

Service Manual

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ORDER NO. MD0302054C2

Service Manual

CD Stereo System



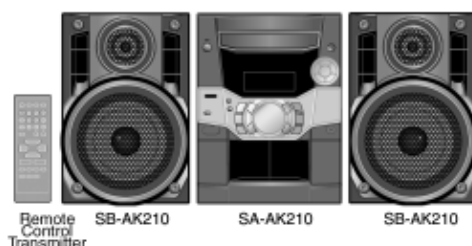
- SA-AK210E
- SA-AK210EB
- SA-AK210EG

Colour

(S)... Silver Type

TAPE SECTION :

SG-2W MECHANISM SERIES



Specifications

AMPLIFIER SECTION

RMS Power output	
10% Total harmonic distortion	
1kHz, both channels driven	
(Low channel)	55 W per channel (6Ω)
10kHz, both channels driven	
(High channel)	55 W per channel (6Ω)
Total Bi-Amp power	110 W per channel
Input sensitivity	
AUX	250 mV
Input Impedance	
AUX	13.3 kΩ

FM TUNER SECTION

Frequency range	87.50 - 108.00 MHz (50 kHz steps)
Sensitivity	1.8μ V (IHF)
S/ N 26 dB	1.5μ V
Antenna terminal(s)	75Ω (unbalanced)

AM TUNER SECTION

Frequency range	522 - 1629 kHz (9 kHz steps)
Sensitivity	
S/ N 20 dB (at 999 kHz)	560μ V/ m

CASSETTE DECK SECTION

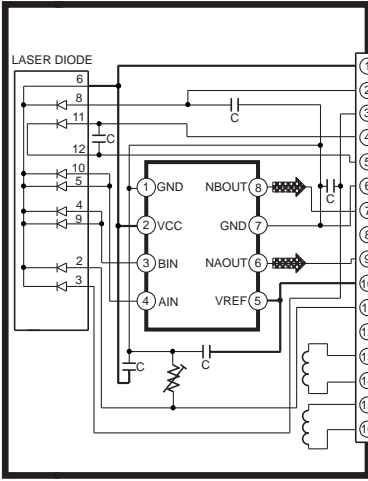
Track system	4 track, 2 channel
Heads	
Record/ playback	Solid permalloy head
Erasure	Double gap ferrite head
Motor	DC servo motor
Recording system	AC bias 100 kHz
Erasing system	AC erase 100 kHz
Tape speed	4.8 cm/ s
Overall frequency response (+ 3 dB, -6 dB at DECK OUT)	
NORMAL (TYPE I)	35 Hz - 14 kHz
S/ N	50 dB (A weighted)
Wow and flutter	0.18% (WRMS)
Fast forward and rewind time	Approx. 120 seconds with C-60 cassette tape

CD SECTION

Sampling frequency	44.1 kHz
Decoding	16 bit linear
Pickup	
Beam source/ wavelength	Semiconductor laser/ 780 nm
Number of channels	Stereo
Frequency response	20 Hz - 20 kHz (+ 1, -2 dB)
Wow and flutter	Below measurable limit
Digital filter	8 fs
D/ A converter	MASH (1 bit DAC)

