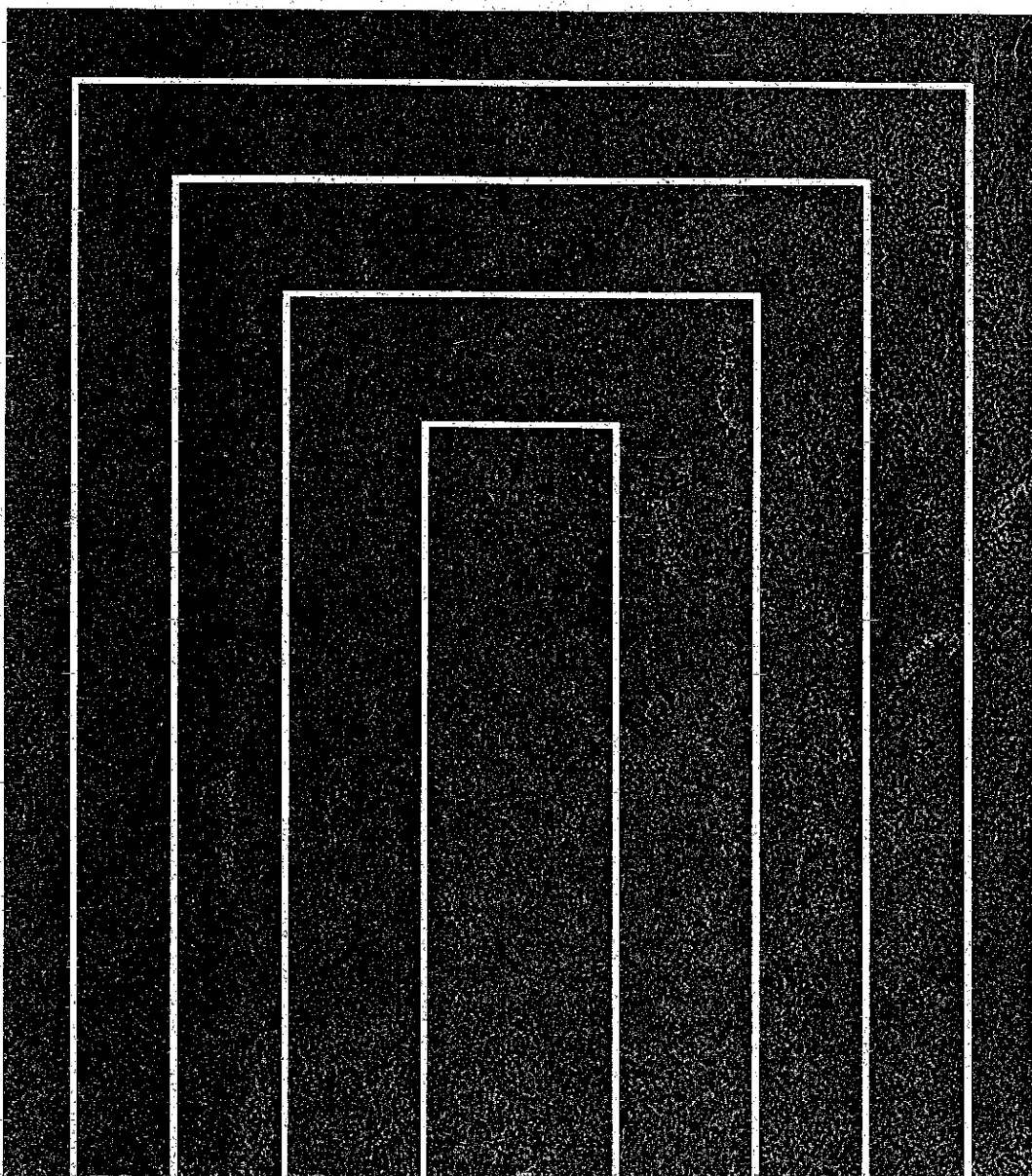


TOYOTA

1E, 2E, 2E-C ENGINE

REPAIR MANUAL

Oct., 1984



Pub.No. 36259

TOYOTA 1E, 2E, 2E-C ENGINE REPAIR MANUAL

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

TOYOTA 1E 2E 2E-C ENGINE REPAIR MANUAL

FOREWORD

This repair manual has been prepared to provide information covering general service repairs for the 1E, 2E and 2E-C engines equipped on the TOYOTA STARLET and COROLLA.

