

HOW TO USE THIS MANUAL

IN00U-36

GENERAL INFORMATION

1. INDEX

An INDEX is provided on the first page of each section to guide you to the item to be repaired. To assist you in finding your way through the manual, the section title and major heading are given at the top of every page.

2. PRECAUTION

At the beginning of each section, a PRECAUTION is given that pertains to all repair operations contained in that section.

Read these precautions before starting any repair task.

3. TROUBLESHOOTING

TROUBLESHOOTING tables are included for each system to help you diagnose the problem and find the cause. The fundamentals of how to proceed with troubleshooting are described on page IN-17.

Be sure to read this before performing troubleshooting.

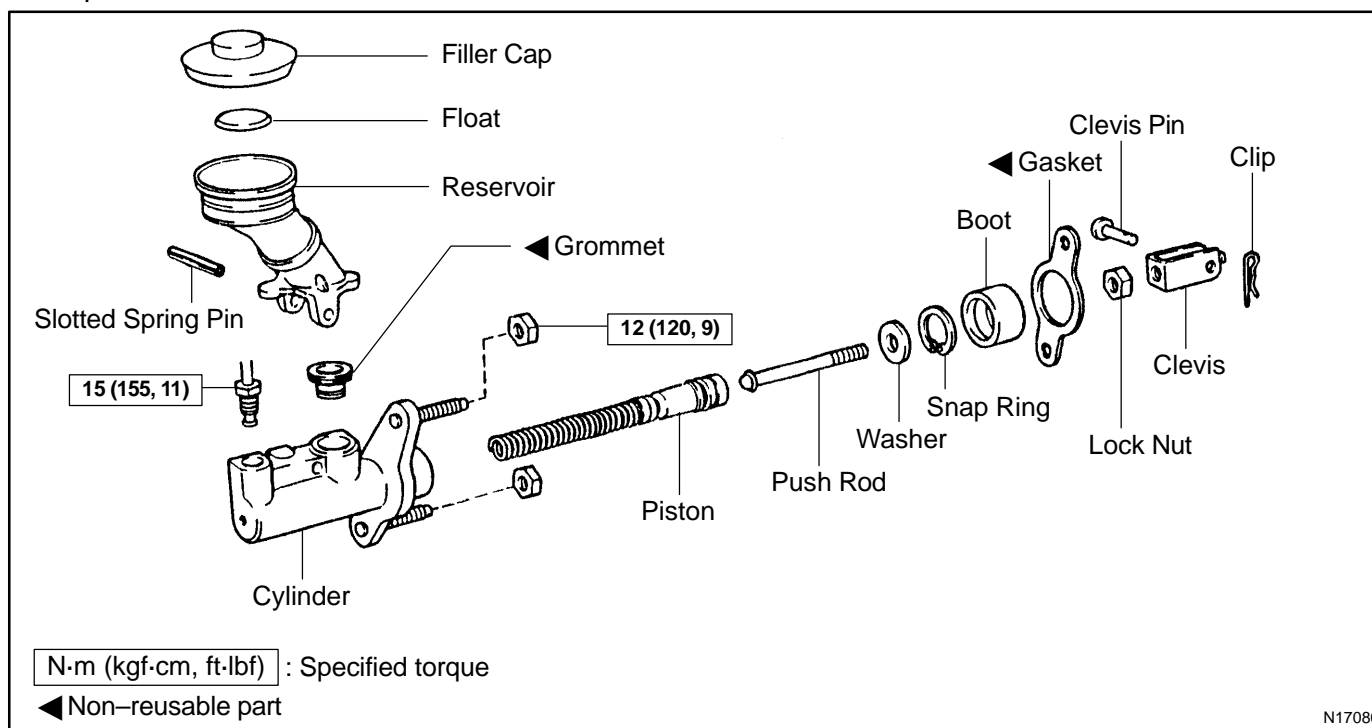
4. PREPARATION

Preparation lists the SST (Special Service Tools), recommended tools, equipment, lubricant and SSM (Special Service Materials) which should be prepared before beginning the operation and explains the purpose of each one.

5. 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*

Task heading : what to do

21. CHECK PISTON STROKE OF OVERDRIVE BRAKE

(a) Place SST and a dial indicator onto the overdrive brake piston as shown in the illustration.

SST 09350-30020 (09350-06120)

Set part No.

Component part No.

Detailed text : how to do task

(b) Measure the stroke applying and releasing the compressed air (392 — 785 kPa, 4 — 8 kgf/cm² or 57 — 114 psi) as shown in the illustration.

Piston stroke: 1.40 — 1.70 mm (0.0551 — 0.0669 in.)

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.

6. REFERENCES

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

7. 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 Service Specifications section for quick reference.

8. 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 perform the repair efficiently.

9. SI UNIT

The UNITS given in this manual are primarily expressed according to the SI UNIT (International System of Unit), and alternately expressed in the metric system and in the English System.

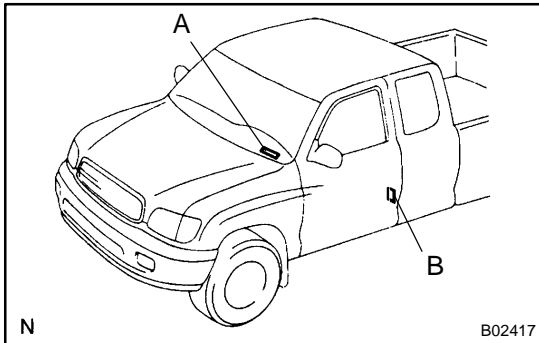
Example:

Torque: 30 N·m (310 kgf·cm, 22 ft·lbf)

