



**Bulletin HY14-1483-M1/US  
Installation Guide**

**Model 23-5010**

Effective: August 1, 2001  
Supersedes: October 1, 1998

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**Power  
Supply**

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**General Description**

Independently adjustable, regulated,  $\pm 15V$ , 1 amp, DC Power Supply Module.

This module contains a complete supply for operating amplifiers, and DC powered command and/or feedback sources. The supply has capacity for multiple Model 23-5030 amplifiers depending upon the power consumption utilized for other system components. The output voltages are regulated for optimum stability of servo control loops, and independently adjustable from +2 to +20 and -2 to -20 volts.

**Specifications**

<b>Dimensions</b>	4.50" X 6.75" X 1.75"	
<b>Weight</b>	0.7 kg (1.55 lbs.)	
<b>Connector</b>	22 pin gold card edge fingers at .156" centers	
<b>Mate</b>	Optional CINCH 50-22A-20 or Parker P/N 23-5CET	
<b>Power Requirement</b>	AC input protected with an MDL 1/2 amp slow-blow fuse 120 VAC* 50/60 Hz, 36 VA at maximum capacity	
<b>Performance (typical)</b>	Load regulation at $\Delta L = 1A$	10 mV
	Output ripple at $I_L = 1A$	100 Vrms
	Temp. stability 0C° to +70C°	$\pm 50$ mV
	Output noise 10Hz > f > 10 kHz	50 uVrms
<b>DC Output (set at factory)</b>	+15V regulated at pins 1, 2, 3 and 4, adjustable from +2V to +20V	
	-15V regulated at pins 9, 10, 11 and 12, adjustable from -2V to -20V	
	Signal common at pins 5, 6, 7 and 8	
	+20V to +30V unregulated at pins 17 and 18, depending on load	
	-20V to -30V unregulated at pins 14 and 15, depending on load	
<b>Circuit Controls</b>	23-5010-A controls are a pair of multiple turn top adjust potentiometers	
Reference Figures 1 & 2	R1 adjusts positive output regulated voltage level	
	R2 adjusts negative output regulated voltage level	

\* Consult factory for optional 240 VAC operation

**Circuit Description**

**Reference Figure 2**

Power input at pin 20 is fused by F1, 1/2 A slow blowing fuse, and applied to transformer T1 primary. Secondary transformer voltage rectified by full wave rectifier bridge BR1, together with substantial smoothing from capacitors C1 and C2 produce the unregulated DC voltages. The regulated output voltages are obtained from integrated circuit voltage regulators VR1 and VR2. Long lead output stability is further improved by capacitors C3 and C4. Diodes D1 and D2 protect the supply from inductive load kick-back on power down.

T1 is a 36V center tapped transformer rated at 36VA with 60 Hz 115V primary windings.

Prem SPW-626-S or equivalent. For 230V primary operation substitute Prem P/N SPW-626-D.

**Transformer Features**

Three flange bobbin design - 2500 Vrms Highpot - CSA and Underwriters Labs Class B approved.

**Voltage Regulator Features**

Current Limit, Thermal Overload Protection, Short Circuit Proof, and 77 to 80 dB ripple rejection.

**Printed Circuit Card Features**

2/2 Material with an FR4 fireproof rating, through plated, with gold fingers, green solder mask, & legend.

