

**SONY****Service Bulletin No. 49****SONY CORPORATION OF AMERICA***Technical Publications Department*

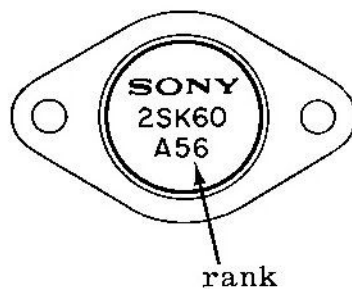
47-47 Van Dam Street, Long Island City, New York 11101

Model: TA-4650, -5650

Subject: V-FET Replacement

Date: August 16, 1976

The TA-4650 uses two V-FETs (2SJ18 and 2SK60) and the TA-5650 uses four V-FETs, in each channel of its power amplifier. Both the 2SJ18 and 2SK60 are divided into six ranks (-53 to -58) according to their  $V_{sgo}$  (gate-source voltage) and  $V_p$  (cut-off voltage). It is necessary to use the same rank V-FETs in the same channel. The rank is indicated on each V-FET as shown. If the correct rank is not available, replace with a complete set of another rank.



It should be noted that only the ranks from -54 to -57 are usable in the TA-4650/5650.

**SONY****hi-fi**  
**Service Bulletin No. 62****SONY CORPORATION OF AMERICA**  
Technical Publications Department  
47-47 Van Dam Street, Long Island City, New York 11101Model: TA-4650, -5650, -8650  
TAN-5550, -8550

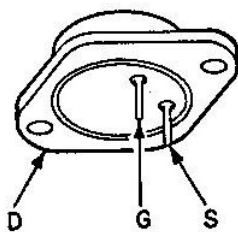
Subject: V-FET Replacement

Date: August 15, 1977

Refer also to Hi-Fi Service Bulletins No. 41, 49, and 51.

Perform the following procedure if V-FET failure is suspected. To avoid damage to a replacement V-FET, do not replace without first making this check.

1. Turn off the power and remove the suspect V-FET.
2. Check resistance readings of this V-FET using a VOM set to the  $X1\Omega$  range. See illustration below.

**2SJ18, 2SK60**VOM set to  $X1\Omega$  range.S to D ----- Approx.  $1\sim 2\Omega$ 

S to G ----- Same as a diode

D to G ----- Same as a diode

If readings appear normal, the V-FET is probably okay, and other circuit components should be checked.

3. If readings are not normal, turn on the power with the V-FET still out of the circuit. Set the VOM to the 50 VDC range (or as close as possible) and connect the leads to the V-FET conductor patterns on the board as follows:

V-FET	source	gate
<b>2SJ18</b>	VOM (+)	VOM (-)
<b>2SK60</b>	VOM (-)	VOM (+)

