WORKSHOP MANUAL

AXIOM
(UPR/S)

FOREWORD

This manual includes special notes, important points, service data, precautions, etc. That are needed for the maintenance, adjustments, service, removal and installation of vehicle components.

All information, illustrations and specifications contained in this manual are based on the latest product information available at the time of publication.

Arrangement of the material is shown in the table of contents on the right-hand side of this page. A black spot on the first page of each section can be seen on the edge of the book below each section title. These point to a more detailed table of contents preceding each section.

This manual applies to 2002 models.

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AXIOM

GENERAL INFORMATION

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General Information

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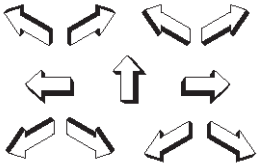
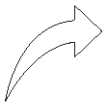
General Repair Instruction

1. If a floor jack is used, the following precautions are recommended.
   Park vehicle on level ground, “block” front or rear wheels, set jack against the recommended lifting points (see “Lifting Instructions” in this section), raise vehicle and support with chassis stands and then perform the service operations.
2. Before performing service operations, disconnect ground cable from the battery to reduce the chance of cable damage and burning due to short circuiting.
3. Use a cover on body, seats and floor to protect them against damage and contamination.
4. Brake fluid and anti–freeze solution must be handled with reasonable care, as they can cause paint damage.
5. The use of proper tools and recommended essential and available tools, where specified, is important for efficient and reliable performance of service repairs.
6. Use genuine Isuzu parts.
7. Used cotter pins, plastic clips, gaskets, O–rings, oil seals, lock washers and self–locking nuts should be discarded and new ones should be installed, as normal function of the parts cannot be maintained if these parts are reused.
8. To facilitate proper and smooth reassembly operation, keep disassembled parts neatly in groups. Keeping fixing bolts and nuts separate is very important, as they vary in hardness and design depending on position of installation.
9. Clean the parts before inspection or reassembly. Also clean oil ports, etc. using compressed air, and make certain they are free from restrictions.
10. Lubricate rotating and sliding faces of the parts with oil or grease before installation.
11. When necessary, use a sealer on gaskets to prevent leakage.
12. Carefully observe all specifications for bolt and nut torques.
13. When removing or replacing parts that require refrigerant to be discharged from the air conditioning system, be sure to use the Vehicle Refrigerant Recovery and Recycling Equipment (VRRRE) to recover and recycle Refrigerant–134a.
14. When a service operation is completed, make a final check to be sure the service has been done properly and the problem has been corrected.
15. SUPPLEMENTAL RESTRAINT SYSTEM
    The vehicle is equipped with a Supplemental Restraint System (SRS) – Air Bags. This system is not to be serviced without consulting the appropriate service information. Consult Section 9J “SRS System” if work is to be done on the front of the vehicle such as bumper, sheet metal, seats, wiring, steering wheel or column. Also review SRS system information if any arc welding is to be done on the vehicle. The SRS system equipped vehicle can be identified by:
    1. “AIR BAG” warning light on the instrument cluster.
    2. A Code “K” or “M” for fifth digit of Vehicle Identification Number.

Illustration Arrows

Arrows are designed for specific purposes to aid your understanding of technical illustrations.

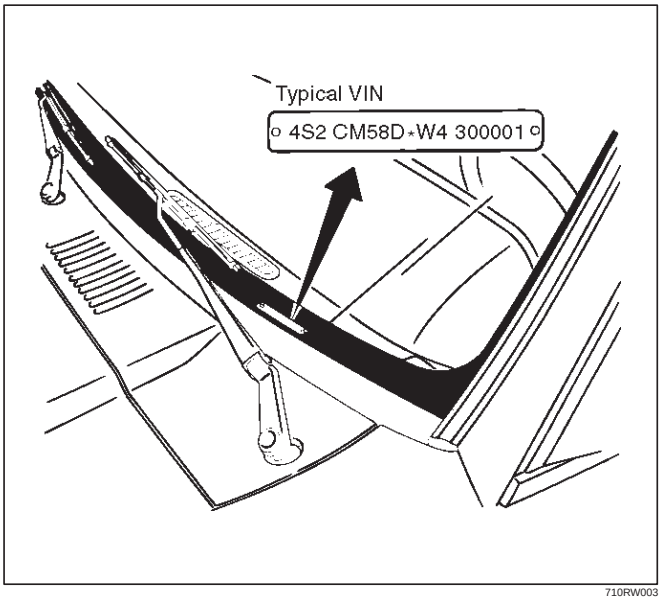
Arrow Type	Application
	Front of vehicle
	Up Side
	Task Related
	View Detail
	View Angle
	Dimension (1:2)
	Sectioning (1:3)

Arrow Type	Application
	▼Ambient/Clean air flow ▼Cool air flow
	▼Gas other than ambient air ▼Hot air flow
	▼Ambient air mixed with another gas ▼Can indicate temperature change
	Motion or direction
	Lubrication point oil or fluid
	Lubrication point grease
	Lubrication point jelly

Identification

Vehicle Identification Number (VIN)

This is the legal identification of the vehicle. it is located on the left bottom of the windshield. It can be easily seen through the windshield from outside the vehicle.



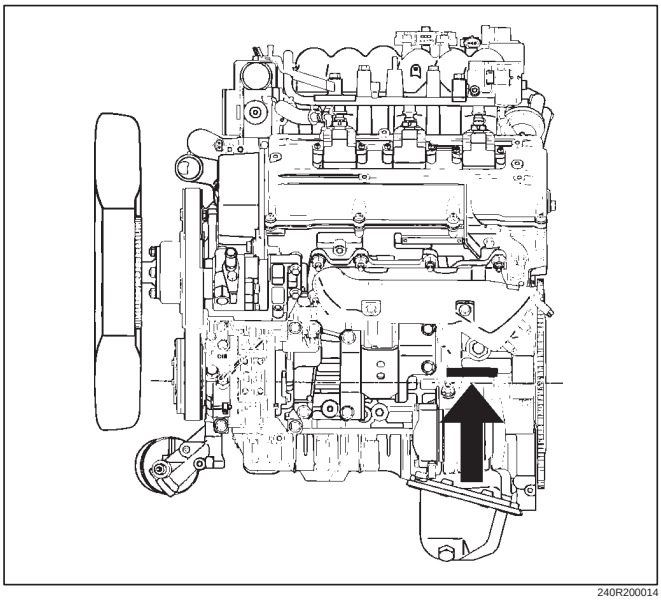
710RW003

4S2 C M 5 8 D * W 4 300001

- 300001 — Sequential Number
- W — Assembly Plant
- * — Model Year (2 = 2002)
- D — Check Digit
- 8 — Engine Type (X = 3.5L V6 DOHC ; 6VE1)
- 5 — Body Type (8 = Van; 4Door Utility)
- M — Series (5 = 5 - seater plus 1/4 ton (nominal))
- C — Vehicle Line (E = 4 x 2, Active belts W/dr. & ps. inflatable restraint)
  (F = 4 x 4, Active belts W/dr. & ps. inflatable restraint)
- 4S2 — GVWR Range (C = 4001 - 5000 LBS)
  (D = 5001 - 6000 LBS)
- C — World Manufacturer Identifier
  (4S2 SIA Built ISUZU Multipurpose Passenger Vehicle)

