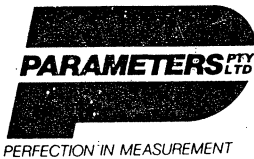
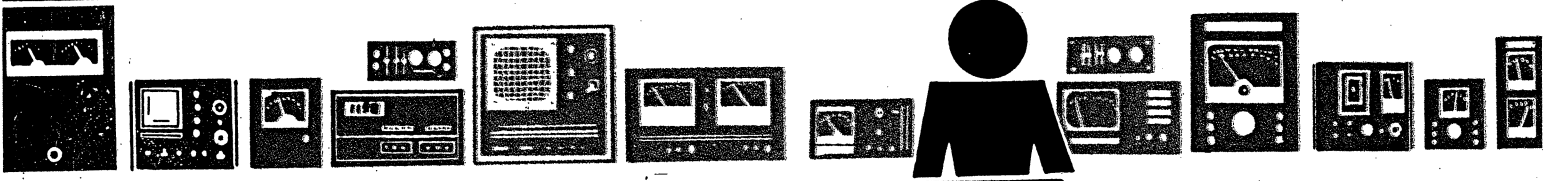
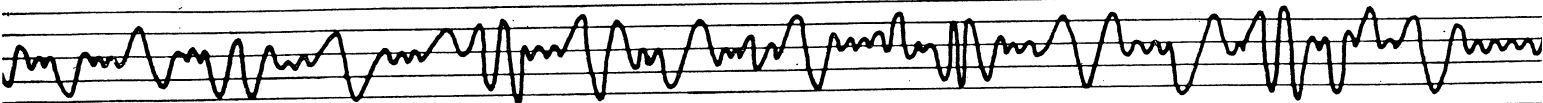


DUAL TRACKING
DC POWER SUPPLY **INSTRUCTION MANUAL**
P4303

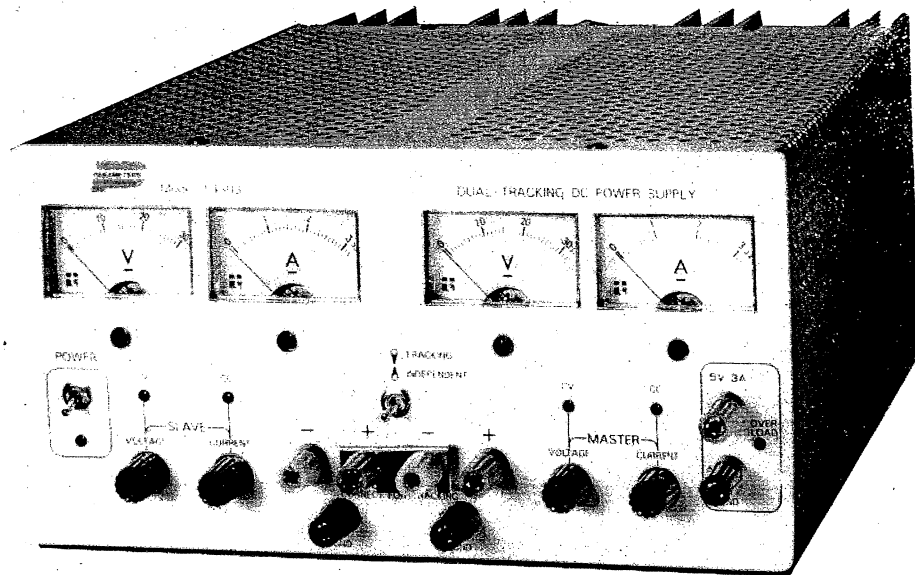


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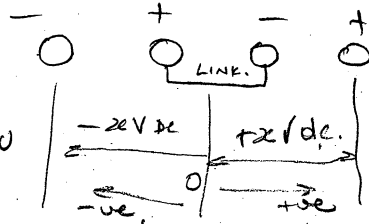
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I. Picture of P4303



To get
 $\pm 12V$ DC.
 gives max of 0-600
 W
 $\pm 30V$



II. General Informance

1. Introduction

The 4000 series dual tracking power supply has two independent single power supplies combined together with tracking function. There are fore meter to indicate voltage and current of both power supplies.

4000 POWER SUPPLY SPECIFICATIONS

MODE		P4303	4302	4305	4603	4602
Output	DC Voltage	0-30V	0-30V	0-30V	0-60V	0-60V
	DC Current	0-3A	0-2A	0-5A	0-3A	0-2A
Loading Effect (Load Regulation):	CV	0.02% + 2mV				
	CC	0.02% + 0.5mA				
Source Effect (Line Regulation):	CV	0.02% + 2mV				
	CC	0.02% + 0.25mA				
PARD (Ripple And Noise) At Any Line Voltage	CV	0.5mV(rms), 4mV(p-p)				
	CC	0.5mA(rms), 4mA(p-p)				
Programming Speed	UP NL	400mS		400mS		
	FL	600mS		600mS		
	DOWN NL	2.5S		3.0mS		
	FL	200mS		250mS		
Output Impedance (Typical)		5mΩ + 2μH				
Input 110V*, 220V**±10% 120V, 240V ±10% Selected by real panel switch		3.7A 400W (110V)	2.6A 290W (110V)	5.7A 630W (110V)	6.1A 680W (110V)	4.3A 470W (110V)
		50-60 Hz				

*: 100V, 110V Selected by jump wire.
 **: 200V, 220V Selected by jump wire.

