

Epic & Epic Pro Irons

Callaway's head of R&D, Dr. Alan Hocknell, is a passionate golfer. A few years ago CEO Chip Brewer instructed him to create his "dream iron" – the iron Alan would want to put in his own bag. Chip imposed no limit on time, materials or cost. More than 70 people were enlisted to help determine what was needed and how to create it. Engineers, metallurgists, industrial designers, Tour pros, professional club fitters; all took part in conceptualizing, developing, refining, and testing.

Alan set out to create a player's shaped head that for the first time incorporated all of Callaway's best performance-enhancing technologies – Face Cup for increased ball speed; Standing Wave for easy launch; Exo-cage body structure for increased forgiveness. The result would combine the sleek appearance, feel and workability of a player's iron with the distance and forgiveness of a game-improvement iron.

How did they succeed? Like the Epic driver, these irons required several "firsts" to come together to create a new head design that offers the best performance package of any iron in Callaway history.

Every Element and Dimension Assessed and Improved

Every element and dimension of an iron was assessed – overall shape, face size, face thickness, cavity shape, sole, topline, CG location, hosel, shaft. Impact dynamics, including the synergies of how each part supported or hindered each other, were painstakingly scrutinized. All to eke out a superior and more pleasing combination of distance, control, forgiveness and feel.

New Exo-Cage Head Construction = More Irons at Maximum COR

We made equally significant improvements to the clubhead's Exo-Cage construction. (This is the second Callaway iron to employ Exo-Cage. The first, Big Bertha OS, was the only iron to earn five stars in every category of the 2017 Golf Digest Hot List.) In Epic, we incorporated a new, entirely hollow hosel that saves a full 20 grams that's reassigned within the head to raise MOI for enhanced stability.

We also increased the body's vertical stiffness to allow the face to take on more impact load. The term for this is "energy lensing." In Epic irons, energy lensing raises the efficiency level of the face to promote faster ball speed and distance. That, combined with face thicknesses finished to a tolerance of 1/1000th of an inch, helped us elevate the COR right up close to USGA limit of .830 COR in the 3-iron through 7-iron. It's the first time we've had so many irons in a single set bump up against the COR limit.

Better 360 Face Cup

Every Epic Pro iron features an ultra-thin, ultra-fast face that's turbocharged by an improved 360 Face Cup architecture that reduces the rim thickness to 1mm at its thinnest point. That allows the rim to flex more readily, consistently and at greater speed. That increases ball speed for more distance, and give you more ball speed on impact toward the toe, toward the heel, high up and especially down low – the most common mis-hit. The result is more distance on nearly every swing. This is the first time Callaway has incorporated 360 Face Cup technology into every iron in a Players' iron set.

Fundamental Changes to Internal Standing Wave

Inside the head, fundamental changes were made to Callaway's Internal Standing Wave technology, a weighting method that affects launch, spin and feel. In simple terms, the ISW is a flat, asymmetrically shaped piece of metal that helps pinpoint CG location to promote optimum launch and spin in each head, and helps control vibration to promote unique feel. In this case, ISW consists of a specially shaped piece of MIM'ed tungsten. MIM'ed stands for Metal-Injected Molding, an injecting-molding process that uses finely powdered metal to create intricately shaped parts with tremendous precision. Parts spend up to 41 hours of furnace-time at temperatures up to 2500 degrees Fahrenheit to fuse the powder into a solid piece.

It's the first time we've ever incorporated MIM'ed weight in a Callaway iron, and it allows us to position a large amount of weight in a small space. MIM'ed tungsten allows a new combination of size, shape and weight for the ISW, allowing us to precisely position the CG location differently in each individual 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.

Each clubhead component is precision-milled and robotically laser-welded for maximum integrity and cohesion between parts. It takes 65 days and more than 200 processes, steps and inspections are required to create each head.

Epic Irons

Dr. Hocknell and his team took the advancements and improvements that make the performance of Epic Pro special and applied them to a game-improvement iron, called Epic. Epic irons share all the same material and technological advancements as the Epic Pro irons, but in a larger head with a slightly thicker topline and sole and more offset -- qualities that, compared to Epic Pro, make it even more forgiving and easier to launch while promoting high, straight flight.

Epic Hybrids

As with the Epic Pro and Epic irons, Callaway's R&D team went deeper than ever before to elevate hybrid performance with the new Epic hybrid. This is the first Callaway hybrid to employ our triaxial carbon composite crown technology, the same crown material used to help fuel the groundbreaking performance of the Epic drivers and fairway woods. By itself, the triaxial crown in these hybrids helped the door to a new level of distance and playability.

First Triaxial Carbon Crown in a Hybrid

Triaxial carbon is 65% lighter than titanium, creating a crown that weighs an astonishing 5 grams. That creates a tremendous amount of discretionary weight that's been redirected into our advanced Internal Standing Wave technology. The key ISW component is a 35-gram weight consisting of MIM'ed tungsten. Tungsten's heavy weight (1.8 x heavier than steel) allows us to concentrate the weight into a smaller space. The MIM process allows us to shape the weight into the precise form necessary to better optimize CG location to promote the coveted high-launch / low-spin combination that promotes maximum distance.

Highest Performing Hybrid Clubface

Epic hybrids also employ the highest performing clubface we've ever installed in a hybrid. Forged of 455 steel, it's ultra-thin and ultra-fast, pushing the COR measurement right up to the USGA limit for speed. Face performance is further enhanced by a new generation of our Hyper Speed Face Cup technology, with a thinner rim and more flexible hinge that promotes faster ball speed across the face, including mis-hits. That helps players net more average distance from one swing to the next.

Robust Frame Maximizes MOI

The clubhead's frame consists of high-grade steel that provides a robust structure for the crown and face while concentrating weight in key areas of the perimeter to maximize MOI and forgiveness. The low-friction sole with dual raised rails is designed to glide smoothly across turf and through rough to promote solid contact from a multitude of lies.

Precision-Milled Parts / Robotic Welding

The face and frame are precision-milled; each clubhead component is honed to the tightest tolerance we've ever achieved; and every part is robotically laser welded for exact fit and maximum integrity. That's critical to allowing each key performance technology to perform at the highest level, allowing Epic hybrids to deliver our finest combination of distance, control, easy launch, forgiveness and versatility.