Shoehorn Fit

Every once in a while, it's fun to do a job for the first time. Believe it or not, I'd never had cause to replace a Honda Accord timing belt. This presents an ideal situation for a fellow in my position. I can learn things the hard way, catalog my mistakes, and hopefully pass along a few suggestions on how and how NOT to do a job.

Upon opening the hood and viewing the crowded contents of the engine compartment, my first inclination was to close the hood and go for coffee. The left, or timing belt side of the engine compartment, is indeed a shoehorn fit. All the accessories: alternator, air conditioning compressor, power steering pump, and water pump are on this side. So is the servo for the cruise control unit, and the speedo and throttle cables pass through at tree top level, well below radar.

The left motor mount boss passes through the center of the timing belt. Unless you're Harry Houdini, that means removing the mount to replace the belt.

It wasn't until completing this first Accord belt replacement (in something less than record time) that I consulted with several Honda techs on ways to speed things up. Then we went back at another car with our new knowledge, and things were sooo much easier. We just needed to make a little extra room, that's all.

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This isn't exactly a pure step by step. Any good shop manual can do that for you. Instead, we included most of the important steps in the sequence, and added a collection of tips the shop manual doesn't bother to mention. Hope the info makes your first one as easy as my second one turned out to be.

I'm starting to like Hondas.

Cheap Insurance

It wasn't hard to convince the owner of the second Honda to replace the belt. In fact, he called me. He'd just received a letter from the local dealer spelling out the rather significant results of a broken belt on an Accord engine. The mention of internal engine damage gave him a new found sense of maintenance religion.

And the water pump? Unlike the Civic engine, the Accord water pump is not driven by the timing belt. A flat, ribbed belt drives both the water pump and alternator. As a result, a seized water pump does not lock up the cam belt as it does on a Civic.

But once you've gone to all the trouble of unearthing the timing belt, you're only five minutes away from water pump R&R. For the thirty or so bucks the pump costs, it would be foolish not to replace it.

Quick Tips

• After you've removed the left motor mount and crank pulley, you can make things a lot roomier by jacking the motor up 5 or 6 inches on the left side. Careful, we don't want to overstress any mounts or tear any ligaments. Our car was on a rack, so we placed a soft block of wood on the head of a floor jack, and raised the engine to provide that precious extra room where we needed it most.

• The other obstacles are the cruise control servo and the bundle of cables on the left. The servo is held in place by two bolts, an electrical connector and a vacuum line. Disconnecting these, and moving the servo off to the side was well worth the effort in terms of added working room. Then we pulled the cruise and throttle cables from their clips and suspended them about a foot above the engine, tying them from the hood with mechanic's wire.

• There's a handy little bleeder valve in the bottom of the radiator. Thank you Honda.

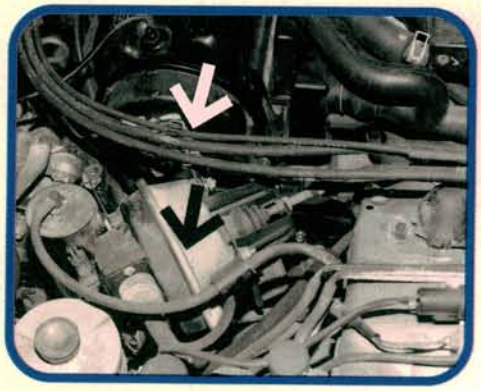
• There's also a handy little bleeder in the thermostat housing to help you purge the air from the system when you refill the cooling system.

• Even though the crankshaft turns in a counterclockwise direction, the crankshaft pulley bolt is a right hand thread.

• While most 1984 and 1985 Accords are probably on their second belts by now, beware of any timing belt on these two years with white lettering on them. As mentioned in an earlier article, Honda techs suggest replacement of these white letter belts, regardless of mileage. Both of our cars were newer models (an '87 and '89 respectively), and while the original belts had stretched about a half a tooth, neither looked like it was on its last legs.

• You're going to remove the valve cover anyhow, and the engine is cold, so why not sell a valve adjustment at the same time? Adjust the valves as you would on any overhead cam engine. Valve lash specs are on the underhood sticker.

