Taken For Granite

Toyota began making a name for itself in this country more than 25 years ago by selling lots of small, inexpensive cars and trucks. Somewhere along the line, someone in the marketing department must have discovered there were also Americans who were looking for a bit more power and luxury in a slightly larger package, and wouldn't mind paying extra for these features. Giving the customer what he wants (or what he thinks he wants) sells cars, so Toyota introduced the Cressida for the 1978 model year.

For the next ten years, the Cressida served as Toyota's top of the line cruiser. Beginning with the introduction of Toyota's luxury Lexus line in the late Eighties, the Cressida found itself "taken for granite" for the first time. The Lexus ES 250, followed by the ES 300, began chipping away at Cressida sales from above. One notch below the Cressida, the restyled Camry also exerted pressure on Cressida sales. Caught between a rock and a hard place, Toyota product planners decided that no 1993 Cressidas would be offered.

Carbon Dating

The Cressida went through three basic stages of development before becoming extinct. If we were archaeologists rather than technicians, we might refer to these three stages of development as the Cressida's Stone, Bronze, and Iron Ages.

- Early Stone Age Cressidas featured a single overhead cam six cylinder engine (the 4-M).
- The late Stone Age brought a body reskin and another single overhead cam six (the 5M-E).

• The early Bronze Age began in 1983 with the introduction of the 5M-GE double overhead cam six cylinder engine and an all new body design.
• Cressidas from the late Bronze Age continued with the 5M-GE engine and another minor body reskin.
• Cressida development reached its peak when the Iron Age began in 1989. The four valve per cylinder twin overhead cam 7M-GE six cylinder engine the Supra had been using since 1986 was adapted to the Cressida. Body design was also completely revised for 1989. The Cressida continued in this form with only minor revisions, until extinction occurred at the end of the 1992 model year.

We'll confine the service and repair information in this article to Cressidas from the Bronze and Iron Ages. We had early Bronze Age (1984) and early Iron Age (1989) Cressidas to work with. In our part of the country, most of the Cressidas from the early and late Stone Age have already made their last trip to the rock quarry.

Stone Cold

Cold starts can be a problem on Bronze and Iron Age Cressidas. A revised cold start injector thermal time switch was introduced to correct this problem on 1983 models and was added to production during December 1982. The internal resistance of the switch was changed. The revised thermal time switch allows the cold start injector to open during cranking at warmer coolant temperatures than the original thermal time switch would allow.

Similar starting problems also cropped up on 1989-90 Cressidas. A revised cold start injector thermal time switch was once again offered as a solution to the long cranking times these models required under certain conditions. The maximum operating temperature of the new thermal time switch was changed from 72 degrees F to 113 degrees F.

On 1989 and 1990 models, a revised TCCS control unit is also available as a cure for cold driveability problems after the engine starts. The new 113 degree injector time switch may be installed with the revised ECU on 1989 models only. When replacing the ECU on a 1990 Cressida, the injector time switch should not be replaced. The 1990 replacement ECU has improved cold start injector control logic, and works best with the original 72 degree thermal time switch.

Before replacing either the injector thermal time switch or the TCCS control unit, make sure that all engine mechanical, fuel, electrical, and electronic systems are operating within recommended specifications. The replacement parts will not make up for existing faults in these areas.

Tar Pits

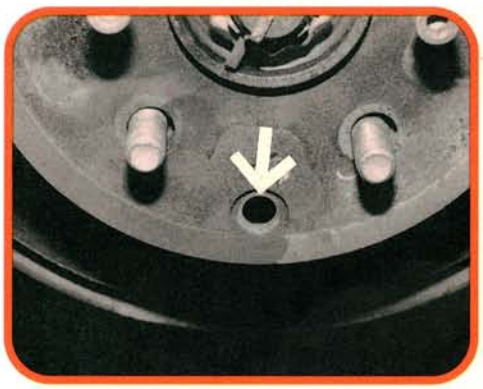
We're talking about maintenance, so we should make special mention of oil changes, probably the single most important maintenance operation of all. If the owner wants to maintain a Cressida strictly "by the book," you'll be changing the oil and filter only once every 10,000 miles. Also according to the factory manual, severe operating conditions like towing a trailer only shorten the oil and filter changes intervals to every 3750 miles on early models and every 5000 miles on later models.

