

*H. G.*

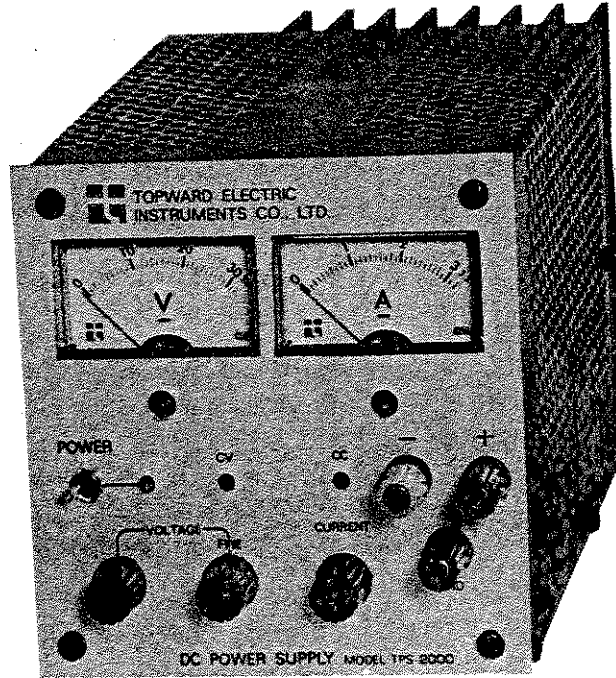
**INSTRUCTION MANUAL**  
**DC POWER SUPPLY**  
**MODEL : TPS - 2000**

**TOPWARD**

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I. Picture of TPS-2000



## II. General Informance

### 1. Introduction

The 2000 series DC power supply is a single power supplies. There are two meter to indicate voltage, current and two lamp to indicate constant voltage, constant current.

