



MORE POWERFUL. MORE FORGIVING.

INFUSING SOFT FEEL INTO FAST-FACED IRONS

ROGUE, ROGUE PRO & ROGUE X

Club designers have long been confronted with a particular “can’t-have-your-cake-and-eat-it-too” conundrum in regard to fast-faced, distance-enhancing irons. For the face to be fast it has to be thin, yet a thin face is prone to excessive vibration at impact, resulting in harsh sound and feel. You can quiet or minimize the vibration by positioning a soft material behind and in contact with the face, but that slows the face down, stealing distance.

“The qualities of really long distance and really great feel have never co-existed in an iron, in our opinion,” said Dr. Alan Hocknell, head of Callaway R&D. “We wanted to solve that problem with our new Rogue iron series.”

The iron development team embarked on a broad search for a compound that could effectively quiet the face’s vibration without interfering with the speed at which the face flexes – if such a material existed. That led to the discovery of a specially formulated urethane material infused with thousands of miniscule “microspheres.” Developed by 3M, the microspheres flatten under pressure, allowing the urethane to behave in a porous manner, allowing it to compress and “give” with relative ease. That quality allowed the material to both quiet unwanted vibration without slowing the face.

Finding a material with promise was the first step. The next was determining how to shape it and position it within each iron’s head to provide maximum benefit. That led to a lot of experimentation and computer modeling.

“Finding the right material is part of the process. The other part was determining the precise shape that would most effectively quiet vibration without intruding on the action of the face, or negatively affecting performance in any other way,” said Hocknell.

The team arrived at a unique shape that’s long and slender and positioned within the head, covering the lower 1/5 (approximately) of the face on the inner side, and spanning the length of the face.



Because the urethane is lighter than the steel area it supplants, it had to be balanced with a piece of MIM’d tungsten in order to achieve the proper weight and CG location necessary to the iron’s performance goals. MIM stands for “metal-injected molding,” a process that allows us to form highly dense alloys into sophisticated shapes.

(MIM’ing is a process of creating an exceedingly dense and heavy part). Again, arriving at the size, shape, weight and position of the tungsten, in relation to the urethane, was of utmost important and took a great deal of time and testing.

“The result is that on the inside, the internal workings of our new Rogue irons is unlike anything we’ve ever offered,” said Hocknell, “and what’s on the inside is what drives their unique combination of long distance and soft feel.”