Just about all "normal" operating conditions are actually severe operating conditions. Unless your customer is using his Cressida strictly for leisurely Sunday rides in the country, the factory specified normal oil and filter change intervals are just too far apart. Even the severe service oil change interval recommendations are longer than we would recommend. Oil that's pushed that hard is bound to break down. The engine extinction caused by tar and sludge deposits will take a large chunk out of even the heaviest pocketbook.

— By Karl Seyfert

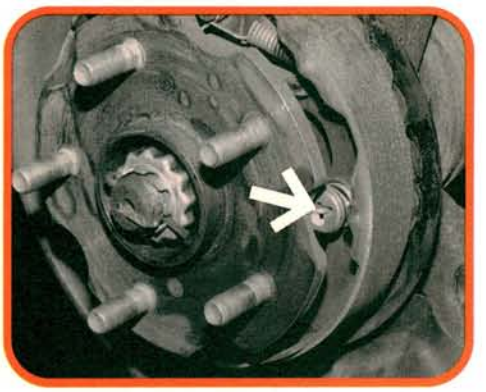
1

Before removing the rear brake rotors for service, clean the axle flange and rotor mating surfaces. Some rotors and flanges were match marked at the factory. Apply antiseize paste to the flange, then return the rotor to its original position after resurfacing to keep rotor runout to a minimum.



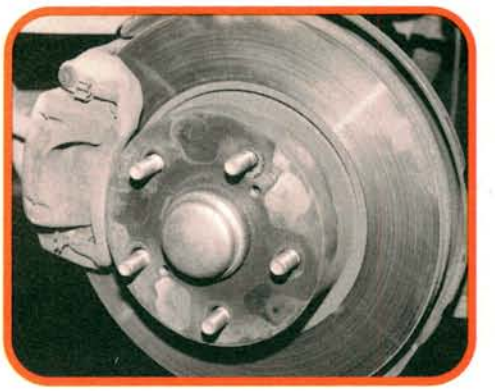
2

The parking brake is operated by two small drum brake shoes inside each rotor. Remove the rubber rotor plug to reach the brake shoe star wheel adjuster. Correct rotor placement is also important because the axle flange will block your access to the star wheel if the rotor is improperly positioned.



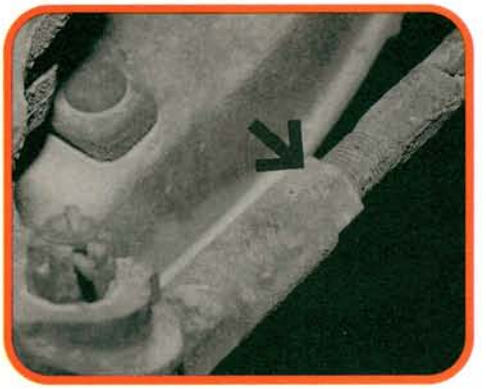
3

On late model Cressidas, noises from the rear suspension when driving over rough surfaces may be caused by loose emergency brake shoes. Updated rear shoe hold down springs hold the rear shoe against the backing plate with greater force to eliminate the noise. The front hold down springs aren't changed.



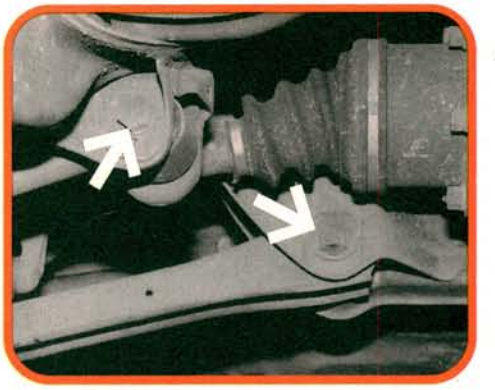
4

Late model Cressidas have removable front rotors. Earlier models had a one piece hub and rotor assembly. Note the rotor position before separating it from the hub. If the position is lost, dial indicate the assembly for runout. Reposition the rotor around the hub in one-fifth increments to achieve the least runout.



