

Design: Rating the golf equipment you sell

by DICK SEMPLE

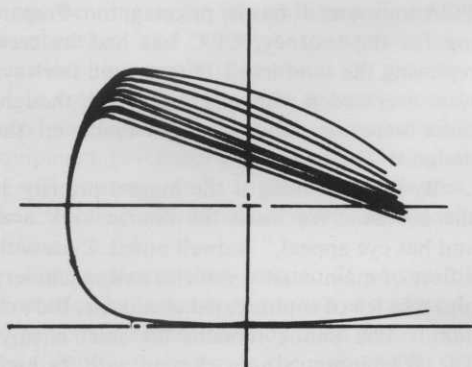


Figure 1—Getting consistent blade alignment is crucial when addressing the ball. To check on this an easy profile of your iron sets can be accomplished by tracing the iron contour on a piece of paper.

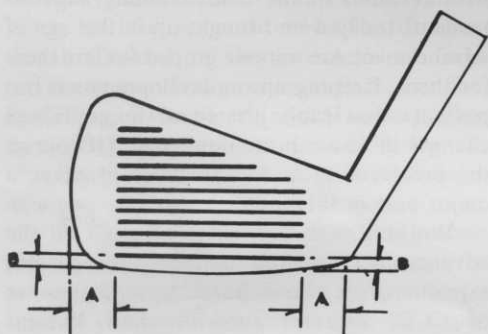


Figure 2—Face scoring is one of the most important aspects of irons. The pattern should be centered on the face and its grooves parallel to the leading edge on the lower face of the blade.

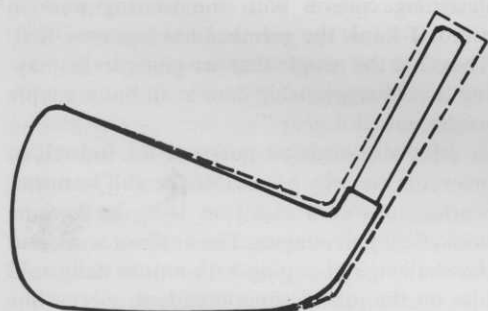


Figure 3—One of the more popular types of hosels is the overfit variety (above). The heel end of the blade "neck downs" too soon as compared in the conventional female type. The overfit is generally regarded as cleaner in appearance.

During the past several years, the golf equipment market has undergone a considerable change in the area of design, processes, materials and cost. That rapid change has left many club professionals lacking in the product knowledge so necessary in making sales.

Since the early part of this decade, the golf market has expanded at a fantastic rate, probably more than any other leisure time field. Only during the recent recession has the buying cycle of equipment shown any decline.

Customers continue to look at a wide variety of brands, styles, performances and prices. Pros must grasp product information that make them better qualified to help guide the customer's selection in equipment.

A customer's decision to buy usually hinges on subjective motives: the way a new club feels or how it looks. Customers seeking new clubs hope to attain a new confidence or pick up the latest 'status symbol' to show around the corner.

Whatever the reason is for the customer's subjective purchase, you have to analyze your store inventory on a more objective level. What should you be telling your customers about the various types of equipment design features and their respective playing characteristics? How do you objectively categorize the endless variety of styles and models on display in your shop and steer customers to the proper clubs, regardless of your own 'brand loyalty' or high-profit items?

Putting price and brand influences aside, let's examine what golf equipment offers in respect to design and construction features. After this examination you should be able to equate value and price on a more knowledgeable level.

All clubs are created equal: the USGA method. All golf equipment in the pro shop are equal in club design as far as the United States Golf Association is concerned. In order to be sold in the shop and used in USGA or PGA-sanctioned events, all golf equipment must pass club specifications established by the USGA rules committee. This is to equalize the physical characteristics of woods and irons such as face score patterns; groove widths, spacing, and depth; grip design, and weight adjustment features.

Taking this into consideration, you can now focus your attention on all the different styling differences of golf equipment and start listing pointers to distinguish good features on equipment and equate value to them.

In this overview of equipment design, let's concentrate on irons first and analyze component features which make up the design of an iron.

Irons. Since most of the differences between styles of irons lie primarily in the head of

the club and clubmakers have focused much of their creative and engineering ingenuity in this area, let's examine it for factors important to you.

Irons have heads made out of either low carbon or stainless steel as specified by the manufacturer to best suit the design function of the club.

The type of processing used to manufacture the irons are either the investment casting or forging methods. Each process has limiting factors in the design of the iron head. Design values are both enhanced or hindered by either process.

