

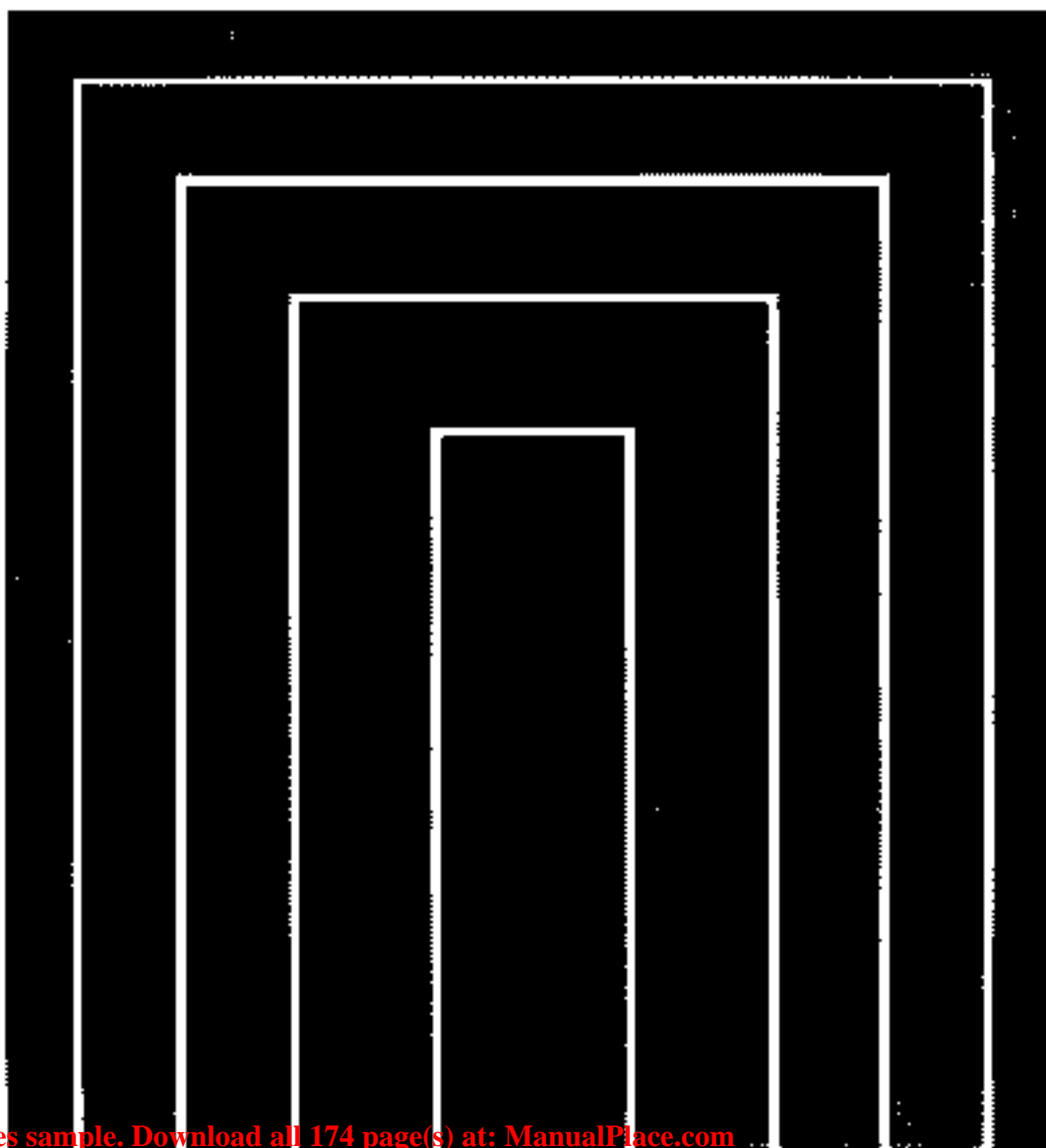


2L-T, 3L

ENGINE

REPAIR MANUAL SUPPLEMENT

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FOREWORD

This supplement has been prepared to provide information covering general service repairs for the 2L-T and 3L engines mounted on the TOYOTA LAND CRUISER, HILUX, and 4RUNNER.

Applicable models:

LJ70, 72, 73, 77, 79 series

LN106, 111, 130, 135 series

For basic engine service repair, refer to the following repair manual.

2L, 3L Engine Repair Manual (Pub. No. RM123E)

Please note that the publications below have also been prepared as relevant service manuals to the components and systems in this engine.

All information contained in this manual is the most up-to-date at the time of publication. However, specifications and procedures are subject to change without notice.