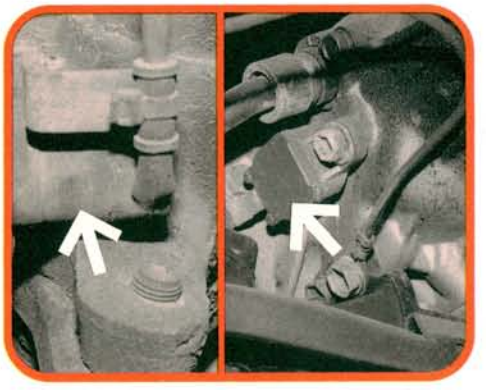
5

Most front wheel alignments will a be a simple toe adjustment. Caster can be adjusted by adding or subtracting washers or by moving the staked nuts to change the overall length of the strut rods. However, caster changes shouldn't occur unless parts are worn or there has been accident damage.



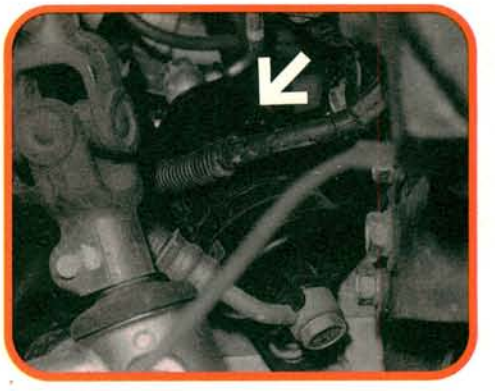
6

The rear toe is also adjustable with an eccentric on early Cressida models with independent rear suspension. Things are more complicated on this late model suspension. Two eccentrics (arrows) control both toe and camber. They must be moved in unison to make adjustments.



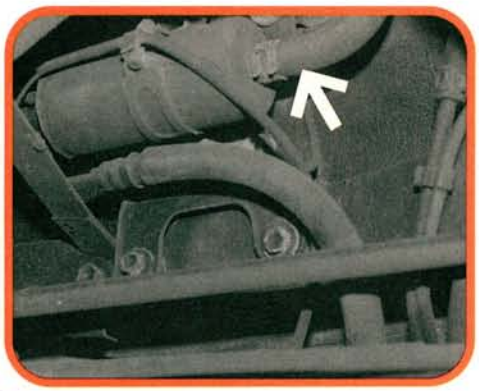
7

ABS was available on last generation Cressidas. It's a three channel system with one speed sensor at each front wheel (left photo), and a third sensor at the transmission extension housing (right photo) to monitor the speed of both rear wheels as a pair. If either rear wheel starts to lock, the ABS kicks in on both.



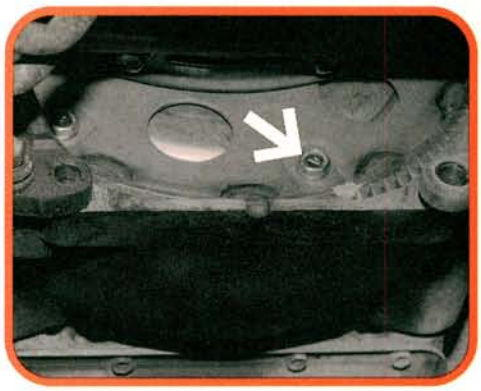
8

Two different engines, same miserable fuel filter location. The filter is attached directly to the engine and tucked under the intake manifold. Working from above risks damage to the cruise control actuator on 5M-GE models. Avoid spilling gas on the starter unless you're fast with a fire extinguisher.



9

The fuel pump is mounted outside the fuel tank on early models. Rust from the fuel tank may clog the fine internal fuel pump filter. Replacing the pump without addressing the tank rust problem is asking for a comeback. An inline filter in the pump's suction line is a less expensive alternative to fuel tank replacement.

