

Note:

POS1 = CP1

in the text procedure

### PROCEDURE FOR TUNING STP300/400 PUMP TO CONTROLLER

#### 1 Initial setup

i STP pump should be connected to its controller and switched off. A backing pump should also be connected.

ii Drop down the front panel of the controller. (undo 4 screws)

iii Use an oscilloscope to monitor the voltage between the test points **POS1** and **GND** on the Mz pcb

The Mz pcb is on the extreme right when viewed from the front.

iv Set the positions of the VR1 and VR2 potentiometers on Mz as shown



⊗ POS  
⊙ GND  
⊙ CP10

#### 2 Tuning adjustment

i Evacuate the STP pump with the rotary pump

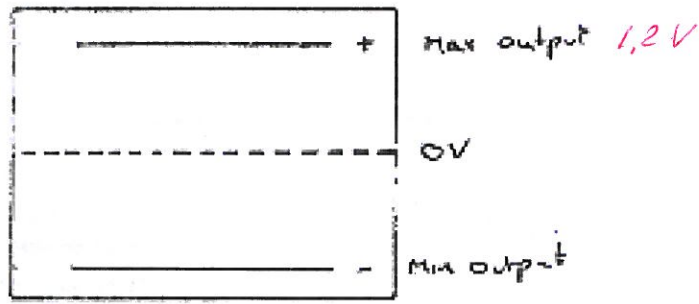
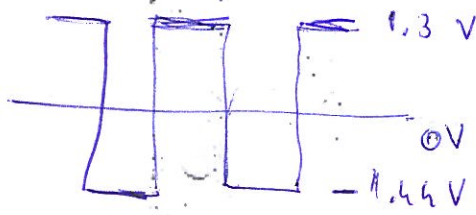
ii Turn on the POWER switch on the STP controller

iii Check that the oscilloscope signal is periodic across 0V

iv If the signal is not varying in step iii then gradually turn VR2 anticlockwise until the voltage does oscillate.

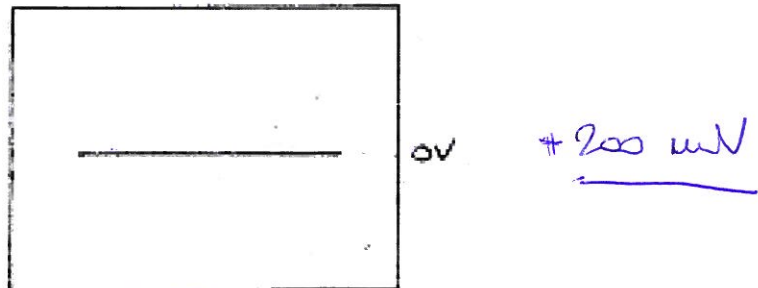
v Now adjust VR1 until the voltage signal oscillates symmetrically about 0V.

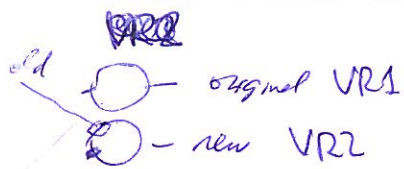
Mz 9V



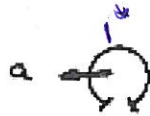
↑ signal up and down

vi Turn VR2 clockwise until the signal at **CP1** does not vary. (The rotor is now suspended in its centre position.)



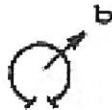


vii Note the position of VR2 and mark the position. (point a)

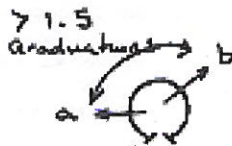


viii Switch controller off and on. Turn VR2 further clockwise until the limit that the output signal at CP1 oscillates.

