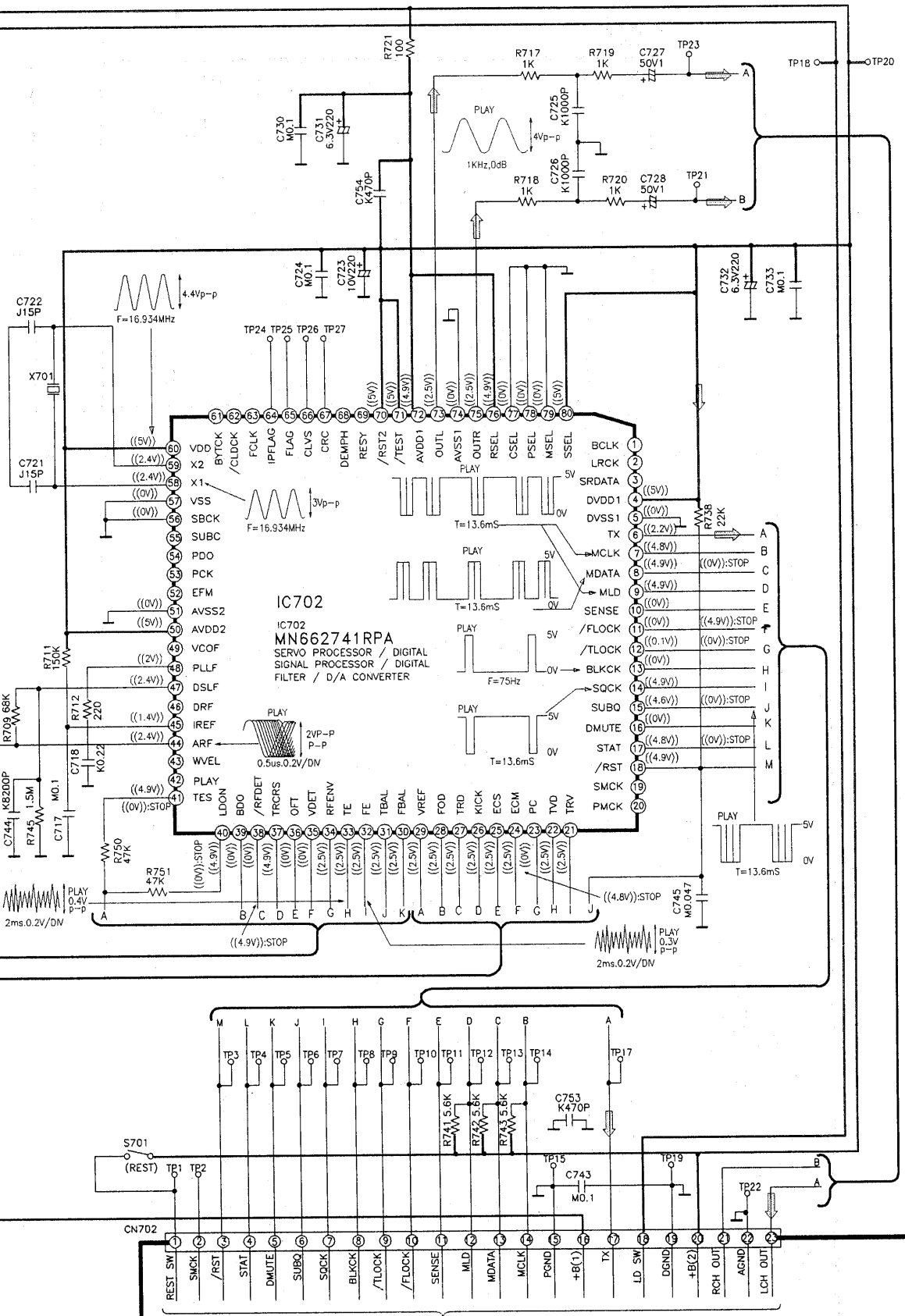





**A** SERVO CIRCUIT

OPTICAL PICKUP

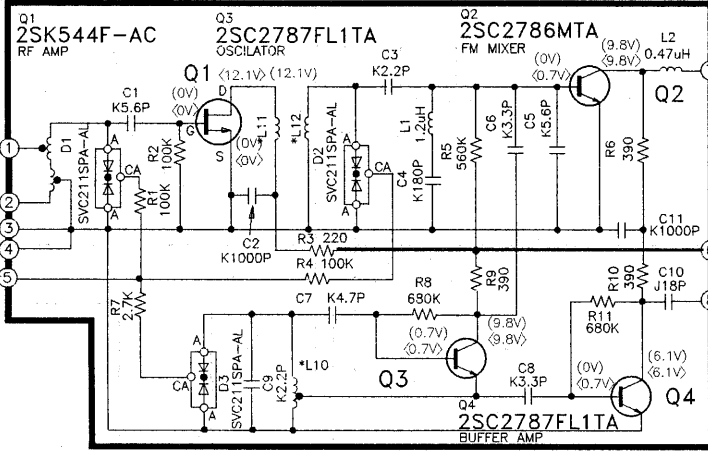




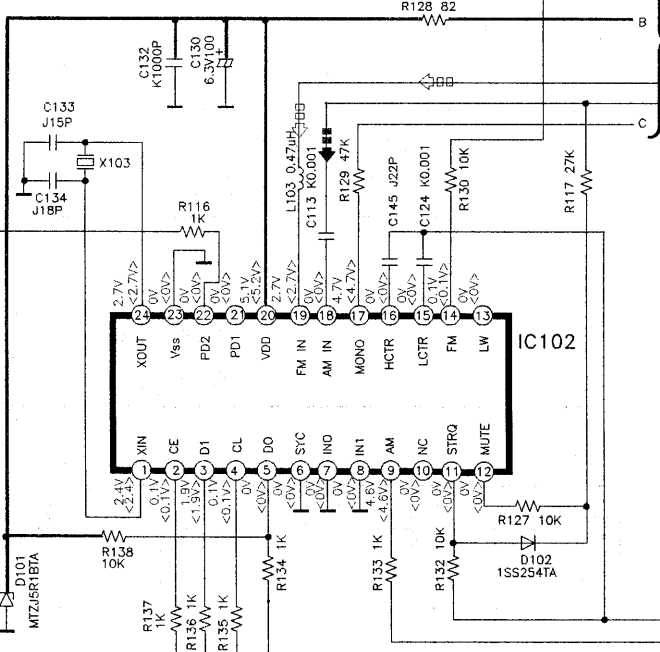
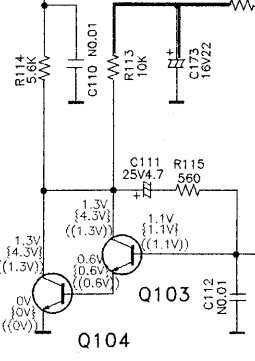
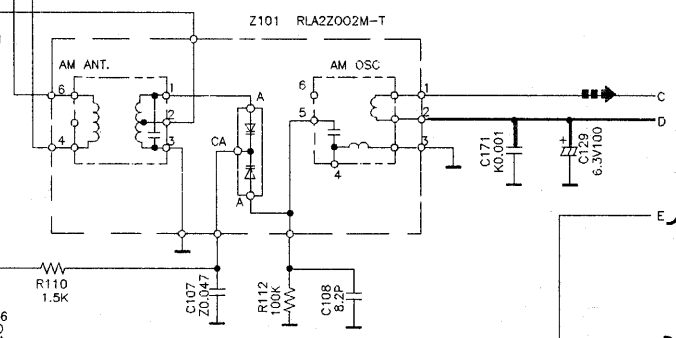
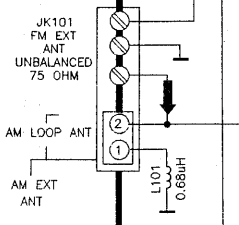
TO  PANEL CIRCUIT (CN802) (PAGE 49)