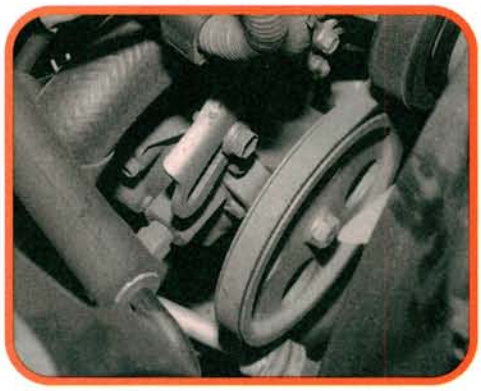


10

Never mix the torque converter bolts with similar bolts during a transmission R&R. Using torque converter mounting bolts that are too long will dimple the lockup surface of the torque converter. These dimples will cause premature wear of the lockup clutch material, causing torque converter failure.

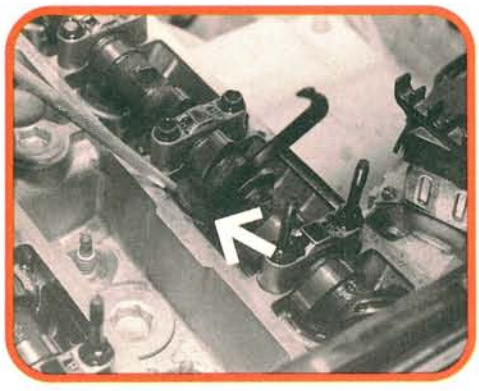
11

The recommended timing belt replacement interval is 60,000 miles. The tensioner bolt on 7M-GE engines is accessible through a hole in the front cover. Periodically loosening and retightening this bolt lets the tensioner remove any belt slack that may develop during the life of the belt.



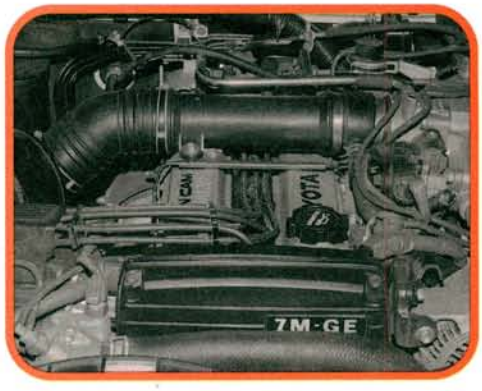
12

All three drive belts can be reached for adjustment or replacement from above. Idle pulleys and adjusting racks make alternator and air conditioning compressor belt adjustment easy. The power steering pump pivots for belt adjustment. Belt tension should be checked with a belt tension gauge.



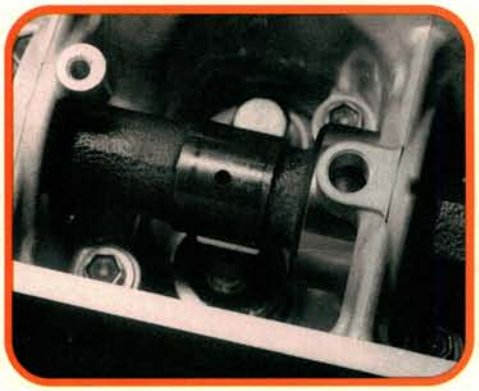
13

It might seem like a step backwards, but the four valve per cylinder 7M-GE engine uses selective shims to adjust valve clearances. To change a shim, depress the valve spring with the special tool, then pop the shim out of the bucket. The good news is that this system holds an adjustment for a long time.



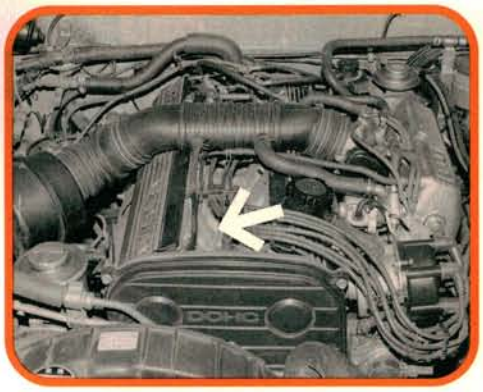
14

A blown head gasket may cause erratic heater output and a miss when the engine is cold without excessive tailpipe smoke on 7M-GE equipped models. The engine never fully warms up and temperature gauge operation may also be erratic. Look for shiny rear cylinder combustion chambers when the head is removed.



