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Carl Strong takes a break in his Bozeman, Mont., bicycle shop, Strong Frames.

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“

I consider myself a craftsman foremost,' says bicycle builder Carl Strong. 'I want a frame to look good, but I never do any adornment that doesn't add to the bike's performance.' — This Is My Job, page 132

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**This
Is My
Job**



HOW IT WORKS: FRAME-BUILDING

1. MITERING

To cut the steel, titanium and carbon-fiber tubes that fit together in bike frames, Strong uses a hand-me-down vertical milling machine. Once he places a tube in a vise and sets it at the desired angle, Strong slices through it to create a coped end.

2. SHAPING

Strong shapes cylindrical parts like the head tube—which connects the fork holding the front wheel to the frame—on a 9-inch lathe. As the tube rotates, he sculpts it thinner at the front for reduced weight and thicker at the back for welding stability.

3. TACKING

Next, Strong places the components in a tacking fixture, which holds the parts in relation to one another so he can fine-tune their fit. The tool is flexible enough that he can remove and reload a tack-welded frame without disturbing the setting. "Larger tools are designed for production runs, so they're hard to change," Strong says. "This one was created with guys like me in mind, where every frame we build is different." To ensure accuracy, he checks each tack-welded frame against a steel alignment plate.

4. ASSEMBLING

When it's time to permanently join the tubes, Strong uses a tungsten inert gas (TIG) welder (left). "Anytime you're trying to optimize strength and minimize weight in assembly, TIG is the best option," he says. Argon gas shields the piece Strong is welding so outside air never touches it, protecting the weld from impurities that can cause contamination and producing a more resilient bond. This allows him to use less material for the frame.

× BIKE BUILDER

Name: CARL STRONG
Location: BOZEMAN, MONT.
Age: 46
Years on Job: 18

× When Carl Strong opened a retail store in 2002 to expand his presence in the local bicycle market, he realized quickly that it was a mistake. "I learned that I didn't want to manage people," he says. "What I wanted to do was build frames." The Seattle transplant now focuses on his true passion—working with chrome moly, titanium and carbon fiber. Strong custom-designs each bike to fit a client's body and biking goals: long road trips or fast, short races, for example. He constructs 90 frames a year. "I consider myself a craftsman foremost," he says. "I want a frame to look good, but I never do any adornment that doesn't add to the bike's performance." — LAURA KINIRY