

Callaway Epic Drivers Q&A

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How did Jailbreak begin its life?

Jailbreak was a research and discovery thing. In the early stages, we witnessed something we had never seen before. It was a phenomenon whereby utilising vertical rods in the head of a driver would potentially encourage the body and face to react very differently on impact with a golf ball.

It was different from our other models of impact we had studied and we weren't quite sure at the time what we were seeing. However, we are sufficiently resourced at Callaway, and curious enough, to experiment further, mostly on computer, using a simulation tool.

This research led to some early prototypes that demonstrated a clear ball speed enhancement, whilst still adhering to the current CT rule, and it was at this stage our senior management team got involved in the project.

Our findings showed that Jailbreak (it wasn't named at this point!) was a potential future ingredient for a driver.

The next stage was to understand how we could manufacture this particular piece of technology in a driver head so that it survived impact with a golf ball. We also had to consider how we could add it into our already hugely advanced driver production processes that involved carbon, titanium and several other things. So it was a huge challenge.

When did you first witness the full performance advantages of Jailbreak?

The thing we didn't understand at the time was how we could turn it into something so meaningful. There was something of a 'light bulb moment' when the prototypes did what the neuro-simulations suggested were possible – until this point, it had all been quite theoretical.

Once we started testing the prototypes we then saw that this stiffening attribute to the body and face had more effect on the performance of the driver head than we had previously thought, but we still had to understand how to harness it effectively.

Are the Epic Drivers a breakthrough?

Epic represents the best of everything Callaway has ever done in driver design. Epic has a very refined multi-material construction with some of the thinnest titanium and certainly some of the thinnest carbon materials we have ever used. Epic has the benefits of what we have learned about moving CG both left and right and up and down and how important MOI is for everyone. The aerodynamic properties of both Epic Drivers have been prominent in our thoughts.

These essential performance ingredients, added to new Jailbreak Technology, have seen us make a big stride forward, similarly to when we introduced Face Cups to fairway woods, hybrids and irons which added ball speed in large amounts.

Who thought of the name Jailbreak?

It came from our innovation team. Some of the first prototypes had three vertical rods, so it really did look like prison cell bars. But clearly, the name also comes from the fact that we are trying to break free from some of the design constraints we feel we've been under as well.

How difficult is it to manufacture a driver featuring Jailbreak Technology?

There are 1,041 manufacturing processes in an Epic Driver. Compare this to XR 16, which has 618, and it gives you some idea of how complex this product really is. Jailbreak itself makes the tooling much more complicated, and with all the multi-materials and different parts, there are different challenges in the way they go together, and how the whole head is finished.

There are also 368 individual inspection points during the creation of an Epic Driver - these could be to measure metal thickness or check weight, or a particular dimension on the head. It is fair to say that a lot goes on during the creation of an Epic Driver, from pre-tooling right through to the finished product.

How will consumers know if they should choose an Epic or an Epic Sub Zero Driver?

The majority of people will require some sort of left-right shot shape correction. One of the two models focuses on that performance metric very heavily, so we would expect that element to be the primary fitting tool for the majority of golfers.

However, there are a large number of people who may not value that form of adjustability quite so much, or may not need it – they already hit the ball well – and they may require help controlling backspin on the golf ball. The second version of Epic, the Sub Zero, is for them.

In most drivers, that low spin characteristic usually comes at the disadvantage of having low forgiveness (low MOI) but for the first time ever, the Epic Sub Zero Driver does not suffer this drawback. This is a huge performance benefit.

Each Epic Driver genuinely has different performance characteristics but both clubs are equally forgiving, and that has never been done in a fitting system. There is now much more capability across the two Drivers to cover the performance requirements of an entire spectrum of golfers like never before.

Is it essential to be custom-fitted for an Epic Driver?

Our philosophy is that we want to be able to design golf clubs for individuals. Having the ability to adapt the characteristics of the club through the settings you use, whether that is adjustable weights or even the choice of shaft, we are now giving ALL golfers the opportunity to perfectly tune a driver just for them.

We are committed to this type of approach and we see Epic as the ultimate fitting platform and every golfer will benefit from this level of personalisation.

How would you compare Epic to the Big Bertha Fusion Driver?

Epic is a more complete design in that it has more adjustable dimensions. There is more opportunity to get dialled in to whatever form of performance a golfer is struggling with, whether it be left/right or any of the other types of issues you might face.

Epic also has Jailbreak Technology so it will have a ball speed advantage for everybody. However, it doesn't have every metric of forgiveness all figured out and for some people forgiveness is about a shorter shaft, or a lighter weight, and that is more the preserve of what Big Bertha Fusion does that is special.