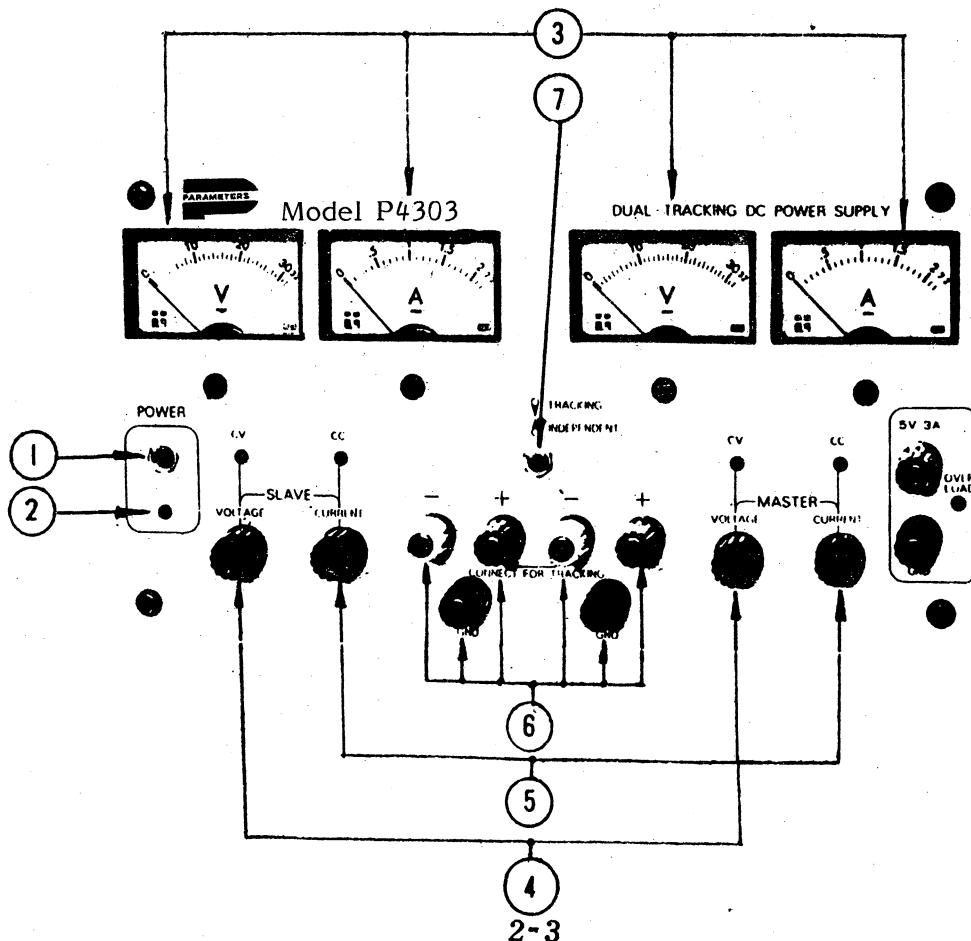
Constant 5V Output Voltage Range: Min, 4.75V Max, 5.25V.
 Load And Source Effect 0.1% + 5mV Output Current 3A±10% Continue.
 Ripple And Noise < 2mV 4302 And 4303 Only.

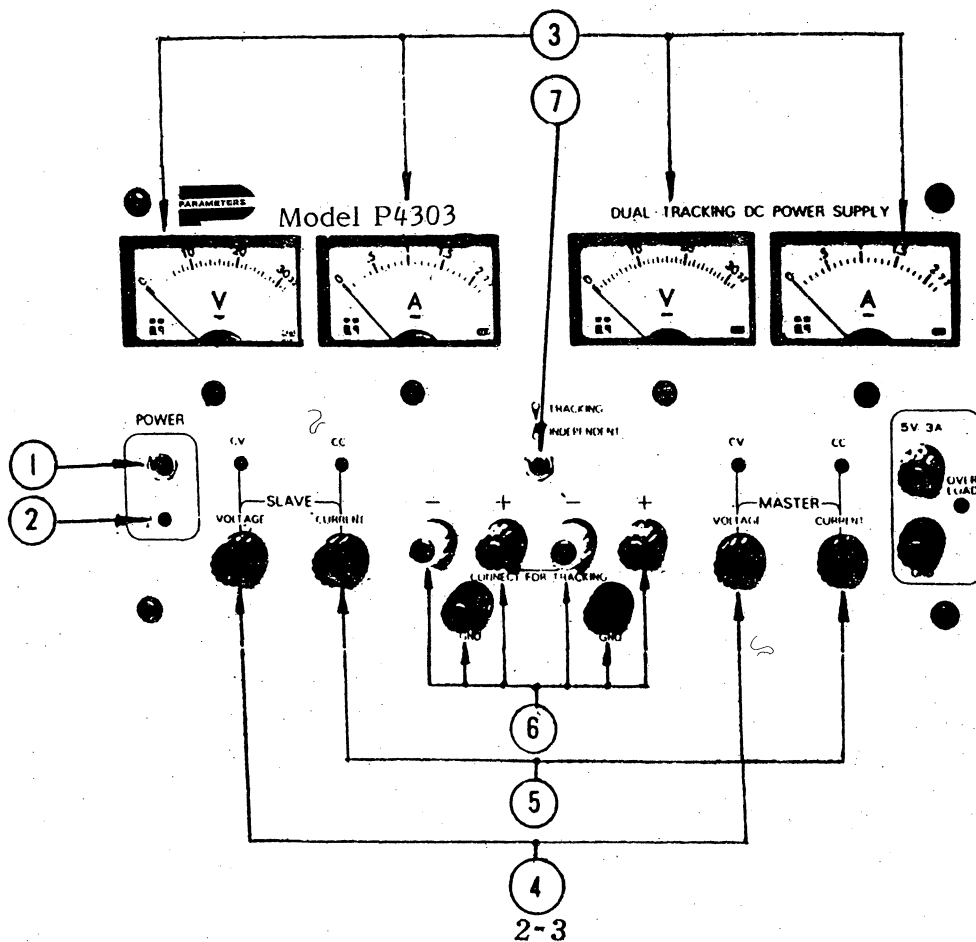
Dimension: (Width, High, Deep)mm	250x140x360	250x140x360	250x140x420	250x140x420	250x140x420
Weight: kg	10	10	14.5	14.5	13.2
Accessory: AOS-002 Banana-Clip	3	3	2	2	2

Operating Temperature Range: Operating: 0°C to 40°C
 Storage: -20°C to 55°C

Notes: NL-NO Load FL-Full Load.
 CC- Constant Voltage CC- Constant Current.