IDENTIFICATION INFORMATION

VEHICLE IDENTIFICATION AND ENGINE SERIAL NUMBER

IN01P-04

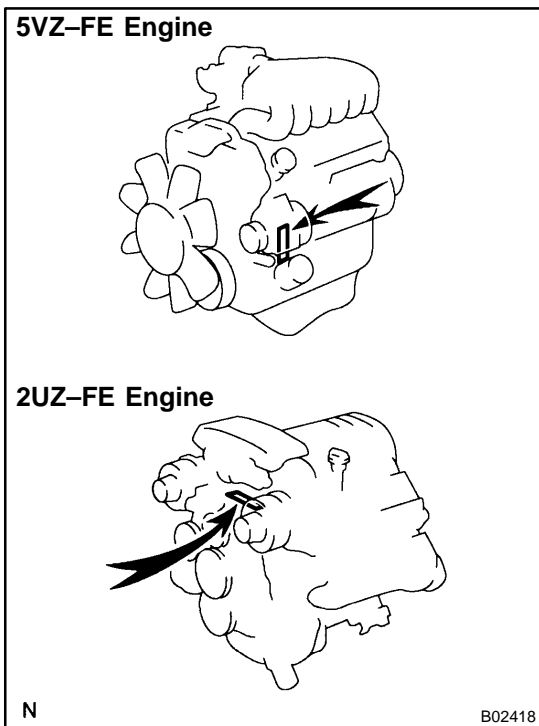


1. VEHICLE IDENTIFICATION NUMBER

The vehicle identification number is stamped on the vehicle identification number plate and certification label.

A: Vehicle Identification Number Plate

B: Certification Label



2. ENGINE SERIAL NUMBER

The engine serial number is stamped on the engine block, as shown in the illustration.

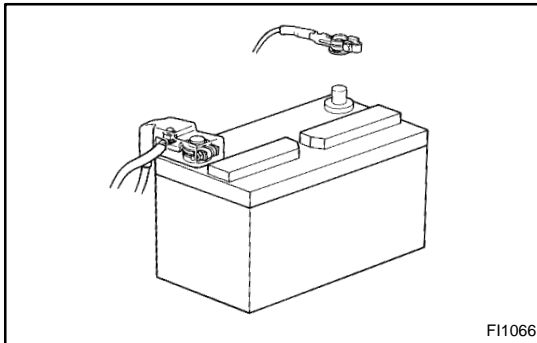
REPAIR INSTRUCTIONS

GENERAL INFORMATION

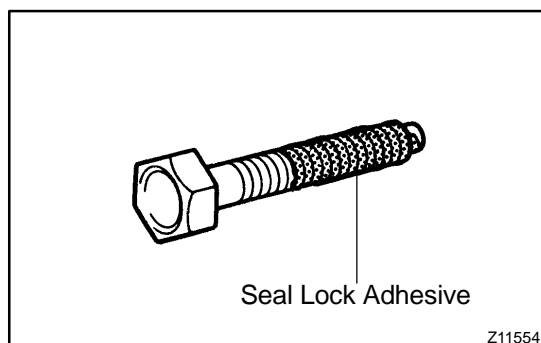
INOCO-12

BASIC REPAIR HINT

- (a) Use fender, seat and floor covers to keep the vehicle clean and prevent damage.
- (b) During disassembly, keep parts in the appropriate order to facilitate reassembly.



- (c) Installation and removal of battery terminal:
 - (1) Before performing electrical work, disconnect the negative (-) terminal cable from the battery.
 - (2) If it is necessary to disconnect the battery for inspection or repair, first disconnect the negative (-) terminal cable.
 - (3) When disconnecting the terminal cable, to prevent damage to battery terminal, loosen the cable nut and raise the cable straight up without twisting or prying it.
 - (4) Clean the battery terminals and cable ends with a clean shop rag. Do not scrape them with a file or other abrasive objects.
 - (5) Install the cable ends to the battery terminals after loosening the nut, and tighten the nut after installation. Do not use a hammer to tap the cable ends onto the terminals.
 - (6) Be sure the cover for the positive (+) terminal is properly in place.
- (d) Check hose and wiring connectors to make sure that they are connected securely and correctly.
- (e) Non-reusable parts
 - (1) Always replace cotter pins, gaskets, O-rings, oil seals, etc. with new ones.
 - (2) Non-reusable parts are indicated in the component illustrations by the " " symbol.

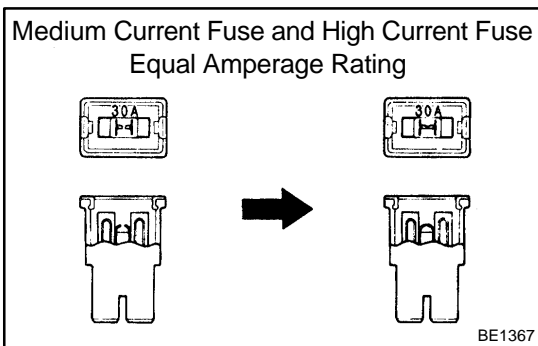


- (f) Precoated parts

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

 - (1) If a precoated part is retightened, loosened or caused to move in any way, it must be recoated with the specified adhesive.
 - (2) When reusing precoated parts, clean off the old adhesive and dry with compressed air. Then apply the specified seal lock adhesive to the bolt, nut or threads.

