IMPORT SERVICE

Our story takes us back in time to a familiar planet in our solar system called Earth. It was on this planet that a group of automotive design engineers gathered in a country then called the Federal Republic of Germany. The engineers embarked on a mission that was daring in its simplicity: to attach a cargo carrying compartment to the rear of a proven terrestrial transporter, the Volkswagen Rabbit. During the compartment grafting procedure, the vehicle's other dimensions would also be slightly enlarged. The engineers called the result of their efforts the Volkswagen Jetta.

Many Jettas have been built and placed in service since the original group of design engineers had their first meetings in the late twentieth century. These vehicles have helped their owners explore millions of square miles of the Earth's surface. But like any exploration or transport vehicle, the Jetta must have routine maintenance and repair in order to return reliable service to its owner.

We caught up with a 1986 Jetta GLI while it was in space dock recently. The Jetta had just returned from a journey of over 77,000 Earth miles. We'll chronicle the maintenance and repair items that were performed to ready the Jetta for its next 77,000 miles of Earth duty. These repairs are typical for 1985 and later second generation Jettas.

Return Of The Jetta

Return of the Jetta

Subspace Transmissions

The Jetta has been a reliable vehicle with very few truly unusual problems. The following service information was transmitted from the factory in coded form and traveled several light years throughout the dealer network. The transmission was later intercepted and decoded by powerful scanners. We hope the additional information will prevent you from burning up during re-entry following your next Jetta encounter.

ECU Precautions

Use caution when servicing 1988 and later Jetta models equipped with Digifant II fuel systems. The ECU may be damaged if any of the following precautions are not observed:

- Never short ignition coil terminal number 1 to ground with a screwdriver or similar object during engine adjustments.
- ECU terminals 13 and 19 must be properly grounded at all times. Check the ground connections at the intake manifold, cooling outlet fitting at the engine block, and at the negative battery cable.
- Never disconnect the idle stabilizer valve harness connector when the engine is operating or when the ignition is switched on.
- Never measure the idle stabilizer current draw with a digital multimeter set on the voltage scale.

Starter Noise

A damaged starter drive and torque converter carrier plate may cause noisy starter engagement on 1985-90 Jettas equipped with automatic transmissions. If the damage is bad enough, the starter may not engage. An updated starter motor and torque converter carrier plate are available to correct this problem. These parts were added to production during June 1990 on German Jetta production and during September 1990 for Mexican Jetta production.

Heater Cores

Many Jetta and Golf models have had problems with heater core leakage. Volkswagen has recently recognized this problem. If your customer has a heater core that's leaking, have him contact a Volkswagen dealership before you attempt to repair the problem. The owner may be entitled to warranty service.

Transaxle Oil Leakage

A metal final drive gasket (P/N 010 409 597 A) is available to correct final drive housing cover leakage on 1989-90 Jetta models. When installing the new gasket, always apply sealing compound (AKD 456 5000 02) to the attaching bolts, then torque the bolts to 75 Nm (55 ft-lb).

Radiator Cooling Fan Operation

At high ambient temperatures (above 105 degrees F) with the ignition off, refrigerant pressure in the A/C system may activate the high pressure switch and trigger the high speed radiator fan relay. This causes the radiator cooling fan to run at high speed, discharging the battery.

To repair this problem:

- Remove the female harness connector from the A/C high pressure switch. Leave the harness connector disconnected.
- Attach female wire terminals (P/N N 017 490 57) to both ends of two 18 gauge wires (one six inches long and the other five feet long).
- Install the short and long wire terminals into harness connector (P/N 161 971 989 C).
- Insert the terminal on the other end of the short wire into cavity number 5 of the high speed radiator fan relay socket.
- Attach the new harness connector to the A/C high pressure switch.
- Cut the long wire approximately five inches from its free end, then install an inline fuse holder and 10 amp fuse. Attach the remaining five inches of wire to the other side of the fuse holder.
- Route the long wire along the fender well to the ignition coil and fasten it with tie wraps.
- Attach the terminal at the end of the long wire to ignition coil terminal 15. This powers the radiator cooling fan only when the ignition is turned on.
- Install the replacement radiator fan relay (P/N 321 919 505 A) in the high speed fan relay socket.

