IMPORT SERVICE

Blue Plate Special

Have you ever wandered into a restaurant without knowing what's on the menu? Maybe you're hungry, but you aren't sure what you want to eat. Asking the waitress for her suggestions can be a gamble. Maybe she'll recommend something delicious. But then again she might try to sell you whatever the cook in the kitchen has put together out of yesterday's leftovers.

If you want to play it safe, most restaurants will fix you up with their Blue Plate Special. It's probably nothing fancy, just basic meat and potatoes fare. Higher priced restaurants may give their house specialties more exotic names, but the idea is the same.

There isn't a repair job on the service menu that's more meat and potatoes than clutch service. That's because diagnosing clutch system problems is usually pretty straightforward. Either the clutch is working properly or it isn't. There are no electronics to worry about.

And although front wheel drive has made some clutch jobs a little less appetizing than they used to be, most certainly aren't bad enough to discourage a technician with a hunger for an honest profit.

Prelude A La Carte

The 1985 Honda Prelude sitting in our stall was an authentic Blue Plate Special, but it didn't come with an extra order of hash browns on the side. This car had been eating too much asbestos for its own good. It needed a new clutch badly.

If you have any previous Honda experience, you already know that some things about them are a little out of the ordinary. In fact, a few things are way out of the ordinary.

The first thing you'll notice when it's time to replace the clutch is that the transaxle is on the passenger side of the car. That's if you can see the transaxle when you raise the hood. The engine compartments of some Honda models, like our Prelude, can be pretty crowded.

Carbureted Prelude models are especially cluttered under the hood. This can turn a routine service job like a clutch replacement into a fishing expedition. The transaxle attaching bolts can be especially difficult to find for the first time if you can't even see them.

Extra Ingredients

Good technicians thrive on this kind of adversity and enjoy coming up with simple answers to hard problems. Several of the Honda technicians we spoke with while researching this article have developed their own special recipes for a smooth Prelude clutch replacement. You won't find these recipes in any service manual.

Where possible, we've worked these tips and suggestions into our photo captions. Some needed further explanation, so we'll include them here. If you read something twice, it's not because we're getting forgetful.

• Like we said, engine compartment clearance is very limited. We removed the air filter housing to make more room for hands and wrenches at the back of the engine. This also made the photography a little easier.

• If you remove the air filter housing, make sure you label the wiring. The connectors to the backup light switch can be easily interchanged with the air filter connectors and you'll end up with no backup lights.

• Some techs claim they can remove the transaxle without disturbing the suspension and drive axle on the left side of the car. We tried this method and found that the inner CV joint interfered with the flywheel during reinstallation. Separating the left lower ball joint, then positioning the axle safely out of the way just took a few extra minutes.

• If you do decide to leave the axle and suspension in place, make sure the steering wheel is turned all the way to the left. Pop the left inner CV joint out of the transaxle. Then clamp a locking pliers around the drive axle next to the left damper fork. Pull the axle out as far as you can before locking the pliers. The locking pliers should hold the axle far enough away from the engine to avoid interference with the flywheel.

• Don't tap on the inner CV joints to engage their locking rings during reassembly. The inner joints have no convenient lips or ledges, and you'll risk ripping the CV boots if you hit them accidentally. Install the inner joint splines into the transaxle as far as they will go by hand. Use the weight of the brake rotor/knuckle assembly like a slide hammer to push the axles in and engage the lock rings.

• The two piece torque arm bracket that bolts to the rear of the transaxle is an erector set. Your biggest problem the first time you do a Prelude clutch is figuring out how the bracket is attached to the transaxle, and which bolts need to be removed. Two bolts pass through the bracket from the engine side, while a third enters from the transaxle side. The torque arm attaches the bracket to the firewall. After removing the bracket bolts, move the bracket aside or remove it completely.

• We'll file this tip under "Experimental." The Prelude has a large crossmember that bridges the frame rails at the front of the body. The crossmember is attached to the frame rails by four large bolts, two at

each end. Slightly loosen the bolts at the left end of the crossmember, then loosen the bolts at the right end about two thirds of the way. Lowering the right end of the crossmember will also lower the engine and transaxle far enough to reach all of the transaxle mounting bolts from under the car. Make sure you've got a transmission jack under the transaxle. Never completely remove any of the crossmember bolts, and properly retorque them when you're finished.

• The basic body style and clutch replacement procedures are very similar for all Preludes from 1983-87. The new body style that came along in 1988 also included a new transaxle with cable operated shift linkage. Removing the transaxle on an 1988 or later Prelude is even more involved than the earlier models we're covering in this article.

—By Karl Seyfert

1

Make a note of the radio stations, and make sure the transaxle is in neutral. Disconnect the battery ground cable. Battery and battery tray removal are optional. These extra steps gave us a little extra room inside the Prelude's crowded engine compartment.

