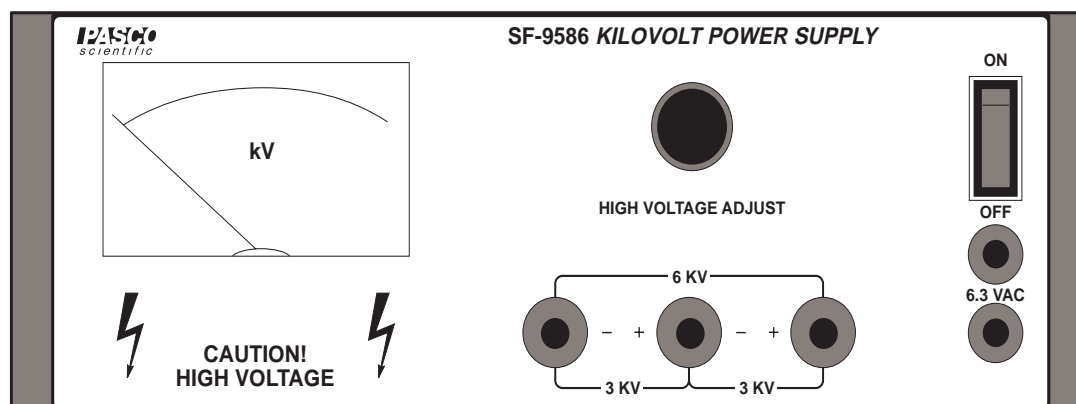


**Instruction Sheet
for the PASCO
Model SF-9586**

KILOVOLT POWER SUPPLY



Introduction

The PASCO scientific Model SF-9586 Kilovolt Power Supply provides regulated DC power from 0 to 6 kilovolts. The 6 kilovolt output is center tapped, providing outputs of 0 to ± 3 kilovolts. In addition, a pair of output jacks provides 6.3 volts of AC power, which is commonly used as filament power in electron tube experiments.

►IMPORTANT:

① The 6.3 VAC output is unregulated. If you are using it to heat the filament in a vacuum tube, we recommend that you use a current limiting resistor (1-2 Ω , variable) in series. Measure the voltage at the filament and adjust the resistance to get the required voltage.

② For an accurate meter reading, always use the left and right output jacks (6 kV). Use the middle jack only when your application requires a center-tapped voltage. (The center tap will be the mid-point of the output voltage only if equal currents are drawn from the ± 3 kV output jacks.)

To Use the Power Supply:

- ① Plug the power cord into a well-grounded 107-128 VAC, 60 Hz or 198-242 VAC, 50 Hz outlet. (See label on rear of unit).
- ② Connect the appropriate output terminals of the power supply to the circuit. (Connecting wires are not provided with the supply.)
- ③ Turn the HIGH VOLTAGE ADJUST knob fully counterclockwise.
- ④ Flip the ON/OFF switch on the front panel to ON. The switch will light to show that the power is on.
- ⑤ Turn the HIGH VOLTAGE ADJUST knob to obtain the desired output. The meter will show the voltage between the 6 kV output terminals.

►CAUTION!—HIGH VOLTAGE

The power supply uses two 390 K Ω resistors which limit the output current to approximately 3mA. Nevertheless:

- * Always work with a partner.
- * Wear rubber soled shoes.
- * Work with one hand only. Keep the other hand in your pocket or behind your back.

© 1994 PASCO scientific

This instruction sheet edited by: Tom Reineking

Specifications

DC Output:

Voltage: Continuously variable
 0 to 6 kV differential (no load)
 0 to 3 kV and/or 0 to -3 kV (no load) each side,
 relative to center-tap.

Current: 50 μ A at 6 kV differential (3 kV each side)
 Short-circuit current: approx. 3 mA

Ripple: Less than 1%

Line Regulation: Less than 1% variation in dc out
 put voltage for a 10% variation in line voltage.

Grounding: Any one terminal may be grounded.