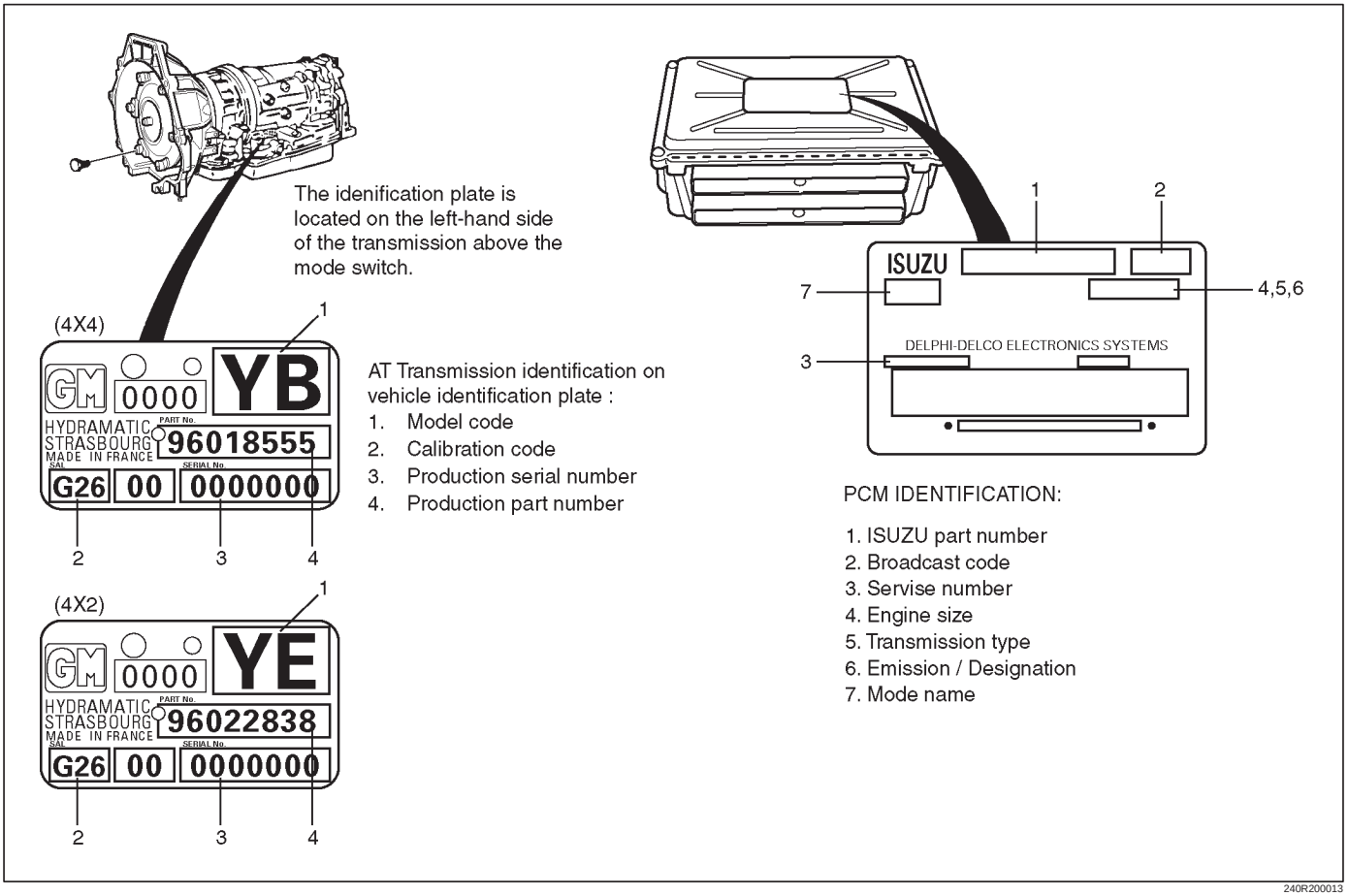
Engine Serial Number

The gasoline engine serial number is stamped on the left rear lower area of the cylinder block above the starter.



240R200014

Automatic : Stamped on the identification plate, located on the left side of the transmission above the mode switch.



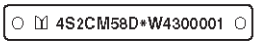
240R200013

Theft Prevention Standard

The 11 major components listed below will be marked with 17 digit VIN at the stage of production. In addition its service parts will be marked with manufacturer's trade mark, "R" mark and "DOT" mark.

Reference Figure No.	COMPONENT		INDICATION	
			PRODUCTION	SERVICE PARTS
0A-10	ENGINE	1– 6VE1	VIN plate	RMDOT Mark stamping
0A-11	TRANSMISSION	2– Automatic transmission	VIN plate	RMDOT Mark stamping
0A-11	BODY	3– Engine hood 4– Front door 5– Rear door 6– Fender 7– Rear Quarter panel 8– Front bumper 9– Back door left side 10– Back door right side 11– Rear bumper	VIN label	RMDOT Mark label

Anti Theft Stamping/Plate/Label

	STAMPING/PLATE	LABEL
PRODUCTION	Example 	Example 
SERVICE PARTS		

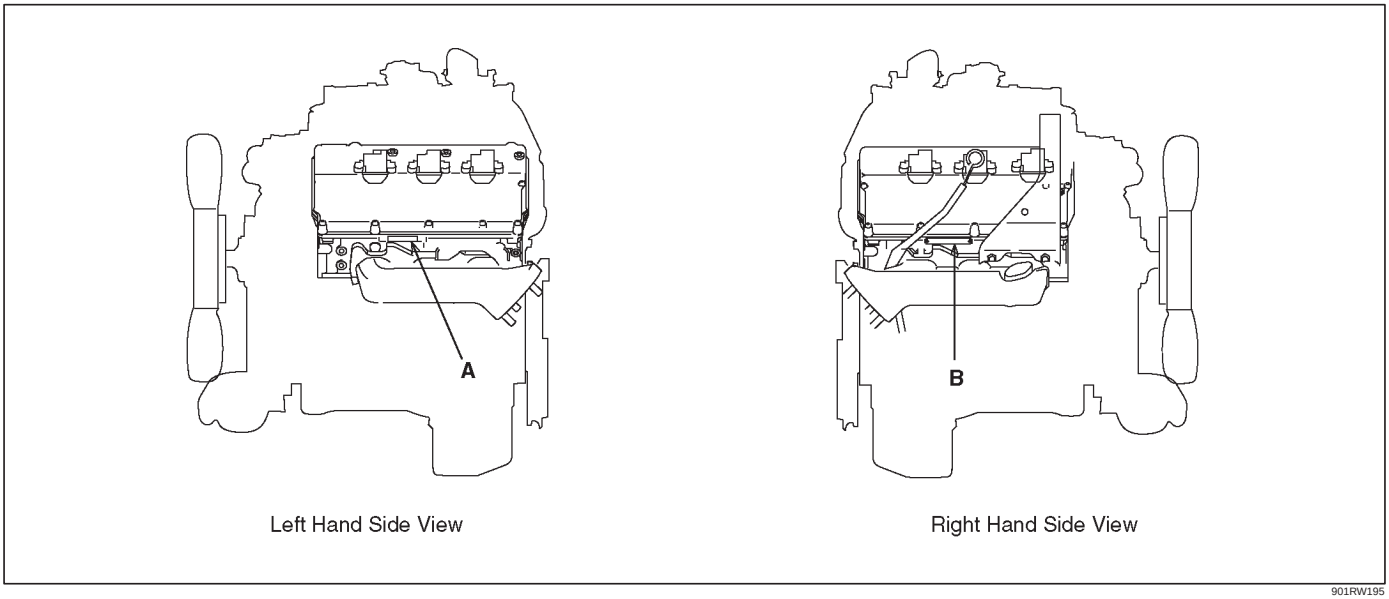
Anti Theft Stamping/Label/Plate Location

The stamping, label and plate locations are indicated by arrows in the illustration below.