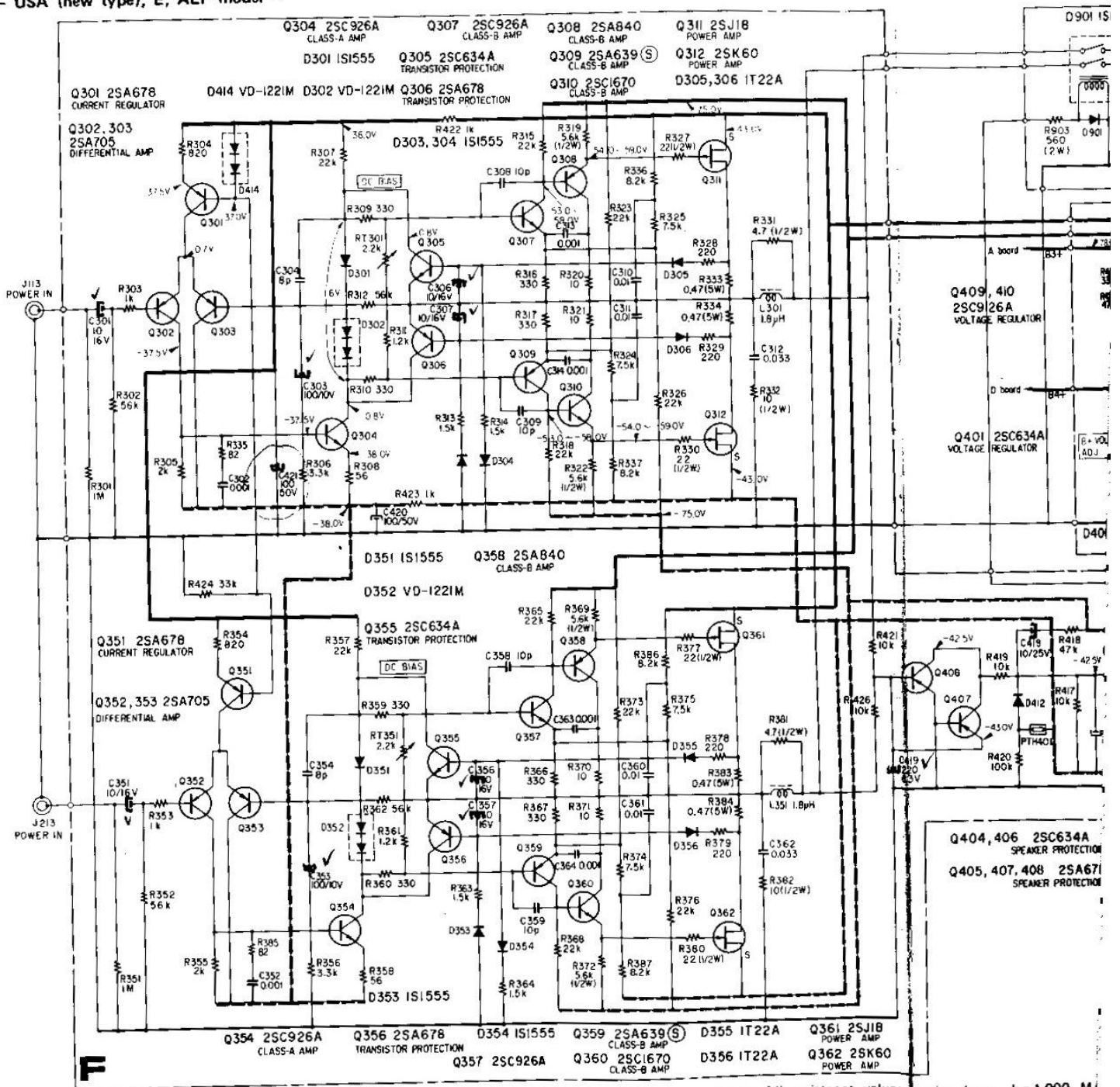
4. Set the dc bias adjust resistor (see below) on the Power Amp Board for maximum reading.

TA-4650, -5650	-	RT-301 (RT-351)
TA-8650, TAN-8550	-	RT-701 (RT-751)
TAN-5550	-	RT-501 (RT-601)

5. Turn off the power and install the replacement V-FET. Reapply power and reset the dc bias according to the service manual for the respective model.

