



# Alchemy SV-1

## NEW FUTURE FOR BEVEL-DRIVE DUCATIS?

**B**Y DEFINITION, EXOTICA IS THAT WHICH IS striking and unusual in appearance—exciting, glamorous, strange. Looking for an example? Consider the Vee Two Alchemy SV-1, a tiny, tube-framed roadster powered by, of all things, a hotted-up 1970s bevel-drive Ducati motor.

Actually, the Australian-built Alchemy SV-1 is a kit bike, akin to those four-wheeled customs that mimic expensive sports cars. But unlike many kit cars, which are often mere styling treatments affixed to production chassis and drivetrains, the SV-1 frame, with its shorter wheelbase, revised steering geometry, stiffer tubing and rising-rate rear suspension, is a tremendous improvement over the rangy, twin-shock frame it replaces.

The name, as well, is unique. "An alchemist is a medieval chemist who turns base metal into gold. Or tries to, at least," says Brook Henry, Vee Two boss and creator of the SV-1 and the RV-1 racebikes that preceded it. "As I see it, the Alchemy is a transition from something people regarded as a bit of a pile, if you know what

I mean, to something neat."

The basic kit includes a steel-tube frame and box-section swingarm, a hand-formed aluminum fuel tank, gel-coat bodywork, WP shock, axles, bearings, footpeg assemblies and associated linkages. Fenders, lights and instruments, a steering damper

and an exhaust are also included. Cost for the kit, available in the U.S. from Pro Italia Motors, is \$5500.

You supply the electrics, fork, wheels, brakes, tires, paint and, of course, a motor. Vee Two says its frame will accommodate any bevel-drive Ducati Twin, from an early '70s 750 GT to a 1000 Mille, but Henry is hopeful that most of the donor engines will be pirated from something non-collectible, say a 900 Darmah or an 860 GT. Since the chassis is compatible with standard Ducati running gear,

choice of ancillary equipment—brakes, front suspension and wheels—is at the discretion and budget of the owner. You can, for example, retain the stock brakes, fork and rims, or upgrade to four-piston calipers, an inverted fork and modern wheels. Depending on the depth of your checkbook, the options are endless. Our





**The Alchemy frame was designed for easy engine service. Reportedly, the rear cylinder head, barrel and piston can be removed with the cases still in the chassis. A lighter version of the frame, made from Reynolds 531, is also available. It costs \$500 more and saves 13 pounds.**

example, with its spoked 17-inch Akront wheels, inverted WP fork and twin-piston Brembo calipers, is a titillating blend of past and present.

Ducati's bevel-drive Twin may date back more than two decades, but Vee Two's 905cc Desmo is hardly graveyard material. The cylinder heads have steeper inlet and exhaust angles, oversize valves (44mm intake, 39 exhaust), ceramic-coated oval combustion chambers, Stage One porting and hotter camshafts. Of the latter, Vee Two offers several profiles from which to choose.

In the bottom end, Vee Two's balanced and lightened crankshaft is mated to modified connecting rods and ceramic-coated, flat-top pistons. The multi-plate dry clutch and standard ratio five-speed transmission are also Vee Two designs, the former with straight-cut primary gears replacing original helical-cut items. A close-ratio gearbox is also available.

Cold starts required a couple twists of the throttle to jet raw fuel into the ports before the engine could be kicked over. Once the engine was warm, the twin 39mm Keihin flat-slides offered crisp, glitch-free response. A bit of fine

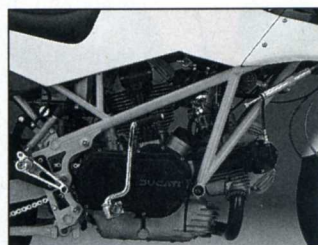
tuning was necessary, though, as the engine would not idle down properly. Also, the carburetors wear only velocity stacks, with nothing to protect the engine's expensive innards from dirt and debris.

Redline is 9000 rpm, at which point the resounding exhaust note, though lovely in tone, is well beyond reasonable levels. A more subdued system is in the works. Duplicating our test SV-1's engine, and the 75 horsepower and nearly 58 foot-pounds of torque it produces, would cost a not-so-inexpensive \$7000.

