

**SECTION 7- 1**

**DO- IT- YOURSELF MAINTENANCE**

**Introduction**

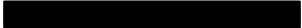
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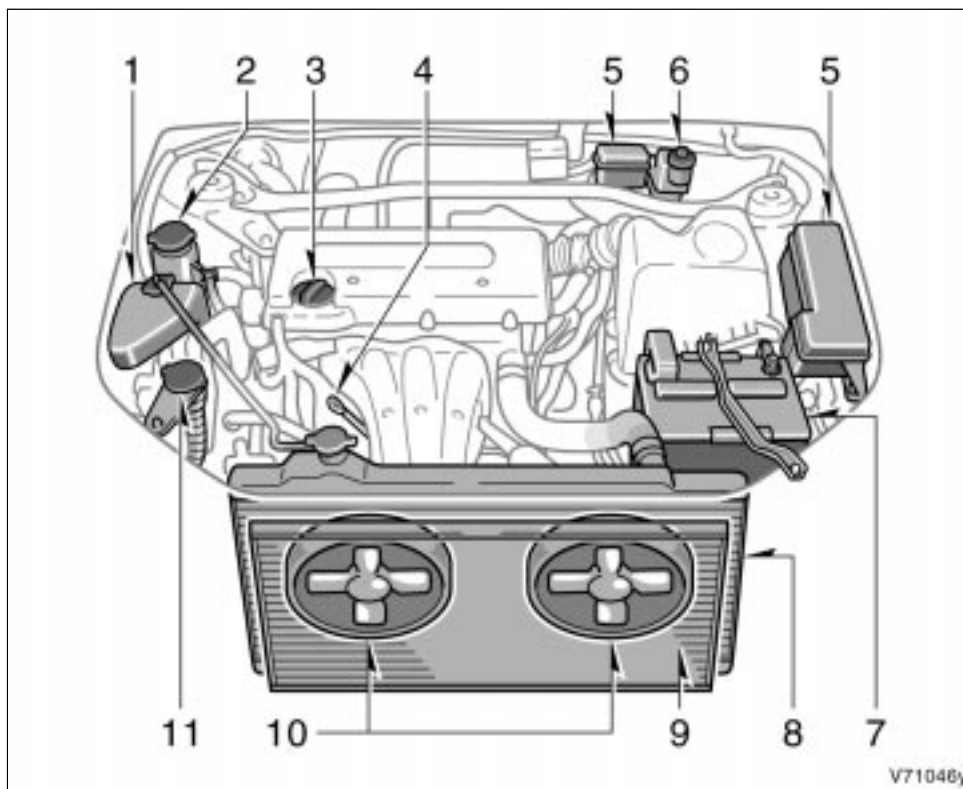
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## '05 HIGHLANDER\_U (L/O 0409)