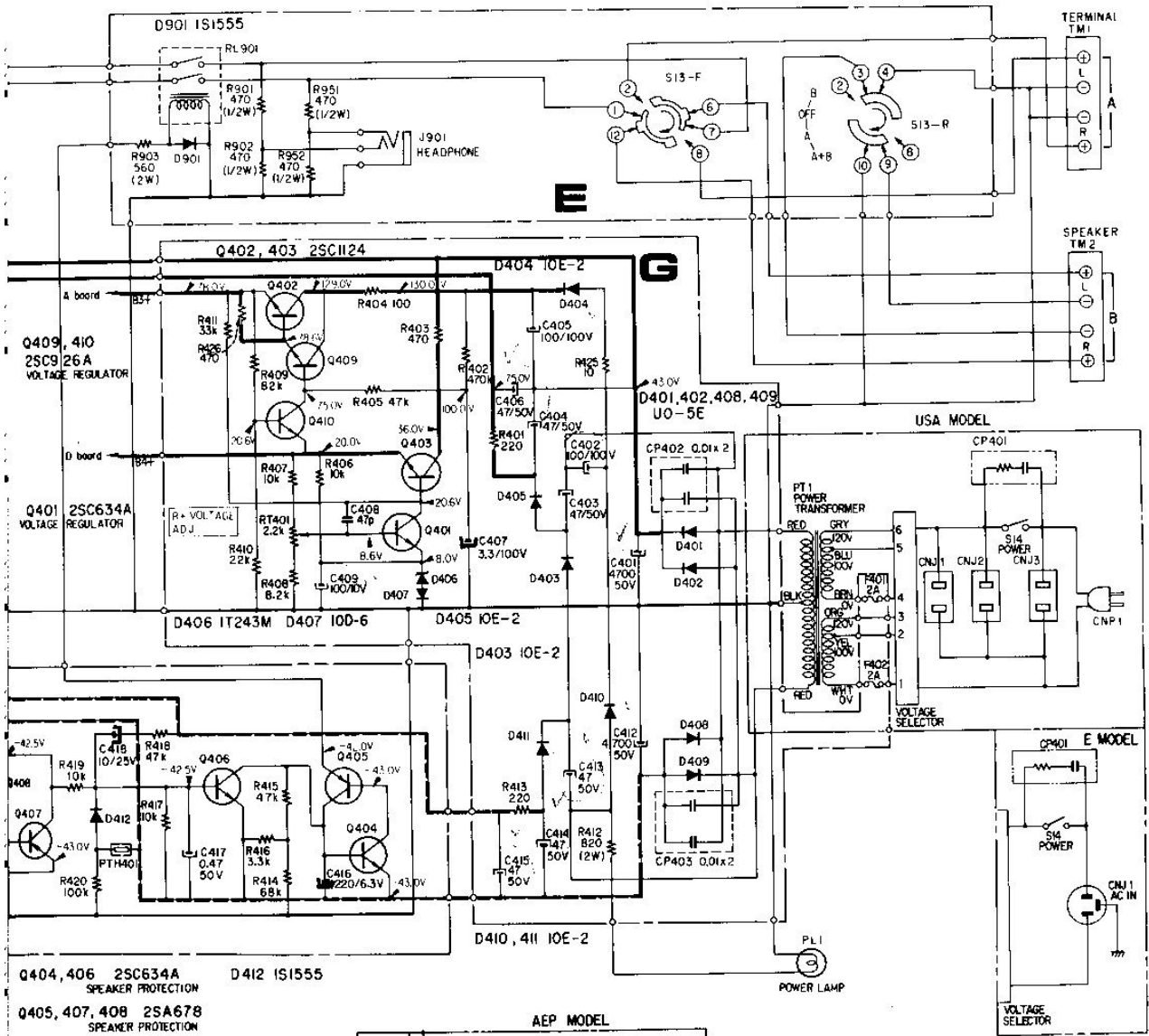
# TA-4650 TA-4650

### SCHEMATIC DIAGRAM – Power Amplifier Section – – USA (new type), E, AEP model –



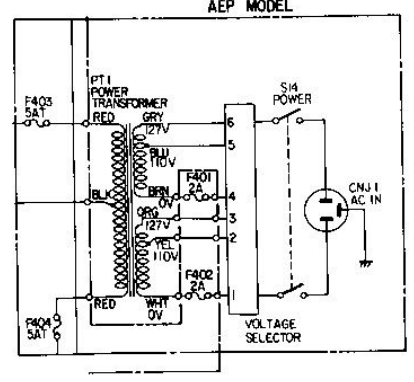
Note: All resistance values are in ohms. k=1,000, M=1,000,000  
All capacitance values are in  $\mu\text{F}$  except as indicated which means  $\text{pF}$