NOTE:

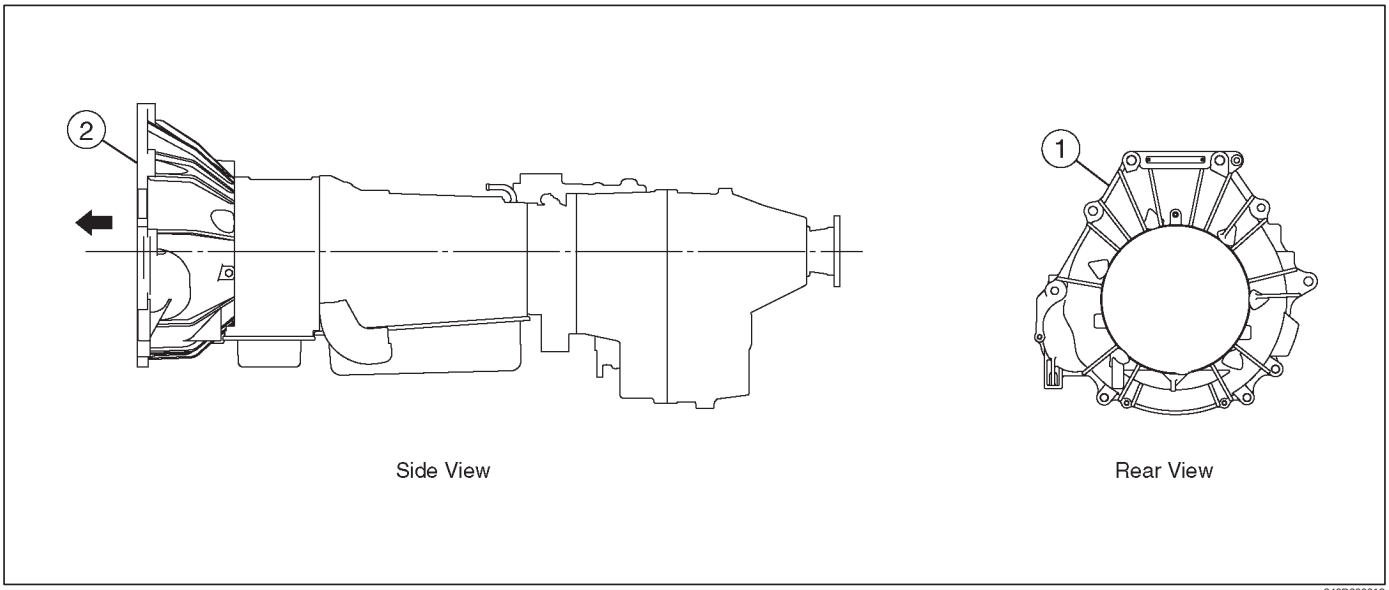
1. VIN plate locations for production.
2. Stamping locations for service parts.

Engine



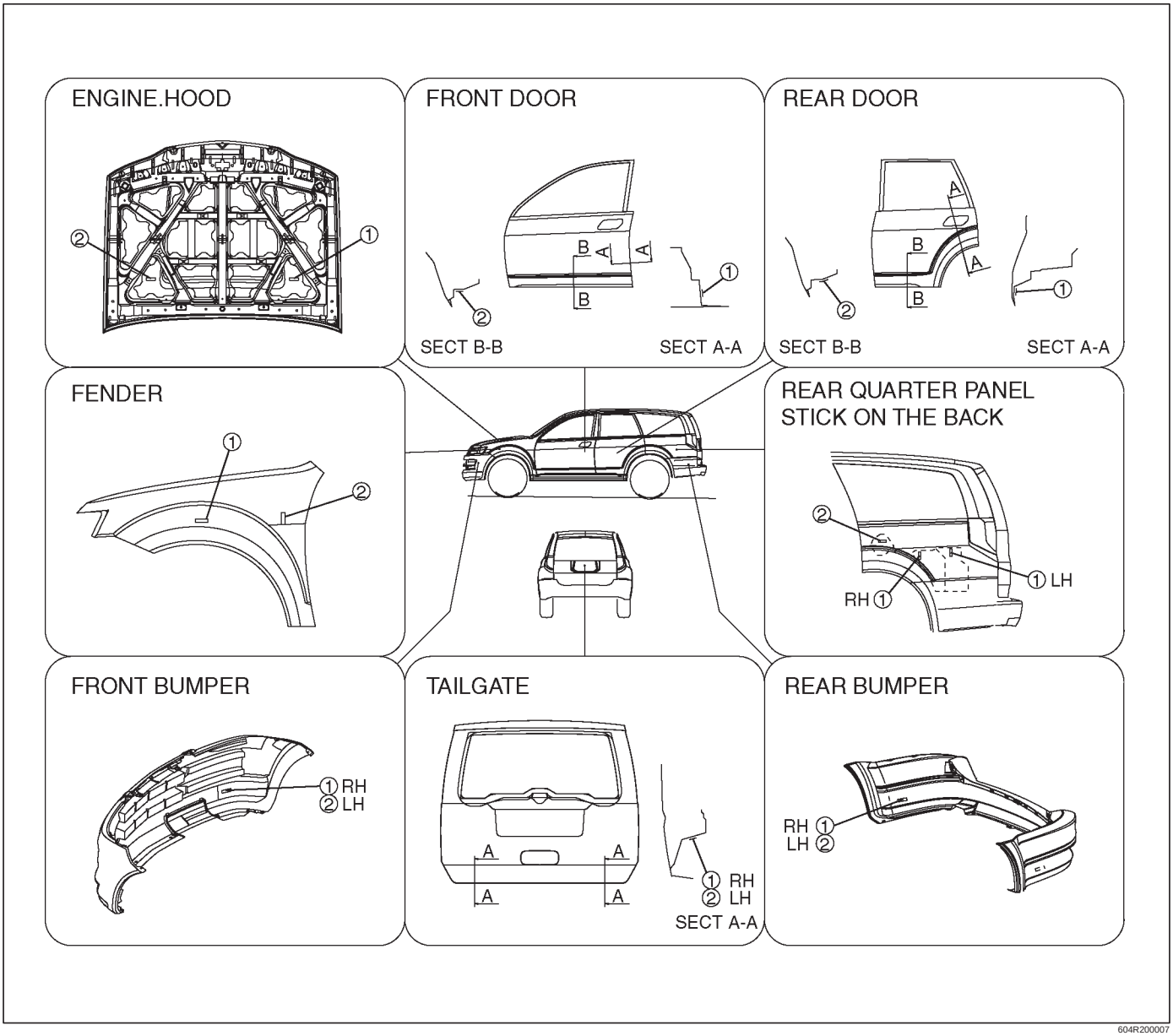
901RW195

Automatic Transmission



240R200012

Body

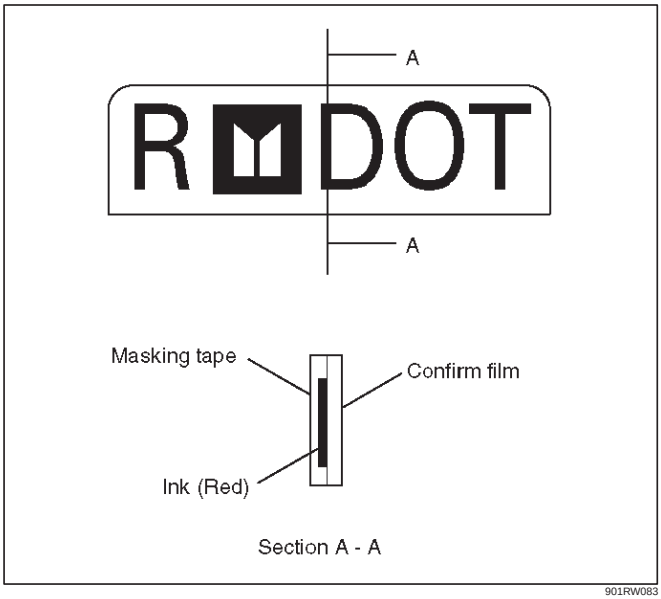

ENGINE.HOOD
FRONT DOOR
SECT B-B
SECT A-A
REAR DOOR
SECT B-B
SECT A-A
FENDER
REAR QUARTER PANEL
STICK ON THE BACK
RH
LH
FRONT BUMPER
RH
LH
TAILGATE
RH
LH
SECT A-A
REAR BUMPER
RH
LH
604R200007

Body Label Instructions

Do not peel off the masking tape until completion of paint work when replacing these parts, as the tape is affixed on the label attached to service parts for body of the anti–theft component.

NOTE: Be sure to pull off the masking tape after paint work has been completed.