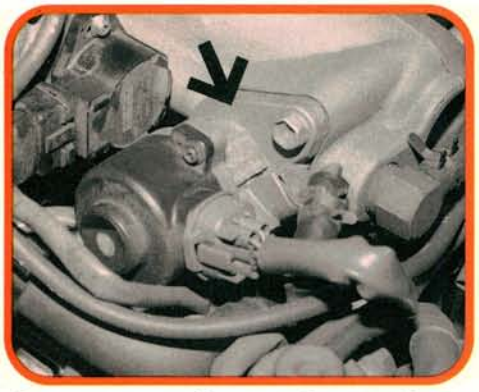
15

The hydraulic lash adjusters and oil passages used on 5M-GE engines may become clogged if oil changes are neglected. Extra valve clearance caused by a sticking lash adjuster may allow a cam follower to fall off the lash adjuster and valve. Check for dislocated followers if you're diagnosing an engine miss.



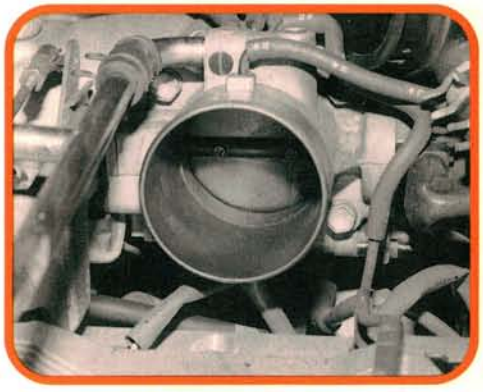
16

The cam housing gaskets may cause oil leaks on the 5M-GE engine. Oil will accumulate on the cylinder head, between the two cam housings, then run down the back of the engine before hitting the ground. Improved cam housing gaskets including raised beads are available to correct these problems.



17

There are no idle speed control screws to adjust during tune ups. Do not adjust the throttle stop screw. On both engines, idle speed is controlled at all engine temperatures by an idle speed control valve. The idle speed control valve allows a controlled amount of air to bypass the throttle plate.

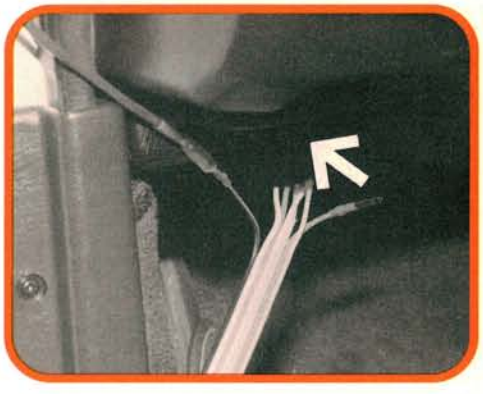


18

Remove the air intake hose and clean the throttle housing bore during maintenance or tune up work. The TCCS engine management system, as well as the ECT transmission rely on an accurate signal from the throttle switch. Throttle housing deposits may keep the switch from closing completely at idle.

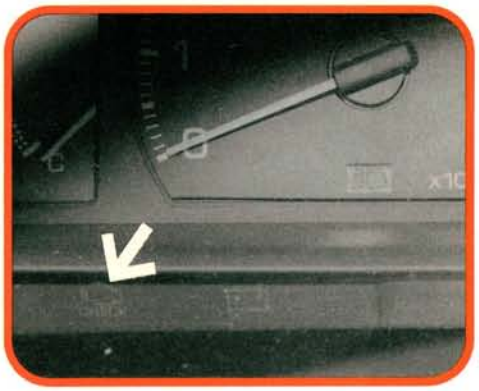
19

The 1983-84 Cressidas have connectors for scanner hookup. To retrieve diagnostic codes without a scanner, jumper the two terminal Check Connector on the left side of the engine. Attach a voltmeter to Diagnostic Connector terminals VF and E1, turn the ignition on, then count the voltage swings between 2.5 and 5 volts.