2-2





4. Front Panel Illustration

- (1) Power On/Off Switch - Switch power on or off.
- (2) Indicating Lamp - RED LED to display power on/off, constant voltage, constant current and overload.
- (3) Meter - To indicate output voltage, output current.
- (4) Voltage Set Knob - Voltage can be set.
- (5) current Set Knob - Current can be set.
- (6) Output Terminal - Power can take from these terminal.
- (7) Tracking/Independent Switch - Tracking or Independent can be selectable.
- (8) Zero Adjuster - Meter mechanical zero can be adjusted.

5. Operation

- (1) Connect the instrument to the AC power source and switch on the power switch. The indicating lamp will be lighted.
- (2) For independent
 - a: Switch off Tracking/Independent Switch to independent position.
 - b: Set voltage and current of both channel independently to the value you desire.
 - c: Then the power can be taken out from output terminals independently.
- (3) For tracking
 - a: Switch on Tracking/Independent Switch to tracking position.

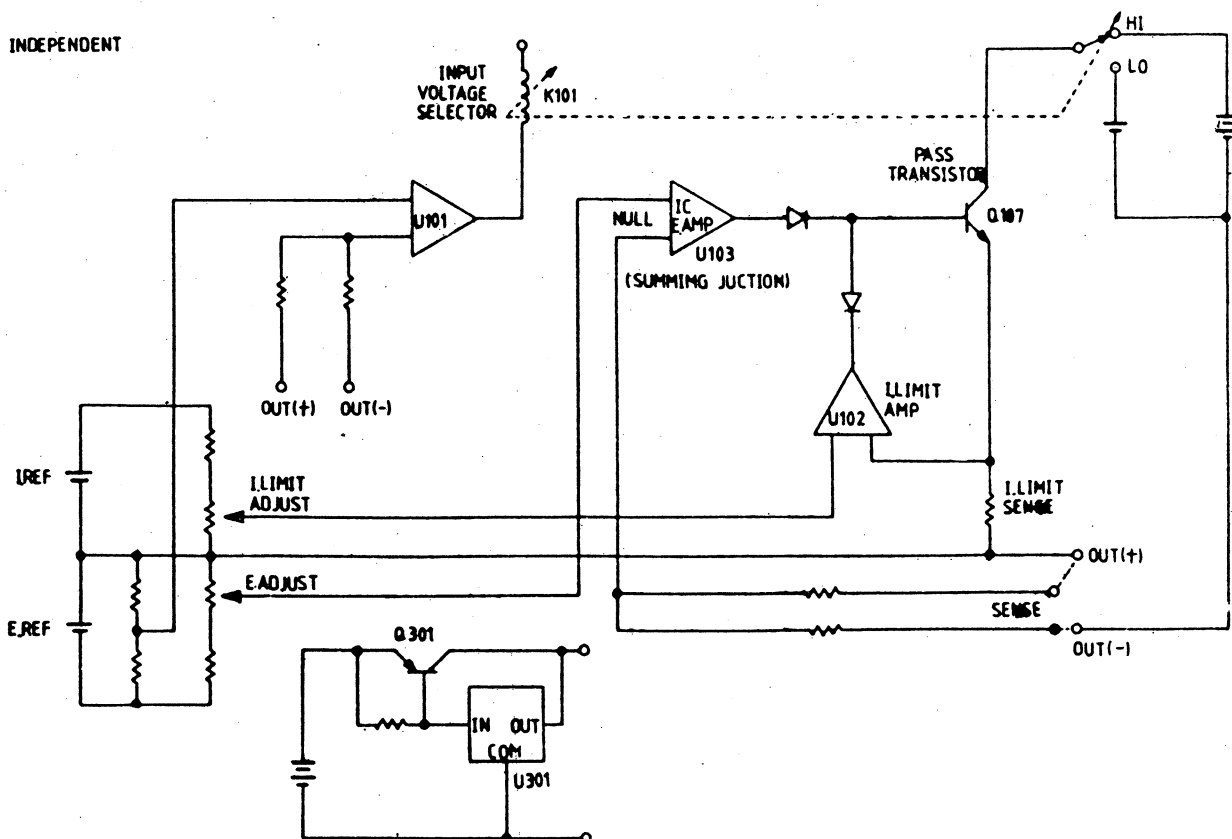
- b: Set the voltage of master channel to the value you desire.
- c: Then the voltage of slave channel will be the same as that of master channel.
- d: SET the current of both channel independently to the value you desire.
- e: Then the power can be taken out from output terminals.

