

Service Manual MONTERO

1987 : Volume 1

FOREWORD

This Service Manual has been prepared with the latest service information available at the time of publication. It is subdivided into various group categories and each section contains diagnosis, disassembly, repair, and installation procedures along with complete specifications and tightening references. Use of this manual will aid in properly performing any servicing necessary to maintain or restore the high levels of performance and reliability designed into these outstanding vehicles.



Mitsubishi Motors corporation reserves the right to make changes in design or to make additions to or improvements in its products without imposing any obligations upon itself to install them on its products previously manufactured.

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N00AA-A

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NOTE
For Electrical, Heater & Air-conditioning, refer to ...
Volume-2
"Electrical, Heater & Air-conditioning"

HOW TO USE THIS MANUAL

N00BAAA

CONTENTS

The preceding page contains the GROUP INDEX which lists the group title and group number.

PAGE NUMBERS

All page numbers consist of two sets of digits separated by a dash. The digits preceding the dash identify the number of the group. The digits following the dash represent the consecutive page number within the group. The page numbers can be found on the top left or right of each page.

Indicates incidental operation to be performed before removal or after installation

TEXT

Unless otherwise specified, each service procedure covers all models. Procedures covering specific models are identified by the model codes, or similar designation (engine type, transmission type, etc.). A description of these designations is covered in this unit under "VEHICLE IDENTIFICATION".

Removal steps : The numbers before part names correspond to numbers in the illustration and indicate the order of removal.

Disassembly steps : The numbers before part names correspond to numbers in the illustration, and indicate the order of disassembly.

Installation steps : This is provided if installation cannot be made in the reverse order of "Removal steps"; omitted if installation in the reverse order of "Removal steps" is possible.

Reassembly steps : This is provided if reassembly cannot be made in the reverse order of "Disassembly steps"; omitted if reassembly in the reverse order of "Disassembly steps" is possible.

TROUBLESHOOTING

Troubleshootings are classified into master troubleshooting and group troubleshooting and located as follows:

The master troubleshooting is prepared when the trouble symptom relates to two or more groups and given in MASTER TROUBLESHOOTING.

The group troubleshooting guide is prepared for causes of problems related to that individual group only; a troubleshooting guide is prepared for each appropriate group.

SERVICE PROCEDURES

The service steps are arranged in numerical order and attentions to be paid in performing vehicle service are described in detail in SERVICE POINTS.

DEFINITION OF TERMS

STANDARD VALUE

Indicates the value used as the standard for judging the quality of a part or assembly on inspection or the value to which the part or assembly is corrected and adjusted. It is given by tolerance.

LIMIT

Shows the standard for judging the quality of a part or assembly on inspection and means the maximum or minimum value within which the part or assembly must be kept functionally or in strength. It is a value established outside the range of standard value.

Classification of SERVICE POINTS

- ◀▶ : Removal
- ▶▶ : Installation
- ◀◀ : Disassembly
- ▶◀ : Reassembly

Page number

Group title

Section title

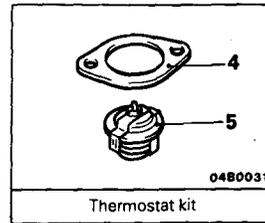
7-10

COOLING – Thermostat

**THERMOSTAT
REMOVAL AND INSTALLATION**

- Pre-removal Operation**
- Draining of the Coolant (Refer to GROUP 0 LUBRICATION AND MAINTENANCE – Maintenance Service.)
- Post-installation Operation**
- Supplying of the Coolant (Refer to GROUP 0 LUBRICATION AND MAINTENANCE – Maintenance Service.)

10-13 Nm
7-9 ft.lbs.

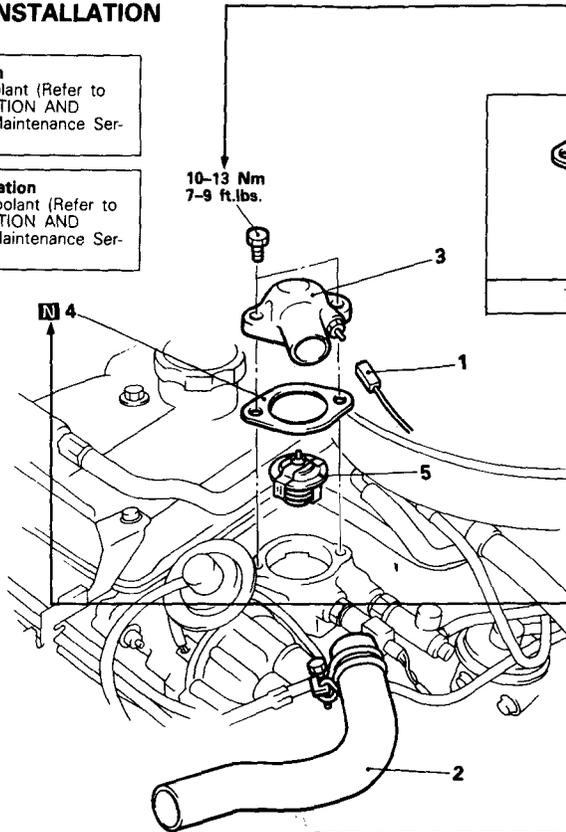


Indicates tightening torque

Repair kit or set parts are shown. (Only very frequently used parts are shown.)

Indicates non-reusable part.

This number corresponds to the number in "Removal steps", "Disassembly steps", "Installation steps" or "Reassembly steps".



Removal steps

1. Connection of water temperature switch connector (Vehicles with an air conditioner)
2. Connection of radiator upper hose
3. Water outlet fitting
4. Water outlet fitting gasket
5. Thermostat

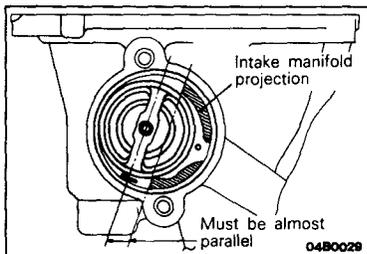
NOTE
 (1) Reverse the removal procedures to reinstall.
 (2) ◆ : Refer to "Service Points of Installation"
 (3) N : Non-reusable parts

SERVICE POINTS OF INSTALLATION

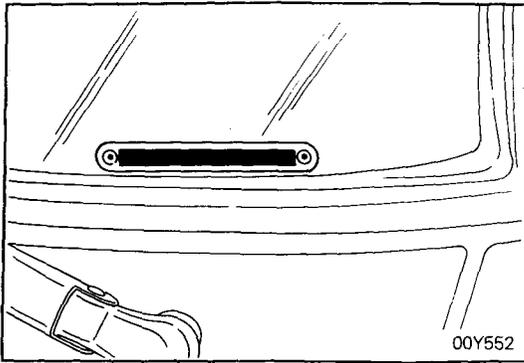
5. INSTALLATION OF THERMOSTAT

Install the thermostat to the intake manifold as illustrated.

Caution
 The thermostat flange fits over the manifold seat; ensure that the thermostat is not installed at an angle.



An explanation of procedures, notes, etc. regarding removal, installation, disassembly and reassembly.



VEHICLE IDENTIFICATION

VEHICLE IDENTIFICATION NUMBER LOCATION

N00CA--

The vehicle identification number (V.I.N.) is located on a plate attached to the left top side of the instrument panel.

VEHICLE IDENTIFICATION CODE CHART PLATE

N00CB-A

All vehicle identification numbers contain 17 digits. The vehicle number is a code which tells country, make, vehicle type, etc.

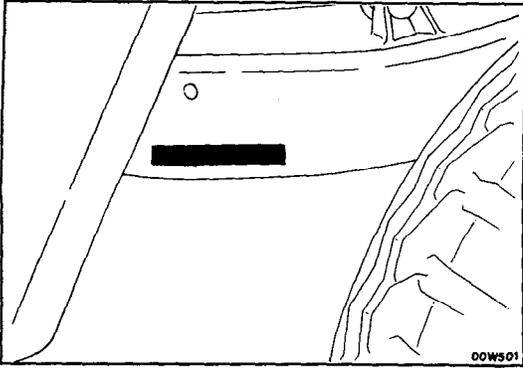


1st digit	2nd digit	3rd digit	4th digit	5th digit	6th digit	7th digit	8th digit	9th digit	10th digit	11th digit	12th thru 17th digit
Country	Make	Vehicle type	Others	Line	Price class	Body	Engine	Check digit	Model year	Plant	Serial number
J- Japan	A- Mitsu- bishi	4- Multi- purpose vehicle (MPV) 7-Truck	F- 4001 lbs. or more with hydraulic brakes	J- MON- TERO	2- Low 4- High	3- 3-door metal- top or van	E- 2.6 liters (155.9 C.I.D.)	0 1 2 3 . . . 9 X	H- 1987 year	J- Nagoya -3	000001 to 999999

NOTE

*"Check digit" means a single number or letter X used to verify the accuracy of transcription of vehicle identification number.