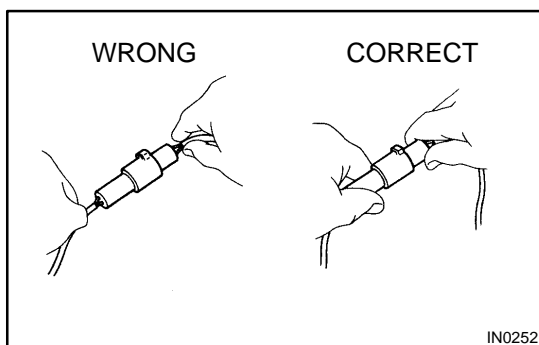
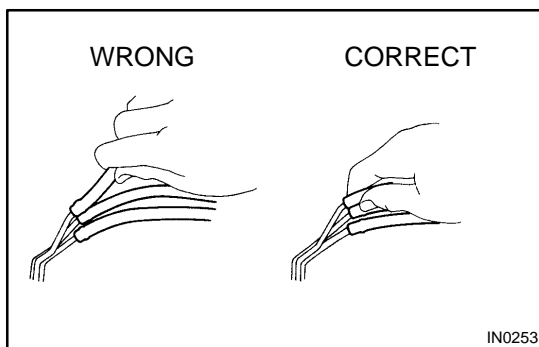
- (3) Precoated parts are indicated in the component illustrations by the "▲" symbol.
- (g) When necessary, use a sealer on gaskets to prevent leaks.
- (h) Carefully observe all specifications for bolt tightening torques. Always use a torque wrench.
- (i) Use of special service tools (SST) and special 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 in Preparation section in this manual.



- (j) When replacing fuses, be sure the new fuse has the correct amperage rating. DO NOT exceed the rating or use one with a lower rating.

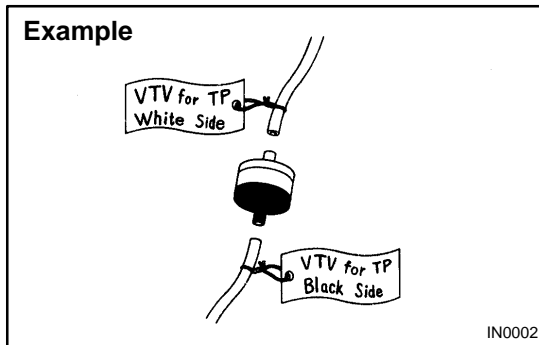
Illustration	Symbol	Part Name	Abbreviation
<p>BE5594</p>	<p>IN0365</p>	FUSE	FUSE
<p>BE5595</p>	<p>IN0366</p>	MEDIUM CURRENT FUSE	M-FUSE
<p>BE5596</p>	<p>IN0367</p>	HIGH CURRENT FUSE	H-FUSE
<p>BE5597</p>	<p>IN0367</p>	FUSIBLE LINK	FL
<p>BE5598</p>	<p>IN0368</p>	CIRCUIT BREAKER	CB

- (k) Care must be taken when jacking up and supporting the vehicle. Be sure to lift and support the vehicle at the proper locations (See page [IN-8](#)).
- ◀ Cancel the parking brake on the level place and shift the transmission in Neutral (or N position).
 - ◀ When jacking up the front wheels of the vehicle at first place stoppers behind the rear wheels.
 - ◀ When jacking up the rear wheels of the vehicle at first place stoppers before the front wheels.
 - ◀ When either the front or rear wheels only should be jacked up, set rigid racks and place stoppers in front and behind the other wheels on the ground.
 - ◀ After the vehicle is jacked up, be sure to support it on rigid racks . It is extremely dangerous to do any work on a vehicle raised on a jack alone, even for a small job that can be finished quickly.
- (l) Observe the following precautions to avoid damage to the following parts:
- (1) Do not open the cover or case of the ECU unless absolutely necessary. (If the IC terminals are touched, the IC may be destroyed by static electricity.)



- (2) To disconnect vacuum hoses, pull off the end, not the middle of the hose.
- (3) To pull apart electrical connectors, pull on the connector itself, not the wires.
- (4) 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.
- (5) When steam cleaning an engine, protect the electronic components, air filter and emission-related components from water.
- (6) Never use an impact wrench to remove or install temperature switches or temperature sensors.

- (7) When checking continuity at the wire connector, insert the tester probe carefully to prevent terminals from bending.
- (8) When using a vacuum gauge, never force the hose onto a connector that is too large. Use a step-down adapter for adjustment. Once the hose has been stretched, it may leak air.



- (m) Installation and removal of vacuum hose:
 - (1) When disconnecting vacuum hoses, use tags to identify how they should be reconnected to.
 - (2) After completing a job, double check that the vacuum hoses are properly connected. A label under the hood shows the proper layout.
- (n) Unless otherwise stated, all resistance is measured at an ambient temperature of 20°C (68°F). Because the resistance may be outside specifications if measured at high temperatures immediately after the vehicle has been running, measurement should be made when the engine has cooled down.

FOR ALL OF VEHICLES PRECAUTION

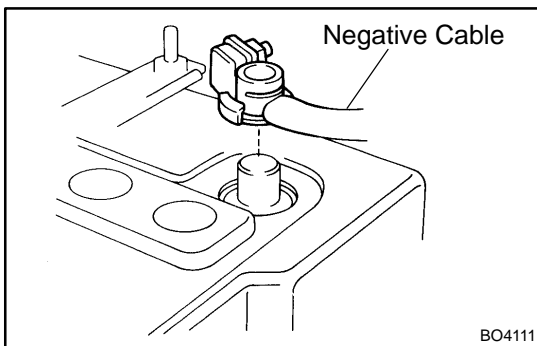
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1. FOR VEHICLES EQUIPPED WITH SRS AIRBAG AND SEAT BELT PRETENSIONER

- (a) The TOYOTA TUNDRA is equipped with an SRS (Supplemental Restraint System), such as the driver airbag, front passenger airbag assembly and seat belt pretensioner.

Failure to carry out service operations in the correct sequence could cause the supplemental restraint system to unexpectedly deploy during servicing, possibly leading to a serious accident.

Further, if a mistake is made in servicing the supplemental restraint system, it is possible the SRS may fail to operate when required. Before servicing (including removal or installation of parts, inspection or replacement), be sure to read the following items carefully, then follow the correct procedure described in this manual.



