

# Service Manual

Simplified

Dolby NR-Equipped  
Stereo Cassette Deck

Cassette Deck

**RS-BX727**



**DOLBY B-C NR HX PRO**



Colour

(K) ... Black Type

**Area**

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

\* Dolby noise reduction and HX Pro headroom extension manufactured under license from Dolby Laboratories Licensing Corporation. HX Pro originated by Bang and Olufsen. "DOLBY", the double-D symbol and "HX PRO" are trademarks of Dolby Laboratories Licensing Corporation.

- Please file and use this simplified manual together with the service manual for Model No. RS-BX707, Order No. AD9106170C2.
- This service manual indicates the main differences between Original RS-BX707.

## ■ CHANGE IN REPLACEMENT PARTS LIST (on pages 32, 38~40, 42.)

**Notes:** • Mentioned in this parts list is only those different from Model No. RS-BX707 (EG).

All other parts are the same as for RS-BX707 (EG).

• Important safety notice:

Components identified by  $\Delta$  mark have special characteristics important for safety. Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used. When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.

Ref. No.	Change of Part No.		Part Name & Description	Remarks
	RS-BX707 (EG)	$\rightarrow$ RS-BX727 (EB, EG)		
<b>TRANSISTOR(S)</b>				
Q505~507	KSB564ACYGTA	<b>2SB621A-R</b>	TRANSISTOR	
Q510	KSB564ACYGTA	<b>2SB621A-R</b>	TRANSISTOR	
Q606	KSB564ACYGTA	<b>2SB621A-R</b>	TRANSISTOR	
Q903	KSB564ACYGTA	<b>2SB621A-R</b>	TRANSISTOR	
<b>SENSOR(S)</b>				
Z701	—	<b>RCDHC-278</b>	REMOTE SENSOR	Addition

**Technics**

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RS-BX707

 DOLBY B-C NR HX PRO



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## RS-TR555 MECHANISM SERIES (AR350)

### SPECIFICATIONS

#### ■ CASSETTE DECK SECTION

Deck system	Stereo cassette deck
Track system	4-track, 2-channel
Recording system	AC bias
Bias frequency	80 kHz
Erasing system	AC erase
Heads	Recording head [Permalloy (Combination)] $\times$ 1 Playback head [Permalloy (Combination)] $\times$ 1 Erasing head (Double-gap ferrite) $\times$ 1

#### Motors

Capstan drive (Quartz DD motor) $\times$ 1  
Reel table drive (DC motor) $\times$ 1

Cassette holder open/close (DC motor) $\times$ 1

4.8 cm/sec. (1 $\frac{5}{8}$  ips)

0.05% (WRMS)

$\pm 0.14\%$  (DIN)

#### Tape speed

#### Wow and flutter

Approx. 100 seconds with C-60 cassette tape

#### Frequency response (Dolby NR off)

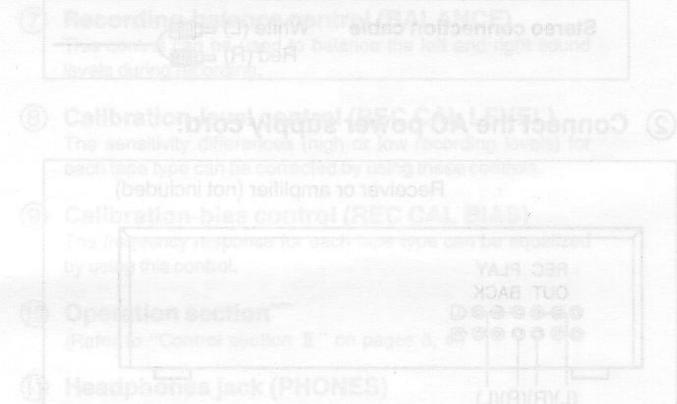
NORMAL	30 Hz~17 kHz, $\pm 3$ dB 20 Hz~18 kHz (DIN)
CrO <sub>2</sub>	30 Hz~18 kHz, $\pm 3$ dB 20 Hz~19 kHz (DIN)
METAL	30 Hz~19 kHz, $\pm 3$ dB 20 Hz~20 kHz (DIN)

#### Area

Country Code	Area	Color
(EB)	Great Britain.	
(EG)	F.R. Germany and Italy./Continental Europe.	(K)

#### Color

(K) ... Black Type



#### S/N (signal level=max recording level, CrO<sub>2</sub> type tape)

NR off	57 dB (A weighted)
Dolby B NR on	66 dB (CCIR)
Dolby C NR on	74 dB (CCIR)
Input sensitivity and impedance	
LINE IN	60 mV/47 k $\Omega$
Output voltage and impedance	
LINE OUT	400 mV/800 $\Omega$
HEADPHONES	125 mV/8 $\Omega$ (Load impedance 8 $\Omega$ ~600 $\Omega$ )

#### ■ GENERAL

Power consumption	20 W
Power supply	AC 50 Hz/60 Hz, 230 V~240 V
Dimensions (W $\times$ H $\times$ D)	430 $\times$ 135 $\times$ 300 mm (16 $\frac{1}{16}$ " $\times$ 5 $\frac{5}{16}$ " $\times$ 11 $\frac{13}{16}$ ")
Weight	5.0 kg (11 lb.)

#### Note:

Specifications are subject to change without notice.

Weight and dimensions are approximate.