Applicable models:

EP70, 71 series
EE80 series

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



INTRODUCTION

step-by-step format:

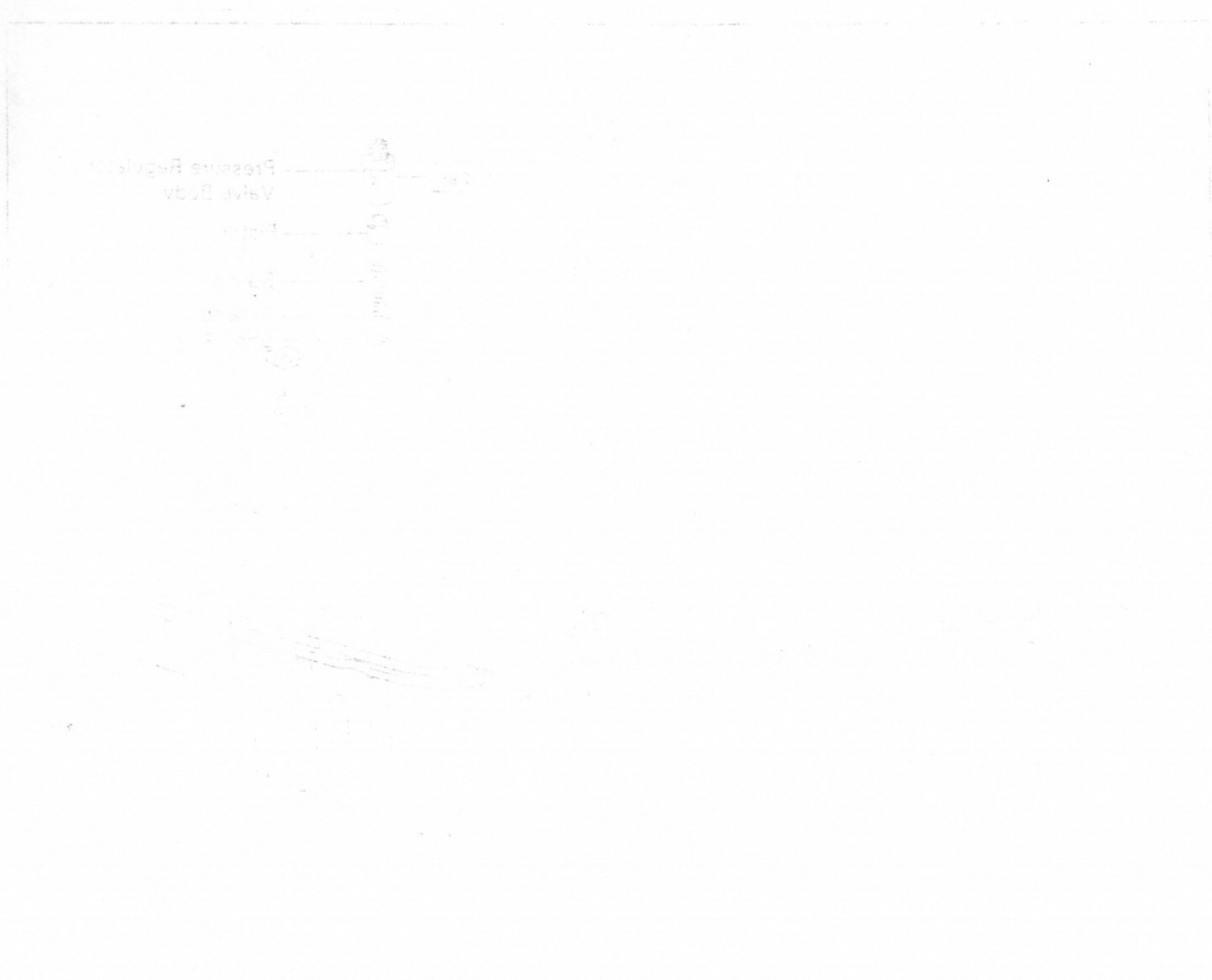
The illustration shows *what* to do and *where* to do it. The task heading tells *what* to do.

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

IN

TROUBLESHOOTING tables are included for each system to help you diagnose the system problem and find the cause. The repair procedure cards are placed in the manual to help you find the correct procedure before starting any repair task.

Each section contains information that is essential to the proper operation of the system. The information is presented in a clear, concise manner to help you understand the system and its operation.



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.