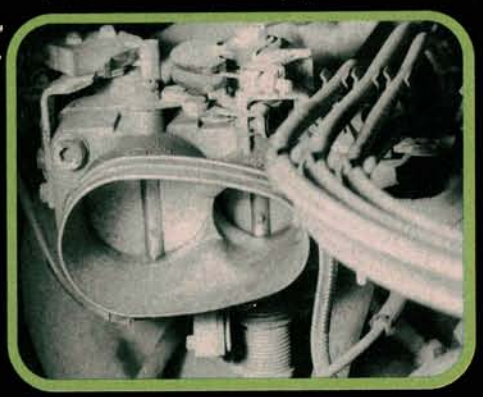
— By Karl Seyfert

1

A sludged up valve cover and a clogged PCV system had loaded the top of the sensor plate with an oily residue. We cleaned the sensor plate, then checked for proper centering and height. Adjust plate height by bending the wire spring stop below the plate.

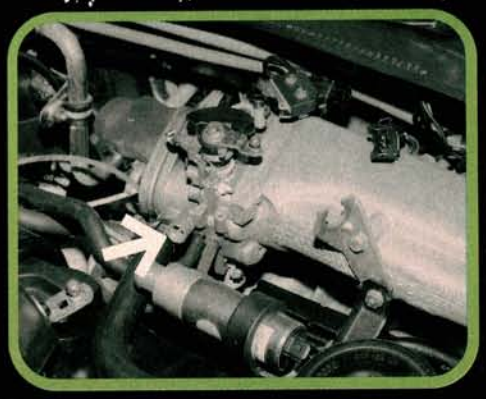
2

If a KE equipped engine accelerates poorly or lacks power, check for an improperly installed or bent sensor plate screen. A bent or upside down screen will limit the sensor plate's upward travel. Clean and straighten the screen, then install it with the words *oben* or *top* facing upward.



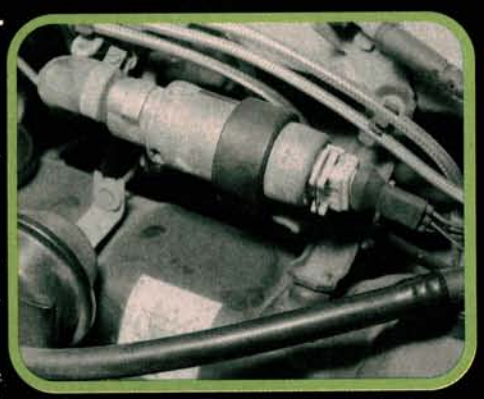
3

Throttle housing deposits can keep the throttle plates from opening and closing properly, causing an unstable idle or a binding throttle. Remove the rubber intake boot, then clean the throttle housing deposits with carburetor cleaner. Readjust the idle stop screw if it has been tampered with.



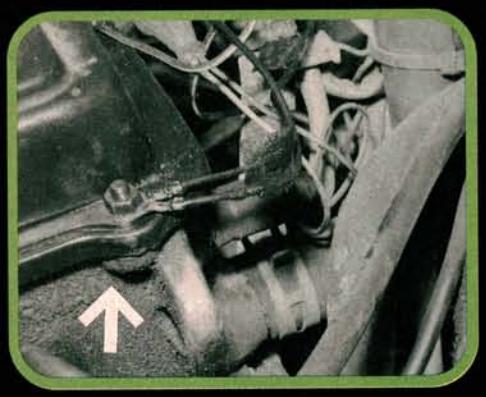
4

The ECU uses the idle stabilizer valve (arrow) to control the idle speed at all engine temperatures and loads on KE and Digifant systems. Turning the air bypass screw in the throttle housing adjusts the idle stabilizer valve's duty cycle. Don't attempt to adjust the idle speed "by ear" by turning the air bypass screw.



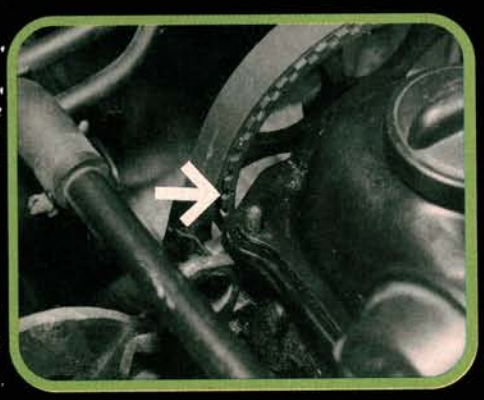
5

Idle stabilizer valve deposits may also keep the engine from idling properly. Also check for air leaks in the hoses leading to and from the valve. If the throttle must be fully depressed to start the engine on Digifant models, the idle stabilizer valve has stuck closed and should be replaced with an updated valve.



