## 0.1 THE BBLR configuration

contact person at BI: Gerard Burtin: Tel: 74209, 75281, 160555

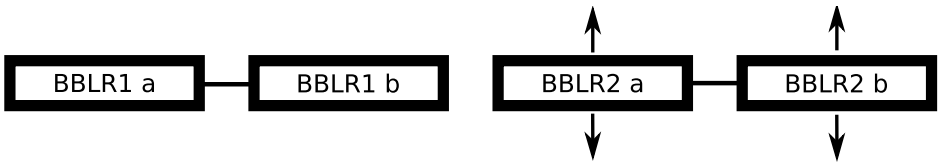



Figure 1: The wires in the SPS

- In the SPS there are 4 wires (each 60cm) installed at $\approx 1775m$.
- They are powered in pairs of two with a DC current of up to 300A. (BBLR1-a with BBLR1-b and BBLR2-a with BBLR2-b)
- The two pairs are separated by $\approx 3$ phaseadvance.
- BBLR2-a and BBLR2-b are independently movable from 19 to 24mm.
- The fixed ones have a wire in the vertical plane below the beam.
- The movable ones have three wires installed. A horizontal one, one at 45, and a vertical one (below the beam).

The wires are water cooled with a flow of approximately 1l/minute. This flow switch needs to be reset manually from within the tunnel.

## 0.2 BBLR infastructure

The BBLR infrastructure is located in Building 872 in BA5. it consists of:

- The power supply
- Inductors.
- An interlock
- A stepping motor controll device

### 0.2.1 The power supply

Get photos.

### 0.2.2 The inductors

In order to reduce the current ripple huge inductors are inserted get photos

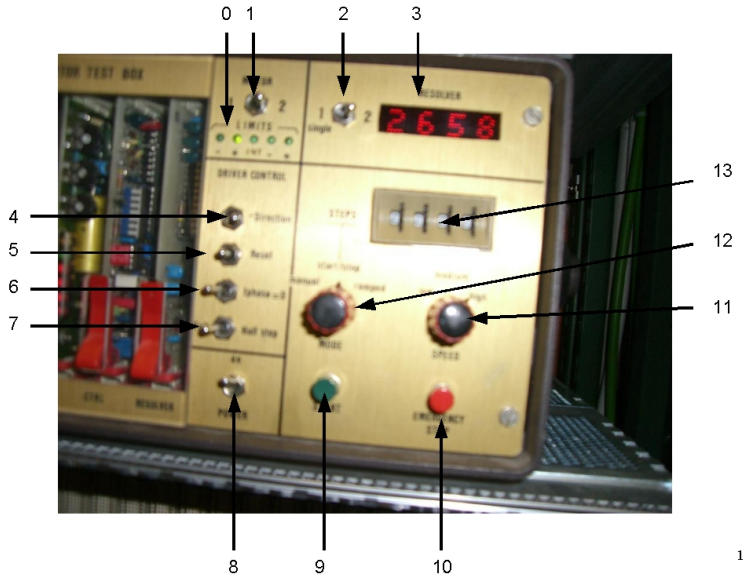
### 0.2.3 The Interlock

The cooling water flow in the wires is monitored by a flowmeter. If the flow drops, the power supply is interlocked. get photos

### 0.2.4 The Step motor controll device

Figure 2: The stepper motor controll

The movement of the two movable wires is controlled from room R-022 in building R-022. Both wires are moved independently from the same device. The movement is calculated in magnetic steps: 200 fullsteps are 1 turn =1mm movement.




**0** Limits: Led indicating if the wire reached the limits.

**1** Motor: Move wire 1 or wire 2

**2** Measure wire 1 or wire 2

**3** Display the position of the wire selected by 2.

**4** Direction: select the relative movement direction of the coming movements. + moved towards the beam (up)

**5** Reset

**6** Iphase=0

**7** Full/Half step: select if to move in half or full steps. Each full step corresponds to $5\mu m$. 200 fullsteps are 1 turn, 1 turn corresponds to 1mm.

**8** Power

**9** Move: execute movement

**10** Emergency stop

**11** Speed: speed of movement

**12** step mode

**13** Nr of steps: select hom many magnetic steps to do.

To move:

- Select which wire to move (1)
- Select full or half step (7)
- Select direction (4)
- Select how many steps (13)
- Execute movement (9)