6 INTRODUCTION AND MASTER TROUBLESHOOTING – Vehicle Identification



CHASSIS NUMBER STAMPING LOCATION

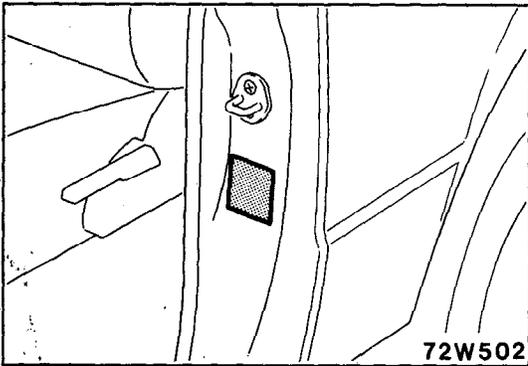
N00CE-A

The chassis number is stamped on the side of the frame near the right rear shock absorber.

CHASSIS NUMBER CODE CHART

L04 2 V HJ000001

Vehicle line	Engine displacement	Body type	Refer to 10th thru 17th digits of V.I.N. plate
L04-MONTERO	2-2.555 liters (155.9 C.I.D.)	V-3-door metal-top T-Van	

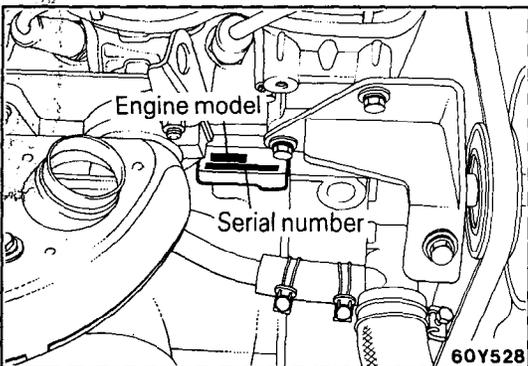


VEHICLE SAFETY CERTIFICATION LABEL

N00CF--

The vehicle safety certification label is attached to face of left door pillar.

This label indicates the month and year of manufacture, Gross Vehicle Weight Rating (G.V.W.R.), front and rear Gross Axle Weight Rating (G.A.W.R.), and Vehicle Identification Number (V.I.N.).



ENGINE MODEL STAMPING

N00CG--

The engine model number is stamped at the right front side on the top edge of the cylinder block as shown in the following:

Engine model	Engine displacement
G54B	2.555 liters (155.9 C.I.D.)

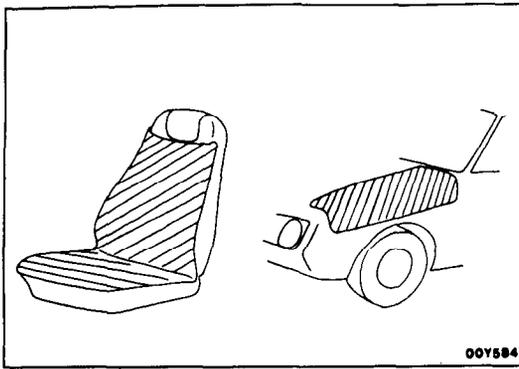
The engine serial number is stamped near the engine model number, and the serial number cycles, as shown below.

Engine serial number	Number cycling
AA0201 to YY9999	AA0201 ----> AA9999
	AB0001 ----> AY9999
	BA0001 ----> YY9999

BODY COLOR CODE

N00CH-

Exterior code	Body color
Monotone B76 C19 H43 R52 S70 X15	Dark blue (Metallic) Brown (Metallic) Silver (Metallic) Red Beige Black
Two-tone B21B76H43 C38C19X13 H15H43X13 R06R52X13 S69S70X13 X45X15H43	Silver (Metallic)/ Dark blue (Metallic) Black/ Brown (Metallic) Black/ Silver (Metallic) Black/Red Black/Beige Black/ Silver (Metallic)

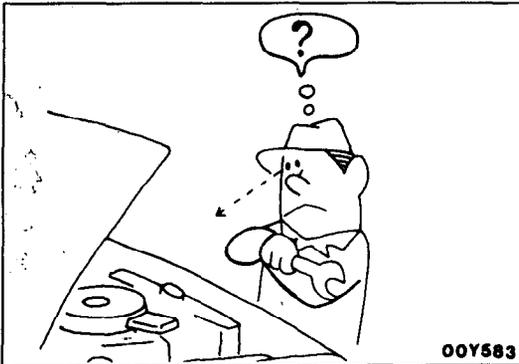


PRECAUTIONS BEFORE SERVICE

PROTECTING THE VEHICLE

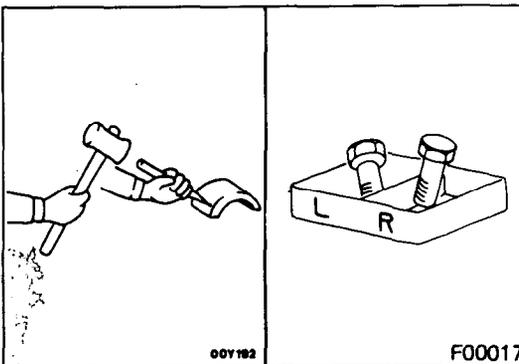
N00DAAC

If there is a likelihood of damaging painted or interior parts during service operations, protect them with suitable covers (such as seat covers, fender covers, etc.).



REMOVAL AND DISASSEMBLY

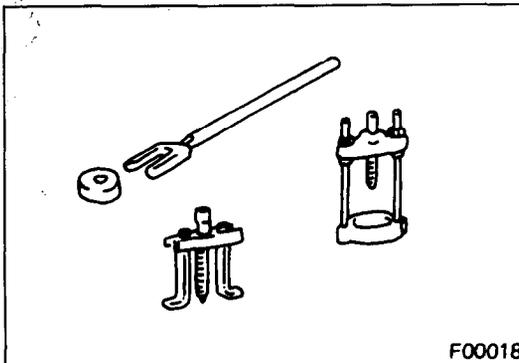
When checking a malfunction, find the cause of the problem. If it is determined that removal and/or disassembly is necessary, perform the work by following the procedures contained in this Workshop Manual.



If punch marks or mating marks are made to avoid error in assembly and facilitate the assembly work, be sure to make them in locations which will have no detrimental effect on performance and/or appearances.

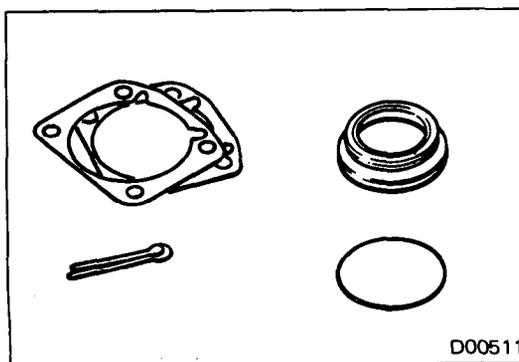
If an area having many parts, similar parts, and/or parts which are symmetrical right and left is disassembled, be sure to arrange the parts so that they do not become mixed during the assembly process.

1. Arrange the parts removed in the proper order.
2. Determine which parts are to be reused and which are to be replaced.
3. If bolts, nuts, etc., are to be replaced, be sure to use only the exact size specified.



SPECIAL TOOLS

If other tools are substituted for the special tools to do service or repair work, there is the danger that vehicle parts might be damaged, or the mechanic might be injured; therefore, be sure to use the special tool whenever doing any work for which the use of one is specified.



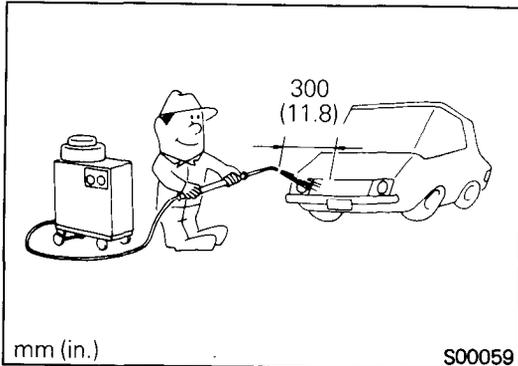
PARTS TO BE REPLACED

If any of the following parts are removed, they must be replaced with new parts.

1. Oil seals
2. Gaskets (except rocker cover gasket)
3. Packings
4. O-rings
5. Lock washers
6. Cotter pins
7. Self-locking nuts

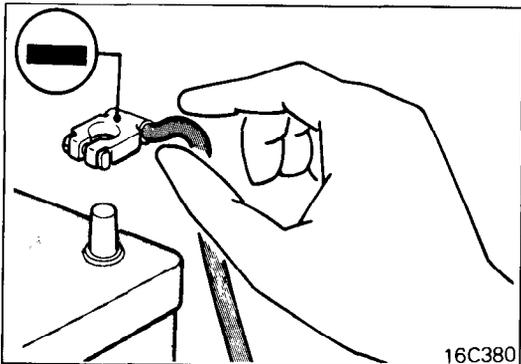
PARTS

When replacing parts, use MITSUBISHI genuine parts.



