

Rogue Irons

Dr Alan Hocknell, Senior Vice President of Research and Development at Callaway Golf, discusses the four-model family that make up the new Rogue Irons...

What is the Rogue Irons story?

The new Rogue Iron family embodies the Rogue philosophy to break away from established protocols to develop new ways of extracting the maximum performance from a golf club.

Rogue Irons feature a premium multi-material construction to combine new technologies with improvements to existing technologies and promote the best combination of distance, accuracy and playability ever in a Callaway Iron.

The family consists of four models - Rogue, Rogue Pro, Rogue X and Rogue W - each featuring a suite of innovative core technologies that work together to heighten performance.

Headline technologies include a 360 Face Cup and VFT (Variable Face Thickness) Technology, Internal Standing Wave Technology with MIM tungsten weighting to control ball flight, and the all-new Urethane Microsphere Technology to perfectly manage impact sound and feel.

Tell us more about the new Microsphere Technology?

Thin, fast, high-COR iron faces promote fast ball speed, yet they are subject to a significant amount of vibration at impact, resulting in a harsh, 'clicky' sound and feel. Inserting a layer of soft material in the head has proven effective at absorbing vibration to improve feel, but with the unwanted side effect of slowing the face. We solved this problem with a new urethane material infused with thousands of tiny air pockets called microspheres, which create porosity – I've nicknamed it the 'Swiss cheese effect'!

At impact, the microspheres change shape and flatten to create room for the urethane to flex to prevent slowing the face; meanwhile the urethane does its job of dampening the unwanted vibration that leads to poor sound and feel.

How does Internal Standing Wave Technology work?

The tungsten-infused Internal Standing Wave in Rogue Irons helps to pinpoint CG location with even more precision to promote optimum launch and spin in each head, and assists in helping to control vibration to promote a unique feel.

The Internal Standing Wave in each iron head consists of a specially shaped piece of MIM'ed tungsten. MIM'ed stands for Metal-Injected Moulding, an injecting-moulding process that uses finely powdered heavy metal to create intricately shaped parts with tremendous precision.

This allows us to position a large amount of weight in a small space and precisely position the CG location differently in each individual Rogue Iron - extremely low in the long-irons to promote easier launch and high, long flight; and progressively

higher as loft increases to promote a lower flight in the short-irons for added control; and a balance of easy launch and control in the middle-irons.

What is different about the new Face Cup?

Rogue Irons combine our renowned 360 Face Cup technology with Variable Face Thickness (VFT) technology to dramatically expand the portion of the face that delivers fast ball speed, giving you more distance on off-centre hits.

The Rogue Face Cup employs a shallow, flexible rim around the perimeter of the face that flexes and releases at impact to increase ball speed. The VFT pattern is thinner than previous faces in the area low on the face and this influences how the face itself flexes to promote more ball speed on off-centre hits.

The combination of these two technologies promotes more ball speed and distance.

What is the design concept of Rogue X Irons?

We decided we would take the opportunity created by the development of the new iron technologies in the Standard Iron to stretch our thinking.

Our goal was to create a very different set that was playable, and remarkable, and we have achieved something special with Rogue X.

We placed all the key performance ingredients into an oversized head with a longer blade, wider sole, slightly more offset, and were able to push the CG deeper and further back from the face.

We coupled this head to a longer (and lighter) shaft configuration with stronger loft and discovered that although Rogue X still launched the ball at the same angle as the Standard model, we were generating significantly less spin, and a lot more ball speed.

Rogue X offers a genuinely new technology recipe that has been configured to deliver distance in a way that has never been in a Callaway Iron before.

Sitting the clubs behind the ball, the lofts are strong and you could be forgiven for thinking you may struggle to get the ball airborne, especially in the longer irons, but that is definitely not the case, the performance is quite incredible.

Rogue X will not be for everyone. Some people may feel they lose overall trajectory height and will be better suited to the Standard model, but through extensive player testing we have discovered there is still a substantial number of golfers out there that will benefit from Rogue X's distance-enhancing performance.

How do they compare to the Standard Rogue Irons?

We undertook a lot of 7-iron comparative testing in a hitting bay environment and, on average, saw a seven-yard increase in distance with the X.

This distance gain was consistent throughout the set, so it was very noticeable. We also discovered that if golfers struggled with the longer Irons, bringing in Rogue X Hybrids continued the distance-gaining trend for the majority of players.

There has been a huge amount of thought put into the correlation between the shaft length, loft, and progression in Rogue X, and when golfers look at the specifications and hit the product, they will immediately see how different they really are.

Headline the Pro Model and W models. What's different?

Both enjoy the full complement of Rogue technologies. However, the Pro specifically caters to the preferences of better players with a compact head, thin top line, thin sole, shallow cavity and minimal offset, to increase workability, trajectory control and impact feedback.

It also features slightly weaker lofts than Rogue Standard, something the more accomplished player prefers.

The W model enjoys the benefits of an ultra-lightweight design with wide sole, large cavity and low CG to help slower swingers build more head speed and launch the ball higher for longer carry and more distance.