





MISSION

C O N T R O L

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Arc Levers founder Bob Barnett originally created his folding levers simply to make them easier to adjust. Since then, his revolutionary design has evolved radically and has completely changed the high-end lever game

WORDS: **AARON HANSEL**

THE SIGN ON THE WALL says Arc Levers, but standing outside this tiny machine shop in Santa Ana, California, you'd never guess there were high-end race products anywhere inside. There's no big, flashy company vehicle loudly declaring the presence of motocross; there's not even a Monster Energy or Red Bull or Rock-

star can in sight. A glance inside reveals filthy walls and the dull roar of machinery at work. Linger several moments, however, and you'll start spotting diamonds in this rough. Stacks of glimmering billet, trick-looking triple clamps, and rare items like a Kawasaki-green hub with a big #3 on it tell you this is no ordinary grease pit.



KARDAS

(Top) Ken Roczen's Honda sports Bob Barnett parts, including levers, bar mounts, and portions of the linkage assembly. (Left) This master brake cylinder, featuring different inserts to control brake feel, is Barnett's latest creation. (Below left) Barnett's dual-position holeshot device on Josh Grant's Kawasaki. (Below) Barnett's shop is filled with parts, including a box containing every part ARC has ever warranted in their history—they don't get many returns.



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MISSION CONTROL



The real story at Arc Levers isn't the Santa Ana headquarters, or even the business itself;

it's Bob Barnett, the man who created it. Barnett found himself drawn to motorcycles as a young boy when he first saw his neighbor working on Triumphs and BSAs, and it wasn't long before that attraction awakened a desire to build and create.

"The first time I saw a motorcycle, I knew I had to have one," Barnett says. "I used to watch my neighbor cut fenders down, repaint tanks, and do things to make bikes look racy. That's kind of where I learned how to drill holes, use a hacksaw, and use welders—just by watching my neighbor modify motorcycles. I finally got my own motorcycle, a cast iron Honda step-through, when I was 11."

More motorcycles followed, and soon Barnett had unofficially started his own business, buying bikes that wouldn't run, fixing problems often as simple as a clogged

pilot jet, and flipping them for profit.

"I was making good money for a 12-year-old," he recalls. "I'd make 50 to 80 a week when most kids were getting maybe five bucks a week in allowance. I'd go buy more tools like grinders, wrenches, welders, and stuff like that so I could make things. It just escalated from there until I got into machining."

Sixteen years, a few machine-shop jobs, and a formal education in CNC pro-

gramming from Orange Coast College later, Barnett was running his own business, taking whatever machining job he could just to stay afloat.

"I was the guy who would get the job nobody could figure out how to do, or there wasn't enough money in it to make it profitable," he says. "But I'd take anything from anybody just to keep busy, and you learn a lot doing that. You get a reputation doing that, too. I just built on it. That was my real education.

Everything I learn in one area gets applied to everything I touch in other areas."

After making everything from gun parts to aerospace items and taking part in all kinds of motorsports, from offshore powerboat racing to Indy Car racing, Barnett began creating trick mountain bike parts under the name Mr. Dirt.

"I needed to make a chain guide because my chain kept falling off my own bike, and that was the first product that started Mr. Dirt," Barnett says. "Then I kept crashing, so I decided I needed to get a better fork. But they didn't make a better fork, so I made my own fork. It just kept going like that."

Barnett would eventually connect with mountain biking superstar John Tomac and supply him with chain guides for years. He lent his expertise to help Tomac's promising young son Eli as an amateur as well. Barnett also met pro female mountain bikers like April Lawyer and Marla Strebb and started taking them to ride motocross with him, which led to an epiphany.



Barnett spent countless hours machining custom parts to make Ricky Carmichael's Makita Suzuki a perfect match for the rider, and the team showed their gratitude by sending him these championship plates two years in a row.



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“The girls had smaller fingers, and they couldn’t reach the levers, so I was always bending the lever out for me and in for them,” he recalls. “After a while I said, ‘I’m a machinist—I’ll just make something that’s adjustable.’” Halfway through 1999, the concept evolved into the beginning of the folding levers that pivot backward to avoid breaking on impact. Now you can find them on most factory bikes, and on the shelves of your local shop.

marketing agency or assembling a sales force, he hit the road himself in search of some exposure for his products.

