

INTRODUCTION

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HOW TO USE THIS MANUAL

To assist you in finding your way through the manual, the Section Title and major heading are given at the top of every page.

An **INDEX** is provided on the first 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

INTRODUCTION -- How to Use This Manual

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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

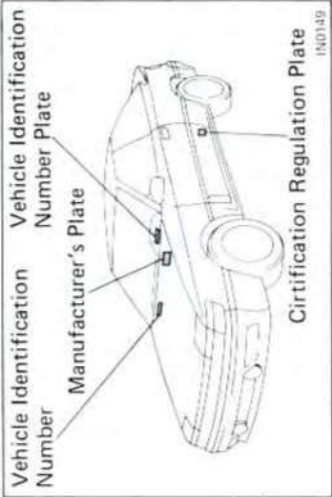
21. CHECK PISTON STROKE OF OVERDRIVE BRAKE

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

SST 09350-30020 (09350-06120)

Set part No. Component part No.

IN-4 INTRODUCTION — Identification Information, General Repair Instructions



**IDENTIFICATION INFORMATION
VEHICLE IDENTIFICATION NUMBER**

The vehicle identification number is stamped on the cowl panel of the engine compartment. This number is also stamped on top of the instrument panel and the driver's door panel.



ENGINE SERIAL NUMBER

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

INTRODUCTION — General Repair Instructions

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6. Precoated parts

Precoated parts are the bolts and nuts, which have been 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 bolt, nut or installation part threads.

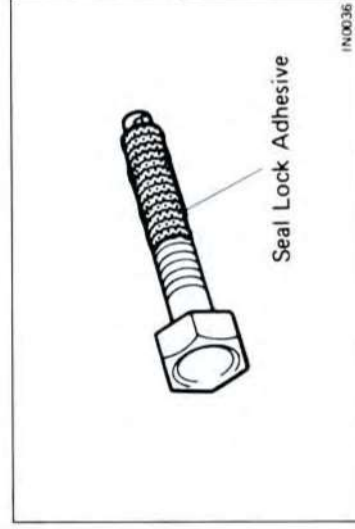
(2) Dry with compressed air.

(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 tor-

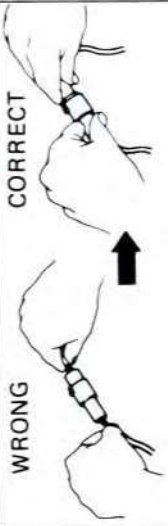


IN-6

INTRODUCTION — Equipped with a catalytic Converter

General Repair Instructions, Precautions for Vehicles

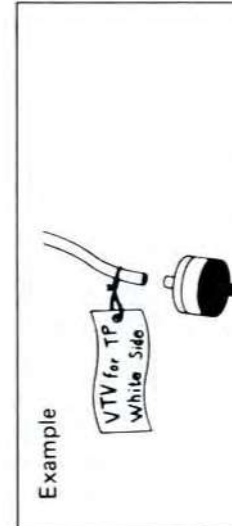
WRONG



CORRECT



Example



(d) 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.

(e) When steam cleaning an engine, protect the distributor, coil, air filter, carburetor intake, air pump and VCV from water.

(f) Never use an impact wrench to remove or install thermo switches or thermo sensors.

(g) When checking continuity at the wire connector, insert the tester probe carefully to prevent terminals from bending.

(h) 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 them.

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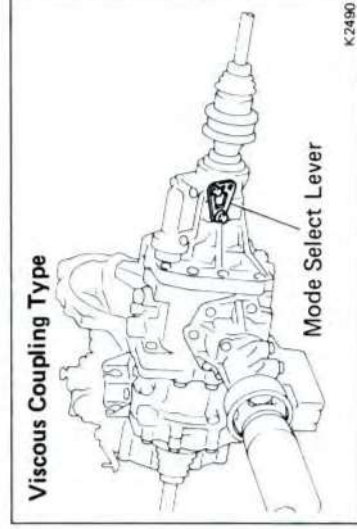
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INTRODUCTION – Precautions When Servicing Full-Time 4WD Vehicles**IN-7**

PRECAUTIONS WHEN SERVICING FULL-TIME 4WD VEHICLES

The full-time 4WD Celica is equipped with the viscous coupling type of center differential lock. When carrying out any kind of servicing or testing on a full-time 4WD in which the front or rear wheels are made to rotate (braking test, speedometer test, on-the-car wheel balancing, etc.), or when towing the vehicle, be sure to observe the precautions given belows. If incorrect preparations or test procedures are used, the test will not be able to be successfully carried out, and may be dangerous as well. Therefore, before beginning any such servicing or test, be sure to check the following items:

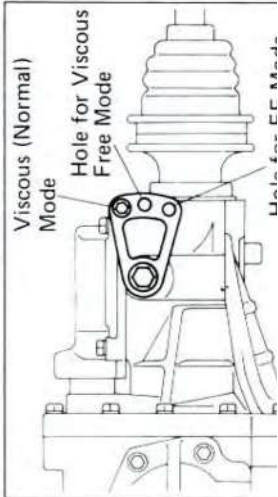
- (1) Center differential lock type
- (2) Center differential mode position
- (3) Whether wheels should be touching ground or jacked up
- (4) Transmission gear position
- (5) Maximum testing vehicle speed



IN-8 INTRODUCTION — Precautions When Servicing Full-Time 4WD Vehicles



- 2. REMOVE MODE SELECT LEVER SET BOLT**
- 3. MOVE MODE SELECT LEVER TO DESIRED MODE POSITION**
NOTES:
 - 1. If the mode select lever cannot be moved smoothly, shift the transmission to 1st gear, then move the lever while rotating one front wheel by hand.
 - 2. Do not use excessive force when moving the mode select lever.
- 4. LOCK MODE SELECT LEVER WITH SET BOLT**

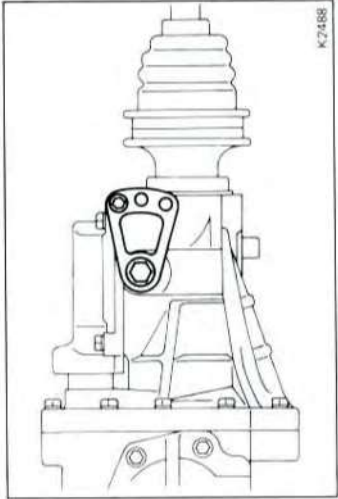


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INTRODUCTION — Precautions When Servicing Full-Time 4WD Vehicles IN-9

6. AFTER FINISHING TEST, RETURN MODE SELECT LEVER TO "VISCOUS (NORMAL) MODE" POSITION AND INSTALL SET BOLT

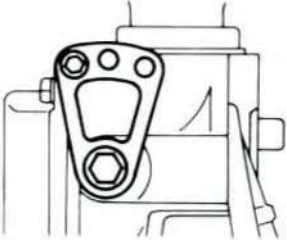
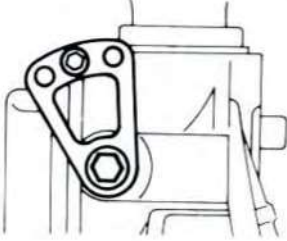
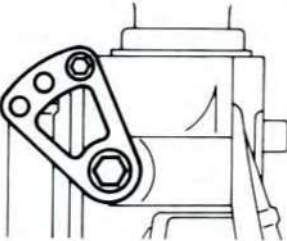
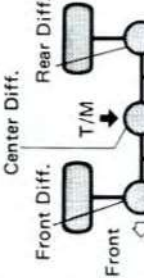
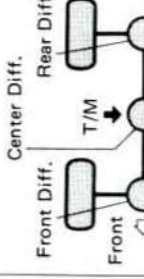
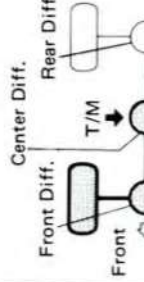


CAUTION:

1. After moving the mode select lever, jack up one of the front or rear wheels and check that the wheel rotates to confirm that the mode selection has been made correctly.
2. Be sure to tighten the set bolt securely each time after moving the mode select lever.
3. Do not remove the clutch or pump the accelerator or

IN-10 INTRODUCTION — Precautions When Servicing Full-Time 4WD Vehicles

STATE IN EACH MODE

Mode	Viscous (Normal) Mode	Viscous Free Mode	FF Mode
Mode Select Lever Position	 K2488	 K2487	 K2489
State in Each Mode	 Front Front Diff. Center Diff. T/M Rear Diff. Rear	 Front Front Diff. Center Diff. T/M Rear Diff. Rear	 Front Front Diff. Center Diff. T/M Rear Diff. Rear

BRAKING FORCE TEST

NOTES:

- 1. According to the vehicle speed during the test, select one of the two test methods described below, either A or B.
- 2. The mode select lever position of mode select lever differs in the two test methods, A and B, so take adequate precautions.