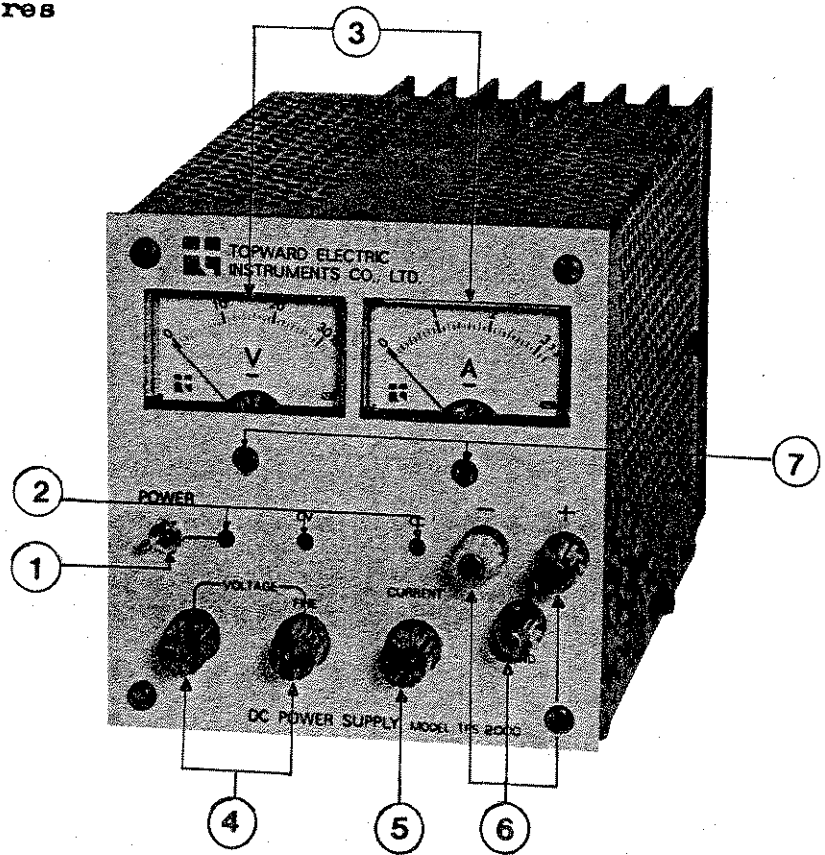
4000 POWER SUPPLY SPECIFICATIONS

MODE		2303	2601	2305	2603	2310
Output	DC Voltage DC Current	0-30V 0-3A	0-30V 0-2A	0-30V 0-5A	0-60V 0-3A	0-30V 0-10A
Load Regulation):	CV CC	0.02% + 2mV 0.02% + 0.5mA				
Line Regulation):	CV CC	0.02% + 2mV 0.02% + 0.25mA				
Output (Ripple And Noise) At Any Line Voltage	CV CC	0.5mV(rms), 4mV(p-p) 0.5mA(rms), 4mA(p-p)				1mV(rms) 1mA(rms)
Programming Speed	NL	400mS		400mS		
Typical Time To Change	UP FL	600mS		600mS		
Time To Put From 0.5% To	NL	2.5S		3.0mS		
0.5% Of Rate Value	DOWN FL	200mS		250mS		
Output Impedance (Typical)		5mΩ + 2μH				
Output 110V*, 220V** ±10% 120V, 240V ±10% Selected by real panel switch		1.5A 170W (110V) 50-60 Hz	1.1 A 120W (110V) 50-60 Hz	2.5A 280W (110V) 50-60 Hz	3.1A 340W (110V) 50-60 Hz	5.1A 560W (110V) 50-60 Hz
