

**NAD**

# **SERVICE MANUAL**

MAR 15 1989

**3220PE**

**3020e**

**INTEGRATED AMPLIFIERS**

# ALIGNMENT METHOD

## AUDIO SECTION 3220PE/3020e

### IMPORTANT

Speaker impedance switch should be in 8 ohm position while adjust center voltage and idiling current.

INITIAL ADJUSTMENT (No load connected)

#### A. CENTER VOLTAGE

1. Connector DC millivoltmeter to L channel output terminal.
2. Turn on and adjust to 0 V+/-30mV with R411(100 ohm). Connect DC millivoltmeter to R channel output terminal and adjust R412 to 0 V+/-30mV.

#### B. IDILING CURRENT

1. Remove solder short across R455 and R456.
2. Connect DC millivoltmeter across R455 (1 ohm) (output transistor's collector resistor) and adjust R443 for 26-30mV reading on meter. Repeat adjustment with R444, connecting meter across R456 (1 ohm).
3. Leave power on for minimum 5 minutes.

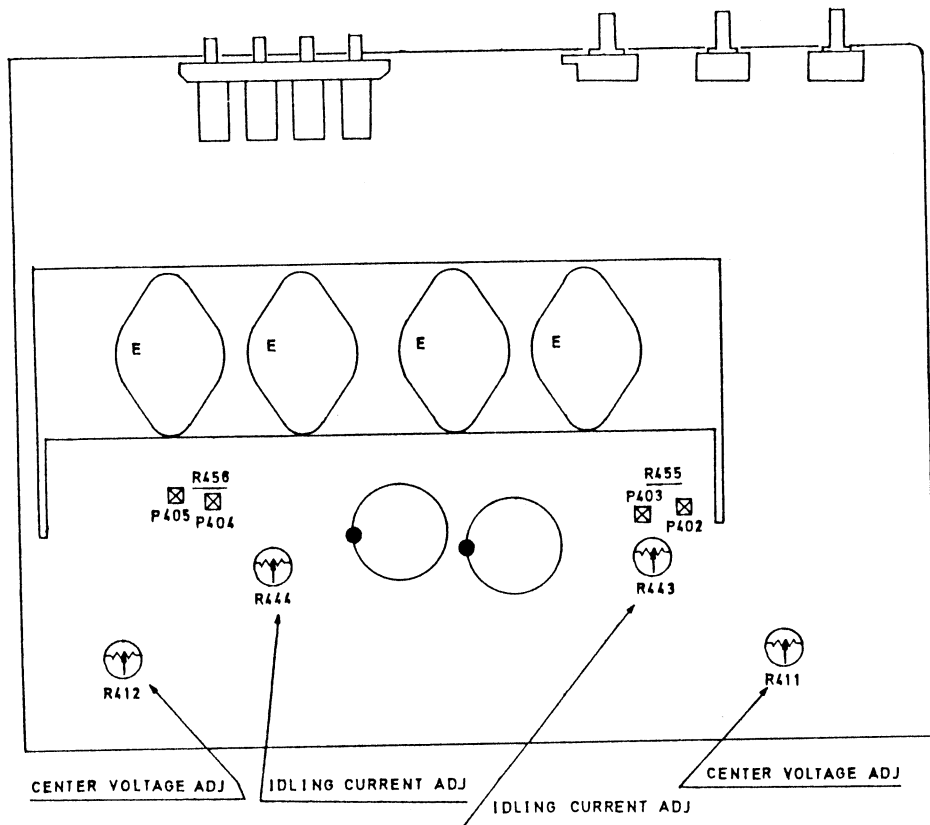
FINAL ADJUSTMENT

#### C. CENTER VOLTAGE

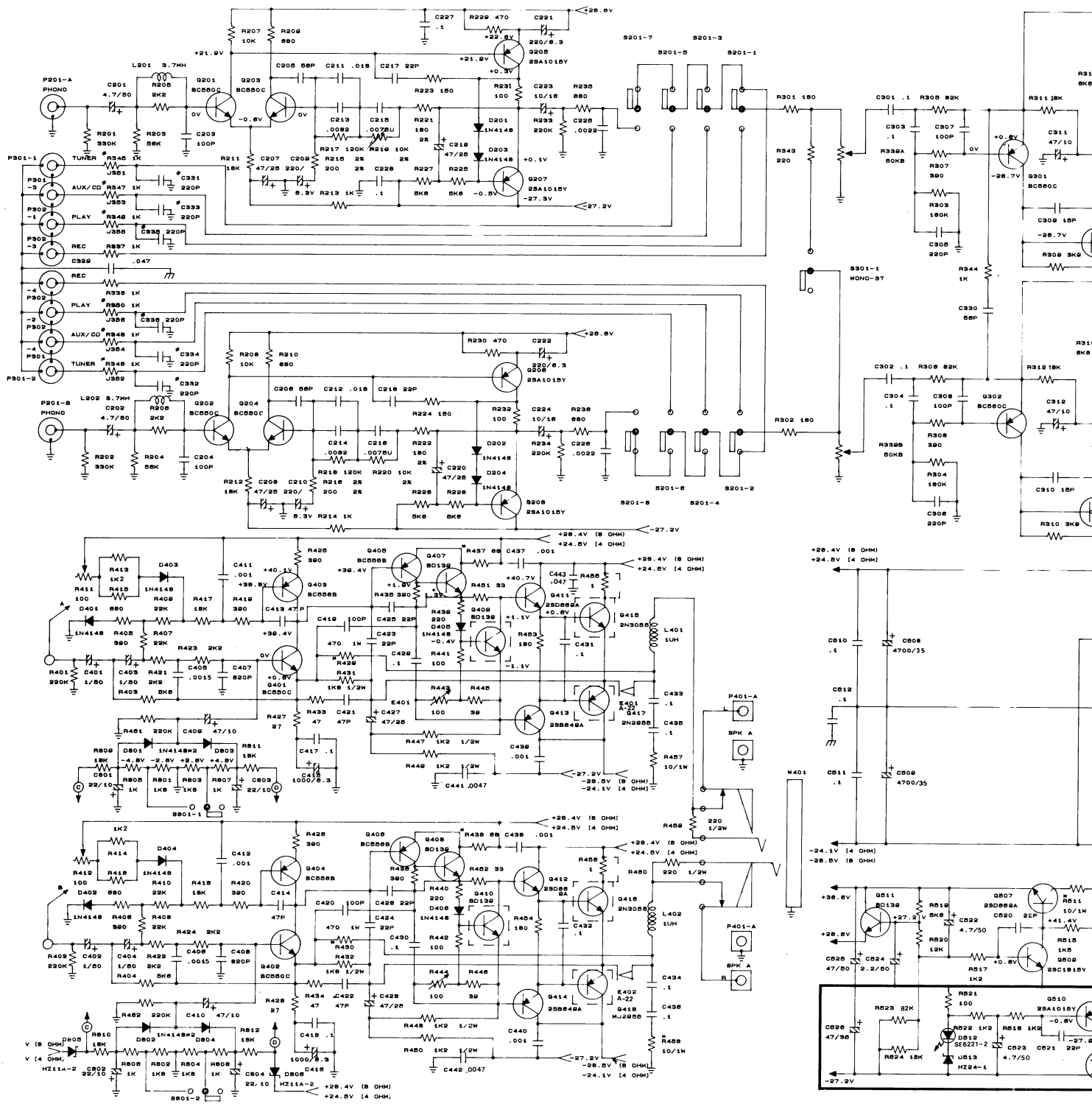
1. Repeat step A about.