6. Caution

- (1) Before connecting the instrument to AC power, verify that the AC power matches the power requirement of the instrument.
- (2) For specified operation, allow the instrument to warm-up at least 20 minutes.
- (3) Please don't connect voltage which is larger than power supply output voltage into the output terminals.
- (4) 5V 3A Overload Period: Never over 20 minutes during per here. (4302, 4303 only)

2-5

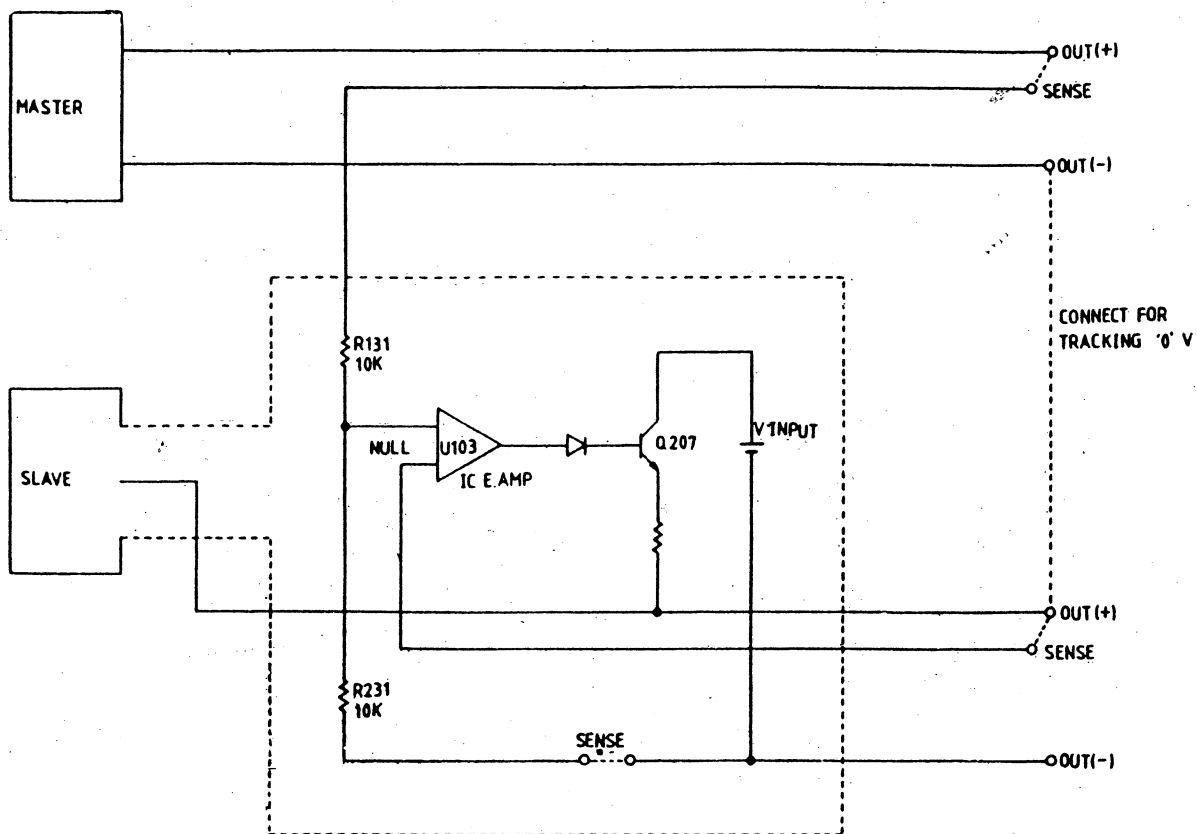
BLOCK DIAGRAM



2-6

BLOCK DIAGRAM

TRACKING



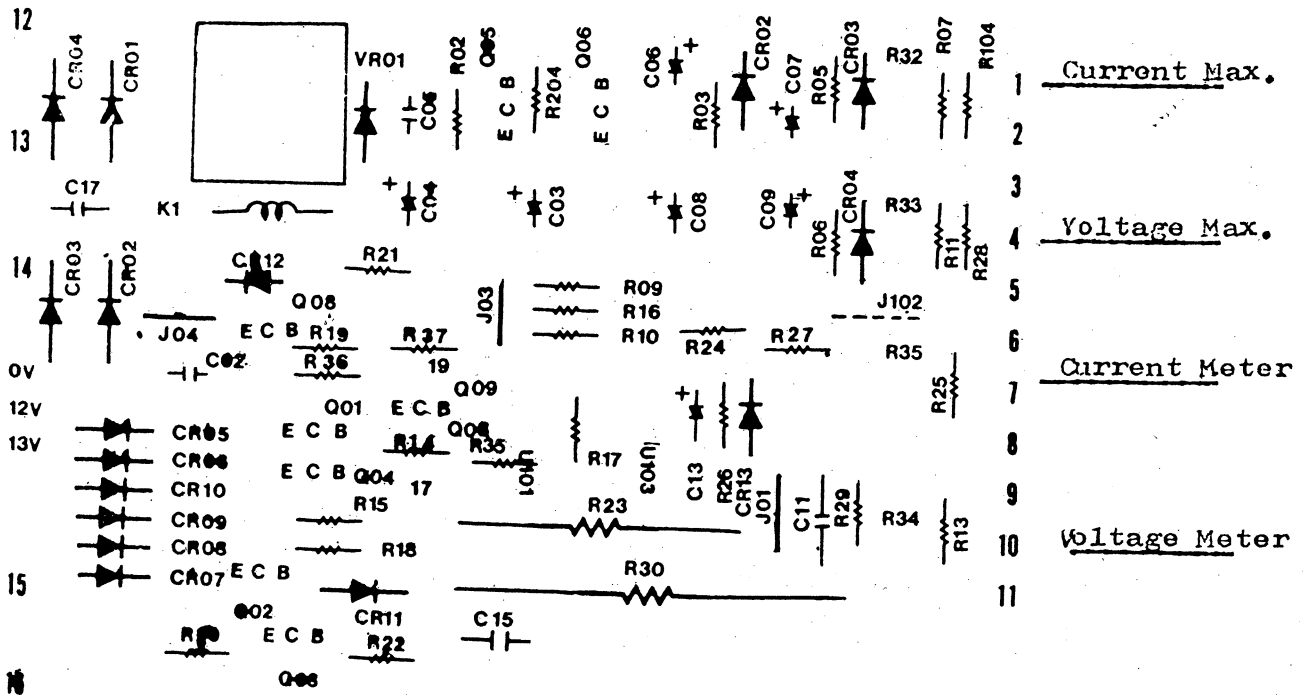
2-7

III. Maintenance