* 100V, 110V Selected by jump wire. ** 200V, 220V Selected by jump wire.						

Dimension: (Width, High, Deep)mm	125x140x300	125x140x300	250x140x360	250x140x360	250x140x420
Weight: kG	5	4.5	8.5	8.5	12
Accessory: ACS-002 Banana-Clip	1	1	1	1	1

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.

### 3. Front Panel Features



#### 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) Zero Adjuster - Meter mechanical zero can be adjusted.

#### 5. Operation

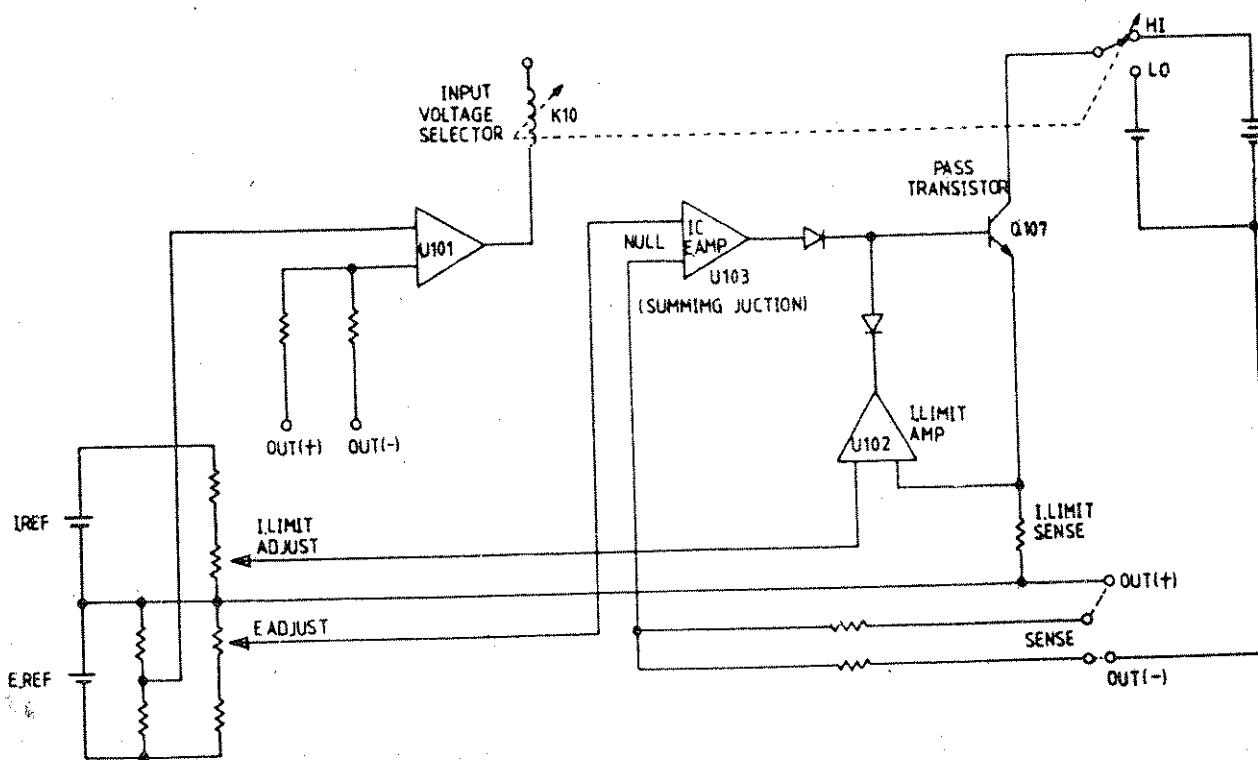
- (1) Connect the instrument to the AC power source and switch on the power switch. The indicating lamp will be lighted.
- (2) Set the voltage and current to the value of you desire. Then the power can be taken out from output terminals.