# A-403U



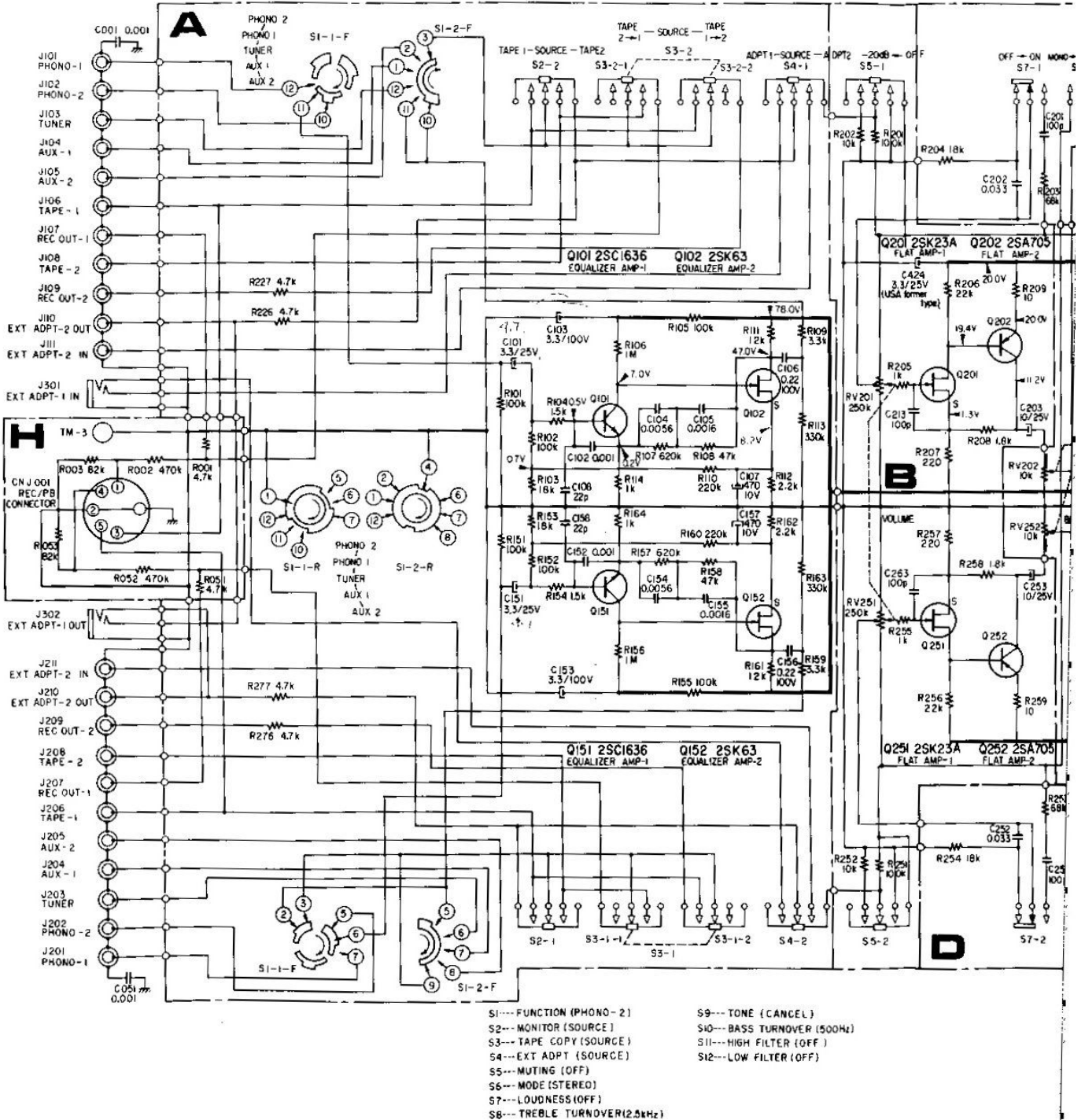
Q404, 406 2SC634A SPEAKER PROTECTION D412 IS1555

