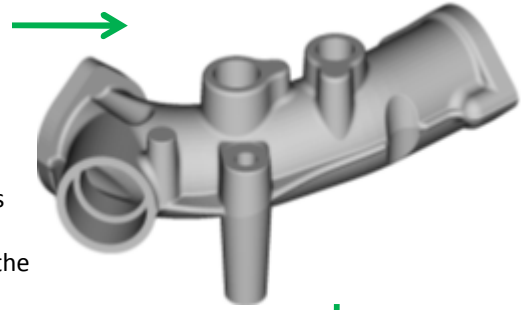


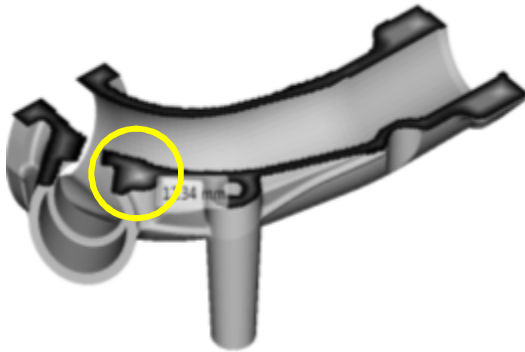
Coolant Pipe

Aluminum Alloy, G.D.C.

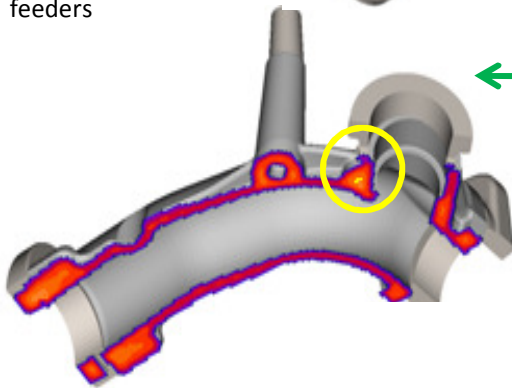
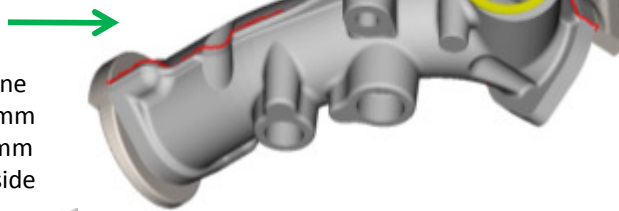
The aluminum coolant pipe casting of overall size 340 mm x 180 mm x 150 mm weighing 3 kg was produced by gravity die casting. After fettling and machining the bottom faces, it exhibited micro shrinkage porosity in two of the bosses.



Thickness analysis shows mass concentration in the bottom portion, corresponding to an inscribed sphere diameter of 26 mm.



The current methoding of the casting included one top feeder of 35 mm diameter and 40 mm height and three side feeders



Simulation of current methoding and analysis of solidification contour clearly indicates an isolated hot spot region which exactly matches the shrinkage defect found in actual casting.



The methoding of the casting was revised by providing an insulating sleeve to the top feeder and chills or cooling under the bosses. Solidification analysis of revised methoding shows that the defect is eliminated.