(b) GENERAL NOTICE

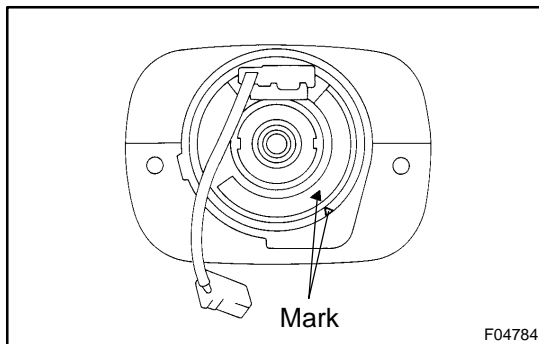
- (1) Malfunction symptoms of the supplemental restraint system are difficult to confirm, so the diagnostic trouble codes become the most important source of information when troubleshooting. When troubleshooting the supplemental restraint system, always inspect the diagnostic trouble codes before disconnecting the battery (See page [DI-490](#)).

- (2) Work must be started after 90 seconds from the time the ignition switch is turned to the "LOCK" position and the negative (-) terminal cable is disconnected from the battery.

(The supplemental restraint system is equipped with a back-up power source so that if work is started within 90 seconds of disconnecting the negative (-) terminal cable from the battery, the SRS may deploy.)

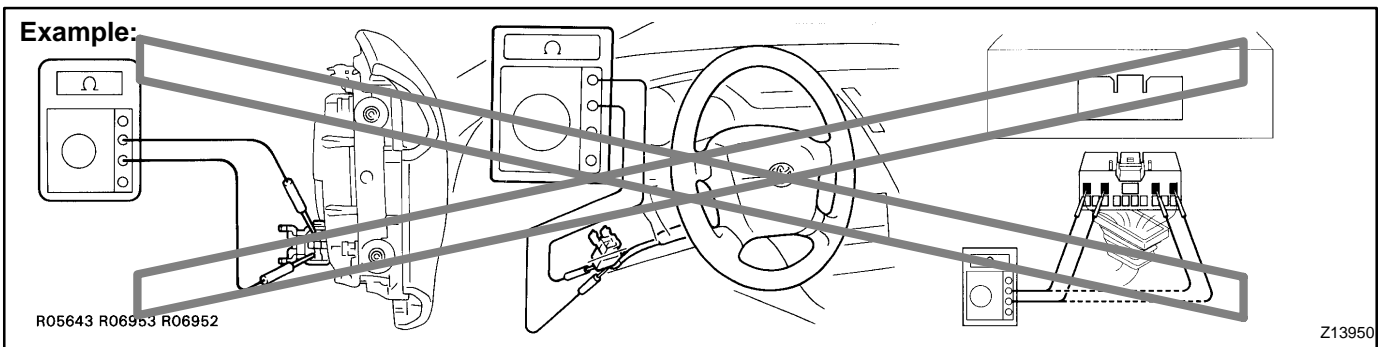
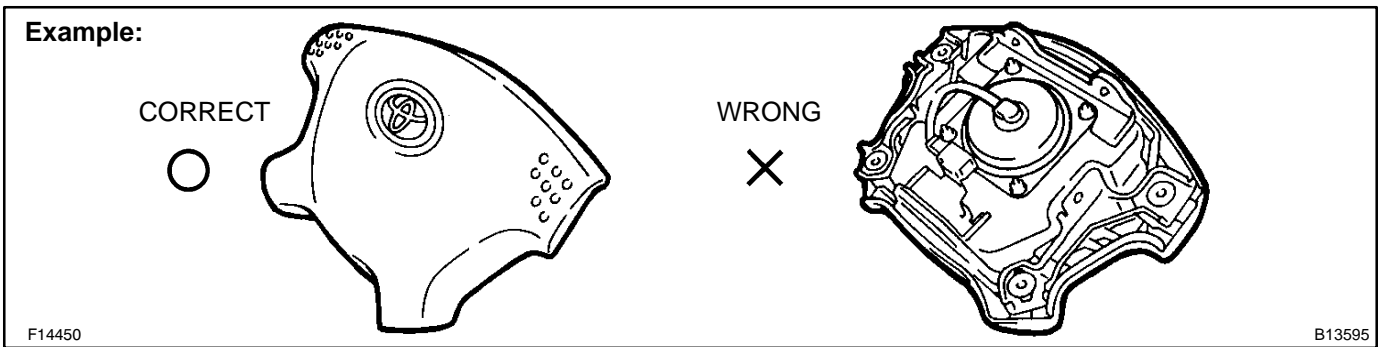
When the negative (-) terminal cable is disconnected from the battery, memory of the clock and audio systems will be cancelled. So before starting work, make a record of the contents memorized by the each memory system. Then when work is finished, reset the clock and audio systems as before. To avoid erasing the memory of each memory system, never use a back-up power supply from another battery.

- (3) Even in cases of a minor collision where the SRS does not deploy, the steering wheel pad (See page [RS-12](#)), front passenger airbag assembly (See page [RS-26](#)) and seat belt pretensioner (See page [BO-140](#)) should be inspected.
- (4) Never use SRS parts from another vehicle. When replacing parts, replace them with new parts.
- (5) Before repairs, remove the airbag sensor if shocks are likely to be applied to the sensor during repairs.
- (6) Never disassemble and repair the airbag sensor assembly, steering wheel pad, front passenger airbag assembly or seat belt pretensioner.
- (7) If the airbag sensor assembly, steering wheel pad, front passenger airbag assembly or seat belt pretensioner has been dropped, or if there are cracks, dents or other defects in the case, bracket or connector, replace them with new ones.
- (8) Do not directly expose the airbag sensor assembly, steering wheel pad, front passenger airbag assembly or seat belt pretensioner to hot air or flames.
- (9) Use a volt/ohmmeter with high impedance (10 k Ω /V minimum) for troubleshooting of the electrical circuit.
- (10) Information labels are attached to the periphery of the SRS components. Follow the instructions on the notices.
- (11) After work on the supplemental restraint system is completed, check the SRS warning light (See page [DI-490](#)).



