R&D Q&A

HANDLEBARS AND BAR ENDS NUMBER EIGHT

TENDING THE BAR

Feeling the urge to customize those new high-performance handlebars? Want to give them a little trim? Maybe add some bar ends? Multi-colored streamers? It's a free country, but you paid a bundle for those handlebars. So how far can you safely go?

One of the most frequently asked questions we receive is. "How much can I cut off of my carbon handlebars?" Apparently, while the industry in its infinite wisdom has deemed a 23-inch wide bar de rigueur, many riders feel that less is more.

And in a close second place to the "I want to cut down my bar" question is "can I use bar ends? And if so, what brand?"

In this issue of R&D Q&A we will attempt to answer both of these questions, but we won't debate the philosophical ramifications (that's between you and your spiritual guide of choice).

Cutting to the Chase

First we will say with certain hesitation that you can... maybe...oh what the heck, go ahead and cut them down. But how much can you cut off? How about *as much as you want.* In fact cut them in half if you feel the need. The bar doesn't care how long it is.

While it is possible to cut the bar in half, half a bar could make it difficult to steer the bike. It can also make it a little dicey mounting your bell and siren. So maybe you should just remove a little and see how it feels. Conventional wisdom is that the width of your handlebars should be based on how wide your shoulders are. Since the ends of the bar are much thinner than the center section where the stem clamps the bar, cutting the ends down does not rob the bar of any strength.

> ***"In fact, cut the bar in half if you feel the need. The bar doesn't care how long it is."***

Cut Off the Reinforcements?

You really can cut your carbon bars down almost to your heart's content — ***unless*** you're planning on adding some bar ends. Why do we say that? Many high-performance bars including Easton's EC70 cross country bars are designed with thicker walls at the ends of the handlebar. Easton adds extra carbon fiber to reinforce the ends of the bar where the bar ends would be mounted. The reinforced zone is about an inch long. By cutting the bar to a narrower width, you may inadvertently remove the reinforced ends of the bar. Without these reinforced ends, it is not safe to add bar ends. So it's a bit of give and take. If you don't use bar ends, it doesn't matter how short you cut the bar. If you do use bar ends you are better off leaving the hack saw in the tool box.

The Beginning of the Bar End

All bar ends are not created equal. In choosing the right pair of bar ends you need to consider the clamp design. The clamp design is the all important interface between the bar end and the handlebar. How it performs its job of securely clamping to the handlebar is of paramount importance.

First, it is important to find a pair of bar ends that have a

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design that allows the clamp to remain round when tightened. We know what you're thinking, all the bar ends you have seen have holes in them that go over the end of the bars. If that isn't round what is?

Upon closer inspection you may find that when you tighten the bolt, that *round* becomes *distorted*. Lightweight, high-performance handlebars are round. It's important that anything that attaches to them comform precisely to that shape. If the bar end clamp does not remain round when tightened, it will crack your carbon fiber, titanium or lightweight aluminum handlebars.

Bar End Round Up

Before you install or buy a new pair of bar ends, put the candidates through a little test.

First inspect the design. A well designed bar end with a compatible clamping system will incorporate certain key features. Feature number one. The slot must align with the center of the handlebar bore (see illustration). Second, the fixing bolt must be perpendicular to the slot. With these designs the clamp will remain round when tightened and not damage the handlebar.

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Unfortunately some bar end manufacturers have poorly designed bar ends that do not remain round when tightened and force the clamp to curl into the bar as you tighten it. It's easy to see why these designs would cause damage to a lightweight carbon handlebar (see illustration on next page).

Feeling the Difference

What if you can't tell if your bar ends are designed correctly. Here is one simple test you can perform.