#### D. IDLING CURRENT

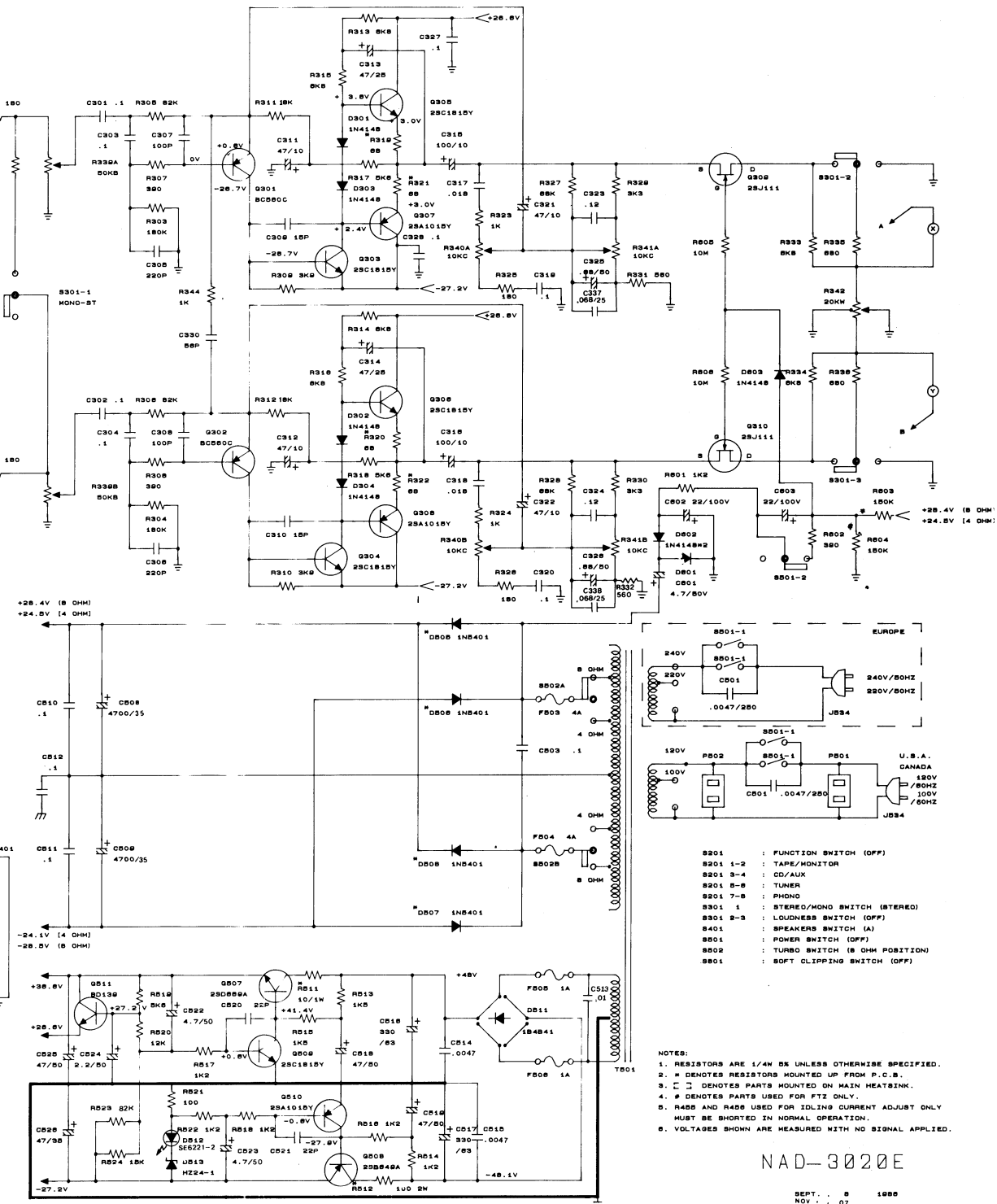
1. Repeat step B and adjust with R443, R444 for 30mV reading on meter.
2. After the alignment is finished, 1 ohm resistor R455, R456 is shorted by solder short.



# SCHEMATIC DIAGRAM NAD3020E AMPLIFIER



# AMPLIFIER



- 2N3055
- MJ2955
- BD139
- 2SB669
- 2SD649
- 2SJ11
- BC550C
- BC556B
- BC560C
- 2SA950
- 2SA1015
- 2SC1815
- 2SC2120

- S201 : FUNCTION SWITCH (OFF)
- S201 1-2 : TAPE/MONITOR
- S201 3-4 : CD/AUX
- S201 5-6 : TUNER
- S201 7-8 : PHONO
- S301 1 : STEREO/MONO SWITCH (STEREO)
- S301 2-3 : LOUDNESS SWITCH (OFF)
- S401 : SPEAKERS SWITCH (A)
- S501 : POWER SWITCH (OFF)
- S502 : TURBO SWITCH (8 OHM POSITION)
- S601 : SOFT CLIPPING SWITCH (OFF)

