

# Service Manual

Portable Stereo CD System

Radio Cassette

## RX-ED70

COMPACT  
**disc**  
DIGITAL AUDIO

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



Colour

(K) : Black

### Areas

Suffix for Model No.	Area	Colour
(EG)	Europe and Germany	(K)
(EB)	Britain	

**Tape Deck: AR2 Mechanism Series**  
**Traverse Deck: RAE0150Z Mechanism Series**

## ■ Specifications

### General:

#### Power Requirement

AC 230 – 240 V, 50 Hz [ for (EG) area ]  
240 V, 50 Hz [ for (EB) area ]

Battery 12 V (Eight UM-1 size, R20 / LR20 batteries)

Memory Back-up for Computer / Clock 6 V (Four UM-3 size, R6 / LR6 batteries)

Power Consumption 37 W (AC only)

Power Output 44 W (PMPO)

Speakers 10 cm PM Dynamic speaker, 2.7Ω

#### Jacks

Output PHONES: 32Ω, Ø3.5

Input MIX MIC: 5 mV, 200-600Ω, Ø3.5

Dimensions: 484 (W) × 180 (H) × 261 (D) mm  
(Top panel closed)

Weight: 5.0 kg without batteries

### CD Player:

Sampling Frequency: 44.1 kHz

Decoding: 16-bit linear

Beam Source: Semiconductor laser  
(wavelength: 780 nm)

No. of Channels: 2 channels, stereo

Wow and Flutter: Less than possible measurement data

D/A Converter: MASH (1 bit DAC)

### Radio :

#### Frequency Range:

FM 87.5 – 108.0 MHz (50 kHz steps)

LW 144 – 288 kHz (9 kHz steps)

MW 522 – 1611 kHz (9 kHz steps)

#### Intermediate Frequency:

FM 10.7 MHz

LW/MW 459 kHz

#### Sensitivity:

FM 3.1 μV/ 0.5 mW H.P. output  
(-3 dB Limit Sens.)

LW 112 μV/m/ 0.5 mW H.P. output (Max.)

MW 84.2 μV/m/ 0.5 mW H.P. output (Max.)

### Tape Recorder :

Track System: 4-track, 2-channel, stereo recording and playback

Monitor System: Variable sound monitor

#### Frequency Range:

Normal 30 – 16000 Hz

CrO<sub>2</sub> 30 – 17000 Hz

Recording System: AC bias, AC erase

Tape Speed: 4.8 cm/s

\*MASH is a trademark of NTT.

### Notes:

1. Weight and dimensions shown are approximate.
2. Design and specifications are subject to change without notice.

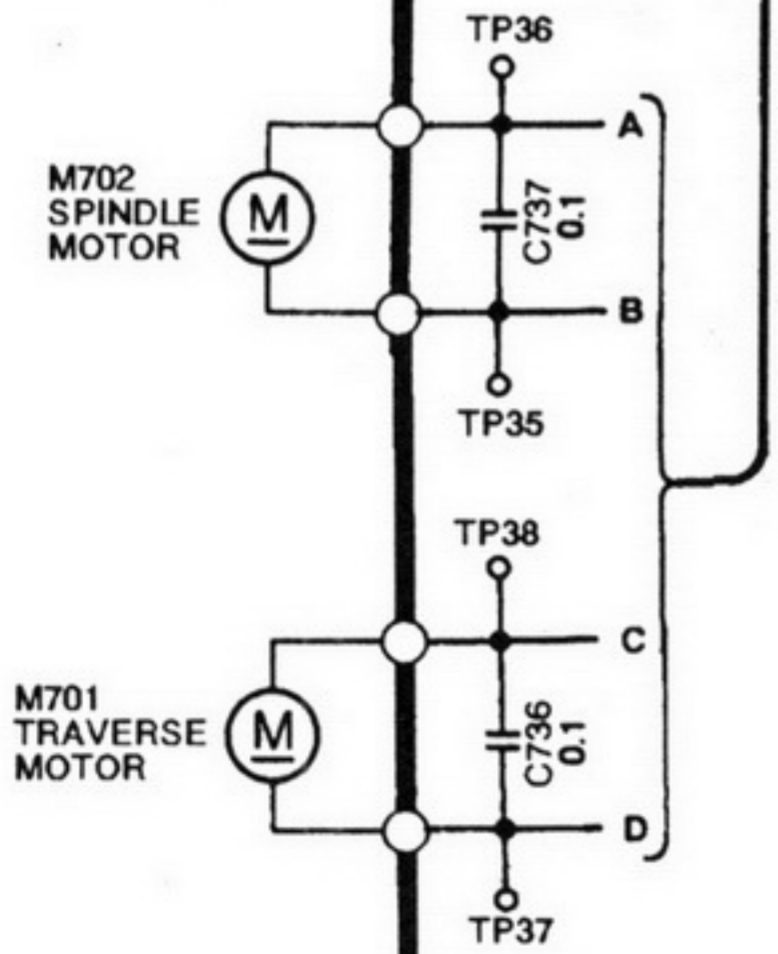
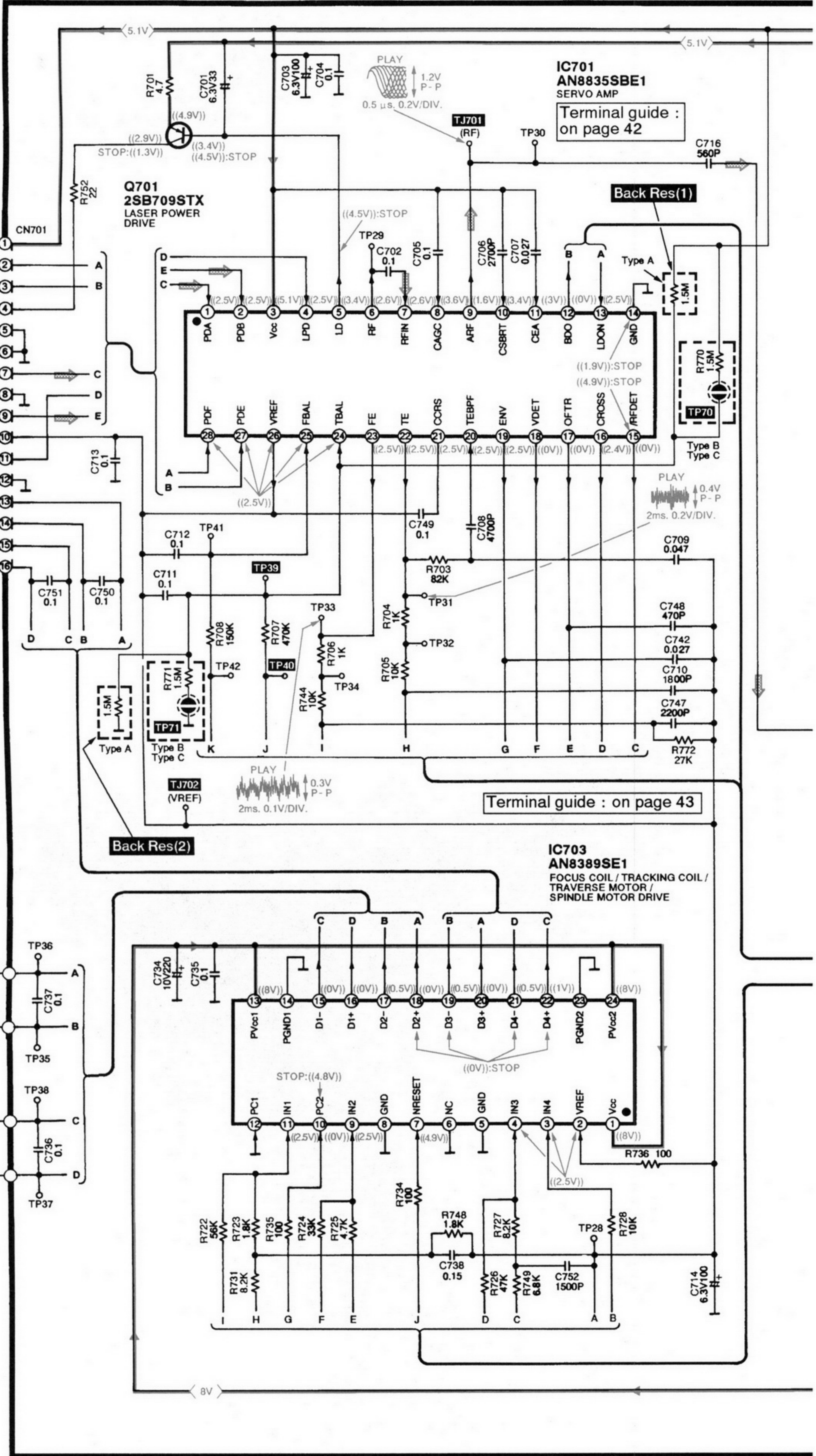
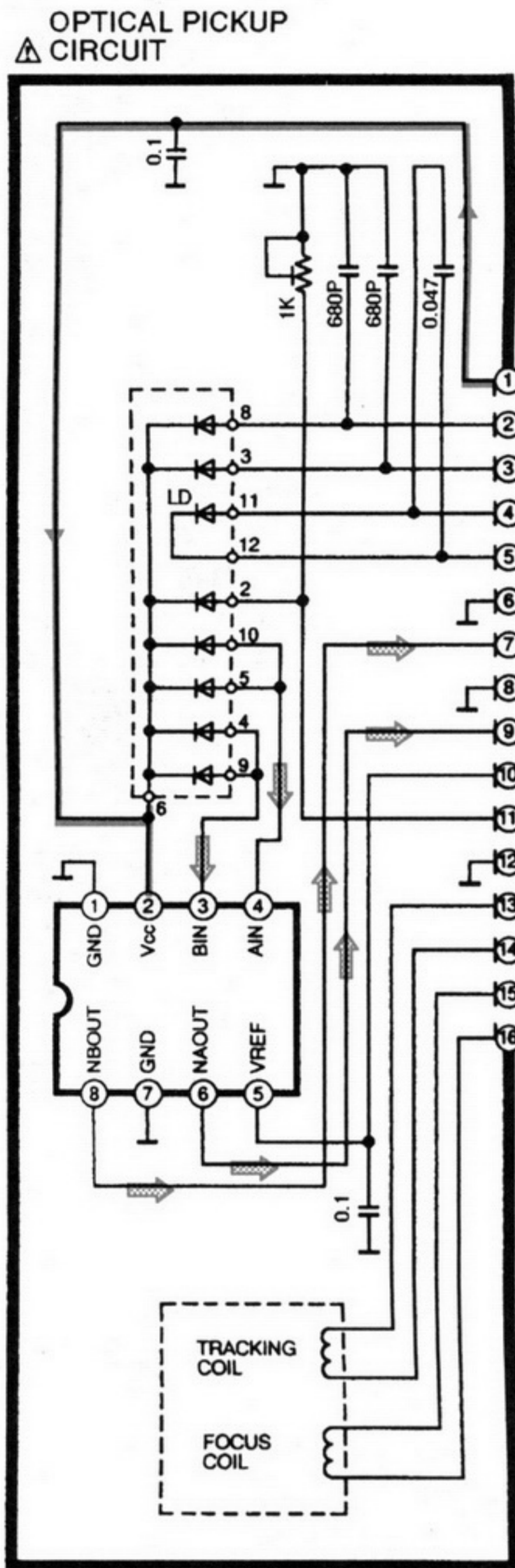
### ⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