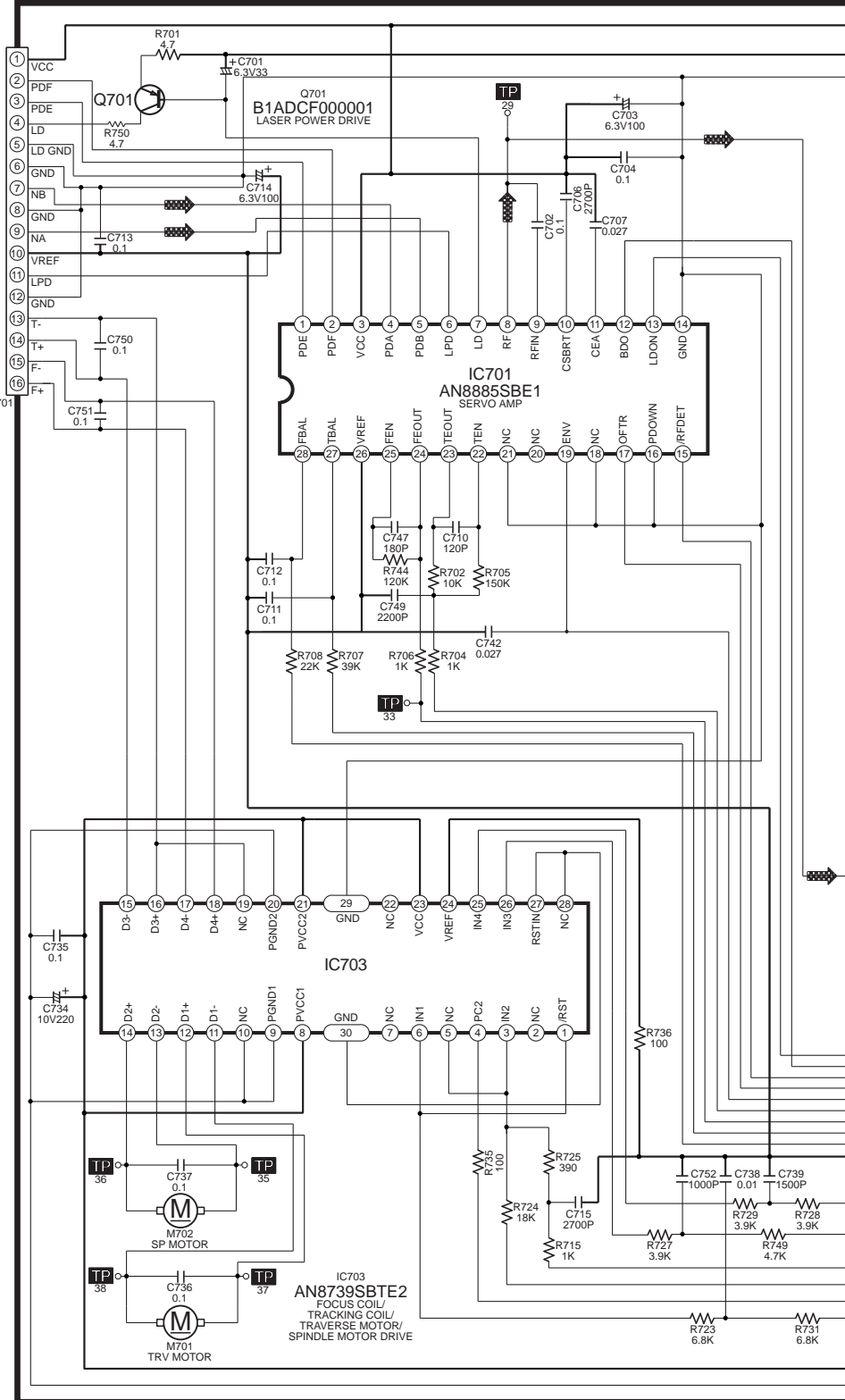
SCHEMATIC DIAGRAM -1

OPTICAL PICKUP CIRCUIT



A CD SERVO CIRCUIT

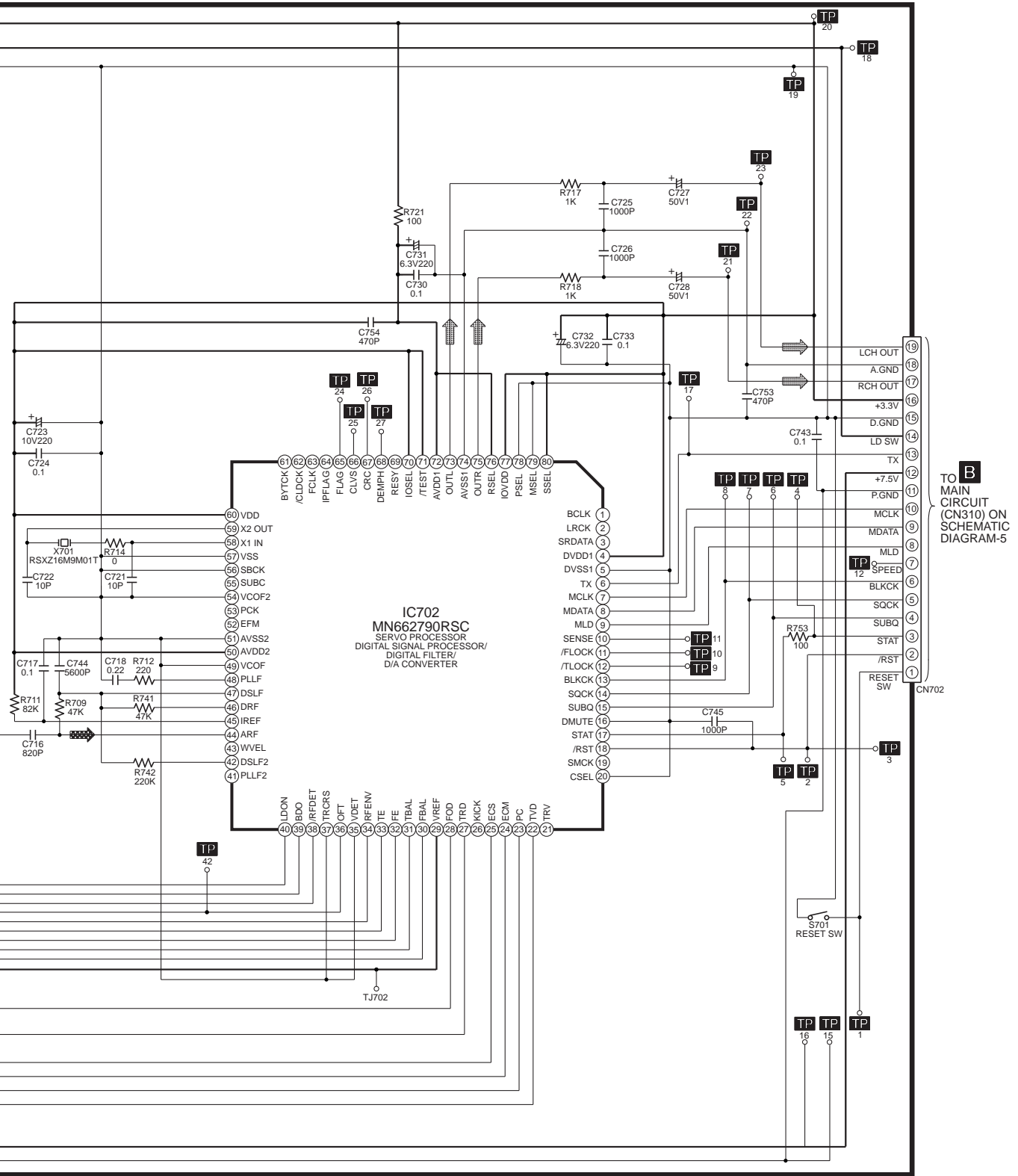
— : +B SIGNAL LINE : CD-DA SIGNAL LINE



SCHEMATIC DIAGRAM - 2

— : +B SIGNAL LINE  : CD-DA SIGNAL LINE  : CD SIGNAL LINE

A CD SERVO CIRCUIT



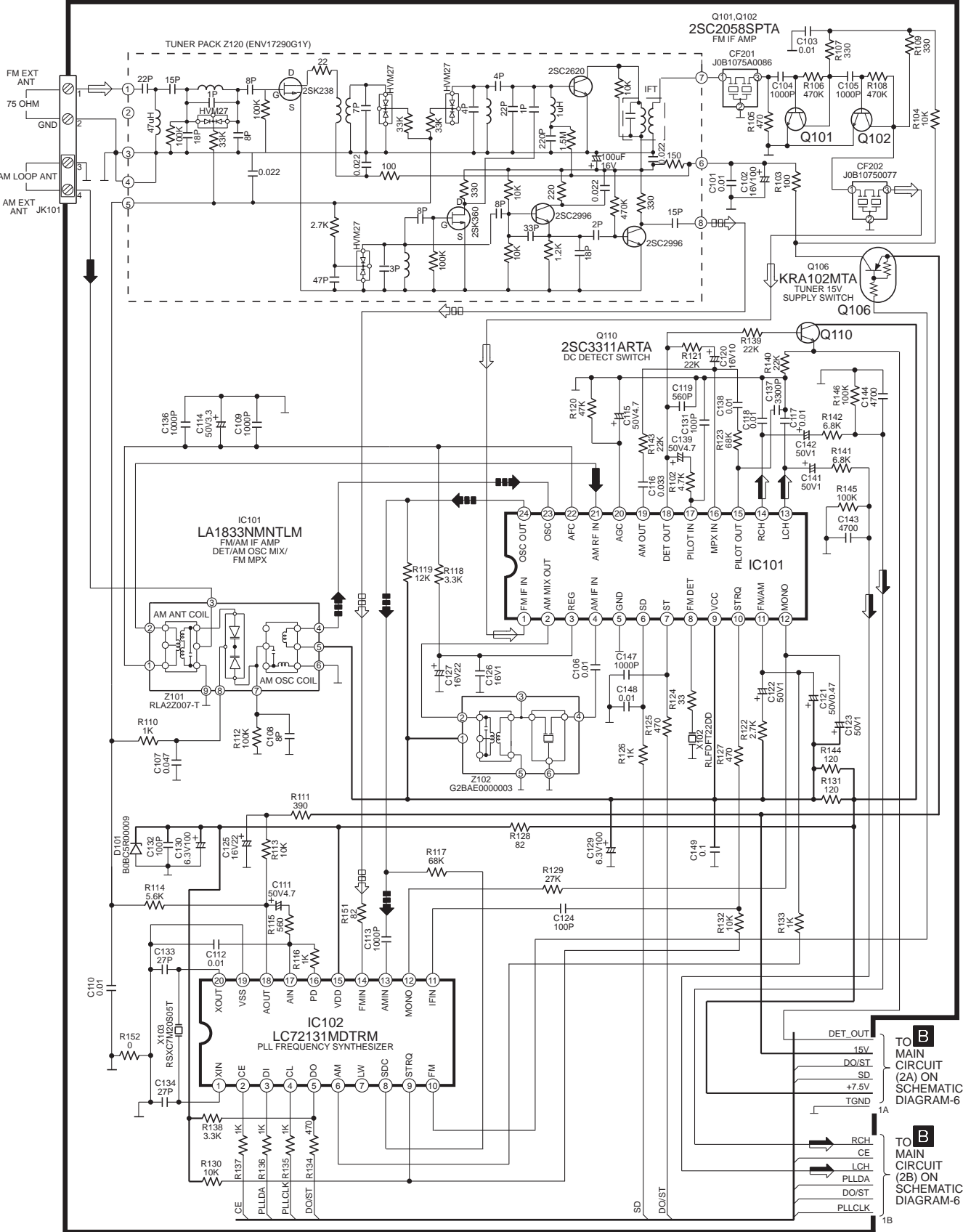
B
TO MAIN CIRCUIT (CN310) ON SCHEMATIC DIAGRAM-5

SCHEMATIC DIAGRAM - 3

- : +B SIGNAL LINE
- ⇨ : FM SIGNAL LINE
- ⇨ : FM/AM SIGNAL LINE
- ⇨ : FM OSC SIGNAL LINE
- ⇨ : AM SIGNAL LINE
- ⇨ : AM OSC SIGNAL LINE

