

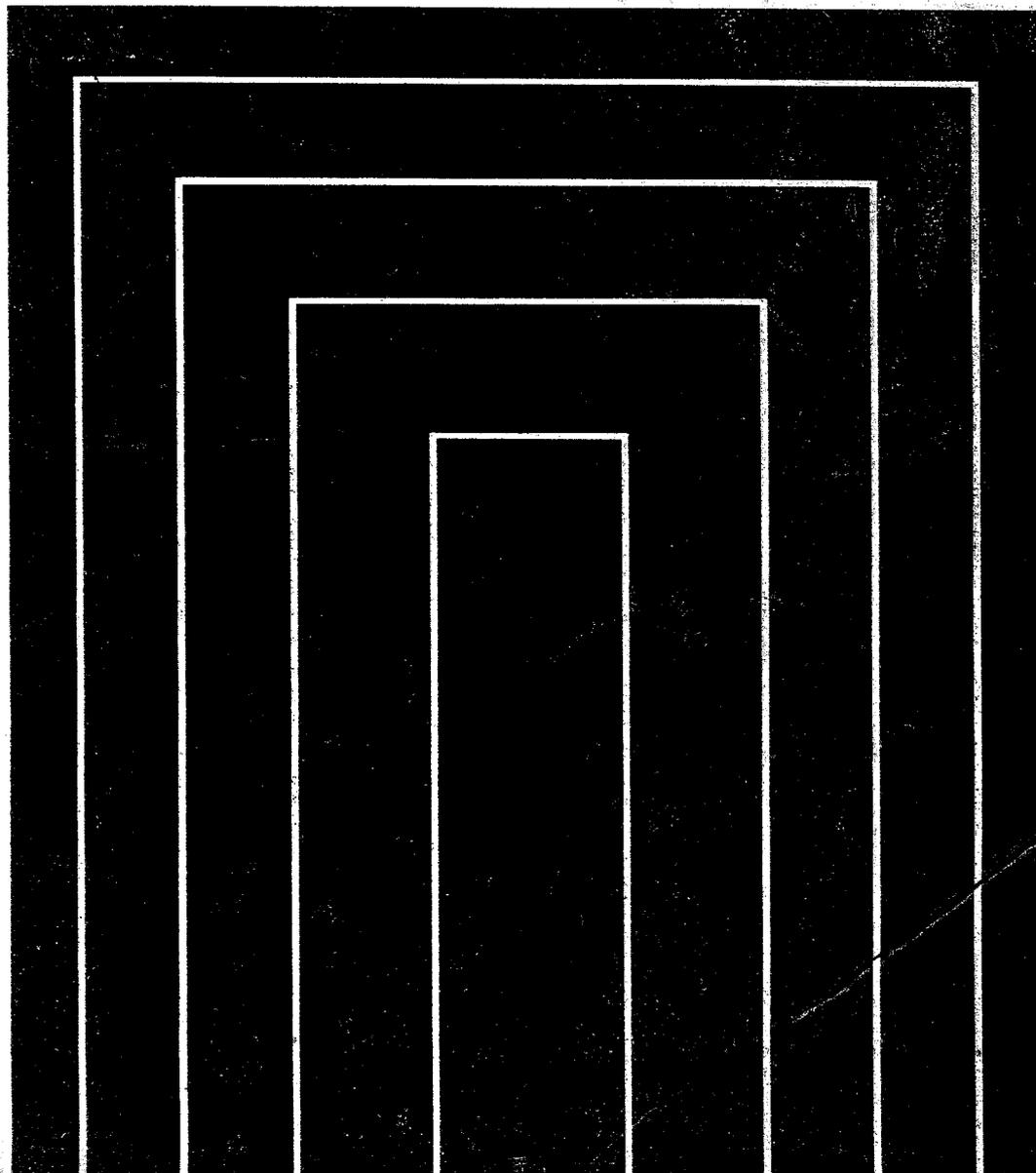
TOYOTA

7M-GE, 7M-GTE

ENGINE

REPAIR MANUAL

Aug., 1987



TOYOTA 7M-GE, 7M-GTE ENGINE REPAIR MANUAL

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IN

HOW TO USE THIS MANUAL

To assist you 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.