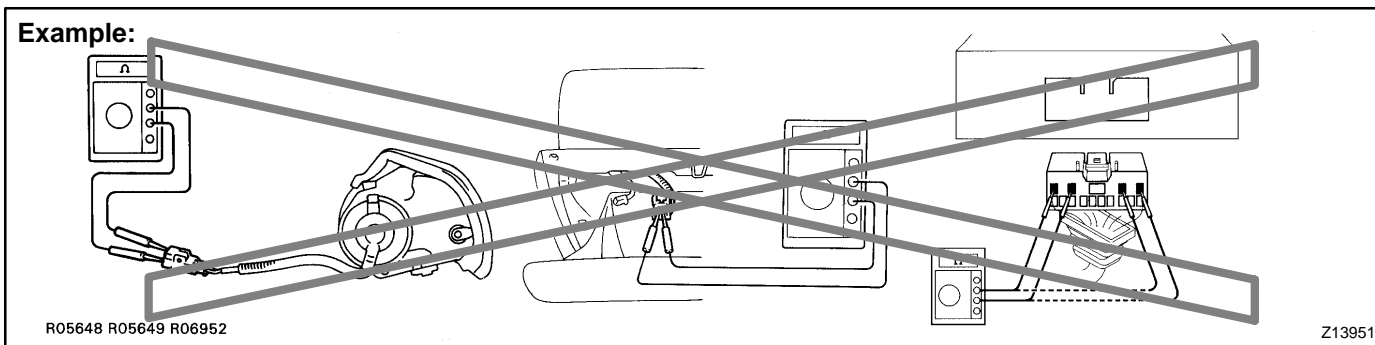
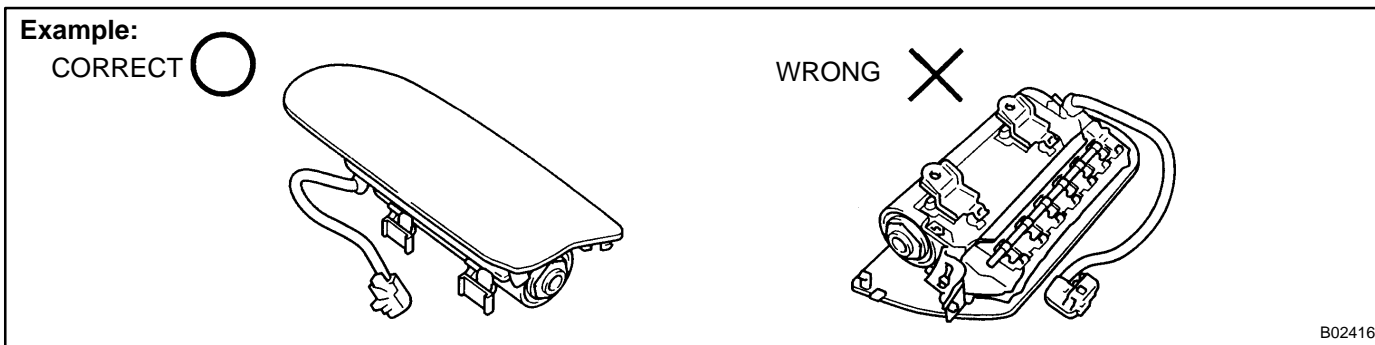
- (c) **SPIRAL CABLE (in Combination Switch)**
 The steering wheel must be fitted correctly to the steering column with the spiral cable at the neutral position, otherwise cable disconnection and other troubles may result. Refer to [SR-28](#) concerning correct steering wheel installation.

- (d) STEERING WHEEL PAD (with Airbag)
 - (1) When removing the steering wheel pad or handling a new steering wheel pad, it should be placed with the pad top surface facing up.
Storing the pad with its metallic surface upward may lead to a serious accident if the airbag inflates for some reason. In addition do not store a steering wheel pad on top of another one.
 - (2) Never measure the resistance of the airbag squib. (This may cause the airbag to deploy, which is very dangerous.)
 - (3) Grease should not be applied to the steering wheel pad and the pad should not be cleaned with detergents of any kind.
 - (4) Store the steering wheel pad where the ambient temperature remains below 93°C (200°F), without high humidity and away from electrical noise.
 - (5) When using electric welding, first disconnect the airbag connector (yellow color and 2 pins) under the steering column near the combination switch connector before starting work.
 - (6) When disposing of a vehicle or the steering wheel pad alone, the airbag should be deployed using an SST before disposal (See page RS-14).
Perform the operation in a safe place away from electrical noise.