# Panasonic®

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**A** CD CIRCUIT (P.C.Board : on pages 33,34)

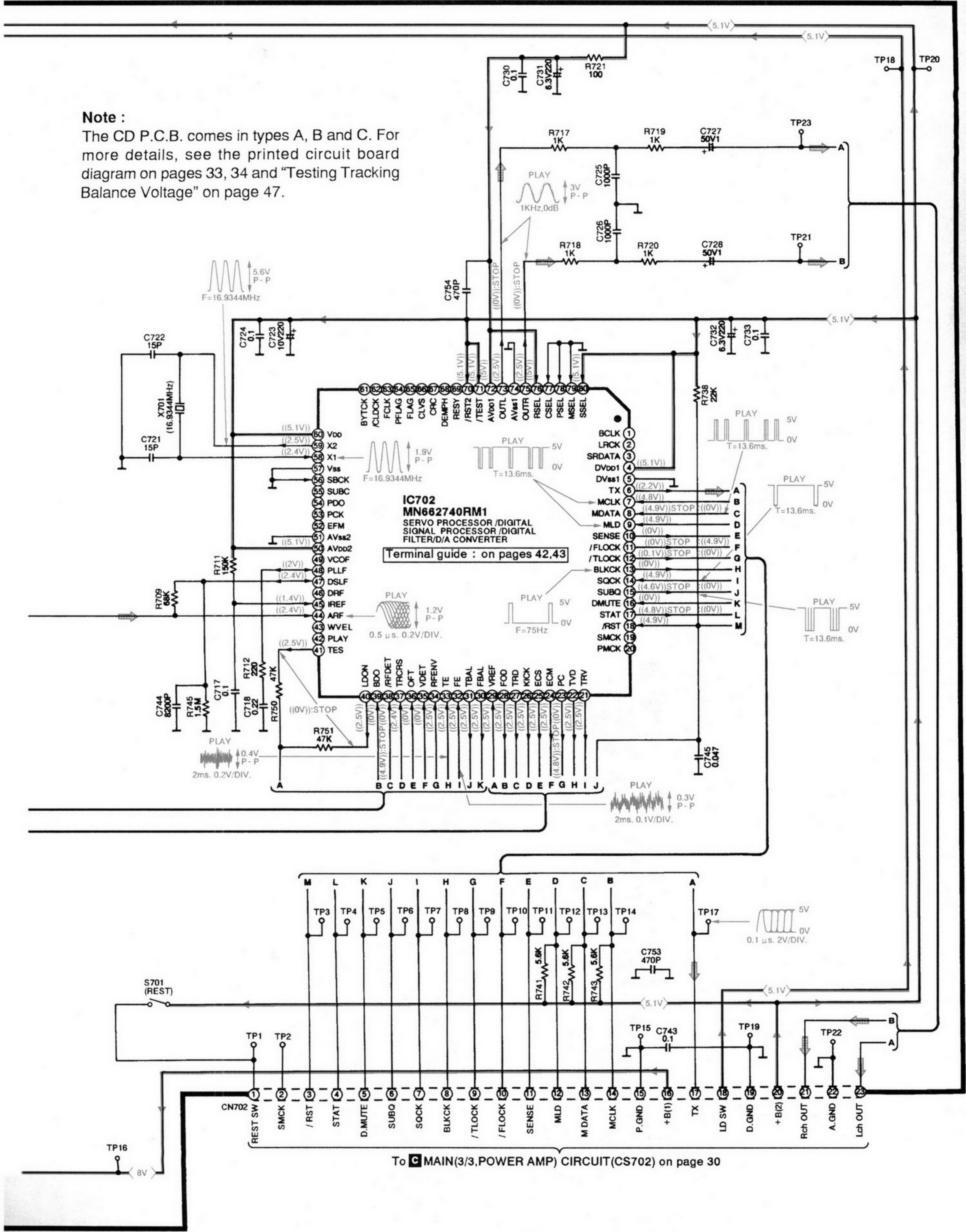


→ : CD Signal Line

→ : + B Line

**Note :**

The CD P.C.B. comes in types A, B and C. For more details, see the printed circuit board diagram on pages 33, 34 and "Testing Tracking Balance Voltage" on page 47.

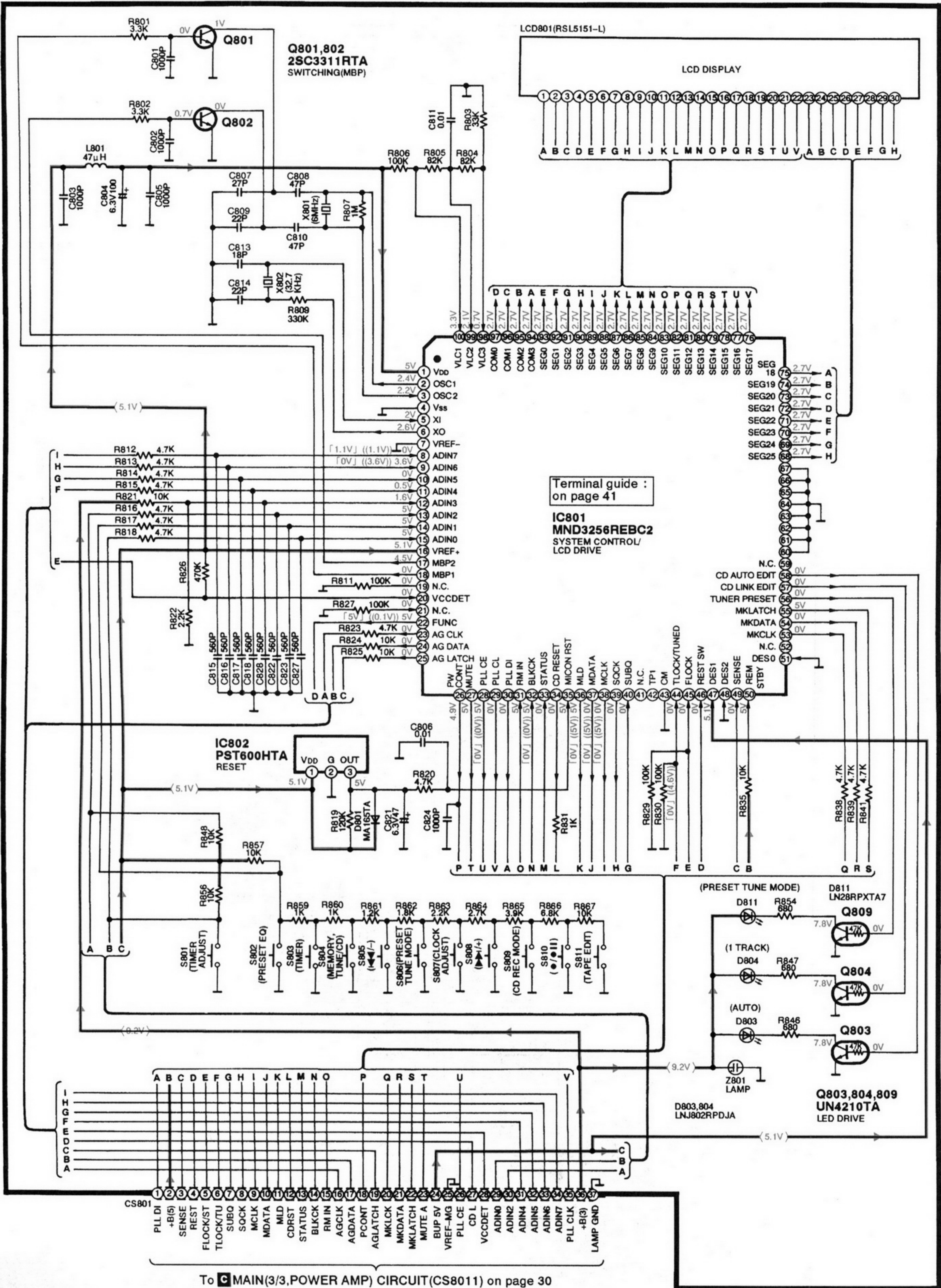


**IC702 MN662740RM1**  
 SERVO PROCESSOR /DIGITAL  
 SIGNAL PROCESSOR /DIGITAL  
 FILTER/D/A CONVERTER

Terminal guide : on pages 42,43

To MAIN(3/3,POWER AMP) CIRCUIT(CS702) on page 30

**B** LCD CIRCUIT (P.C.Board : on page 35)



## Schematic Diagram

	Page		Page
<b>A</b> CD circuit .....	22, 23	<b>G</b> Loading motor circuit .....	29
<b>B</b> LCD circuit .....	24	<b>H</b> Sensor circuit .....	29
<b>C</b> Main circuit .....	25 ~ 32	<b>I</b> Operation (1) circuit .....	29
<b>D</b> Mechanism circuit (DECK2) .....	28	<b>J</b> Operation (2) circuit .....	29
<b>E</b> Mechanism circuit (DECK1) .....	28	<b>K</b> Motor (Top panel) circuit .....	30
<b>F</b> Motor circuit .....	28	<b>L</b> Power supply circuit .....	32

### Notes:

< CD circuit >

S701 : Rest switch.