6

Jetta gasoline engines have had hydraulic cam followers since 1985, so there's a good chance the valve cover won't be removed until the gasket starts to leak oil (ours was). Vacuum leaks at the valve cover gasket can also cause idle speed control problems, especially on 16 valve models.

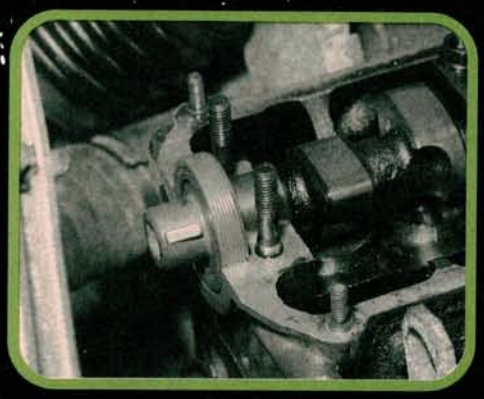


7

Timing belt replacement procedures are the same as earlier Volkswagen models equipped with the single overhead cam engine. The valves won't bend if the belt breaks, but a broken belt can do some very expensive damage on twin cam and diesel engines. Following the 60,000 mile change interval prevents problems.

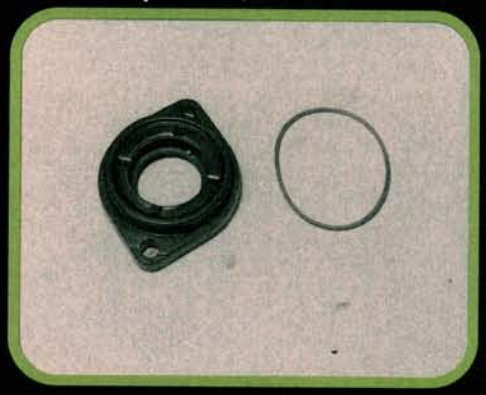
8

At 77,000 miles, our engine was already well past the recommended belt replacement interval. We also found several other good reasons to replace the belt. The camshaft, crankshaft, and auxiliary shaft seals were all leaking. The belt and sprockets must be removed to replace these seals.



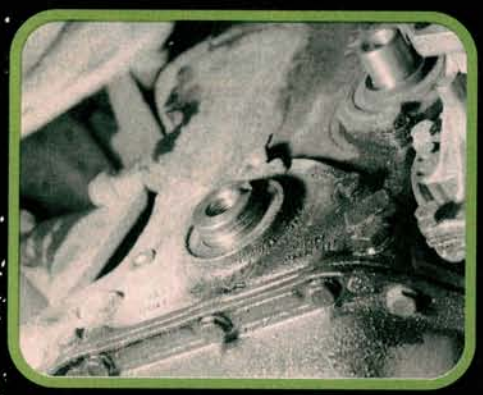
9

We didn't have the special camshaft seal remover and installer, so we removed the upper half of the camshaft bearing to replace the camshaft seal. The seal sits in a recess at the end of the bearing housing. Once the cam bearing cap is removed, the seal slides right off the end of the camshaft.



10

The auxiliary shaft seal is mounted in a separate housing that bolts to the block. Always remove the housing when replacing this seal. The large o-ring that seals the housing to the block should also be replaced. The o-ring flattens out over time and was causing one of our engine's larger oil leaks.



11

Unless you are particularly handy with a hook style seal remover, it may be easier and safer to remove the seal housing to replace the crankshaft seal. It's also easier to install the new seal when the housing is on the bench. The seal housing can be removed without damaging the pan gasket.

12

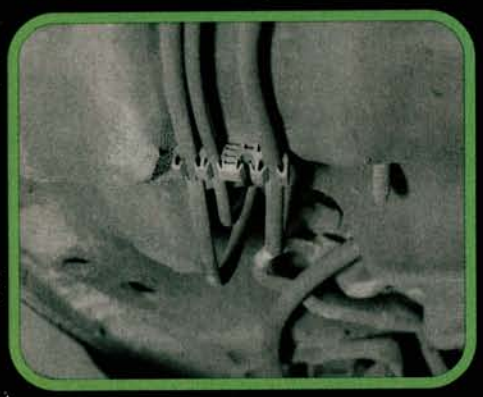
Take a close look at the water pump while the timing belt, sprockets and timing covers are removed. The water pump is mounted on an extension housing that bolts to the block. The housing is sealed to the block by a large o-ring. Replace the pump and housing o-ring now if either shows any signs of seepage.

