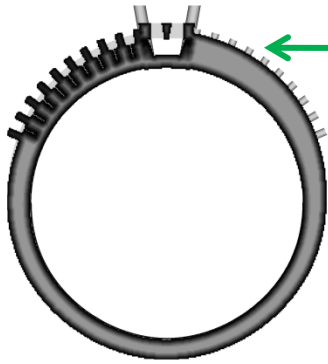
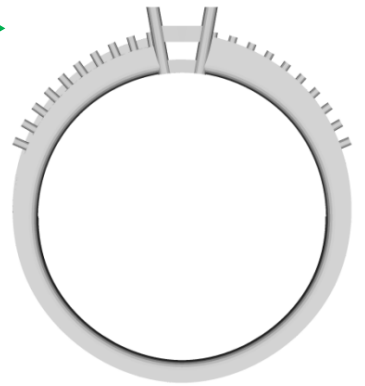


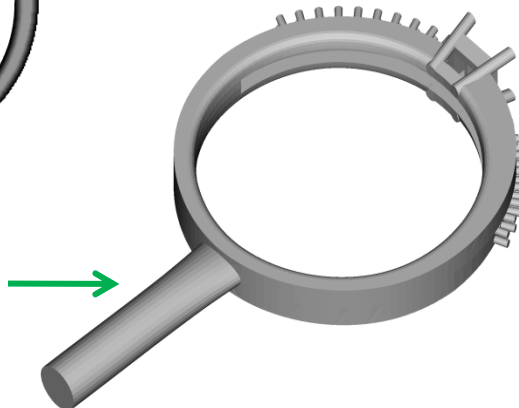
The silver ring of overall size 25 mm x 25 mm x 5 mm is produced by precision investment casting process. While finishing the top side of the ring, micro porosity was observed, leading to rejections.



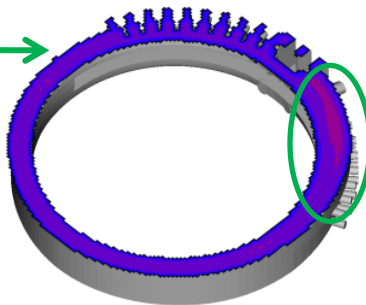
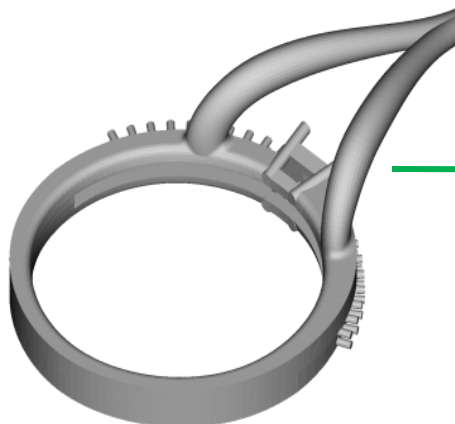
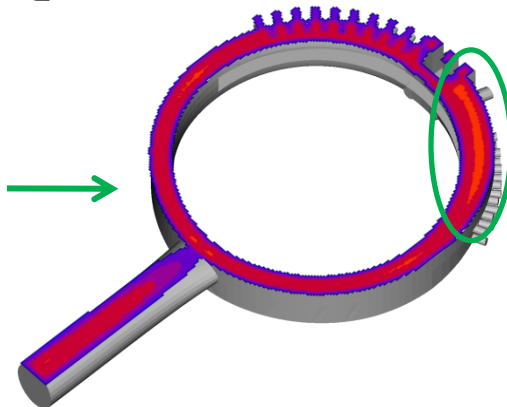
Thickness analysis of the 3D CAD model of the ring showed thick region on the right side of the top face.



The current methoding of the ring casting included feeding by a single round gate connected to sprue.



Solidification simulation of current methoding indicates an hot zone region on the side opposite to the gate. The thin side wall solidifies early and cuts off the feed metal to the hot zone, leading to shrinkage defect observed in the actual casting.



The gating design was revised by providing two gates on the top face fed by a single sprue, promoting directional solidification, proved by simulation.