

INTRODUCTION

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IN

HOW TO USE THIS MANUAL

To assist in finding your way through this manual, the section title and major heading are given at the top of every page.

An **INDEX** is provided on the 1st page of each section to guide you to the item to be repaired.

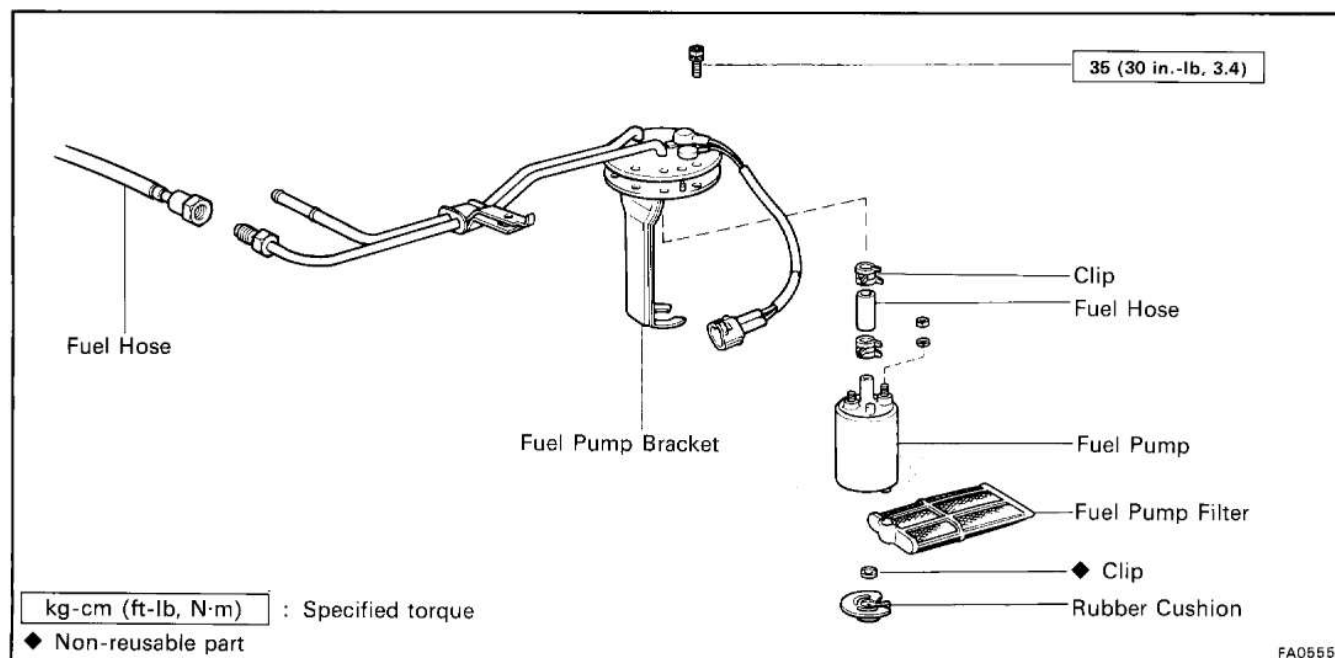
At the beginning of each section, **PRECAUTIONS** are given that pertain to *all* repair operations contained in that section. *Read these precautions before starting any repair task.*

TROUBLESHOOTING tables are included for each system to help you diagnose the problem and find the cause. The repair for each possible cause is referenced in the remedy column to quickly lead you to the solution.

REPAIR PROCEDURES

Most repair operations begin with an overview illustration. It identifies the components and shows how the parts fit together.

Example:



The procedures are presented in a step-by-step format:

- The illustration shows *what* to do and *where* to do it.
- The task heading tells *what* to do.
- The detailed text tells *how* to perform the task and gives other information, such as specifications and warnings.

Example:

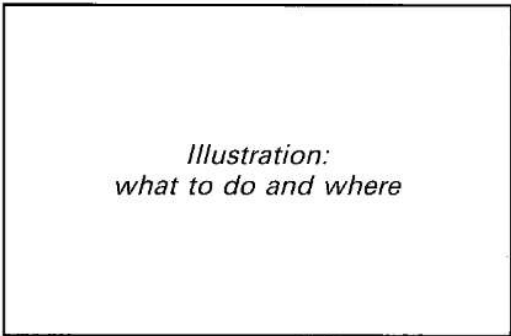


*Illustration:
what to do and where*

3. INSTALL FUEL PUMP BRACKET TO FUEL TANK

- (a) Install a new gasket and the pump bracket with the screws.