# Technics

1

2

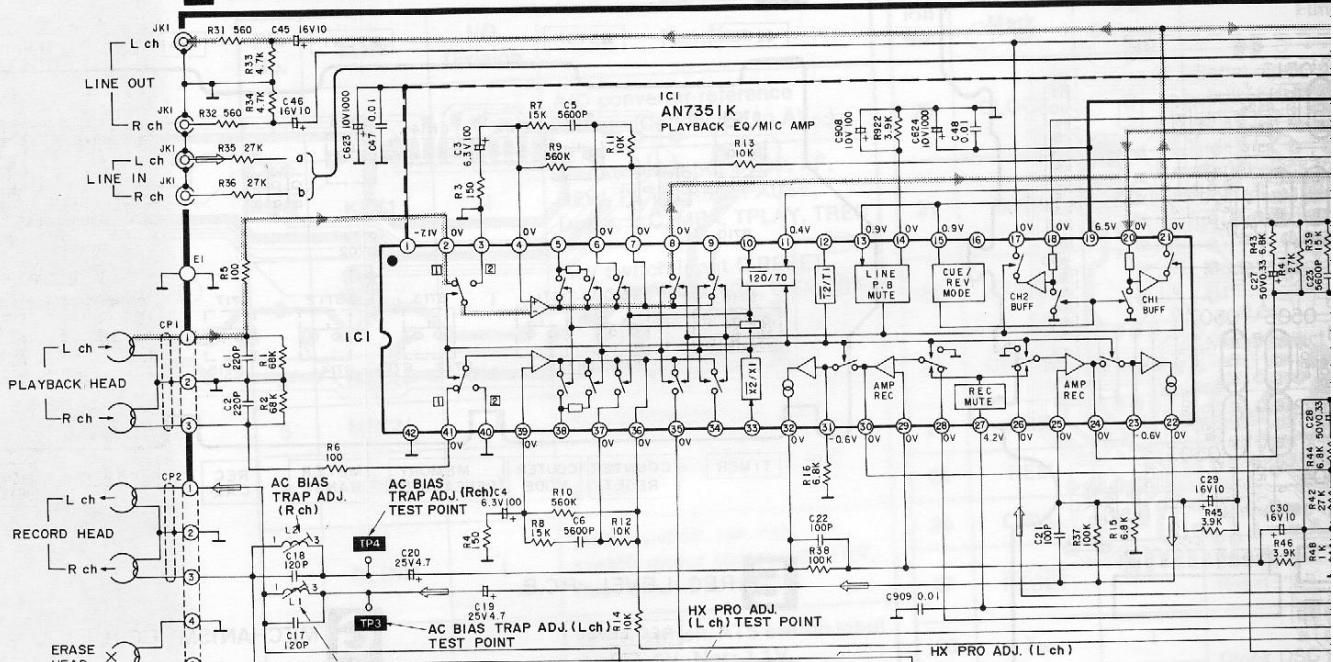
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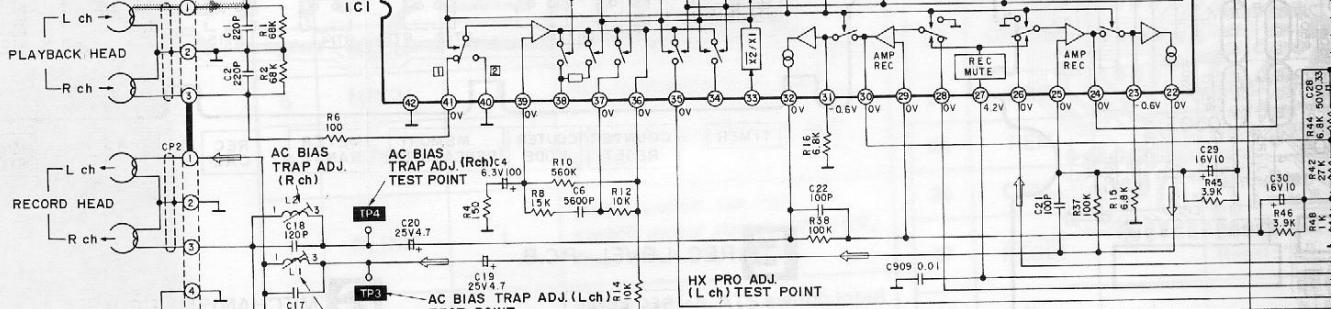
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A

