These are the precautions while using the Heidelberg. Please make sure to read them and follow them so that you do not damage the tool.

1) Precautions – Substrates

1.1 Make sure that all sides of the substrates are greater than 5mm for pneumatic autofocus. Please do not use substrates that do not meet this criterion. YOU COULD CRASH THE OBJECTIVE IF YOU DO NOT FOLLOW THIS CRITERION. Heidelberg1 has pneumatic autofocus only. Hiedelberg2 has optical autofocus, if you have a substrate smaller than 5mm, you must use optical autofocus in Heidelberg2.

1.2 If you have a substrate with a side between 5mm-12mm, you need to use "small substrate" protocol/SOP. Please contact Swaroop Kommera if you have any questions regarding this protocol.

1.3 Please make sure that the flatness of the top surface (i.e., the surface you are exposing) is less than 50um. This includes wafer bow, total thickness variation of the substrate (TTV), Z height of pre-existing structures on your substrate, photo-resist edge bead on the top surface etc.

1.4 Please make sure the backside of your substrate is absolutely clean and does not have any material that can be transferred onto the chuck (for example, photoresist, uncured polyimide etc). When you spin photo-resist, you will get a front-side edge bead and a back-side edge bead. You want to make sure that the back-side edge bead is removed. If you are spinning thicker photo-resist, then, it is possible that the front-side edge bead makes the front-side surface have a flatness >50um. In that case, please remove frontside edge bead as well

1.5 Please make sure that the substrates are 100um or greater in thickness. If you have a flexible substrate, please contact Swaroop Kommera to evaluate it

1.6 Please make sure your resist is does not interfere with the pneumatic autofocus. This is applicable if your resist is too soft. Normal photoresists after pre-exposure bake are usually OK to be used

1.7 Please do not use kapton tape or other tapes to attach your substrates to another substrate as the tape may be too thick and could damage the objective. If you have special situations like that, please contact Swaroop Kommera

1.8 If you have a transparent substrate and would like to use optical autofocus (for example, if the substrate size is smaller than 5mm), please contact Swaroop Kommera before running your substrate

2) Precautions – while the tool is in operation

2.1 Please make sure that the substrate is underneath the objective EVERY TIME you load the substrate. Please check the protocol for "Small" substrates. "Small" substrates use overhead camera for making sure the substrate is under the objective. For "Standard" substrates, the user has to verify that the substrate is underneath the objective visually.

2.2 Please make sure to remove the alignment aid after your substrate is aligned on the chuck.

2.3 Please make sure to check the vacuum holds your substrate by trying to move your substrate using a tweezer.

2.4 Please do not touch the mirrors used for interferometers and the aperture.
2.5 Please make sure not to drop your small substrate in the slots in the chuck in Heidelberg
2.6 If the stage freezes during the run, please do not try to retrieve your substrate from underneath the lens. Please contact Swaroop Kommera for substrate retrieval.
2.7 Please be careful not to put anything in the way of the window coming up, after pressing the window button. There is no obstruction sensor in the window.