While its dyno numbers may not astound, the engine has a lot to offer—namely a torque band as wide as Texas. On all but the tightest canyon roads, shifting is unnecessary. Just stick the transmission in fourth and use the engine's remarkable grunt to vault you into the next county. Minus number-plates and tech stickers, the SV-1 is a racer, and ridden as such, is wonderfully rewarding. With its 54.4-inch wheelbase, sporting steering geometry and race-stiff suspension, the Alchemy will make quick work of a twisty road.

It is that handling that separates the Alchemy from Ducatis of yore, and even from many current sportbikes. Steering geometry, while not as sharp as on a Ducati 916, for example, is plenty responsive, though quick transitions take a firm hand on the multi-adjustable clip-ons. Part of that is due to SV-1's steering damper; even on the lightest setting, it imparts a minor amount of a straight-line weave, and

**Towershafts and bevel gears draw lots of attention. Starting the kick-only, 11.0:1 compression engine, even when hot, is not particularly difficult. Electric-start Ducati motors also fit the Alchemy frame.**



## CW INTERVIEW

# Brook Henry

**BREATHING NEW LIFE INTO OLD DUCATIS**

BY MATTHEW MILES

**B**ROOK HENRY BUILDS HOT-ROD Ducatis. His efforts have produced, among other things, a raft of engine components, a chassis—complete with rising-rate rear suspension—and numerous race wins. During a recent trip to the U.S., the 40-year-old New Zealand native sat down with us for an insight into the passion that has consumed the better part of his adult life.

**Q How did you get started?**

**A** In 1979, I set up a general engineering business in Australia. I really wasn't planning to make motorcycle parts, but I bought a Ducati 750 Sport, which promptly blew the big end, like they all do. Since I couldn't get one, I

remanufactured it. People heard about it, and asked if I could make them one. That got me out of general engineering, which I didn't like anyway, and into repairing Ducatis.

**Q Your company, Vee Two, concentrates on Ducati's old-style bevel-drive engines. Why?**

**A** In some ways, they're the worst bloody things that ever sucked air through a carburetor, but I like the engine. It's got charisma. I've redesigned the thing—clutch, transmission, bottom end, etc.—to get it to work better mechanically. I've always applied an engineering approach to my motors, rather than just trying to make more horsepower.

**Q How did the Alchemy chassis come about?**

**A** My race motor was making more than 100 horsepower, but the bike wouldn't handle. So I built a mono-shock frame, which was a bit better. I showed it to a friend and told him

**Henry hopes U.S. owners of Ducati's dubiously styled, non-SS models from the 1970s will want to yank the motors and install them in Alchemy frame kits.**



PHOTO BY JEFF ALLEN

what we wanted—a short wheelbase with rising-rate suspension. He messed around with it and said it couldn't be done, not with rising-rate suspension. We tried relocating the shock, but nothing worked. A friend of his came up with a system similar to what we have now, but much more complicated. We fiddled around with it, made a few changes and came up with the current design. Owen Coles raced it all over Australia and New Zealand, and when he didn't crash or



**The SV-1's 3.5-gallon fuel tank is cut from sheet aluminum, then welded together. A larger, 5.0-gallon tank is also available.**

causes some imprecision when banking into a corner. Removing the damper resulted in crisper turn-in at the expense of headshake accelerating out of corners, especially on bumpy pavement.

The twin-piston Brembo calipers and floating 11.0-inch rotors offer exceptional feel and power, and stopping distances from both 30 and 60 mph were only marginally longer than those of Ducati's 916, which is equipped with the latest Brembos.

Our testbike's suspension was racebike-firm, especially the WP shock (Vee Two confirmed the damper was straight off its Twins racer). Even at minimum damping settings, the shock was best suited to smooth, high-speed, sweeping corners. The ultra-expensive, three-way adjustable WP fork—valved to Vee Two's specs—worked very well, soaking up braking bumps and mid-corner ripples. With its taut rear end and compact chassis, no surprise that the SV-1 is a buckboard on the freeway. Expansion joints and potholes jar the bike, sending jolts directly to the rider. Making matters worse is the thinly padded saddle, which offers little comfort.

As evidenced by the seat, there is no fat on this bike—just enough hardware to get the job done. As such, the head- and taillight are merely adequate, and the bar-end mirrors, which offer a surprisingly good rearward view, more like afterthoughts. There are no warning lights, and hoisting the bike up on its centerstand—there is no sidestand—requires Schwarzenegger-like strength.