Method A : Viscous Free Mode

(Low Speed Test)

Method B : FF Mode

(High Speed Test)

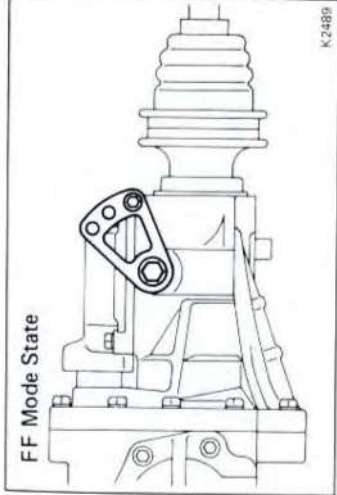
TEST METHOD A (Low Speed Test)

Speed indicated on speedometer: 19 mph (30 km/h),

Wheel speed (tester speed): 38 mph (60 km/h) and

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INTRODUCTION – Precautions When Servicing Full-Time 4WD Vehicles



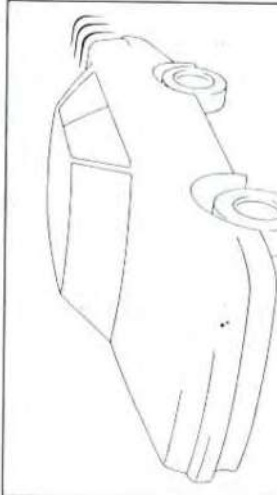
TEST METHOD B (High Speed Test)

[Vehicle Speed: Over 38 mph (60 km/h)]

1. MOVE MODE SELECT LEVER TO "FF MODE" AND INSTALL SET BOLT
(See page IN-7)
2. CONFIRM MODE SELECTION
(See page IN-8)
3. PLACE WHEELS (EITHER FRONT OR REAR) TO BE TESTED ON TESTER ROLLERS

CAUTION:

1. Do not drive the vehicle in 1st gear, 2nd gear or reverse while in the FF mode.
2. If it is necessary to move the vehicle, drive it in 3rd, 4th or 5th gear.
3. When desiring to back the vehicle, push it backwards manually.

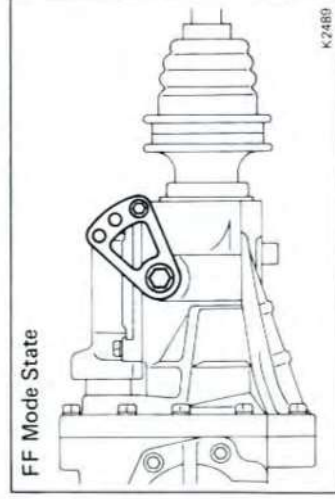


SPEEDOMETER TEST OR OTHER TESTS (Using Speedometer Tester or Chassis Dynamometer)

1. MOVE MODE SELECT LEVER TO "FF MODE" AND
INSTALL SET BOLT
(See page IN-7)
2. CONFIRM MODE SELECTION
(See page IN-8)

CAUTION:

1. Do not drive the vehicle in 1st gear, 2nd gear or reverse while in the FF mode.
2. If it is necessary to move the vehicle, drive it in 3rd, 4th or 5th gear.
3. When desiring to back the vehicle, push it backwards manually.
4. Do not engage the clutch or pump the accelerator or brake pedal suddenly.



ON-THE-CAR WHEEL BALANCING

CAUTION:

1. When doing on-the-car wheel balancing on a full-time 4WD vehicle, to prevent the wheels from rotating at different speeds on indifferent directions from each other (which could lead to damage to the center differential or transaxle gears), always be sure to observe the following precautions:
 - a) All four wheels should be jacked up, clearing the ground completely.
 - b) The wheels be driven with both the engine and the wheel balancer.
 - c) The mode select lever on the transaxle of the viscous coupling type center differential should be in the viscous (normal) mode position.
 - d) The parking brake lever should be fully released.
 - e) None of the brakes should be allowed to drag.
2. Avoid sudden acceleration, deceleration and braking.
3. Carry out the wheel balancing with the transmission in 3rd or 4th gear.