< Loading motor circuit >

S790 : CD tray open detect switch.

S791 : CD tray close detect switch.

< LCD circuit >

S801 : Timer adjust switch. ( TIMER ADJUST )

S802 : Preset equalizer switch. ( PRESET EQ )

S803 : Timer switch. ( TIMER )  
( ●...PLAY, ●●...REC )

S804 : Memory/program switch. [ MEMORY ( TUNE/CD ) ]

S805 : Skip/search/timer set/tuning switch.(CD/TUNE/TIME SET ◀◀/–)

S806 : Preset tuning mode switch. ( PRESET TUNE MODE )

S807 : Clock time adjust switch. ( CLOCK ADJUST )

S808 : Skip/search/timer set/tuning switch.(CD/TUNE/TIME SET ▶▶/+) )

S809 : CD rec mode switch. ( CD REC MODE )

S810 : Rec/rec pause switch. ( ●/●|| )

S811 : Tape edit switch. ( TAPE EDIT )

< Power supply circuit >

S901 : AC/DC select switch.

< Mechanism ( DECK 1 ) circuit >

S951 : Mode detect switch.

S952 : Cassette tape detect switch.

S953 : CrO<sub>2</sub> tape detect switch.

< Mechanism ( DECK 2 ) circuit >

S971 : Mode detect switch.

S972 : Cassette tape detect switch.

S973 : CrO<sub>2</sub> tape detect switch.

S974 : Rverse side record prevention tab detect switch.

S975 : Forward side recoed prevention tab detect switch.

< Motor (DECK) circuit >

VR981 : Tape speed adjustment VR.

< Operation (2) circuit >

S1001 : Power "STDBY ⏻(AC)/ON" switch. [ POWER/BATT,  
STANDBY ⏻(AC)/ON ]

S1011 : CD tray open/close switch. ( ▲ CD OPEN/CLOSE )

S1012 : DECK 1 tape eject switch. ( DECK 1 ▲ )

S1013 : Tape rewind/TPS switch. ( REW/ [TPS] )

S1014 : DECK select switch. (DECK 1/2)

S1015 : Tape fast forward /TPS switch. ( FF/ [TPS] )

S1016 : DECK 2 tape eject switch. ( DECK 2 ▲ )

< Operation (1) circuit >

S1002 : Volume down switch. ( – )

S1003 : Volume up switch. ( + )

S1004 : Tape stop switch. ( ■ )

S1005 : Tape play/direction switch. ( ◀▶ )

S1006 : Band select switch. ( BAND )

S1007 : CD play/pause switch. ( ▶/|| )

S1008 : CD stop/clear switch. ( ■/CLEAR )

S1009 : Top panel close switch. ( CLOSE )

S1010 : Top panel open switch, ( OPEN )

### Battery current:

Vol. min...370 mA (FM)	Vol. max...1020 mA (FM)
370 mA (LW)	810 mA (LW)
370 mA (MW)	820 mA (MW)
385 mA (TAPE)	1580 mA (TAPE)
520 mA (CD)	1960 mA (CD)

### Measurement instruction




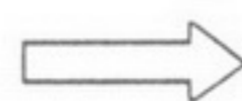



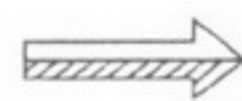


MW/LW:	74 dB/m, 30% Mod.
FM:	60 dB, 30% Mod.
TAPE:	315 Hz, 0 dB
CD:	1 kHz, 0 dB

- DC voltage measurements are taken with electronics voltmeter. The negative terminal of the battery provides negative meter connection point.

No mark ... TAPE PLAYBACK	「 」	..... TUNER
( )	..... MW/LW	< > ..... FM
(( ))	..... CD	[[ ]] ..... REC

- Important safety notice  
Components identified by ⚠ mark have special characteristics important for safety.  
When replacing any of these components, use only manufacturer's specified parts.

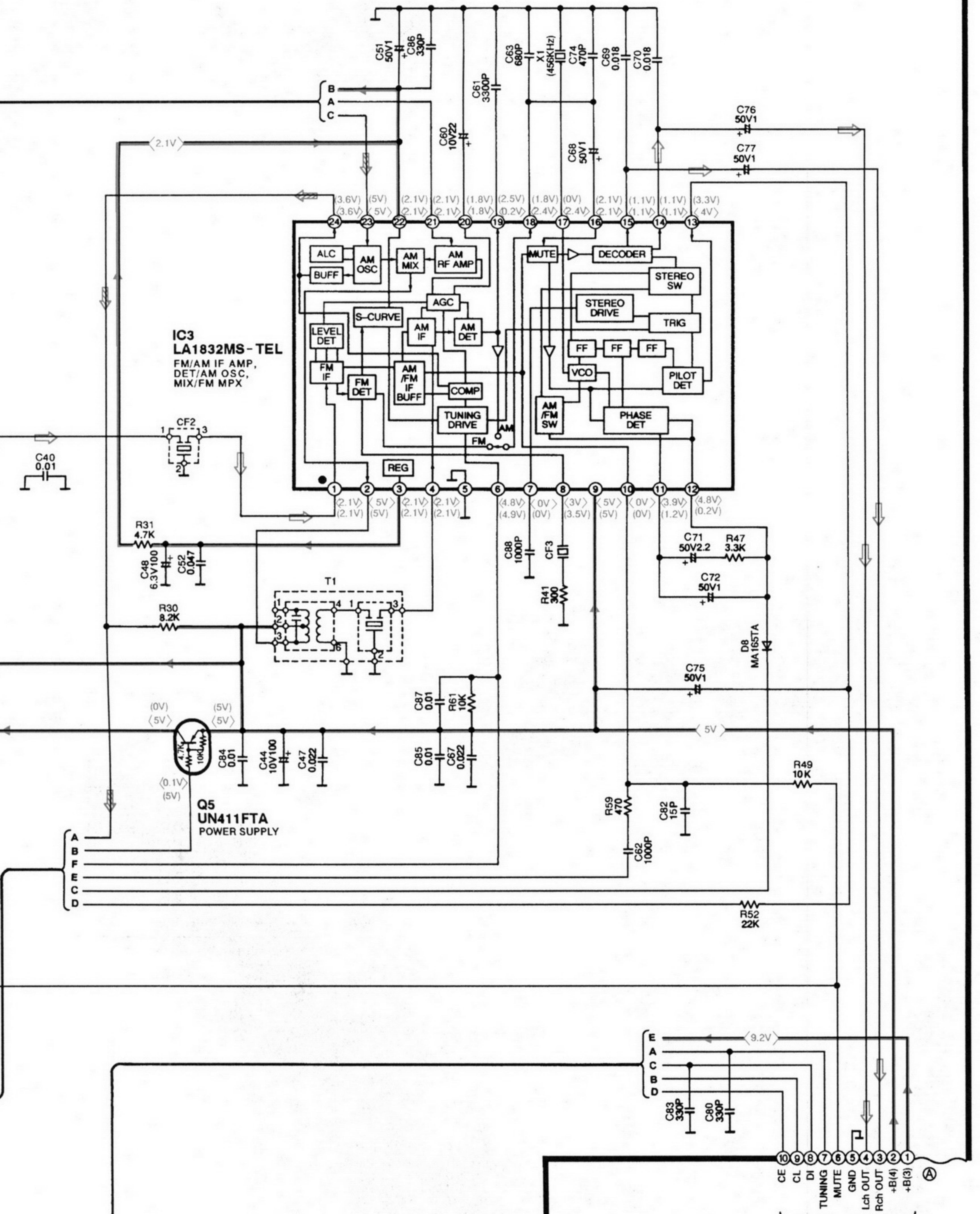
- This schematic diagram may be modified at any time with the development of new technology.