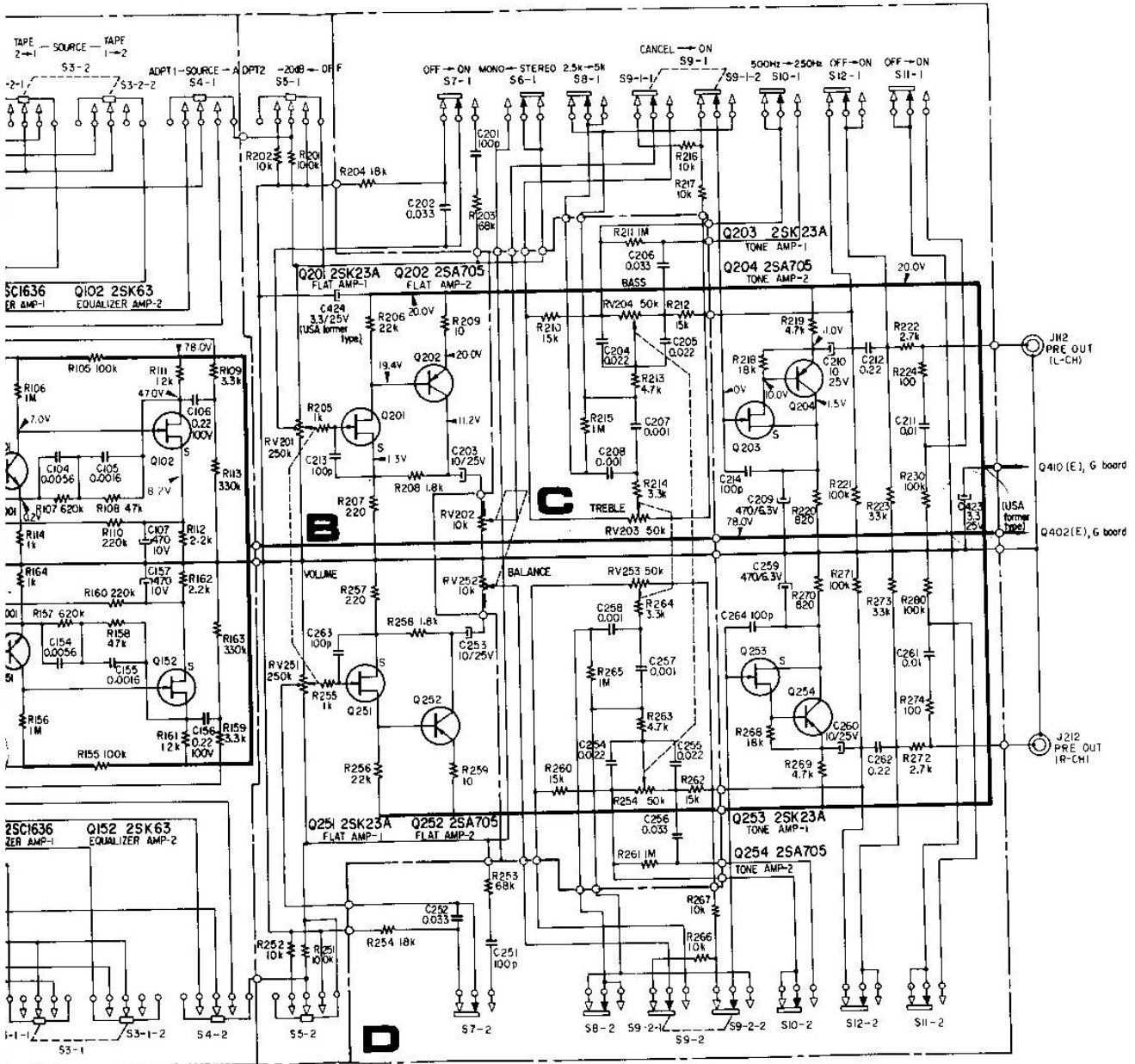
Q405, 407, 408 2SA678 SPEAKER PROTECTION



in ohms. k = 1,000, M = 1,000 k.  
 in  $\mu$ F except as indicated with p,  
 and with a VOM which has an input  
 pl. No signal in.  
 is noted because of normal pro-