PRECAUTIONS WHEN TOWING FULL-TIME 4WD VEHICLES

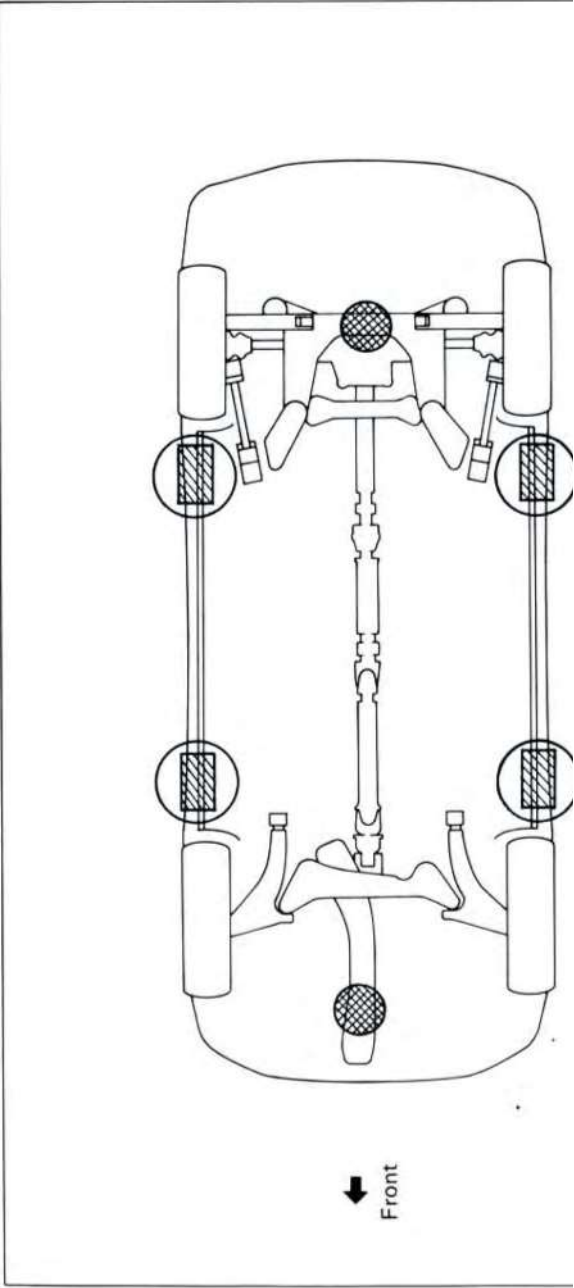
1. Use one of the methods shown below to tow the vehicle.
2. When there is trouble with the chassis and drive train, use method ① (flat bed truck) or method ② (sling type two truck with dollies)
3. Recommended Methods: No. ①, ② or ③
Emergency Method : No. ④

Towing Method	Type of Center Differential	Viscous Coupling Type		
		Parking Brake	T/M Shift Lever Position	Viscous Coupling
① Flat Bed Truck				Normal Driving (Viscous Mode)

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INTRODUCTION – Vehicle Lift and Support Locations

VEHICLE LIFT AND SUPPORT LOCATIONS



ABBREVIATIONS USED IN THIS MANUAL

ALR	Automatic Locking Retractor
A.B.S.	Anti-lock Brake System
A/C	Air Conditioner
BTDC	Before Top Dead Center
BVSV	Bimetal Vacuum Switching Valve
CALIF.	Vehicles Sold in California
CB	Circuit Breaker
CCS	Cruise Control System
ECU	Electronic Controlled Unit
EFI	Electronic Fuel Injection
EGR	Exhaust Gas Recirculation
ELR	Emergency Locking Retractor
EVAP	Evaporative (Emission Control)
EX	Exhaust (manifold, valve)
Ex.	Except
FIPG	Formed in Place Gasket
FL	Fusible Link
FR, Fr	Front
IN	Intake (manifold, valve)

IG	Ignition
ISC	Idle Speed Control
LH	Left-hand
Min.	Minimum
MP	Multipurpose
M/T, MTM	Manual Transaxle
OD, O/D	Overdrive
O/S	Oversize
PCV	Positive Crankcase Ventilation
PKB	Parking Brake
PS	Power Steering
RH	Right-hand
Rr	Rear
SOL	Solenoid
SSM	Special Service Materials
SST	Special Service Tools
STD	Standard
S/W	Switch
TCCS	TOYOTA Computer Controlled System
TDC	Top Dead Center
T-VIS	TOYOTA-Variable Induction System
TWC	Three-Way Catalyst
U/S	Undersize
VSV	Vacuum Switching Valve

VTV	Vacuum Transmitting Valve
w/	With
w/o	Without