VEHICLE WASHING

If high-pressure car-washing equipment or steam car-washing equipment is used to wash the vehicle, be sure to maintain the spray nozzle at a distance of at least 300 mm (11.8 in.) from any plastic parts and all opening parts (doors, luggage compartment, etc.).

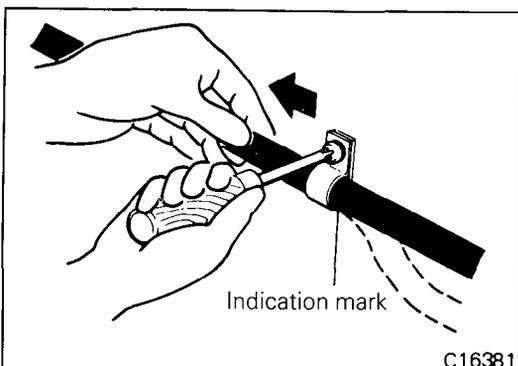


SERVICING THE ELECTRICAL SYSTEM

When servicing the electrical system, disconnect the negative cable terminal from the battery.

Caution

Before connecting or disconnecting the negative cable, be sure to turn off the ignition switch and the lighting switch. (If this is not done, there is the possibility of semiconductor parts being damaged.)

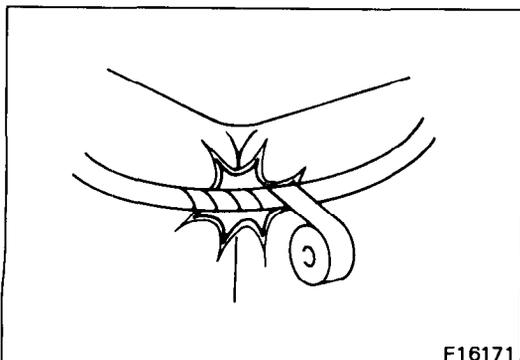


WIRING HARNESSSES

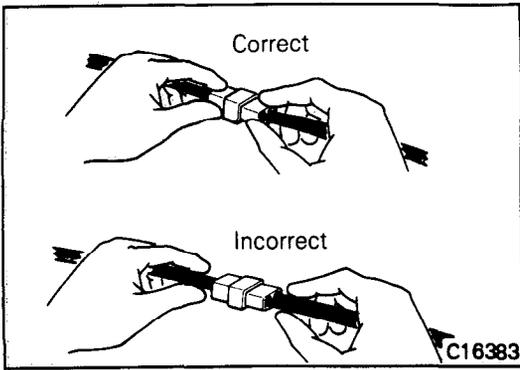
1. Secure the wiring harnesses by using clamps so that there is no slack. However, for any harness which passes to the engine or other vibrating parts of the vehicle, allow some slack within a range that does not allow the engine vibrations to cause the harness to come into contact with any of the surrounding parts. Then secure the harness by using a clamp.

In addition, if a mounting indication mark (yellow tape) is on a harness, secure the indication mark in the specified location.

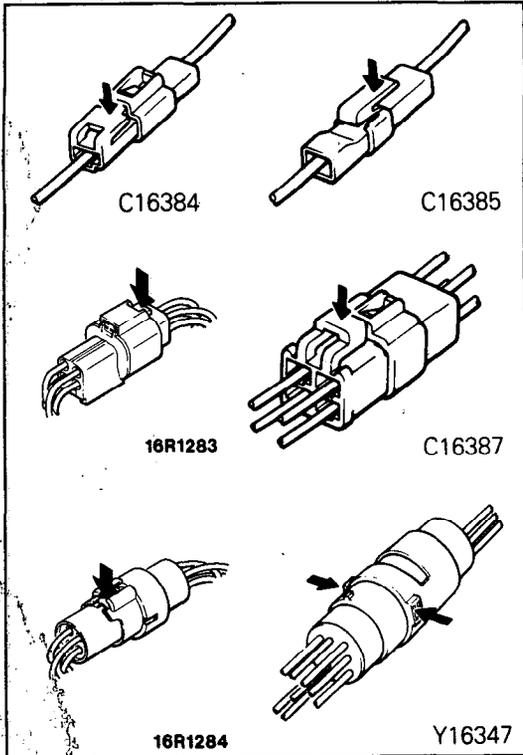
2. If any section of a wiring harness contacts the edge of a part, or a corner, wrap the section of the harness with tape or something similar in order to protect it from damage.



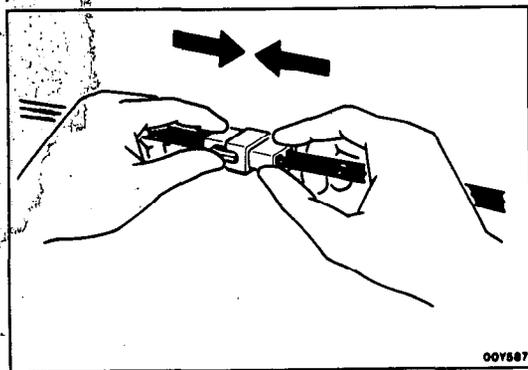
10 INTRODUCTION AND MASTER TROUBLESHOOTING -- Precautions Before Service



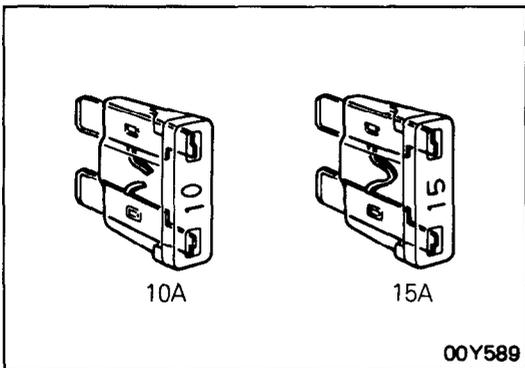
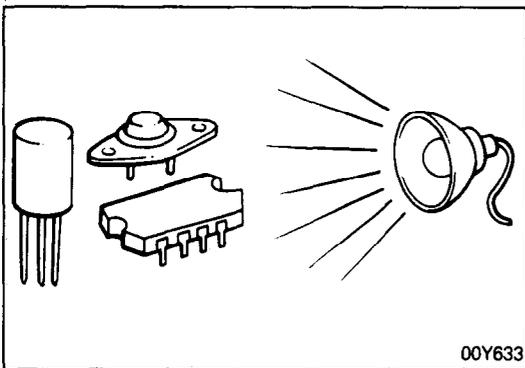
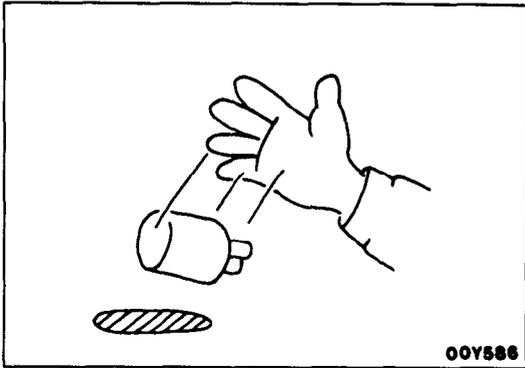
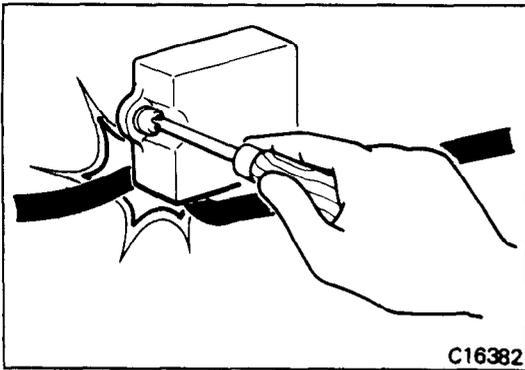
3. When disconnecting a connector, be sure to pull only the connector, not the harness.



4. Disconnect connectors which have catches by pressing in the direction indicated by the arrows in the illustration.



5. Connect connectors which have catches by inserting the connectors until they snap.



ELECTRICAL COMPONENTS

1. When installing any of the vehicle parts, be careful not to pinch or damage any of the wiring harnesses.
2. Sensors, relays, etc., are sensitive to strong impacts. Handle them with care so that they are not dropped or mishandled.
3. The electronic parts used for relays, etc., are sensitive to heat. If any service which causes a temperature of 80°C (176°F) or more is performed, remove the part or parts in question before carrying out the service.

FUSES AND FUSIBLE LINKS

1. If a blown-out fuse is to be replaced, be sure to use only a fuse of the specified capacity. If a fuse of a capacity larger than that specified is used, parts may be damaged and the circuit may not be protected adequately.