Short-circuit protection: continuous

AC Output:

Voltage: 6.3 VAC nominal, unregulated

Current: at least 2 A at 6.3 V

Fuse: 630 mA, (115 VAC units)
 315 mA, (220/240 VAC units)

CAUTION

RISK OF ELECTRIC SHOCK
 DO NOT OPEN

CAUTION:
 TO PREVENT THE RISK OF ELECTRIC SHOCK, DO
 NOT REMOVE COVER ON UNIT. NO USER SERVICE-
 ABLE PARTS INSIDE. REFER SERVICING TO QUALI-
 FIED SERVICE PERSONNEL.



The lightning flash with arrowhead, within
 an equilateral triangle, is intended to alert
 the user of the presence of uninsulated
 "dangerous voltage" within the product's
 enclosure that may be of sufficient magni-
 tude to constitute a risk of electric shock to
 persons.



The exclamation point within an equi-
 lateral triangle is intended to alert the
 user of the presence of important oper-
 ating and maintenance (servicing) in-
 structions in the literature accompany-
 ing the appliance.

Equipment Return

Should this product have to be returned to PASCO scien-
 tific, for whatever reason, notify PASCO scientific by
 letter or phone BEFORE returning the product. Upon
 notification, the return authorization and shipping instruc-
 tions will be promptly issued.

► **NOTE:** NO EQUIPMENT WILL BE
 ACCEPTED FOR RETURN WITHOUT
 AN AUTHORIZATION.

When returning equipment for repair, the units must be
 packed properly. Carriers will not accept responsibility
 for damage caused by improper packing.

Address: PASCO scientific
 10101 Foothills Blvd.
 P.O. Box 619011
 Roseville, CA 95678-9011

Phone: (916) 786-3800

FAX: (916) 786-8905

Limited Warranty

PASCO scientific warrants this product to be free from
 defects in materials and workmanship for a period of one
 year from the date of shipment to the customer. PASCO
 will repair or replace, at its option, any part of the product
 which is deemed to be defective in material or workman-
 ship. This warranty does not cover damage to the product
 caused by abuse or improper use. Determination of
 whether a product failure is the result of a manufacturing
 defect or improper use by the customer shall be made
 solely by PASCO scientific. Responsibility for the return
 of equipment for warranty repair belongs to the customer.
 Equipment must be properly packed to prevent damage
 and shipped postage and freight prepaid. (Damage caused
 by improper packing of the equipment for return ship-
 ment will not be covered by the warranty.) Shipping
 costs for returning the equipment, after repair, will be
 paid by PASCO scientific.