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.



# BLOCK DIAGRAM

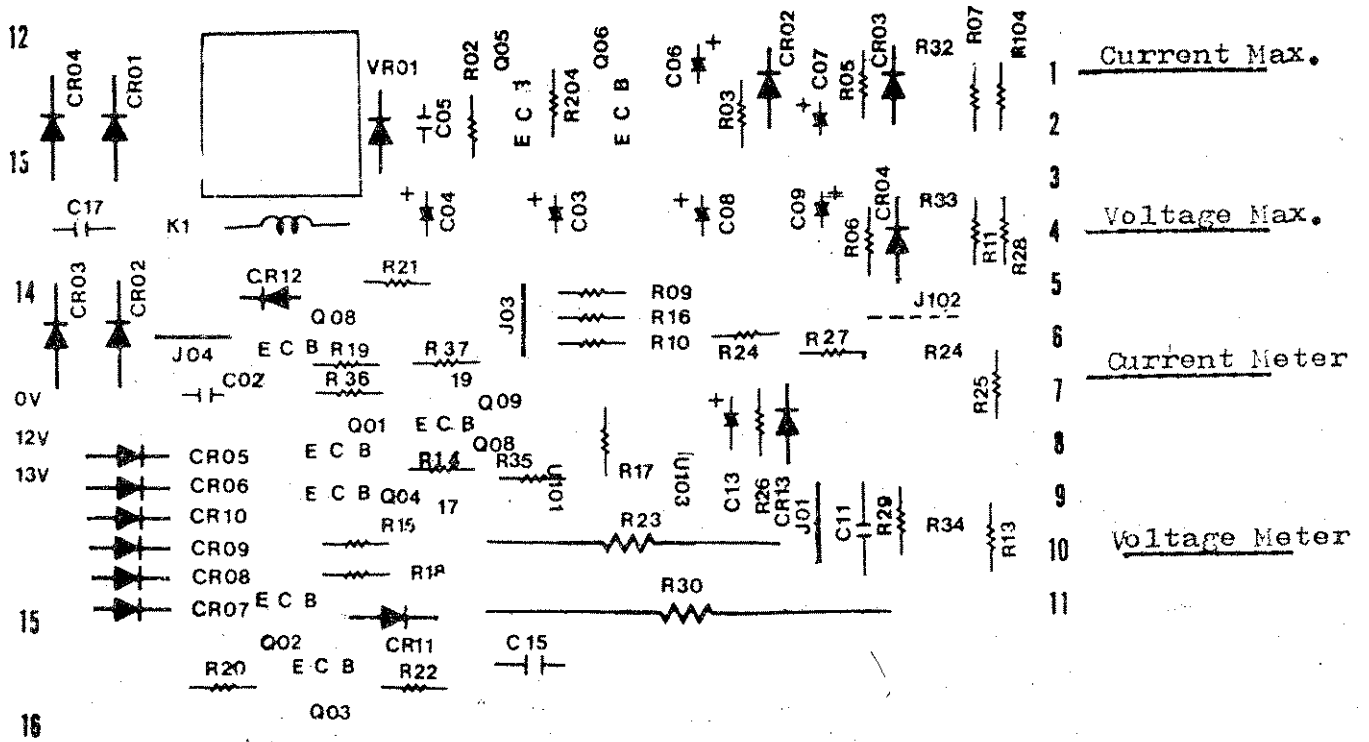


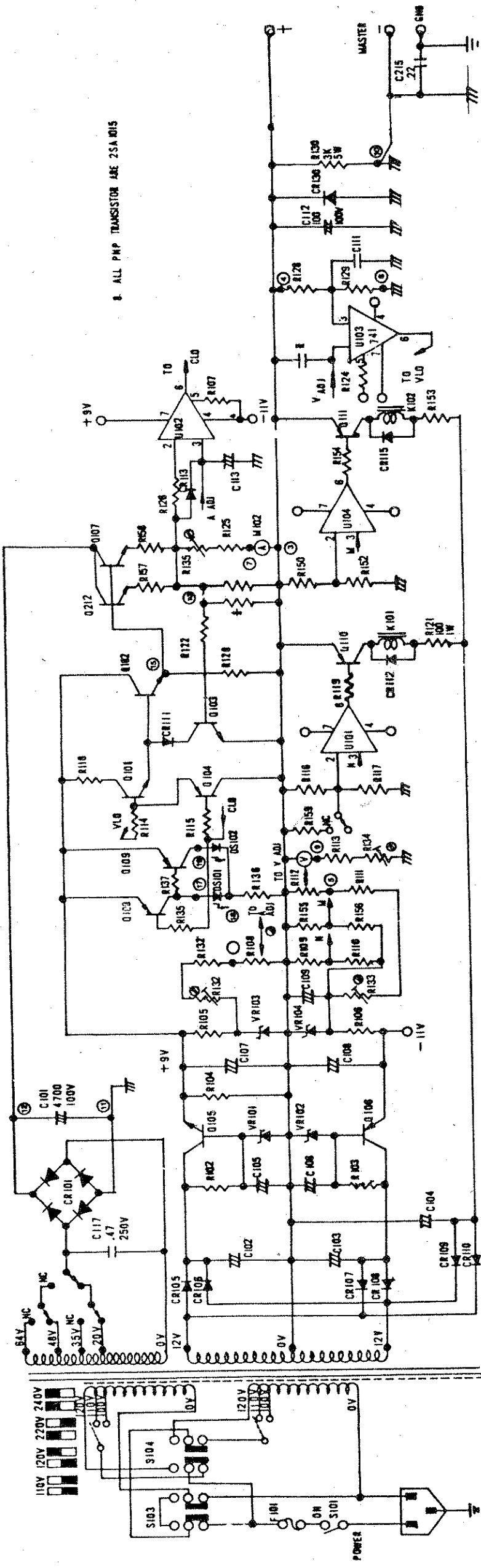
### III. Maintenance

#### 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 (2302, 2303, 2310), 62V-63V (2602, 2603).
- (4) Voltage full scale adjustment: Turn Voltage control, to let the output voltage to be exactly 30V (2302, 2303), 60V (2602, 2603). 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 (2302, 2602) or 3.1A-3.2A (2303, 2603) or 10.5A-10.7A (2310).
- (6) Current Full Scale Adjustment: Turn Current Control to let the output current to be exactly 2A (2302, 2602), 3A (2303, 2603) or 10A (2310). Adjust R35 to let meter indicate full scale.

### 9. Component layout





8. ALL PNP TRANSISTOR ARE 2SA1015

2000 SERIES DC POWER SUPPLY