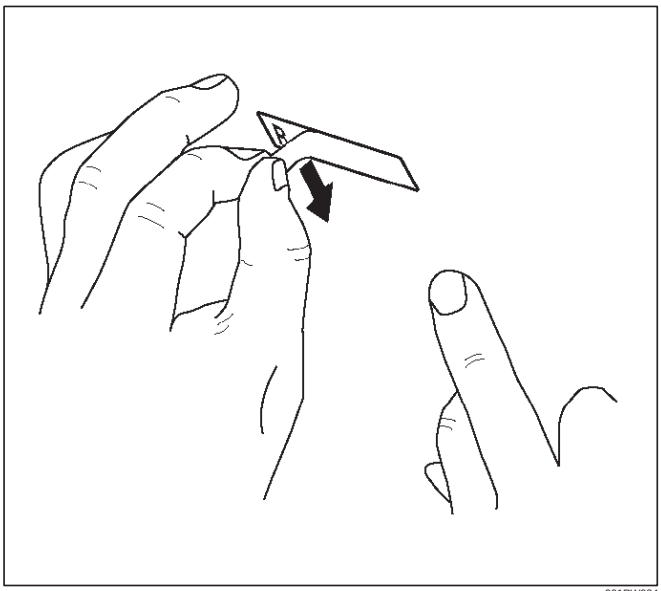
Do not attempt to remove this label for any reason.



901RW083

Precautions in pulling off the masking tape

1. Use only your finger nail or a similar blunt instrument to peel off the masking tape. Use of a sharp object will damage the underlying anti–theft label.
2. Be careful not to damage the paint around the label.



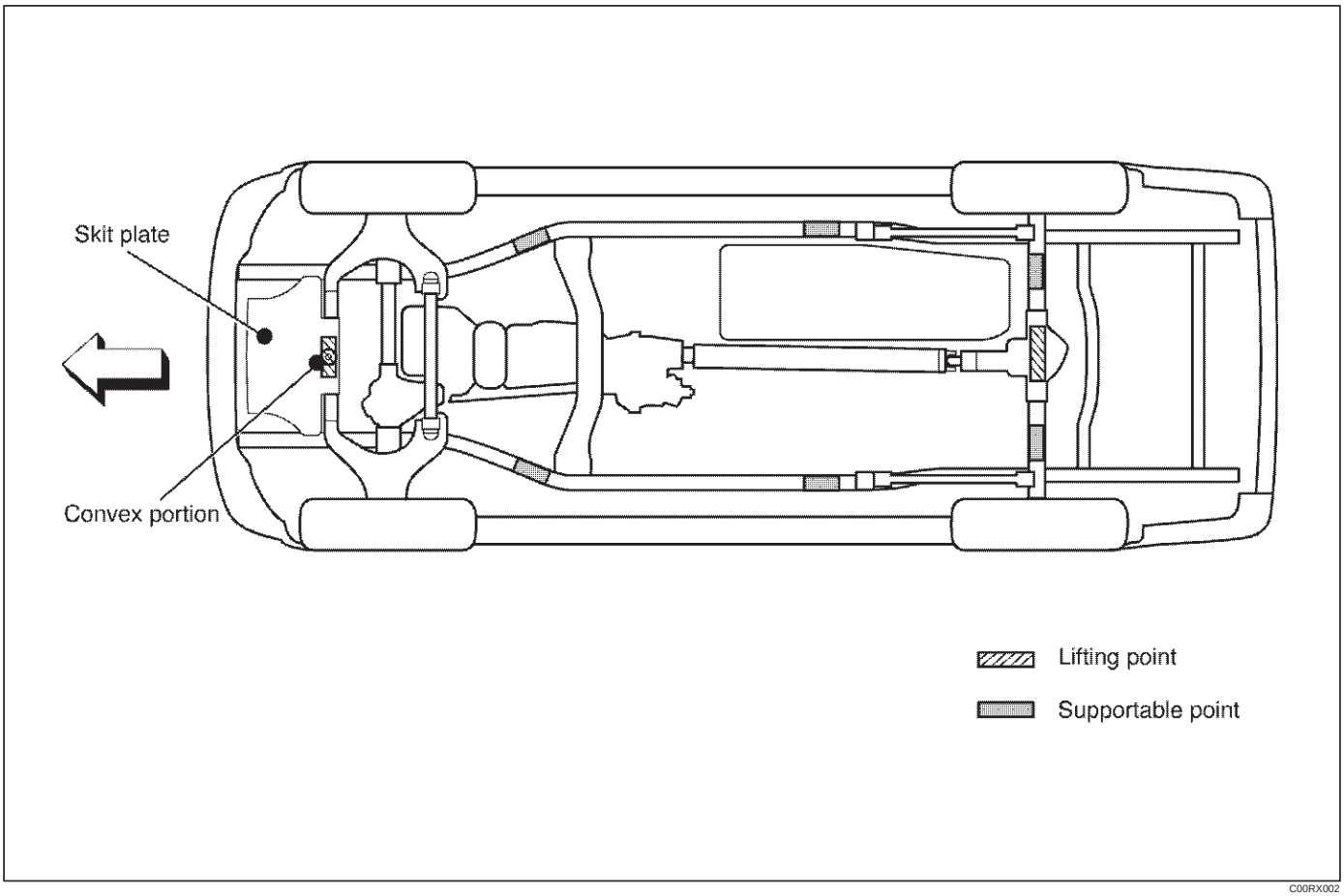
901RW084

Lifting Instructions

CAUTION:

- **If a lifting device other than the original jack is used, it is most important that the device be applied only to the correct lifting points. Raising the vehicle from any other point may result in serious damage.**
- **When jacking or lifting a vehicle at the frame side rail or other prescribed lift points, be certain that lift pads do not contact the catalytic converter, brake pipes or cables, or fuel lines. Such contact may result in damage or unsatisfactory vehicle performance.**

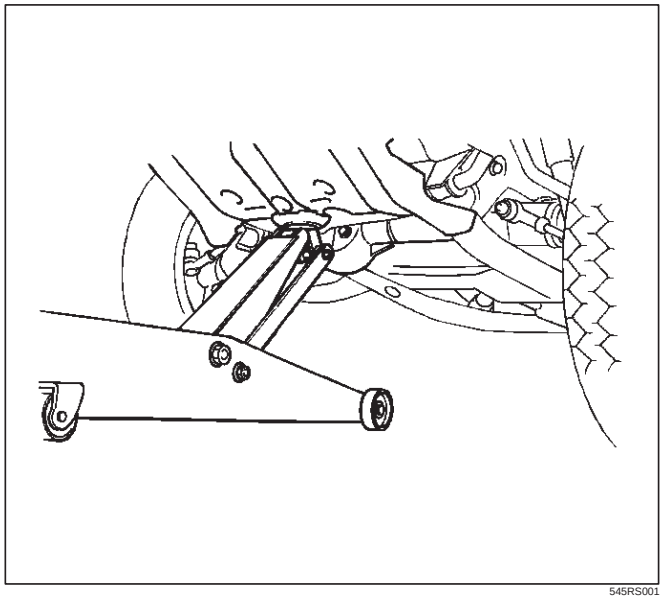
Lifting Points and Supportable Point Locations



C00RX002

Lifting Point: Front

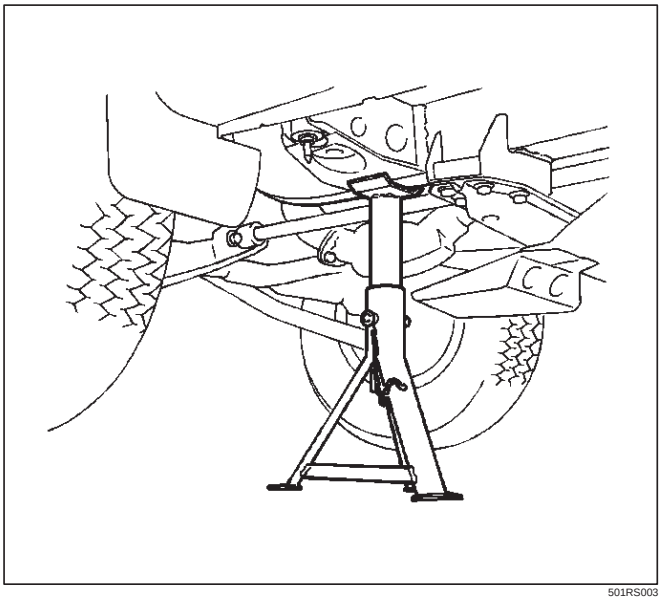
- When using a floor jack, lift on the Convex portion of the skid plate.