— By Ralph Birnbaum



1

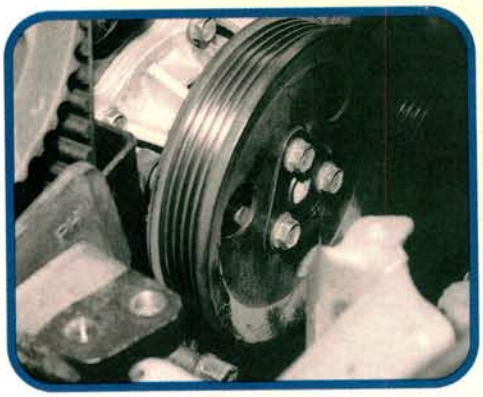
Tight fit? You bet. The cruise control servo (arrow) is REALLY going to be in our way. But it's easy to unbolt it, pull the electrical connector away, unplug the vacuum line, and swing it aside, cable and all. You can also see that bundle of cables we mentioned (white arrow). Tie them away also.

2

We removed the under-engine plastic protector, which is conveniently held in place by a jillion bolts and two plastic clips. Access to most everything under the car was easier with the cover removed. Later, replacing every single bolt becomes a good test of your dedication to a job well done.

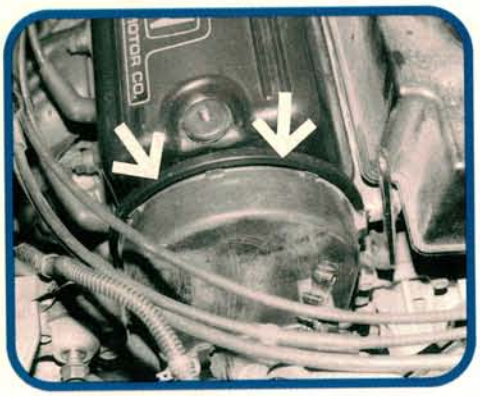
3

The A/C compressor rides low and to the front of the engine, just above the shield we just removed. Loosen the pinch bolt on the adjuster slide, and back off the adjustment bolt. Pivot the compressor and remove the belt. The power steering pump is on top. Same basic approach for that belt.



4

On our first Honda, we removed the alternator/water pump belt before breaking the bolts on the water pump pulley loose. That meant sticking a bar through the holes on the pulley to keep it from turning. The second time, we left the belt in place, and used the belt tension to hold the pulley.



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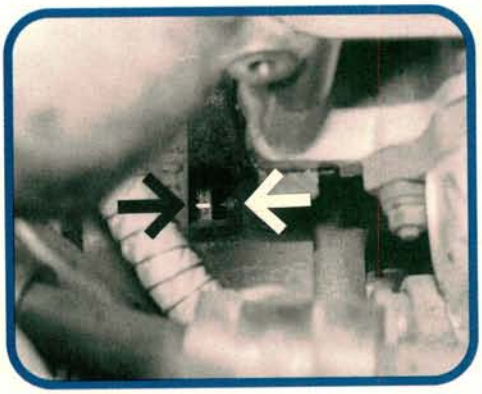
The valve cover holds the top timing belt cover captive below a rolled lip. Remove the valve cover, and then remove the 6 mm bolts holding the timing belt cover in place. Turn the engine counterclockwise until the engine is at TDC on Number 1.



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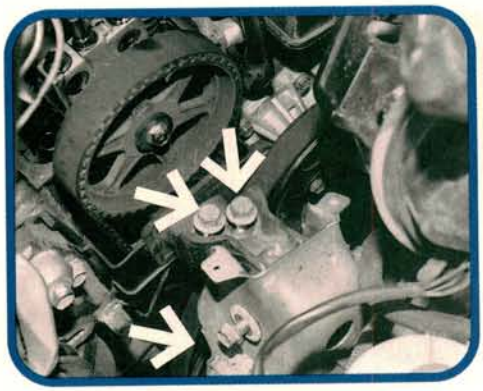
The access hole for the flywheel timing mark is located on the front of the engine, right next to the bell housing. Remove the rubber concealment plug from the hole, and watch for the timing mark as you approach TDC. Use the white mark shown in our photo.