**H** TUNER PACK CIRCUIT

Z120

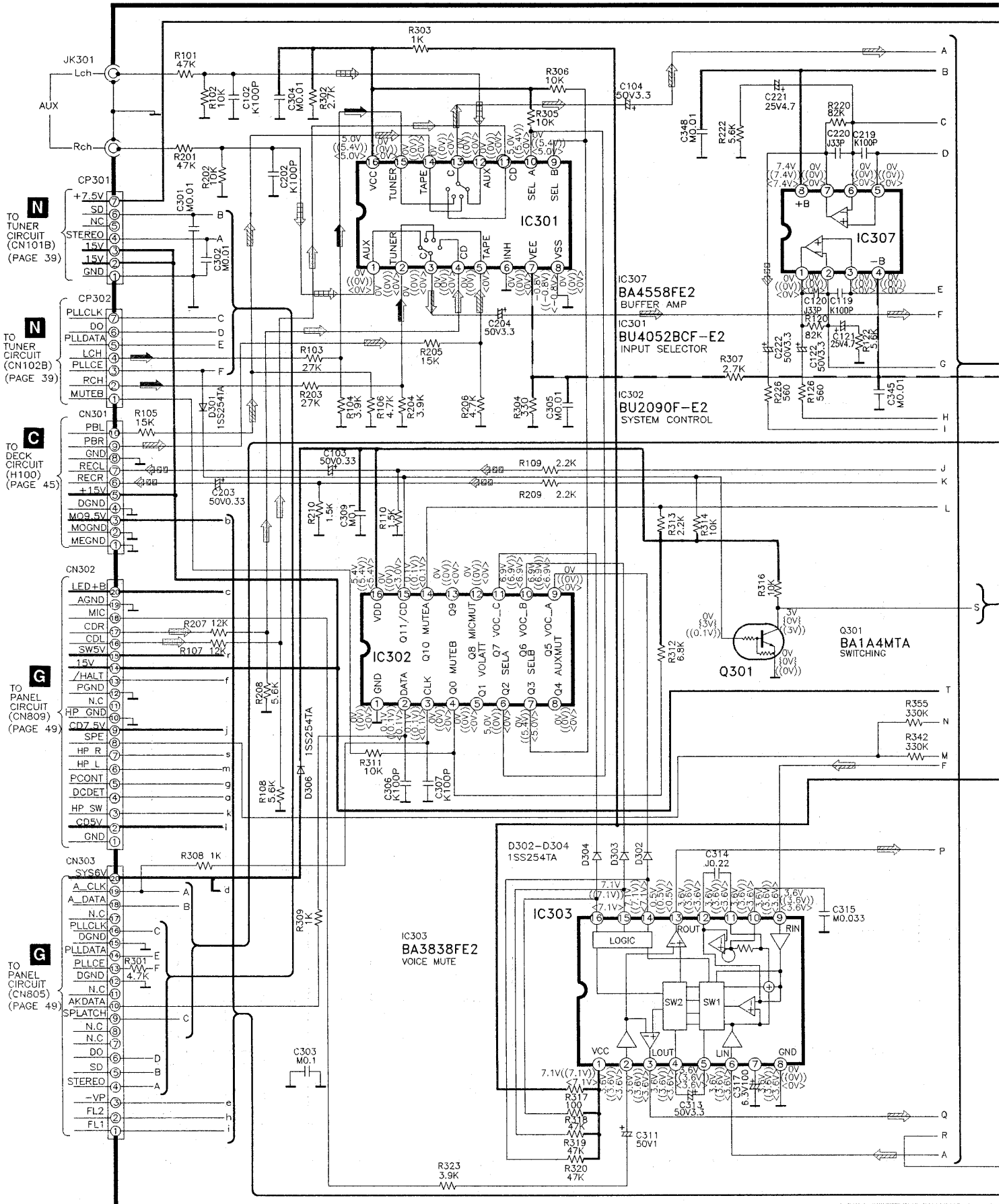


**N** TUNER CIRCUIT



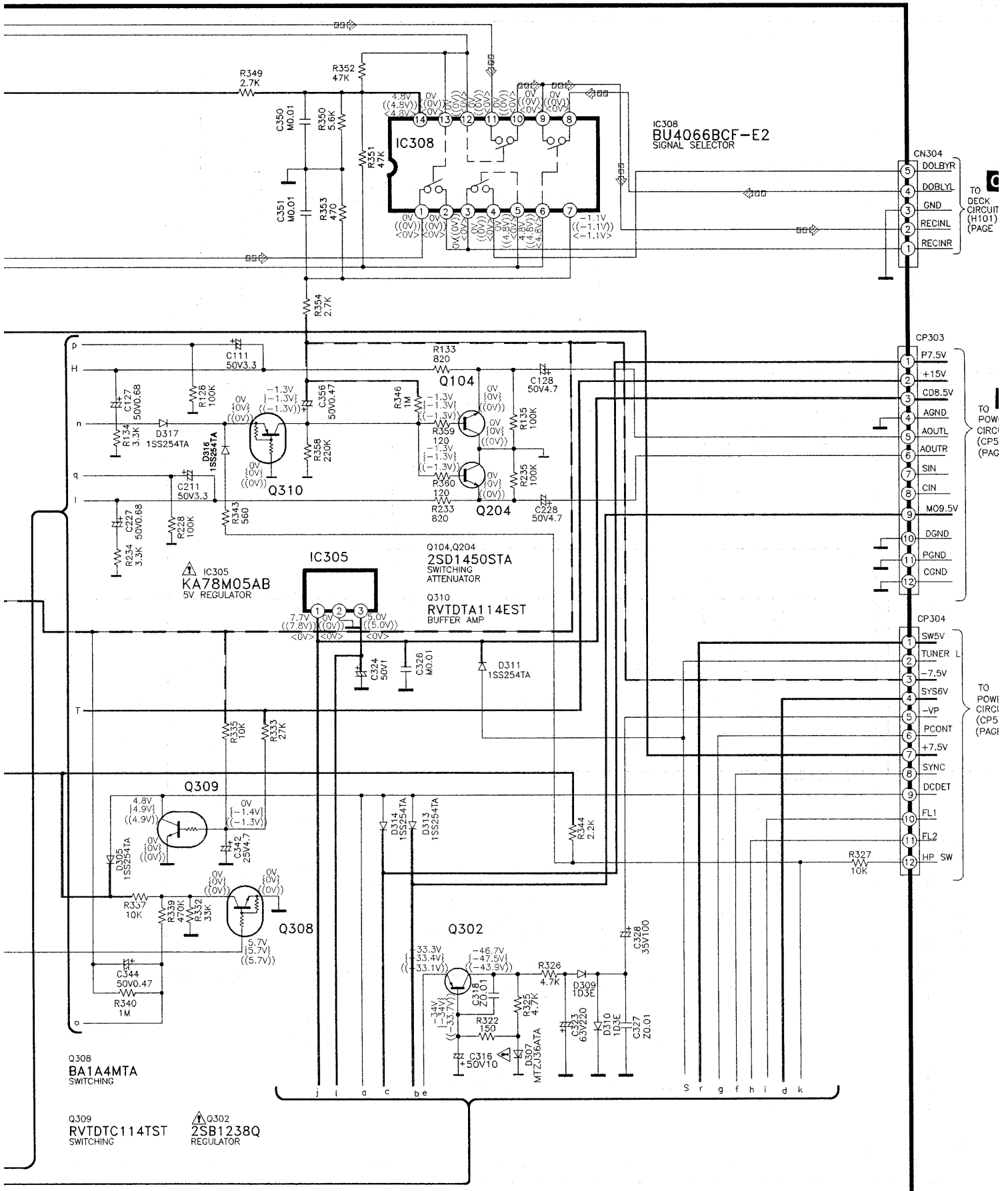


**B** MAIN CIRCUIT