B

TUNER/MAIN CIRCUIT



SCHEMATIC DIAGRAM - 4

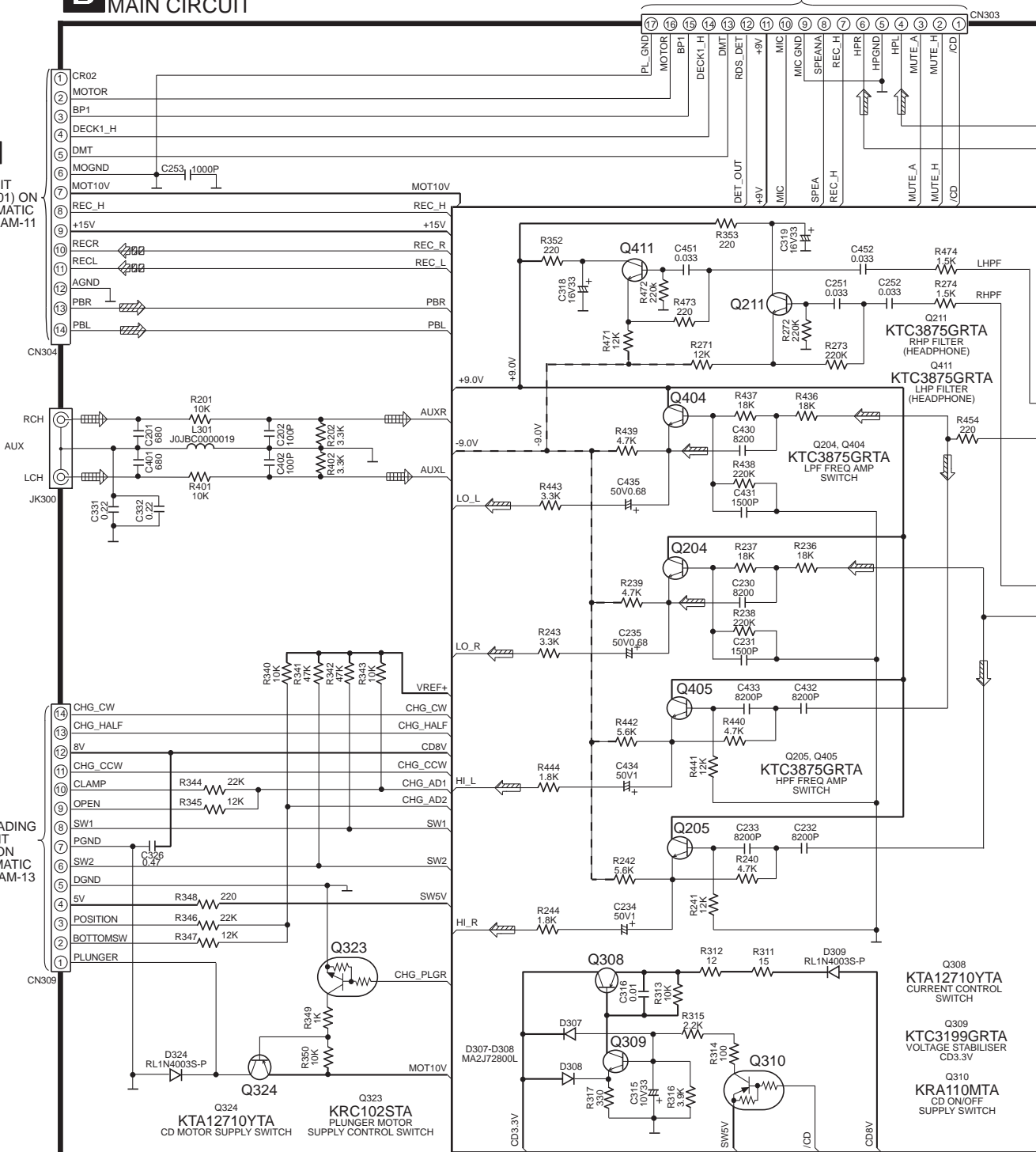
- : +B SIGNAL LINE
- - - : -B SIGNAL LINE
- ▭▭▭▭ : AUX SIGNAL LINE
- ▭▭▭▭▭▭ : CD SIGNAL LINE
- ▭▭▭▭▭▭▭▭ : MAIN SIGNAL LINE
- ▭▭▭▭▭▭▭▭▭▭ : PLAYBACK SIGNAL LINE
- ▭▭▭▭▭▭▭▭▭▭▭▭ : RECORD SIGNAL LINE