“In 2001, I went to Delmont, Pennsylvania [for the Steel City National], to show off my levers and try to get some business, which was somewhat intimidating,” he recalls. “I’m nobody, and I’m going to walk up to Roger DeCoster [then with Suzuki] and tell him my levers are better than the ones on his motorcycles? But I believed in the product, and I had to give it a go. I showed

to fit that thing, you’re on the team next year.’

“When I showed up later in December, my stuff was just perfect, and Roger and Ian Harrison were looking back and forth at each other and my parts, kind of wondering how a guy who looks like me could come up with parts like this. Roger turned to Ian and said, ‘See, I told you the hippie wasn’t a complete loser!’”

Once DeCoster realized Barnett was reliable and could produce whatever was necessary on short notice, he

and between the drawing and the machine shop, there’s a difference, and we find out at the very last minute. And with him being local, we can be at the track and find something out, and an hour later we can be at his place. He’s a good guy and is always willing to try something. He’s pretty stubborn to find a solution to a problem, and when he’s challenged, he keeps trying and working.

“He’s good at taking criticism, too,” DeCoster adds. “Instead of getting frustrated, he goes back and tries to figure out a way to make his customer happy.”

When the team frequently needed custom parts machined for Ricky Carmichael, Barnett would get the call. In fact, he came through for them so frequently that the team sent him a pair of AMA #1 plates in 2005 and 2006, along with a signed letter of appreciation from DeCoster. Barnett was also responsible for machining the cases for Jeremy McGrath’s CR250R in 2006—the same bike that recorded the last two-stroke holeshot in Phoenix. In 2009, Chad Reed cased a jump at the practice track and ripped the linkage right out of his RM-Z450 frame a day and a half before a supercross race. Not knowing if it was a problem with just that particular frame or a run of them, and without any time to figure it out, DeCoster went straight to Barnett, who created reinforcement clamps to guarantee the problem



When Monster Energy Supercross is in town, a usual weekend for Barnett includes dropping off parts on Friday afternoon, taking orders, working into the night to fulfill them, and dropping them off early Saturday morning.

Working Relationships

After a short partnership with ASV Inventions soured, Barnett had Arc Levers—named, simply enough, for the arc created by pulling a lever—up and running and was in search of ways to enhance product visibility. Rather than hiring a

him my latest brake lever, which had a ball bearing on the knee [where it meets the master cylinder]. At the time, teams just had solid, metal-to-metal connections that would end up turning into sandpaper during races. Roger saw it and said, ‘That’s a technical advantage. If you can make a rubber cover

started tapping Barnett and his humble machine shop for parts regularly, despite having the resources of factory Suzuki at his disposal.

“Bob’s always been willing to work with us when we need last-minute items,” DeCoster says. “Sometimes the factory may make something,





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CUBBY

While there are many brands of folding levers on the market—some of which pay Barnett royalties—Arc Levers is the overwhelming brand of choice for major teams like Monster Energy Kawasaki.

wouldn't recur on Saturday night. And when Ryan Dungey moved to KTM and experienced a problem with a component of the automatic compression release system, it was Barnett who supplied the solution.

Not surprisingly, Barnett's reputation in the pits is as solid as they come—so much so that, while being interviewed for this article, he didn't think twice about walking into the Yamalube/Star Racing Yamaha pits and installing a small master

cylinder banjo-bolt guard on Dan Reardon's bike without even asking, right in front of team manager Brad Hoffman, who didn't even bat an eye.

"We can throw an idea at Bob, and he'll just get us what we need," Hoffman says. "One guy might want his lever to be a certain way, another guy wants it to be a different shape or have his clutch engage a certain way. There's a lot of customizing just in levers—they're a big part of the bike's feel. It might seem unimportant, but to the riders, it's a big deal. I don't think there's anyone else who can do what Bob does. Our guys can have their levers any way they want."

"Bob's a wizard," says Ben Schiermeyer, Justin Barcia's mechanic at JGR Suzuki. "He knows everything about levers and what lever came on what bike and what works with what. He can make pretty much anything you need. If we need something in a pinch, we just go

to him. He usually even has it on the shelf already or knows a bike that used to run that kind of lever but has a different ratio. Different internals fit different master cylinders, and he knows all of that stuff and can come up with pretty much anything you need."