SCHEMATIC DIAGRAM - Preamplifier Section -



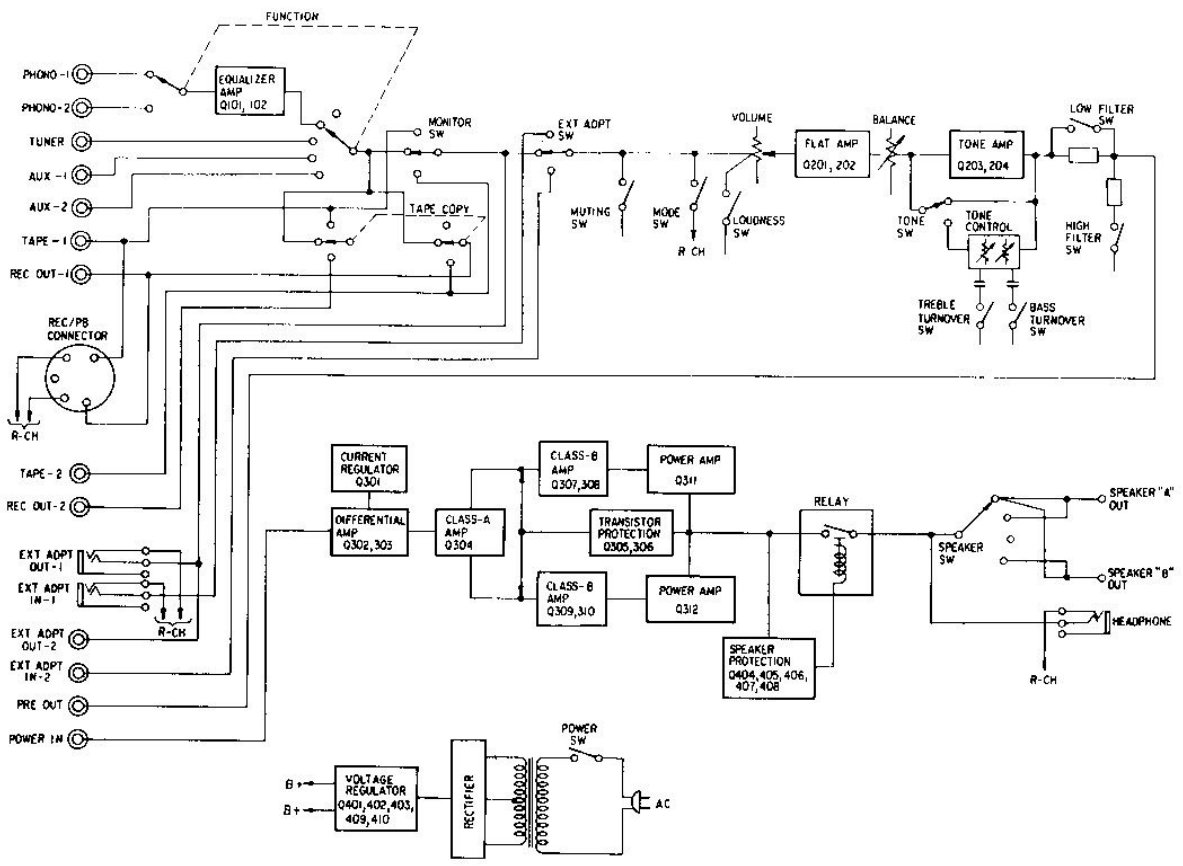


- NO-2)
- CE1)
- URCE1)
- URCE)
- S9---TONE (CANCEL)
- S10---BASS TURNOVER (500Hz)
- S11---HIGH FILTER (OFF)
- S12---LOW FILTER (OFF)