	: CD Signal Line
	: FM/AM/ V cap Control Signal Line
	: Main Signal Line
	: FM Signal Line
	: Tape Signal Line
	: AM OSC Signal Line
	: Record Signal Line
	: FM OSC Signal Line
	: Mic Signal Line
	: + B Line

→ : FM Signal Line

■ ■ ■ → : FM/AM/ V cap Control Signal Line

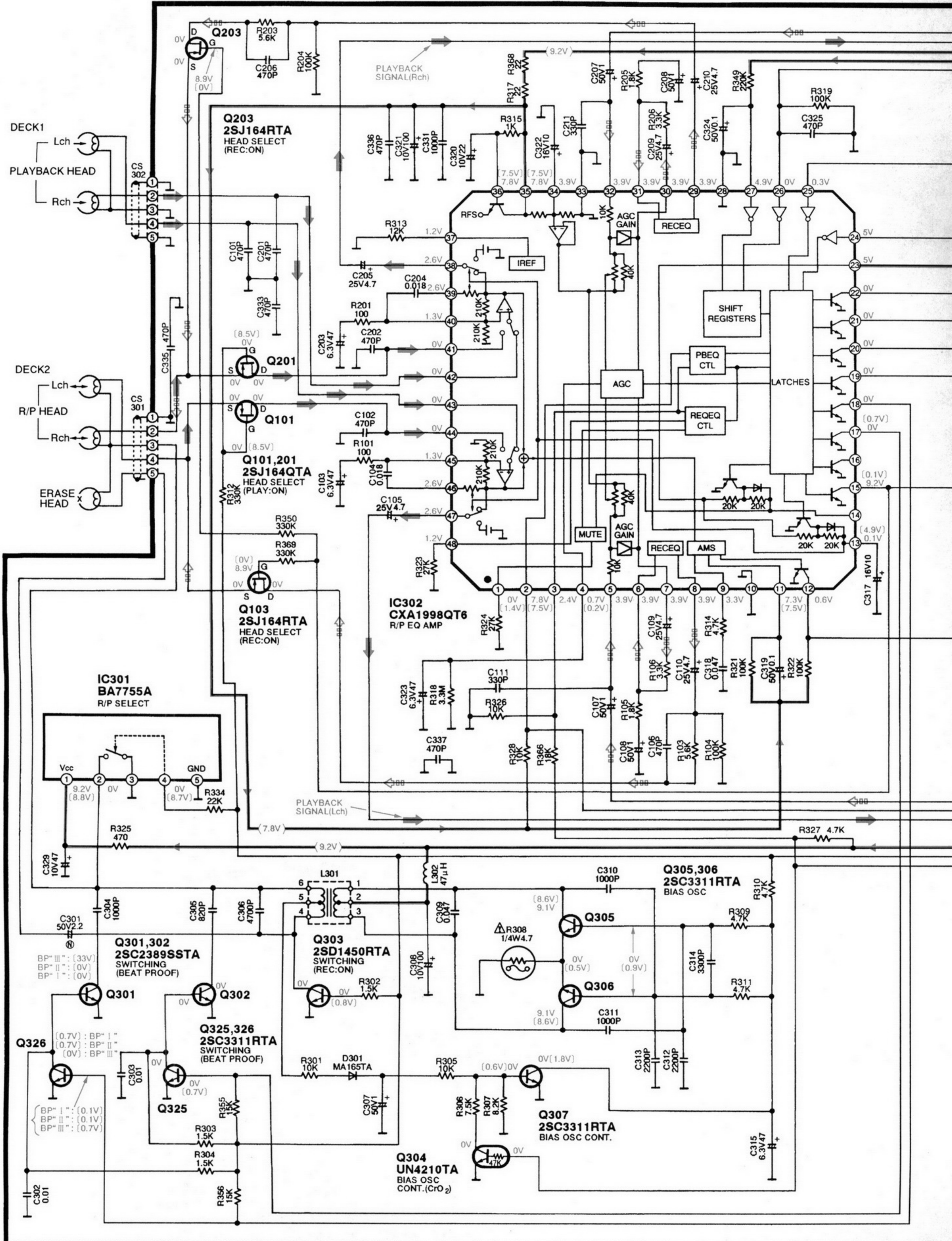
▨ → : AM OSC Signal Line

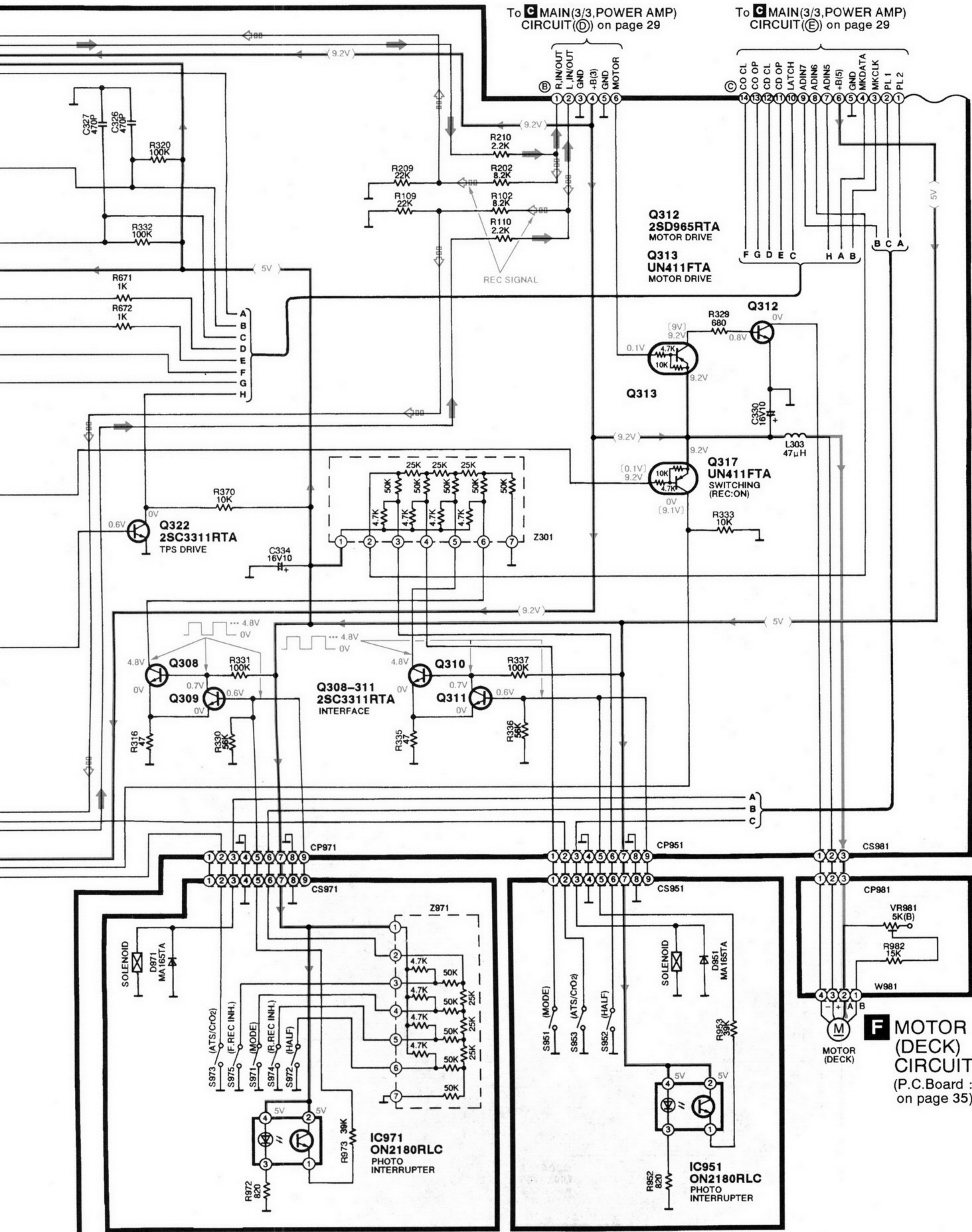


To **C** MAIN(3/3,POWER AMP)CIRCUIT (E) on page 32

➔ : Tape Signal Line    □□□➔ : Record Signal Line    ➔ : + B Line

**C** MAIN(2/3,DECK) CIRCUIT (P.C.Board : on pages 36,37)



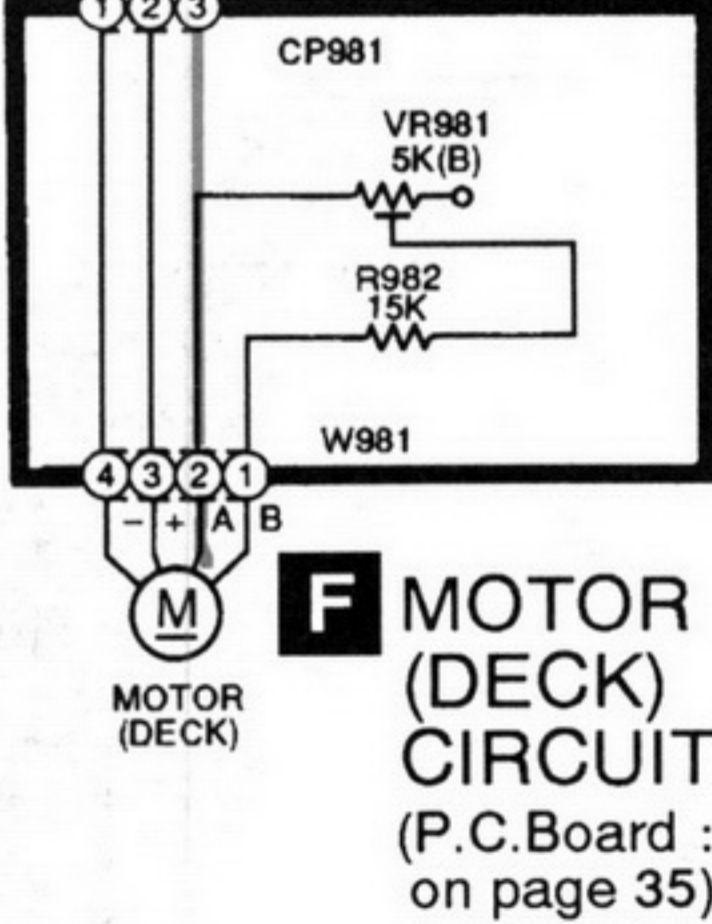


To **C** MAIN(3/3,POWER AMP) CIRCUIT (D) on page 29

To **C** MAIN(3/3,POWER AMP) CIRCUIT (E) on page 29

**D** MECHANISM(DECK2) CIRCUIT (P.C.Board : on page 34)

**E** MECHANISM(DECK1) CIRCUIT (P.C.Board : on page 34)

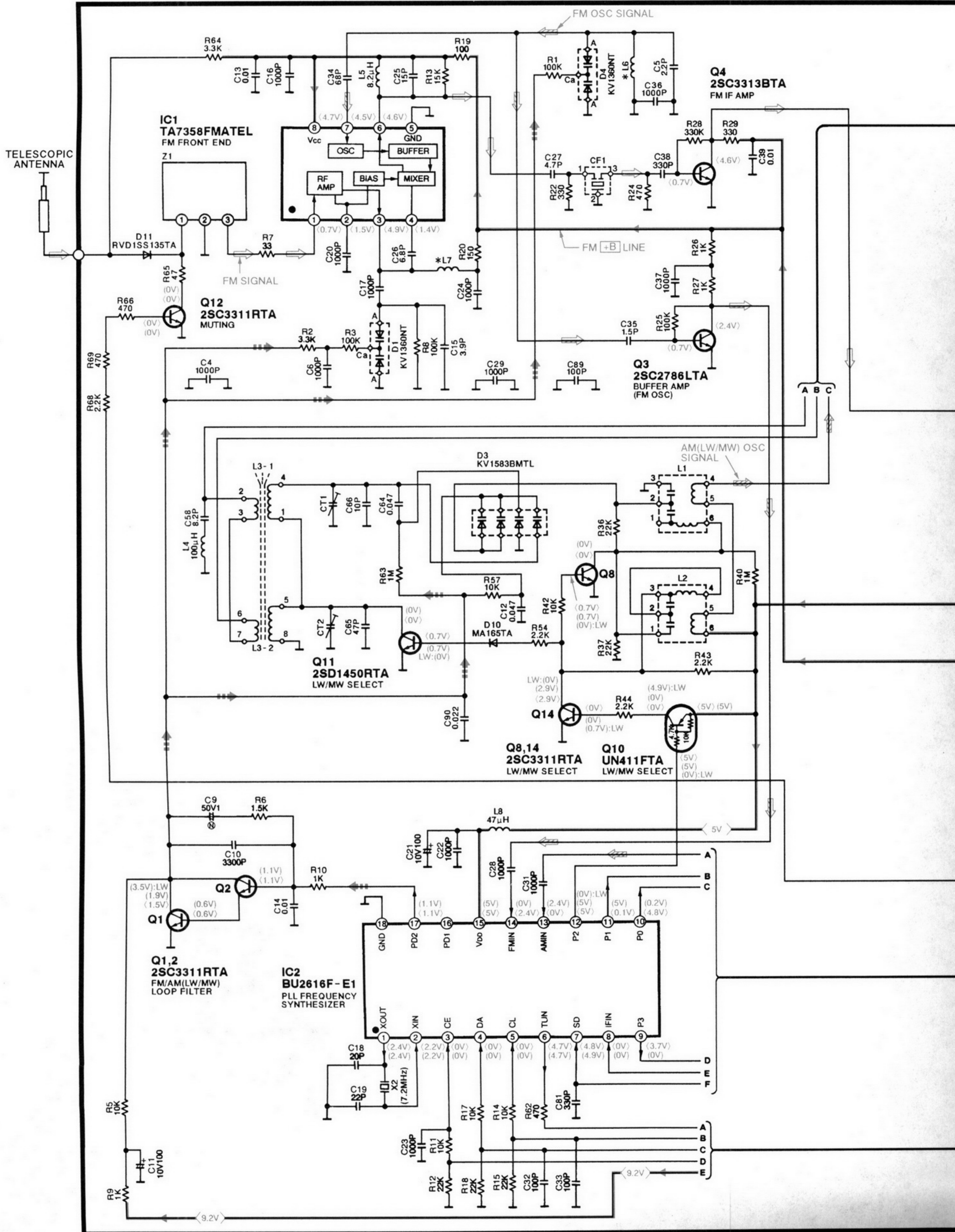


**F** MOTOR (DECK) CIRCUIT (P.C.Board : on page 35)



FM/AM/ V cap Control Signal Line + B Line

C MAIN(1/3,TUNER)CIRCUIT (P.C.Board : on pages 36,37)