Torque: 35 kg-cm (30 in.-lb, 3.4 N·m)

Torque Specification

*Detailed text:
how to do task*

This format provides the experienced technician with a FAST TRACK to the information needed. The upper case task heading can be read at a glance when necessary, and the text below it provides detailed information. Important specifications and warnings always stand out in bold type.

REFERENCES

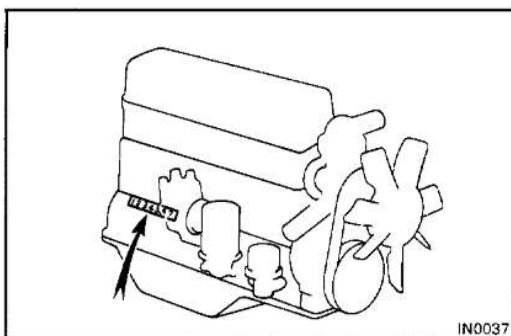
References have been kept to a minimum. However, when they are required you are given the page to refer to.

SPECIFICATIONS

Specifications are presented in bold type throughout the text where needed. You never have to leave the procedure to look up your specifications. They are also found in Appendix A, for quick reference.

CAUTIONS, NOTICES, HINTS

- **CAUTIONS** are presented in bold type, and indicate there is a possibility of injury to you or other people.
- **NOTICES** are also presented in bold type, and indicate there is a possibility of damage to the components being repaired.
- **HINTS** are separated from the text but do not appear in bold. They provide additional information to help you perform the repair more efficiently.



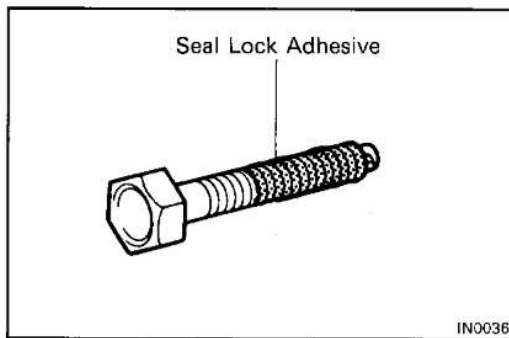
IDENTIFICATION INFORMATION

ENGINE SERIAL NUMBER

The engine serial number is stamped on the right side of the cylinder block.

GENERAL REPAIR INSTRUCTIONS

1. Use fender, seat and floor covers to keep the vehicle clean and prevent damage.
2. During disassembly, keep parts in order to facilitate re-assembly.
3. Observe the following:
 - (a) Before performing electrical work, disconnect the cable from the battery terminal.
 - (b) If it is necessary to disconnect the battery for inspection or repair, always disconnect the cable from the negative (-) terminal which is grounded to the vehicle body.
 - (c) To prevent damage to the battery terminal post, loosen the terminal nut and raise the cable straight up without twisting or prying it.
 - (d) Clean the battery terminal posts and cable terminal with a shop rag. Do not scrape them with a file or such.
 - (e) Install the cable terminal to the battery post with the nut loose and tighten the nut after installation. Do not use a hammer or such to tap the terminal onto the post.
 - (f) Be sure the cover for the positive (+) terminal is properly in place.
4. Check all hose and wiring connectors to make sure they are securely and correctly connected.
5. Non-reusable Parts
 - (a) Always replace cotter pins, gaskets, O-ring and oil seals, etc. with new ones.
 - (b) Non-reusable parts are indicated in the component illustrations by the "◆" symbol.



6. Precoated Parts

Precoated parts are bolts, nuts, etc. that are coated with a seal lock adhesive at the factory.

(a) If a precoated part is tightened, loosened or caused to move in any way, it must be recoated with the specified adhesive.

(b) Recoating of Precoated Parts

(1) Clean off the old adhesive from the bolts, nut or installation part threads.

(2) Dry with compressed air.

(3) Apply the specified seal lock adhesive to the bolt or nut threads.

(c) Precoated parts are indicated in the component illustrations by the "★" symbol.