Caution

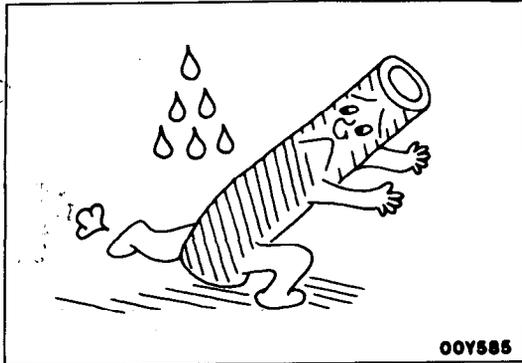
If a fuse is blown-out, be sure to eliminate the cause of the problem before installing a new fuse.

2. If additional optional equipment is to be installed in the vehicle, follow the procedure listed in the appropriate instruction manual; however, be sure to pay careful attention to the following points:
 - (1) In order to avoid overloading the wiring, take the electrical current load of the optional equipment into consideration, and determine the appropriate wire size.
 - (2) Where possible, route the wiring through the existing harnesses.

Nominal size	SAE gauge No.	Permissible current	
		In engine compartment	Other areas
0.3 mm ²	AWG 22	–	5A
0.5 mm ²	AWG 20	7A	13A
0.85 mm ²	AWG 18	9A	17A
1.25 mm ²	AWG 16	12A	22A
2.0 mm ²	AWG 14	16A	30A
3.0 mm ²	AWG 12	21A	40A
5.0 mm ²	AWG 10	31A	54A

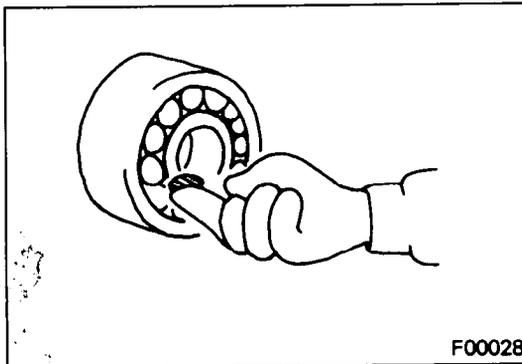
12 INTRODUCTION AND MASTER TROUBLESHOOTING -- Precautions Before Service

- (3) If an ammeter or similar instrument is to be connected to a live-wire circuit, use tape to protect the wire, use a clamp to secure the wire, and make sure that there is no contact with any other parts.
- (4) Be sure to provide a fuse for the load circuit of the optional equipment.



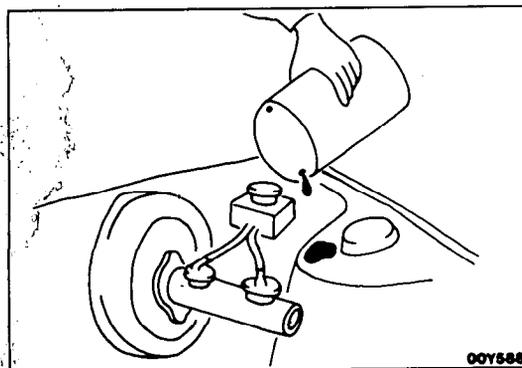
TUBES AND OTHER RUBBER PARTS

Be careful to avoid spilling any gasoline, oil, etc., because if it adheres to any tubes or other rubber parts, they might be adversely affected.



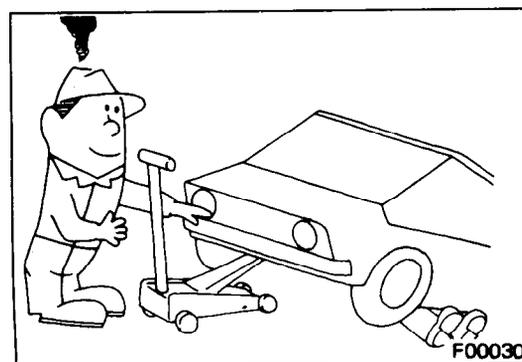
LUBRICANTS

In accordance with the instructions in this Workshop Manual, apply the specified lubricants in the specified locations during assembly and installation.



BRAKE FLUID

Be careful to avoid spilling any brake fluid, because if it adheres to the vehicle body, the paint coat might be discolored.



DOING SERVICE WORK IN GROUPS OF TWO OR MORE TECHNICIANS

If the service work is to be done by two or more technicians extra caution must be taken.

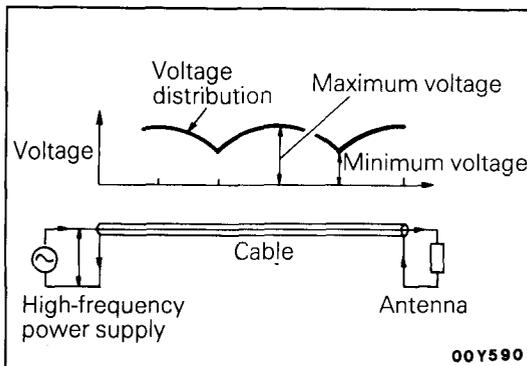
NOTE ON INSTALLATION OF RADIO EQUIPMENT
NO0EA--

The computers of the electronic control system has been designed so that external radio waves will not interfere with their operation.

However, if antenna or cable of amateur transceiver etc. is routed near the computers, it may affect the operation of the computers, even if the output of the transceiver is no more than 25W.

To protect each of the computers from interference by transmitter (hum, transceiver, etc.), the following should be observed.

1. Install the antenna on the roof.
2. Because radio waves are emitted from the coaxial cable of the antenna, keep it 200 mm (8 in.) away from the computers and the wiring harness. If the cable must cross the wiring harness, route it so that it runs at right angles to the wiring harness.
3. The antenna and the cable should be well matched, and the standing-wave ratio* should be kept low.
4. A transmitter having a large output should not be installed in the vehicle.
5. After installation of transmitter, run the engine at idle, emit radio waves from the transmitter and make sure that the engine is not affected.



***STANDING-WAVE RATIO**

If an antenna and a cable having different impedances are connected, the input impedance Z_i will vary in accordance with the length of the cable and the frequency of the transmitter, and the voltage distribution will also vary in accordance with the location.

The ratio between this maximum voltage and minimum voltage is called the standing-wave ratio. It can also be represented by the ratio between the impedances of the antenna and the cable.

The amount of radio waves emitted from the cable increases as the standing-wave ratio increases, and this increases the possibility of the electronic components being adversely affected.

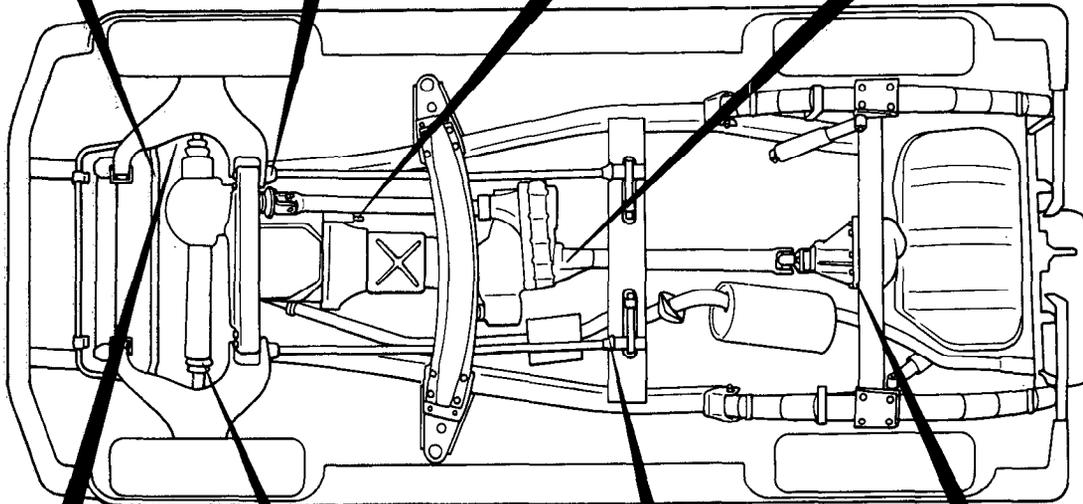
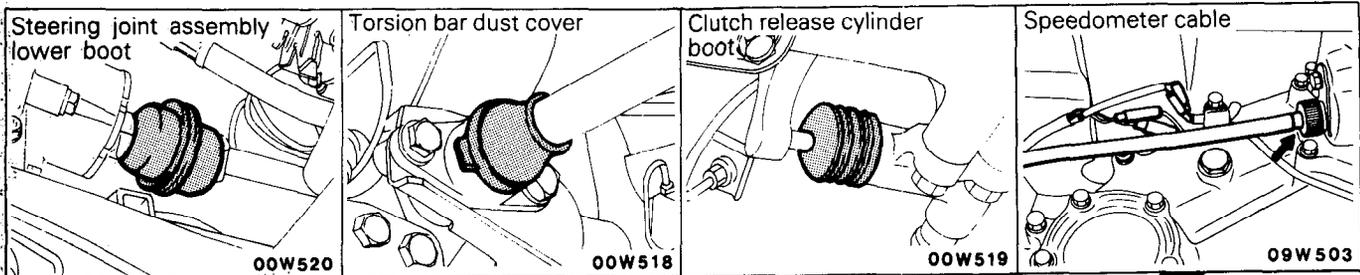
TREATMENT BEFORE/AFTER THE FORDING OF A STREAM