2

Removing the air cleaner inlet tube will give you a clear shot at the clutch cable. Loosen the cable adjusting thumb wheel until the clutch cable can be removed at the release arm, then pull the cable out of the bracket. Disconnect the small ground wire attached to the clutch cable mounting bracket.

3

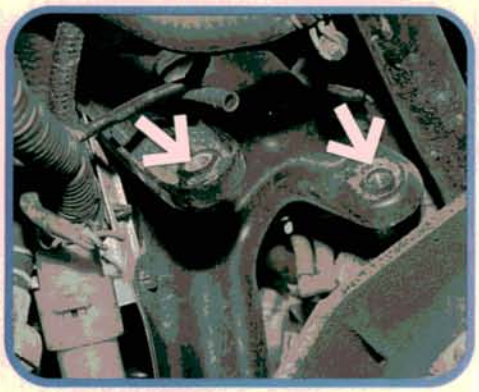
We pushed aside a tangle of emission hoses to get this photo of the starter. The starter motor's electrical connections are pretty easy to reach, its mounting bolts are not. The long upper mounting bolt passes through the transaxle to the engine. The shorter lower bolt threads into the transaxle.

4

Disconnect the backup light switch wiring connectors located near the air cleaner assembly. Use an extension (arrow) to remove the two upper transaxle mounting bolts. The first is directly above the upper starter mounting bolt hole, the second is further forward. Eyes on your fingertips will help to find them.

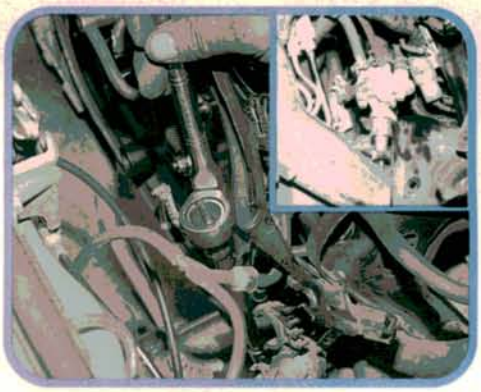
5

This photo shows the two piece torque arm bracket at the rear of the transaxle. We've already removed the torque arm that connects the bracket to the firewall. The two piece bracket straddles the transaxle, with mounting bolts that pass through unthreaded holes in the transaxle clutch housing.



6

We're jumping ahead a little here. With the transaxle removed, you can see how the the torque arm bracket is attached to the transaxle. Two bracket bolts pass through the transaxle from the engine side, and one bolt comes from the transaxle side. Captive nuts in both bracket halves hold all three bolts in place.



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Use an extension to reach the speedometer drive assembly attaching bolt at the rear of the transaxle. Leave the power steering hoses attached to the speed sensor. Pull the speedometer drive out of the transaxle, then prop it against the crossmember to keep it out of the way.

8

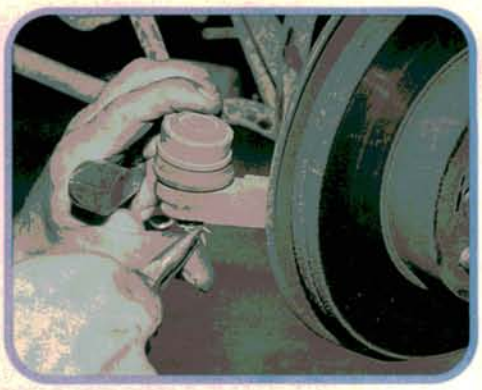
Raise the car on a frame contact hoist. Remove both front wheels. Remove the plastic underpanels, then drain the transaxle. Remove the right side radius rod. Some techs claim they can remove the transaxle without removing the radius rod. It looks like it would be a tight fit (arrow).

9

Remove the center beam. The beam doesn't support the weight of the engine and transaxle. The rubber damper at the middle of the beam mates with the damper bracket that's attached to the transaxle (arrow). Remove the three damper bracket bolts along with the bracket.

10

Disconnect the shift lever torque rod at the clutch housing. Remove the shift rod clevis bolt, then check the shifter bushings and clevis bolt for wear. Put the small bushing parts in a safe place to keep from losing them. Position both shift linkage rods out of the way.



11

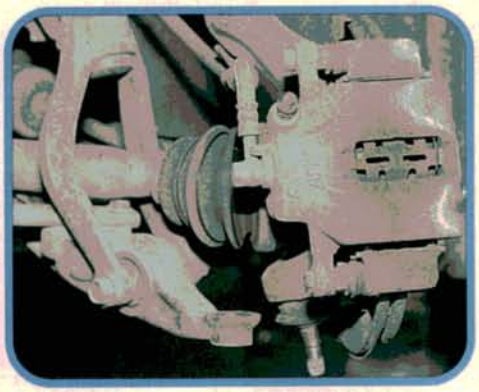
Remove the passenger side tie rod and lower ball joint cotter pins and castle nuts. Use a ball joint tool to separate the lower ball joint and tie rod end. Separate the lower ball joint on the driver side. Turn the steering wheel all the way to the left.