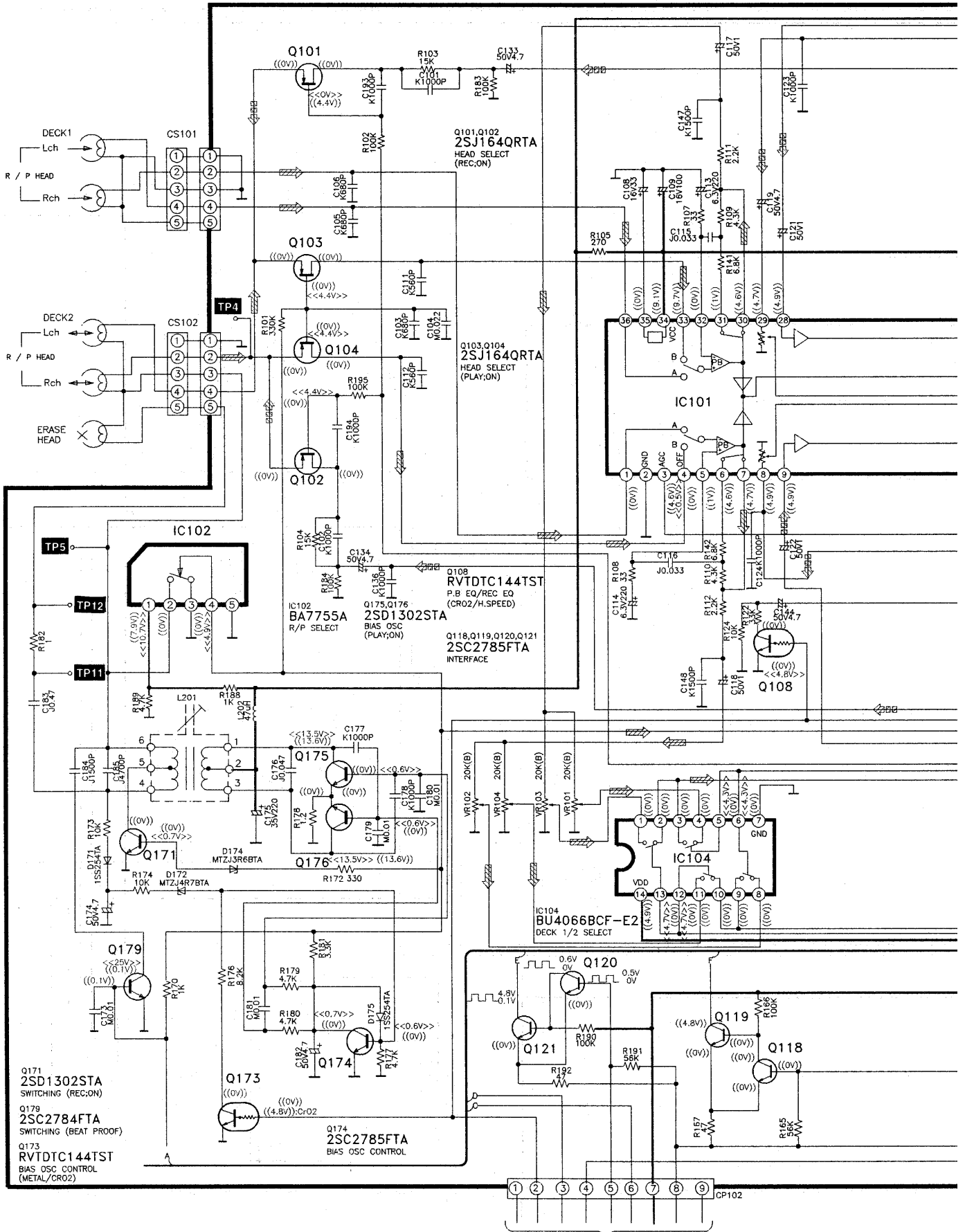








**C** DECK CIRCUIT



Q171 2SD1302STA SWITCHING (REC:ON)  
 Q179 2SC2784FTA SWITCHING (BEAT PROOF)  
 Q173 RVTDTC144TST BIAS OSC CONTROL (METAL/CROZ)

