

OBSOLETE - How to DPS with Gas Jets

DO NOT FOLLOW THIS PAGE! - Go here instead: [How to use the gas jets!](#)

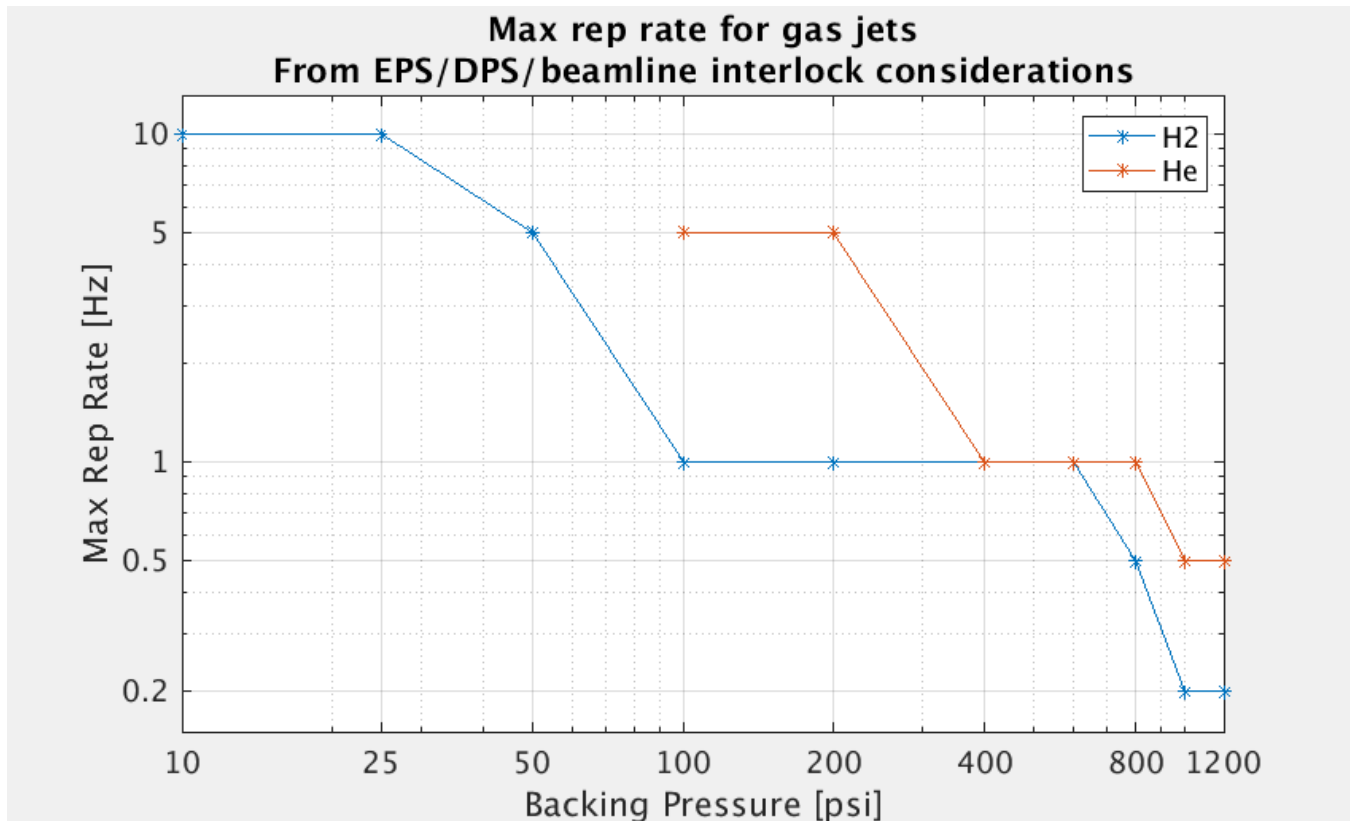
Updated for all DPS pumps being installed, but no apertures except for the holey upstream window.

Gas jet max rep rate (updated 7/15/2022):

THIS IS NOT CORRECT. NEED TO REPLACE WITH NEW DATA WITH NEW GAS JET WIDTH

There are various ways to define the max gas jet, but it is some combinations of keeping the PB pressure low, and keeping the pressures low at either end of the DPS. If the pressure in US4 stays in the low $1\text{e-}10$ scale, then the pressure rise on 3073 (TCAV) is less than a $1\text{e-}9$ Torr.

The table below is an estimate of the max rep rate that does not do bad things, i.e. trip the EPS, trip off the DPS, or trip the beamline valves.



Note - this plot does not guarantee happiness. Things may still trip off, and this does not take into account the PB background pressure, this can be considered separately from the below data.