TOYOTA MOTOR CORPORATION

TOYOTA 2L-T, 3L ENGINE REPAIR MANUAL SUPPLEMENT

INTRODUCTION	IN
ENGINE MECHANICAL	EM
TURBOCHARGER SYSTEM	TC
FUEL SYSTEM	FU
COOLING SYSTEM	CO
LUBRICATION SYSTEM	LU
STARTING SYSTEM	ST
CHARGING SYSTEM	CH
SERVICE SPECIFICATIONS	A
STANDARD BOLT TORQUE SPECIFICATIONS	B
SST AND SSM	C

INTRODUCTION

	Page
HOW TO USE THIS MANUAL	IN-2
IDENTIFICATION INFORMATION	IN-4
GENERAL REPAIR INSTRUCTIONS	IN-4
ABBREVIATIONS USED IN THIS MANUAL	IN-7

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.

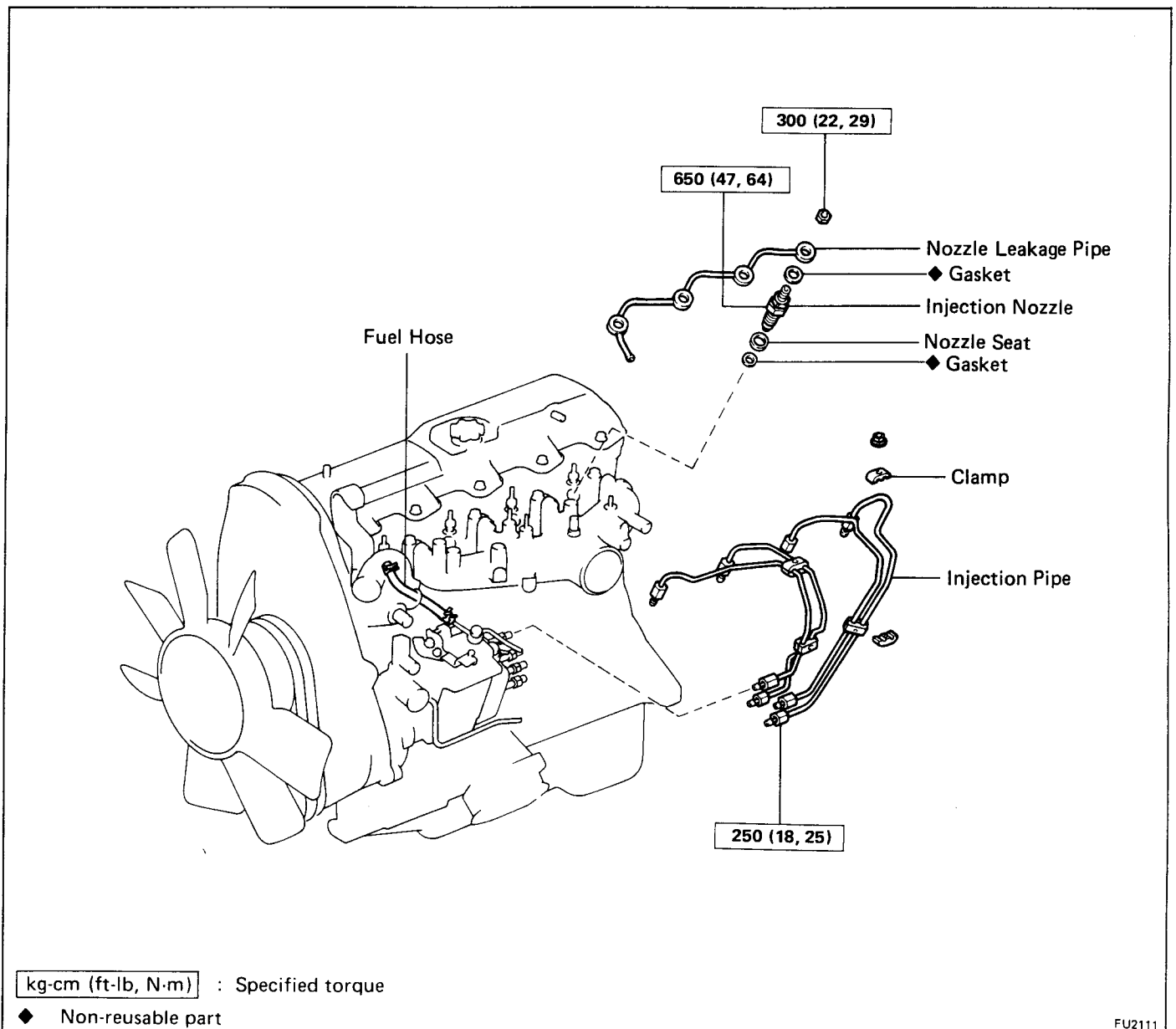
Read these precautions before starting any repair task.

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

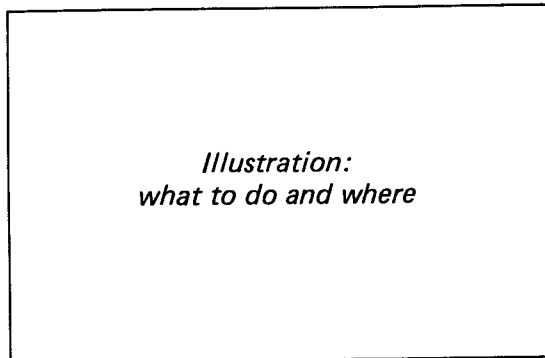
Example:



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

REMOVE CRANKSHAFT PULLEY

Using SST, remove the pulley.

