

Hot Fudge Hyundai Excel Maintenance



Just a few years ago, if someone had told me that he just bought a Hyundai, the first thing I probably would have thought of was vanilla ice cream, chocolate syrup, and chopped peanuts. Yes, Hyundai rhymes with sundae, but that's where any similarity between Hyundais and dairy products ends. With almost 800,000 cars sold in the U.S. since their introduction, there aren't many people making the same mistake today.

A year ago, we did a maintenance and valve adjustment article on a late model BMW. The scope of this article is similar to what we covered back then. We'll familiarize you with the Hyundai Excel's mechanical layout and give an overview of some of the more common maintenance services that you might be performing on these cars.

If you're thinking that the Excel is still too new, and that most of them are still going to the dealer for

maintenance service, consider this. With over three quarters of a million on the road, there are a lot more Excels than there are dealers to service them. The odds are pretty good that you'll be seeing one for service before too long.

We spent some time with a 1989 Excel and went through the factory recommended 15,000 mile maintenance procedures ourselves. If you've done any work on Mitsubishi products before, the Excel will seem especially familiar. The Excel's engine and transmission are both Mitsubishi designs. Similar versions of the engine can also be found in the Mitsubishi Mirage and Precis, as well as the captive import Dodge Colt. You won't need to learn Tae Kwon Do before working on Hyundais.

The engine is a three-valves per cylinder design. Hyundai, like Mitsubishi, refers to the small auxiliary

intake valves used in the engine as Jet Valves. Proper adjustment of the Jet Valves, and the conventional intake and exhaust valves, requires a special procedure which we will cover in detail later in this article. It's really not that hard to do, it just requires some practice to get the hang of it.

Another unique feature of the Excel is the operation of its five-speed manual transaxle. The first few shifts into fifth and reverse brought some unfamiliar sounds from the transmission. It made a distinct clicking noise which didn't seem connected to anything I was doing with the shift lever.

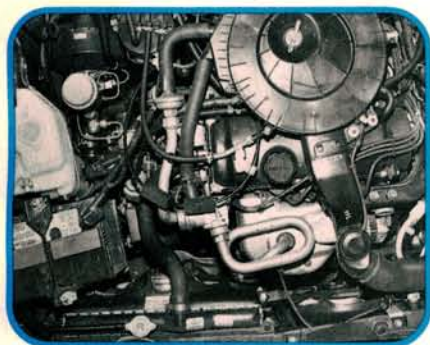
Some research in the factory manual revealed that the transaxle engages fifth and reverse gears with the help of a vacuum powered select actuator. A select switch at the front of the transaxle senses the position

of the shift linkage. Current from the closed select switch actuates the control relay, which allows operation of the select control valve. The select control valve applies vacuum to the select actuator to engage either fifth or reverse gears.

At today's prices, it's pretty hard to describe any new car as inexpensive. The cost of even the lowest priced car is more money than most people carry around in their back pockets. That's why a regular maintenance program—either one that follows factory recommendations, or one similar to what we detailed in this month's **Carside Manner**—should make as much sense to a Hyundai owner as to any other.

For your convenience, we've included a chart of maintenance-related information on the Excel in this article.

—By Karl Seyfert



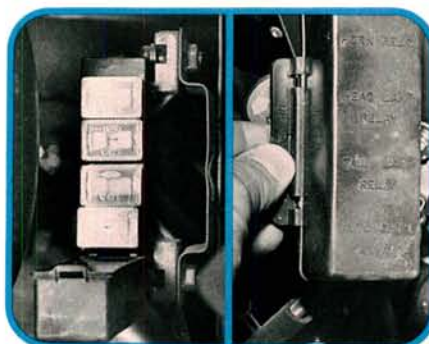
Here's a bird's eye view of the engine compartment. The front hinged hood leaves lots of room to work at the back of the engine. Transparent reservoirs are used, so most fluid levels can be checked at a glance. This photo isn't backward, the master cylinder really is on the right.



