MC2 Pinhole Collimator Status

Gordon Koizumi

18 September 2020

At the end of this text is an exchange of e-mails that summarizes the status of the MC2 pinhole collimator that need work. I’ll be contacting Cons Gattuso to see where we are with the request to get the pinhole collimator work. Until the pinhole collimator can be made to work reasonably and reliably, most of the other issues related to the pinhole will have to wait unless we can work around the current problems with it.

 I need to get information on things like the limits of travel of the pin hole transverse to the beam line both vertically and horizontally relative to the what is believed to be the central trajectory of the beam through the pin hole. I also want to know what is that alignment has for the central trajectory and what those readings for the central trajectory we would see on Acnet. I also need to know how much the pin hole can be cocked both vertically and horizontally relative to the beam before the limits of the drive prevent further cocking, whether the calibration of the movement seen by Acnet corresponds to the actual distances moved, if there are backlash issues with the pinhole so it should only be moved in one direction and if so from what limits and if those limits are mechanical or switches and if the settings set by Acnet are reproduceable. I would also like to get a better number for the length of the part of the metal that has the pin hole itself which I was only able to get a rough measure.

I've had the MCR operators exercise the pin hole collimators recently so I know at the drives seem work at some level but with difficulties. I do not know what are the "do's and don't's" when I move the pin hole from a mechanical standpoint

The Acnet names for the pin hole are: F:MC2PUH, F:MC2PUV, F:MC2PDH and F:MC2PDV respectively for the upstream horizontal and vertical, and downstream horizontal and vertical.

t**From:**Adam C. Watts <awatts@fnal.gov>  
**Sent:**Friday, September 18, 2020 1:18 PM  
**To:**Gordon M Koizumi <koizumi@fnal.gov>  
**Subject:**Re: MC2 Pinhole

Hi Gordon,

I made a request with the Controls Department to have Mike Coburn overhaul the system, and it's even in the worklist as a shutdown job. I don't think there's been any movement whatsoever on it. Cons was certainly aware of the job, so maybe he can push for us. We may need to wait until the MI collimator job is finished, since that's a motion control job that would involve Mike as well.

I have no documentation whatsoever about this pinhole collimator, nor could I find any.

Adam

**From:**Gordon M Koizumi <koizumi@fnal.gov>  
**Sent:**Friday, September 18, 2020 12:44 PM  
**To:**Adam C. Watts <awatts@fnal.gov>  
**Subject:**MC2 Pinhole

Hi Adam,

I see from entries you made on 12 March 2020 that you were trying to do some MC2 pinhole studies. Among the things you mention is that the horizontal is not functional for the pinhole. I only did a quick e-log search but I don't see any mention about anyone working on the drives following that entry. Was anything done to try to get the pin hole to work better? I had the operators try moving the pinhole since then to see if they could move it (at least give it commands from the MCR) and the pin hole seems to move but it seems to have difficulties. I think I need to send in some requests to get it looked at if you haven't done so already. Also, do you have any documentation on the pin hole except those in the e-log. I can't even find a drawing for it or other details.

Gordon