13

The fuel filter is located under the car, next to the main fuel pump. There are no flexible lines nearby to pinch with a hose pliers, so position a pan under the filter before loosening the filter banjo bolts. Use a backup wrench on the filter to properly torque the bolts during installation.

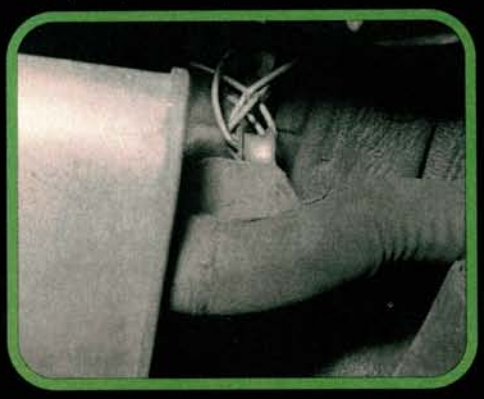
14

The high pressure, low volume main fuel pump is housed in a plastic reservoir. A low pressure, high volume prepump inside the fuel tank keeps the reservoir filled with fuel. A prepump failure will cause stalling around corners. Also check for fuel leaks between the reservoir and the main pump.



15

Digifant and KE systems require correct fuel pressure and no leaks for proper operation. The plastic fuel lines and fuel tank should give better service than the steel components they replace. Use the proper techniques (September 1989 *Import Service*) when repairing plastic lines or fittings.

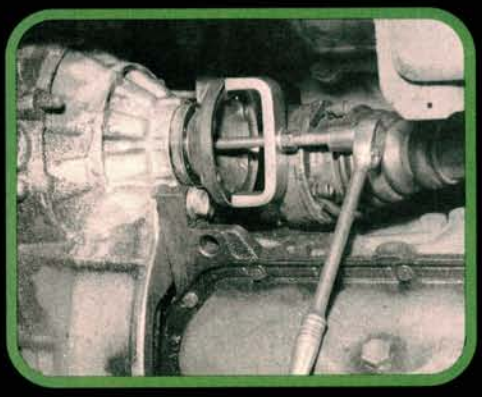


16

Use care when installing new exhaust components. Make sure all parts have adequate clearance before tightening the clamps. The rubber hangers may stretch or break, causing the exhaust to hit the rear axle over bumps or when heavily loaded. The stiff wire shown here is an imaginative repair solution.

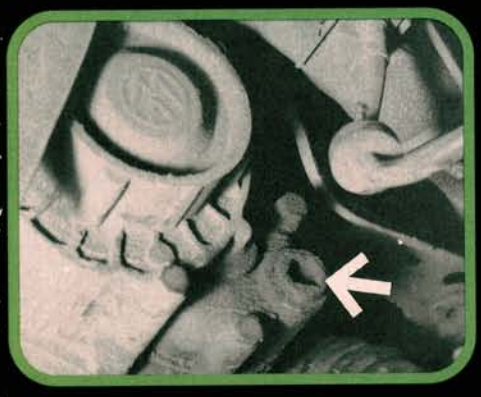
17

Rusted heat shields at the catalytic converter or front pipe are another potential source of rattles. The nuts and bolts that attach the converter to the front and rear exhaust sections like to rust away and disappear. Ceramic elements also occasionally break loose inside the converter.



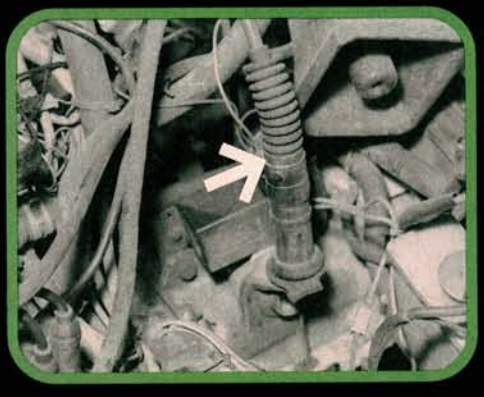
18

Separate the drive axles from the drive flanges to replace the axle seals. Clean the dirt out of the axle bolt splines before attempting to loosen them. Compress the axle flange springs, then remove the snap rings. A long bolt, nut, and GM steering column lock plate tool will do the trick.