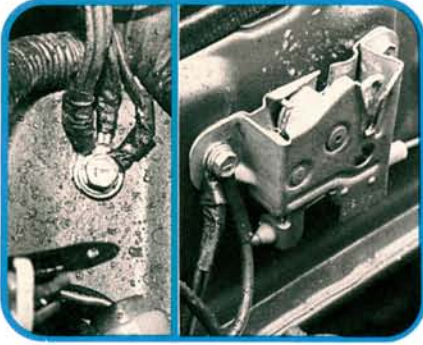
Most common service items are arranged for easy accessibility. The fuel filter is mounted below the carbon canister, on the right side of the firewall. The oil filter is mounted on the back side of the engine and can be reached from the top side of the engine.



The Excel doesn't have any maintenance or oxygen sensor reminder lights to reset. It's up to you to remind the customer of his maintenance requirements. The oxygen sensor has a 50,000 mile replacement interval and the timing belt should be replaced at the 60,000 mile mark.

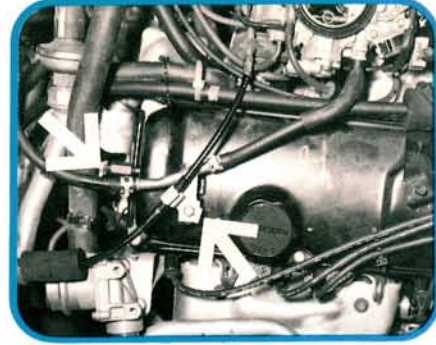


Relays and fusible links are easily accessible. The fusible links (left photo) are under a plastic cover to the left of the battery tray. The horn, head lamp, and tail lamp relays are also under a plastic cover on the firewall above the clutch cable (right photo).



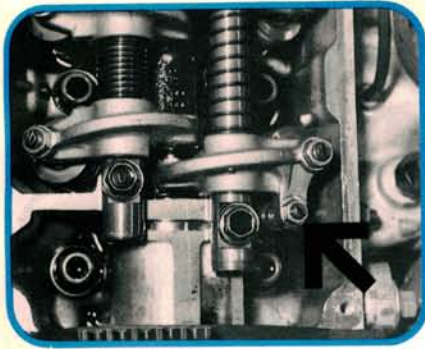
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Check the wiring harness ground connections for looseness or corrosion. Many hard to solve electrical problems start with loose grounds. The Excel's engine harness ground wires are under bolts at the front of both inner fenders (left photo) and also at the hood latch (right photo).

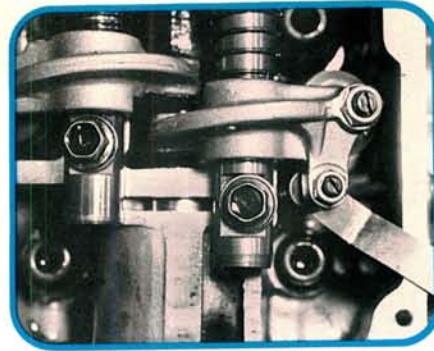


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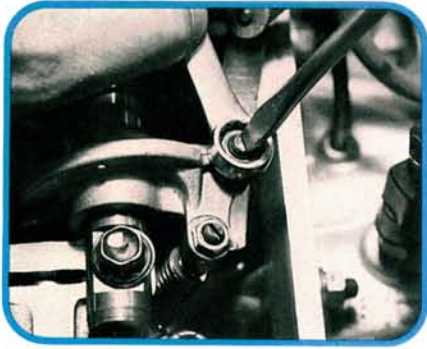
The valves are adjusted with the engine at operating temperature (70-90 degrees C). Remove the air cleaner assembly and spark plug wires. Remove the accelerator cable bracket and PCV valve hose (arrows). Remove the six valve cover bolts, then lift the valve cover free of the head.



Hyundai recommends retorquing the Allen-headed head bolts before adjusting the valve clearances. Before adjusting the Jet Valve clearance (arrow), loosen the intake valve locknut and back off its adjustment by two or more turns. Then adjust the Jet Valve clearance to 0.25 mm (0.010 in).