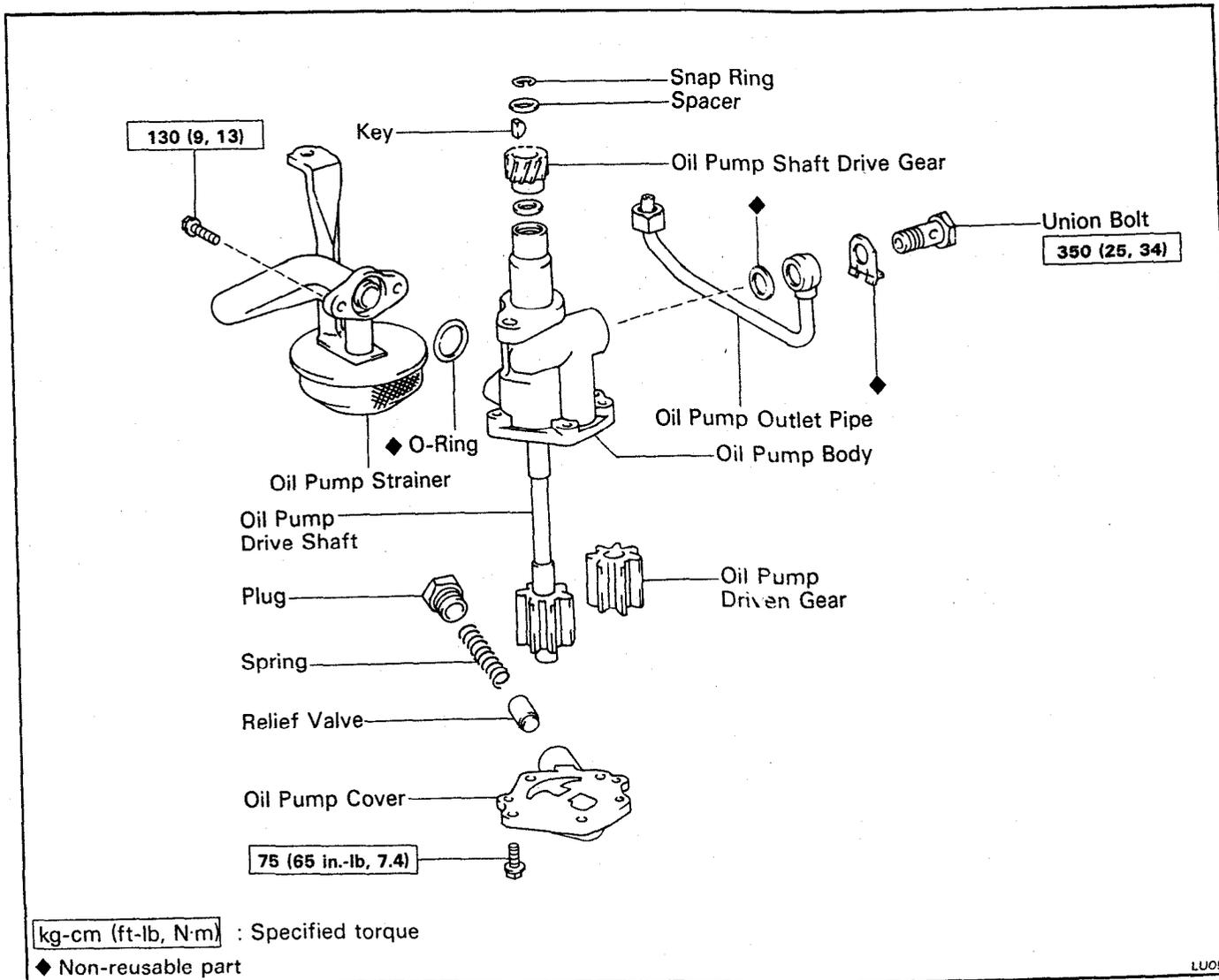
At the beginning of each section, **PRECAUTIONS** are given that pertain to *all* repair operations contained in that section. *Read these precautions before starting any repair task.*

TROUBLESHOOTING tables are included for each system to help you diagnose the system 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.

