

Project CABRIO

By JEFF HOLIFIELD

Welcome, to the first installment of *Hot VWs* magazine's latest endeavor, Project Cabrio. Yeah, we too noticed it's a water-cooled VW. And no, we don't have any plans on putting an air-cooled engine in it.

Through the years, *Hot VWs* has done articles on water-cooled VWs; but most of these have been along the lines of new car impressions, hi-po powertrains, or basic wheel/tire/suspension upgrades (that, by now, we've all seen a zillion times). Generally speaking, we've noticed that regular technical articles on how to keep a water-cooled VW on the road (and out of the wrecking yards) have been lacking from the newsstand here in the United States. As a VW enthusiast's publication that caters to folks who prefer to turn their own wrenches, we decided to correct that.

Our initial hurdle was finding an ideal water-cooled project candidate that also fit the size of an average bank account. The car had to be a model that someone would want to restore (and maintain), rather than send to the scrap heap. It also had to be fun to drive, and a fixer-upper in the \$2,000 to \$3,000 range. Our prospective models thinned quickly to the Golf and Jetta (A2), GTI (A1 and A2 models), Scirocco, and the convertibles (sorry Dasher fans — *ed.*).

Ultimately, the intended use of the vehicle eliminated many of the sportier models. As much as our souls desired a 5-speed VW, we were in the market for a city commuter car — one with an automatic transmission.

After non-inspiring test drives in a couple automatic Golfs and Jettas, we were all but ready to give up our morning cup of Joe in favor of a 5-speed, that is, until we got behind the wheel of a drop-top. Once around the block was all it took to convince us that a convertible water-pumper was the way to go. And so, the search was on.

We eliminated the Convertible Rabbit models (1980-'83) right off the bat. Besides

It's new, it's different ...
and it has a timing belt!



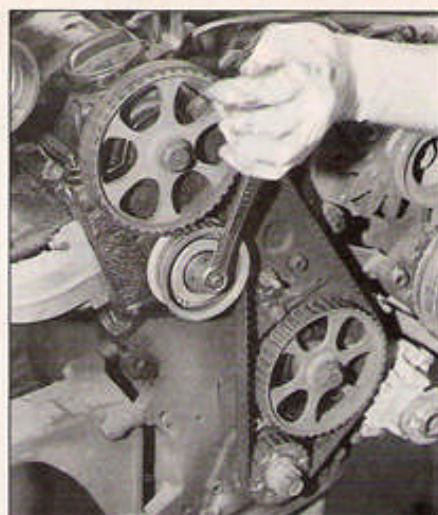
ABOVE, a long time in coming, *Hot VWs* has undertaken its first, full-tilt water-cooled project car — a 1986 Cabriolet.

RIGHT, looking for the utmost in reliability and compatibility, Genuine VW Parts will be our first choice of mechanical parts, such as the required timing belt and tensioner shown.

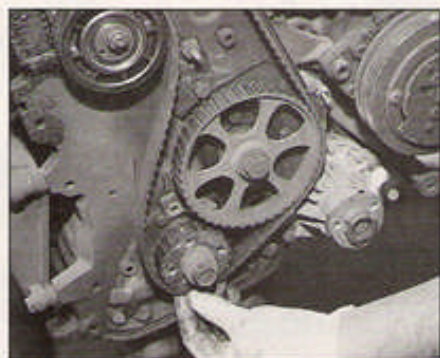


Camshaft drive belt replacement is simple if you just remember, timing *is* everything. **LEFT**, begin by removing the upper belt guard, and V-belts (above) by removing the water pump pulley. **BELOW**, using a long-handle socket wrench, turn the crankshaft drive bolt until the vibration damper's TDC mark matches the lower cover arrow. **BELOW CENTER & FAR LEFT**, check that cam and ignition timing is also at #1 cylinder TDC. Align cam sprocket timing mark with the valve cover surface. Remove distributor cap and check that the rotor is in-line with the #1 TDC mark on edge of housing. If both are off, the crankshaft should be rotated 360 degrees, and all markings rechecked.

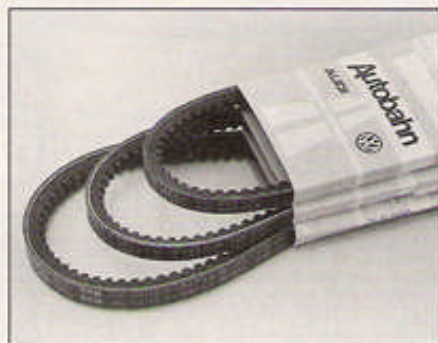
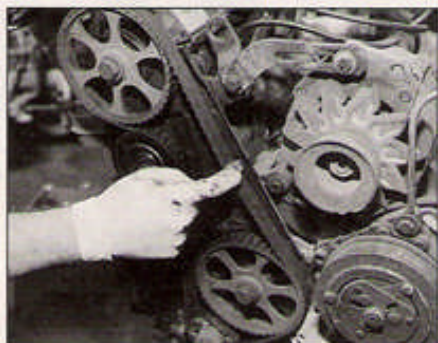




ABOVE LEFT, also, it is a good idea to verify the flywheel TDC dimple (arrow) aligns with the middle of the inspection port in the center of the bell housing. On automatics, there's a "0" on the flexplate for easy reference. **ABOVE CENTER**, remove the vibration damper, and the lower belt cover. Take note, there is a hidden Allen head socket head cap screw, by the crankshaft, holding the cover on (shown). **RIGHT**, with full access gained, remove the tensioner, taking care not to upset the sprockets.



