Hall C User Howto

Experiment: HKS

Target Ladder Operation

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June 6, 2005

Abstract

This Howto outlines how to operate the Target ladder.

1 Operation

Login any PC of cdaql1 - cdaql6 with 'cvxwrks' and go to /home/cvxwrks/MEDM/HKS. Type **./sst-control.tcl** and see the window of **Sieve slits / Target control for E01-011**. You can operate sieve slits and the target ladder from this window. The + direction is moving to left on the camera (from the upstream). The bottom column is for the target ladder.

```
> 'STOP!'       stop running program.
> 'tgt1'-'tgt6' move to target#1-6. #1 is at most right side from the upstream.
> 'AllOut'      move the lader out completry to exchange the ladder.
> 'Out +10mm'   move out from beamline by +10 mm to fine tuning a position.
> 'In  -10mm'   move into beamlime by -10 mm.
> 'Out +1mm'    move out from beamline by +1 mm.
> 'In  -1mm'    move into beamlime by -1 mm.
> 'Out +0.5mm'  move out from beamline by +0.5 mm.
> 'In  -0.5mm'  move into beamlime by -0.5 mm.
> 'Go home'     move to HOME switch (+0.0) after power recycling.
```

To move,

1. Push the button of 'tgt1' $\sim$ 'tgt6' to move the ladder to the target 1 $\sim$ 6 position.
2. See a message 'Moving..' on a right-white window after a few seconds.
3. After a message of 'Stopping...' is shown up, Check the current position on the 'Position' window.
4. Look at the target on the camera and do a fine tuning with the bottom of '+-10', '+-1' and '+-0.5'.
5. Start run.

In a case of emergency,

- Push the button of 'STOP!' to stop running program.

2 Status/Error message

You can see status message in a column on a right hand side.

- 'Stopping'/'Moving' message for a motor status. DO NOT move again during 'Moving'
- '$\pm$ limit latched'/'$\pm$ limit UNlatched' for status of limit switches. MOVE to the $\pm$ direction in case of '$\mp$ limit UNlatched'.
- You may see ERROR message on a bottom of the window.

3 Positions list

These are values of target positions.

Table 1: Positions list for target. Unit is about 1 mm.

name	positions
Target 1	-150.8
Target 2	-171.1
Target 3	-191.5
Target 4	-211.8
Target 5	-232.1
Target 6	-252.3
Empty	35.0

4 Trouble shooting

- Often, the screen is hanged up. When the status doesn't change, close the screen and reopen it.
- After a power down and a recycling, we need to adjust the zero(0.0) position.

```
> Push the button of 'Go home'.
> In case of '+limit latched',
   push the button of '-10 mm' and 'Go home'
> In case of '-limit latched',
   push move +300 mm with the button of '+10 mm' and 'Go home'
```

- If the target does not move, check the second column for the current position on the screen. The background color is 'pink' in case of No fault and is 'red' in case of something fault. If the color is red, you need to cycle power for the controller which is located behind the 'Splitter' power supply. After you go into HAllC, check the controller box. In the right side, see LED lights of 'Disable/short'. If the LED is red, it means 'Amp fault'. Anyway, In the behind of the rack, there is a plug labeled 'TARGET'. Unplug and plug it for power cycling. For a test, push the bottom of '+1mm' and confirm the problem is solved. Do not forget the zero adjustment.

5 Motor, Controller and switches

The motor are mounted at side of a xyz-stage for the target ladder. The control box is located at a rack in front of SOS power supplies in Hall C as well as the control boxes for the slit boxes. These are operated from hcpc10402 (pc104 board PC) remotely. Current positions and status are read out and stored in EPICS and data.

Two limit switches for negative and positive positions, and home switch are placed on the sides.