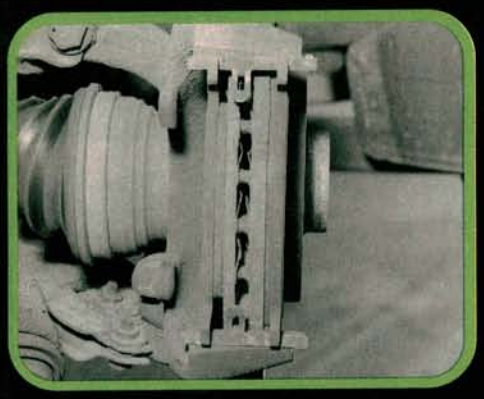
19

Early manual transaxles require a special filling procedure. Add lube through the fill hole in the transaxle until lube drips out. Install the fill plug, then remove the speedometer cable and add an additional pint. The fill hole was moved up a few millimeters on later models to make this procedure unnecessary.



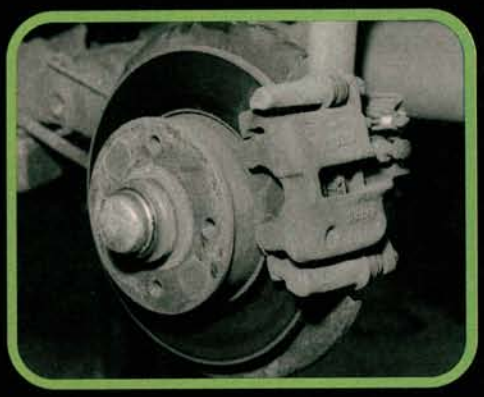
20

Some Jettas are equipped with self-adjusting clutch cables that can be identified by a large rubber boot near the transaxle end of the cable. The spring under the boot must be compressed when removing and installing the cable. A strap is supplied with new cables to hold the spring in position.



21

Disc brake noises may occur if brake hardware is missing or in poor condition. A self- adhesive shim kit (P/N 171 698 993) can be installed to correct brake squeak. Make sure the back sides of the pads are clean before installing the shims. Trim any excess shim material before installing the pads.



22

Rear drum brakes are used on all Jettas except GLI models, which have four wheel discs. To prevent rear wheel bearing water damage, never reuse rear axle seals following disassembly. Axle bearing dust caps should also be replaced if they are bent or otherwise damaged.

23

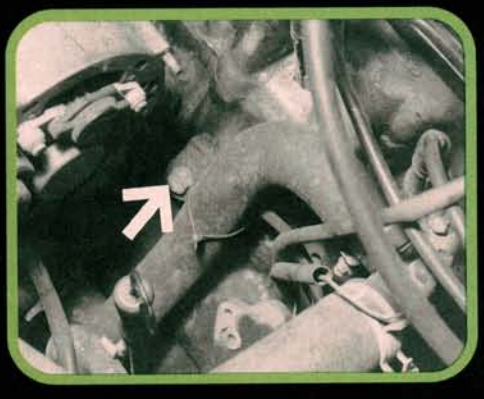
Lubrication specialists of the nation take note: do not overtighten the engine oil drain plug. The drain plug and oil pan only have a few threads apiece. The oil pan threads are easily damaged by overtightening. Install a new sealing washer, then torque the drain plug to 30 Nm (22 ft-lb).

24

Check the condition of the distributor cap, rotor, spark plug wires, coil wire, and coil tower. Ignition coils with black part number 1 labels may cause accelerated secondary ignition component wear and burnout. Install an updated green label coil (P/N 211 905 115 D) if you find these problems.

25

Both KE and Digifant fuel systems have several ground wires attached to the intake manifold (arrow). The combination of a short wiring harness and engine vibration and movement may cause one or more of these wires to break. Solder additional wire into the harness to correct this problem.



26

Replacement knock sensors are equipped with gold plated terminals. The harness connector terminals must also be replaced with gold plated terminals to assure the best possible electrical connection. Knock sensors, terminals and harness connectors are available through Volkswagen parts departments.