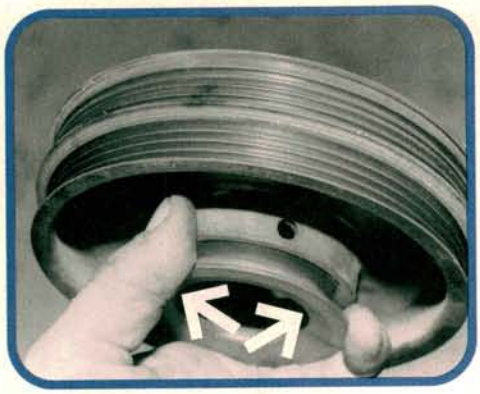
7

The camshaft timing mark is on the front of the cam sprocket, and should align with the top of the cylinder head (the valve cover gasket sealing surface) as shown. On both engines, the belt had stretched, which left the camshaft timing mark off by a half tooth with the crank at TDC on Number 1.



8

Let's move on to the motor mount. Support the motor and remove the bolts shown by our arrows. Then briefly lower the engine enough to remove the mount completely. With a few items out of the way our working area is starting to look downright spacious. At this point we also have room to remove the crank pulley.



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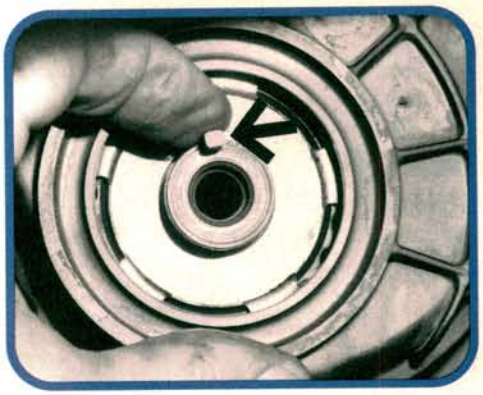
Forget about prying on a stuck crank pulley to remove it. The plastic timing cover is certainly no place to get leverage with a bar. And the outer lip of the pulley is very thin and easily damaged. We used a puller with the jaws reversed to grip against the stronger inner diameter of the pulley (arrows).



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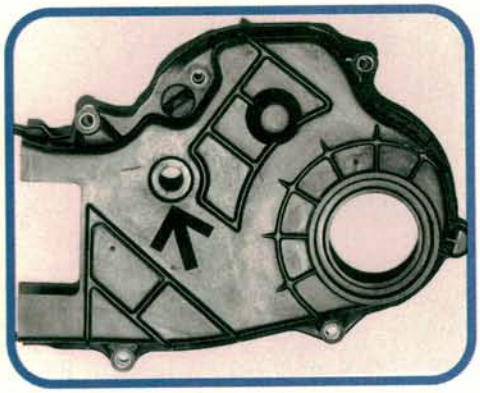
Even though the crank turns counterclockwise, the crankshaft retainer bolt is a right hand thread. The old "lefty loosey, righty tighty" approach applies. The locking key (arrow) between the crank snout and pulley is very tiny, and will do its best to land in the pile of floor dry at your feet.



11

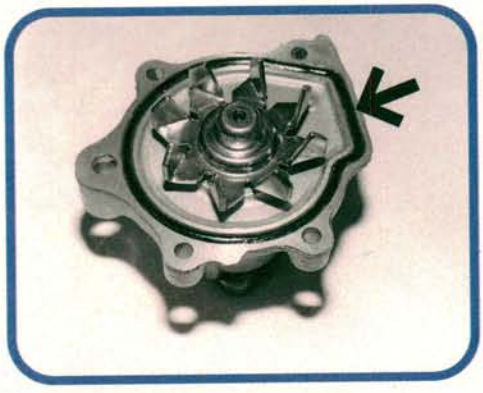
Now we can remove the lower timing belt cover. It's held in place by five bolts trapped in tight quarters. Maybe knowing where they're at will help your sightless fingers. The head of the tensioner bolt sticks through the hole (arrow) and the bolt shaft is sealed to the cover by a rubber ring.

12

The alternator bracket is still holding the pump captive and it'll have to step aside for a moment. The bracket is bolted to the intake manifold and alternator, and straddles the stud shown by our arrow. Careful here, there's a spacer between the bracket and the alternator. Make sure you reinstall it later.