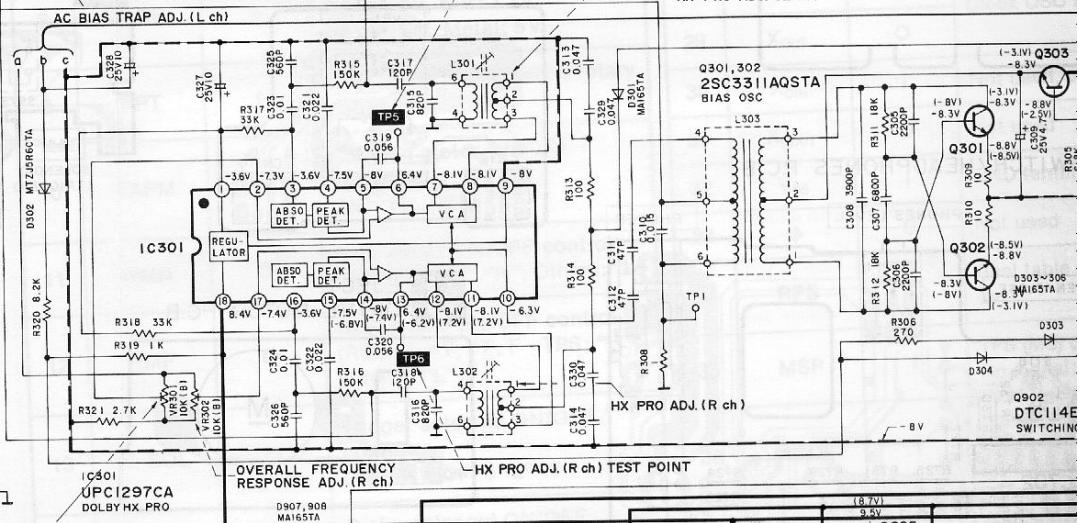
## A MAIN CIRCUIT



B



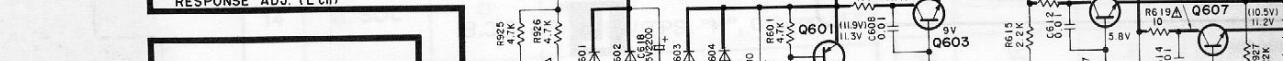
C



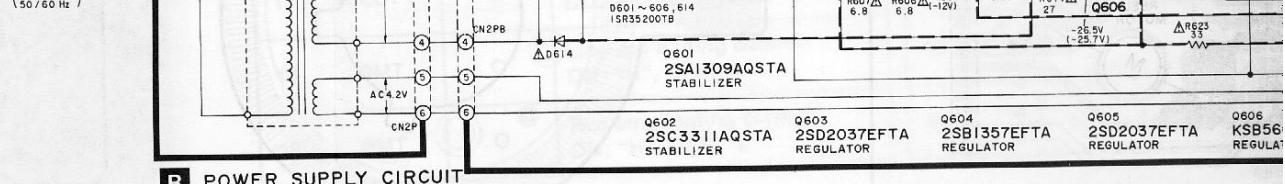
D

E2  
E2  
E2  
E2  
E2  
E2  
E2OVERALL FREQUENCY  
RESPONSE ADJ. (L ch)OVERALL FREQUENCY  
RESPONSE ADJ. (R ch)