545RS001

Supportable Point: Front

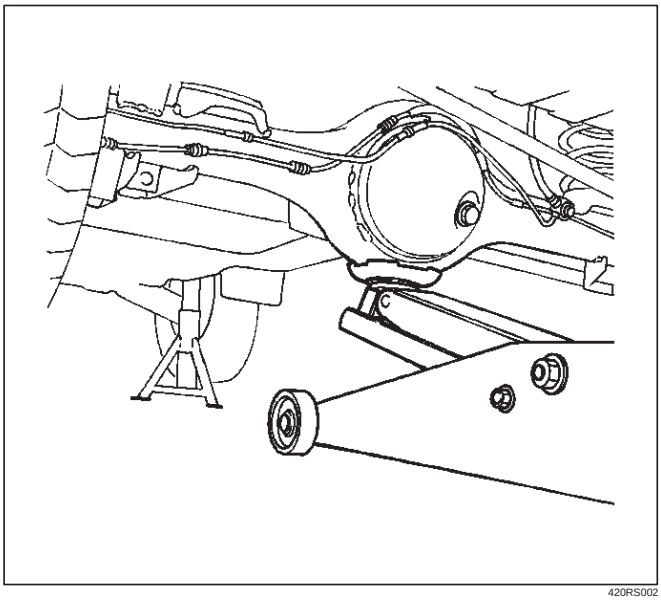
▼ Position the chassis stands at the bottom of the frame sidemember, behind the front wheel.



501RS003

Lifting Point: Rear

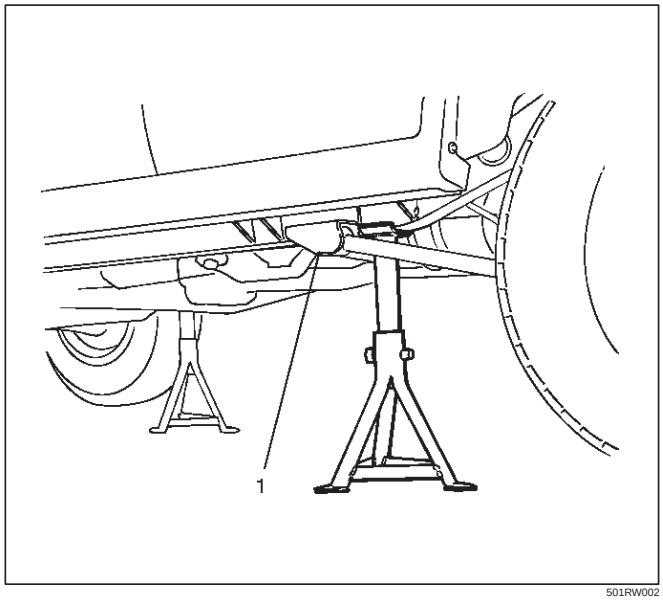
▼ Position the floor jack at the center of the rear axle case when lifting the vehicle.



420RS002

Supportable Point: Rear

▼ Position the chassis stands at the bottom of the frame sidemember, just behind the trailing link bracket.



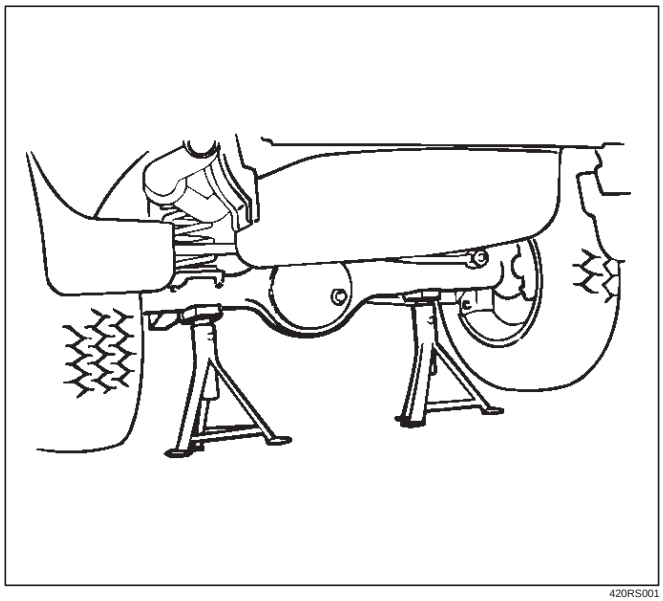
501RW002

Legend

(1) Trailing Link Bracket

Supportable Point: Rear

▼ Position the chassis stands at the bottom of the rear axle case.



420RS001

Standard Bolts Torque Specifications

The torque values given in the following table should be applied where a particular torque is not specified.

Strength Class	4.8	8.8		9.8
		Refined	Non-Refined	
Bolt Identification				
	 No mark			
Bolt Diameter × Pitch (mm)				
M 6X1.0	4 – 8 N·m (3 – 6 lb ft)	5 – 10 N·m (4 – 7 lb ft)		–
M 8X1.25	8 – 18 N·m (6 – 13 lb ft)	12 – 23 N·m (9 – 17 lb ft)		17 – 30 N·m (12 – 22 lb ft)
M 10X1.25	21 – 34 N·m (15 – 25 lb ft)	28 – 46 N·m (20 – 34 lb ft)		37 – 63 N·m (27 – 46 lb ft)
* M10X1.5	20 – 33 N·m (14 – 25 lb ft)	28 – 45 N·m (20 – 33 lb ft)		36 – 60 N·m (27 – 44 lb ft)
M12X1.25	49 – 74 N·m (36 – 54 lb ft)	61 – 91 N·m (45 – 67 lb ft)		76 – 114 N·m (56 – 84 lb ft)
* M12X1.75	45 – 69 N·m (33 – 51 lb ft)	57 – 84 N·m (42 – 62 lb ft)		72 – 107 N·m (53 – 79 lb ft)
M14X1.5	77 – 115 N·m (56 – 85 lb ft)	93 – 139 N·m (69 – 103 lb ft)		114 – 171 N·m (84 – 126 lb ft)
* M14X2.0	72 – 107 N·m (53 – 79 lb ft)	88 – 131 N·m (65 – 97 lb ft)		107 – 160 N·m (79 – 118 lb ft)
M16X1.5	104 – 157 N·m (77 – 116 lb ft)	135 – 204 N·m (100 – 150 lb ft)		160 – 240 N·m (118 – 177 lb ft)
* M16X2.0	100 – 149 N·m (74 – 110 lb ft)	130 – 194 N·m (95 – 143 lb ft)		153 – 230 N·m (113 – 169 lb ft)
M18X1.5	151 – 226 N·m (111 – 166 lb ft)	195 – 293 N·m (144 – 216 lb ft)		230 – 345 N·m (169 – 255 lb ft)
M20X1.5	206 – 310 N·m (152 – 229 lb ft)	270 – 405 N·m (199 – 299 lb ft)		317 – 476 N·m (234 – 351 lb ft)
M22X1.5	251 – 414 N·m (185 – 305 lb ft)	363 – 544 N·m (268 – 401 lb ft)		425 – 637 N·m (313 – 469 lb ft)
M24X2.0	359 – 539 N·m (265 – 398 lb ft)	431 – 711 N·m (318 – 524 lb ft)		554 – 831 N·m (409 – 613 lb ft)

The asterisk * indicates that the bolts are used for female–threaded parts that are made of soft materials such as casting, etc.