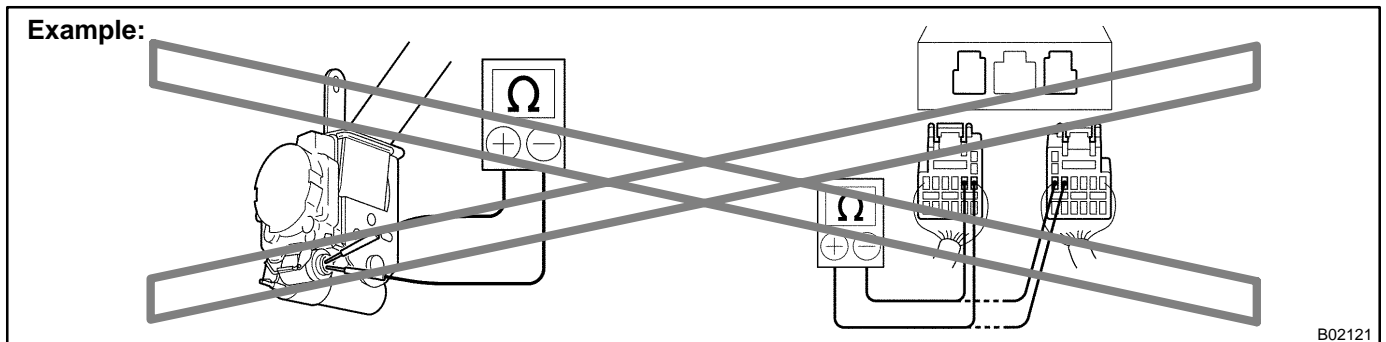
(e) FRONT PASSENGER AIRBAG ASSEMBLY

- (1) Always store a removed or new front passenger airbag assembly with the airbag deployment direction facing up.
Storing the airbag assembly with the airbag deployment direction facing down could cause a serious accident if the airbag deploys.
- (2) Never measure the resistance of the airbag squib. (This may cause the airbag to deploy, which is very dangerous.)
- (3) Grease should not be applied to the front passenger airbag assembly and the airbag door should not be cleaned with detergents of any kind.
- (4) Store the airbag assembly where the ambient temperature remains below 93°C (200°F), without high humidity and away from electrical noise.
- (5) When using electric welding, first disconnect the airbag connector (yellow color and 2 pins) installed on assembly before starting work.
- (6) When disposing of a vehicle or the airbag assembly alone, the airbag should be deployed using an SST before disposal (See page RS-27).
Perform the operation in a safe place away from electrical noise.



(f) SEAT BELT PRETENSIONER

- (1) Never measure the resistance of the seat belt pretensioner. (This may cause the seat belt pretensioner activation which is very dangerous.)
- (2) Never disassemble the seat belt pretensioner.
- (3) Never install the seat belt pretensioner in another vehicle.
- (4) Store the seat belt pretensioner where the ambient temperature remains below 80°C (176°F) and away from electrical noise without high humidity.
- (5) When using electric welding, first disconnect the connector (yellow color and 2 pins) before starting work.
- (6) When disposing of a vehicle or the seat belt pretensioner alone, the seat belt pretensioner should be activated before disposal (See page [BO-142](#)). Perform the operation in a safe place away from electrical noise.
- (7) The seat belt pretensioner is hot after activation, so let it cool down sufficiently before the disposal. However never apply water to the seat belt pretensioner.



(g) AIRBAG SENSOR ASSEMBLY

- (1) Never reuse the airbag sensor assembly involved in a collision when the SRS has deployed.
- (2) The connectors to the airbag sensor assembly should be connected or disconnected with the sensor mounted on the floor. If the connectors are connected or disconnected while the airbag sensor assembly is not mounted to the floor, it could cause undesired ignition of the supplemental restraint system.
- (3) Work must be started after 90 seconds from the time the ignition switch is turned to the "LOCK" position and the negative (-) terminal cable is disconnected from the battery, even if only loosening the set bolts of the airbag sensor assembly.

(h) WIRE HARNESS AND CONNECTOR

The SRS wire harness is integrated with the cowl wire harness assembly and floor wire harness assembly. All the connectors for the system are also a standard yellow color. If the SRS wire harness becomes disconnected or the connector becomes broken due to an accident, etc., repair or replace it.

2. FOR VEHICLES EQUIPPED WITH A CATALYTIC CONVERTER

CAUTION:

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

- (a) Use only unleaded gasoline.
- (b) Avoid prolonged idling.
Avoid running the engine at idle speed for more than 20 minutes.
- (c) Avoid spark jump test.
 - (1) Perform spark jump test only when absolutely necessary. Perform this test as rapidly as possible.
 - (2) While testing, never race the engine.
- (d) Avoid prolonged engine compression measurement.
Engine compression tests must be done as rapidly as possible.
- (e) 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.
- (f) Avoid coasting with ignition turned off.
- (g) Do not dispose of used catalyst along with parts contaminated with gasoline or oil.

3. IF VEHICLE IS EQUIPPED WITH MOBILE COMMUNICATION SYSTEM

For vehicles with mobile communication systems such as two-way radios and cellular telephones, observe the following precautions.

- (1) Install the antenna as far as possible away from the ECU and sensors of the vehicle's electronic system.
- (2) Install the antenna feeder at least 20 cm (7.87 in.) away from the ECU and sensors of the vehicle's electronic systems. For details about ECU and sensors locations, refer to the section on the applicable component.
- (3) Do not wind the antenna feeder together with the other wiring as much as possible, also avoid running the antenna feeder parallel with other wire harness.
- (4) Check that the antenna and feeder are correctly adjusted.
- (5) Do not install powerful mobile communications system.

4. FOR USING OBD II SCAN TOOL OR TOYOTA HAND-HELD TESTER

CAUTION:

Observe the following for safety reasons:

- ▲ Before using the OBD II scan tool or TOYOTA hand-held tester, the OBD II scan tool's instruction book or TOYOTA hand-held tester's operator manual should be read thoroughly.
- ▲ Be sure to route all cables securely when driving with the OBD II scan tool or TOYOTA hand-held tester connected to the vehicle. (i.e. Keep cables away from feet, pedals, steering wheel and shift lever.)
- ▲ Two persons are required when test driving with the OBD II scan tool or TOYOTA hand-held tester, one person to drive the vehicle and one person to operate the OBD II scan tool or TOYOTA hand-held tester.