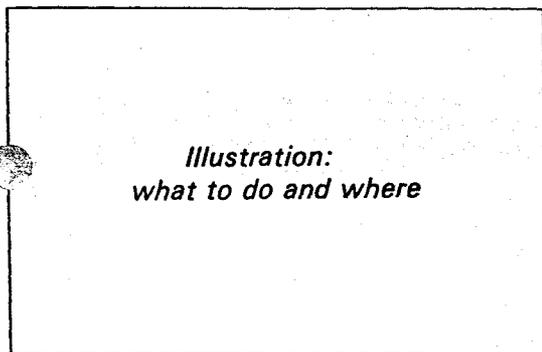
Example:



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:



Task heading: what to do

2. IF NECESSARY, REPLACE DRIVE SHAFT BEARING

Using SST, replace the No.1 bearing by using No. 2 bearing as a guide.

SST 09215-00100 (09215-00120, 09215-00150,
09215-00160, 09215-00210, 09214-00220)

Set part No.

Component part No.

Detail text: how to do it

- (i) Tighten the No. 3 and No. 7 bearing cap bolt a little at a time and in the sequence shown in the figure.

Torque: 500 kg-cm (36 ft-lb, 49 N-m)

Specification

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 and only when necessary, the text below it provides detailed information. Important specifications and warnings always stand out in bold type.

REFERENCES

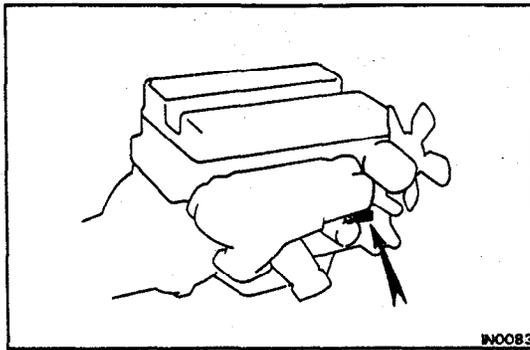
References have been kept to a minimum. However, when they are required you are given the page to go to.

SPECIFICATIONS

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

WARNINGS, CAUTIONS, NOTES:

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



IDENTIFICATION INFORMATION

ENGINE SERIAL NUMBER

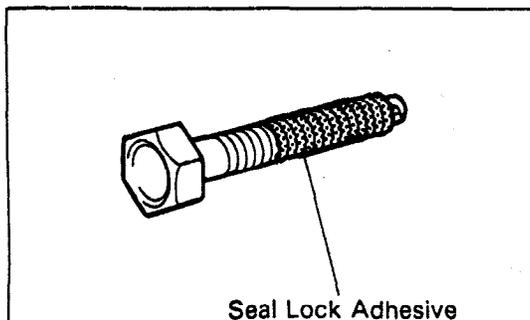
The engine serial number is stamped on the right side of the cylinder block.

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 reassembly.
3. Observe the following:
 - (a) Before performing electrical work, disconnect the negative (-) 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 terminals with a shop rag. Do not scrape them with a file or other abrasive object.
 - (e) Install the cable terminal to the battery post with the nut loose, and tighten the nut after installation. Do not use a hammer to tap the terminal onto the post.
 - (f) Be sure the cover for the positive (+) terminal is properly in place.
4. Check hose and wiring connectors to make sure that they are secure and correct.
5. Non-reusable parts
 - (a) Always replace cotter pins gaskets, O-rings, 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 the bolts, nuts, etc. which are coated with a seal lock adhesive at the factory.

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



Seal Lock Adhesive

- (b) Recoating of Precoated Parts
 - (1) Clean off the old adhesive from the part's threads.
 - (2) Dry with compressed air.
 - (3) Apply the specified seal lock adhesive to the part's threads.
 - (c) Precoated parts are indicated in the component illustrations by the "★" symbol.
7. When necessary, use a sealer or gaskets to prevent leaks.
 8. Carefully observe all specifications for bolt 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. DO NOT exceed the fuse amp 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 a jack alone, even for a small job that can be finished quickly.
 12. Observe the following precautions to avoid damaging the parts:
 - (a) Do not open the cover or the case of the ECU unless absolutely necessary. (If the IC terminals are touched, the IC may be destroyed by static electricity.)
 - (b) 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.
 - (c) When disconnecting vacuum hoses, pull on the end of the hose, not the middle.
 - (d) When separating electrical connectors, pull on the connector itself, not the wires.