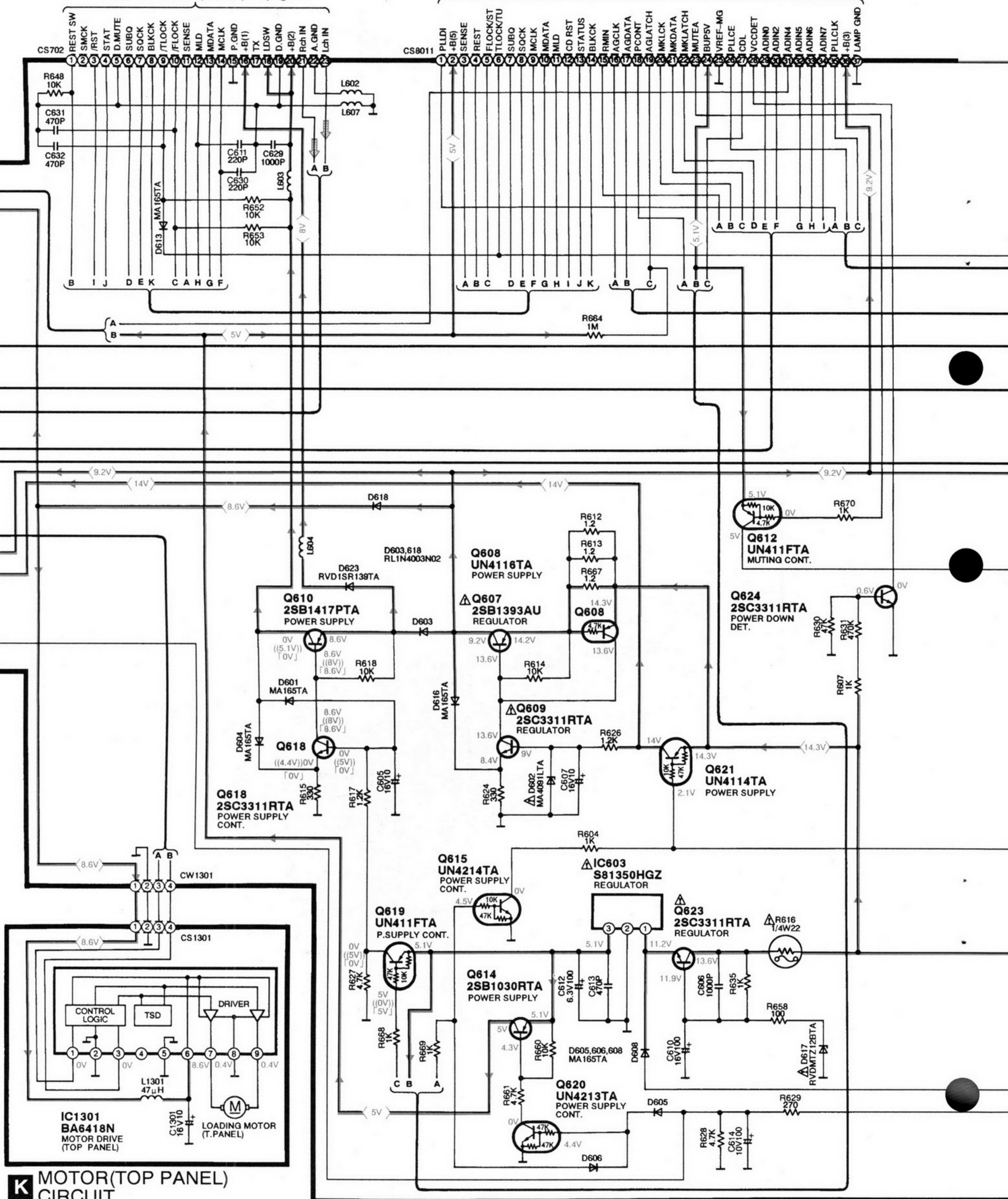
→ : CD Signal Line

→ : Main Signal Line

→ : + B Line

To **A** CD CIRCUIT(CN702) on page 23

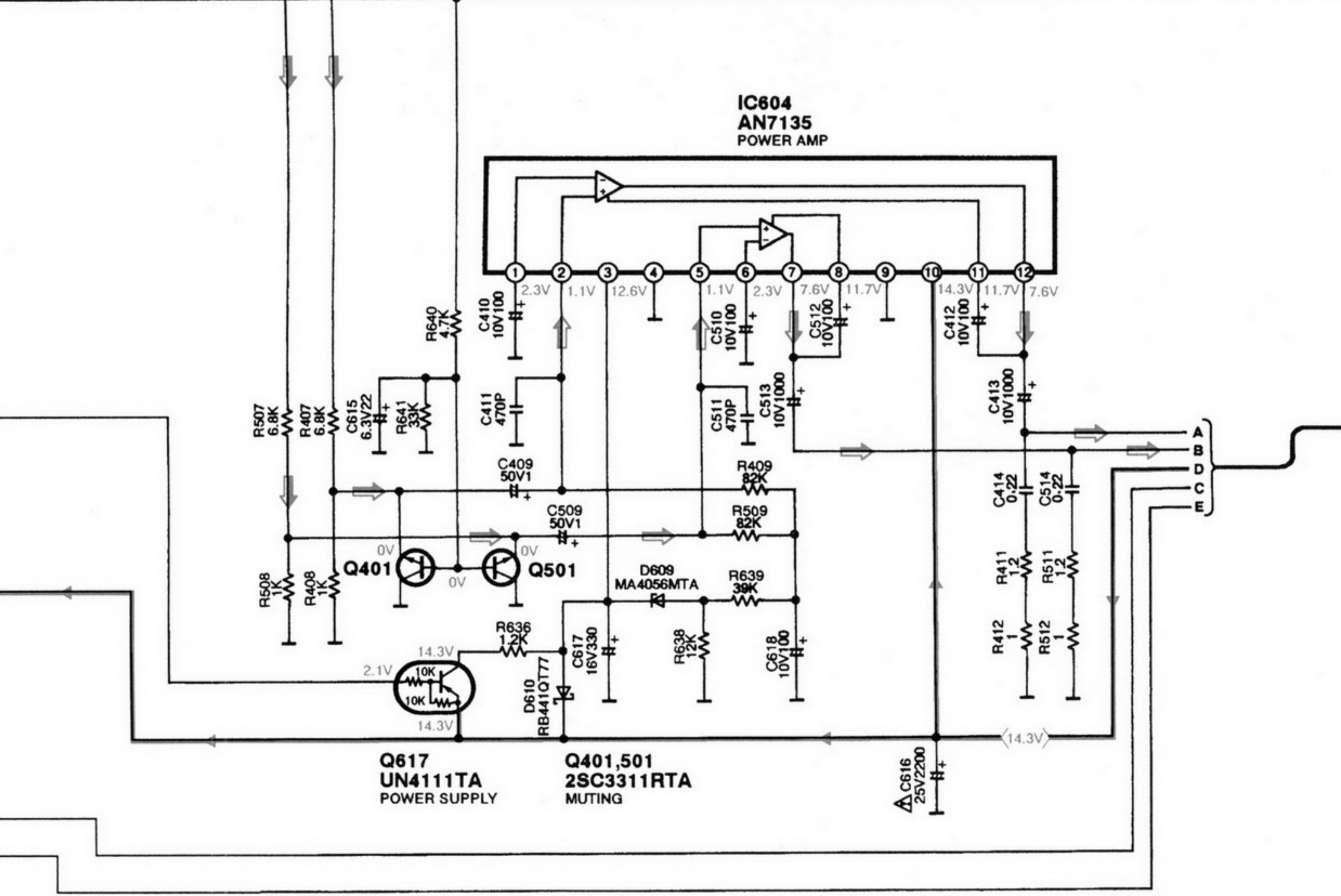
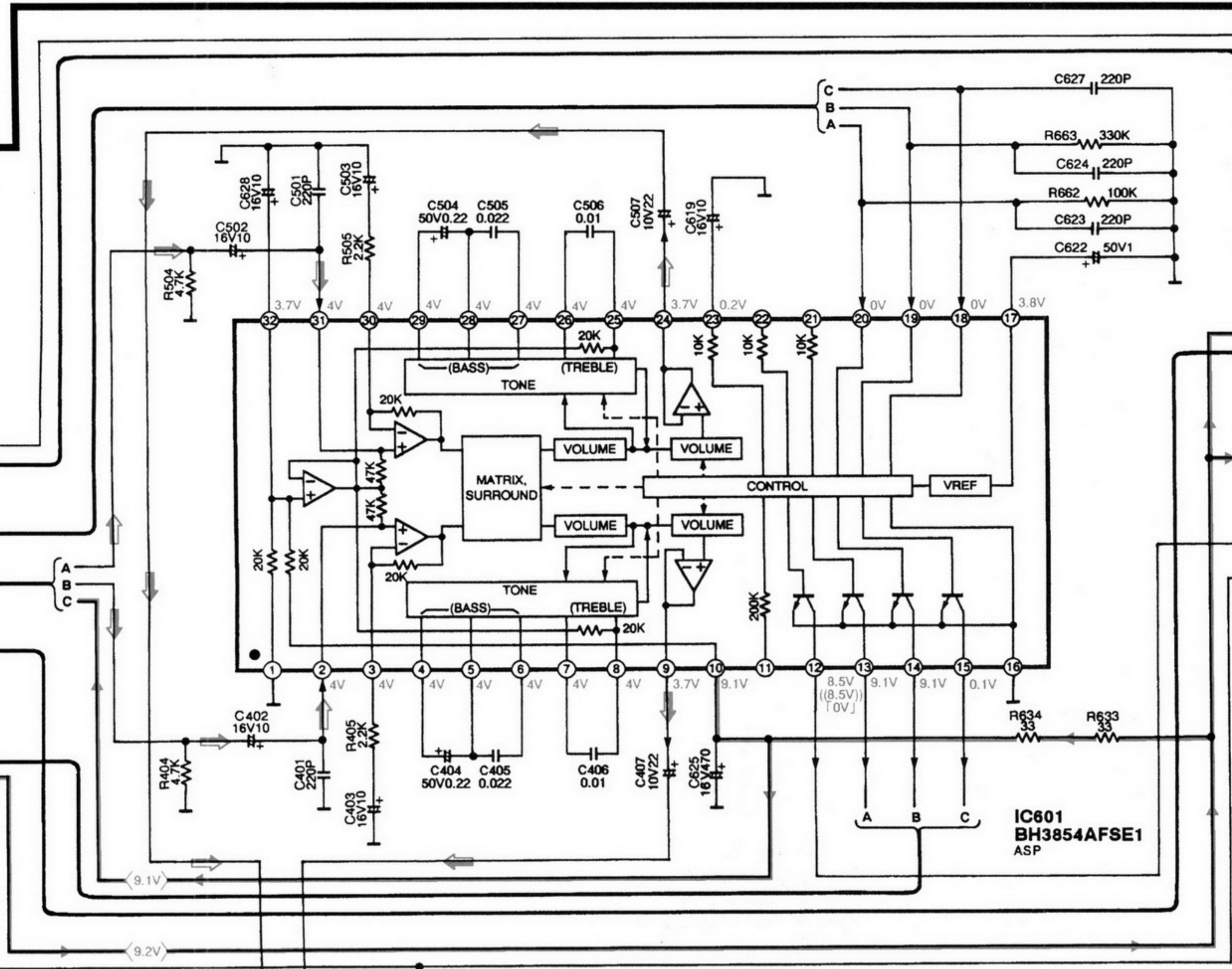