HOW TO TROUBLESHOOT ECU CONTROLLED SYSTEMS

GENERAL INFORMATION

IN01T-12

A large number of ECU controlled systems are used in the TOYOTA TUNDRA. In general, the ECU controlled system is considered to be a very intricate system requiring a high level of technical knowledge and expert skill to troubleshoot. However, the fact is that if you proceed to inspect the circuits one by one, troubleshooting of these systems is not complex. If you have adequate understanding of the system and a basic knowledge of electricity, accurate diagnosis and necessary repair can be performed to locate and fix the problem. This manual is designed through emphasis of the above standpoint to help service technicians perform accurate and effective troubleshooting, and is compiled for the following major ECU controlled systems:

The troubleshooting procedure and how to make use of it are described on the following pages.

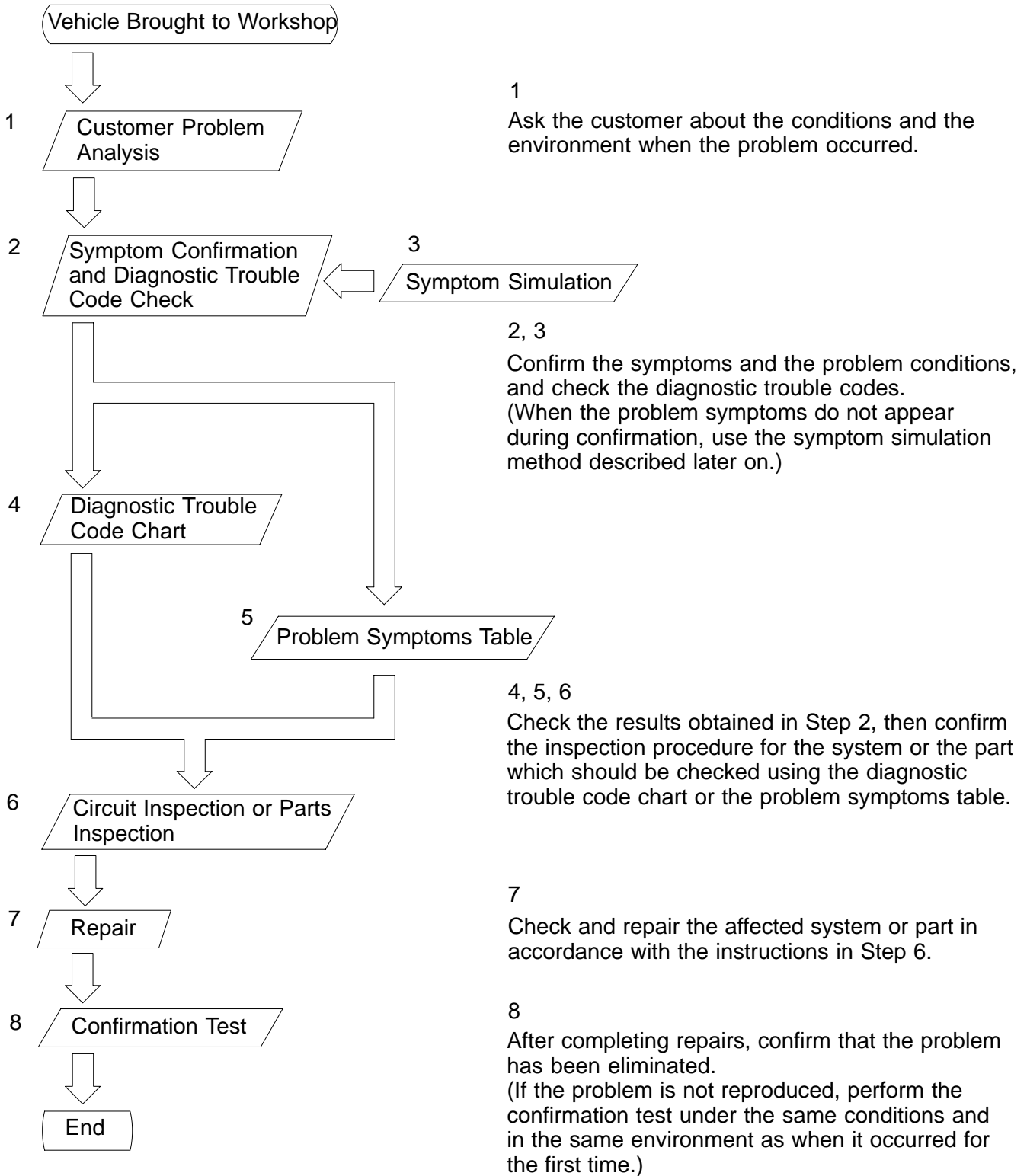
System	Page
1. Engine (5VZ-FE)	DI-1
2. Engine (2UZ-FE)	DI-192
3. Automatic Transmission (A340E, A340F)	DI-382
4. Anti-Lock Brake System	DI-446
5. Supplemental Restraint System	DI-488
6. TOYOTA Vehicle Intrusion Protection System	DI-592
7. Cruise Control System (5VZ-FE)	DI-638
8. Cruise Control System (2UZ-FE)	DI-662

FOR USING OBD II SCAN TOOL OR HAND-HELD TESTER

- ▲ Before using the scan tool or tester, the scan tool's instruction book or tester's operator manual should be read thoroughly.
- ▲ If the scan tool or tester cannot communicate with ECU controlled systems when you have connected the cable of the scan tool or tester to DLC3, turned the ignition switch ON and operated the scan tool, there is a problem on the vehicle side or tool side.
 - (1) If communication is normal when the tool is connected to another vehicle, inspect the diagnosis data link line (Bus < line) or ECU power circuit of the vehicle.
 - (2) If communication is still not possible when the tool is connected to another vehicle, the problem is probably in the tool itself, so perform the Self Test procedures outline in the Tester Operator's Manual.

HOW TO PROCEED WITH TROUBLESHOOTING

Carry out troubleshooting in accordance with the procedure on the following page. Here, only the basic procedure is shown. Details are provided in Diagnostics section, showing the most effective methods for each circuit. Confirm the troubleshooting procedures first for the relevant circuit before beginning troubleshooting of that circuit.