Abbreviations Charts

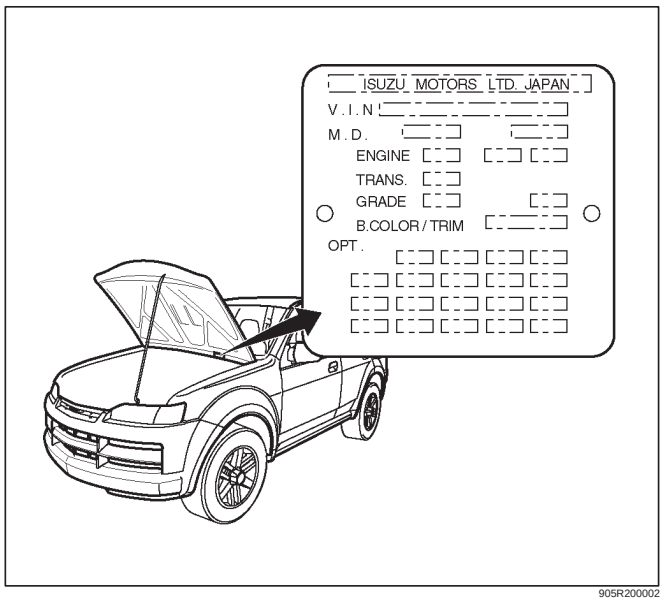
List of automotive abbreviations which may be used in this manual

A — Ampere(s)
ABS — Antilock Brake System
AC — Alternating Current
A/C — Air Conditioning
ACCEL — Accelerator
ACC — Accessory
ACL — Air Cleaner
Adj — Adjust
A/F — Air Fuel Ratio
AIR — Secondary Air Injection System
Alt — Altitude
AMP — Ampere(s)
ANT — Antenna
ASM — Assembly
A/T — Automatic Transmission/Transaxle
ATDC — After Top Dead Center
ATF — Automatic Transmission Fluid
Auth — Authority
Auto — Automatic
BARO — Barometric Pressure
Bat — Battery
B+ — Battery Positive Voltage
Bbl — Barrel
BHP — Brake Horsepower
BPT — Backpressure Transducer
BTDC — Before Top Dead Center
° C — Degrees Celsius
CAC — Charge Air Cooler
Calif — California
cc — Cubic Centimeter
CID — Cubic Inch Displacement
CKP — Crankshaft Position
CL — Closed Loop
CLCC — Closed Loop Carburetor Control
CMP — Camshaft Position
CO — Carbon Monoxide
Coax — Coaxial
Conn — Connector
Conv — Converter
Crank — Crankshaft
Cu. In. — Cubic Inch
CV — Constant Velocity
Cyl — Cylinder(s)
DI — Distributor Ignition
Diff — Differential
Dist — Distributor
DLC — Data Link Connector
DOHC — Double Overhead Camshaft
DTC — Diagnostic Trouble Code
DTM — Diagnostic Test Mode
DTT — Diagnostic Test Terminal
DVM — Digital Voltmeter (10 meg.)
DVOM — Digital Volt Ohmmeter
EBCM — Electronic Brake Control Module
ECM — Engine Control Module
ECT — Engine Coolant Temperature
EEPROM — Electronically Erasable Programmable Read Only Memory
EGR — Exhaust Gas Recirculation
EI — Electronic Ignition
ETR — Electronically Tuned Receiver
EVAP — Evaporation Emission
Exh — Exhaust
° F — Degrees Fahrenheit
Fed — Federal (All States Except Calif.)
FF — Front Drive Front Engine
FL — Fusible Link
FLW — Fusible Link Wire
FP — Fuel Pump
FRT — Front
ft — Foot
FWD — Front Wheel Drive
4WD — Four Wheel Drive
4 x 4 — Four Wheel Drive
4 A/T — Four Speed Automatic Transmission/Transaxle
Gal — Gallon
GEN — Generator
GND — Ground
Gov — Governor
g — Gram
Harn — Harness
HC — Hydrocarbons
HD — Heavy Duty
Hg — Hydrargyrum (Mercury)
HiAlt — High Altitude
HO2S — Heated Oxygen Sensor
HVAC — Heater–Vent–Air–Conditioning
IAC — Idle Air Control
IAT — Intake Air Temperature
IC — Integrated Circuit / Ignition Control
ID — Identification / Inside Diameter
IGN — Ignition
INJ — Injection
IP — Instrument Panel
IPC — Instrument Panel Cluster
Int — Intake
ISC — Idle Speed Control
J/B — Junction Block
kg — Kilograms
km — Kilometers
km/h — Kilometer per Hour
kPa — Kilopascals
kV — Kilovolts (thousands of volts)
kW — Kilowatts
KS — Knock Sensor
L — Liter
lb ft — Foot Pounds
lb in — Inch Pounds
LF — Left Front
LH — Left Hand
LR —Left Rear
LS — Left Side
LWB — Long Wheel Base
L–4 — In–Line Four Cylinder Engine
MAF — Mass Air Flow
MAN — Manual
MAP — Manifold Absolute Pressure
Max — Maximum
MC — Mixture Control
MFI — Multiport Fuel Injection
MIL — Malfunction Indicator Lamp
Min — Minimum
mm — Millimeter
MPG — Miles Per Gallon
MPH — Miles Per Hour
M/T — Manual Transmission/Transaxle
MV — Millivolt

N — Newtons
NA — Natural Aspirated
NC — Normally Closed
N·M — Newton Meters
NO — Normally Open
NOX — Nitrogen, Oxides of
OBD — On-Board Diagnostic
OD — Outside Diameter
O/D — Over Drive
OHC — Overhead Camshaft
OL — Open Loop
O2 — Oxygen
O2S — Oxygen Sensor
PAIR — Pulsed Secondary Air Injection System
P/B — Power Brakes
PCM — Powertrain Control Module
PCV — Positive Crankcase Ventilation
PRESS — Pressure
PROM — Programmable Read Only Memory
PNP — Park/Neutral Position
P/S — Power Steering
PSI — Pounds per Square Inch
PSP — Power Steering Pressure
Pt. — Pint
Pri — Primary
PWM — Pulse Width Modulate
Qt. — Quart
REF — Reference
RF — Right Front
RFI — Radio Frequency Interference
RH — Right Hand
RPM — Revolutions Per Minute
RPM Sensor — Engine Speed Sensor
RPO — Regular Production Option
RR — Right Rear
RS — Right Side
RTV — Room Temperature Vulcanizing
RWAL — Rear Wheel Antilock Brake
RWD — Rear Wheel Drive
SAE — Society of Automotive Engineers
Sec — Secondary
SFI — Sequential Multiport Fuel Injection
SI — System International
SIR — Supplemental Inflatable Restraint System
SOHC — Single Overhead Camshaft
Sol — Solenoid
SPEC — Specification
Speedo — Speedometer
SRS — Supplemental Restraint System
ST — Start / Scan Tool
Sw — Switch
SWB — Short Wheel Base
SYN — Synchronize
Tach — Tachometer
TB — Throttle Body
TBI — Throttle Body Fuel Injection
TCC — Torque Converter Clutch
TCM — Transmission Control Module
TDC — Top Dead Center
Term — Terminal
TEMP — Temperature
TOD— Torque On Demand
TP — Throttle Position
TRANS — Transmission/Transaxle
TURBO — Turbocharger
TVRS — Television & Radio Suppression
TVV — Thermal Vacuum Valve
TWC — Three Way Catalytic Converter
3 A/T — Three Speed Automatic Transmission/Transaxle
2WD — Two Wheel Drive
4 x 2 — Two Wheel Drive
U–joint — Universal Joint
V — Volt(s)
VAC — Vacuum
VIN — Vehicle Identification Number
VRRRE — Vehicle Refrigerant Recovery and Recycling Equipment
V–ref — ECM Reference Voltage
VSS — Vehicle Speed Sensor
VSV — Vacuum Switch Valve
V–6 — Six Cylinder “V” Engine
V–8 — Eight Cylinder ”V” Engine
W — Watt(s)
w/ — With
w/b — Wheel Base
w/o — Without
WOT — Wide Open Throttle

Service Parts Identification Plate

The Vehicle Information Plate (Service Parts ID plate) is provided on all vehicle models.
It is located on the center dash wall inside the engine compartment. The plate lists the VIN (Vehicle Identification Number), paint information and all production options and special equipment on the vehicle when it was shipped from the factory.