TO PANEL CIRCUIT (CP601) ON SCHEMATIC DIAGRAM-9




B MAIN CIRCUIT

TO DECK CIRCUIT (CN1001) ON SCHEMATIC DIAGRAM-11

TO CD LOADING CIRCUIT (CN1) ON SCHEMATIC DIAGRAM-13

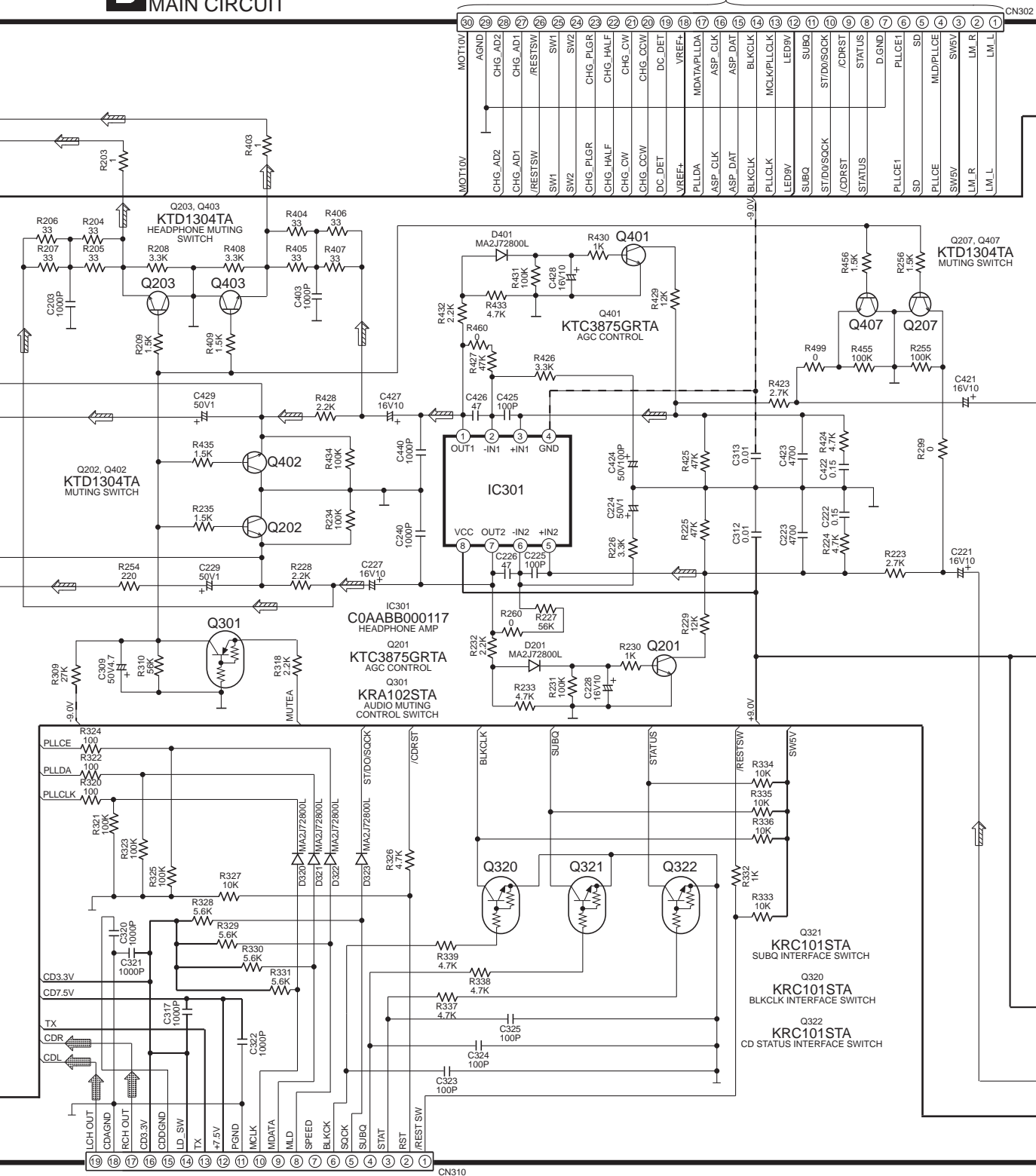


SCHEMATIC DIAGRAM - 5

— : +B SIGNAL LINE  : AUX SIGNAL LINE  : MAIN SIGNAL LINE
 - - - : -B SIGNAL LINE  : CD SIGNAL LINE

B MAIN CIRCUIT

TO **C**
 PANEL CIRCUIT
 (CP602) ON
 SCHEMATIC DIAGRAM-9



TO **A**
 SERVO CIRCUIT
 (CN702) ON
 SCHEMATIC DIAGRAM-2

SCHEMATIC DIAGRAM - 6

— : +B SIGNAL LINE
 - - : -B SIGNAL LINE

▬▬▬ : AUX SIGNAL LINE

▬▬▬▬ : CD SIGNAL LINE

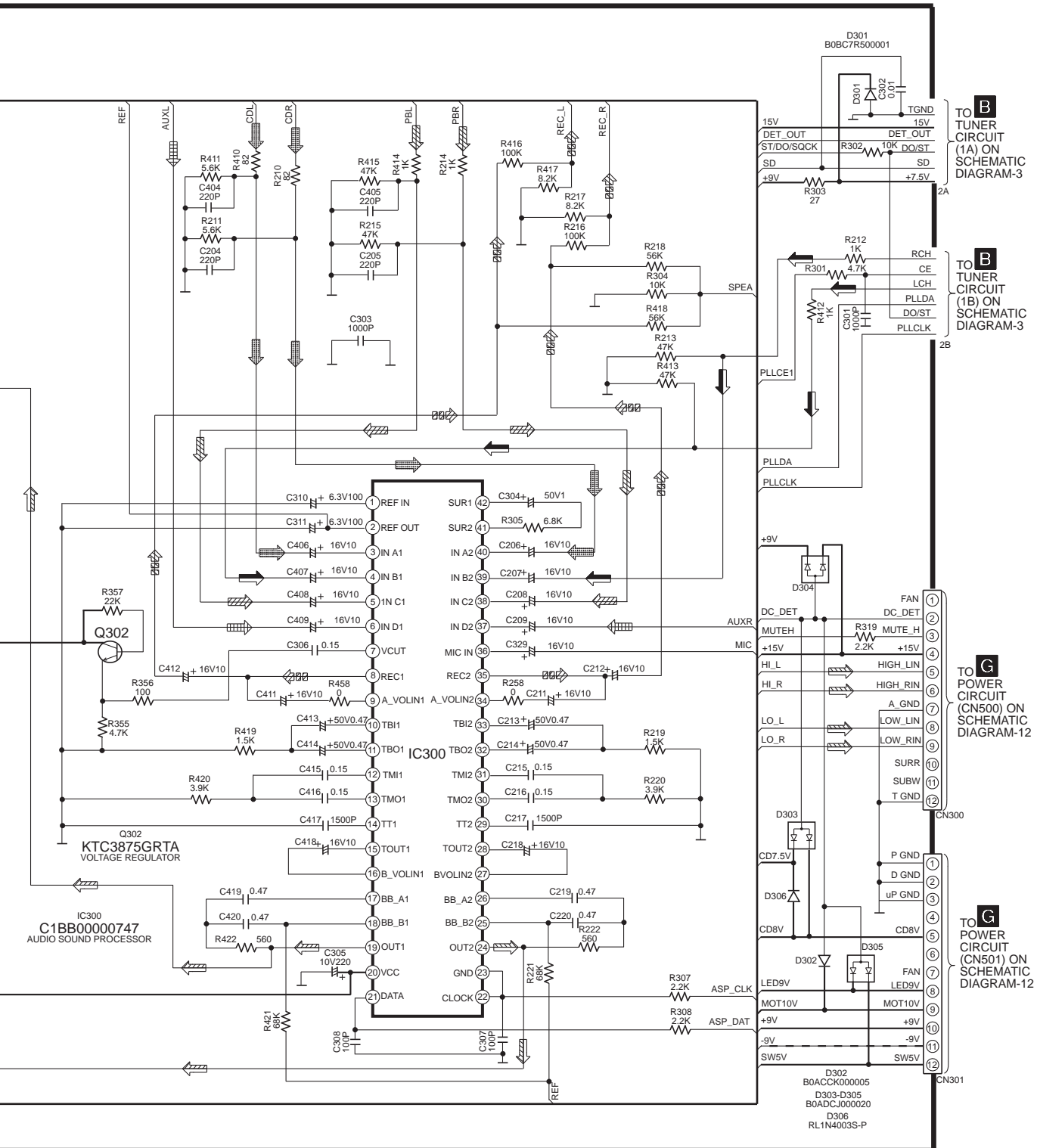
▬▬▬▬▬ : FM/AM SIGNAL LINE

▬▬▬▬▬▬ : MAIN SIGNAL LINE

▬▬▬▬▬▬▬ : PLAYBACK SIGNAL LINE

▬▬▬▬▬▬▬▬ : RECORD SIGNAL LINE

B MAIN CIRCUIT



TO B
 TUNER
 CIRCUIT
 (1A) ON
 SCHEMATIC
 DIAGRAM-3

TO B
 TUNER
 CIRCUIT
 (1B) ON
 SCHEMATIC
 DIAGRAM-3

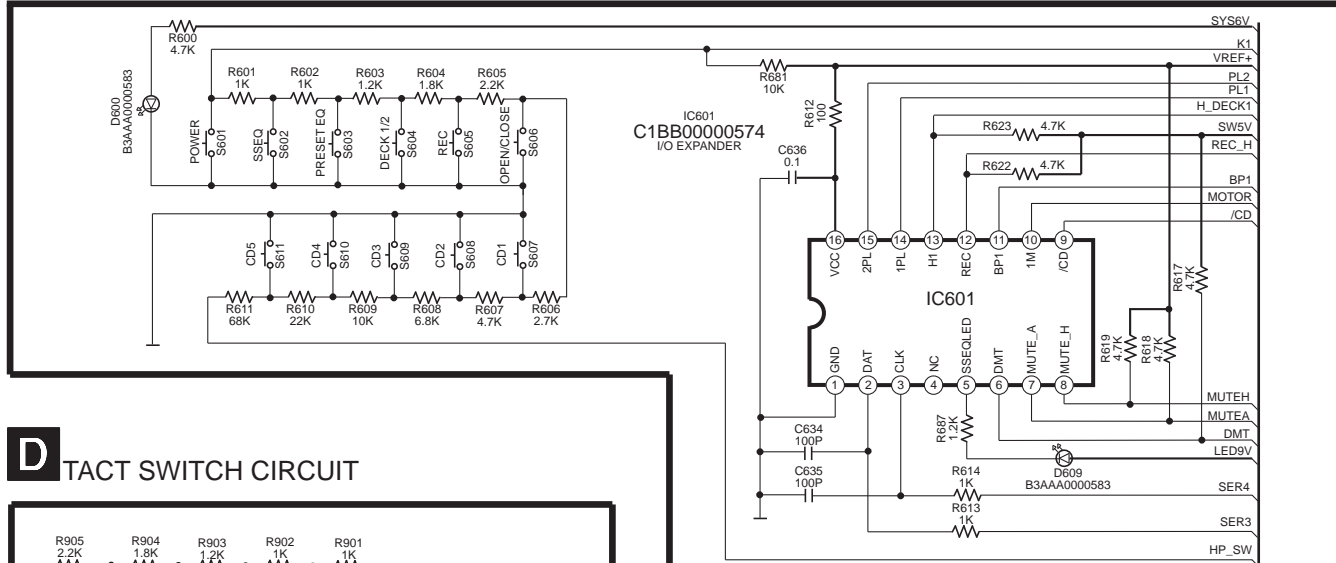
TO G
 POWER
 CIRCUIT
 (CN500) ON
 SCHEMATIC
 DIAGRAM-12

