



## Maintaining Power with Dual Stage Fixtures

Rev A

Occasionally there is a need to do dual stage fixturing where power must be maintained during parts of both stages. An example might be where a volatile RAM is programmed during In-Circuit, where typically the vacuum is on, and then the RAM information is used during functional tests, where the vacuum is off and a gate is holding the board.

There are several ways to accomplish this task. Two different methods are demonstrated below with small example programs.

Note that a list of hazards that require an interlocking safety shield to be used on the fixture, such as if the accessible voltage exceeds 60 volts dc, 42 volts peak, or 30 volts RMS, is described in chapter 1 of "Building Board Test Fixtures".

### Method 1

Assume that only vacuum A is needed. Set up the testhead config, and the board file, as though vacuum A and B were both used, but don't bother to connect B. If B must exist for other fixtures, and you can't use C or D, just turn the vacuum off manually.

```
fabon          !** turns on both vacuum A and B
               !** (B is unused).
```

```
unpowered
```

```
powered
cps
sps 1,5,2
rps 1,V,I
print V,I
fbon          !** turns vacuum A off, but does
               !** NOT disconnect supplies.
```

```
rps 1,V,I
print V,I
```

```
!** Discharge the board prior to operator removal
fabon          !** Turns vacuum A back on.
```

```
faoff          !** Disconnects the supplies,  
              !** discharges the board, and  
              !** turns vacuum A and B off.
```

## Method 2

Assume that only vacuum A is needed. Set up the testhead config with NO "relay" statements; i.e. 'relay 1 controls vacuum 2' type statements have been ELIMINATED from the testhead config file. Note this will probably affect testing done with OTHER fixtures, so be prepared. It is still necessary for relay 1 to be wired to the vacuum control valve for port A (or whichever port is to be used).

```
auxconnect 1    !** turns vacuum A on  
unpowered  
  
powered  
cps  
sps 1,5,2  
rps 1,V,I  
print V,I  
auxdisconnect 1  !** turns vacuum A off, but  
                 !** does not disconnect supplies.  
  
rps 1,V,I  
print V,I
```

!\*\* Discharge the board prior to operator removal

```
auxconnect 1    !** Turns vacuum A on.  
  
dps            !** Turns off and disconnects  
              !** power supplies.  
  
unpowered      !** Does a discharge.  
  
auxdisconnect 1  !** Turns vacuum A off.
```