To **B** CD CIRCUIT(CS801) on page 24

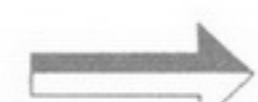



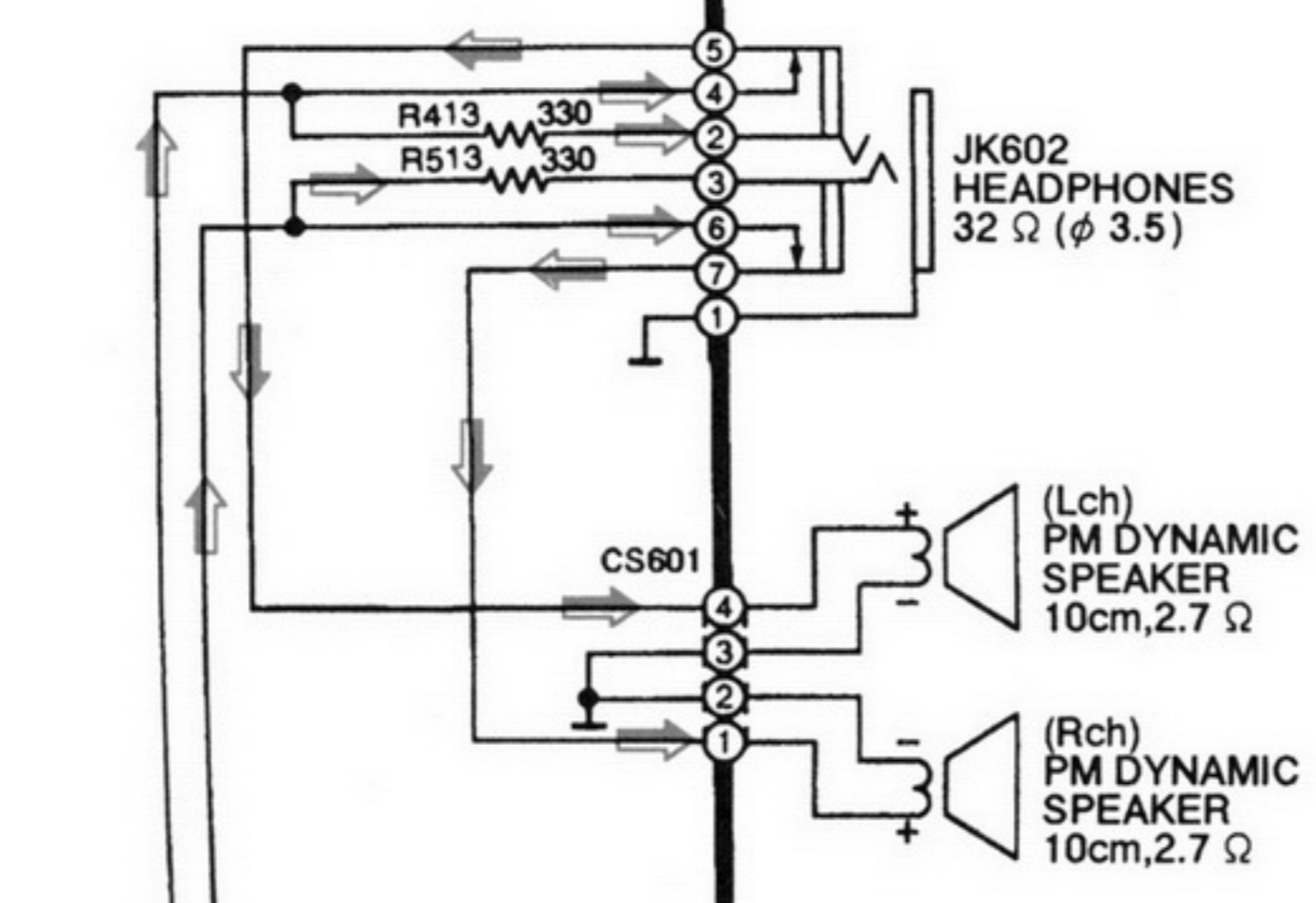
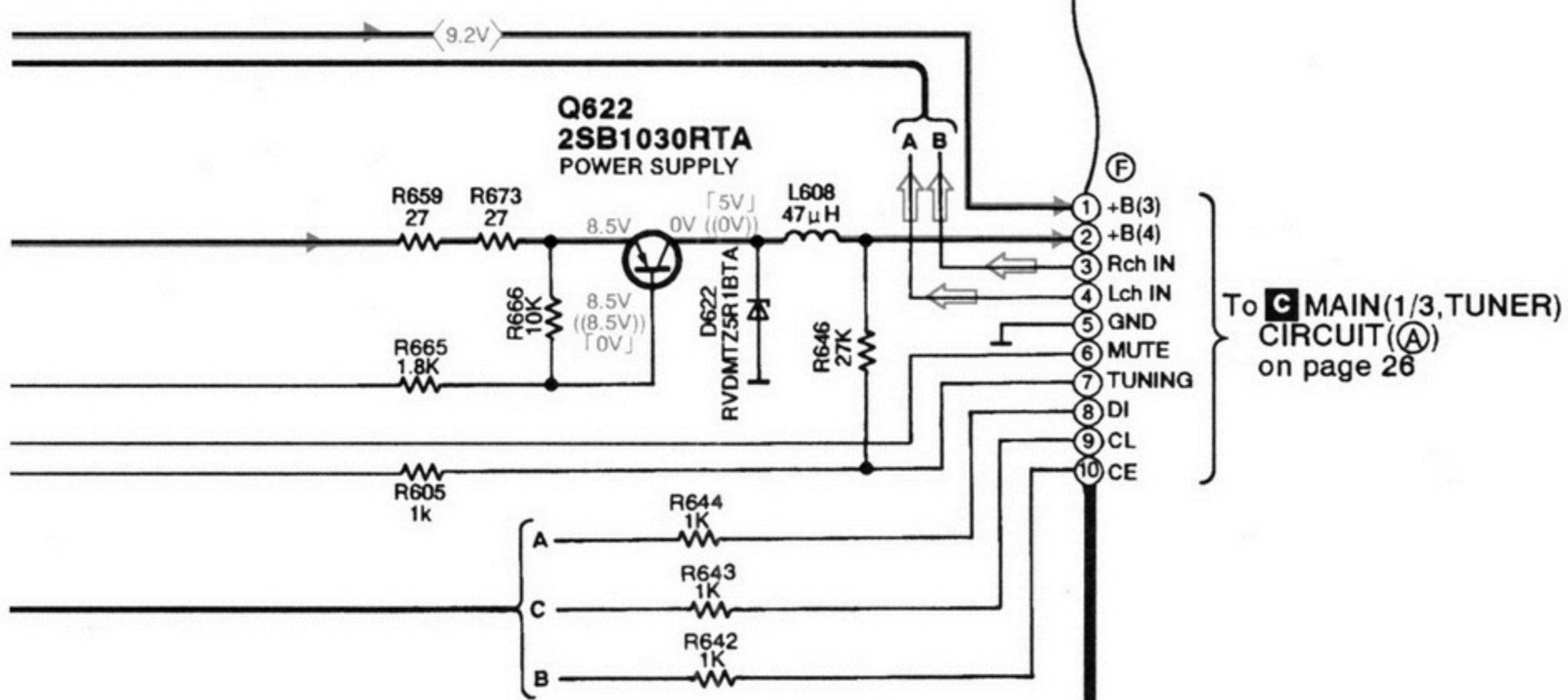
**K** MOTOR(TOP PANEL) CIRCUIT