12

Retaining rings are used to lock the inner CV joints into the transaxle splines. Use a large screwdriver or pry bar to pry between the transaxle and inner CV joint to pop the retaining ring out of its groove. Stretching an old ring to reuse it may jam the joint in the transaxle splines.

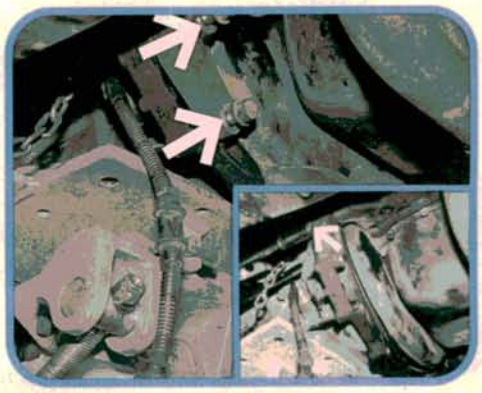
13

Honda recommends separating the front struts from the damper forks to disassemble the drive axles. These bolts are often rusted. Instead, we disconnected the brake hose bracket from the strut on the passenger side. Then we slid the axle part way through the fork, and wedged the inner CV joint against the frame.



14

Some Honda techs leave the driver side suspension assembled. We tried it both ways and found it easier with the lower ball joint separated. This lets the drive axle move out far enough to avoid interference between the inner CV joint and the transaxle. Keep the wheel turned to the left.

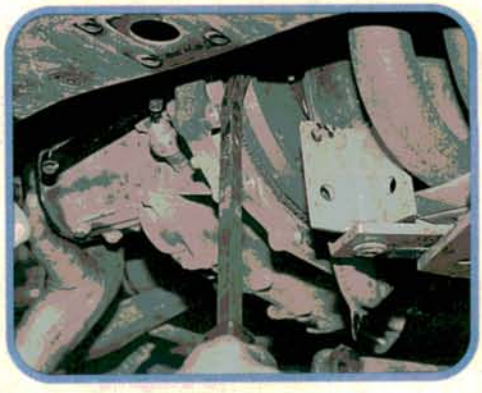


15

Slide a transmission jack under the transaxle before removing any more bolts. The cast iron front mount (left arrow) attaches the transaxle to the engine with four bolts (two to the engine, two to the transaxle). With the mount out of the way, remove the front transaxle attaching bolts (right arrow).

16

Remove the three bolts that attach the rear mount to the transaxle clutch housing. All three bolts thread into the left axle seal area of the clutch housing. Make sure you remove the correct bolts, since the upper half of the rear mount also supports the rear of the engine. Remove the stamped metal flywheel shield.



17

Push the transaxle away from the engine. The transaxle has a short input shaft and should clear the pressure plate. Use the weight of the differential to roll the rear of the transaxle downward as you lower the transaxle. This rolling maneuver lets the transaxle squeeze between the engine and right frame rail.

Blue Plate Special

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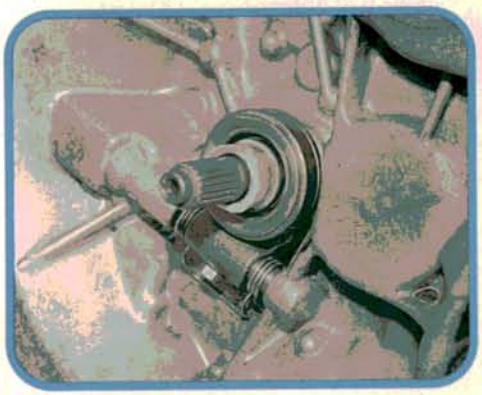
Remove the clutch disc and pressure plate, then inspect the flywheel surface. Some Honda techs recommend a flywheel refacing job with every clutch replacement to avoid chatter problems. If you're fixing a Blue Plate Special, the heat damaged flywheel may need to be replaced rather than refaced.



19

Check the inside of the bell housing for signs of input shaft or rear main shaft seal leakage. The transaxle must be disassembled to replace the input shaft seal. Remove the release bearing, then clean the bell housing. Check the transaxle snout for release bearing wear, then install the new release bearing.

20

Give the new clutch disc a test fit on the input shaft. It's better to find out now whether you have the right disc. Use a clutch aligning tool to center and install the new clutch disc and pressure plate. Evenly tighten the pressure plate bolts to 26 Nm (19 ft-lb), then retrace the transaxle removal steps.