See more info here:

H2 gas - <http://physics-elog.slac.stanford.edu/facetelog/show.jsp?dir=/2022/28/12.07&pos=2022-07-12T22:12:49>

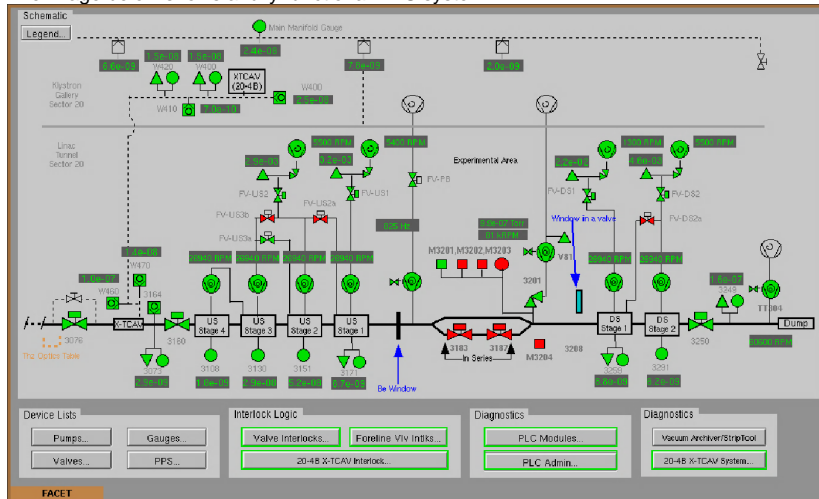
He gas -

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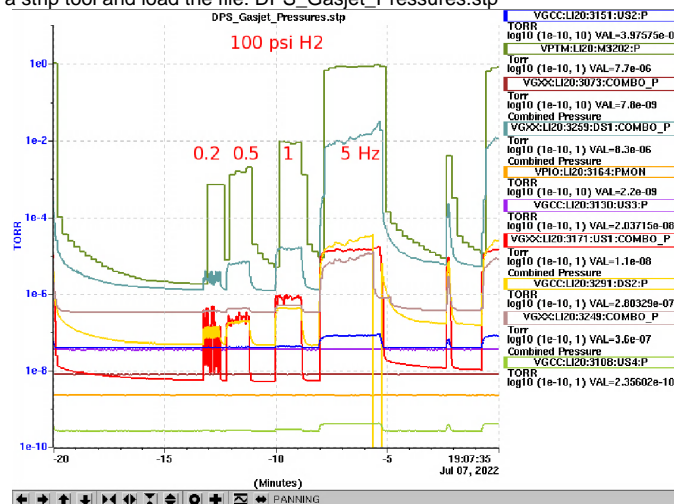
How to set up DPS:

1. Follow the gas jet how to page to get the gas jets ready: [OBSOLETE - How to use gas jet](#)
 - a. Use the plot above to chose the max backing pressure and rep rate
2. Ensure both US-DPS and DS-DPS pumps are running and operating as normal. Also check VPIO:LI20:3164 to ensure the ion pump is on.

- Open the LI20 Vacuum panel, and then open the "DPS full schematic..." panel from the button near center of the page.
- The image below shows a fully functional DPS system:



- Start a strip tool and load the file: DPS_Gasjet_Pressures.stp



- Fire the gas jet once and watch the strip chart.
 - VGCC:LI20:3108:US4 should stay below 1e-9 Torr
 - VGCC:LI20:3291:DS2 should stay below 1e-5 Torr
 - VGCC:LI20:3073 should see minimal change and stay below 5e-8 Torr
- Fire the gas jet for a minute or so and watch the strip chart.
- If all continues to look good then you are good to fire at will.

Things to watch for:

- If the lone cold cathode gauges shut themselves off, then turn them back on. If pressure reads above 1e-3 Torr then turn it back off.
- If a CC gauges on 3171 or 3259 are cycling on and off, then force them to stay off (or on if it is in a safe pressure zone)
 - Change the control mode to Off, then turn CC HV off.
- Watch the PB and oven turbo temperatures
- Watch CC3073 to see if it ever changes.
- Watch if the DPS foreline valves trip in and the turbos shut off. If this happens **DO NOT TRY TO FIX** unless you are Doug, or Christine, or Ryan.

How to stop everything at the end:

- Stop firing the jets and follow [OBSOLETE - How to use gas jet](#) to shutdown and depressurize the gas jet system.
- Remove any changes to interlocks that you made.
- Reset any cold cathode gauge "control modes" that were changed back to auto.
- Call ACR and tell them everything has been reset.

In case of catastrophe:

You can always make art