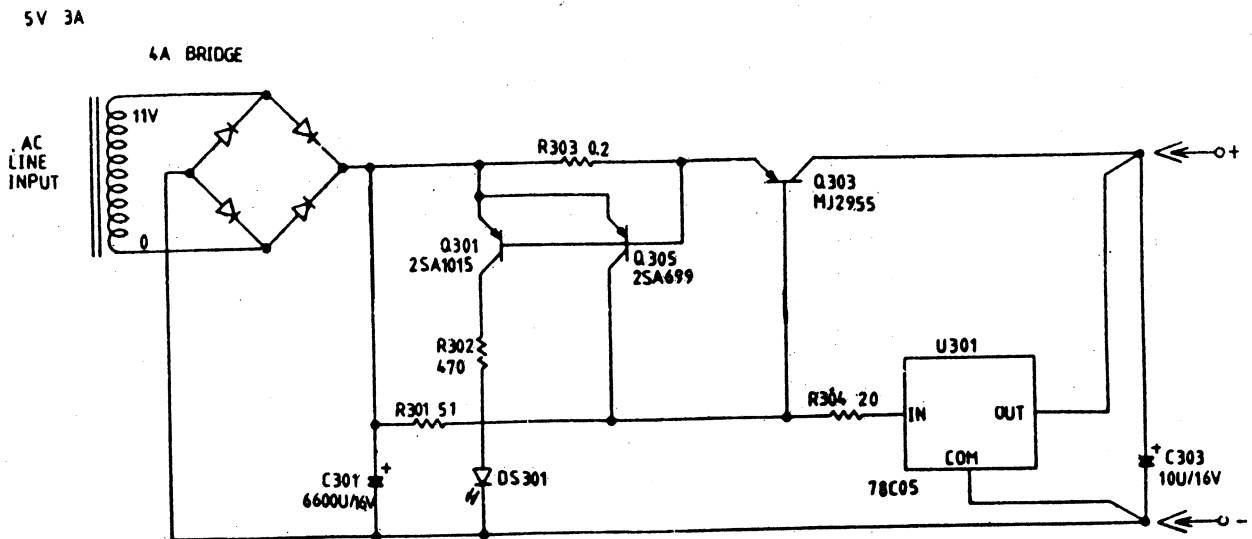
8. Adjustment procedures

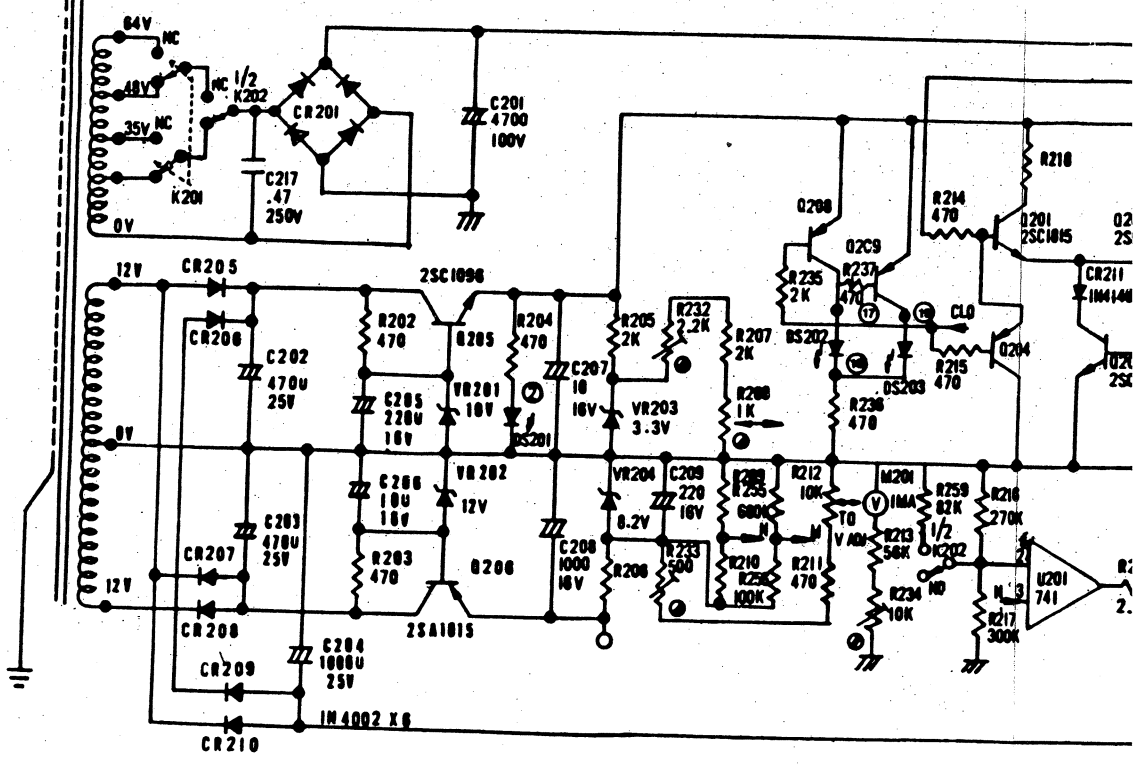
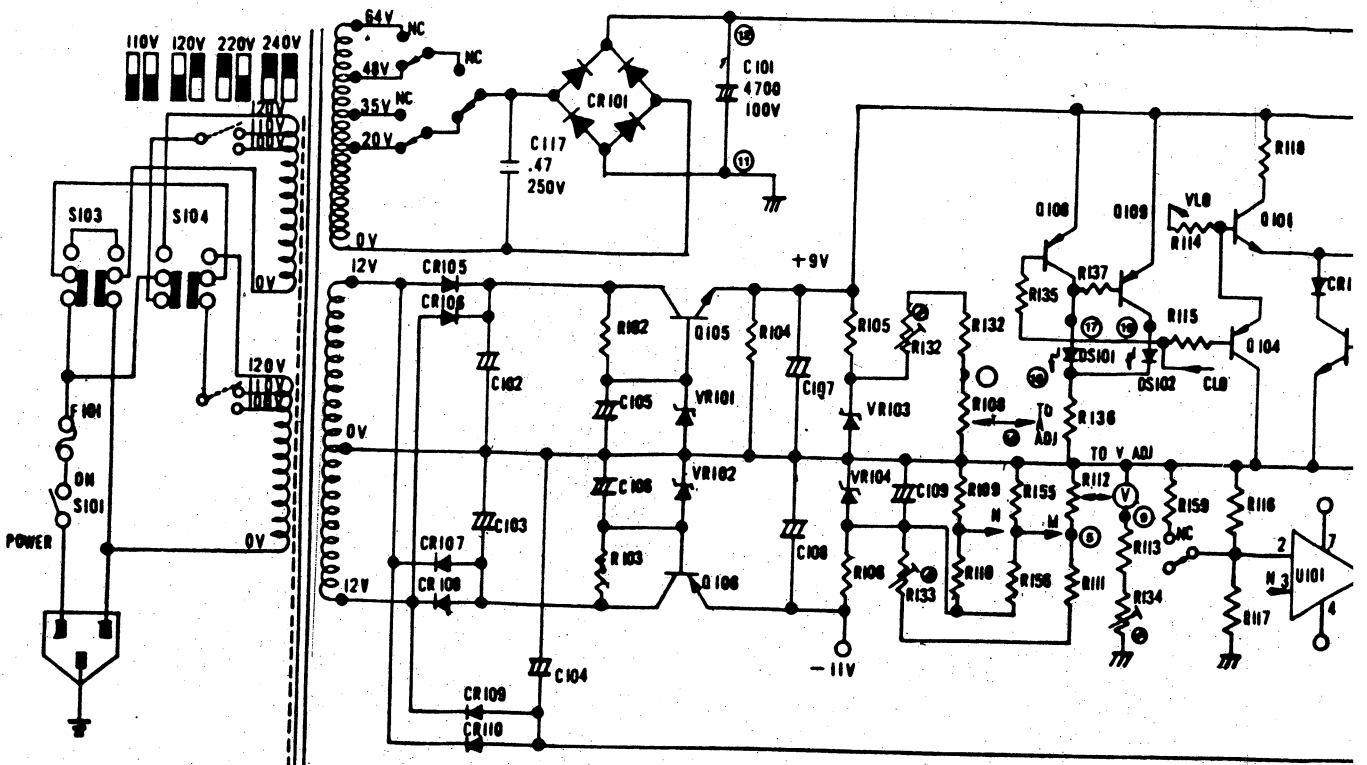
- (1) Mechanical zero adjustment: Turn power off and adjust "zero adjuster" to let four meters to indicate zero.
- (2) Set Tracking/Independent Switch to Independent.
- (3) Max. output Voltage Adjustment: Turn power on and connect Digital Multimeter (set to DC 200V range) to output terminals. Set Voltage Control to Max. Adjust R33 to let the output voltage to be within 31V-32V (4302, 4303, 4305), 62V-63V (4602, 4603).
- (4) Voltage full scale adjustment: Turn Voltage control, to let the output voltage to be exactly 30V (4302, 4303), 60V (4602, 4603). Adjust R34 to let meter indicate full scale.
- (5) Max. Output Current Adjustment: Set DMM to DC 20A range . Turn Voltage Control to 1/4 location and Current Control to Max. Adjust R32 to let output current to be within 2.1A-2.2A (4302, 4602) or 3.1A-3.2A (4303, 4603) or 5.1A-5.2A (4305).
- (6) Current Full Scale Adjustment: Turn Current Control to let the output current to be exactly 2A (4302, 4602), 3A (4303, 4603) or 5A (4305). Adjust R35 to let meter indicate full scale.