TO G
 POWER
 CIRCUIT
 (CN501) ON
 SCHEMATIC
 DIAGRAM-12

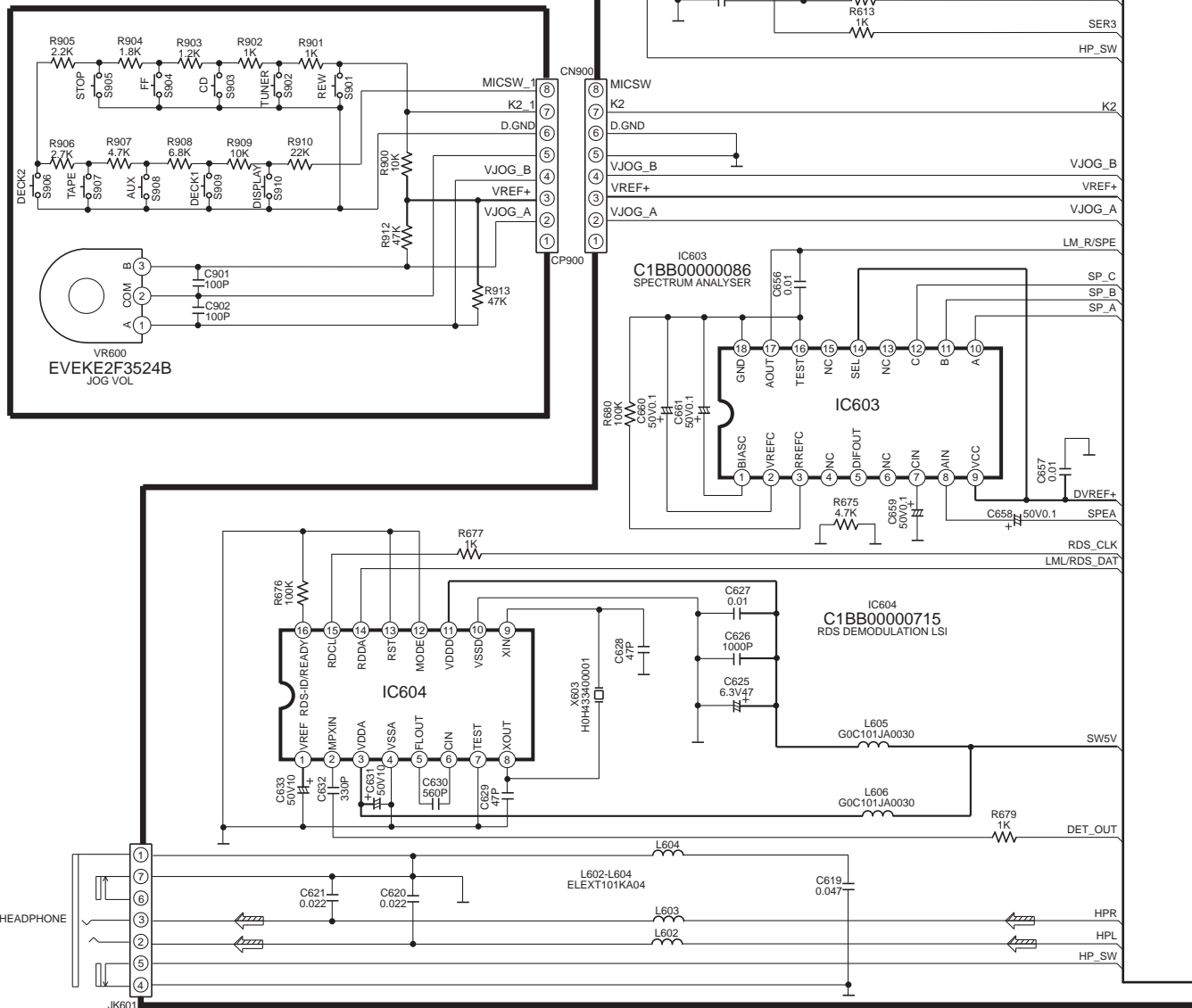
SCHEMATIC DIAGRAM - 7

— : +B SIGNAL LINE ⇨ : MAIN SIGNAL LINE

C PANEL CIRCUIT



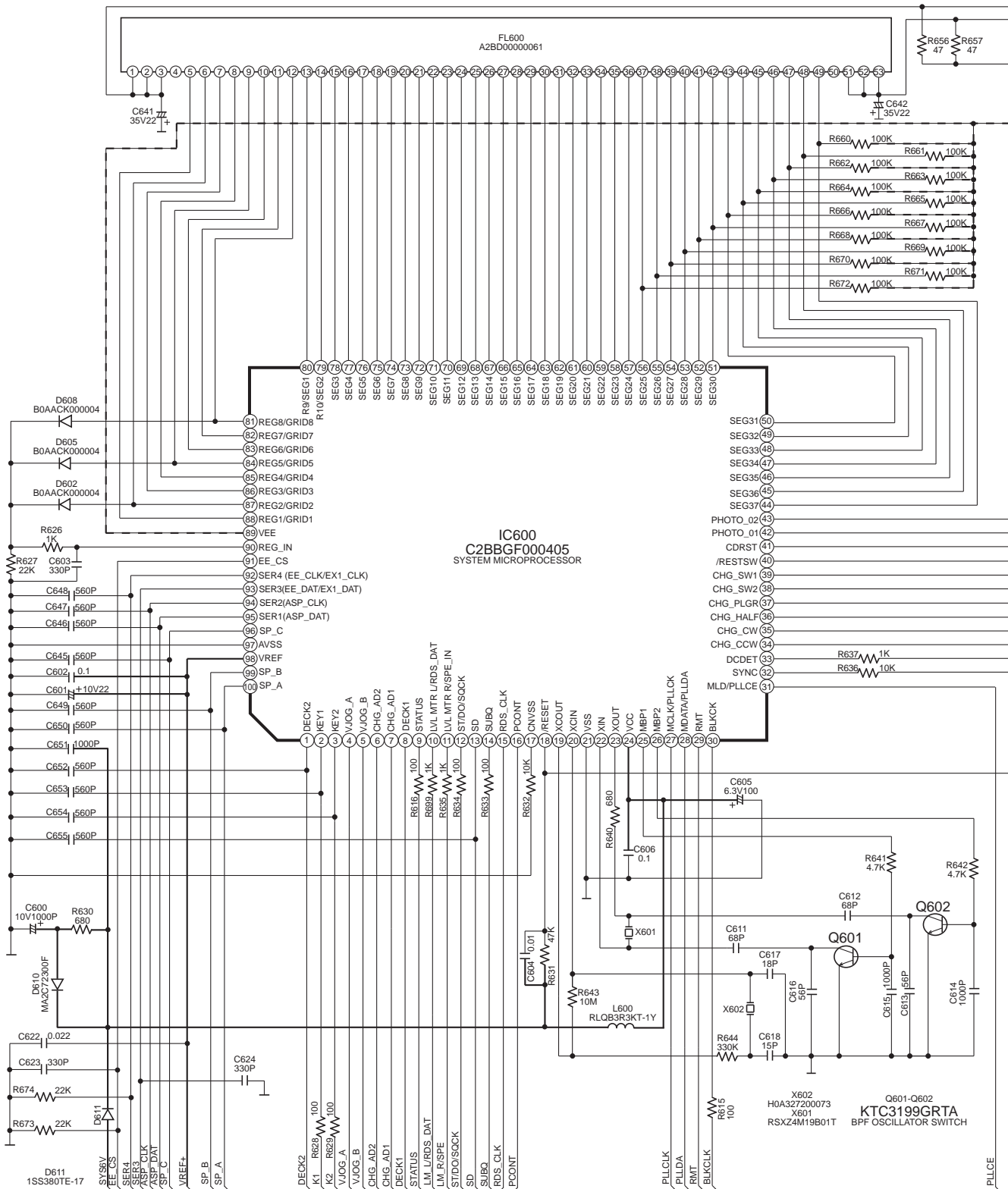
D TACT SWITCH CIRCUIT



SCHEMATIC DIAGRAM - 8

— : +B SIGNAL LINE - - - : -B SIGNAL LINE

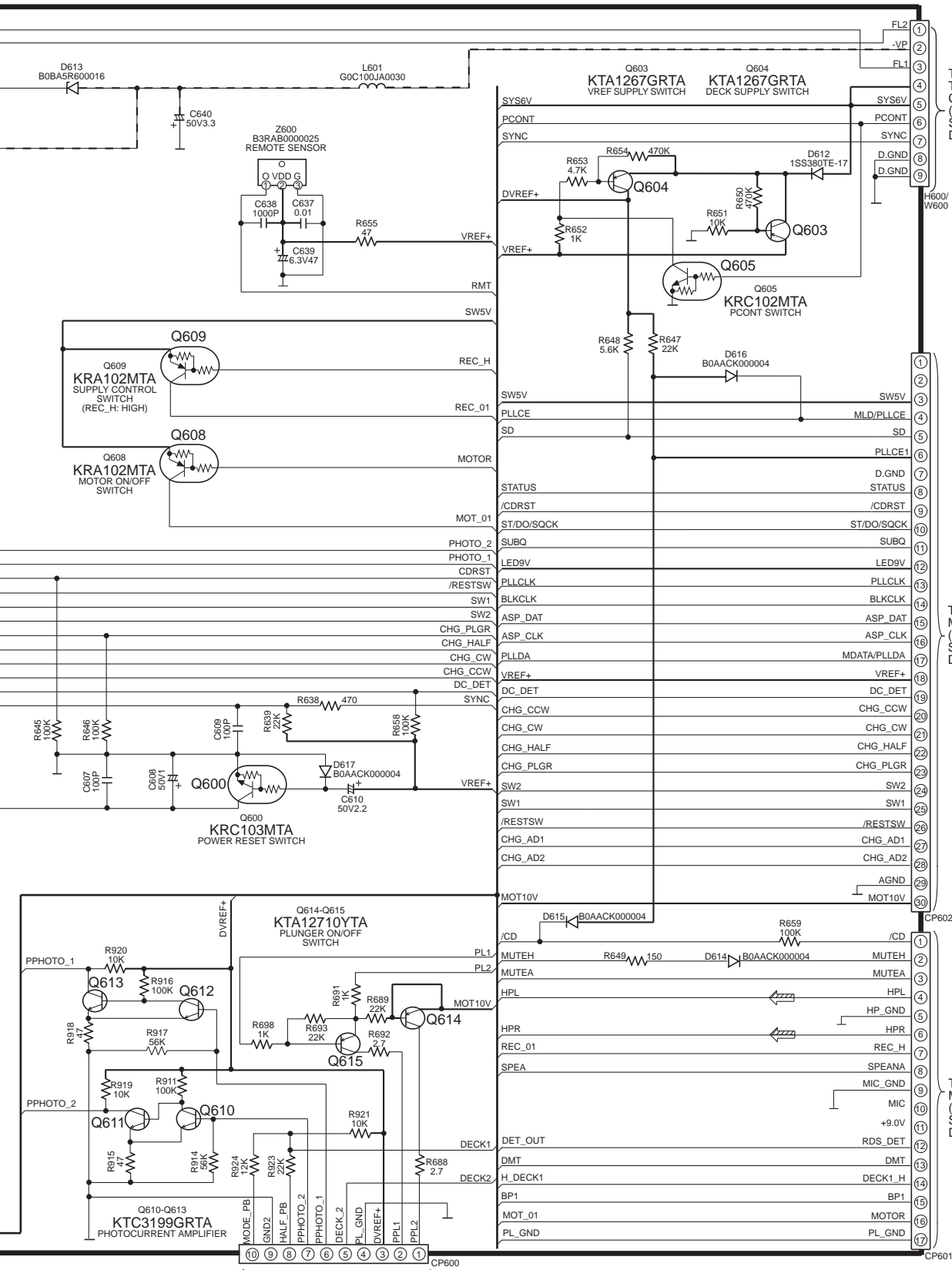