13

You'll notice we've chosen to replace the pump before replacing the belt. Even though we've already drained the cooling system, there's always enough coolant trapped behind the pump to baptize the timing belt. We'll replace the pump first, clean up the mess, and then install the new belt.



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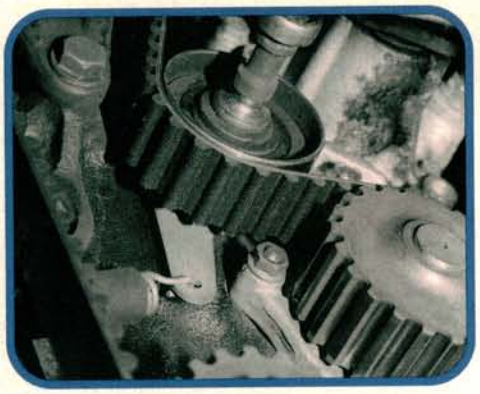
A new Honda pump comes with a new, shaped o-ring. There is no paper gasket. Please take a second to note the placement of the bolt holes in the pump. The one at the very bottom is tough to see with the pump in place. If you end up with a spare 6 mm bolt when you're through, this is a good place to start looking.



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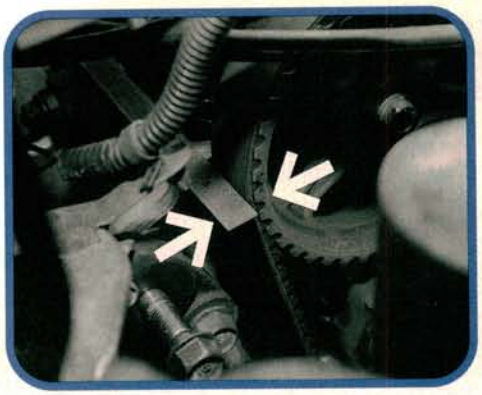
We're ready for a new belt. This view of the belt routing from below shows how it snakes around the crank and oil pump sprockets before turning its back to the idler pulley. Loosen the tensioner bolt, pry the tensioner away from the belt, and retighten the bolt. Remove the old belt.



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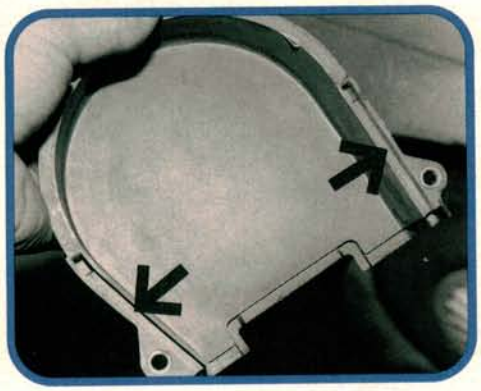
Remember, the old belt had stretched. So with the crank at TDC, we had to nudge the cam counterclockwise one half tooth to install the new belt, keeping all slack on the tensioner side. A thin machinist's scale laid flat on the head helped us sight across the mark. Loosen and retighten the tensioner pinch bolt.

17

The tensioner return spring will pull the tensioner against the belt and remove the slack. Tighten the crank bolt to 115 Nm (to keep it from backing off) and turn the crank counterclockwise, two full revolutions. Stop at TDC Number 1. Loosen and retighten the tensioner pinch bolt and recheck your timing marks.

18

There's a thin, washer-like belt guide sandwiched between the crank sprocket and pulley. If you do remove it, reinstall it as shown before replacing the lower cover. Remove the crank pulley bolt. Then reinstall the crank pulley and bolt. Bolt torque is 115 Nm (83 ft-lb).



19

Honda does its best to keep the dirt out of the timing cover. A rubber seal similar to a valve cover gasket seals the lower cover to the block. Part of the one piece seal extends above the lower cover and fits in these notches in the upper cover. Take a moment to fit the seal correctly.

20

Last minute finishing touches include: (1) Don't forget to reattach the ground wire at the valve cover stud. It can fall down and easily be forgotten. (2) Bleeding the cooling system was a breeze. Honda provides a small bleeder port on the thermostat housing to help bleed off any trapped air in a hurry.