7. When necessary, use a sealer on gaskets to prevent leaks.

8. Carefully observe all specifications for bolt tightening torques. Always use a torque wrench.

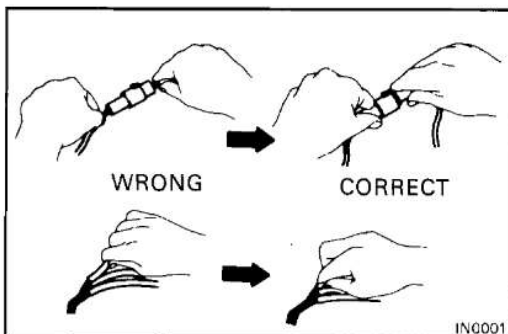
9. Use of special service tools (SST) and special service materials (SSM) may be required depending on the nature of the repair. Be sure to use SST and SSM where specified and follow the proper work procedure. A list of SST and SSM can be found at the back of this manual.

10. When replacing fuses, be sure the new fuse is the correct amperage rating. DO NOT exceed the rating or use one of a lower rating.

11. Care must be taken when jacking up and supporting the vehicle. Be sure to lift and support the vehicle at the proper locations.

(a) If the vehicle is to be jacked up only at the front or rear end, be sure to block the wheels in order to ensure safety.

(b) After the vehicle is jacked up, be sure to support it on stands. It is extremely dangerous to do any work on the vehicle raised on one jack alone, even for a small job that can be finished quickly.



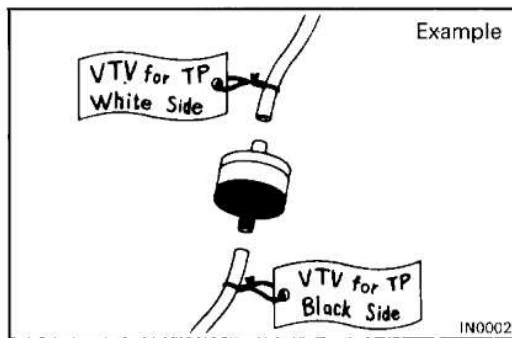
12. Observe the following precautions to avoid damage to parts:

(a) To disconnect vacuum hoses, pull on the end, not the middle of the hose.

(b) To pull apart electrical connectors, pull on the connector itself, not the wires.

(c) Be careful not to drop electrical components, such as sensors or relays. If they are dropped on a hard floor, they should be replaced and not reused.

- (d) When steam cleaning an engine, protect the distributor, coil, air filter, and VCV from water.
- (e) Never use an impact wrench to remove or install temperature switches or temperature sensors.
- (f) When checking continuity at the wire connector, insert the tester probe carefully to prevent terminals from bending.
- (g) When using a vacuum gauge, never force the hose onto a connector that is too large. Use a step-down adapter instead. Once the hose has been stretched, it may leak.



13. Tag hoses before disconnecting them:

- (a) When disconnecting vacuum hoses, use tags to identify how they should be reconnected.
- (b) After completing a job, double check that the vacuum hoses are properly connected. A label under the hood shows the proper layout.

PRECAUTIONS FOR VEHICLES EQUIPPED WITH A CATALYTIC CONVERTER

CAUTION: If large amounts of unburned gasoline flow into the converter, it may overheat and create a fire hazard. To prevent this, observe the following precautions and explain them to your customer.

1. **Use only unleaded gasoline.**
2. **Avoid prolonged idling.**
Avoid running the engine at idle speed for more than 20 minutes.
3. **Avoid spark jump test.**
 - (a) Perform a spark jump test only when absolutely necessary and as quickly as possible.
 - (b) Never race the engine, while testing.
4. **Avoid prolonged engine compression measurement.**
Engine compression tests must be made as quickly as possible.
5. **Do not run engine when fuel tank is nearly empty.**
This may cause the engine to misfire and create an extra load on the converter.
6. **Avoid coasting with ignition turned off and prolonged braking.**
7. **Do not dispose of used catalyst along with parts contaminated with gasoline or oil.**

ABBREVIATIONS USED IN THIS MANUAL

AI	Air Injection
ASV	Air Switching Valve
BTDC	Before Top Dead Center
DP	Dash Pot
ECU	Electronic Controlled Unit
EFI	Electronic Fuel Injection
EGR	Exhaust Gas Recirculation
ESA	Electronic Spark Advance
EX	Exhaust (manifold, valve)
IG	Ignition
IN	Intake (manifold, valve)
ISC	Idle Speed Control
OHV	Over Head Valve
O/S	Oversize
PCV	Positive Crankcase Ventilation
PS	Power Steering
SSM	Special Service Materials
SST	Special Service Tools
STD	Standard
SW	Switch
TCCS	TOYOTA Computer Controlled System
TDC	Top Dead Center
U/S	Undersize
VCV	Vacuum Control Valve
VSV	Vacuum Switching Valve
VTV	Vacuum Transmitting Valve
w/	With
w/o	Without