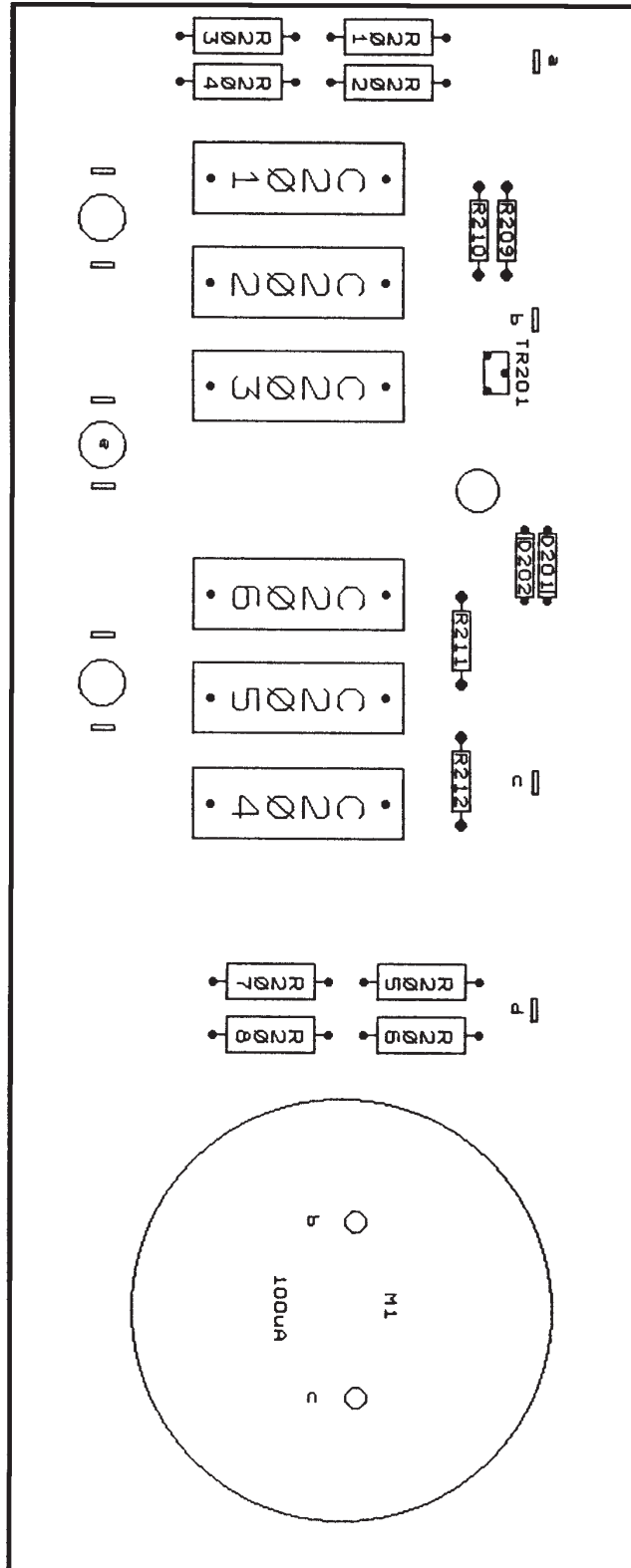
Other PASCO Power Supplies

PASCO scientific offers a variety of rugged, reliable
 power supplies. From low-voltage, fixed-output supplies
 to this 6KV DC supply, all PASCO power supplies are
 easy to use, ruggedly built, and short circuit protected for
 long life in the student lab. For information, check our
 catalog or call toll-free 1-800-772-8700.