INSPECTION AND SERVICE BEFORE FORDING A STREAM

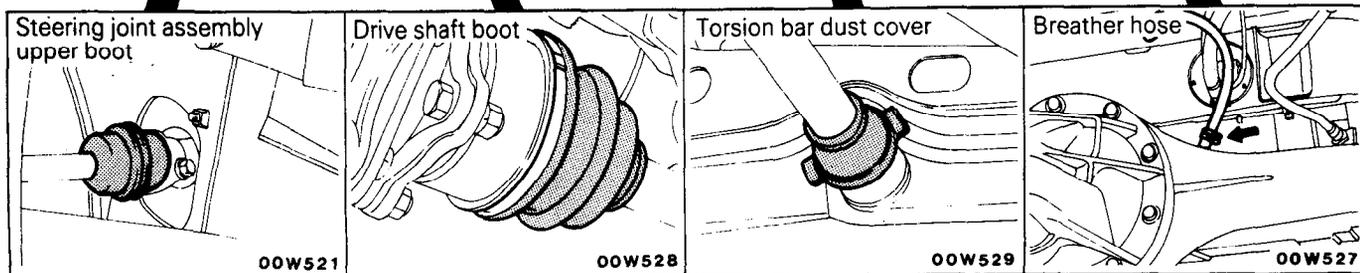
N00FA--

Vehicles which are driven through water, or which may possibly be driven through water, should be subjected to the following inspections and maintenance procedures in advance.

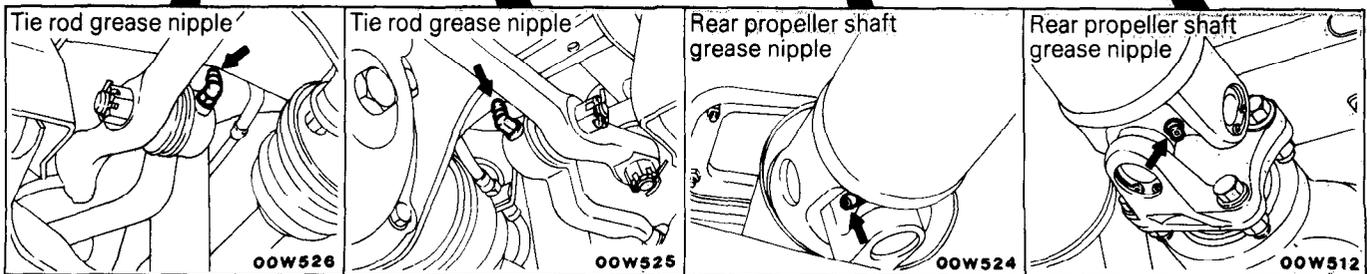
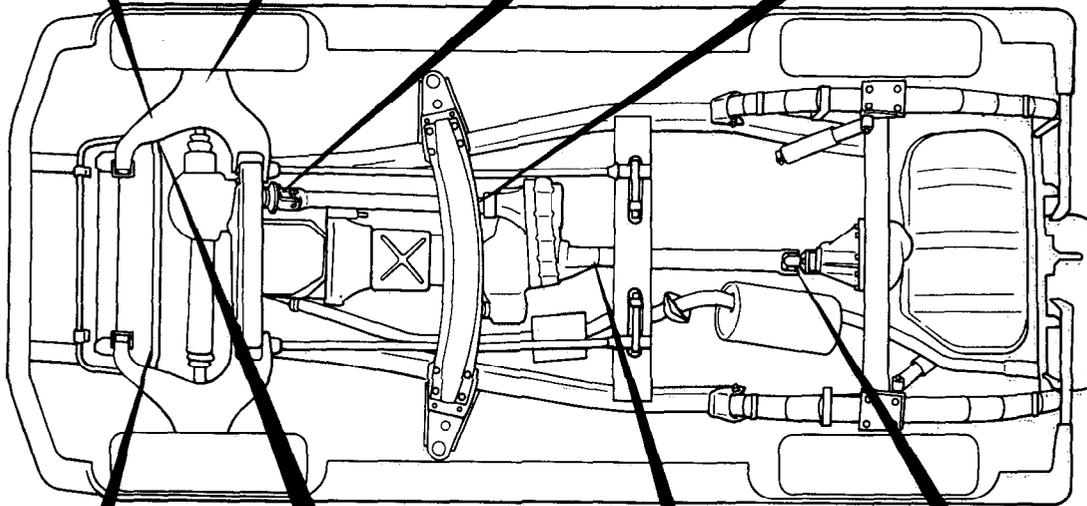
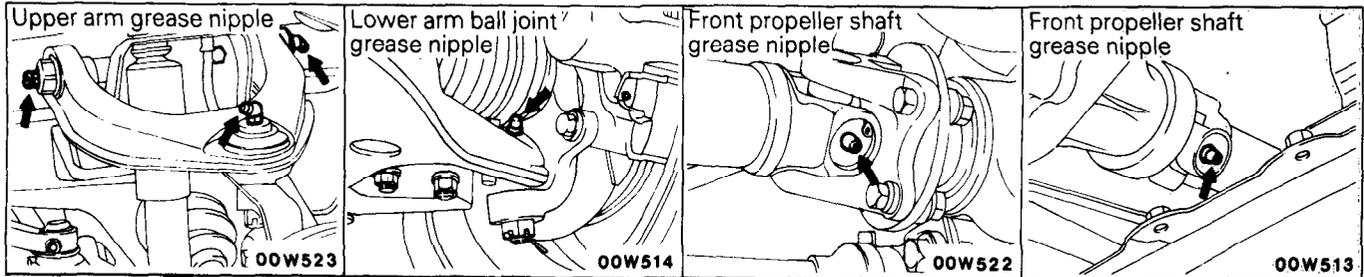
- Seal the speedometer cable with a water-resistant grease or tape.
- Inspect the dust boots and breather hose for cracks or damage, and replace them if cracks or damage are found.



00W554



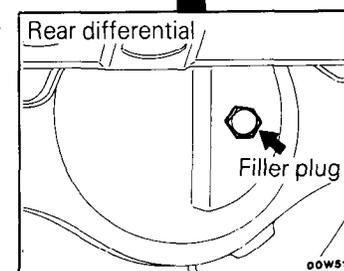
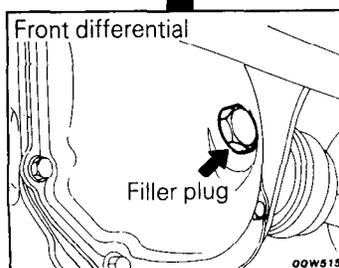
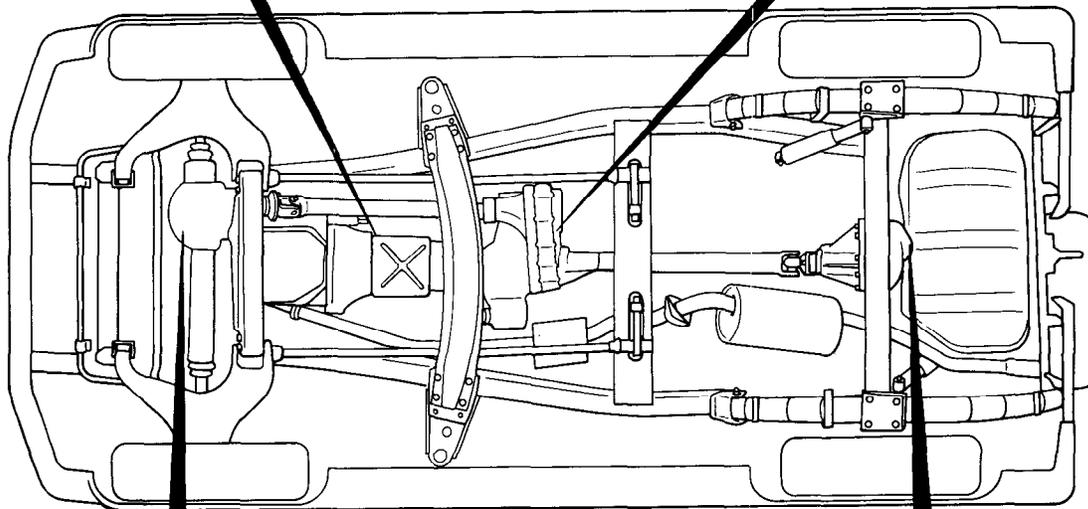
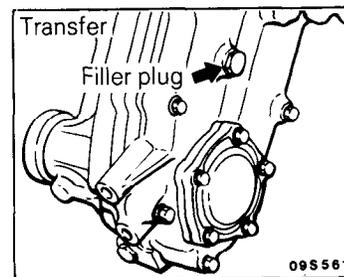
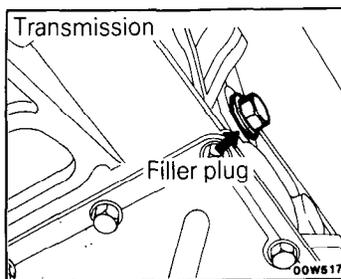
- Apply grease to the lubricating points of the front suspension, steering linkage and propeller shaft.