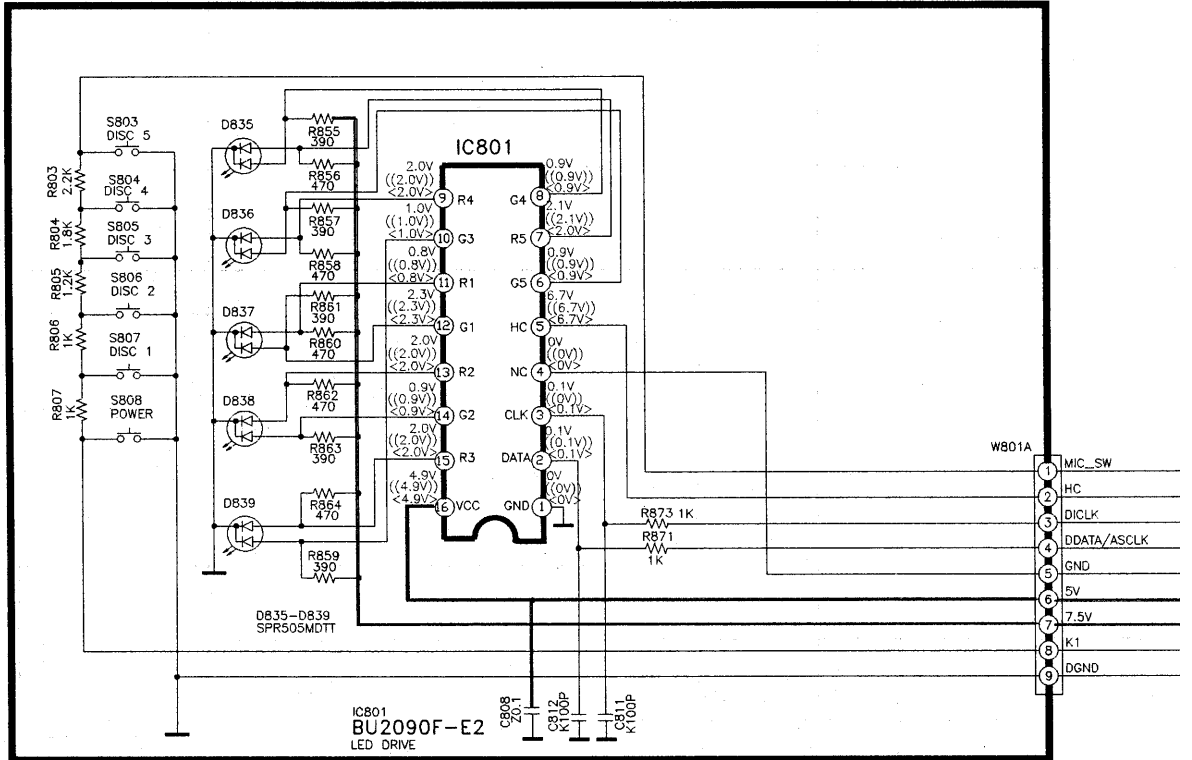
Q174 2SC2785FTA BIAS OSC CONTROL

**L** TO MACHINISM (DECK 2) (CS971) (PAGE 45)

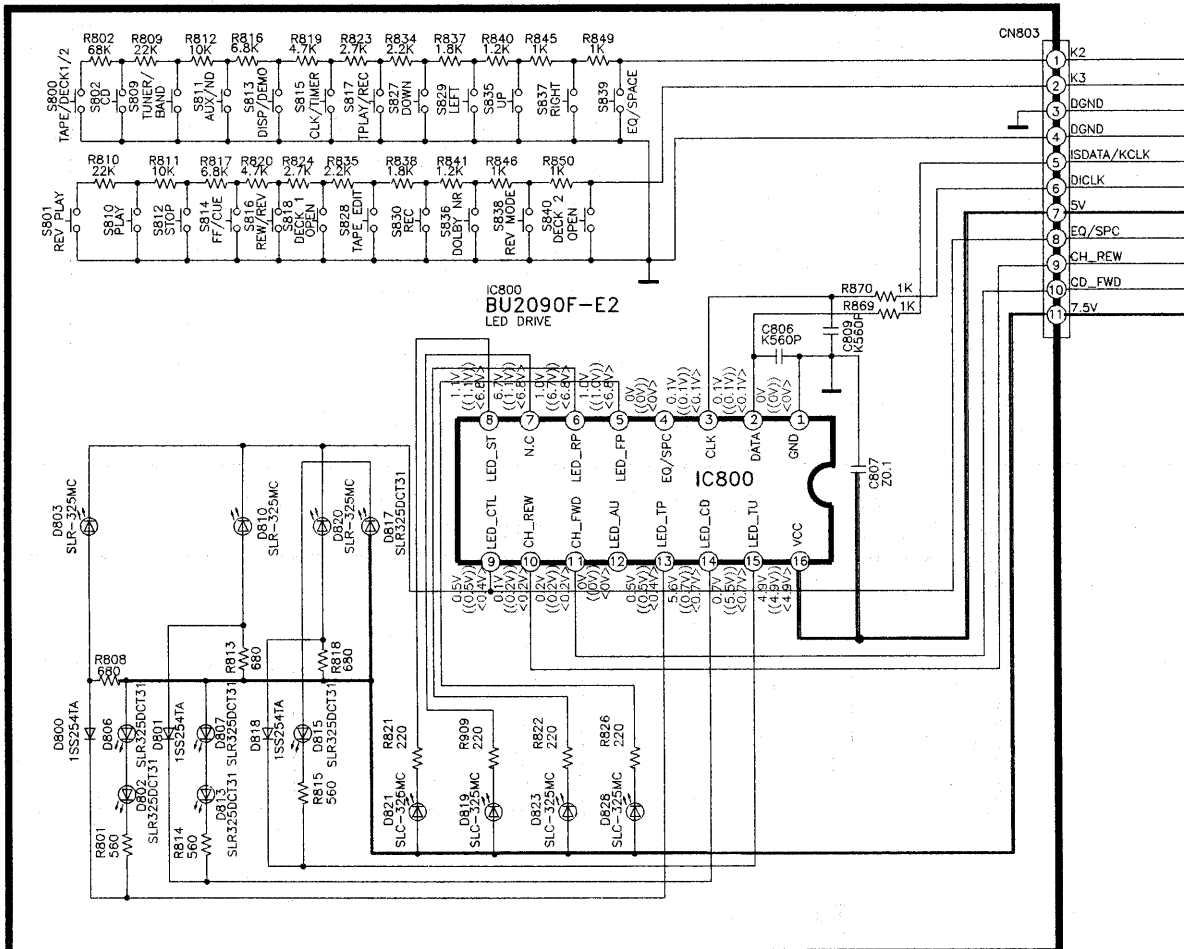




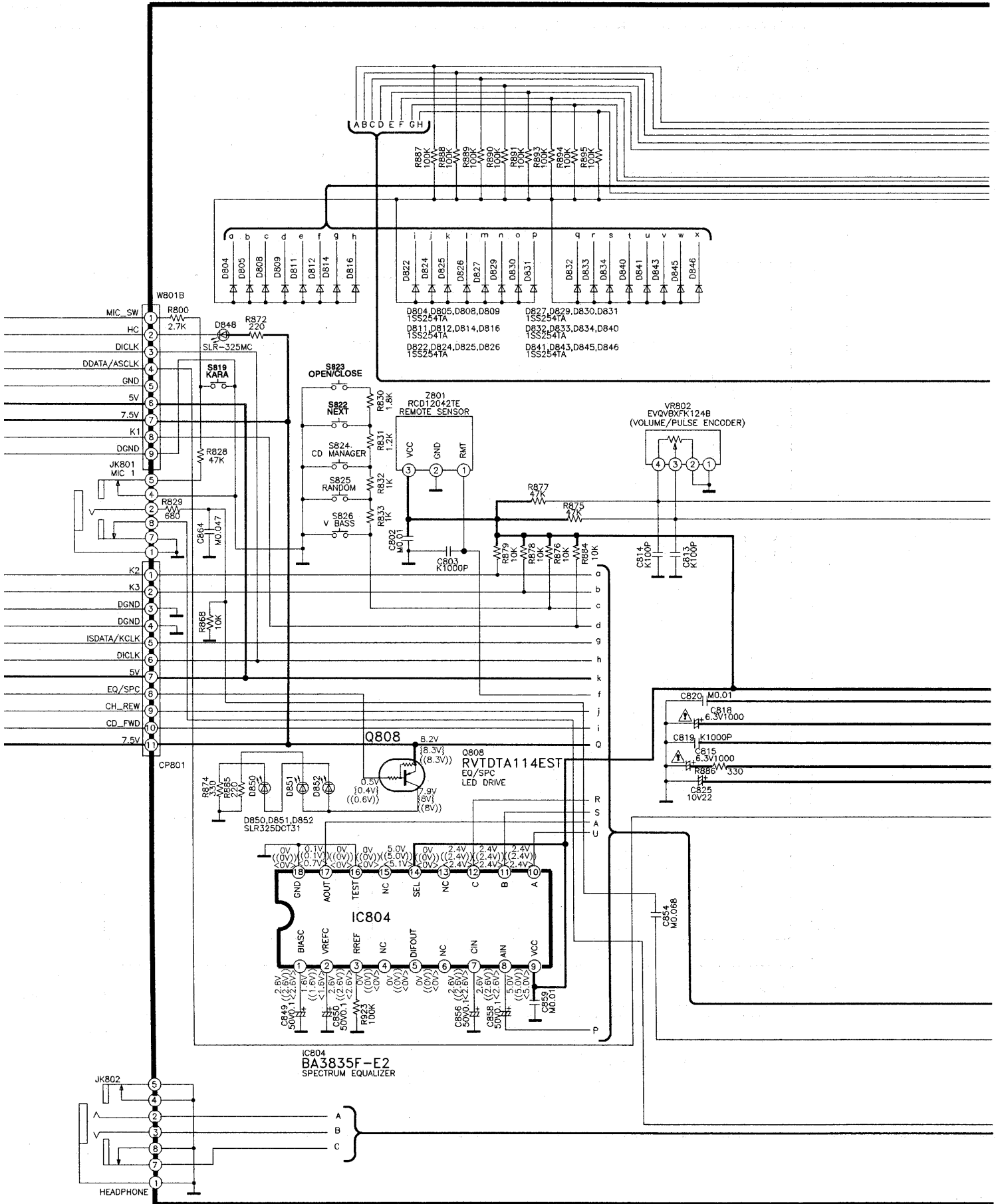
