

HOW CALLAWAY INCORPORATED SERIOUS PERFORMANCE TECHNOLOGY INTO A PLAYERS IRON

Of all types of irons, the model that has evolved the least is the one favored most by elite ball strikers: the forged Players blade, defined by their small, compact shape; narrow topline and sole; sharp leading edge and minimal degree of offset. Players irons are renowned for their simple beauty, great feel and keen workability, yet their compact size and notorious lack of forgiveness requires exceptionally precise ball-striking. Arguably the biggest performance advancement in this iron category to date has been the incorporation of a semi-shallow cavity in the back, providing moderate perimeter-weighting a small increase in mis-hit forgiveness. Beyond that, little has been done to improve performance.

There are three key reasons why. **1)** The smaller head size means less space to manipulate the material necessary to incorporate performance-changing features, especially internally. **2)** Forged steel is softer and weaker than cast steel, and performance-enhancing features typically cause stress in certain areas of the head that forged steel can't withstand. **3)** Performance-enhancing features often affect sound and feel in adverse ways that better players reject.

New Head Construction Allows More Performance-enhancing Technology

Callaway engineers overcame all three problems to create the Apex Pro 19, the first iron in this category with serious performance-enhancing technology. It starts with the basic head construction. A Players iron-head typically consists of a single part forged from a block of soft steel. Integrity has always suffered when multi-piece forged construction was attempted. For example, previous Callaway attempts at creating the face separately from the body, in order to incorporate Face Cup technology, didn't work because the topline was prone to failure. The problem was solved by replacing the medallion that usually resides in the back of the cavity with a distinctive support resembling an upside down Y, buttressing the center region of the topline to prevent bending or breakage.

That paved the way for a large-scale influx of performance technology by Callaway engineers. Creating the face separately from the body allowed us to incorporate our proven Face Cup technology in the long- and middle-irons. Face Cup is characterized by a thin rim on the inner side of the face that flexes and releases at impact, adding ball speed on both center and off-center impacts to promote more distance on nearly every swing.

It also unlocked access to the interior of the head, allowing Callaway to install weight in the form of tungsten-loaded materials low in the head, which shift the CG downward in the long- and middle-iron. That makes these clubs easier to launch and promotes a higher, longer carrying flight, which promotes more distance. In the shorter irons, a face-plate is employed instead of Face Cup, shifting the CG upward to help the player flight shots lower with more spin, making it easier to attack the pin with accuracy and control.

Callaway engineers also gave Apex Pro 19 Spin Control VFT (Variable Face Thickness) technology, wherein the face thickness is thinner and thicker in strategic areas to promote less spin off the long-irons for more distance and more spin off the short-irons for increased control.

The final piece to the puzzle was dialing in agreeable sound and feel. The forged, single-piece, soft-steel construction of a Players iron yields a soft feel and low-pitched "thunk" at impact that most better players insist on. The answer lay in Callaway's urethane microsphere technology. A small amount of urethane, infused with hundreds of thousands of microspheres, is injected through the sole into a small area between the back of the clubface and the body. The microspheres "give" at impact, softening feel and sound, without slowing the speed of the face. The result is a beautiful, soft-yet-solid sound and feel that met or exceeded the expectations of our broad panel of testers, including Tour pros.

The First of its Kind

The Apex Pro 19 is the first club of its kind – an elite players iron incorporating serious technologies that promote faster ball speed, easier launch and better feel. Doing that while maintaining the size, shape and integrity of the clubhead is represents a leap forward in club design. Although the audience for this type of iron is relatively small, the size of the accomplishment in producing the Apex Pro 19 is, in fact, huge.