ABOVE LEFT, remove belt from the top down, working it loose from the cam sprocket first. Install the new tensioner hand tight. **ABOVE CENTER**, verify the timing marks on the crankshaft (at the flywheel), camshaft, and distributor are still in their correct location. Install new drive belt, starting at the crankshaft, then to the intermediate shaft (shown), then to the camshaft. Verify all the belt's teeth are firmly set into each sprocket, and not riding on top. **ABOVE RIGHT**, using a special spanner wrench (available from Bugpack dealers), turn the tensioner clockwise to tighten belt, and secure with nut. A word of caution, it is possible to rotate the tensioner counter-clockwise and secure in place, but the lower belt cover will not fit due to interference with the tensioner.



ABOVE LEFT & CENTER, the drive belt should be fairly tight, with little deflection (shown left). The factory manual concludes the belt is properly tightened (on 8-valve engines) when the belt cannot be twisted by hand more than 90-degrees (center). It also is recommended to turn the crankshaft a couple of revolutions, then verify belt tightness and that timing mark locations correspond with one another. Reassembly is the opposite of removal. **ABOVE RIGHT**, don't forget new, factory V-belts as well (especially at 60,000 miles).

the Rabbit's anemic powertrain (which, of course, could be upgraded), improvements in the top design of the later Cabriolets (1984-'93) made the choice easy. Then statistics, and used car prices, played roles.

Here in the U.S., VW sold more than 12,000 Cabriolets annually between 1985-'88, which also meant they are the most plentiful group to choose from when buying used. We liked the idea of an '88, but due to its late-model exterior styling, revised interior package, and hydraulic cam engine, the going rate for used '88-later models put it out of reach.

The field now consisted solely of '85 through '87 Cabriolets which, incidentally, are nearly identical. Each year carried the same wheel well trim, grill, and taillights — though for '86 the bumpers were moved closer to the car (for better appearance) and a third brake light was added. Mechanically, all three years of the VW Cabriolet use a very similar 90hp 1.8L powertrain.

In the SoCal area, we found prices starting at \$1,800 (for highly used examples) to \$4,500 for clean, running VWs with rebuilt engines. In the end, we purchased a metallic gray, 1986 Cabriolet with 57,820 on the

odometer for \$2,600. More than we wanted to spend on this particular car, but a fair price considering the low mileage. The 12-year-old Cabriolet was mechanically fit, had a solid chassis, and flawless upholstery.

It is not without its problems though. The top has some small tears, the A/C compressor is on the blitz (ecks!\$!), the right engine mount is collapsed, the original shocks are barely adequate, and the factory paint has lost its luster.

As we have eluded to, our objective with Project Cabrio is to build a safe, reliable

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commuter car. Nevertheless, we also want a VW that looks, handles, and rides well ... without putting us in the "poor" house.

As much as we would like to save money on this project, we also have to be realistic and recognize that often there's a big difference between a cheap price and good value. When put in such light, some of the less expensive replacement parts currently on the market just don't seem like much of a bargain to us, particularly when compared to original equipment.

That's one of the nicer aspects of doing a water-cooled VW project — we can actually go to the dealer for factory parts. Instead of working with aftermarket import parts, we will be going through the car's mechanicals, top to bottom, using Genuine VW Parts whenever possible.

We will be starting with the camshaft drive belt for many reasons, the least of which is because if it fails, the VW is not going anywhere quick. Interestingly, while thumbing through the factory manual, we ran across a statement suggesting precautionary drive belt replacement at 60,000 miles, or every 4 to 5 years!

This brings us to an appropriate moment to discuss how we will be approaching Project Cabrio tech articles. Our plans are not to rehash the excellent information already available in the Official VW Service Manuals by Robert Bentley (we strongly suggest you pick one up). What we do intend to do is highlight the possible pitfalls, and hopefully demonstrate possible alternative methods of performing the same repair tasks, so driveway mechanics can utilize them at home.

To this end, we called upon late-model VW/Audi guru, Ron Wood, at Watercooled Specialties, in Huntington Beach, CA (714/848-3766). Fortunate for us, the shop had a similar 1.8L engine available on a stand (for photo purposes), and one of their top technicians was able to take time from his schedule and go through the ins and outs of the procedure with us.

Keep in mind during the installation that the "timing" belt not only clocks the camshaft to the crankshaft, but (on 8-valve engines) also synchronizes the distributor timing through an intermediate shaft.

Ron also warned that, on 16-valve engines, the tight piston-valve clearance demands precision timing of the opening and closing of the valves in relation to the pistons. If a worn 16-valve timing belt breaks, it spells disaster for a handful of valves, and a huge dent in the owner's pocketbook. Just something to keep in mind, 16-valve VW owners.

Also, we recommend a new tensioner pulley, as well as new V-belts, be installed at the same time a high mileage timing belt is replaced. So, once again, welcome to the first installment of *Hot VWs'* "Project Cabrio," brought to you by Genuine Volkswagen Parts. ●