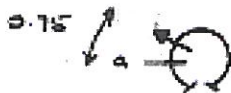
ix Note the position of VR2 and mark the position. (point b)



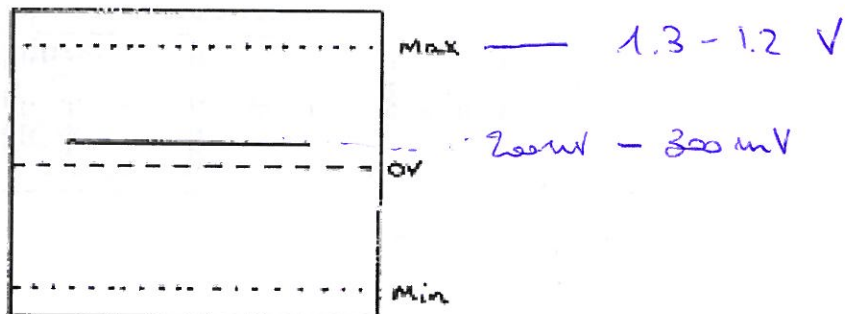
x Check that the spacing between points a and b is at least 1.5 graduations.



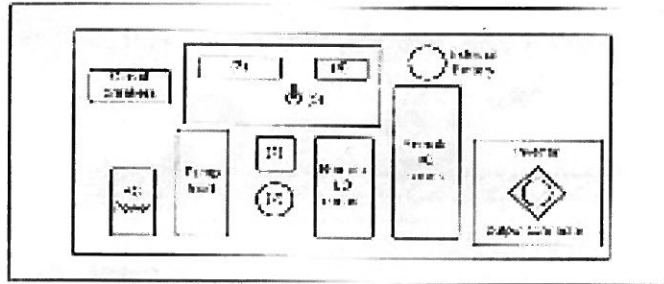
xi Turn VR2 to a point 0.75 graduations clockwise from point a



xii Switch power off. Wait 2 minutes and switch power back on. Check that the signal from CP1 is not oscillating. The signal should be as in the diagram.



## SCU 11600C/H11000C/H2000C Connections

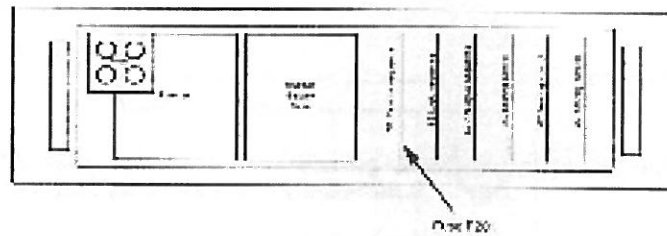


- (1) Emergency Stop
- (2) AC Power
- (3) Pump Start
- (4) Monitor LED
- (5) External Energy

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## SCU 300/400 Internal Layout



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## Warning Lights 1

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- ◆ Over Temperature
  - maximum temp of controller exceeded
  - maximum temp of pump exceeded
  - connection cable damaged
- ◆ Battery Operation
  - Failure of mains power
- ◆ Failure
  - Unserviceable or discharged battery
  - inverter fault - see below
  - emergency vent valve not closed

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## Warning Lights 2

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- ◆ Emergency
  - magnetic bearing problem
  - cable damaged
  - external shock or vibration
  - mis-ratched pump and controller
  - Fuse F351 on SL board blown - SCU 300401 only

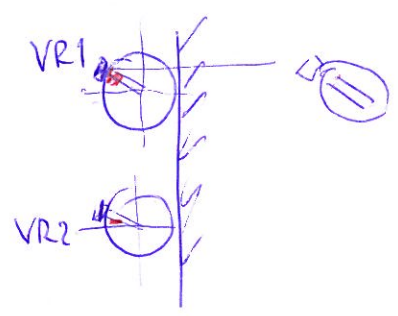
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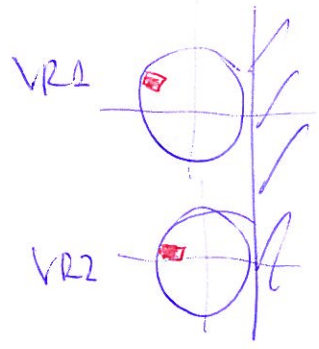
Old Position

19/12/2011



New position

20/12/2011



(same as before)