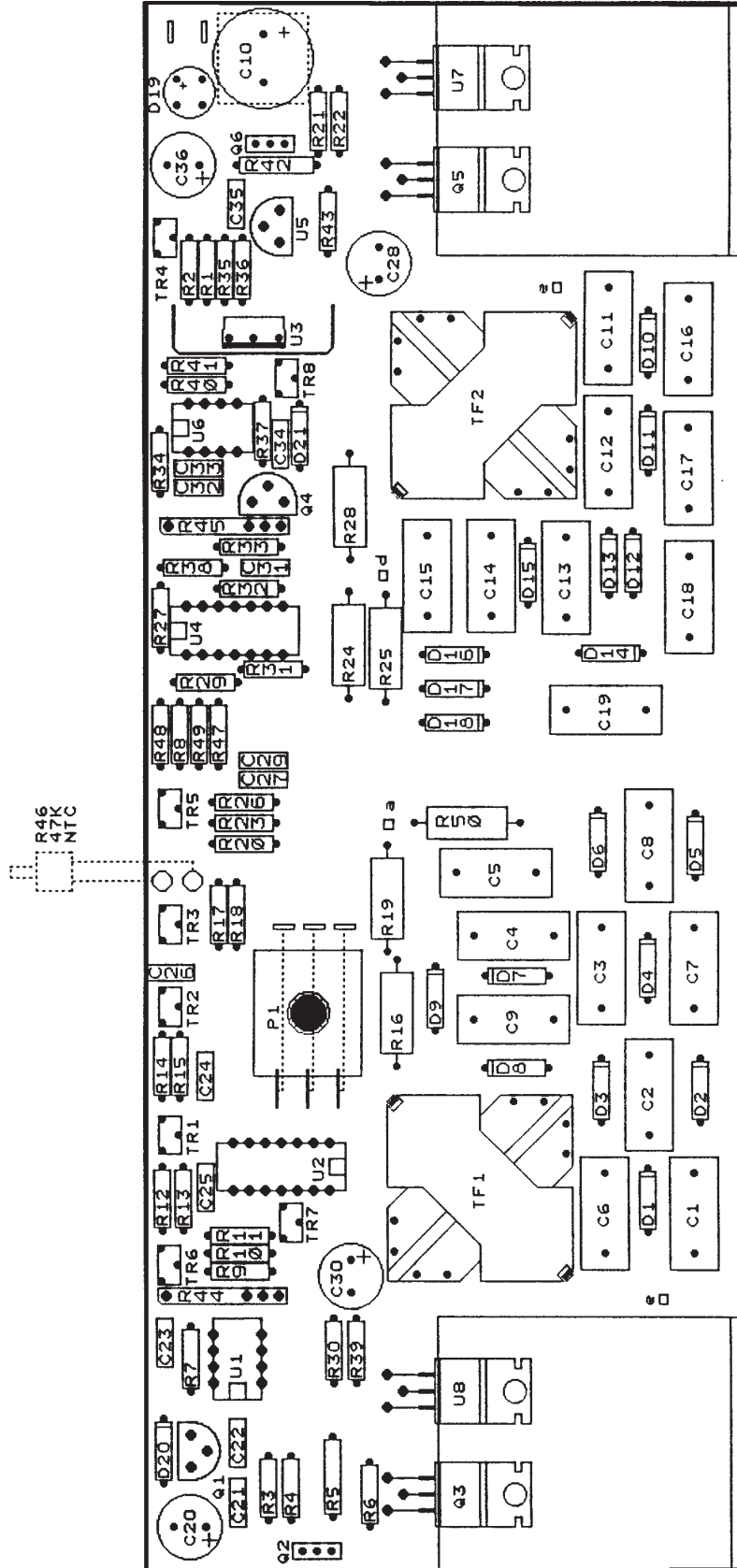
Parts List

<u>REFERENCE</u>	<u>PART</u>	<u>RATING</u>			
C1,C2,C3,C4,C5,C6,C7, C8,C9,C11,C12,C13,C14, C15,C16,C17,C18,C19 C10	1N4007	1000V		R11,R29	82K
C20,C28,C30,C36	1500uF	50V		R12,R14,R47,R48,R49	10K
C21,C33	100uF	40V		R16,R19,R24,R28	10M
C22,C34	0.47uF			R17,R26	8K2
C23,C24,C25,C26,C27, C29,C31,C32	10nF	63V		R18,R32	1K
C35	0.1uF	63V		R20,R33	75K 1%
C201,C202,C203, C204,C205,C206	220nF	63V		R21,R30	4K7
D1,D2,D3,D4,D5,D6, D7,D8,D9,D10,D11, D12,D13,D14,D15,D16 D17,D18	0.22uF	1000V		R23	2K2
D19	GP02	1000V		R27	1M
D20,D21,D201,D202	2W04M			R2	274R 1%
F1	1N4148			R22,R39	270R
J1	T630/250			R3,R37	470R
M1	777			R25,R50	820R 5W
P1A,P1B	100ua	KF86b		R35	560R 1%
Q1,Q4	10K	POT		R38	68K
Q2,Q6	BC557B			R44,R45	2K2 SIL
Q3,Q5	BD788			R46	47K NTC
R4,R41	BD243C			R201,R202,R203,R204, R205,R206,R207,R208	390K
R7,R40	100R			R209,R211	15M
R8	3K3			R210,R212	12M
R10,R31	12K4	1%		SW1	C5403FQ
R13,R15	22K			TF1,TF2	14445
R1,R36	47K			TF3	16566
R5,R42	2K43	1%		TF4	16567
R6,R43	22R	2W		TR1,TR2,TR201	10K TRIM
R9,R34	82R			TR3,TR5	4K7 TRIM
	6K8			TR4,TR6	2K2 TRIM
				TR7,TR8	47K TRIM
				U1,U6	NE555
				U2,U4	LM324
				U3,U7,U8	LM317
				U5	LM317L