E

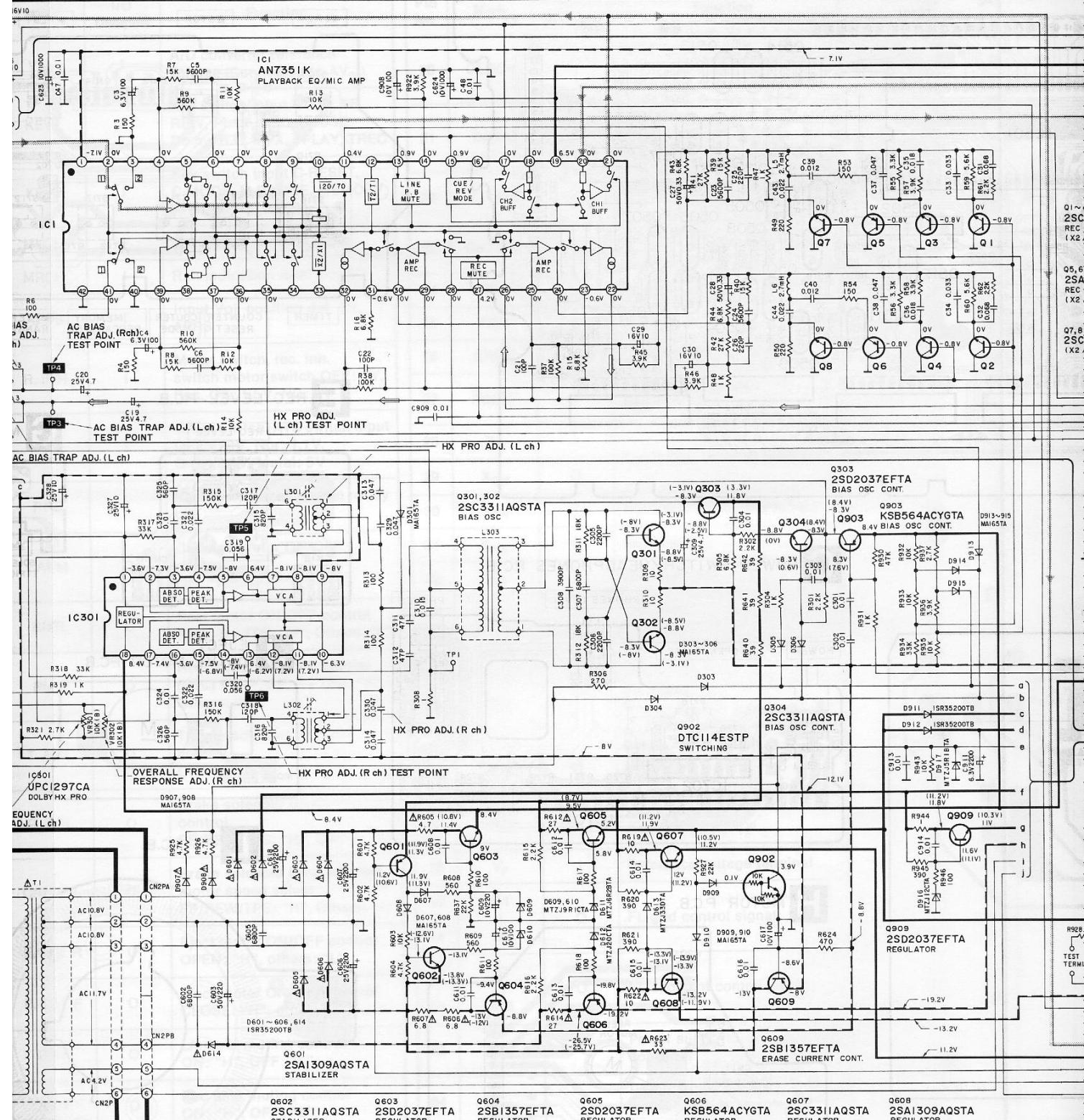


F

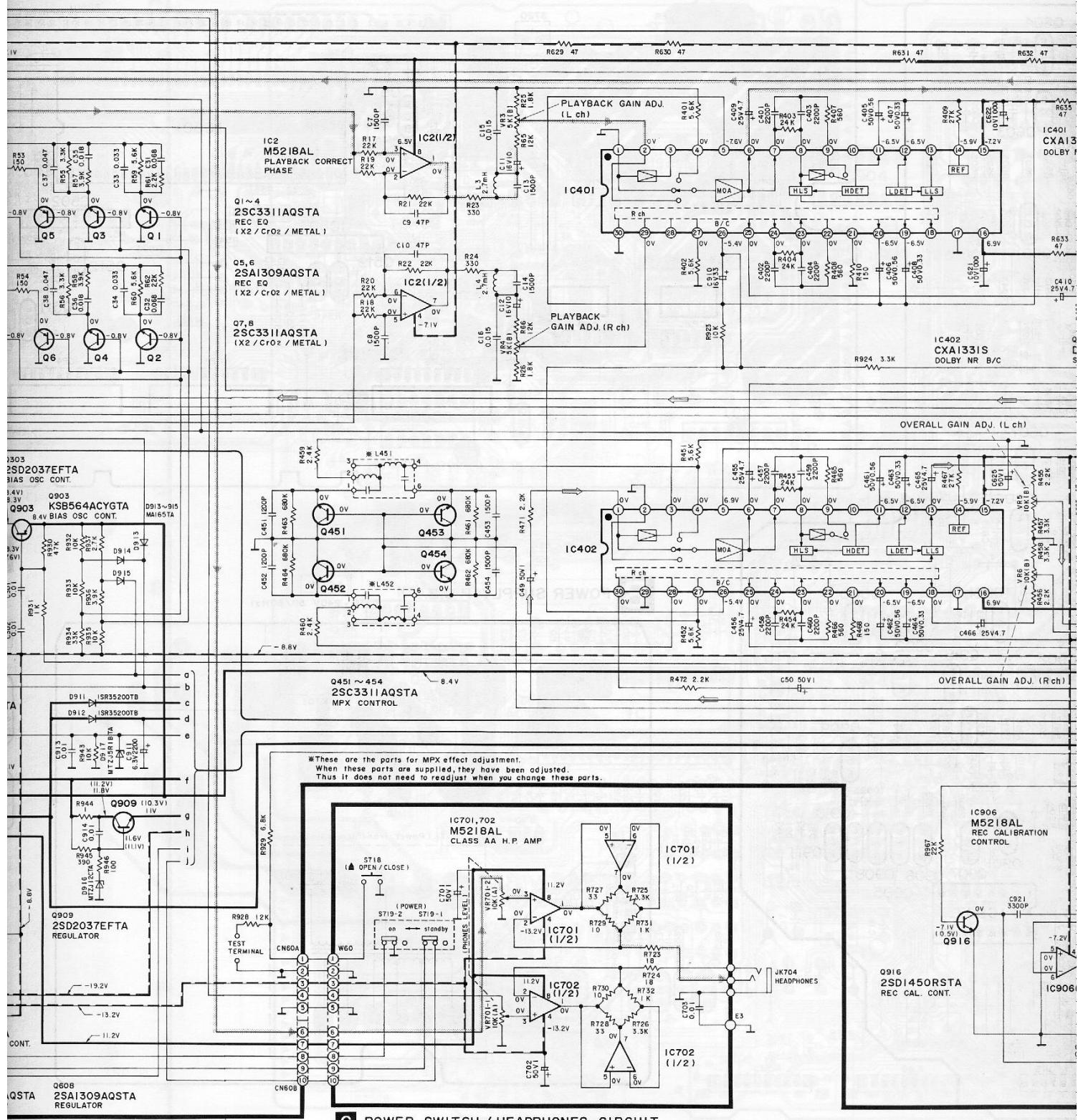


## B POWER SUPPLY CIRCUIT

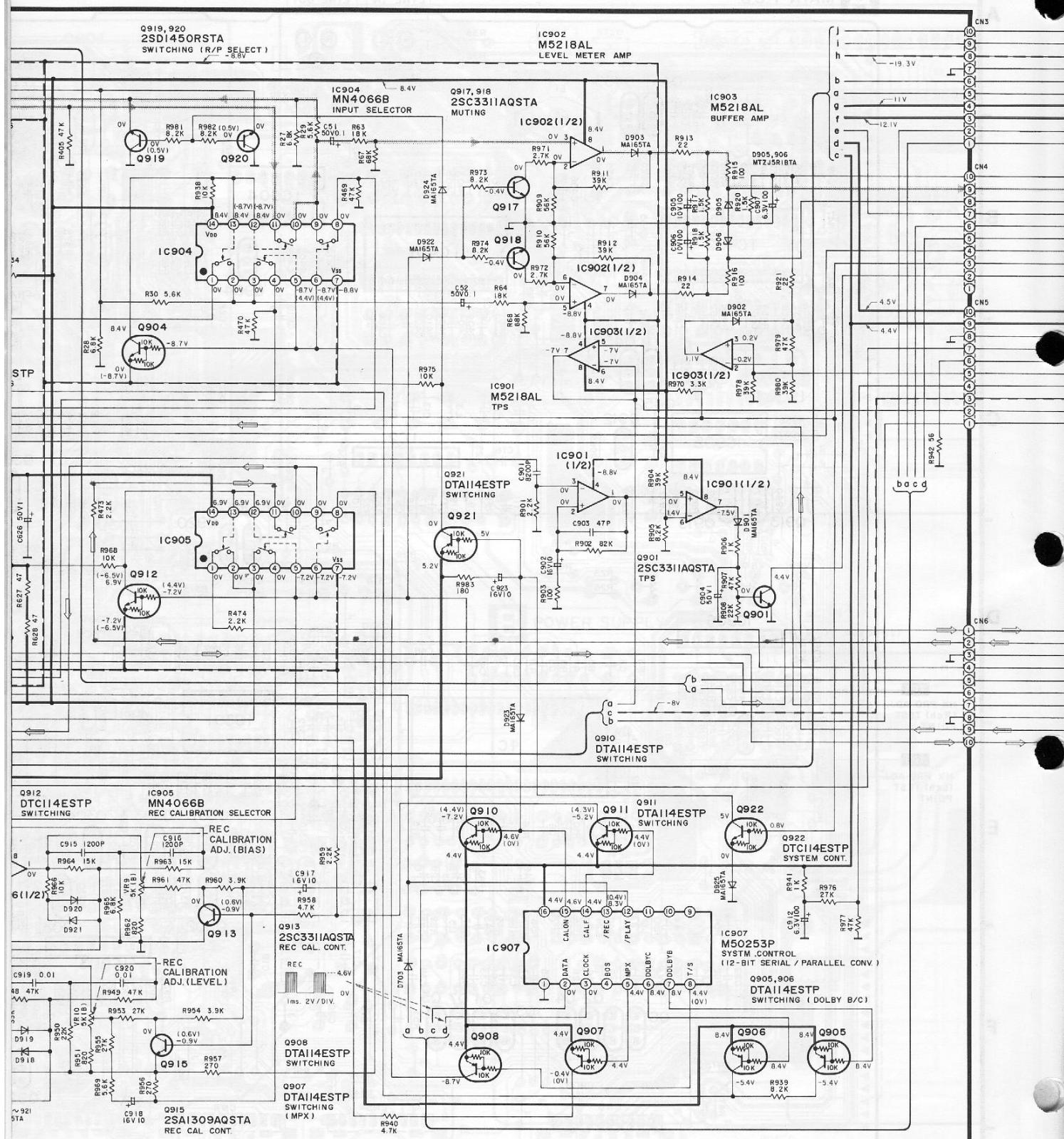