(P.C.Board : on page 35)

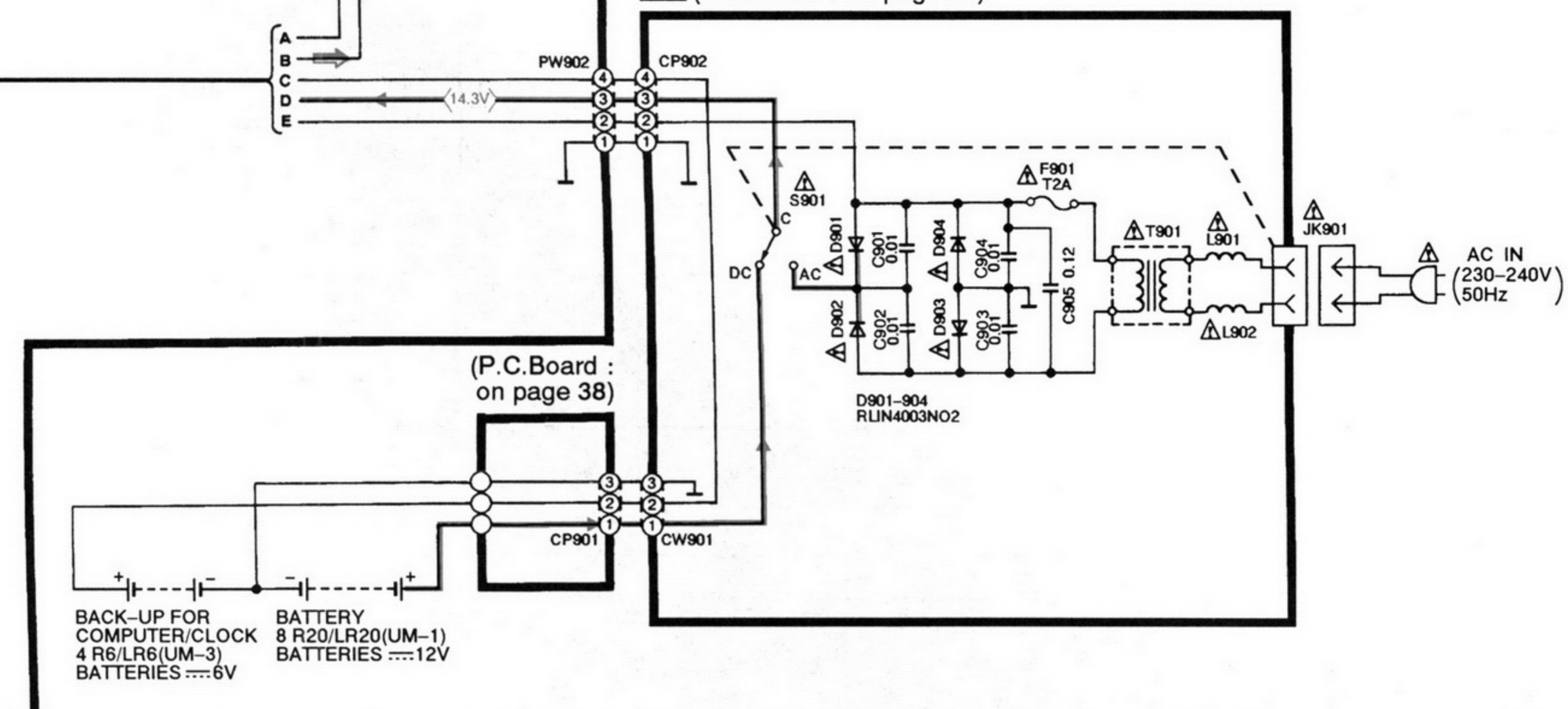
**C** MAIN(3/3,POWER AMP)CIRCUIT (P.C.Board : on pages 36,37)



