Carriage Motor and Drive Control

The Carriage Motor is a high-torque five-phase stepping motor driven by five magnetic control lines: A through E. These lines are +24 VDC outputs of the IIT Driver PWB which is under the control of the CPU on the IPS Yahoo PWB. +24 VDC is applied to all lines when the motor is locked in one position.

The motor uses rubber dampers to isolate vibrations from the rest of the IIT. It also uses magnetic damping to maintain a constant speed.

The motor emits a pulse every 0.72 degrees of rotation. This is equivalent to 500 pulses per one complete motor revolution. These pulses are routed back to the IIT Driver PWB. The IIT Driver PWB uses the interval between the pulses to determine if the carriage speed is correct and tracks the cumulative number of pulses to determine the location of the carriage.

Carriage Motor and Drive (continued)

PRE IPE PWB

- MOTOR CLOCK
- MOTOR ON
- NOT SMOOTH
- MOTOR FORWARD
- REFERENCE VOLTAGE
- REFERSE MOTOR CLOCK
- REFERSE REFERENCE VOLTAGE
- IPS FAN ON
- IPS FAN SLOW
- IPS FAN FAIL
- FL LS
- LAMP ON
- 24.5 VDC

IIT DRIVE PWB

A
B
C
D
E

Carriage Motor

- IPS FAN SLOW
- IPS FAN SLOW
- IPS FAN FAIL

IPS Fan

- FL LS
- LAMP ON
- 24.5 VDC

Lamp Power Supply

Exposure Lamp