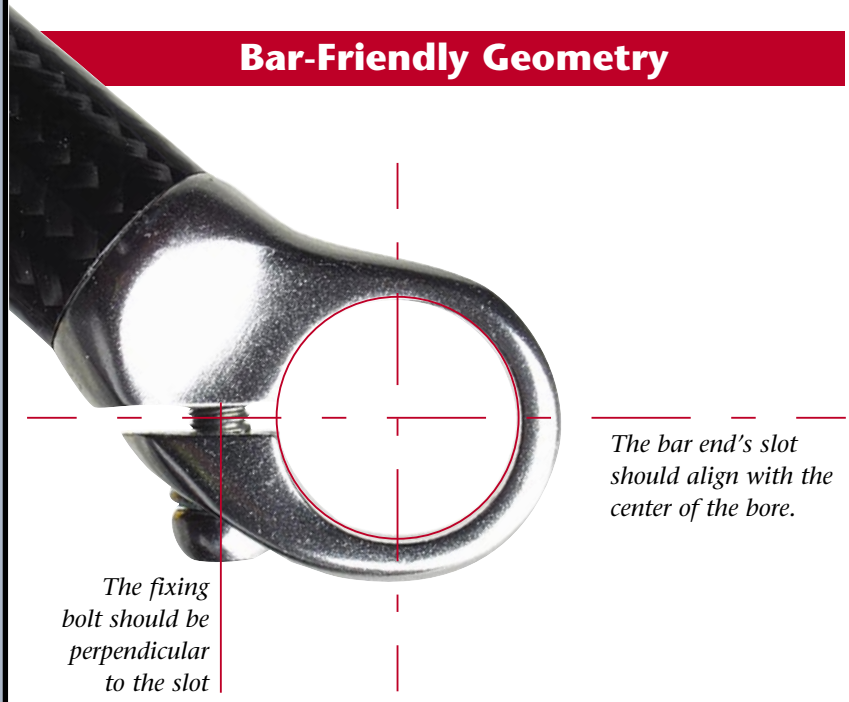
Take the suspect bar end and without installing it onto the handlebar, tighten the fixing bolt until the slot is closed — go slowly, a little bit at a time. It is not necessary to over tighten. Just tighten until contact between the faces of the slot is made. Now run your fingeraround the handlebar bore. If you feel a lip, the bar end needs to be replaced or modified to work safely with high-performance bars.

Making the Rounds

It is possible to modify poorly designed bar ends so that they are compatible with your handlebars. But, you'll need a vice, a metal file or Dremel tool, and a steady hand. Your goal is to

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Bar-Friendly Geometry



remove the lip that would otherwise damage the bar.

Start by tightening the bar end's fixing bolt as was done in the test above. After carefully clamping the bar end in a vice (you may want to wrap the bar end with cloth or a section of old bike tube to protect the finish), use the dremel tool or round-edged file to grind/file away the lip until the hole feels smooth and uniform. Loosen the bolt and install on your handlebar. Tighten the bar end bolts slowly and only enough to keep the bar end from slipping (60 to 80 inch pounds of torque should be sufficient).

As always with lightweight components, it is portant to use the proper tools and care when installing or modifying components. In R&D Q&A article number 5 (September 2002 issue) we covered how to cut carbon components down to size. The key points were as follows:

1) Put some duct or masking tape over the area to be cut.

2) Mark the cut line carefully with a marker or pencil.

3) Follow the old adage, "measure twice and cut once."

4) Use a new, fine-toothed hacksaw blade.

5) After you have finished the cut, use some sandpaper to deburr the edges inside and out and then remove the tape.

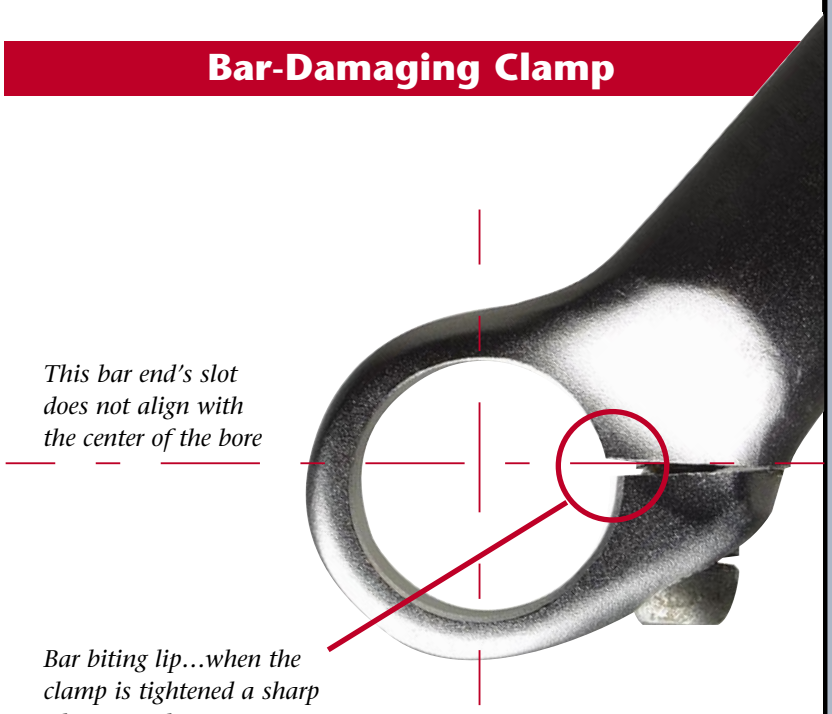
6) Take care not to breath any of the carbon dust.

Modifying Your Perspective

High-performance parts require a little more care to ensure rider safety and component longevity. But, with a little un-common sense and attention to detail you will be rewarded with a dependable, high-performance ride.

"High-performance parts require a little more care to ensure rider safety and component longevity."

Bar-Damaging Clamp



This bar end's slot does not align with the center of the bore

Bar biting lip…when the clamp is tightened a sharp edge protrudes