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GENERAL INFORMATION

Maintenance and Lubrication

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Lubricant Viscosity Chart 0B–9
Recommended Liquid Gasket 0B–11
Recommended Thread Locking Agents . . . 0B–11
Maintenance Service Data 0B–12

Maintenance Schedule List

Normal Vehicle Use

The maintenance instructions in this Maintenance Schedule are based on the assumption that the vehicle will be used as designed:

- to carry passengers and cargo within the limitations specified on the tire placard located on the inside of the glove compartment door;
- to be driven on reasonable road surfaces within legal operating limits;
- to be driven on a daily basis, as a general rule, for at least several miles/kilometers;
- to be driven on unleaded fuel

Unusual or severe operating conditions will require more frequent vehicle maintenance, as specified in the following sections.

Severe Driving Conditions

If the vehicle is usually operated under any of the severe driving conditions listed below, it is recommended that the applicable maintenance services be performed at the specified interval shown in the chart below.

Severe driving conditions:

- Towing a trailer, using a camper or car top carrier.
- Repeated short trips of less than 8 Km (5 miles) with outside temperature remaining below freezing.
- Extensive idling and/or low speed driving for long distances, such as police, taxi or door–to–door delivery use.
- Operating on dusty, rough, muddy or salt spread roads.

ITEMS	INTERVAL
CHANGE ENGINE OIL AND OIL FILTER	Every 3,000 miles (4,800 km) or 3 months
CHANGE AUTOMATIC TRANSMISSION FLUID	Every 20,000 miles (32,000 km)
CHANGE REAR AXLE OIL	Every 15,000 miles (24,000 km)
REPLACE TIMING BELT	Every 75,000 miles (120,000 km)
REPLACE AIR CLEANER FILTER	See explanation of service, page 0B–5
CHANGE POWER STEERING FLUID	Every 30,000 miles (48,000 km)

MILEAGE ONLY ITEMS

IN THOUSANDS OF MILES (USE ODOMETER READING) (x 1000 miles)

	MILEAGE ONLY ITEMS	7.5	15	22.5	30	37.5	45	52.5	60	67.5	75	82.5	90	97.5	105	112.5	120	DESCRIPTION
1	CHANGE FRONT AND REAR AXLE OIL		■		■				■				■				■	
2	* CHECK AND ADJUST OR CHANGE AUTOMATIC TRANSMISSION FLUID (IF NECESSARY)																■	
3	CHECK AUTOMATIC TRANSMISSION FLUID LEAKAGE		■		■		■		■		■		■		■		■	
4	CHENGE TRANSFER CASE OIL		■		■				■				■				■	
5	* REPLACE AIR CLEANER FILTER				■				■				■				■	
6	REPLACE SPARK PLUGS	Replace every 100,000 miles																
7	CHANGE ENGINE COOLANT				■				■				■				■	
8	REPLACE TIMING BELT	Replace every 100,000 miles																
9	CHECK AND ADJUST VALVE CLEARANCE (IF NECESSARY)	If noisy																
10	ROTATE TIRES	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
11A	REPLACE FRONT WHEEL BEARINGS GREASE (Vehicles produced before July/31/2001)				■				■				■				■	
11B	CHECK FRONT WHEEL BEARINGS AXIAL RATTLE (Vehicles produced after Aug./1/2001)								■								■	
12	CLEAN RADIATOR CORE AND A/C CONDENSER								■								■	

* : UNDER SEVERE DRIVING CONDITIONS, MORE FREQUENT MAINTENANCE IS REQUIRED. REFER TO "SCHEDULED MAINTENANCE UNDER SEVERE DRIVING CONDITIONS".

■ SHADED AREA INDICATES SERVICE TO BE PERFORMED.

MILEAGE/MONTHS

	MILEAGE/MONTHS whichever comes first	IN MONTHS	IN THOUSANDS OF MILES (USE ODOMETER READING) (x 1000 miles)																DESCRIPTION
			7.5	15	22.5	30	37.5	45	52.5	60	67.5	75	82.5	90	97.5	105	112.5	120	
1	CHECK ENGINE COOLANT LEVEL	12	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
2	CHECK BRAKE FLUID LEVEL	12	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
3	CHECK FLUID LEAKS	12	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
4	• CHANGE ENGINE OIL	12	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
5	• REPLACE ENGINE OIL FILTER	12	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
6	CHECK COOLING AND HEATER HOSES	12		■		■		■		■		■		■		■		■	
7	*(2) CHECK EXHAUST SYSTEM	12	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
8	*(2) CHECK FUEL LINE AND FUEL TANK/CAP	12								■								■	
9	CHECK ENGINE DRIVE BELT	24				■				■				■				■	
10	CHECK TIRES AND WHEELS	12	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
11	CHECK STEERING OPERATION	12	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
12	CHECK BRAKE LINES AND HOSE	12	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
13	CHECK DRUM AND DISC BRAKES	12		■		■		■		■		■		■		■		■	
14	CHECK BRAKE PEDAL PLAY	12		■		■		■		■		■		■		■		■	
15	ADJUST BRAKE PEDAL PLAY	12		■		■		■		■		■		■		■		■	

*(2); This service is recommended for vehicles sold in California, and it is required for vehicles sold in other areas.

• UNDER SEVERE DRIVING CONDITIONS, ADDITIONAL MAINTENANCE IS REQUIRED. REFER TO "MAINTENANCE SCHEDULE UNDER SEVERE DRIVING CONDITIONS" LATER IN THIS SECTION

SHADED AREA INDICATES SERVICE TO BE PERFORMED.

MILEAGE/MONTHS

	MILEAGE/MONTHS whichever comes first	IN MONTHS	IN THOUSANDS OF MILES (USE ODOMETER READING) (x 1000 miles)																DESCRIPTION
			7.5	15	22.5	30	37.5	45	52.5	60	67.5	75	82.5	90	97.5	105	112.5	120	
16	CHECK PARKING BRAKE	12		▒		▒		▒		▒		▒		▒		▒		▒	
17	LUBE ACCELERATOR PEDAL LINKAGE	6	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	
18	CHECK SUSPENSION AND STEERING	12	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	
19	• CHECK POWER STEERING FLUID LEVEL	6	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	
20	LUBE BODY AND CHASSIS	6	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	
21	LUBE REAR PROPELLER SHAFT	6	▒		▒		▒		▒		▒		▒		▒		▒		
22	CHECK PROPELLER SHAFT FLANGE TORQUE	12	▒		▒		▒		▒		▒		▒		▒		▒		
23	CHECK SHIFT ON THE FLY SYSTEM GEAR OIL	12		▒		▒				▒				▒				▒	
24	CHECK AUTO CRUISE CONTROL LINKAGE AND HOSES	12		▒		▒		▒		▒		▒		▒		▒		▒	
25	CHECK STARTER SAFETY SWITCH	12	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	
26	CHECK ACCELERATOR LINKAGE	12		▒		▒		▒		▒		▒		▒		▒		▒	
27	LUBE KEY LOCK CYLINDER	12		▒		▒		▒		▒		▒		▒		▒		▒	

• UNDER SEVERE DRIVING CONDITIONS, ADDITIONAL MAINTENANCE IS REQUIRED. REFER TO "MAINTENANCE SCHEDULE UNDER SEVERE DRIVING CONDITIONS" LATER IN THIS SECTION

▒ SHADED AREA INDICATES SERVICE TO BE PERFORMED.

Explanation of Complete Vehicle Maintenance Schedule

Brief explanations of the services listed in the preceding Maintenance Schedule are presented below.
Replace all questionable parts and note any necessary repairs as you perform these maintenance procedures.

Front and Rear Axle Lubricant Replacement

Check the lubricant level after every 7,500 miles (12,000 km) of operation and add lubricant to level of filler hole if necessary.
Replace the front and rear axle lubricant at 15,000 miles (24,000 km) and 30,000 miles (48,000 km) and after every 30,000 miles (48,000 km) of operation thereafter.