 : Main Signal Line  
 : + B Line

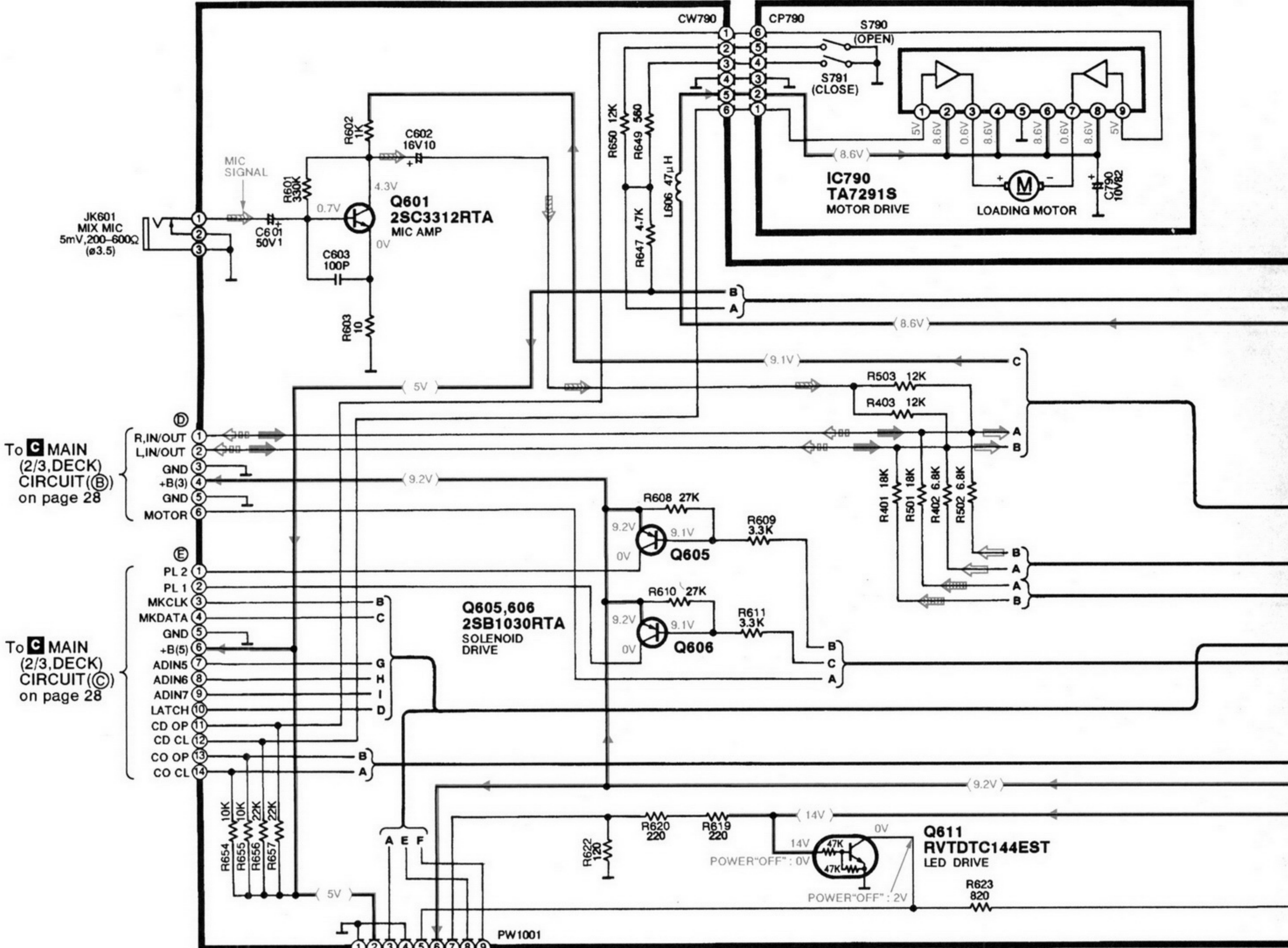


**POWER SUPPLY CIRCUIT**  
(P.C.Board : on page 38)



**C** MAIN(3/3,POWER AMP) CIRCUIT  
(P.C.Board : on pages 36,37)

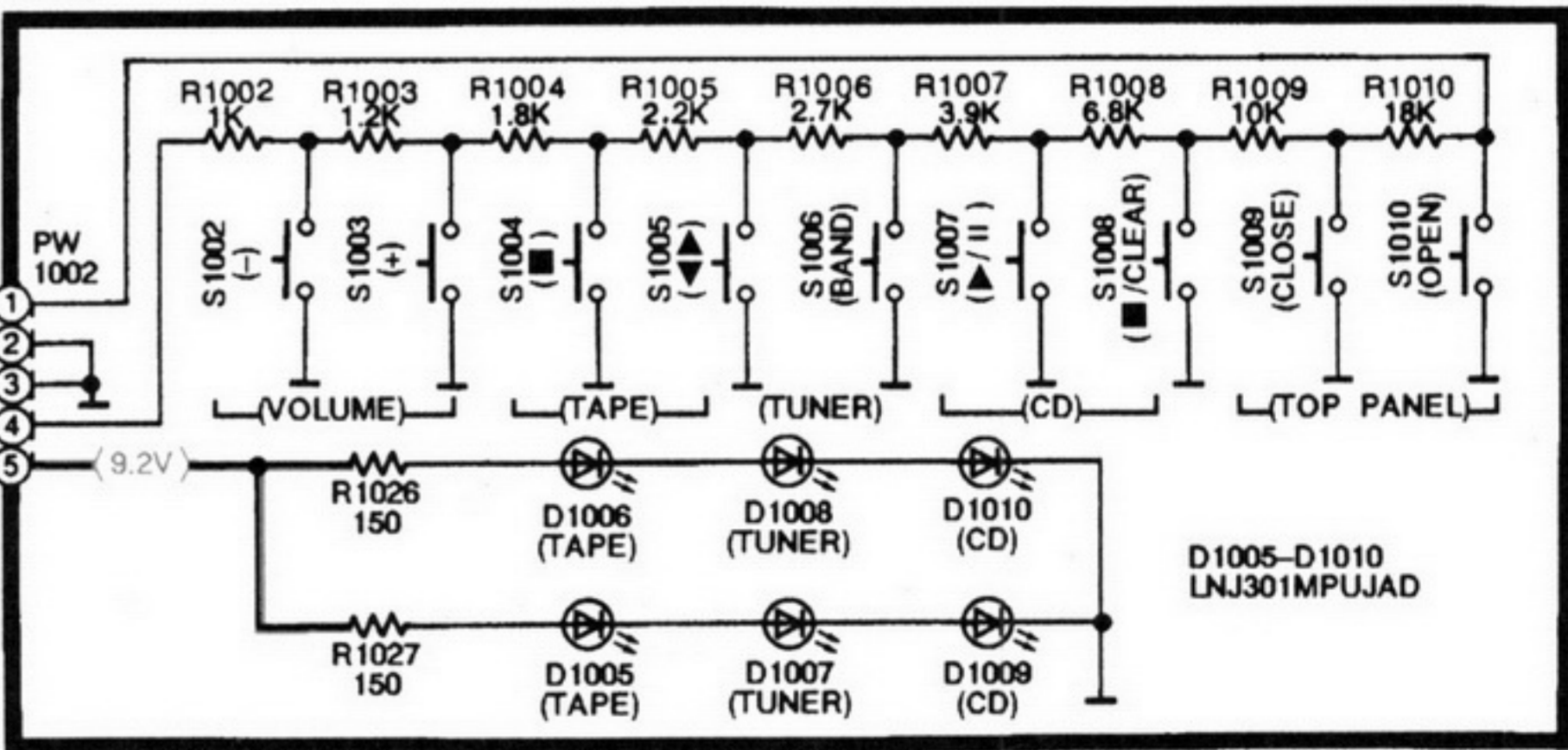
**G** LOADING MOTOR CIRCUIT  
(P.C.Board : on page 35)



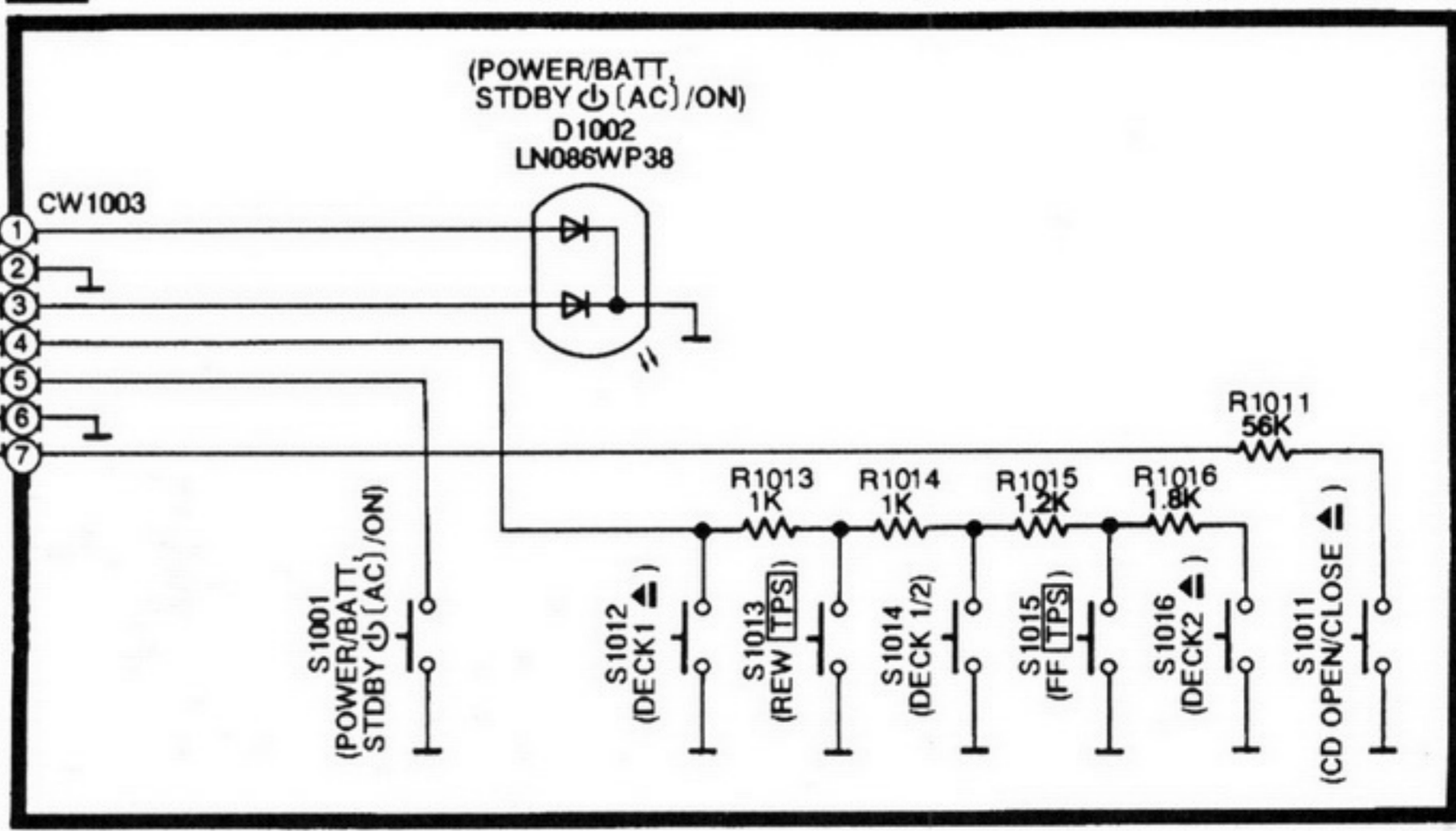
To **C** MAIN (2/3,DECK) CIRCUIT (B) on page 28

To **C** MAIN (2/3,DECK) CIRCUIT (C) on page 28

**I** OPERATION(1) CIRCUIT (P.C.Board : on page 34)



**J** OPERATION(2) CIRCUIT (P.C.Board : on page 38)



**H** SENSOR CIRCUIT  
(P.C.Board : on page 35)