C PANEL CIRCUIT



SCHEMATIC DIAGRAM - 9

C PANEL CIRCUIT

— : +B SIGNAL LINE - - : -B SIGNAL LINE ⇨ : MAIN SIGNAL LINE



TO **H** TRANSFORMER CIRCUIT (CN951) ON SCHEMATIC DIAGRAM-13

TO **B** MAIN CIRCUIT (CN302) ON SCHEMATIC DIAGRAM-5

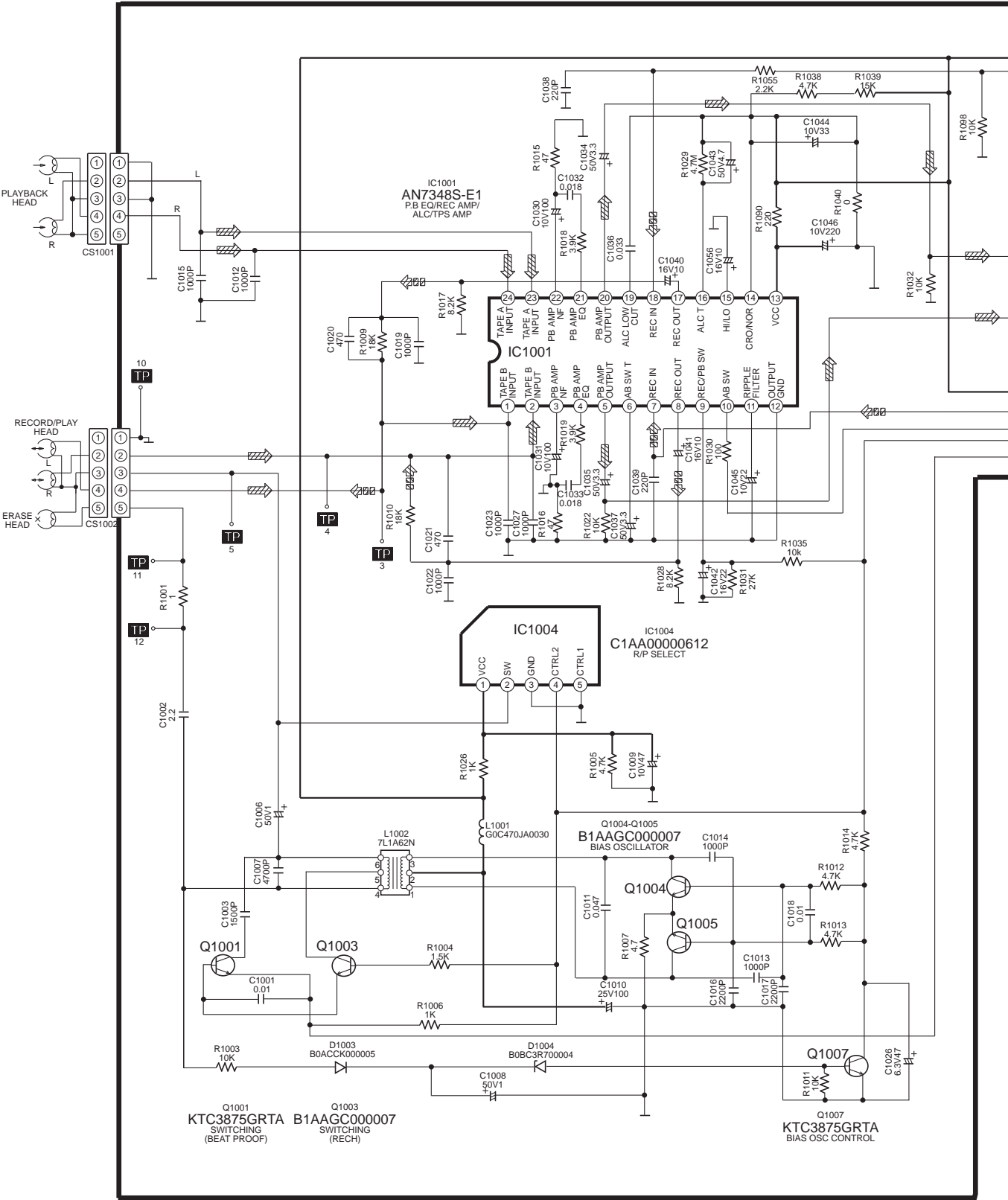
TO **B** MAIN CIRCUIT (CN303) ON SCHEMATIC DIAGRAM-4