## CIRCUIT



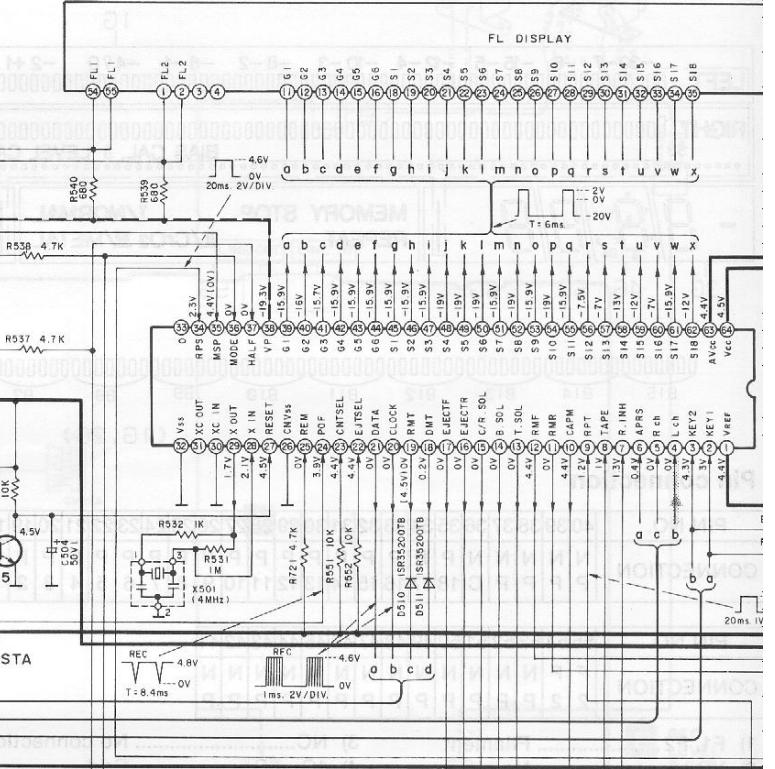
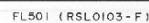
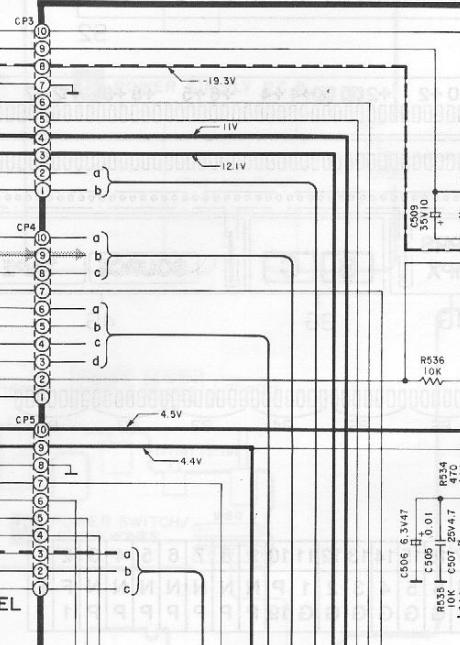
## PRINTED CIRCUIT BOARDS