1. CUSTOMER PROBLEM ANALYSIS

In troubleshooting, the problem symptoms must be confirmed accurately and all preconceptions must be cleared away in order to give an accurate judgment. To ascertain just what the problem symptoms are, it is extremely important to ask the customer about the problem and the conditions at the time it occurred.

Important Point in the Problem Analysis:

The following 5 items are important points in the problem analysis. Past problems which are thought to be unrelated and the repair history, etc. may also help in some cases, so as much information as possible should be gathered and its relationship with the problem symptoms should be correctly ascertained for reference in troubleshooting. A customer problem analysis table is provided in Diagnostics section for each system for your use.

<p>Important Points in the Customer Problem Analysis</p> <ul style="list-style-type: none"> ▲What ——— Vehicle model, system name ▲When ——— Date, time, occurrence frequency ▲Where ——— Road conditions ▲Under what conditions? ——— Running conditions, driving conditions, weather conditions ▲How did it happen? ——— Problem symptoms
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(Sample) Engine control system check sheet.

CUSTOMER PROBLEM ANALYSIS CHECK				
ENGINE CONTROL SYSTEM Check Sheet		Inspector's Name _____		
Customer's Name		Model and Model Year		
Driver's Name		Frame No.		
Data Vehicle Brought in		Engine Model		
License No.		Odometer Reading	km miles	
Problem Symptoms	<input type="checkbox"/> Engine does not Start	<input type="checkbox"/> Engine does not crank	<input type="checkbox"/> No initial combustion	
	<input type="checkbox"/> Difficult to Start	<input type="checkbox"/> No complete combustion		
	<input type="checkbox"/> Poor Idling	<input type="checkbox"/> Engine cranks slowly	<input type="checkbox"/> Other _____	
	<input type="checkbox"/> Poor Drive ability	<input type="checkbox"/> Incorrect first idle	<input type="checkbox"/> Idling rpm is abnormal	<input type="checkbox"/> High (rpm) <input type="checkbox"/> Low (rpm)
	<input type="checkbox"/> Engine Stall	<input type="checkbox"/> Rough idling	<input type="checkbox"/> Other _____	
	<input type="checkbox"/> Others	<input type="checkbox"/> Hesitation	<input type="checkbox"/> Back fire	<input type="checkbox"/> Muffler explosion (after-fire) <input type="checkbox"/> Surging
	<input type="checkbox"/> Knocking	<input type="checkbox"/> Other _____		
	<input type="checkbox"/> Soon after starting	<input type="checkbox"/> After accelerator pedal depressed		
	<input type="checkbox"/> After accelerator pedal released	<input type="checkbox"/> During A/C operation		
	<input type="checkbox"/> Shifting from N to D	<input type="checkbox"/> Other _____		
<input type="checkbox"/> constant <input type="checkbox"/> Sometimes (times per day/month)				

2. SYMPTOM CONFIRMATION AND DIAGNOSTIC TROUBLE CODE CHECK

The diagnostic system in the TOYOTA TUNDRA fulfills various functions. The first function is the Diagnostic Trouble Code Check in which a malfunction in the signal circuits to the ECU is stored in code in the ECU memory at the time of occurrence, to be output by the technician during troubleshooting. Another function is the Input Signal Check which checks if the signals from various switches are sent to the ECU correctly. By using these check functions, the problem areas can be narrowed down quickly and troubleshooting can be performed effectively. Diagnostic functions are incorporated in the following systems in the TOYOTA TUNDRA.

System	Diagnostic Trouble Code Check	Input Signal Check (Sensor Check)	Diagnostic Test Mode (Active Test)
1. Engine (5VZ-FE)	◀ (with Check Mode)	◀	◀
2. Engine (2UZ-FE)	◀ (with Check Mode)	◀	◀
3. Automatic Transmission	◀ (with Check Mode)	◀	
4. Anti-Lock Brake System	◀	◀	
5. Supplemental Restraint System	◀		
6. Cruise Control System (5VZ-FE)	◀		
7. Cruise Control System (2UZ-FE)	◀	◀	

In diagnostic trouble code check, it is very important to determine whether the problem indicated by the diagnostic trouble code is still occurring or occurred in the past but returned to normal at present. In addition, it must be checked in the problem symptom check whether the malfunction indicated by the diagnostic trouble code is directly related to the problem symptom or not. For this reason, the diagnostic trouble codes should be checked before and after the symptom confirmation to determine the current conditions, as shown in the table below. If this is not done, it may, depending on the case, result in unnecessary troubleshooting for normally operating systems, thus making it more difficult to locate the problem, or in repairs not pertinent to the problem. Therefore, always follow the procedure in correct order and perform the diagnostic trouble code check.

DIAGNOSTIC TROUBLE CODE CHECK PROCEDURE

Diagnostic Trouble Code Check (Make a note of and then clear)	Confirmation of Symptoms	Diagnostic Trouble Code Check	Problem Condition
Diagnostic Trouble Code Display	Problem symptoms exist	Same diagnostic trouble code is displayed	Problem is still occurring in the diagnostic circuit
	No problem symptoms exist	Normal code is displayed	The problem is still occurring in a place other than in the diagnostic circuit (The diagnostic trouble code displayed first is either for a past problem or it is a secondary problem)
Normal Code Display		Problem symptoms exist	Normal code is displayed
	No problem symptoms exist	Normal code is displayed	The problem occurred in a place other than in the diagnostic circuit in the past

Taking into account the points on the previous page, a flow chart showing how to proceed with troubleshooting using the diagnostic trouble code check is shown below. This flow chart shows how to utilize the diagnostic trouble code check effectively, then by carefully checking the results, indicates how to proceed either to diagnostic trouble code troubleshooting or to troubleshooting of problem symptoms table.