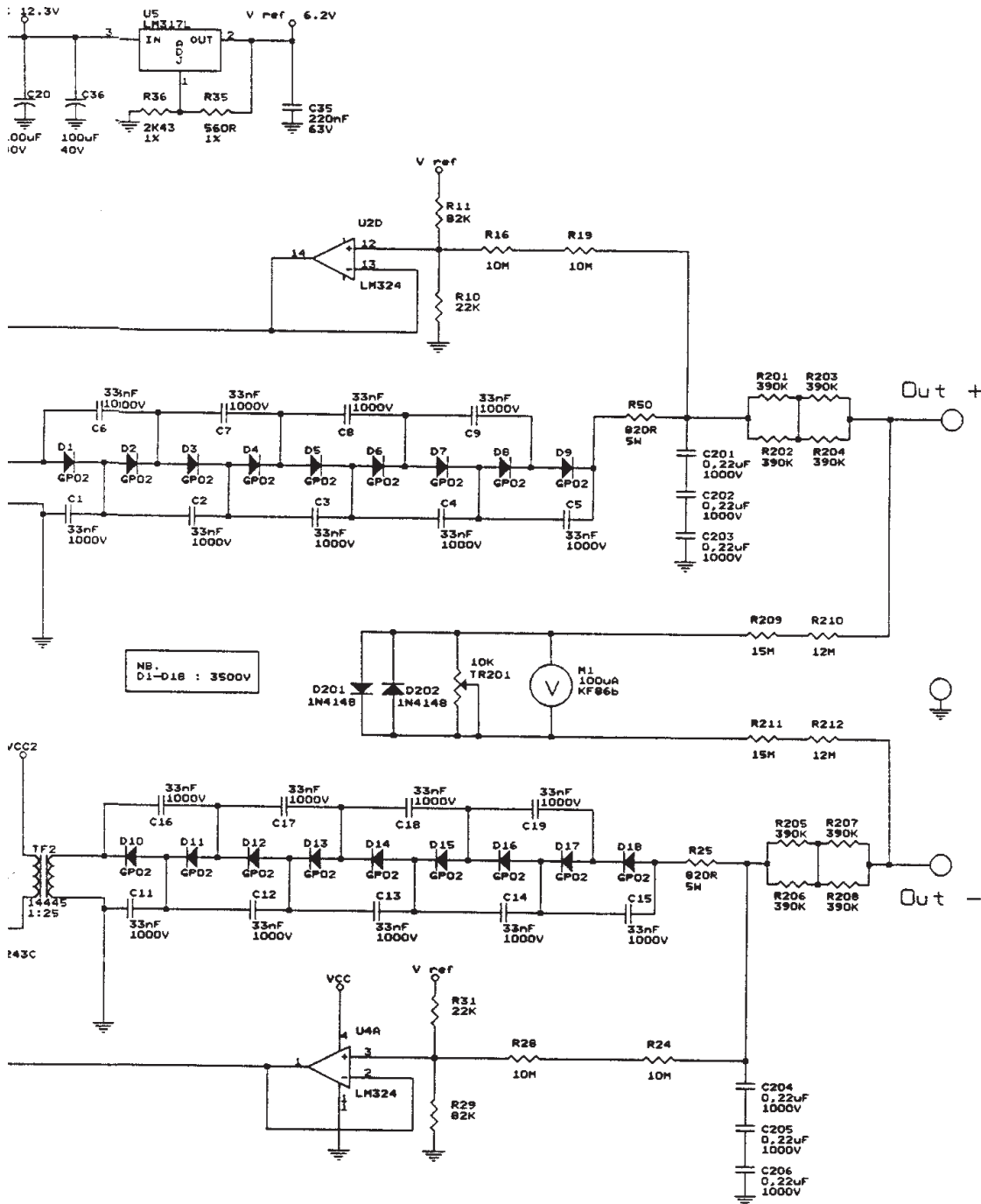
Layout



Component Layout (1 of 2)



Component Layout (2 of 2)



Schematic continued

Technical Support

Feed-Back

If you have any comments about this product or this manual please let us know. If you have any suggestions on alternate experiments or find a problem in the manual please tell us. PASCO appreciates any customer feed-back. Your input helps us evaluate and improve our product.

To Reach PASCO

For Technical Support call us at 1-800-772-8700 (toll-free within the U.S., (916) 786-3800, or email: techsupp@PASCO.com

Contacting Technical Support

Before you call the PASCO Technical Support staff it would be helpful to prepare the following information:

- If your problem is computer/software related, note:

Title and Revision Date of software.

Type of Computer (Make, Model, Speed).

Type of external Cables/Peripherals.

- If your problem is with the PASCO apparatus, note:

Title and Model number (usually listed on the label).

Approximate age of apparatus.

A detailed description of the problem/sequence of events. (In case you can't call PASCO right away, you won't lose valuable data.)

If possible, have the apparatus within reach when calling. This makes descriptions of individual parts much easier.

- If your problem relates to the instruction manual, note:

Part number and Revision (listed by month and year on the front cover).

Have the manual at hand to discuss your questions.