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Personal LaserWriter: Special Diagnostic Connector (4/95)

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TOPIC -----

The Personal LaserWriter LS/SC/NT/NTR printers contain a special diagnostic connector which can be used to diagnose printer problems that cannot be resolved using the standard troubleshooting procedures.

DISCUSSION -----

Connector J207 is a 12-pin test connector located on the DC controller boards for Personal LaserWriter LS/SC/NT/NTR printers. By carefully connecting one or more of the other pins to ground (chassis or signal), several useful tests can be performed. These tests can be helpful when troubleshooting print engine problems that cannot be resolved using the standard troubleshooting procedures.

One method for enabling the tests is to connect one end of an alligator clip lead to the metal chassis, and connect the other end to a small probe such as a T-pin or paper clip. Touch the tip of the T-pin to the appropriate pin to enable the feature. To prevent damage to the printer care should be taken to avoid accidentally shorting adjacent pins together. Pins 1-3 provide easy access for taking voltage readings of the 5, 12, and 24 volt power supplies.

WARNING:

DO NOT connect pins 1, 2, or 3 to ground or damage may occur.

One of the most useful capabilities provided by the J207 connector is the ability to force a printer into a 'READY' state, even when there is an error condition that prevents the printer from printing. To enable this feature, connect pin 5 to ground and then try to print a test page. Carefully watch and listen to the printer to determine what functional areas of the printer are working. Listen for the distinctive sounds of the fan, main motor, paper pickup rollers, solenoids, and the scanner assembly. If any of the sounds are missing, or do not sound normal, then that area of the printer should be inspected. For example, a blank page may indicate that the imaging system has a problem. If the whine of the scanner motor couldn't be heard then the scanner motor may not have been moving the laser beam across the photoconducting surface. If the scanner motor was audible, but the page was still blank, then the laser diode or high

voltage power supply could be at fault. Read the Service Source theory of operation overview for more information about how the printer operates.

Begin_Table

Pin	Signal Name	Signal Description
1	+ 5 VDC	Power supply used for I/O & DC controllers, photosensors, scanner, high-voltage power supply, and laser diode
2	+12 VDC	Power supply used for the scanner motor and fan
3	+24 VDC	Power supply used for the high-voltage PWS, main motor, fan solenoids
4	GND	Signal ground
5	RDYINH	When shorted to GND the printer is forced into a ready-stat even if the ready-state conditions have not been met. This is the most useful option available because the DC controller will ignore error conditions and attempt to print. Monitoring the printing process while this pin is shorted to GND can yield important clues about the source of the problem.
6	LPC	When shorted to GND the laser diode is turned on. This test should NOT be used when the laser/scanner is exposed.
7	GND	Signal ground
11	TPTPE	Specifies whether a blank or vertical test pattern will be produced when the service test print button is pressed. Short this pin to GND to produce a blank page instead of the standard vertical lines.

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10 Apr 1996 - Replaced entire discussion with previous enclosure text.

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