SST 09213-60017 (09213-00060)

Set part No. *Component part No.*

Detailed text: how to do task

Install the four injection nozzles.

Torque: 650 kg-cm (47 ft-lb, 64 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 when necessary, and the text below it provides detailed information. Important specifications and warnings always stand out in bold type.

REFERENCES

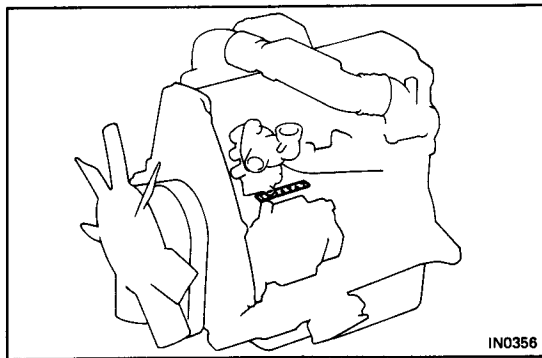
References have been kept to a minimum. However, when they are required, you are given the page to refer to.

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 the 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 efficiently perform the repair.



IDENTIFICATION INFORMATION

ENGINE SERIAL NUMBER

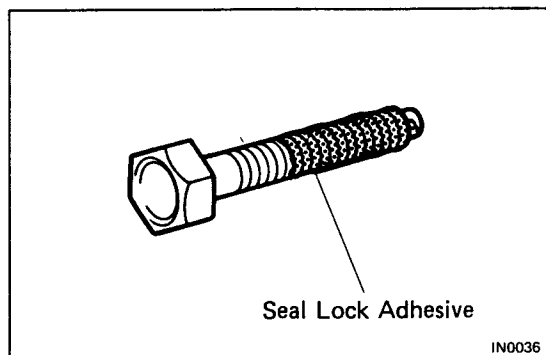
The engine serial number is stamped on the left side of the cylinder block.

GENERAL REPAIR INSTRUCTIONS

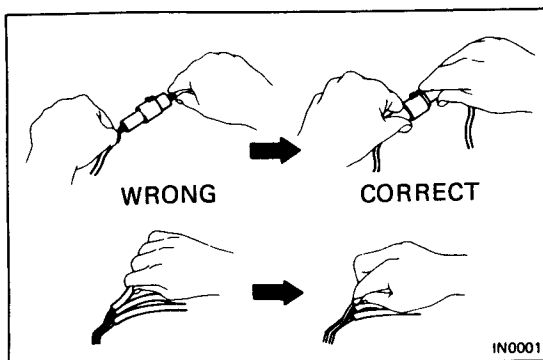
1. Use fender, seat and floor covers to keep the vehicle clean and prevent damage.
2. During disassembly, keep parts in order to facilitate reassembly.
3. Observe the following.
 - (a) Before performing electrical work, disconnect the negative (–) cable from the battery terminal.
 - (b) If it is necessary 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 bolts and nuts, etc. These are coated with a seal lock adhesive at the factory.

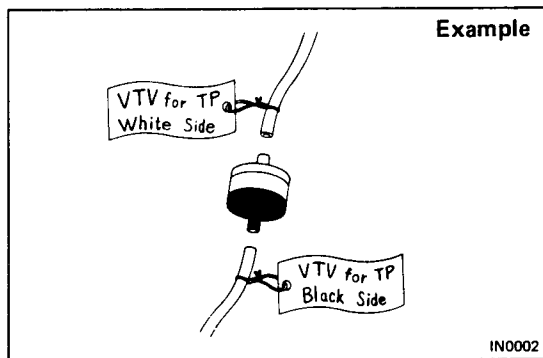
 - (a) If a precoated part is retightened, loosened or caused to move in any way, it must be recoated with the specified adhesive.



- (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 on 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 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) 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.



- (b) When separating electrical connectors, pull on the connector itself, not the wires.
- (c) When disconnecting vacuum hoses, pull on the end of the hose, not the middle.



- (d) When steam cleaning an engine, protect the distributor, coil, air filter, and injection pump from water.
 - (e) Never use an impact wrench to remove or install temp. switches or temp. 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.

ABBREVIATIONS USED IN THIS MANUAL

A/C	Air Conditioner
ACSD	Automatic Cold Start Device
Approx.	Approximately
EGR	Exhaust Gas Recirculation
EVRV	Electronic Vacuum Regulating Valve
EX	Exhaust (manifold, valve)
Ex.	Except
FIPG	Formed in Place Gasket
FL	Fusible Link
HAC	High Altitude Compensation
IN	Intake (manifold, valve)
LH	Left-Hand
O/S	Oversized
PIJ	Pilot Injection Device
RH	Right-Hand
SSM	Special Service Materials
SST	Special Service Tools
STD	Standard
TDC	Top Dead Center
U/S	Undersize
VSV	Vacuum Switching Valve
w/	With
w/o	Without