At the dragstrip, the Alchemy sprinted through the quarter-mile in 11.87 seconds at 114 mph, nearly two seconds quicker than the 860 GT tested by *Cycle World* in 1975, and



only .13 seconds slower than our '92 Ducati 900 Superlight. Top-gear roll-ons were simply outstanding. The Alchemy required only 3.1 seconds to jet from 40-60 mph and a mere 2.9 seconds from 60-80 mph. No current production streetbike—even Honda's CBR900RR with its exceptional power-to-weight ratio—delivers such phenomenal figures. Much of this can be attributed to the bike's 410-pound dry weight; even the featherweight CBR weighs 22 pounds more. The SV's gearing-governed top speed was 123 mph.

The Alchemy's exotic status is guaranteed by its price. According to Vee Two, duplicating the SV-1 as tested here would cost about \$15,000. But as its performance indicates, the Alchemy is more than just another expensive exotic. Lightweight, narrow motorcycles can be incredibly satisfying, almost magical, reminding us that there's more to a good sportbike than three-figure horsepower or the latest in technology.

The Vee Two Alchemy SV-1? Think of it as a back-to-basics Superbike. □

blow up, which wasn't that often, nothing got anywhere near it.

**Q And the street version?**

**A** After we finished fourth at Daytona in '91, Owen went off to Europe and I went home. As it was, I just didn't have the time to put into racing. With the Alchemy, we figured there were lots of Darmah and 860 owners who could use a chassis with rising-rate suspension, quick steering and a short wheelbase. I'm convinced there are lots of guys who, if they knew about us, wouldn't need much prodding to get their old bikes back on the road.

**Q The Alchemy is a natural for BEARS (British, European, American Racing Series) competition. Do you like the series?**

**A** BEARS racing is made for me. It's going to be huge, and I'm getting geared up for it. At the moment, it's the fastest growing class in Europe and it's going to happen in America.

There's lots of guys who want to race a Ducati, but can't afford an eight-valve.

**Q You also manufacture a variety of components for newer Ducatis. Is there a chassis in the works?**

**A** We've actually designed such a bike, but we haven't put it in production. The standard bevel-drive chassis is really dated; with the Alchemy, you can use the powerplant and late-model suspension to come up with a really nice bike. But there really isn't anything wrong with the new 900SS frame, or a 916's. To make a chassis for that would be like trying to reinvent the wheel.

**Q What is the future for Vee Two?**

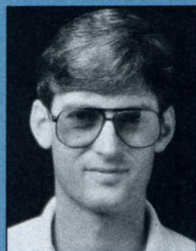
**A** Next year, we'll be concentrating on classic racing, and I want to get my original RV-1 going again and race that, or maybe a late-model 900SS, in BEARS. Also, I have to decide if I'm going to produce a belt-drive conver-



PHOTO BY KOICHI NAKAMURA

**Vee Two's racebike, the RV-1, uses the same chassis as the SV-1 but with a unique twist in the engine department. "I cut off the side of the engine, threw out the gears and drove the cams straight off the crankshaft, like the Britten," says Henry.**

sion kit for the old engines, or if I'm going to channel development work into my own engine. Also, there are quite a few engine bits for the eight-valve and late-model two-valve engines that we'll manufacture. We'll definitely be busy. □



IN THIS AGE OF HOME-BUILTS, RANGING from kit cars to composite aircraft, do-it-yourself motorcycles like the Alchemy SV-1 certainly have their place. All it takes is time, money, mechanical aptitude and a well-equipped work space.

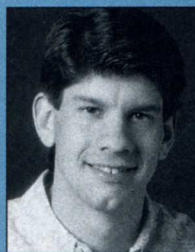
Personally, I don't have enough time, money or desire to even consider undertaking such a project, so getting a chance to ride the turnkey SV-1 was a treat indeed.

I was impressed more by the SV-1's handling than any other aspect of the bike. Steering was light and neutral while offering solid high-speed stability. Although cornering clearance wasn't without limit, there was enough on hand for serious road work in the twisties.

The engine? Well it worked pretty good, too—for a 20-year-old design.

So, if the idea of assembling your vehicle rather than riding it off the sales floor appeals to you, the SV-1 could be your bike. Call it a Ducati ultralight.

—Don Canet, Road Test Editor



WHAT'S THE BIG DEAL WITH VEE Two's Alchemy SV-1? Ducati's stunning 916 costs less, makes 25 percent more power and posts a 23-mph higher top speed. What, if anything, could be so appealing about a \$15,000 motorcycle powered by a 25-year-old, air-cooled Twin?