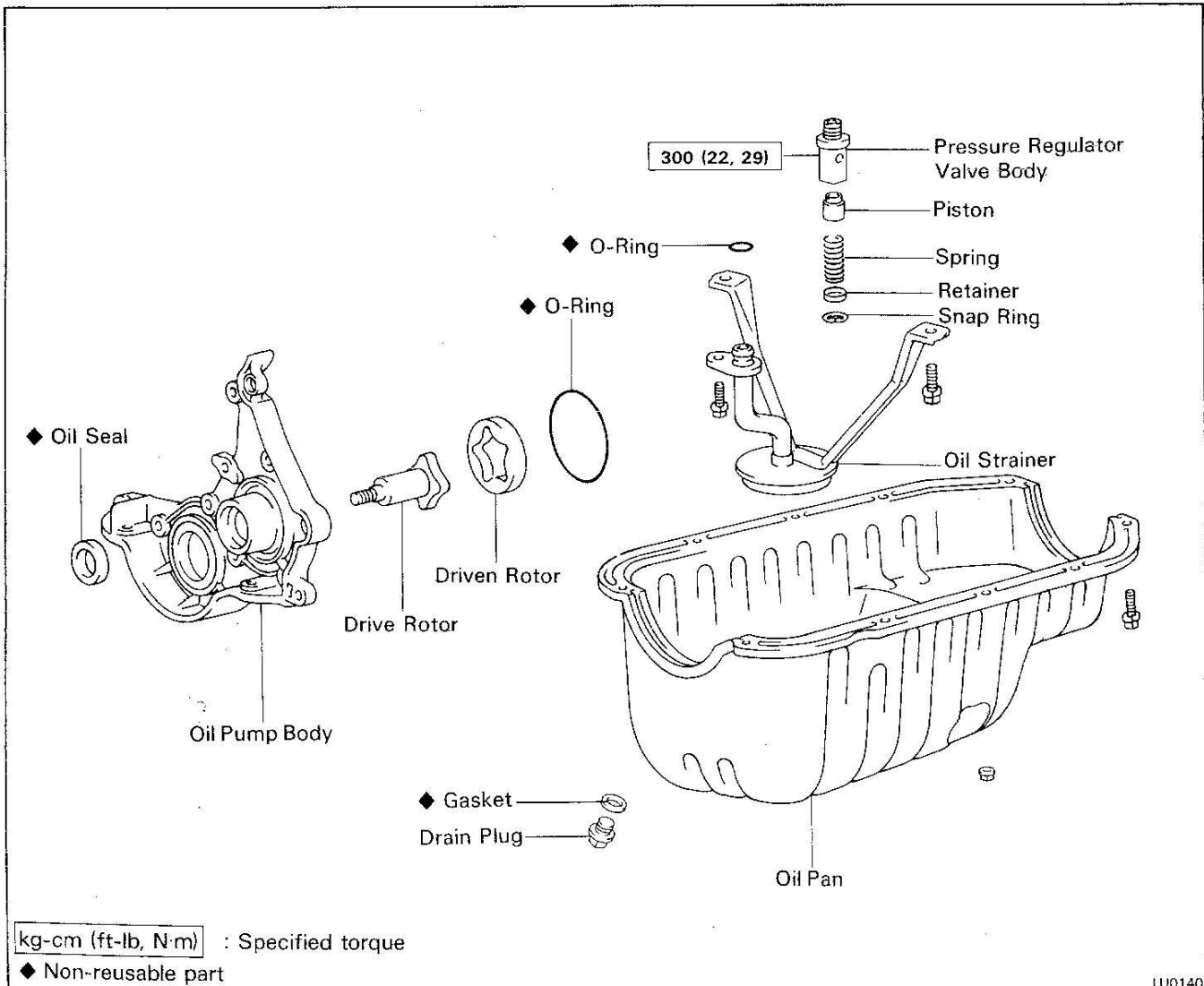
At the beginning of each section, **PRECAUTIONS** are given that pertain to *all* repair operations contained in that section. *Read these precautions before starting any repair task.*

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

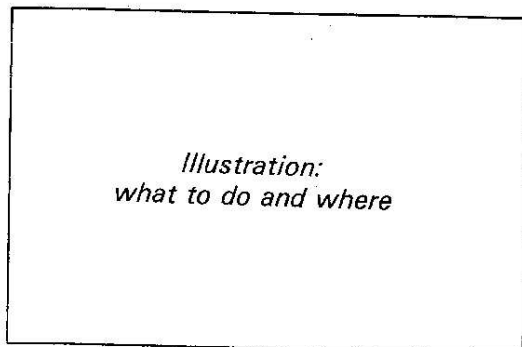
Most repair operations begin with an overview illustration. It identifies the components and shows how the parts fit together.

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:

INSTALL FLYWHEEL

Install the flywheel on the crankshaft with six bolts.

Torque the bolts.

Torque: 750 kg-cm (54 ft-lb, 74 N·m)

Task heading: *what to do*

Detail text:
how to do it

Specification

This format enables the experienced technician to have a FAST TRACK. He can read the task headings and refer to the detailed text only when he needs it. Important specifications and warnings always stand out in bold type.