TO **F** DECK MECHANISM CIRCUIT (CN971) ON SCHEMATIC DIAGRAM-11

SCHEMATIC DIAGRAM -10

- : +B SIGNAL LINE
- ▨ : PLAYBACK SIGNAL LINE
- - - : -B SIGNAL LINE
- ▩ : RECORD SIGNAL LINE

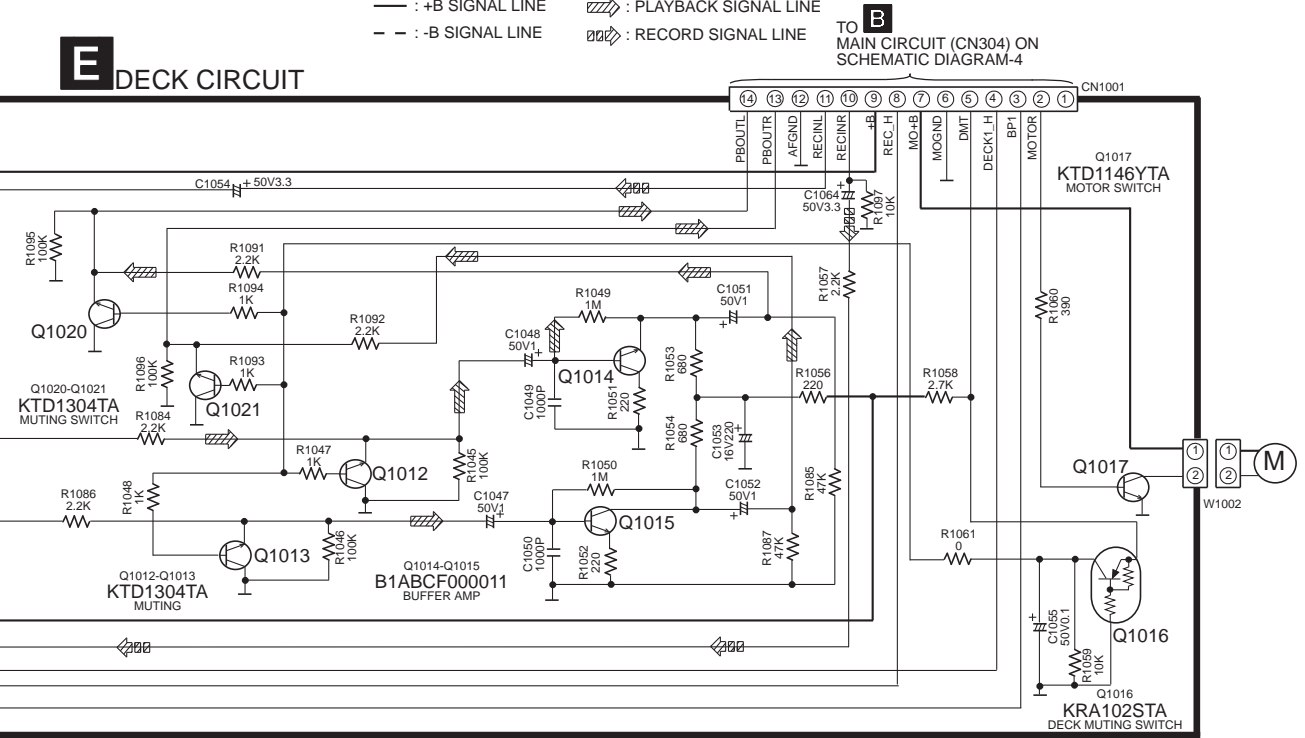
E DECK CIRCUIT



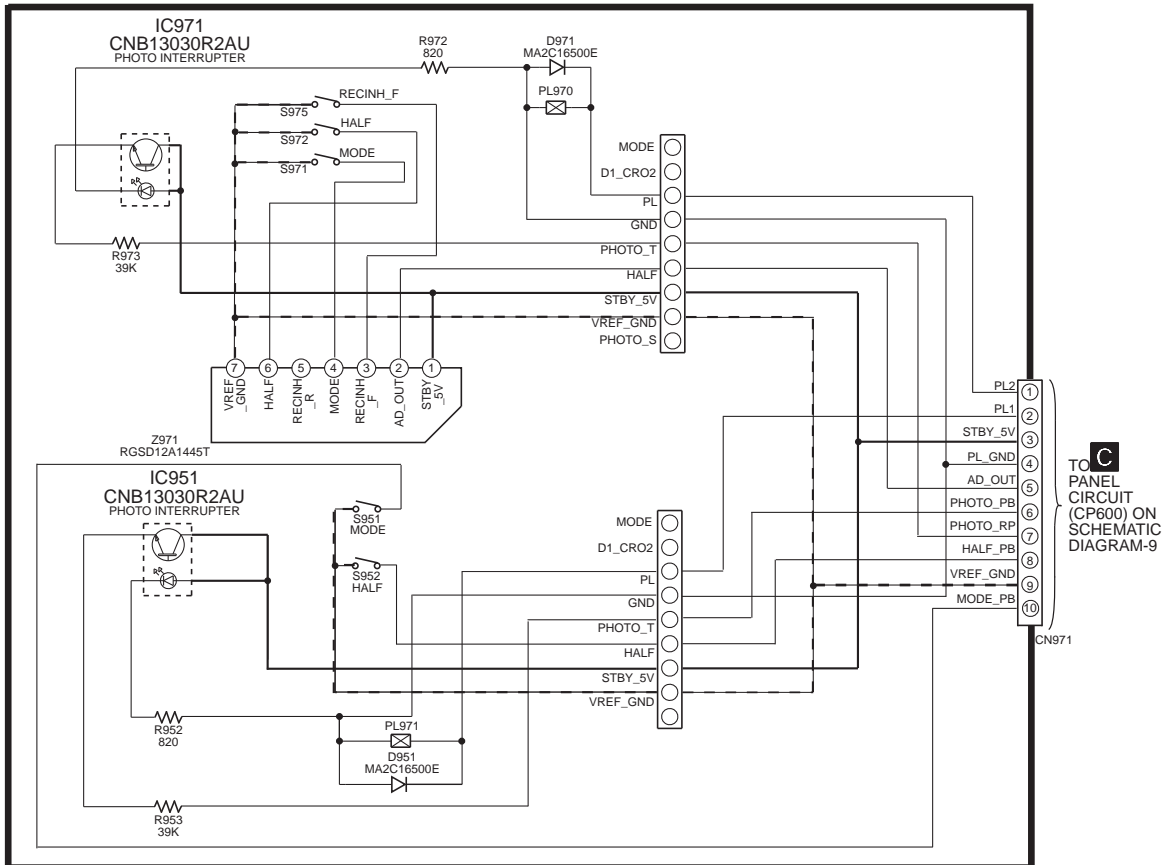
SCHEMATIC DIAGRAM - 11

— : +B SIGNAL LINE
 - - : -B SIGNAL LINE
 : PLAYBACK SIGNAL LINE
 : RECORD SIGNAL LINE

E DECK CIRCUIT



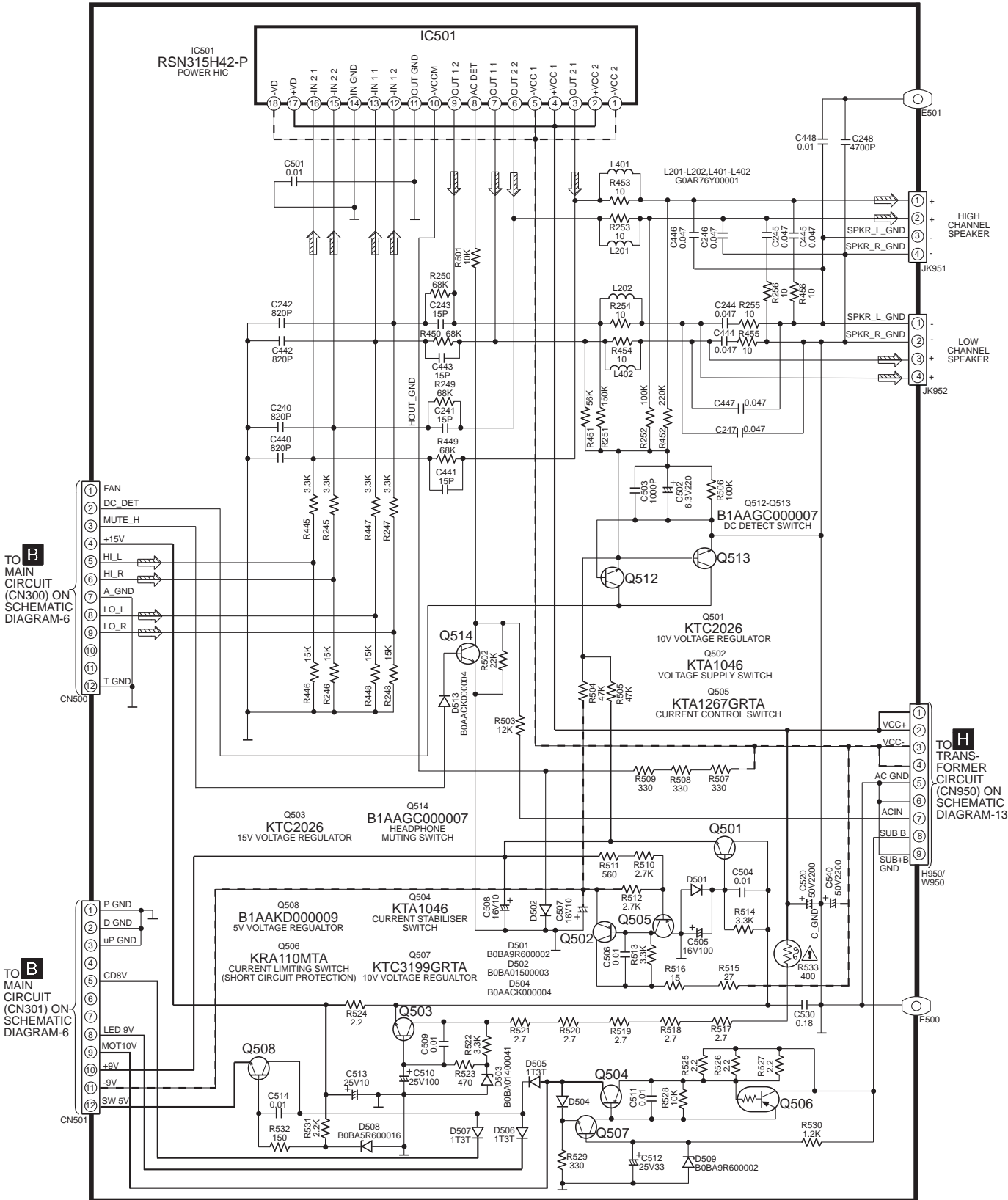
F MECHANISM CIRCUIT



SCHEMATIC DIAGRAM - 12

— : +B SIGNAL LINE - - : -B SIGNAL LINE ⇨ : MAIN SIGNAL LINE