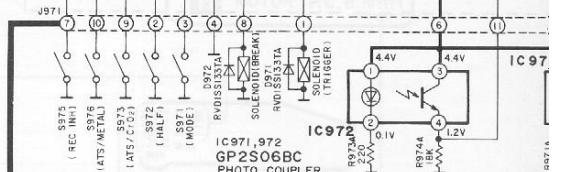
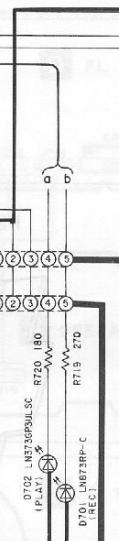
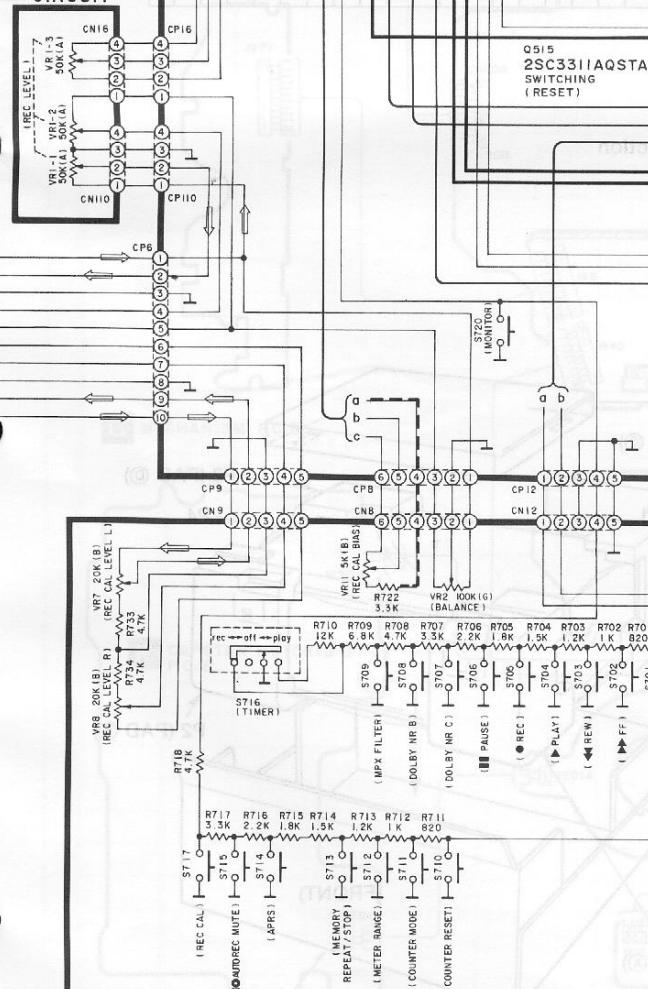
C POWER SWITCH / HEADPHONES CIRCUIT