### Engine compartment overview

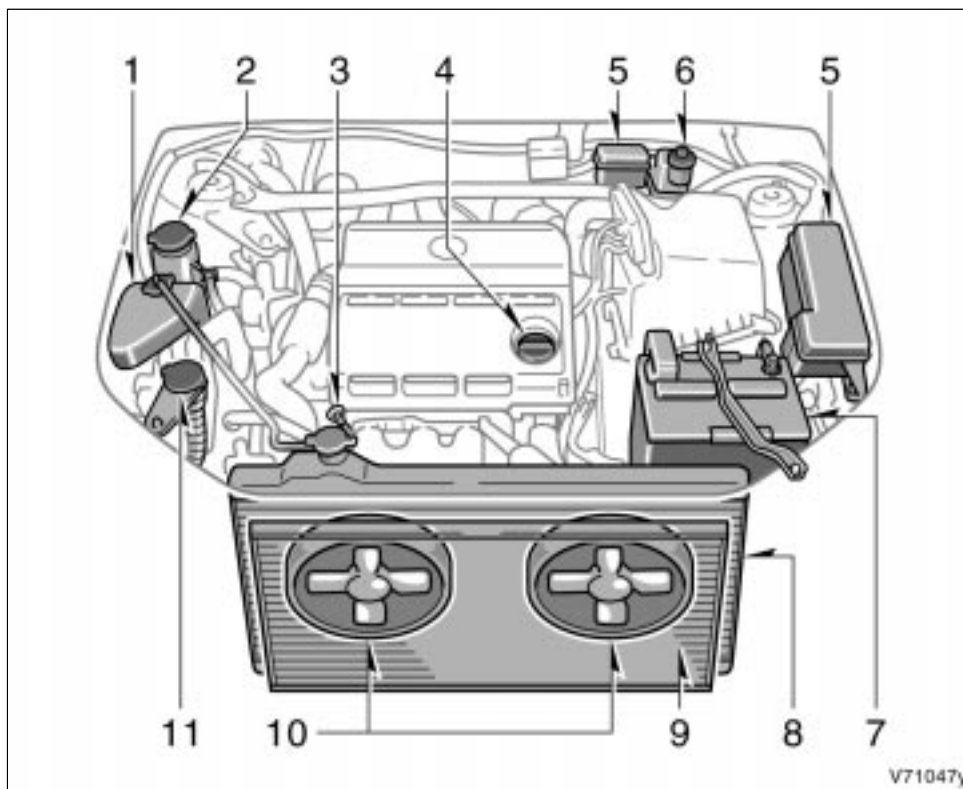
#### ►2AZ- FE engine



1. Engine coolant reservoir
2. Power steering fluid reservoir
3. Engine oil filler cap
4. Engine oil level dipstick
5. Fuse blocks
6. Brake fluid reservoir
7. Battery
8. Radiator
9. Condenser
10. Electric cooling fans
11. Windshield and rear window washer fluid tank

## '05 HIGHLANDER\_U (L/O 0409)

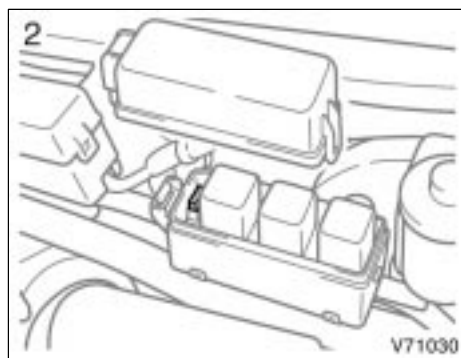
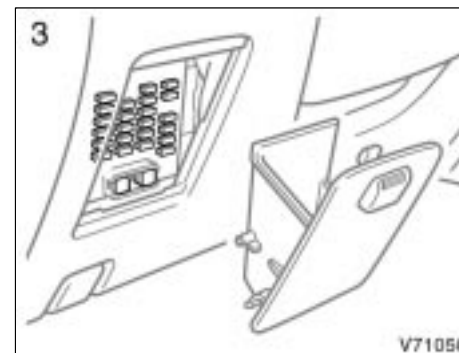
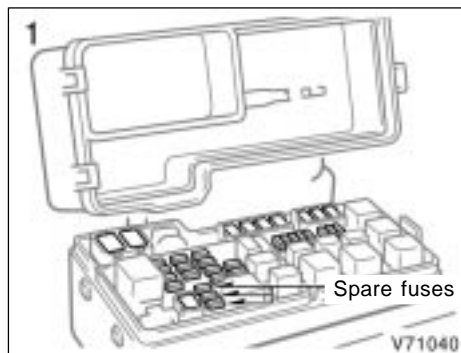
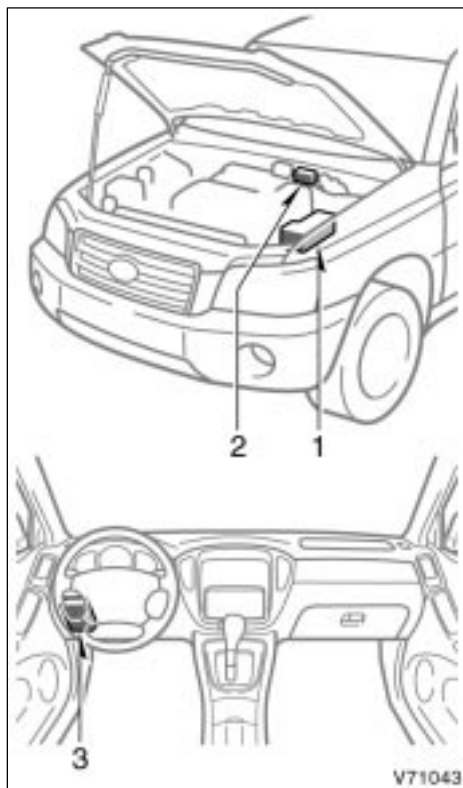
### ►3MZ- FE engine



1. Engine coolant reservoir
2. Power steering fluid reservoir
3. Engine oil level dipstick
4. Engine oil filler cap
5. Fuse blocks
6. Brake fluid reservoir
7. Battery
8. Radiator
9. Condenser
10. Electric cooling fans
11. Windshield and rear window washer fluid tank

## '05 HIGHLANDER\_U (L/O 0409)

### Fuse locations



With daytime running light system

## Do-it-yourself service precautions

If you perform maintenance by yourself, be sure to follow the correct procedure given in this Section.