Aside from the fact that it is supremely capable in the twisties, the Alchemy is, by design, incredibly versatile. Interested in a completely different look? Try a set of five-spoke Marvics, four-piston Brembos and a 2-into-2 exhaust capped with carbon-fiber silencers. If you're really serious, opt for Vee Two's 100-horsepower, belt-drive conversion motor.

Purists may wince at the thought of chopping up a classic 900SS or 750 Sport to make an Alchemy. But with all respect to The Faithful, I'll take the SV-1 over an old-style Duck any day. Over a 916? That may take some convincing.

—Matthew Miles, Managing Editor



BROOK HENRY'S ALCHEMY SV-1 IS A sweetheart of a sportbike. Perfect? Not hardly. I'd like to see front-end geometry biased more towards the street than the racetrack. Softer rear suspension, too, please. And the shape of the bodywork—carved from styrofoam block by Henry and a helper—could use a restyle.

But the basics are bang-on. Big torque, light weight and low gearing mean that the SV-1 positively boils off corners. Just ask the startled FZR1000 rider who trailed me down Ortega Highway last Sunday. Great second-gear wheelies, too.

The Alchemy underscores the opinion that torque and taking off weight—rather than merely adding horsepower—is the best way to deal with a set of curves. Ducati knows this, Honda (at least with the CBR900) knows this, and so does one builder of bevel-drive specials in Australia. Everyone else, sadly, seems to have forgotten.

—David Edwards, Editor-in-Chief

# ALCHEMY SV-1

## SPECIFICATIONS

### GENERAL

List price approx. \$15,000  
 Importer Pro Italia  
 3518 N. Verdugo Rd.  
 Glendale, CA 91208

Customer service phone 818/249-5707

Warranty 12 mo./unlimited mi.

### ENGINE

Engine air-cooled, four-stroke V-Twin

Bore x Stroke 88.0 x 74.4mm

Displacement 905cc

Compression ratio 11.0:1

Valve train sohv, two valves per cylinder, desmodromic

Valve adjustment intervals 3000 mi.

Carburetion (2) 39mm Keihin

Oil capacity 5.3 qt.

Electrical power 200w

Battery 12v, 10ah

### CHASSIS

Weight:  
 Tank empty 410 lb.  
 Tank full 431 lb.

Fuel capacity 3.5 gal.

Wheelbase 54.4 in.

Rake/trail 27.0°/3.9 in.

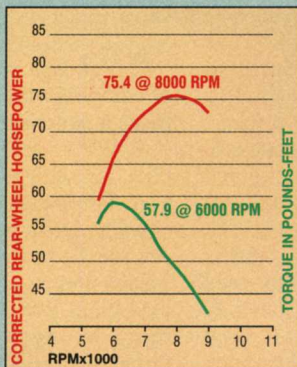
Seat height 31.3 in.

Ground clearance 6.6 in.

GVWR n/a

Load capacity n/a

### HORSEPOWER/TORQUE



### SUSPENSION/TIRES

Front suspension:  
 Manufacturer WP  
 Tube diameter 40mm  
 Claimed wheel travel 4.7 in.  
 Adjustments compression and rebound damping, spring preload

Rear suspension:  
 Manufacturer WP  
 Type single shock  
 Claimed wheel travel 4.0 in.  
 Adjustments compression and rebound damping, spring preload

Tires:  
 Front 110/70R17 Dunlop GPR-50F Rideen  
 Rear 150/60R17 Dunlop GPR-50 Rideen

### PERFORMANCE

1/4 mi. 11.87 sec.  
 @ 114.94 mph  
 0-30 mph 1.5 sec.  
 0-60 mph 3.5 sec.  
 0-90 mph 7.0 sec.  
 0-100 mph 8.7 sec.

Top gear time to speed:  
 40-60 mph 3.1 sec.  
 60-80 mph 2.9 sec.

Measured top speed 123 mph

Engine speed at 60 mph 3775 rpm

### FUEL MILEAGE

High/low/avg. 46/33/39

Avg. range inc. reserve 137 mi.

### BRAKING DISTANCE

from 30 mph 28 ft.  
 from 60 mph 116 ft.

### SPEEDOMETER ERROR

30 mph indicated n/a  
 60 mph indicated n/a