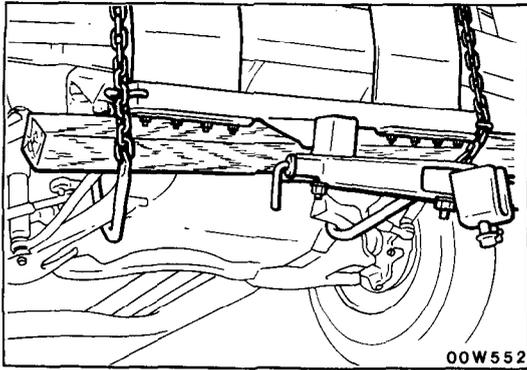


INSPECTION AND SERVICE AFTER FORDING A STREAM

After fording a stream, check the following points. If abnormal condition is evident, clean, replace or lubricate.

- Check for water, mud, sand, etc, in the rear brake drum, clutch housing, starter motor, brake pipe and fuel pipe.
- Check for water in the fluid or oil inside the front differential, rear differential, transmission and transfer case.
- Apply grease to the lubricating points of the front suspension, steering linkage and propeller shaft.
- Check all boots and breather hoses for cracks and damage.





TOWING AND HOISTING

N00GA-

This vehicle can only be towed from the front with conventional sling-type equipment and tow chain with grab hooks.

If a vehicle is towed from the rear, use a tow dolly.

A lumber spacer (4" x 4" x 55" wood beam) should be placed forward of under guard and under towing hook/shipping tie down hook.

Then, attach J-hook to the lower arm.

A safety chain system must be used. This system must be completely independent of the primary lifting and towing attachment. Care must be taken in the installation of safety chains to insure they do not cause damage to bumper, painted surfaces or lights.

LIFTING-GROUND CLEARANCE

Towed vehicle should be raised until wheels are a minimum of 10 cm (4 in.) from the ground. Be sure there is adequate ground clearance at the opposite end of the vehicle, especially when towing over rough terrain or when crossing sharp rises, such as curbs. If necessary, ground clearance can be increased by removing the wheels from the lifted end of the disabled vehicle and carrying the lifted end closer to the ground. A 20 cm (8 in.) ground clearance must be maintained between brake drums and ground.

FRONT TOWING PICKUP

The vehicle may be towed on its rear wheels for extended distances, provided the parking brake is released.

Make certain the transmission remains in "NEUTRAL".

SAFETY PRECAUTIONS

The following precautions should be taken when towing the vehicle.

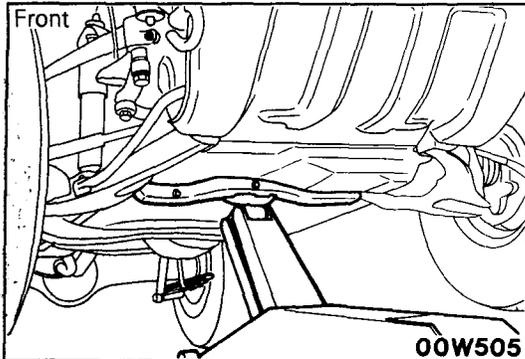
1. Remove exhaust tips and any other optional equipment, that interface with the towing sling. Padding (heavy shop towel or carpeting) should be placed between the towing sling cross bar and any painted surfaces, and bumper surfaces.
2. A safety chain system completely independent of the primary lifting and towing attachment must be used.
3. Any loose or protruding parts of damaged vehicle such as hoods, doors, fenders, trim, etc., should be secured prior to moving the vehicle.
4. Operator should refrain from going under a vehicle unless the vehicle is adequately supported by safety stands.
5. Never allow passengers to ride in a towed vehicle.
6. State and local rules and regulations must be followed when towing a vehicle.

HOISTING

POST TYPE

Special care should be taken when raising the vehicle on a frame contact type hoist. The hoist must be equipped with the proper adapters in order to support the vehicle at the proper locations. (See next page)

Conventional hydraulic hoists may be used after determining that the adapter plates will make firm contact with the side frame.

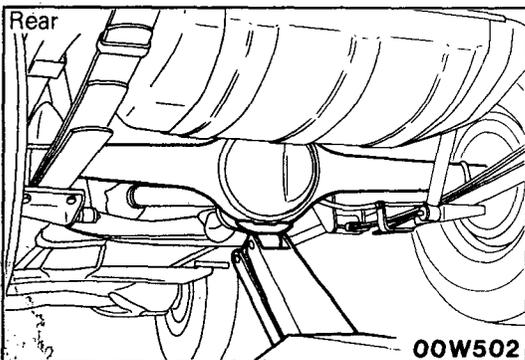


FLOOR JACK

A regular floor jack may be used under the front crossmember or rear axle housing.

Caution

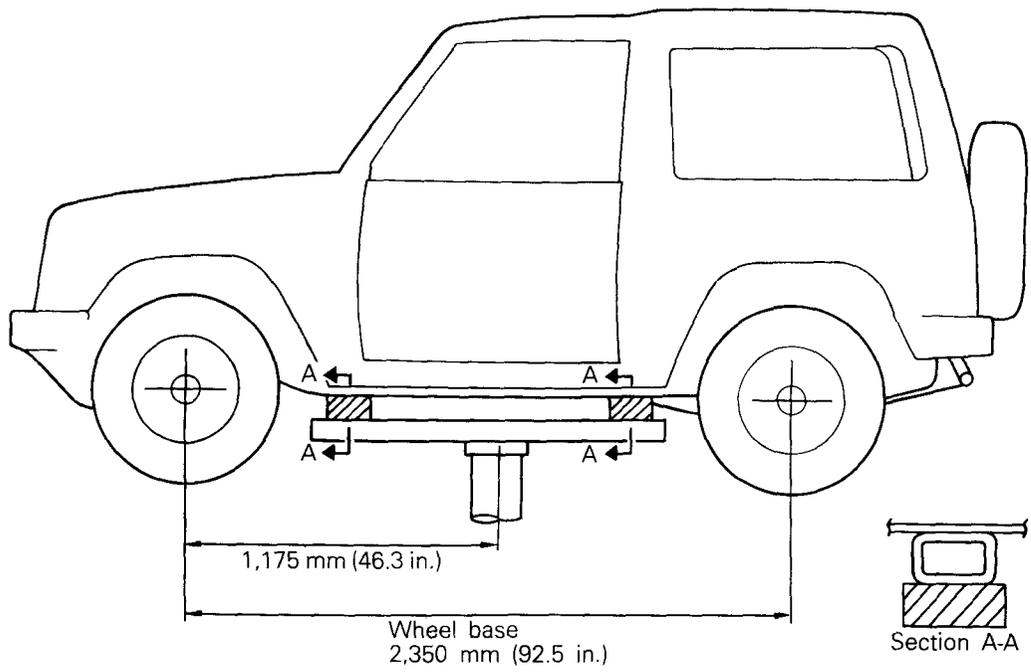
1. A floor jack must never be used on any part of the underbody.
2. Do not attempt to raise one entire side of the vehicle by placing a jack midway between front and rear wheels. This practice may result in permanent damage to the body.



EMERGENCY JACKING

Jack receptacles are located at the No. 2 crossmember and rear axle housing to accept the jack supplied with the vehicle for emergency road service. Always block the opposite wheels and jack only on a level surface.

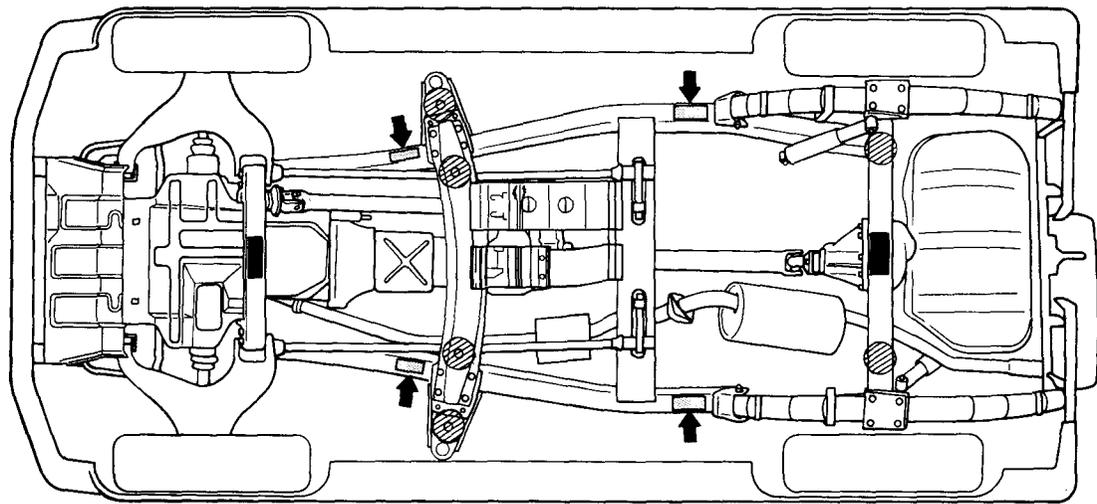
FRAME CONTACT SUPPORT LOCATIONS



NOTE
The locations of the support point shown as Section A-A are the same as those of the twin post hoist shown in the illustration (00W588) below.