**Note:** All resistance values are in ohms. k =  
 All capacitance values are in  $\mu$ F except  
 which means  $\mu$ F.  
 All voltages are dc measured with a VOI  
 impedance of 20k ohms/volt. No signa  
 Voltage variations may be noted bec  
 duction tolerances.  
 ■■■■■ : B +

# SECTION 1 OUTLINE

## 1-1. BLOCK DIAGRAM

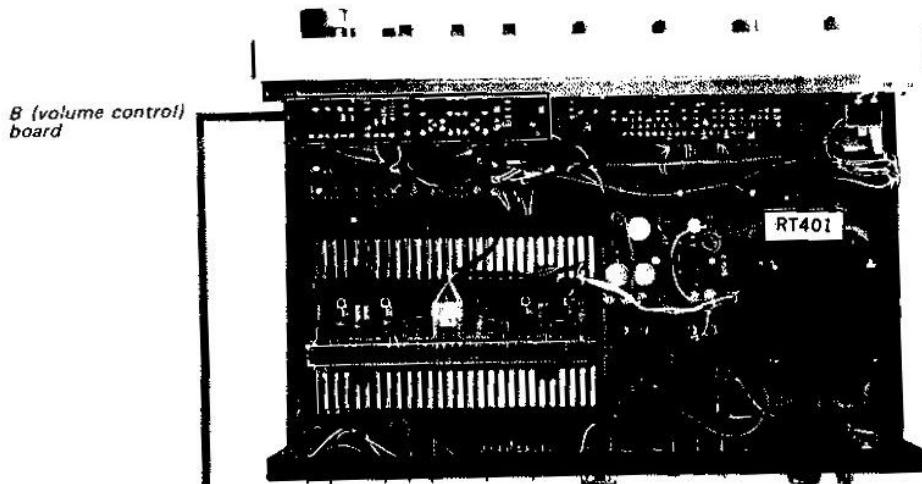


## SECTION 2 ADJUSTMENTS

**Note:** Turn POWER on and allow about three minutes for warm-up.

### 2-1. POWER SUPPLY VOLTAGE ADJUSTMENT

See Fig. 2-1 and 2-2.



Adjust RT401 for 20 V reading on the meter with no signal input.

Fig. 2-1.

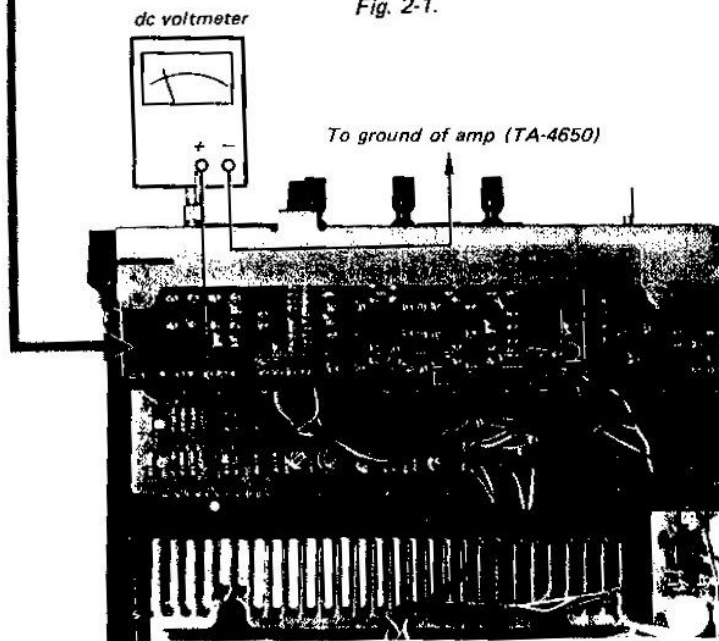


Fig. 2-2.