9. Component layout



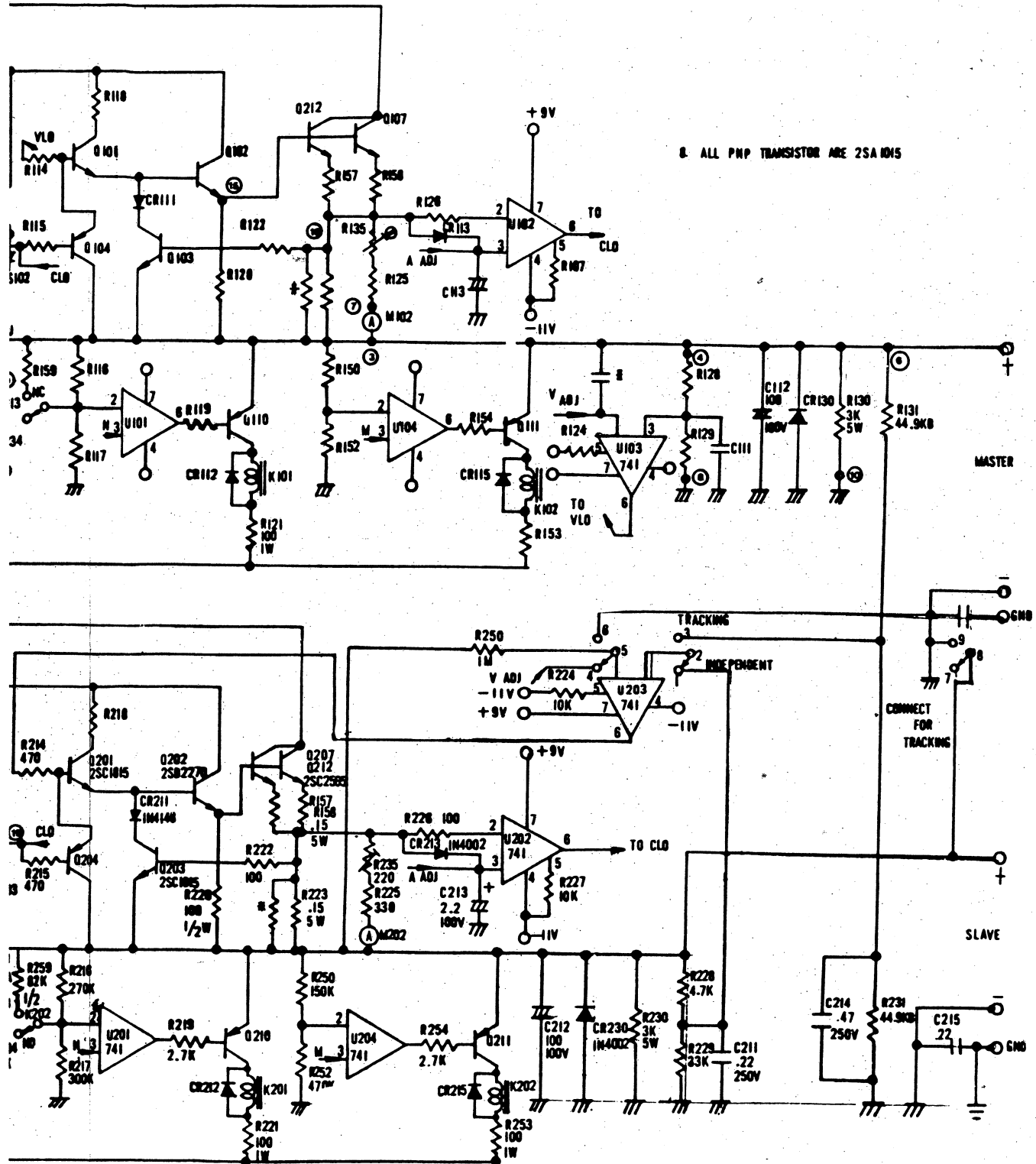
CIRCUIT DIAGRAM



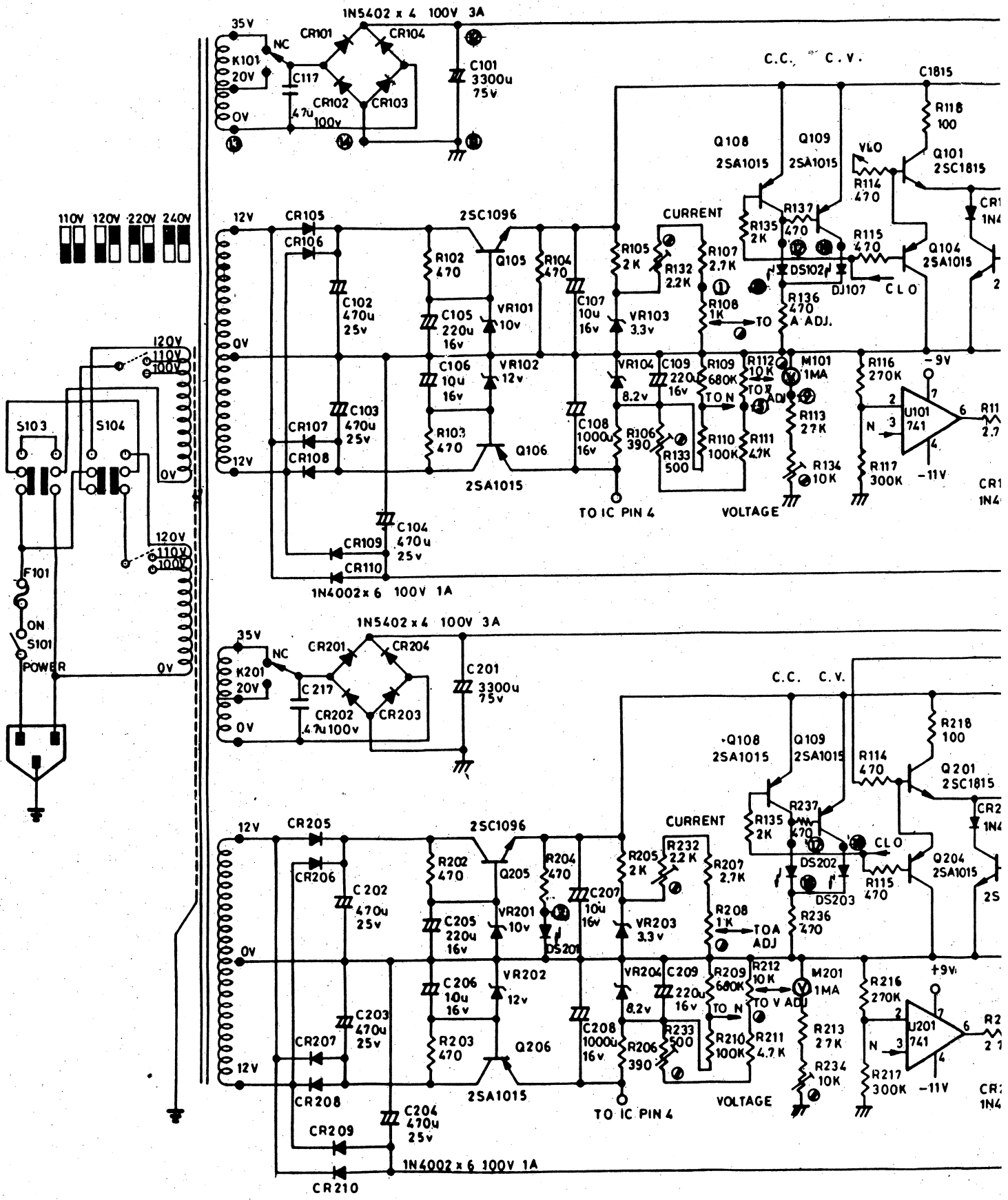


4000 SERIES DUAL TRACKING DC POWER SUPPLY

B. ALL PNP TRANSISTOR ARE 2SA1015



SUPPLY

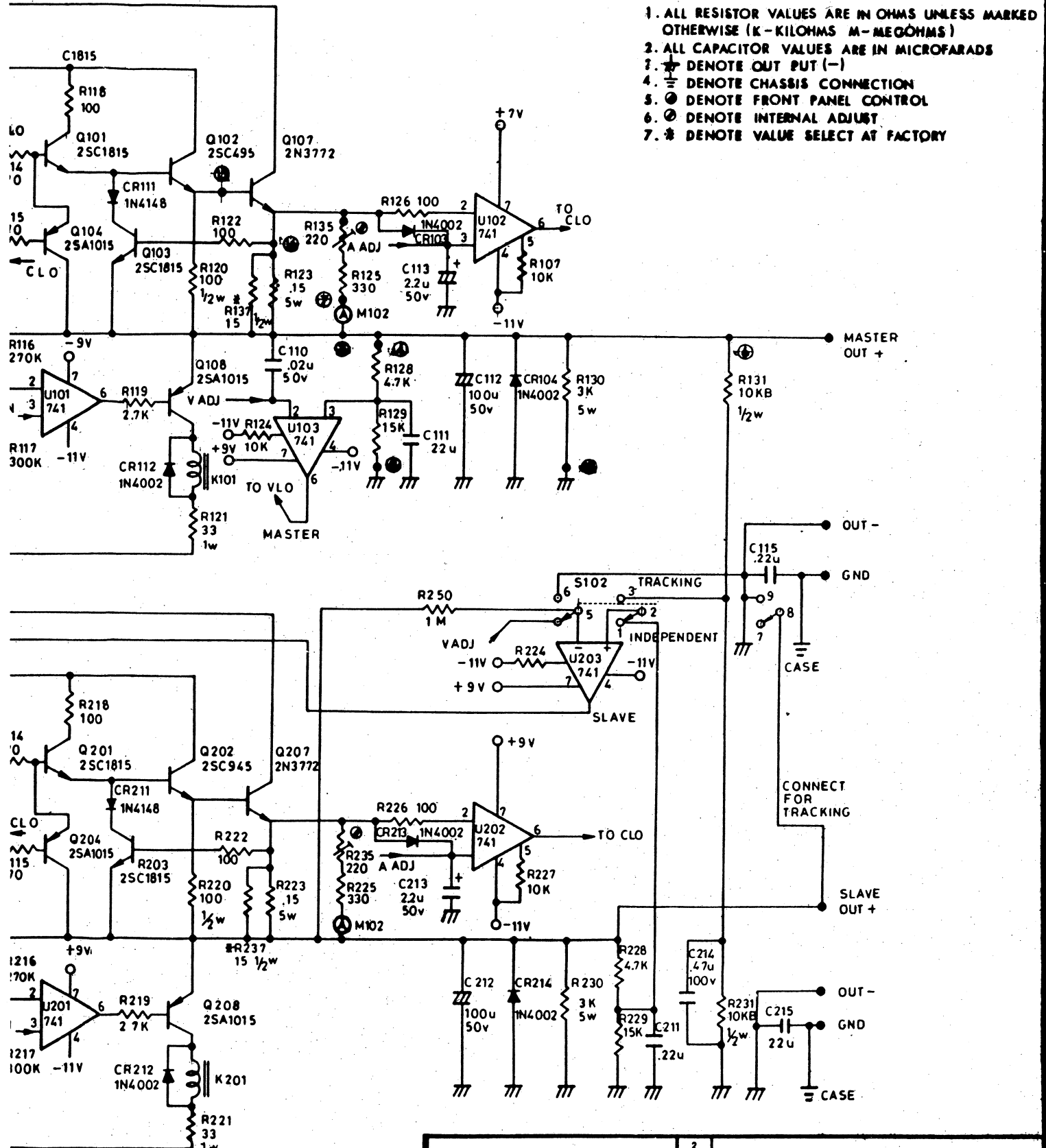


110V 120V 220V 240V

4000 SERIES DUAL TRACKING DC POWER SUPPLY

NOTES:

1. ALL RESISTOR VALUES ARE IN OHMS UNLESS MARKED OTHERWISE (K-KILOHMS M-MEGOHMS)
2. ALL CAPACITOR VALUES ARE IN MICROFARADS
3. ∇ DENOTE OUT PUT (-)
4. \equiv DENOTE CHASSIS CONNECTION
5. \odot DENOTE FRONT PANEL CONTROL
6. \oplus DENOTE INTERNAL ADJUST
7. * DENOTE VALUE SELECT AT FACTORY



尺寸规格	容 差 范 围					公差	%	备注
	F	G	H	K	P			
50以下	±0.2	±0.2	±0.1	±0.1	±0.05	常用		材料
50-100	±0.3	±0.3	±0.15	±0.15	±0.08			加工
100-180	±0.5	±0.4	±0.25	±0.2	±0.12	比例		繪圖 設計 檢驗 備註
180-300	±0.8	±0.5	±0.4	±0.3	±0.25	數量		Shaw
300以上	±1.5	±1.0	±0.8	±0.6	±0.5	材料		Sign 7.9.2