The praise continues from Cycle Trader/Rock River Yamaha crew chief Scott Rabon: "Bob is a super nice guy who is willing to do whatever the rider wants. He doesn't hesitate to try to deliver exactly what's being asked of him. We wouldn't be able to achieve the level of customization our bikes have without him. You don't find very many people who will change what they believe is the right product, but his ears are open. He listens and goes back and builds what we want and need, then he turns around and sells these same products to the public. He helps us, and we help him by providing feedback, and it ends up benefitting the public."



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Jeremy Martin | #6

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A dirty, cluttered shop isn't what you'd expect from a producer of factory parts, but it doesn't seem to bother Barnett, who says, "In a machine shop, you can get the job done or you can make it look like a museum. It's hard to get both. I've seen really great shops that produce a lot of parts, but they're not very creative."



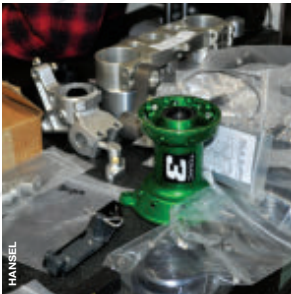
One example of all that factory-level research benefiting the public is Barnett's latest creation, a fully adjustable master cylinder that has yet to hit the market. All brake levers have an adjustable reach these days, but setting the reach in different spots impacts the feel of the brake. For example, if you like your lever close to the bar, it might feel a little spongy—a problem Barnett's setup solves with spacers, which allow a rider to adjust the feel, or perceived bite, of the front brake regardless of lever position.

"You can set it up so it feels like it has air in it, like Ricky Carmichael and Kevin Windham liked," Barnett explains. "If you set it up on the other end, it's almost going to feel like something's wrong

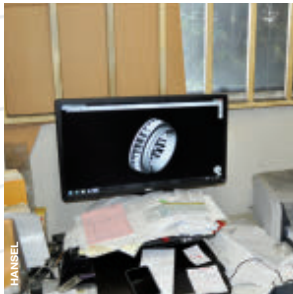
with it. It will feel solid. That's a Davi Millsaps-type setting. It's kind of like changing a spring rate—you can adjust it to fit any terrain or preference. The capabilities are there."

Another innovation is Memlon, which Barnett considers his crowning achievement: a special material he invented himself to solve the problem of the up-and-down forces levers can be subjected to in a crash.

"It was important to make them strong enough so they wouldn't bend under use, but still able to flex in the event of a crash," Barnett explains. "I took a digital fish scale over to Ryan Villopoto's bike, and it took 9 pounds of energy to pull in his clutch, so I made my target 12 pounds. I tried a lot of things before ending



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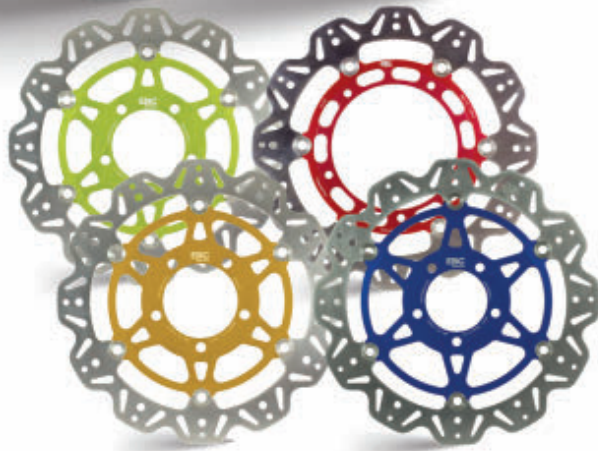
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up with Memlon—it's a real witches' brew of polymers. Since day one, broken levers have been a problem for anyone who rides, but with Memlon, you can tie your lever in a knot and bend it back and it'll still be like new."

What's Next?

When you're dealing with a mad scientist like Barnett, who thinks working only 50 hours a week is semi-retirement and describes Arc Levers simply as a company that "makes levers and a couple other parts," you never know what the next chapter will hold. Perhaps he'll move on his idea of manufacturing custom Volkswagen parts under the name Value VW, or maybe he'll continue supplying parts to the top teams in the paddock. Either way, you're sure to find Bob in his small machine shop in Santa Ana, hands dirty, head down, enjoying "making parts as good as they can be." 



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Forget fancy pit vehicles like blinged-out Groms or lifted side-by-sides; when Barnett delivers parts to teams like Monster Energy/Pro Circuit Kawasaki and Justin Hill (46) he does it aboard his old bicycle.

