Hall C User Howto

Experiment: HKS

Sieve Slit/Collimator Box Operation

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Abstract

This Howto outlines how to operate the HKS and Enge slit boxes.

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 top column is for the HKS sieve slit and the middle is for the Enge sieve slit.

```
> 'STOP!'       stop program,
> 'Go home'     move to HOME switch,
> 'Collimator'  move to collimeter,
> 'Sieve'       move to sieve slit,
> 'Empty'       move the box out from the beamline,
> 'Go up'       move up by +10 (+1) for HKS (Enge) S.S,
> 'Go dw'       move down by -10 (-1)  for HKS (Enge) S.S,
```

To move,

1. Push the button of 'Go home' for a zero-position adjustment at first, before moving.
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. Confirm 'Position' is '0'.
5. Push the button of 'Collimator'/'Sieve'/'Empty' to move the box to the 'Collimator'/'Sieve'/'Empty' position.
6. After a message of 'Stopping...' is shown up, Check the current position on the 'Position' window.
7. 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 positions from controllers.

Table 1: Positions list for slits.

name	Sieve	Collimator	Empty
HKS slit	153.8	354.4	-30
Enge slit	13.12	28.13	-8

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' and 'Go home'
> In case of '-limit latched',
   push move +50 with the button of '+10' and 'Go home'
```

- If the slit box 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 'HKS SS'/'ENGE SS'. 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 Brake

The motors are mounted at bottom sides of slit boxes. Two limit switches for negative and positive positions, and home switch are placed on the sides. The control boxes are located at a rack in front of SOS power supplies in Hall

C. These are operated from hcpc10402 (pc104 board PC) remotely. Current positions and status are read out and stored in EPICS and data.

Since the HKS sieve slit is quite heavy, a brake is used in case of something accident like power down. The brake ON and OFF is done automatically in the running program.

The $+(-)$ limit switch is located at an edge in the $+(-)$ direction. When the $+(-)$ limit switch is latched, you have to move a box to the $-(+)$ direction only.

The 'Go home' direction is always '$-$'. Therefore, when the $-$ limit switch is latched, move by $+50$ $(+15)$ for HKS-S.S (Enge-S.S) and then 'Go home again. '