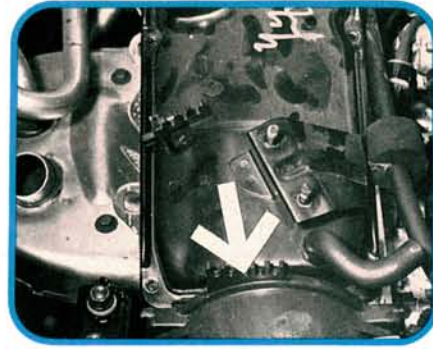


Recheck the Jet Valve adjustment before adjusting the intake valve. The spring pressure on the Jet Valve is so light that tightening the adjuster locknut may be enough to throw off the adjustment. An improperly adjusted Jet Valve not only makes noise, it also affects emissions and performance.



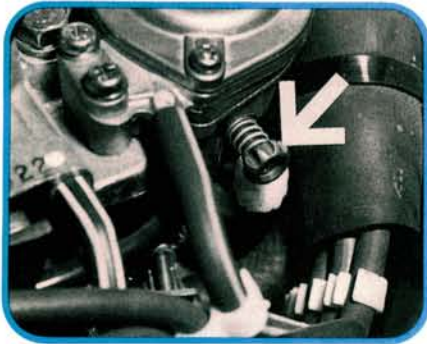
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Rotate the engine to TDC on number one, then adjust number one and two intakes, and number one and three exhaust valves. Turn the engine to TDC on number four, then adjust number three and four intakes and number two and four exhausts. Intake clearance is 0.15 mm (0.006 in), exhausts 0.25 mm (0.010 in).



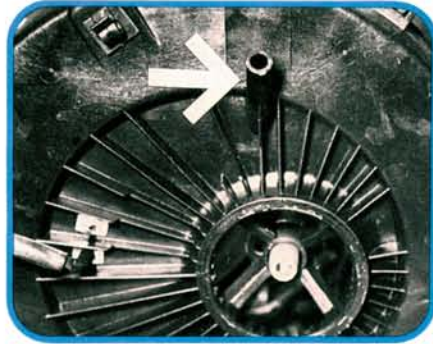
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This car was nearly new so we reused the rubber valve cover gasket. Check for splits in the gasket, especially around the bolt holes. Make sure the gasket is in place, then tilt the left end of the valve cover under the timing belt cover (arrow) to reinstall it.



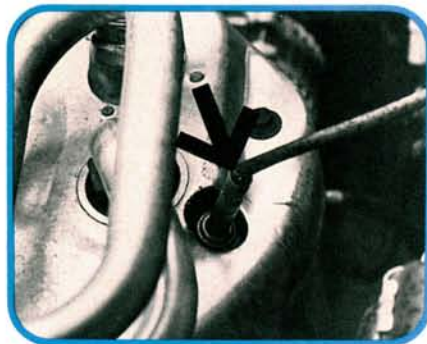
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Make sure you know which adjusting screw on the feedback carburetor you're twisting. The metal-headed screw (arrow) adjusts the throttle opener. The white plastic screw below it controls normal idle speed. A third screw in the carburetor base is factory preset and should not be adjusted.



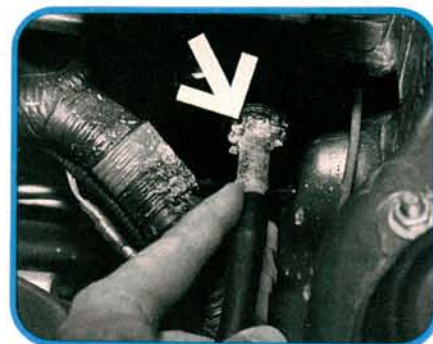
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I spent about five minutes while reinstalling the plastic air cleaner trying to find the hose that connects to this port (arrow) in the air cleaner assembly. The port isn't drilled all the way through. No vacuum hoses are attached to it on this model.



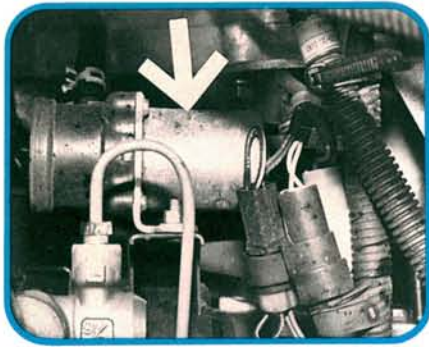
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As we mentioned, there's no dash reminder light for oxygen sensor replacement. The oxygen sensor is easily serviced at the top of the exhaust manifold (arrow). The Excel has a pulsed secondary air system which supplies air to the exhaust before and after the front converter.