Just briefly, here is a look at the two processes:

Investment casting. In this process, which is relatively new to the golf club manufacturer, the designer has tremendous creative and engineering freedom for putting contours, voids, and great graphic detail on the master iron model and it is reproduced exactly the same way every time a part is cast. All that remains to do on the iron head is grind to the proper head weight and polish for specified finish.

The only negative of the investment casting process is the cast steel head is more brittle than forgings and must be reheated to do any major loft-tilt adjustments in your pro shop. This is impractical to do, so utilize closer scrutiny on stock received in your shop to make sure the equipment adheres closely to the manufacturer's specifications on loft-tilt data.

Despite this negative feature of investment cast irons, high quality control, style variety and unique playing features make up on the plus side for this forming process.

Forging. In this age-old process for making iron heads, parts are made by stamping hot metal in a die. Heads must then be machined for contour and desired weight. Face scoring and graphic details must be struck in separate operations. After considerable handcrafting for profile and finish, the club head is ready for assembly.

Forged heads are more flexible than castings in the hosel area so re-loft/relie adjustments up to five degrees are possible in your shop without any difficulty. Because of this feature alone, pros and better players prefer forged irons.

Price and feature-wise, forgings fare better at the low and high end (custom) price points, while castings appeal to the bulk of the market for styling and unique playing features, buyers are looking for in your shop.

Design quality checklist. Beyond knowing irons are USGA-approved and what material the heads are made of, there are many details you should focus your attention to in picking out good and bad design quality features.

The following shows details you should check off all golf equipment against to establish what you expect in value and quality from clubs sold in your shop and seeing your

customers get their money's worth of equipment.

- **Blade profile**
- **Face scoring**
- **Loft and lie**
- **Hosel design**
- **Sole geometry**
- **Blade back design**
- **Finish**

Profile. The profile of a blade is very important to the translation of the blade alignment when addressing the ball and creating the proportional backdrop to which the golfer "frames-in" the ball for hitting. In a matched set of irons, the blade contours should be essentially the same from the No. 2 iron to the pitching wedge. The blade height should also progress uniformly in size. The basic effect to look for is that of a progressively larger blade with the same proportions throughout the entire set of irons.

If you would like to analyze a sample set of irons in your shop, here is a procedure to use:

Take a piece of paper and place it on the top edge of a table. Then put blade (start with No. 2 iron), groove-side down, on top of paper so blade is flat on its surface. Trace around blade profile with a pencil and remove from position. Repeat for every iron in the set until all are recorded on the paper. Compare your profile analysis with the example in Fig. 1. If the blade profiles don't progress uniformly in height or toe shape lines are overlapping, then profile is not properly designed.

Many clubmakers do not have a progressive numeric relationship in their club profile as it is difficult to control at the grinding phase of club fabrication or it was not designed into the club at its inception.

A properly designed profile family helps establish a progressive working relationship from one club head to another in a matched set and gives the player the feeling of playing with the same club for a more consistent game.

Face scoring. Second most important feature to analyze in a golf club is the face scoring patterns and grooves. As mentioned earlier, the USGA closely scrutinizes this segment of a club head design to eliminate an unfair advantage from an illegal face scoring design or groove detail.

First criteria of good face scoring is to check for straightness on the face of the blade. The pattern should be centered on the face of the club and its grooves parallel to the leading edge on the lower face of the blade. (Fig. 2)

Groove depth should be consistent from toe to heel and bottom to top of the pattern. Poor grinding and stamping operations cause the grooves to thin out and become too shallow to be effective.

By process, investment cast irons should have better face scoring detail because the grooves can be cast accurately into the part for

spacing and proper, consistent depth dimensions.

Forged irons must have the face scoring struck or rolled on to the blade and can't achieve the tight spacing and consistency seen in the former process for face scoring patterns.

You should make comparison of scoring patterns by putting your shop equipment into their respective process category. It is not fair to compare them together and therefore, rating value on an equal basis.

Some clubmakers have incorporated alignment aids on the face scoring to help the golfer to tell if the face is open or closed, where the sweet spot is located, or they concentrate a maximum number of grooves on the primary hitting area of the blade. Most of these aids are legal and legitimate functions and should be pointed out to golfers who require such aids. They can also be construed as a plus to equipment possessing such features and should be promoted by you in your shop.

Loft and lie. Most of the irons in your shop have standard loft and lie specifications created by their respective manufacturers.