Fusion also has really high MOI, at the same time as being configurable to a shorter length or a lighter weight. For some people, those length and weight dimensions are a big part of the forgiveness recipe and so we want to offer that, separate to Epic. Fusion exists because it has an enormous MOI number, whilst at the same time having other characteristics that are different from Epic that you can adjust.

What is different about the adjustable weighting on Epic?

You have seen forms of it before. Our previous drivers that had the Gravity Core, really tried hard to move CG vertically up and down but it was expensive in the way that it was done - expensive in terms of weight, because you needed the Gravity Core itself, you needed a tube in which to hold the Gravity Core, and you needed a screw on the bottom of the tube to hold the Gravity Core in.

In our Big Bertha Alpha 816 Double Black Diamond Driver, for example, we had two of these chambers, and they were not in ideal positions for MOI. They were also expensive in terms of the amount of weight they used in the overall make-up of the head.

On our perimeter-weighted Epic Driver, we were focused on moving the maximum amount of weight, in the most efficient way, and we found that we didn't need a super-long track to go all the way from one side of the head to the other to achieve this.

We have actually gained more adjustability in Epic with a much shorter track and a heavier moveable weight. In our early adjustable weight drivers, we wanted a really long track because it was very impressive, and it made intuitive sense that the weight had to move a long way.

What we have since discovered is that it is actually more efficient for the track to be as short as possible (meaning you can locate it more in the back of the club versus in the middle of the club) and this then makes the weight more efficient from an MOI perspective.

If Epic is about 'total performance', why do you need other drivers in the Callaway range?

It is our job to seek out and manufacture products that push the boundaries of what is possible, and to make these game-enhancing features available to all golfers as soon as possible.

As a business we have an ability to get excited about a product in a certain time frame and not long after we may get excited about a different product, but we are genuinely moving onwards at a relatively fast pace.

So, if we take XR 16 as an example, it is a terrific driver which has won on Tour and a lot of amateurs have been very successful with it, but it doesn't have Jailbreak Technology, it doesn't have adjustable CG, and it doesn't benefit from multi-material construction.

It definitely has a place – and a driver like this will always have a place in our range in the future too – but we wanted to reach up and give people the opportunity to experience all of our best technologies, at the same time, and in one driver.

3D printing has been used on the Epic Drivers. How?

The Speed Step on the crown of the head – which improves air flow and head speed during the swing – has previously been cast into the head during the production process. However, with Epic we have used 3D printing for the first time.

The Speed Step is printed onto the Driver head in a series of layers which gives us a high degree of control over the dimensions of the step. It also makes it very light because it is now made from a polymer material rather than being part of the metal frame.

To now be able to add (and control) this feature, and save weight without interfering with any of the other important elements of the Exo-Cage, including the location of the Jailbreak rods, is another design breakthrough for Callaway.

What performance advantages will golfers see in using an Epic Driver?

In early golfer tests we have seen significant ball speed gains across the board, whether it's a Tour pro hitting a ball or a mid-handicapper. Some people will see circumstances where the ball speed gain is much, much bigger, by marrying all the adjustable elements together, so we are hugely encouraged by this. But there are always other factors involved to make the opportunity to gain even more performance very likely, such as spin rate, dispersion etc.

Is Jailbreak ground-breaking?

Jailbreak is right up there in terms of important driver breakthrough technologies. Sometimes technology breakthroughs are as much about the physics as they are about how ready we are for it in the real world, but Callaway is ready to tell a big driver story here.

Jailbreak is the missing piece in our plan to be the undisputed No. 1 in every product category. There does not seem to be many competing technologies at the moment and we have something that is brand new and very special.

Coming out with a driver that has a completely new face technology is a pretty rare thing and we are extremely excited about the opportunity our golfers have in using these products.

How forgiving is the Epic Driver?

The Epic Driver is 1000 points more forgiving than Great Big Bertha. This measurement represents the resistance to rotation that the driver has and this is important when golfers do not hit the centre of the face. A forgiveness increase from 7000 points to 8000 points (Epic Vs GBB) is a very big deal.

The Great Big Bertha has been popular on Tour and with average golfers, so now you take that performance and upscale it, and you are getting to a level with some of the most forgiving drivers around, with the addition of maximum adjustability.

Have any Tour players tried Epic yet?

We're still in the early testing stages at the moment with many of our players but starting to see a few of them put it in the bag. Notably Danny Willett, Sebastien Gros and Pablo Larrazabal put Epic Drivers in play at the UBS Hong Kong Open, whilst Marc Leishman was the first to game an Epic product, a fairway wood, at the Australian PGA Championship.

Sum up Epic?

It represents the bringing together of all the best elements of current Callaway Driver development and marries it to Jailbreak Technology, to give every golfer a clear and consistent ball speed advantage.

By putting all the ingredients together, Epic Drivers address the needs of a great number of golfers because they can control ball flight, unlock distance, whilst also maintaining forgiveness.