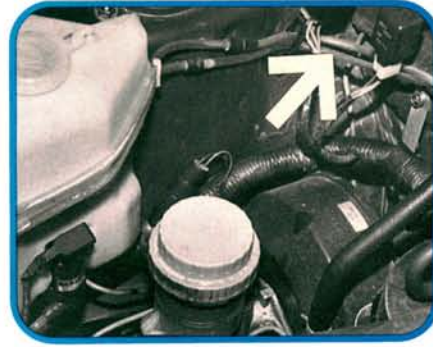
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Clutch cable free play is adjusted at this star wheel (arrow) located on the left side of the firewall. Pull out lightly on the outer clutch cable tube, then turn the star wheel to adjust the clearance between the star wheel and the cable holder to 5-6 mm (0.20-0.25 in).



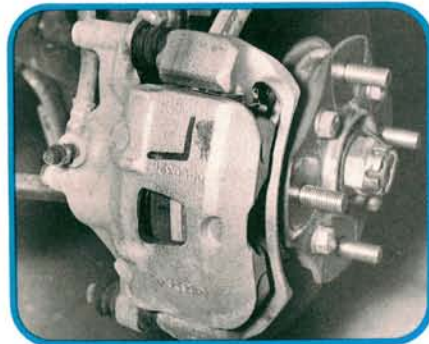
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This will give you an idea where the transmission clicking noise in fifth and reverse is coming from. The vacuum operated control actuator is below the master cylinder (arrow). The select actuator is out of sight below the clutch cable. Both gears are mounted on the transmission's input shaft.



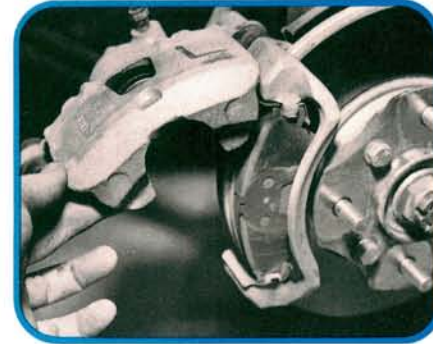
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The right side mounted brake master cylinder would make the Excel an easy conversion for a driver training car. It's connected to the brake pedal by a linkage which runs across the inside of the car. The electric choke and intake manifold heater relays are at the upper right (arrow).



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The 1988-89 Excel's ventilated front brake discs are something not usually found on cars in this price range. Different hub and rotor combinations have been used. This rotor requires hub removal for rotor refinishing. Tokico design front rotors can be removed separately.



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Front brake pad replacement has been simplified on the '89 Excel. Remove the lower caliper mounting bolt, then swing the caliper away from the pads. Slide the caliper off the upper mounting pin to remove it. Install the brake pad wear indicators facing down on the inner pads.

HYUNDAI EXCEL MAINTENANCE INFORMATION CHART

FLUID CAPACITIES AND RECOMMENDED LUBRICANTS

Crankcase—API Classification SF or SF/CC

Without filter: 3.0 liters (3.2 quarts)

With filter: 3.5 liters (3.5 quarts)

Manual Transmission—API Classification GL-4

2.1 liters (2.2 quarts)

SAE 75W-85W

Automatic Transmission—Dexron® or

Dexron® II ATF

5.8 liters (6.1 quarts)

Power Steering—Dexron® II ATF, 0.8 liters

Cooling System—ethylene glycol, 50 percent concentration, 5.0 liters (5.3 quarts)

Brake Fluid—must conform to DOT 3 or equivalent

MAINTENANCE AND REPLACEMENT INTERVALS

Engine Oil and Filter—7500 miles or six months, 3000 miles or three months under severe usage

Air Cleaner—30,000 miles or 24 months, more frequently under severe usage

Spark Plugs—30,000 miles or 24 months, every 24,000 miles or 18 months under severe usage

Engine Coolant—30,000 miles or 24 months

Manual and Automatic Transmission Lubricants—30,000 miles or 24 months

Valve Clearance Adjustment—15,000 miles or 12 months

Timing Belt—60,000 miles or 48 months

Oxygen Sensor and Charcoal Canister—50,000 miles or 40 months