Check your in-stock samples for plus and minus tolerances of the loft/lie specifications received from the manufacturer.

It is particularly important for investment cast irons, as mentioned earlier. They will not take to readjustment of any great degree in your shop due to the heat treating done to them in processing to make cast stainless steel suitable.

If you are selling investment cast irons to a customer, try to fit him with a brand model tailored to his physical stature. If you have to re-lie the clubs to properly fit your customer's stance, you will find it all but impossible to bend the hosels.

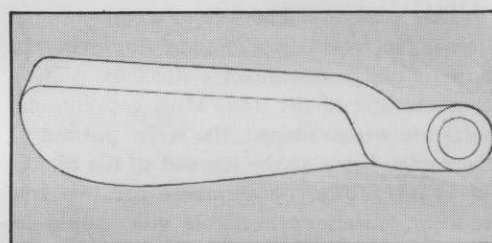
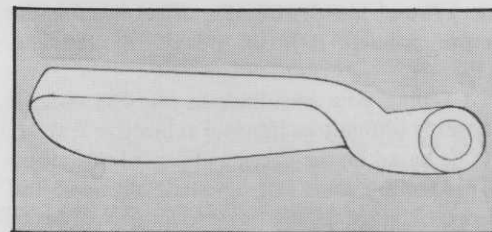
Most often, pro shop personnel will crack the hosel by overbending, then have clubs break off in play.

Forgings are better suited by many for custom fitting in the shop as they are more "plastic" in nature and can be readjusted to fit most golf stances. On the other hand, forgings, by the nature of its flexibility, must be re-lofted and re-lie by pro shop personnel from time to time, depending on the amount of abuse and frequency of use.

Hosel design. The hosel of a golf club is a very important factor in the design of an iron head and influences its detail to a large degree. The hosel is the connecting link between the blade and the shaft and how this is achieved becomes the focal point of this particular segment.

On a conventional-shaped iron, the hosel is usually located at the heel end of the blade and is connected to the shaft in one of two styles:

Female Hosel — A bore is located inside the hosel to allow the tip of the shaft to be inserted and glued into position. In forgings, this is achieved by drilling a bore at an angle



Figures 4 & 5—Two hosel/neck blends on the market are the straight neck, bottom, and the offset, top. The straight neck creates the look of a strong, compact blade. The offset is set ahead of the leading edge.

parallel to the sides of the hosel to the desired depth. Some investment cast processors can cast a bore right in the iron head at the time of casting and provide an accurate, ready to assemble iron head, with no machining necessary.

Male Hosel (overfit) — overfit or stud-type hosel is a relatively new design method of fastening the shaft to the iron head. As the name implies, the shaft fits over the stud as it is assembled to the iron.

Visually, the overfit is cleaner in appearance and flows better aesthetically from shaft to blade. There is the illusion weight is removed from the hosel area and put elsewhere but in actuality, it is really inside the shaft at the tip.

Overfit hosels require the heel end of the blade to "neck-down" too soon as compared to the conventional female hosel. This makes the heel end of the iron very small and thin (material-wise), and does not lend itself suitable for the strong-hitting player. (Fig. 3)

The overfit hosel will remain around for a while, however, as many clubmakers have used this type of hosel on ladies models with a great degree of marketing success.

Conventional (female) hosels remain the more widely used style due to the fact it is structurally stronger and makes a proportionally better looking iron.

Another detail that should be illustrated about hosels, is that of the hosel/neck blend options. There are two styles of necks available on irons. The straight neck hosel is one in which the neck/hosel blends into the leading edge of the lower face of the iron in a smooth, straight line. This creates a strong or compact-looking blade. (Fig. 4). The offset, or goose-neck hosel is one in which the neck/hosel is set ahead of the leading edge on the lower face of the iron. The straight hosel has always been known as the classic method of designing the

neck/hosel blend while the offset hosel is the more popular style in today's marketplace. (Fig. 5)

Telling your customer to use one style of hosel is difficult as this is a subjective feature, to be based on the playing ability of the golfer. This feature joins loft/lie, shaft stiffness, and grip size as things that have to be applied on an individual basis.

Sole geometry. The sole of a conventional iron is the foundation of the entire club and how its design can directly affect the playing characteristic of the iron. Most conventional soles are wedge-shaped, the wider portion of the wedge being at the toe end of the blade.

