

## Technical Newsletter

**SUBJECT: SO-40a ERROR E10 All Solutions**

**PROBLEM:** The clamping mechanism of the SO-40a shaker is the most complex process inside the shaker and therefore also the cause of the most problems.

Between the control board and the actual moving of the spindle are a lot of electrical and mechanical actions that can give a problem.

If one of these actions has a problem it will result in the error code E10.

This letter will explain the different actions and what can go wrong.

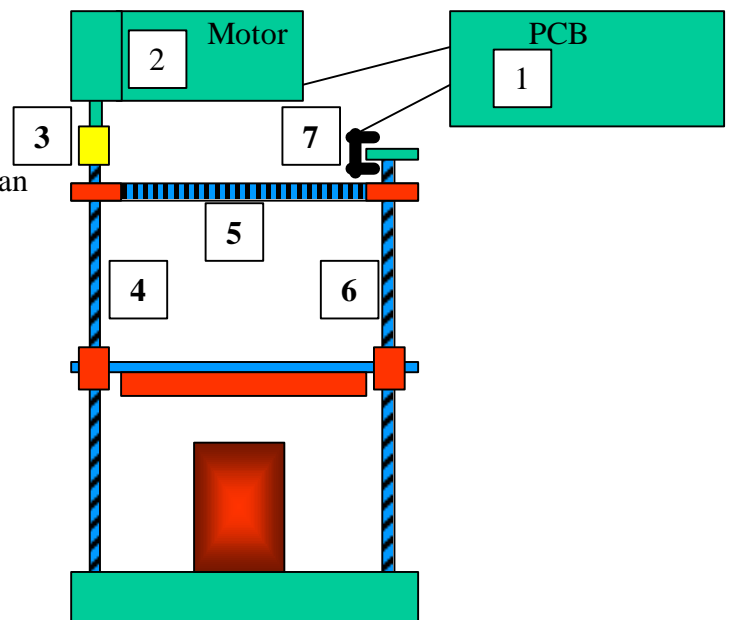
**Process description:** Board (1) is giving power to the clamping motor (2) in order to move the clamping-plate. Motor (2) will via coupling (3) drive the left spindle (4). Left spindle will drive the timing-belt (5) and so the right spindle (6). Now the opto-coupler (7) which is mounted on the right spindle is checking if the clamping plate is moving and will give this signal to the control board.

**Problem 1** PCB is not giving power to the motor.  
Door-solenoid is activated  
Motor is not running at all but spindle can be moved manually

**Solution** Check fuse on left side of the board  
Check if the 2 x 18 Vac is coming from the transformer to the board  
Change PCB

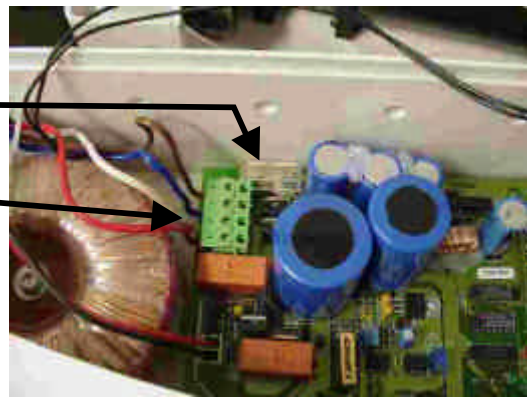
**Problem 2** PCB is giving power to the motor.  
Motor is not running at all.

**Solution** Check if the cable to the motor is right connected.  
Check if the motor has electrical resistance (10 to 100 Ohm)  
Check if there is a can clamped inside. If so the press emergency switch then press UP button and at the same time release the emergency switch. (See also newsletter)

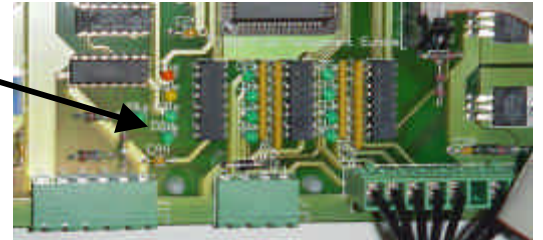


Fuse clamping motor

2 x 18 Vac  
Brown  
Blue  
White  
Red

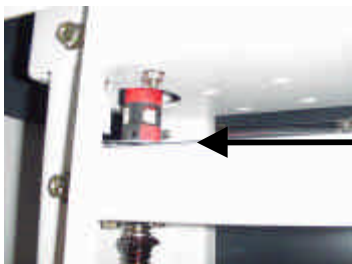
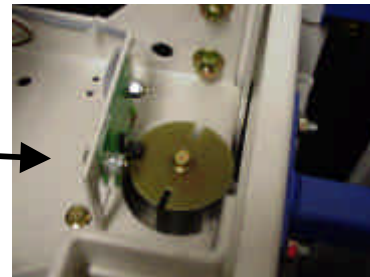


**Problem 3** PCB is giving power to the motor.  
Motor is running for a short time  
Third (green) LED is not flashing Third (green)  
LED is the incoming signal from opto-coupler



**Solution** Check the opto-coupler for damage  
If damaged check right-hand spindle on play and proceed  
according the newsletter regarding play in the spindle.

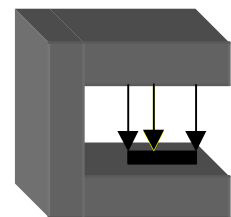
Check the opto-coupler for dust and  
if necessary, clean it with compressed  
air or with a brush.



Check if the spindle is moving while  
the motor is running.  
If this is not the case then the coupling  
between motor and spindle is loose.

### How does the opto-coupler works:

On one side there is an infrared transmitter which sends out infrared light.  
On the other side there is an infrared receiver which receives this light.  
When the cap of the disk reaches the beam the opto-coupler is switched on  
and you can see this on the third (green) LED on the board.  
When the spindle turns the cap in the disk will move away from  
the beam and the opto-coupler will switch off.



**Please distribute these Newsletters to your sales and service people**

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