20

The Toyota Diagnostic Communications Link (TDCL for short) is located under the dash on last generation Cressidas. The TDCL allows the use of a scanner and provides a central location for diagnosis of the TCCS, ECT, ABS, and cruise control systems. Terminal designations are marked on the TDCL cap.

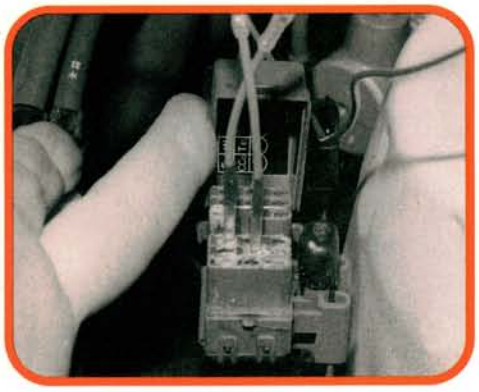


21

Jumper terminals TE1 and E1 to retrieve TCCS diagnostic codes. The Check Engine light on the dash will flash. The first group of flashes equals the first digit, and the second group equals the second digit. There is a 2.5 second pause between codes. ECT codes are flashed on the O/D OFF light.

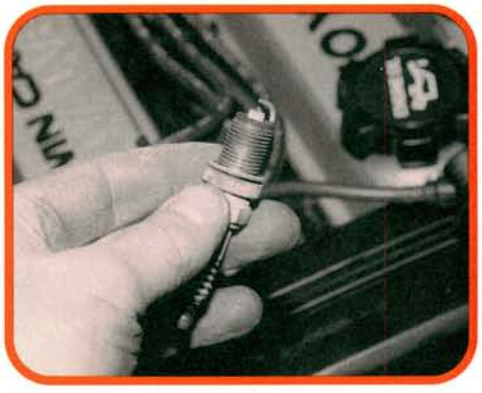
22

After repairing a TCCS problem, turn the ignition off, then cancel the diagnostic code by removing the 20 amp EFI fuse in the underhood fuse and relay panel. Remove the fuse for at least 10 seconds. The lower the ambient temperature, the longer the fuse must be removed to cancel the diagnostic code.



23

The diagnostic Check Connector is located under the hood on later models. Some of the terminals from the TDCL are duplicated here. To adjust the base timing, jumper TE1 and E1 again. If your tachometer is compatible with the TCCS system, the IG terminal can be used to check idle speed.

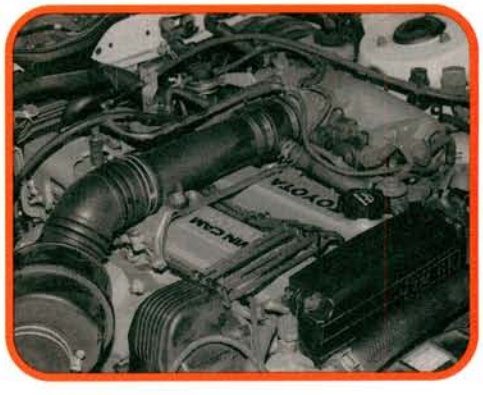


24

Platinum tipped spark plugs are factory recommended for both engines. While these plugs are supposed to last 60,000 miles, it's probably a good idea to check them more frequently. Replace the plugs if the gap is incorrect. Don't try to readjust them, the center electrode is easily damaged.

25

Both engines use vane style air flow meters. The idle CO percentage can be adjusted when necessary by changing the amount of air bypassing the air flow meter. Carefully remove the anti-tamper plug to access the CO adjustment screw. A new plug keeps dirt out and prevents accidental adjustment.



26

All underhood fluid reservoirs are transparent for easy fluid level checks. A 60,000 mile/6 year change interval is specified for the engine coolant, and no change interval is mentioned for the brake fluid. More frequent change intervals should extend the life of expensive components and systems like ABS.