REFERENCES

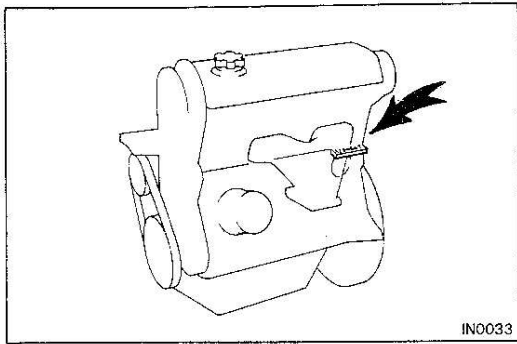
References have been kept to a minimum. However, when they are required you are given the *page* to go to.

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 specs. 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 there is a 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 perform the repair.



IN0033

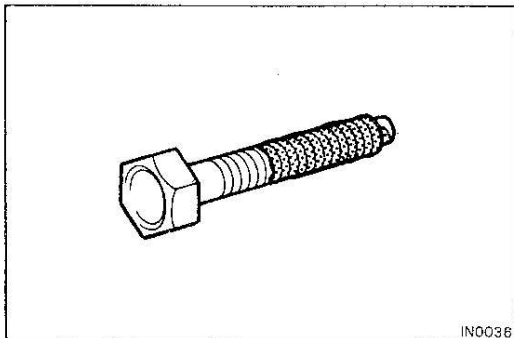
IDENTIFICATION INFORMATION

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 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 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 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 and oil seals etc. with new ones.
 - (b) Parts which cannot be reused are indicated by the "◆" symbol.



IN0036

6. Precoated Parts

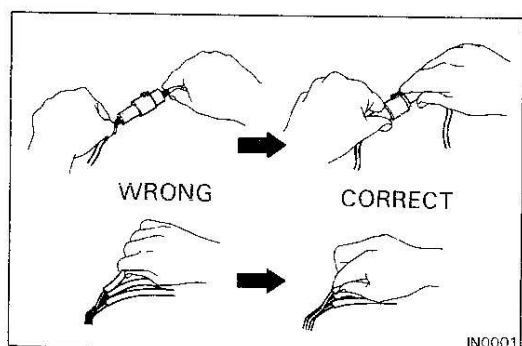
Precoated parts are the bolts, nuts, etc., which are coated with a seal lock adhesive at the factory.

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

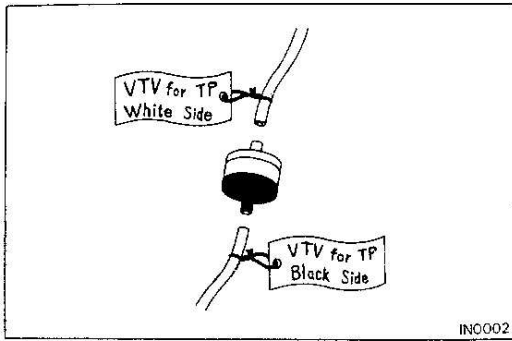
- (b) Recoating of Precoated Parts
 - (1) Clean off the old adhesive from the part's threads.
 - (2) Dry with compressed air.
 - (3) Apply the specified seal lock adhesive to the part's threads.
 - (c) Precoated parts are indicated in the component illustrations by the "★" symbol.
7. When necessary, use a sealer on gaskets to prevent leaks.
 8. Carefully observe all specifications for bolt 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 of the correct amperage. DO NOT exceed the fuse amp rating or use one of a lower rating.

Care must be taken when jacking up and supporting the vehicle. Lift and support the vehicle only at the proper locations.

- (a) If the vehicle is to be jacked up at the front or rear end only, 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.



11. 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 thermo switches or thermo 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.



12. 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
A/T	Automatic Transmission
BTDC	Before Top Dead Center
BVSV	Bimetal Vacuum Switching Valve
DP	Dash Pot
EC	European Country
EGR	Exhaust Gas Recirculation
EX	Exhaust
Ex.	Except
FIPG	Formed in Place Gasket
HAI	Hot Air Intake
HIC	Hot Idle Compensation
IIA	Integrated Ignition Assembly
IN	Intake
K TYPE CARBURETOR	Conventional (Two barrel) Type Carburetor
LLC	Long Life Coolant
MP	Multipurpose
M/T	Manual Transmission
O/S	Oversize
PCV	Positive Crankcase Ventilation
RON	Research Octane Number
SSM	Special Service Materials
SST	Special Service Tools
STD	Standard
TDC	Top Dead Center
U/S	Undersize
VCV	Vacuum Control Valve
V TYPE CARBURETOR	Variable Venturi Type Carburetor
w/	With
w/o	Without