Air Cleaner Element Replacement

Replace the air cleaner under normal operating conditions every 30,000 miles (48,000 km).
Operation of the vehicle in dusty areas will necessitate more frequent replacement.

Spark Plug Replacement

Replace the plugs at 100,000 miles (160,000 km) intervals with the type specified at the end of this section.

Cooling System Service

Drain, flush and refill system with new engine coolant. Refer to *"Recommended Fluids and Lubricants" in this section, or ENGINE COOLING (SEC.6B).*

Timing Belt Replacement

Replacement of the timing belt is recommended at every 100,000 miles (160,000 km).
Failure to replace the timing belt may result in serious damage to the engine.

Valve Clearance Adjustment

Incorrect valve clearance will result in increased engine noise and reduced engine output.
Retorque the camshaft bracket bolts before checking and adjusting the valve clearance.
Check and adjust the valve clearance whenever increased engine noise is heard.

Tire Rotation

Rotate tires every 7,500 miles (12,000 km).

Front Wheel Bearings Lubricant Replacement (Vehicles Produced Before July/31/2001)

Clean and repack the front wheel bearings at 30,000 miles (48,000 km) intervals.
Refer to **DRIVE SHAFT SYSTEM (SEC. 4C).**

Front Wheel Bearings Check (Vehicles Produced After Aug./1/2001)

Inspect hub unit bearing at every 60,000 miles (96,000 km).
If there is abnormal condition, replace hub unit bearing.

Radiator Core and Air Conditioning Condenser Cleaning

Clean the front of the radiator core and air conditioning condenser, at 60,000 miles (96,000 km) intervals.

Fluid Level Check

A fluid loss in any system (except windshield washer) may indicate a problem. Repair the system at once.

Engine oil level

Check level and add if necessary. The best time to check the engine oil level is when the oil is warm. After stopping the engine with the vehicle on a level surface, wait a few minutes for the oil to drain back to the oil pan. Pull out the oil level indicator (dipstick). Wipe it clean and push the oil level indicator back down all the way. Pull out the oil level indicator, keeping the tip down, and look at the oil level on it.

Add oil, if needed, to keep the oil level above the "ADD" mark and between the "ADD" and "FULL" marks in the operating range area. Avoid overfilling the engine since this may cause engine damage. Push the oil level indicator back down all the way after taking the reading.
If you check the oil level when the oil is cold, do not run the engine first. The cold oil will not drain back to the pan fast enough to give a true oil level.

Engine coolant level and condition

Check engine coolant level in the coolant reservoir and add engine coolant if necessary. Inspect the engine coolant and replace it if dirty or rusty.

Windshield washer fluid level

Check washer fluid level in the reservoir and add if necessary.

Power steering system reservoir level

Check and keep at the proper level.

Brake master cylinder reservoir level

Check fluid. Keep fluid at proper level. A low fluid level can indicate worn disc brake pads which may need to be serviced.

Hydraulic clutch system

Check fluid level in the reservoir. Add fluid as required.

Battery fluid level

Check fluid level in the battery.

Fluid Leak Check

Check for fuel, water, oil or other fluid leaks by looking at the surface beneath the vehicle after it has been parked for a while. Water dripping from the air conditioning system after use is normal. If you notice gasoline fumes or fluid at any time, locate the source and correct it at once.

Engine Oil and Oil Filter Replacement

Always use API SE, SF, SG, SH or ILSAC GF–1 quality oils of the proper viscosity.
When choosing an oil, consider the range of temperatures the car will be operated in before the next oil change. Then, select the recommended oil viscosity from the chart.

Always change the oil and the oil filter as soon as possible after driving in a dust storm.

Engine Cooling System Inspection

Inspect the coolant/anti–freeze. If the coolant is dirty or rusty, drain, flush and refill with new coolant. Keep coolant at the proper mixture for proper freeze protection, corrosion inhibitor level and best engine operating temperature. Inspect hoses and replace if cracked, swollen or deteriorated. Tighten the hose clamps if equipped with screw–type clamps. Clean outside of radiator and air conditioning condenser. Wash filler cap and neck. To help ensure proper operation, a pressure test of both the cooling system and the cap is also recommended.

Exhaust System Inspection

Visually inspect the exhaust pipes, muffler, heat shields and hangers for cracks, deterioration, or damage.
Be alert to any changes in the sound of the exhaust system or any smell of fumes. These are signs the system may be leaking or overheating. Repair the system at once, if these conditions exist. (See also “Engine Exhaust Gas Safety” and “Three Way Catalytic Converter” in the Owner’s manual.)

Fuel Cap, Fuel Lines, and Fuel Tank Inspection

Inspect the fuel tank, the fuel cap and the fuel lines every 60,000 miles (96,000 km) for damage which could cause leakage.
Inspect the fuel cap and the gasket for correct sealing and physical damage. Replace any damaged parts.

Drive Belt Inspection

Check the serpentine belt driving for cracks, fraying, wear, and correct tension every 30,000 miles (48,000 km). Replace as necessary.

Wheel Alignment, Balance and Tires Operation

Uneven or abnormal tire wear, or a pull right or left on a straight and level road may show the need for a wheel alignment. A vibration of the steering wheel or seat at normal highway speeds means a wheel balancing is needed. Check tire pressure when the tires are “cold” (include the spare).
Maintain pressure as shown in the tire placard, which is located on the driver’s door lock pillar.

Steering System Operation

Be alert for any changes in steering operation. An inspection or service is needed when the steering wheel is harder to turn or has too much free play, or if there are unusual sounds when turning or parking.

Brake Systems Operation

Watch for the “BRAKE” light coming on. Other signs of possible brake trouble are such things as repeated pulling to one side when braking, unusual sounds when braking or between brake applications, or increased brake pedal travel. If you note one of these conditions, repair the system at once.
For convenience, the following should be done when wheels are removed for rotation: Inspect lines and hoses for proper hookup, bindings, leaks, crack, chafing etc. Inspect disc brake pads for wear and rotors for surface condition.
Inspect other brake parts, including parking brake drums, linings etc., at the same time. Check parking brake adjustment.
Inspect the brakes more often if habit or conditions result in frequent braking.

Parking Brake and Transmission Park Mechanism Operation

Park on a fairly steep hill and hold the vehicle with the parking brake only. This checks holding ability. On automatic transmission vehicles, shifting from “P” position to the other positions cannot be made unless the brake pedal is depressed when the key switch is in the “ON” position or the engine is running.

WARNING: BEFORE CHECKING THE STARTER SAFETY SWITCH OPERATION BELOW, BE SURE TO HAVE ENOUGH ROOM AROUND THE VEHICLE. THEN FIRMLY APPLY BOTH THE PARKING BRAKE AND THE REGULAR BRAKE. DO NOT USE THE ACCELERATOR PEDAL. IF THE ENGINE STARTS, BE READY TO TURN OFF THE KEY PROMPTLY. TAKE THESE PRECAUTIONS BECAUSE THE VEHICLE COULD MOVE WITHOUT WARNING AND POSSIBLY CAUSE PERSONAL INJURY OR PROPERTY DAMAGE.

Starter Safety Switch Operation

Check by trying to start the engine in each gear while setting the parking brake and the foot brake. The starter should crank only in “P” (Park) or “N” (Neutral).

Accelerator Linkage Lubrication

Lubricate the accelerator pedal fulcrum pin with chassis grease.

Steering and Suspension Inspection

Inspect the front and rear suspension and steering system for damaged, loose or missing parts or signs of wear. Inspect power steering lines and hoses for proper hookup, binding, leaks, cracks, chafing, etc.

Body and Chassis Lubrication

Lubricate the key lock cylinders, the hood latch, the hood and door hinges, the door check link, the parking cable guides, the underbody contact points, and the linkage.

Propeller Shaft Inspection and Lubrication

Check the propeller shaft flange–to–pinion bolts for proper torque to 63 N•m (46 lb ft) for front and rear propeller shaft.