00W553

LIFTING AND JACKING SUPPORT LOCATIONS

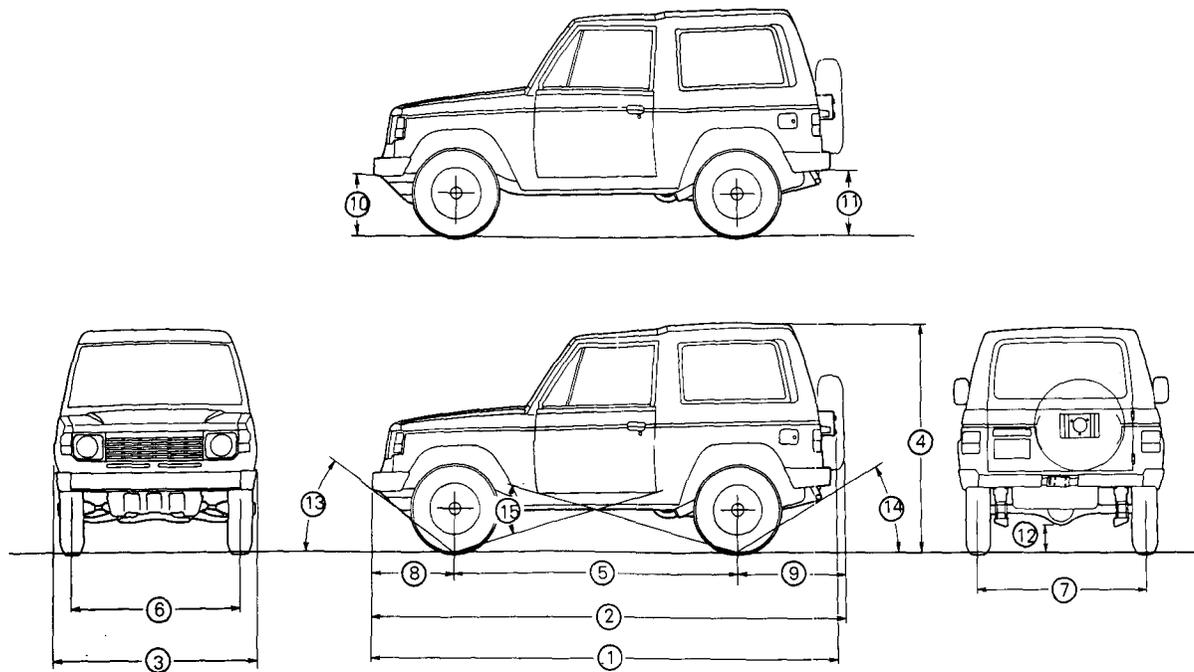


- ← Twin post hoist
- Floor jack
- ⊘ Emergency jacking (jack supplied with the vehicle)

00W588

GENERAL DATE AND SPECIFICATIONS

N00HA-A



00W556

Description		L042G	VNJLF/H	VRJLF/H	TNSLF/H	TRSLF/H
Vehicle dimensions mm (in.)						
Overall length						
Without spare tire	①	3,960 (155.9)	3,960 (155.9)	3,960 (155.9)	3,960 (155.9)	3,960 (155.9)
With spare tire	②	3,995 (157.3)	3,995 (157.3)	3,995 (157.3)	3,995 (157.3)	3,995 (157.3)
Overall width	③	1,680 (66.1)	1,680 (66.1)	1,680 (66.1)	1,680 (66.1)	1,680 (66.1)
Overall height	④	1,840 (72.4)	1,840 (72.4)	1,840 (72.4)	1,850 (72.8)	1,850 (72.8)
Wheelbase	⑤	2,350 (92.5)	2,350 (92.5)	2,350 (92.5)	2,350 (92.5)	2,350 (92.5)
Tread	Front	⑥	1,400 (55.1)	1,400 (55.1)	1,400 (55.1)	1,400 (55.1)
	Rear	⑦	1,375 (54.1)	1,375 (54.1)	1,375 (54.1)	1,375 (54.1)
Overhang	Front	⑧	745 (29.3)	745 (29.3)	745 (29.3)	745 (29.3)
	Rear	⑨	900 (35.4)	900 (35.4)	900 (35.4)	900 (35.4)
Height at curb weight (wt.)						
Front bumper to ground	⑩	480 (18.9)	480 (18.9)	480 (18.9)	480 (18.9)	480 (18.9)
Rear bumper to ground	⑪	440 (17.3)	440 (17.3)	440 (17.3)	440 (17.3)	440 (17.3)
Minimum running ground clearance	⑫	210 (8.3)	210 (8.3)	210 (8.3)	210 (8.3)	210 (8.3)
Angle of approach	⑬	38°	38°	38°	38°	38°
Angle of departure	⑭	28°	28°	28°	28°	28°
Ramp breakover angle	⑮	21°	21°	21°	21°	21°
Vehicle weights kg (lbs.)						
Curb weight		1,479 (3,260)	1,493 (3,290)	1,440 (3,175)	1,460 (3,219)	1,460 (3,219)
Gross vehicle weight rating		1,910 (4,210)	1,910 (4,210)	1,910 (4,210)	1,910 (4,210)	1,910 (4,210)
Gross axle weight rating	Front	1,100 (2,425)	1,100 (2,425)	1,100 (2,425)	1,100 (2,425)	1,100 (2,425)
	Rear	1,450 (3,197)	1,450 (3,197)	1,450 (3,197)	1,450 (3,197)	1,450 (3,197)
Seating capacity		4	4	2	2	2

Description	L042G	VNJLF/H	VRJLF/H	TNSLF/H	TRSLF/H
Engine					
Model No.	G54B	G54B	G54B	G54B	G54B
Type	In-line OHC	In-line OHC	In-line OHC	In-line OHC	In-line OHC
Number of cylinders	4	4	4	4	4
Bore	91.1 mm (3.59 in.)	91.1 mm (3.59 in.)	91.1 mm (3.59 in.)	91.1 mm (3.59 in.)	91.1 mm (3.59 in.)
Stroke	98.0 mm (3.86 in.)	98.0 mm (3.86 in.)	98.0 mm (3.86 in.)	98.0 mm (3.86 in.)	98.0 mm (3.86 in.)
Piston displacement	2,555 cm ³ (155.9 CID)	2,555 cm ³ (155.9 CID)	2,555 cm ³ (155.9 CID)	2,555 cm ³ (155.9 CID)	2,555 cm ³ (155.9 CID)
	8.7	8.7	8.7	8.7	8.7
	1-3-4-2	1-3-4-2	1-3-4-2	1-3-4-2	1-3-4-2
	7° BTDC ± 2°	7° BTDC ± 2°	7° BTDC ± 2°	7° BTDC ± 2°	7° BTDC ± 2°
Transmission & transfer case					
Model No.	KM145	KM148	KM145	KM145	KM148
Type	5-speed manual	4-speed automatic	5-speed manual	5-speed manual	4-speed automatic
Gear ratio					
Transmission					
1st	3.967	2.826	3.967	3.967	2.826
2nd	2.136	1.493	2.136	2.136	1.493
3rd	1.360	1.000	1.360	1.360	1.000
4th	1.000	0.688	1.000	1.000	0.688
5th	0.856	–	0.856	0.856	–
Reverse	3.578	2.703	3.578	3.578	2.703
Transfer case					
High	1.000	1.000	1.000	1.000	1.000
Low	1.944	1.944	1.944	1.944	1.944
Final ring gear ratio	4.625	4.625	4.625	4.625	4.625
Clutch					
Type	Dry single disc & diaphragm spring	–	Dry single disc & diaphragm spring	–	–
Chassis					
Tire size					
Front suspension			P225/75R15		
Type			Wishbone compression type		
Spring constant (Wheel position)			22 N/mm (123 lbs./in.)		
Rear suspension					
Type			Asymmetrical semi-elliptic leaf spring		
Spring constant					
At load of 1,000-2,500 N (220-551 lbs.)			22 N/mm (123 lbs./in.)		
At load of 4,670-8,870 N (1,030-1,955 lbs.)			50 N/mm (280 lbs.in.)		