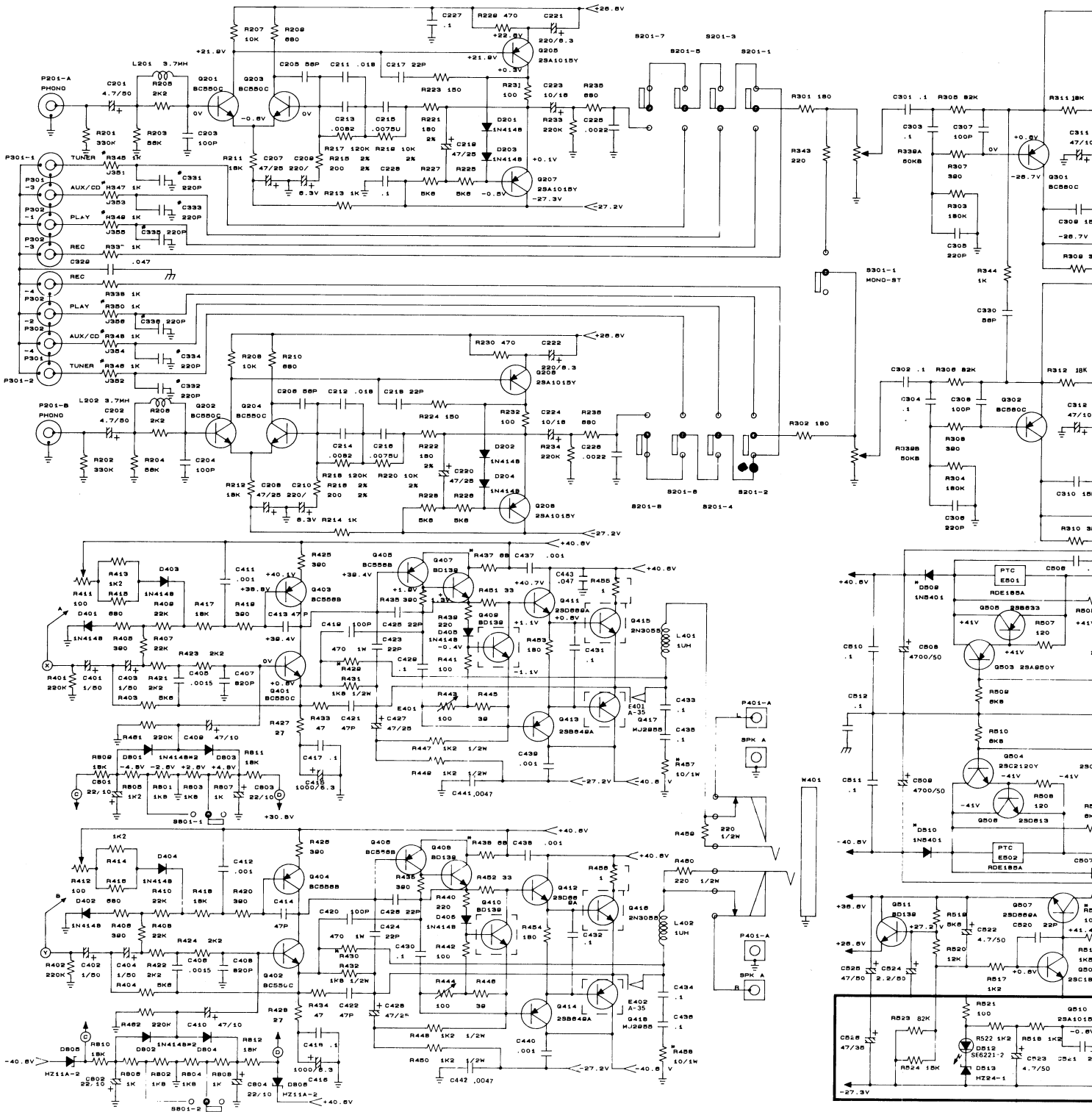
NOTES:

1. RESISTORS ARE 1/4W 5% UNLESS OTHERWISE SPECIFIED.
2. \* DENOTES RESISTORS MOUNTED UP FROM P. C. B.
3. □ DENOTES PARTS MOUNTED ON MAIN HEATSINK.
4. # DENOTES PARTS USED FOR FTZ ONLY.
5. R48B AND R48B USED FOR IDLING CURRENT ADJUST ONLY MUST BE SHORTED IN NORMAL OPERATION.
6. VOLTAGES SHOWN ARE MEASURED WITH NO SIGNAL APPLIED.