G POWER CIRCUIT



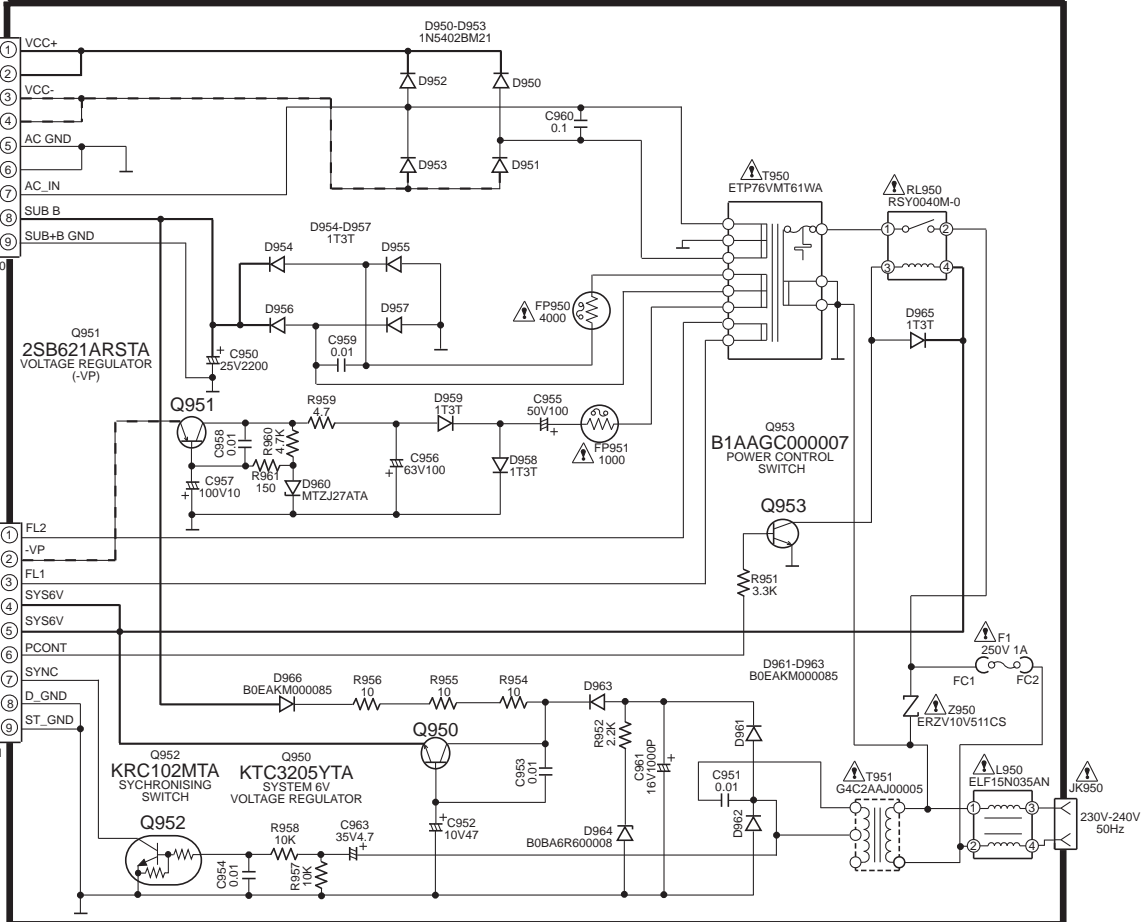
SCHEMATIC DIAGRAM - 13

— : +B SIGNAL LINE - - - : -B SIGNAL LINE

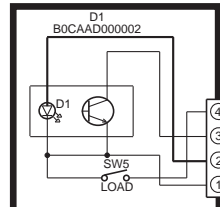
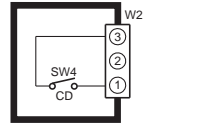
H TRANSFORMER CIRCUIT

G
TO POWER CIRCUIT (H950/W950) ON SCHEMATIC DIAGRAM-12

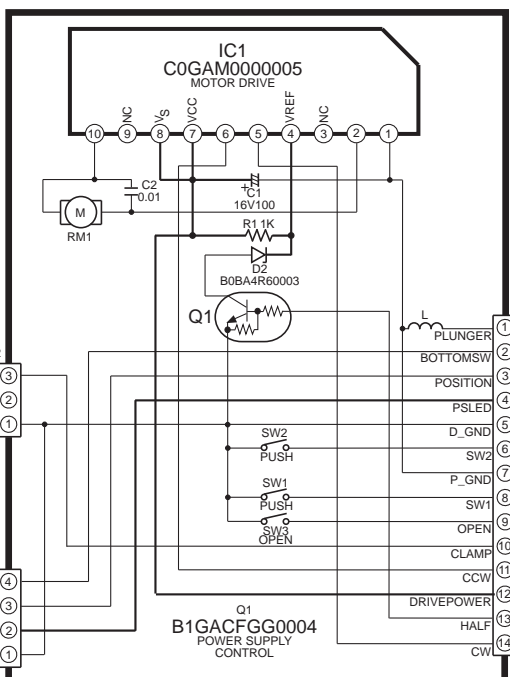
C
TO PANEL CIRCUIT (H600/W600) ON SCHEMATIC DIAGRAM-9



J CD DETECT CIRCUIT



K SPINDLE POSITION CIRCUIT



B
TO MAIN CIRCUIT (CN309) ON SCHEMATIC DIAGRAM-4

I CD LOADING CIRCUIT