

The Sites Medical CoCr Stabilization Process

Sites Medical Research and Development

Introduction

The Sites Medical CoCr Stabilization Process is a proprietary process that reduces the dimensional movement of CoCr components during manufacturing. Implementation of this process as part of CoCr component fabrication results in reduced manufacturing costs and lead times.

CoCr Stabilization Process

The CoCr Stabilization Process is a trade secret recipe developed by Sites Medical to reduce CoCr part movement during manufacturing. Components undergoing the CoCr Stabilization Process are only exposed to manufacturing materials common to CoCr machining, finishing, and thermal processing. Likewise, CoCr components are not exposed to temperatures that exceed typical thermal treatments for CoCr, such as those needed for HIP heat treat and stress relieving cycles. Typical parts that could benefit from the CoCr Stabilization Process include femoral knee castings (Figure 1).

Figure 1:

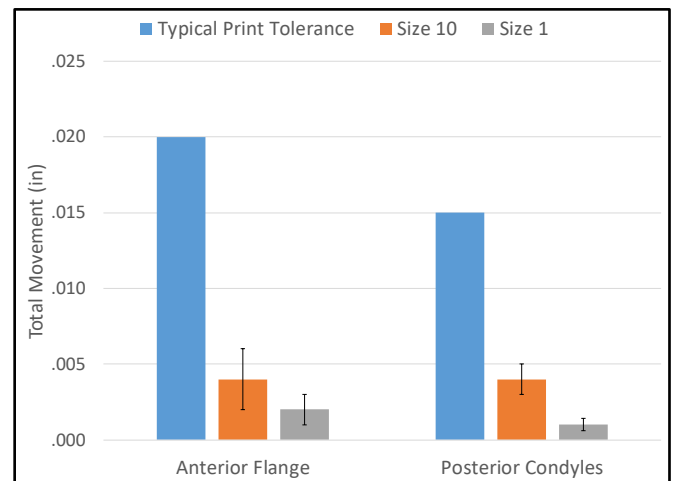


CoCr femoral knee castings

The value derived from the CoCr Stabilization Process arises from the reduction of dimensional movement seen during part processing. For example, measured movement

of the anterior and posterior flanges of size 1 and 10 femoral components that underwent the CoCr Stabilization Process was a fraction of the typical print tolerance (Figure 2). The reduced movement of such parts reduces manufacturing costs and lead times. In terms of cost, the CoCr Stabilization Process can eliminate the need for processing steps such as bending and penetrant inspection. It also facilitates meaningful scrap reduction because the potential for part movement outside the allowable tolerance band is significantly reduced. Likewise, the CoCr Stabilization Process reduces lead time by eliminating process steps and providing for consistent manufacturing flow.

Figure 2:



Total CoCr femoral knee movement, casting thru final polish. This data includes results obtained from multiple raw material suppliers and machining vendors. (The error bars represent standard deviation.)

Conclusions

Sites Medical has developed a proprietary CoCr Stabilization Process that results in reduced movement of CoCr components during manufacturing. Reduced movement results in lower costs through eliminating process steps, reducing scrap, and reducing manufacturing lead times. Finally, because components are not exposed to materials or temperatures that are uncommon during manufacture of CoCr products, the Sites Medical CoCr Stabilization Process is easy and quick to implement.