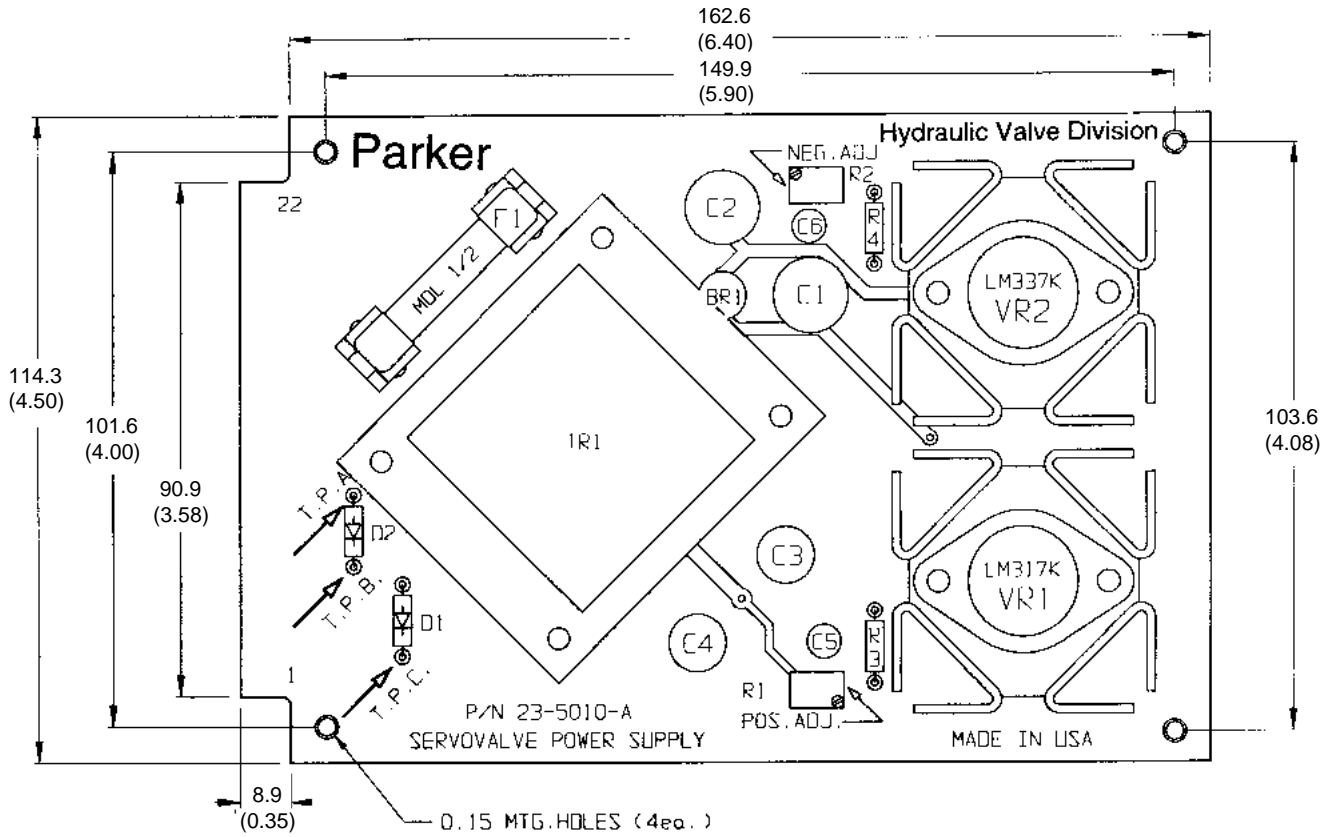
**Calibration Procedure**

P/N 23-5010-A Servo Power Supplies are pre-calibrated under load at the factory for  $\pm 15$  VDC output. The following procedure can be used for field calibration if required. The procedure requires the use of a digital multi meter (DMM)

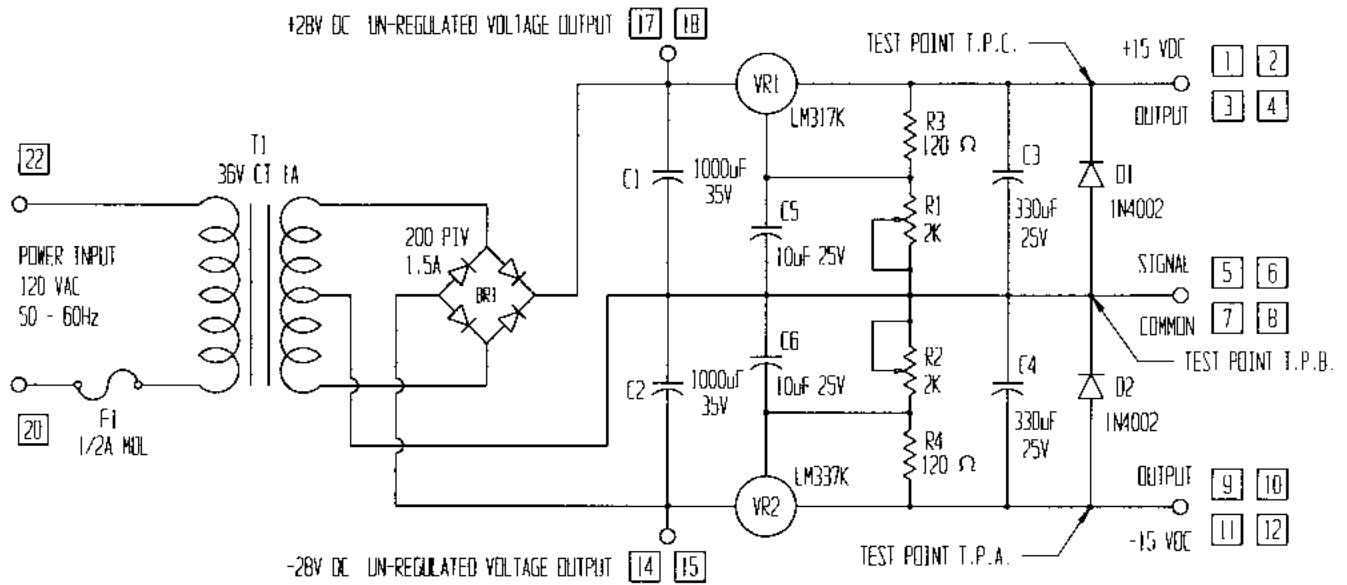
1. Connect DMM negative lead to the location designated as T.P.B.
2. Connect DMM positive lead to the location designated as T.P.C. Adjust the potentiometer designated as R1 for the desired positive output voltage.
3. Connect DMM positive lead to the location designated as T.P.A. Adjust the potentiometer designated as R2 for the desired negative output voltage.

**Component ID for service:**

VR1: LM317K	C1 & C2 1000uF @ 35V electrolytic	C5 & C6 10uF @ 25V tantalum
VR2: LM337K	C3 & C4 330pF @ 25V electrolytic	D1 & D2: 1N4002 rectifier
BR1: 200PIV 1.5A	R1 & R2: Boums3296W cermet trim pots	R3 & R4: 1/2W 1% 120 ohm



**Figure 1 - Model 23-5010-A Circuit Board Assembly**



**Figure 2 - Model 23-5010-A Schematic Diagram**

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