**D** LED CIRCUIT

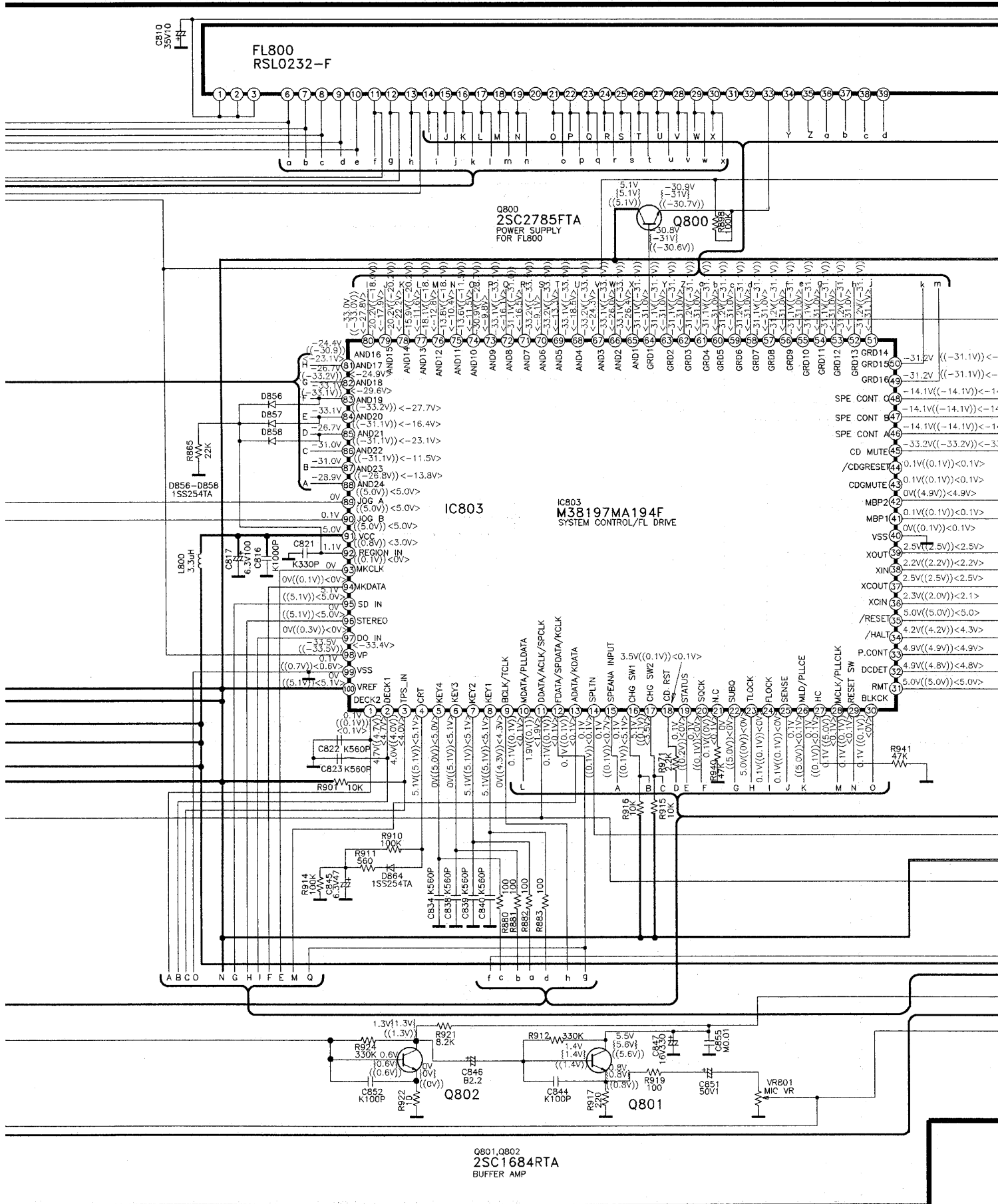


**E** OPERATION CIRCUIT



**G** PANEL CIRCUIT

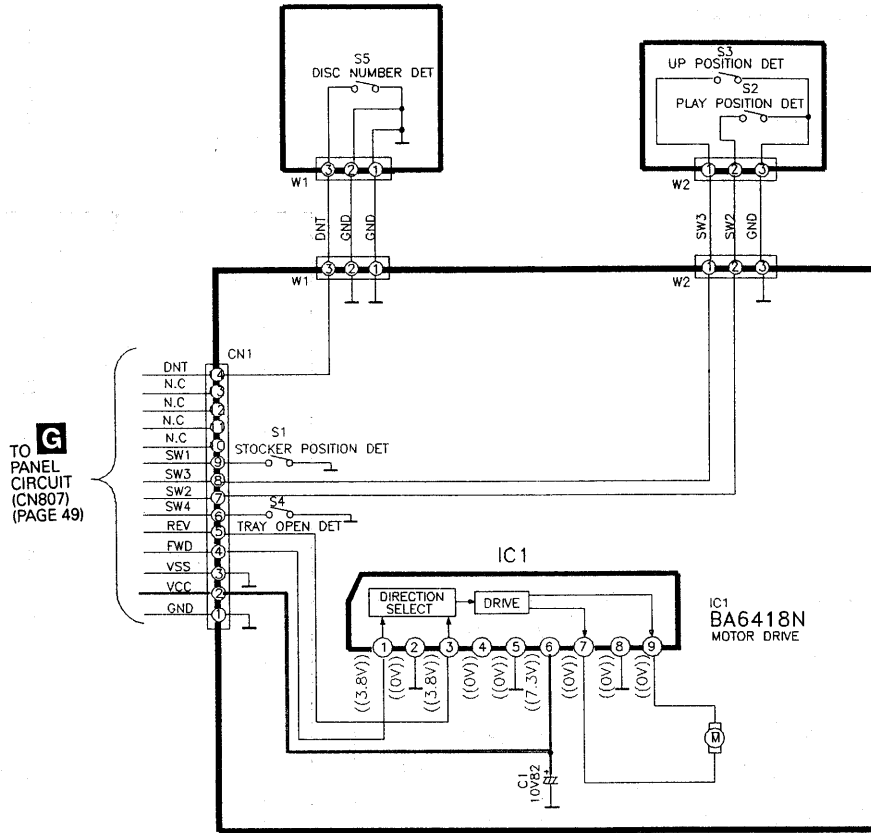








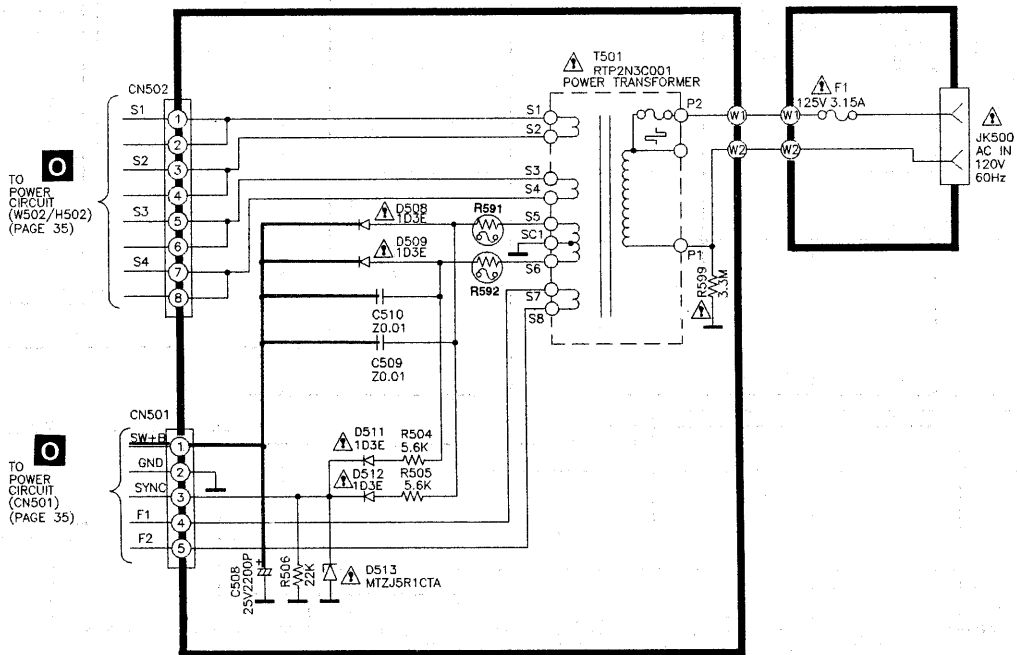
**I** DETECTING SWITCH (1) CIRCUIT      **J** DETECTING SWITCH (2) CIRCUIT



**K** LOADING MOTOR CIRCUIT

**F** TRANSFORMER CIRCUIT FOR PC

**P** AC IN CIRCUIT

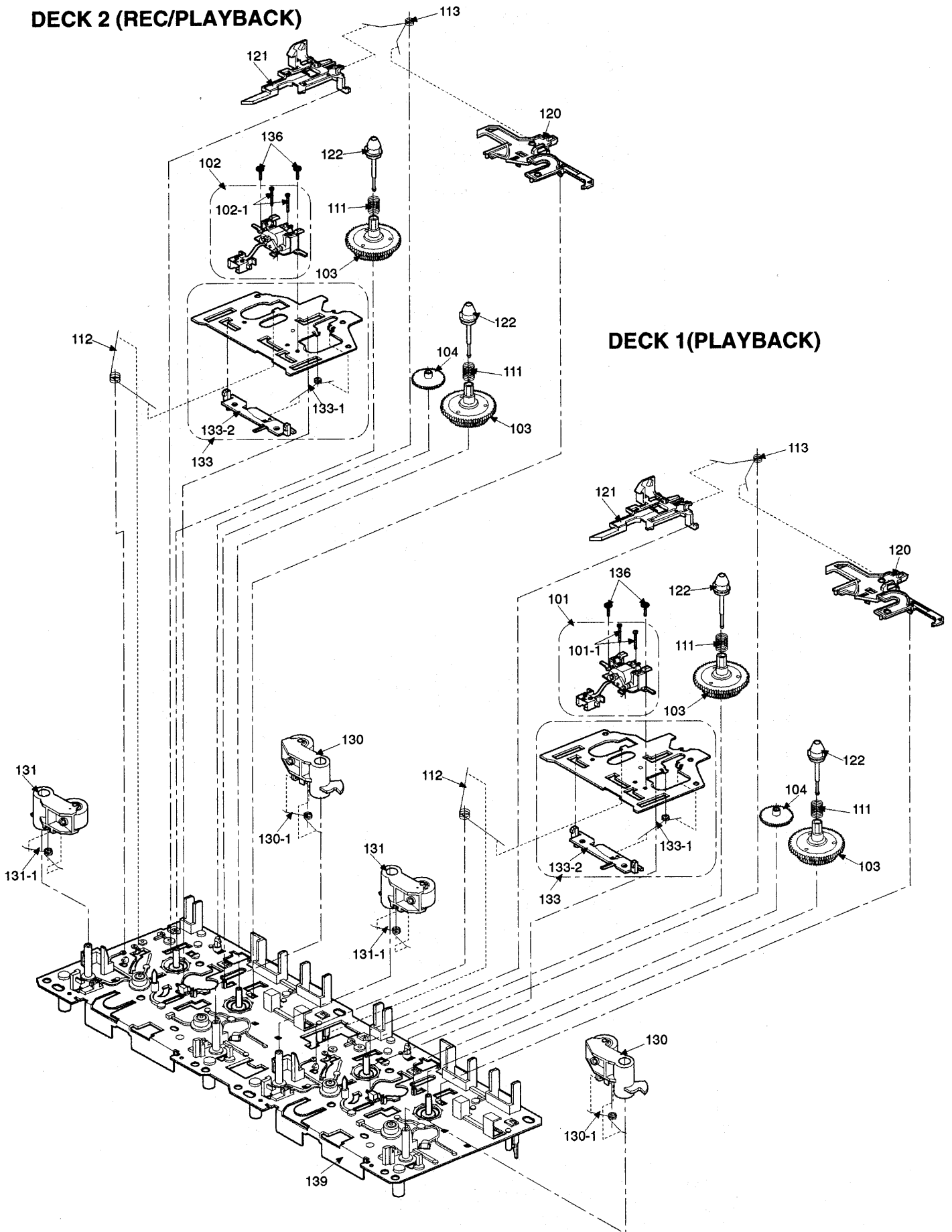


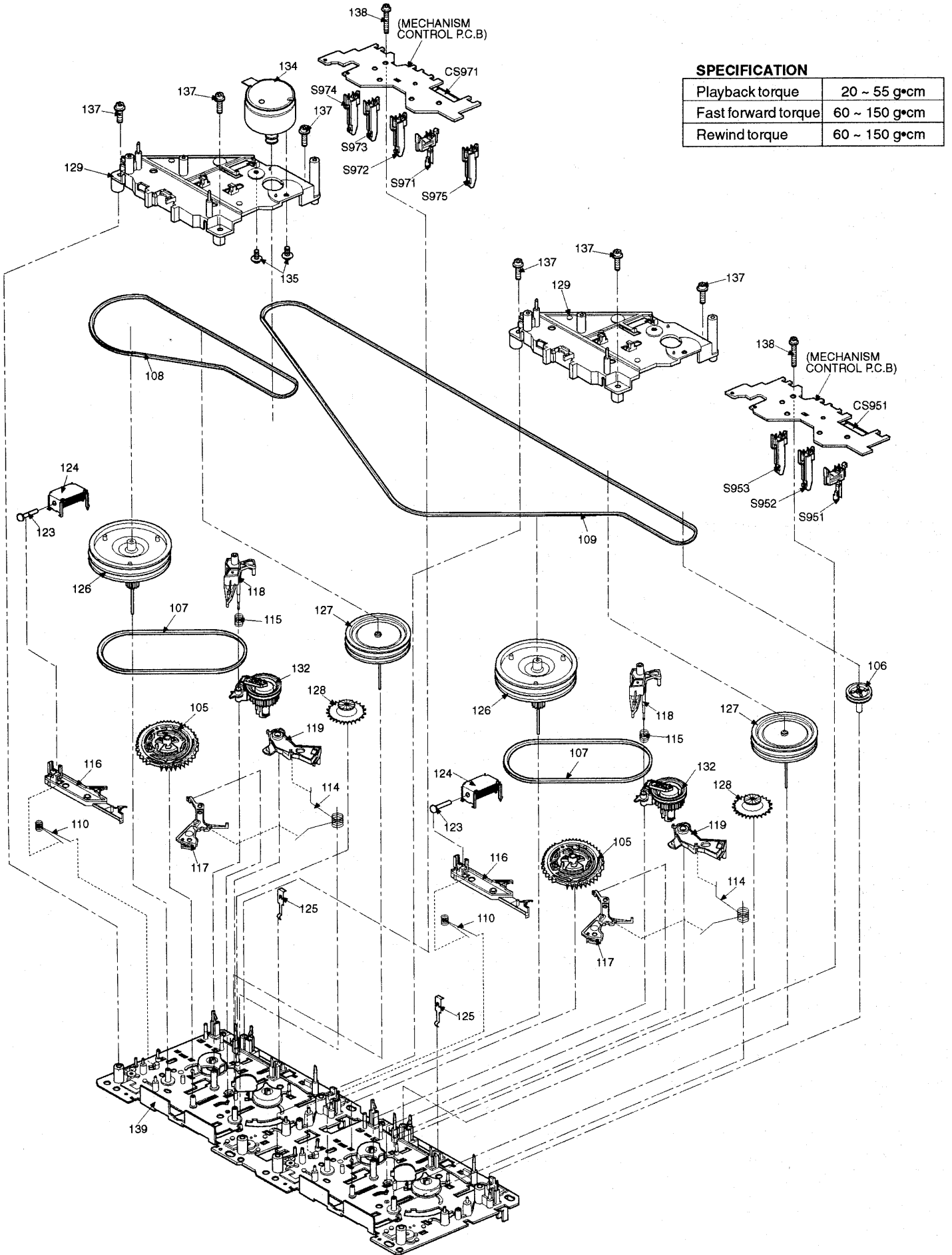


