#1300: solidThinking Inspire – If Frequency constraint not achieved

Product: solidThinking Inspire
Product Version: solidThinking Inspire 2017.0 or above

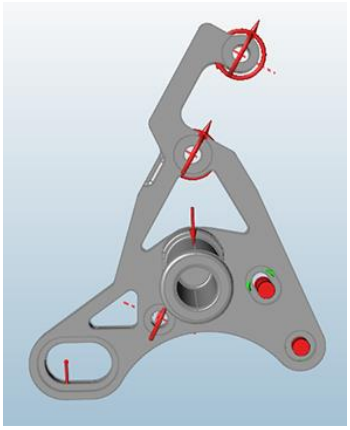
Topic Objective

If Frequency constraint not achieved in solidThinking Inspire.

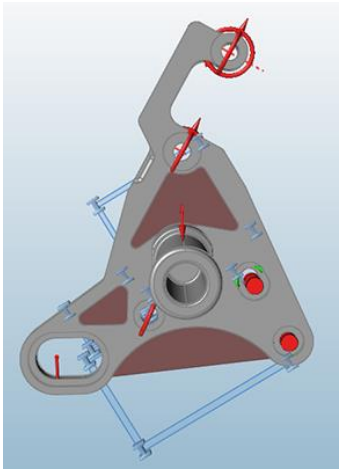
Topic Details

What If I'm Not Achieving My Frequency Constraint?

If your optimized shape is not achieving your desired frequency constraint, you may need to add material to your part if running a topology optimization. In the example below, the final part as designed was not achieving the required minimum frequency of 500 Hz.



As a result, it was necessary to add three design spaces and apply an extrusion shape control so that additional material could be added to meet the frequency constraint.



Then an optimization was run, with the objective to minimize mass. Only a frequency constraint (no stress or displacement constraints) were applied. The image below shows the resulting shape, with the additional material needed to meet the frequency constraint displayed in yellow.