## D FL DRIVE CIRCUIT

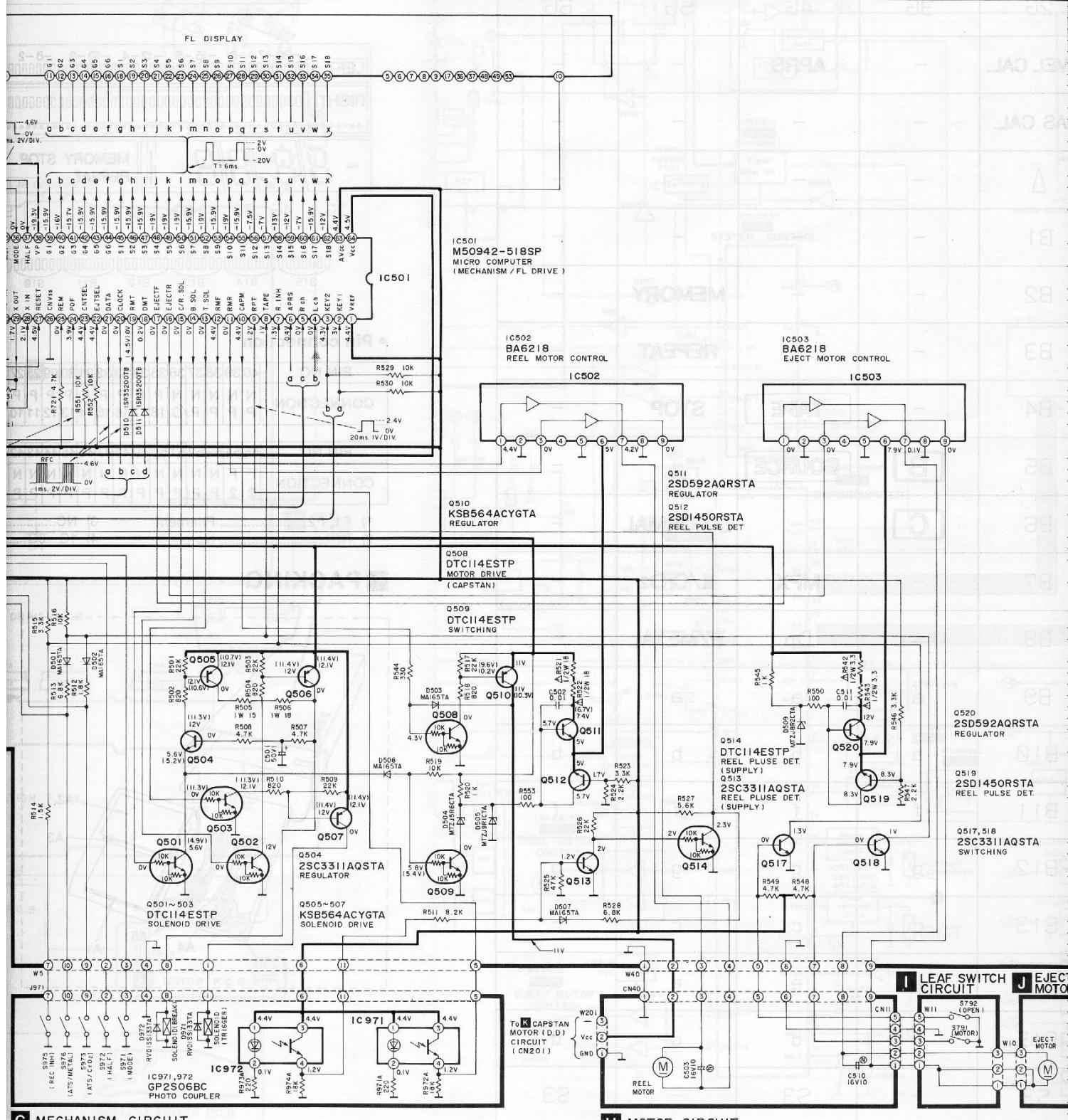


E REC LEVEL  
CIRCUIT

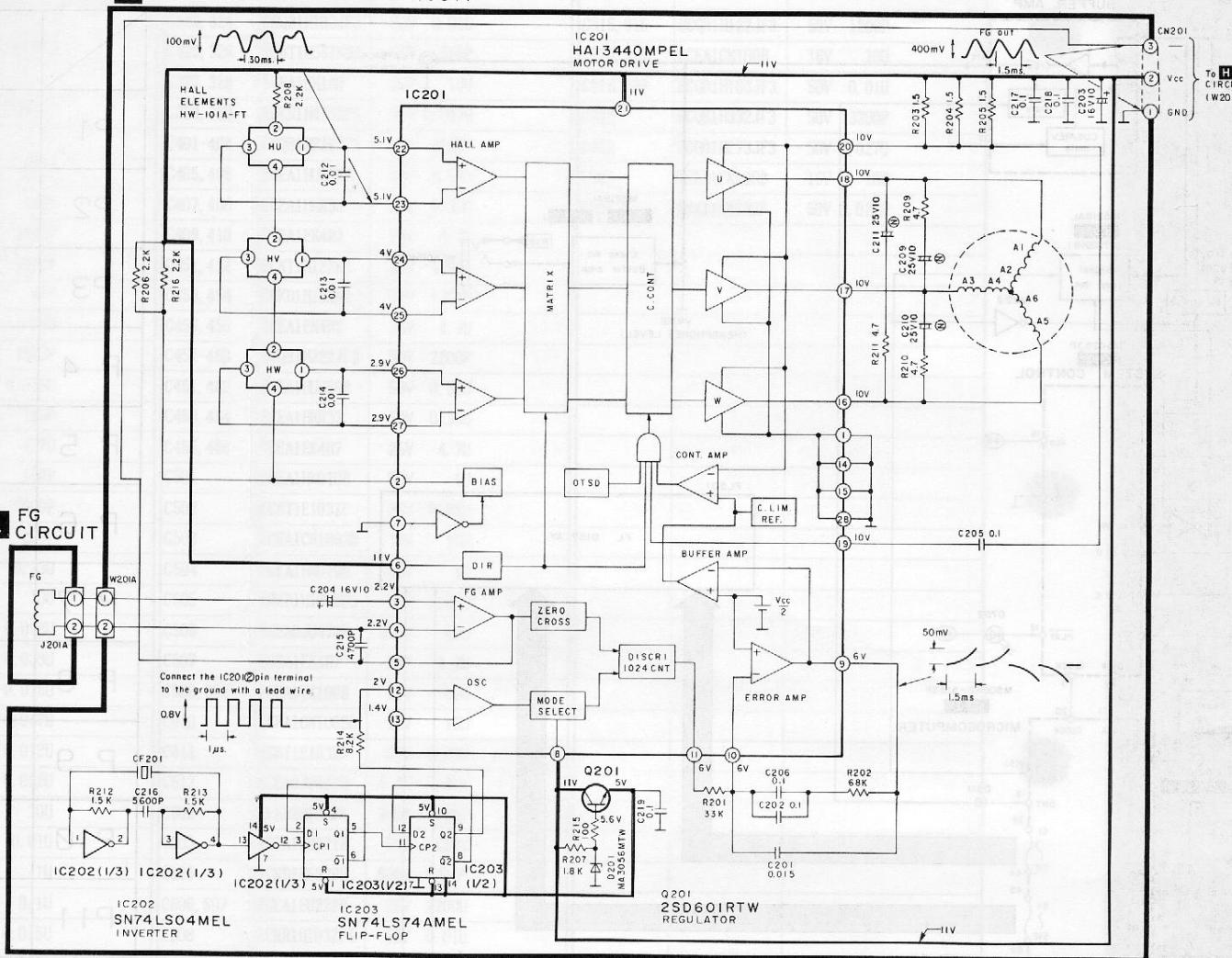


#### **F OPERATION CIRCUIT**

G MECHANISM CIRCUIT



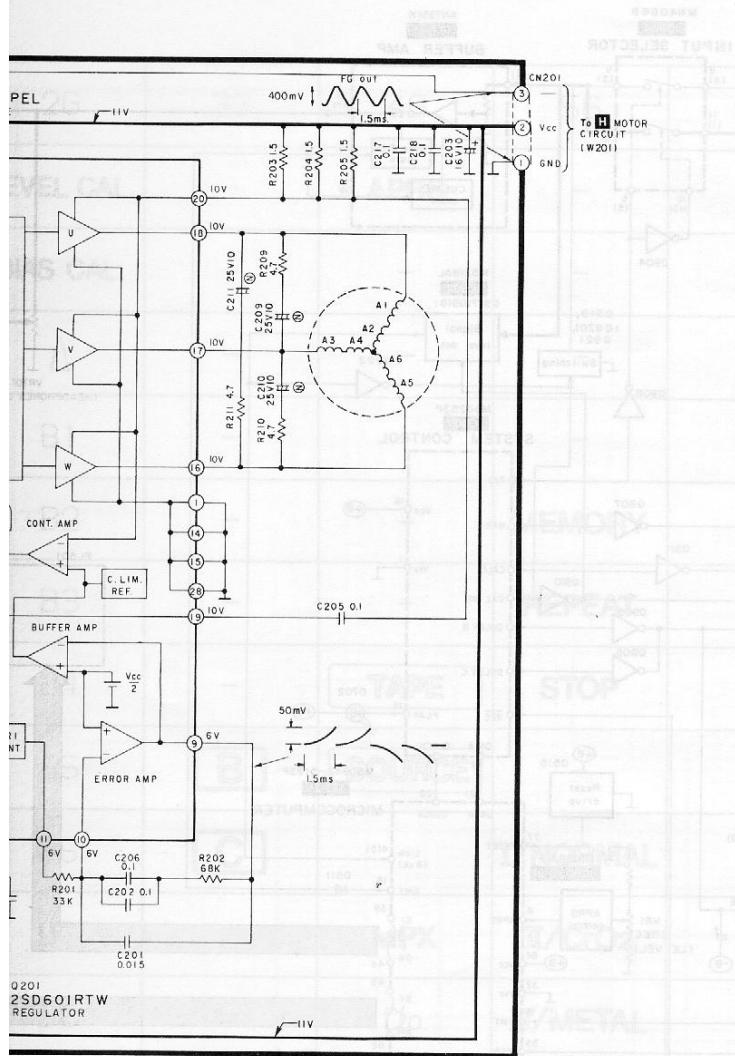
## K CAPSTAN MOTOR(D.D) CIRCUIT



## • TROUBLESHOOTING OF DIRECT DRIVEN CAPSTAN MOTOR

Problem	Probable Cause
1. The motor does not rotate.	1. No power supply. 2. The Hall element is not working. 3. The ceramic (or) Hall element is not working.
2. The motor does not rotate properly. (When pressed, it stops at certain angles. Sometimes it does not rotate even if power is ON.)	1. The coil is broken. 2. Output of the Hall element is not correct.
3. The motor is out of control.	1. The FG coil is broken.
4. Abnormal wow.	1. Same as those of the motor.

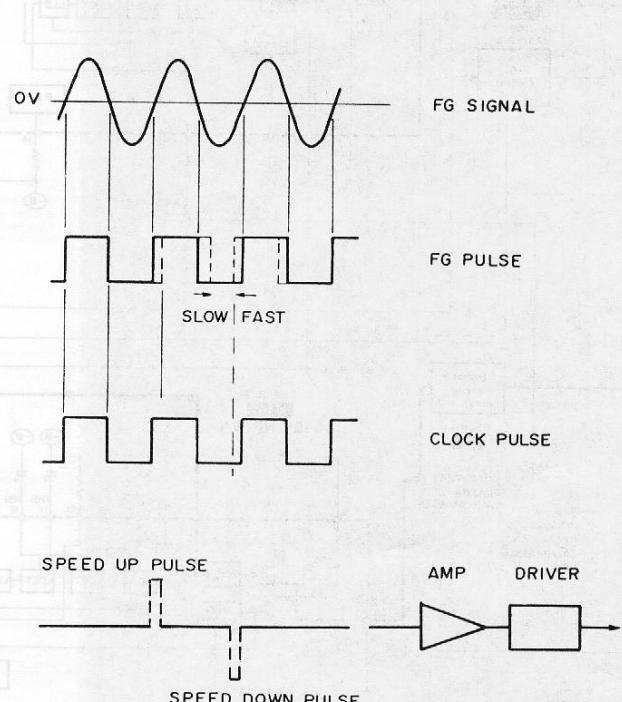
**Note:** Check the points marked with an asterisk (\*) to GND with a lead wire. (After the DD motor is heated the IC.)



## ■ TROUBLESHOOTING OF DIRECT DRIVE MOTOR

### • OUTLINE OF THE DIRECT DRIVE MOTOR SYSTEM

The capstan motor is actuated by the DD motor digital servo system. The FG pulse is generated after the detection of the zero crosspoint, and the reference signal generated from the quartz oscillator is compared with this FG pulse. From this comparison, the accelerated and reduced speed pulses are generated, causing the driving coil to function.



### • TROUBLESHOOTING OF DIRECT DRIVE MOTOR

Problem	Possible Cause	Check Points
1. The motor does not rotate.	1. No power supply (+12V). 2. The Hall element has failed (Current does not flow). 3. The ceramic (or crystal) does not oscillate.	• Check the voltage applied to the connector. • Check the DC potential on IC201 pins ②~⑦. * Check the waveform of IC201 pin ②.
2. The motor does not rotate properly. (When pressed, it stops at certain angles. Sometimes it does not rotate even if power is ON.)	1. The coil is broken or not properly soldered. 2. Output of the Hall element is not proper.	* Check the conductance of the coil. If normal, the resistances between IC201 pins ⑥~⑦, ⑦~⑧, ⑧~⑨ will reach 20 ohms. • Check the waveform of IC201 pins ②~⑦.
3. The motor is out of control.	1. The FG coil is broken.	• Check the waveform of IC201 pin ⑤. • Check if the FG coil is broken.
4. Abnormal wow.	1. Same as those described for problem 2.	

**Note:** Check the points marked with an asterisk (\*) by removing the DD motor control P.C.B. and then connecting IC201 pin ② to GND with a lead wire. (After the DD motor control P.C.B. is removed, current will start flowing through the coil, heating the IC.)