# Mechanism Parts Location (RAA3404)

## DECK 2 (REC/PLAYBACK)

## DECK 1 (PLAYBACK)

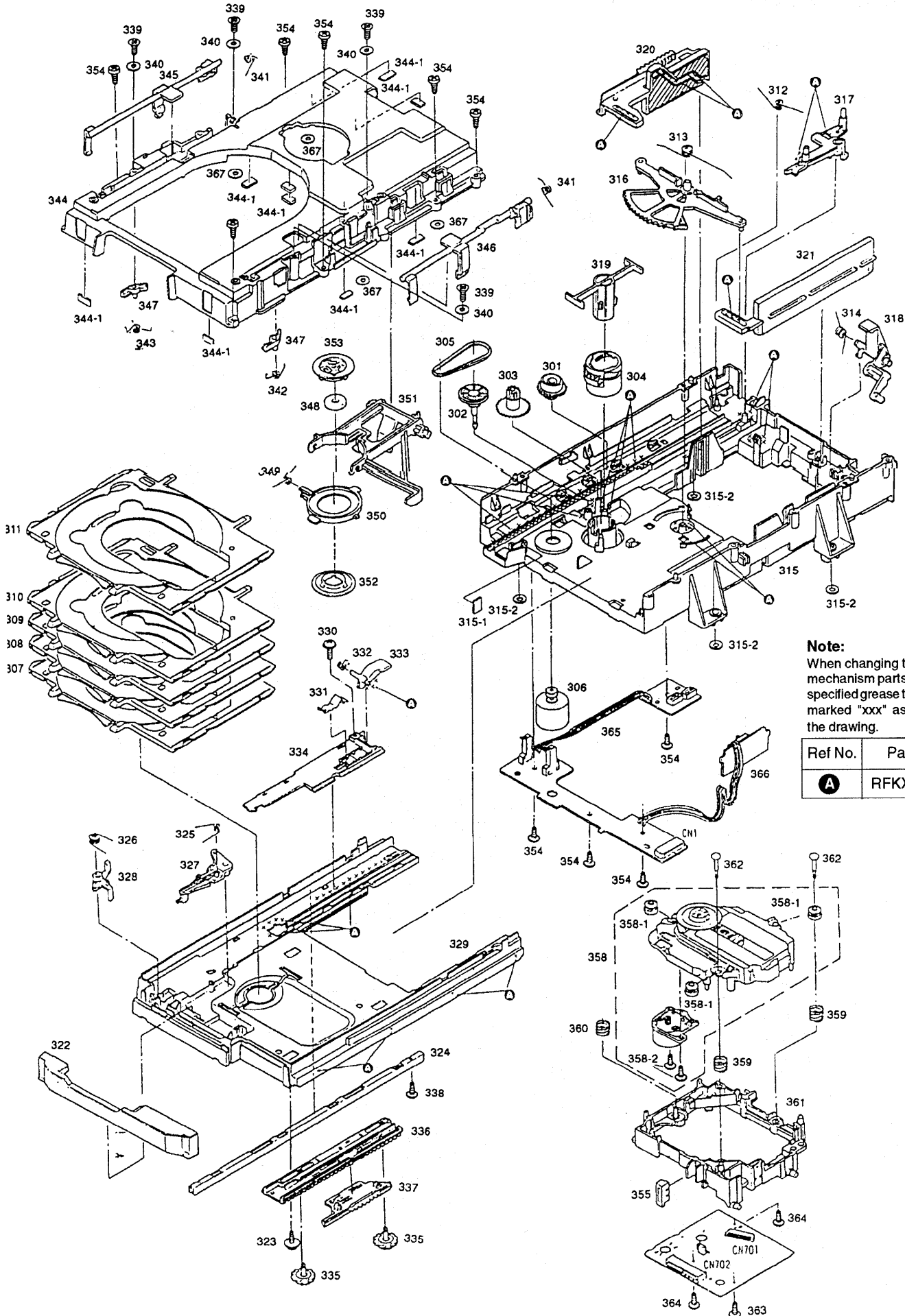




**SPECIFICATION**

Playback torque	20 ~ 55 g•cm
Fast forward torque	60 ~ 150 g•cm
Rewind torque	60 ~ 150 g•cm

# CD Loading Unit Parts Location



**Note:**  
When changing the loading mechanism parts, apply the specified grease to the areas marked "xxx" as shown in the drawing.

Ref No.	Part No.
A	RFKXPG671

# ■ Cabinet Parts Location