You should be aware that improper or incomplete servicing may result in operating problems.

Performing do-it-yourself maintenance during the warranty period may affect your warranty coverage. Read the separate Toyota Warranty statement for details and suggestions.

This Section gives instructions only for those items that are relatively easy for an owner to perform. As explained in Section 6, there are still a number of items that must be done by a qualified technician with special tools.

For information on tools and parts for do-it-yourself maintenance, see "Parts and tools" on page 377 in this Section.

Utmost care should be taken when working on your vehicle to prevent accidental injury. Here are a few precautions that you should be especially careful to observe:

### CAUTION

- When the engine is running, keep hands, clothing, and tools away from the moving fan and engine drive belts. (Removing rings, watches, and ties is advisable.)
- Right after driving, the engine compartment—the engine, radiator, exhaust manifold, power steering fluid reservoir and spark plug boots, etc.—will be hot. So be careful not to touch them. Oil, fluids and spark plugs may also be hot.
- If the engine is hot, do not remove the radiator cap or loosen the drain plugs to prevent burning yourself.
- Do not leave anything that may burn easily, such as paper or rags, in the engine compartment.
- Do not smoke, cause sparks or allow open flames around fuel or the battery. Their fumes are flammable.
- Do not get under your vehicle with just the body jack supporting it. Always use automotive jack stands or other solid supports.

- Be sure that the ignition is off if you work near the electric cooling fans or radiator grille. With the ignition on, the electric cooling fans will automatically start to run if the engine coolant temperature is high and/or the air conditioning is on.
- Use eye protection whenever you work on or under your vehicle where you may be exposed to flying or falling material, fluid spray, etc.
- Used engine oil contains potentially harmful contaminants which may cause skin disorders such as inflammation or skin cancer, so care should be taken to avoid prolonged and repeated contact with it. To remove used engine oil from your skin, wash thoroughly with soap and water.
- Do not leave used oil within the reach of children.
- Dispose of used oil and filter only in a safe and acceptable manner. Do not dispose of used oil and filter in household trash, in sewers or onto the ground. Call your dealer or a service station for information concerning recycling or disposal.

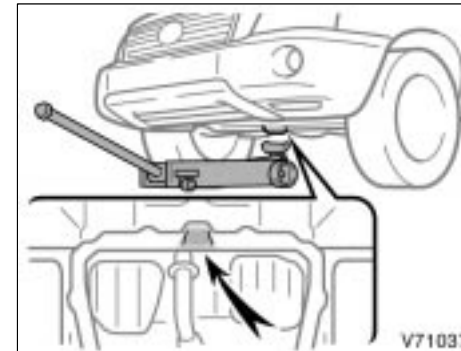
- Be extremely cautious when working on the battery. It contains poisonous and corrosive sulfuric acid.

#### NOTICE

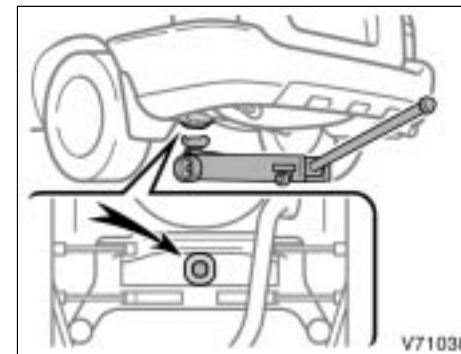
- ◆ Remember that battery and ignition cable carry high currents or voltages. Be careful of accidentally causing a short circuit.
- ◆ Add only "Toyota Super Long Life Coolant" or similar high quality ethylene glycol based non-silicate, non-amine, non-nitrite, and non-borate coolant with long-life hybrid organic acid technology to fill the radiator. "Toyota Super Long Life Coolant" is a mixture of 50% coolant and 50% deionized water (for the U.S.A.) or 55% coolant and 45% deionized water (for Canada).
- ◆ If you spill some of the coolant, be sure to wash it off with water to prevent it from damaging the parts or paint.
- ◆ Do not allow dirt or anything else to fall through the spark plug holes.