From another angle, there are two sole contour variations available you should be aware of in rating the design value of specific equipment in your shop. One style is known as the standard sole. The sole line is straight with a very slight bevel to the leading edge. (Fig. 6)

On this particular style, make sure all the clubs have some kind of bounce built into the set. For the record, bounce is the term used to describe the angle of the trailing edge of the sole and whether or not it comes into play when engaged with the ball at the ground (Fig.

7). It is important the correct bounce be in a standard sole design, otherwise too large a divot will be taken and deter the quality of the golfer's swing.

The camber or rounded sole is the second variation available on the iron and gives the golfer considerable assist in keeping the blade leading edge off the ground and delivers the blade more smoothly through a divot. This style of sole is recommended for the majority of golfers who purchase pro equipment. It allows more freedom in striking the ground and reduces topping the ball to some degree.

Camber or rounded soles don't require bounce to be built into the design as its curvature acts like a sled to "slide" the club head out of the grass or sand.

When your customer is looking over the styles and models in your shop, make sure you distinguish these two particular features to him so he can make the proper club selection.

Blade back design. All of the factors discussed so far make up the chassis of a typical iron head design. Now, we will focus at the way we are able to create the multitude of styling and graphic variations.

The back design of a club has always been a product of weight removal and distribution needed to get the iron head to the proper weight for a balanced club.

When clubs were made by the forged process only the back design was limited by the machining of milling and broaching equipment.

In recent years, however, with the advent of forged and investment cast iron processes, the designer has had greater freedom to put weight wherever need to impart a specific playing function.

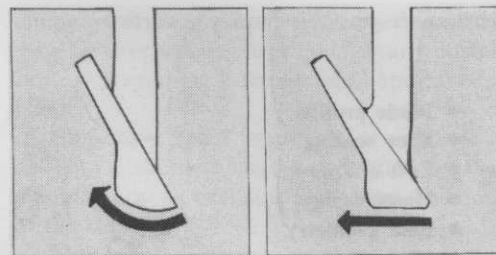
There are three basic styles of back designs the major of clubs fall into:

Muscle-Back Designs — The typical contour and weight distribution on this style of club is a muscle-like bulge located in the back near the sole or spread around the center of the blade back. It is a favorite design for players who want power to compliment their good control-type of swing.

Heel-Toe Weighted Designs — A popular style of back design distinguished by a cavity located in the center of blade back and prominent masses of weight located around the toe and heel areas of the club head. Investment casting process has made this style of club design widely exploited and copied.

Flange Sole Back Designs — This form of back design has become more popular during the past two years due to the demand by golfers for a club that will get the ball up quicker without using flatter lofts to achieve the effect. By locating the weight mass low, along the back of the club head, the center of gravity is aligned closer to the center of percussion point which is on the face of the iron.

Equating value of a back design to price is really a highly subjective motive, much like



Figures 6 & 7—Sole geometry is another important aspect of design. Figure 6 shows the theory of bounce, the term describing the angle of the trailing edge of the sole and whether it comes into play with the ball at the ground. Figure 7 shows the sole line. In this case, with a slight bevel to the leading edge.

trying to pick out one body style of an automobile over another, if functions were put aside for a moment.

The fact appearance is a direct product of function on a golf club, makes it important to know what claims a clubmaker says the back design of his club will have on your customer's golf game.

Study the fact tags and brochures from the manufacturers in regards to the styling/function characteristics of the club and identify what type of performance to expect. Go out and test every model you are selling in your shop. That way you can be more candid about the equipment in stock and offer your customers the best value for the money.

Finish. Finish is literally a reflection of the type of quality a clubmaker puts out in his golf clubs and the best designed club in the world will sell poorly if not finished properly.

These are some of the flaws that do show up in professional grade golf equipment: poor polishing of chrome surfaces, poor masking of bright surfaces near sandblasted areas, paint-fill falling out of recesses in club engravings, rings and adaptor off-center to top of hosel, poorly applied leather grips, tapered top line-caused by poor grinding and par area blend improperly ground out.

Pro line golf equipment deserves a luxury car's quality control, but often gets treated more like an economy model.

Your criticism of finish is important feedback to get back to the clubmaker. It minimizes the grief your customers may experience sending his clubs back to a warranty repair station and helps to keep your honesty and integrity intact with your customers.

Now that you have been exposed to golf equipment design, as seen through the eyes of a design consultant, it is hopeful you now have more insight into the equipment you sell as to how it functions and what to expect of those functions.

Among your membership, only you have the knowledge and intelligence to fit and sell your customer the type of golf equipment that has high value for him in terms of his pocket-book and does what its designed to do. □

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