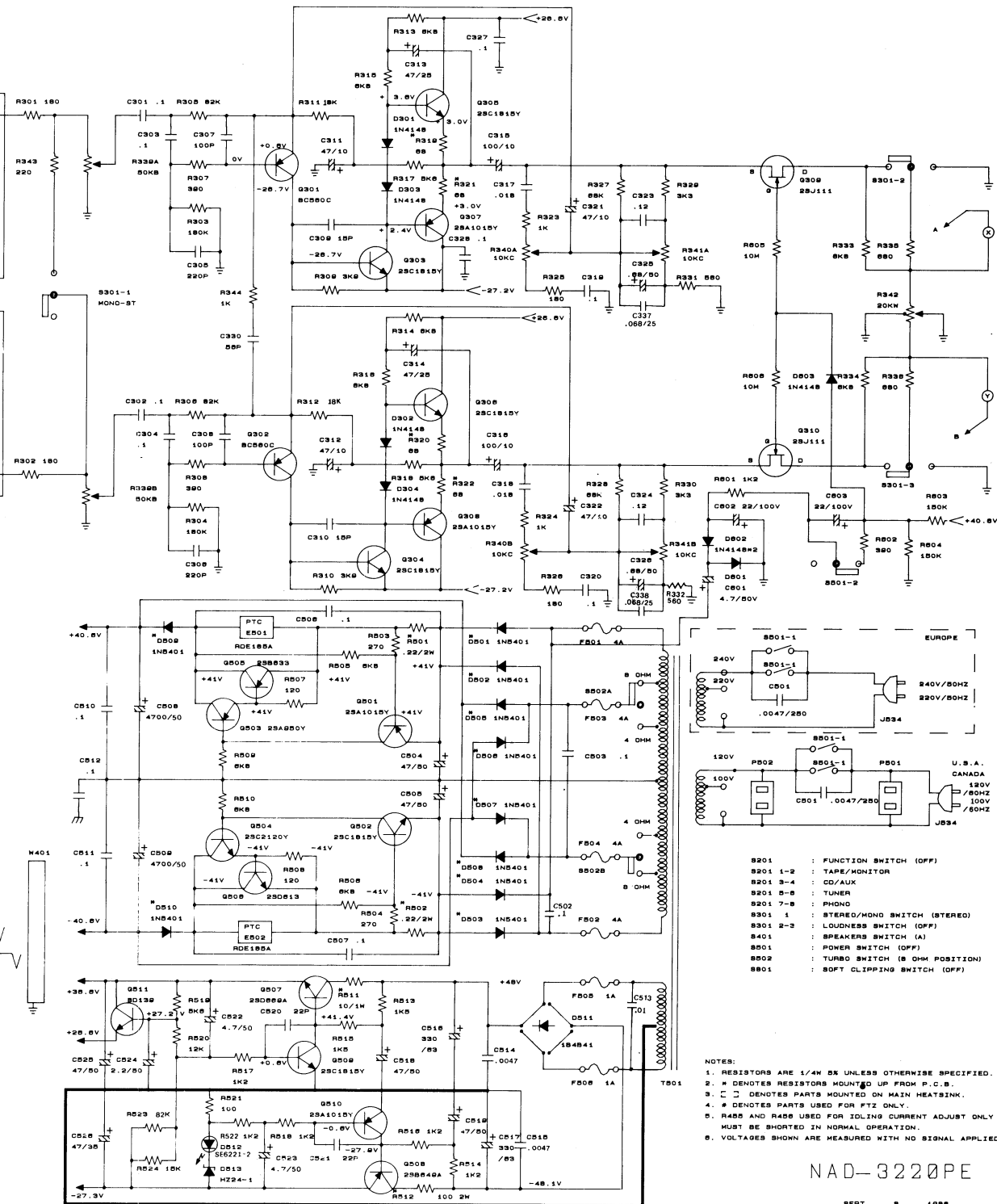
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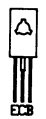
# SCHEMATIC DIAGRAM NAD3220PE AMPLIFIER



# AMPLIFIER



2N3055  
MJ2955



2S9669  
2SD649  
2SA496  
BD139



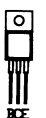
2SJ111



BC550C  
BC560C



2SA950  
2SA1015  
2SC1815  
2SC2120



BC550C  
2SD633  
2SD613

- S201 : FUNCTION SWITCH (OFF)
- S201 1-2 : TAPE/MONITOR
- S201 3-4 : CD/AUX
- S201 5-6 : TUNER
- S201 7-8 : PHONO
- S301 1 : STEREO/MONO SWITCH (STEREO)
- S301 2-3 : LOUDNESS SWITCH (OFF)
- S401 : SPEAKERS SWITCH (A)
- S501 : POWER SWITCH (OFF)
- S502 : TURBO SWITCH (8 OHM POSITION)
- S503 : SOFT CLIPPING SWITCH (OFF)

- NOTES:
1. RESISTORS ARE 1/4W 5% UNLESS OTHERWISE SPECIFIED.
  2. \* DENOTES RESISTORS MOUNTED UP FROM P.C.B.
  3. [Symbol] DENOTES PARTS MOUNTED ON MAIN HEATSINK.
  4. # DENOTES PARTS USED FOR FTZ ONLY.
  5. R405 AND R406 USED FOR IDLING CURRENT ADJUST ONLY MUST BE SHORTED IN NORMAL OPERATION.
  6. VOLTAGES SHOWN ARE MEASURED WITH NO SIGNAL APPLIED.

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