- ◆ Use only spark plugs of the specified type. Using other types will cause engine damage, loss of performance or radio noise.
- ◆ Do not reuse iridium-tipped spark plugs by cleaning or regapping.
- ◆ Do not overfill automatic transmission fluid and power steering fluid, or the transmission and power steering could be damaged.
- ◆ Do not drive with the air cleaner filter removed, or excessive engine wear could result. Also backfiring could cause a fire in the engine compartment.
- ◆ Be careful not to scratch the glass surface with the wiper frame.
- ◆ When closing the engine hood, check to see that you have not forgotten any tools, rags, etc.

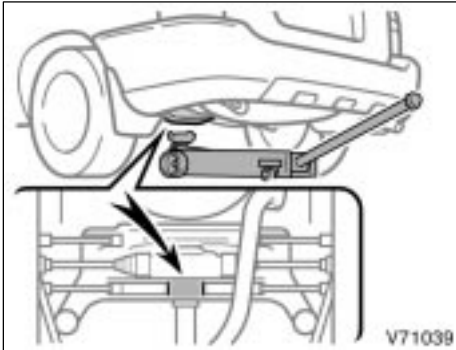
#### Positioning the jack



Front



Rear (two-wheel drive models)



Rear (four-wheel drive models)

When jacking up your vehicle with the jack, position the jack correctly as shown in the illustrations.



#### CAUTION

When jacking, be sure to observe the following to reduce the possibility of personal injury:

- Follow jacking instructions.
- Do not put any part of your body under the vehicle supported by the jack. Personal injury may occur.

- Do not start or run the engine while your vehicle is supported by the jack.
- Stop the vehicle on a level firm ground, firmly set the parking brake and put the transmission in "P". Block the wheels on the opposite side of the jack up point if necessary.
- Make sure to set the jack properly in the jack point. Raising the vehicle with jack improperly positioned will damage the vehicle or may allow the vehicle to fall off the jack and cause personal injury.
- Never get under the vehicle when the vehicle is supported by the jack alone; use vehicle support stands.
- Do not raise the vehicle with someone in the vehicle.
- When raising the vehicle, do not place any objects on top of or underneath the jack.

#### NOTICE

*Make sure to place the jack correctly, or your vehicle may be damaged.*

## Parts and tools

Here is a list of parts and tools you will need to perform do-it-yourself maintenance. Remember all Toyota parts are designed in metric sizes, so your tools must be metric.

### CHECKING THE ENGINE OIL LEVEL

#### Parts (if level is low):

- "Toyota Genuine Motor Oil" or equivalent

See page 380 in Section 7-2 for details about engine oil selection.

#### Tools:

- Rag or paper towel
- Funnel (only for adding oil)

### CHECKING THE ENGINE COOLANT LEVEL

#### Parts (if level is low):

- "Toyota Super Long Life Coolant" or similar high quality ethylene glycol based non-silicate, non-amine, non-nitrite, and non-borate coolant with long-life hybrid organic acid technology.

"Toyota Super Long Life Coolant" is a mixture of 50% coolant and 50% deionized water (for the U.S.A.) or 55% coolant and 45% deionized water (for Canada).

**Tools:**

- Funnel (only for adding coolant)

**CHECKING BRAKE FLUID**

**Parts (if level is low):**

- SAE J1703 or FMVSS No.116 DOT 3 brake fluid

**Tools:**

- Rag or paper towel
- Funnel (only for adding fluid)

**CHECKING POWER STEERING FLUID**

**Parts (if level is low):**

- Automatic transmission fluid  
DEXRON®II or III

**Tools:**

- Rag or paper towel
- Funnel (only for adding fluid)

**CHECKING BATTERY CONDITION**

**Tools:**

- Warm water
- Baking soda
- Grease
- Conventional wrench  
(for terminal clamp bolts)

**CHECKING AND REPLACING FUSES**

**Parts (if replacement is necessary):**

- Fuse with same amperage rating as original

**ADDING WASHER FLUID**

**Parts:**

- Water
- Washer fluid containing antifreeze  
(for winter use)

**Tools:**

- Funnel

**REPLACING LIGHT BULBS**

**Parts:**

- Bulb with same number and wattage rating as original (See charts in "Replacing light bulbs" on page 400 in Section 7-3.)

**Tools:**

- Screwdriver