Description	L042G	VNJLF/H	VRJLF/H	TNSLF/H	TRSLF/H
Brakes					
Type	Front Rear		Disc Drum (Leading and trailing)		
Power steering					
Gear type			Integral type (Recirculating ball nut)		
Gear ratio			16.4		
Fuel tank capacity			60 liters (15.9 U.S. gal./13.2 Imp. gal.)		

TIGHTENING TORQUE

N00JA--

Description	Head mark 		Head mark 	
	Nm	ft.lbs.	Nm	ft.lbs.
Thread for general purposes (size x pitch) mm				
6 x 1.0	3.0–3.9	2.2–2.9	4.9–7.8	3.6–5.8
8 x 1.25	7.9–12	5.8–8.7	13–19	9.4–14
10 x 1.25	16–23	12–17	27–39	20–29
12 x 1.25	29–43	21–32	47–72	35–53
14 x 1.5	48–70	35–52	77–110	57–85
16 x 1.5	67–100	51–77	130–160	90–120
18 x 1.5	100–150	74–110	180–230	130–170
20 x 1.5	150–190	110–140	160–320	190–240
22 x 1.5	200–260	150–190	340–430	250–320
24 x 1.5	260–320	190–240	420–550	310–410

Description	Nm	ft.lbs.	Remarks
Taper thread for pipes (size)			
PT 1/8	7.9–12 16–19	5.8–8.7 12–14	Internal thread: Aluminum Internal thread: Cast iron
PT 1/4	19–30 34–45	14–22 25–33	Internal thread: Aluminum Internal thread: Cast iron
PT 3/8	39–54 58–73	29–40 43–54	Internal thread: Aluminum Internal thread: Cast iron
Tape thread for dry sealed pipes (size)			
NPTF 1/16	4.9–7.8 7.9–12	3.6–5.8 5.8–8.7	Internal thread: Aluminum Internal thread: Cast iron
NPTF 1/8	7.9–12 16–19	5.8–8.7 12–14	Internal thread: Aluminum Internal thread: Cast iron
NPTF 1/4	19–13 34–45	14–22 25–33	Internal thread: Aluminum Internal thread: Cast iron

MASTER TROUBLESHOOTING

NOOKAAC

ENGINE OVERHEATS

Symptom	Probable cause	Remedy	Reference page
Engine overheats	Cooling system faulty	Troubleshoot cooling system	7-5
	Incorrect ignition timing	Readjust ignition timing	0-13

ENGINE WILL NOT CRANK OR CRANKS SLOWLY

Symptom	Probable cause	Remedy	Reference page
Engine will not crank or cranks slowly	Starting system faulty	Troubleshoot starting system	8-94

ENGINE WILL NOT START OR START TO HARD (CRANKS OK)

Symptom	Probable cause	Remedy	Reference page
Engine will not start or start to hard (Crank OK)	No fuel supply to carburetor	Check fuel line	14-85
	Carburetor problems	Troubleshoot fuel system	14-20
	Ignition system problems	Troubleshoot ignition system	8-109
	Vacuum leaks <ul style="list-style-type: none"> ● Purge control valve hose ● Vacuum hoses ● Intake manifold ● Carburetor ● EGR valve 	Repair as necessary	-
	Compression too low	Check compression (Troubleshoot engine)	9-14

ROUGH IDLE OR ENGINE STALL

Symptom	Probable cause	Remedy	Reference page
Rough idle or engine stalls	Vacuum leaks <ul style="list-style-type: none"> ● Purge control valve hose ● Vacuum hoses ● Intake manifold ● Carburetor ● EGR valve 	Repair as necessary	–
	Ignition system problems	Troubleshoot ignition system	8-109
	Idle speed set too low	Readjust idle speed	0-14
	Idle mixture too lean or too rich	Readjust idle speed and mixture	0-14
	Carburetor problems	Troubleshoot fuel system	14-20
	Exhaust gas recirculation (EGR) system problems	Troubleshoot fuel system	14-20
	Engine overheats	Refer to "Engine Overheats"	–
Compression too low	Check compression (Troubleshoot engine)	9-14	

ENGINE HESITATES OR POOR ACCELERATION

Symptom	Probable cause	Remedy	Reference page
Engine hesitates or poor acceleration	Ignition system problem	Troubleshoot ignition system	8-109
	Vacuum leaks <ul style="list-style-type: none"> ● Purge control valve hose ● Vacuum hoses ● Intake manifold ● Carburetor ● EGR valve 	Repair as necessary	–
	Air cleaner filter clogged	Check air cleaner filter	11-4
	Fuel line clogged	Check fuel line	14-85
	Carburetor problem	Troubleshoot fuel system	14-20
	Auxiliary accelerator pump faulty (cold engine)	Check auxiliary accelerator device	14-43
	Emission control system problem <ul style="list-style-type: none"> ● EGR system always on high-altitude compensation (HAC) system problem 	Check EGR system Check HAC system	25-33 25-34
	Engine overheats	Refer to “Engine Overheats”	–
Compression too low	Check compression (Troubleshoot engine)	9-14	

ENGINE DIESELING

Symptom	Probable cause	Remedy	Reference page
Engine dieseling (runs after ignition switch is turned off)	Carburetor problems	Troubleshoot fuel system	14-20
	Incorrect ignition timing	Readjust ignition timing	0-13

26 INTRODUCTION AND MASTER TROUBLESHOOTING – Master Troubleshooting

EXCESSIVE OIL CONSUMPTION

Symptom	Probable cause	Remedy	Reference page
Excessive oil consumption	Oil leak	Repair as necessary	–
	Positive crankcase ventilation line clogged	Check positive crankcase ventilation system	0-17
	Valve stem seal worn or damaged	Check valve stem seal	9-45
	Valve stem worn	Check valves and guides	9-45
	Piston ring worn or damaged	Check piston rings	9-55

POOR FUEL MILEAGE

Symptom	Probable cause	Remedy	Reference page
Poor fuel mileage	Fuel leak	Repair as necessary	–
	Air cleaner filter clogged	Check air cleaner filter	11-4
	Ignition problems	Troubleshoot ignition system	8-109
	Carburetor problems	Troubleshoot fuel system	14-20
	Compression too low	Check compression	9-14
	Tires improperly inflated	Inflate tires to proper pressure	22-2
	Clutch slips	Troubleshoot clutch	6-4
	Brakes drag	Troubleshoot brakes	5-7

NOISE

Symptom	Probable cause	Remedy	Reference page
Noise	Loose bolts and nuts	Retighten as necessary	–
	Engine noise	Troubleshoot engine	9-11

HARD STEERING

N00KBAC

Symptom	Probable cause	Remedy	Reference page
Hard steering	Loose power steering oil pump belt	Adjust	19-11
	Low fluid level	Refill	19-11
	Air in power steering system	Bleed air	19-12
	Low tire pressure	Adjust	22-2
	Excessive turning resistance of upper or lower ball joint	Replace	2-35 2-40
	Excessively tight linkage ball joint	Adjust	19-10
	Improper front wheel alignment	Correct	2-14
	Excessive turning resistance of tie-rod ball joint	Replace	19-40
	No lubrication of tie-rod	Lubricate	–
	Siticky flow control valve	Replace	19-34
No lubrication of idler arm	Lubricate	19-5	

POOR RETURN OF STEERING WHEEL TO CENTER

Symptom	Probable cause	Remedy	Reference page
Poor return of steering wheel to center	Improper front wheel alignment	Adjust	2-14
	Improper tire pressure	Adjust	22-2
	Damaged front wheel bearing	Replace	2-23

POOR RIDING

Symptom	Probable cause	Remedy	Reference page
Poor riding	Improper tire pressure	Adjust	22-2
	Imbalanced wheels	Repair	22-3
	Improper front or rear wheel alignment	Repair or replace	2-14, 17-3
	Malfunctioning shock absorber	Replace	2-35, 17-4
	Broken or worn stabilizer	Replace	2-51
	Broken or worn torsion bar spring	Replace	2-48
	Loose suspension securing bolt(s)	Retighten	–
	Worn lower arm bushing	Replace	2-40

28 INTRODUCTION AND MASTER TROUBLESHOOTING – Master Troubleshooting

ABNORMAL TIRE WEAR

Symptom	Probable cause	Remedy	Reference page
Abnormal tire wear	Improper front or rear wheel alignment	Adjust	2-14 17-3
	Improper tire pressure	Troubleshooting wheels and tires	22-3
	Imbalanced wheels		
	Loose wheel bearings	Adjust or replace	2-23
	Malfunctioning shock absorber	Replace	2-35, 17-4

ROAD WANDER

Symptom	Probable cause	Remedy	Reference page
Road wander	Improper front or rear wheel alignment	Adjust	2-14 17-3
	Excessive play of steering wheel	Repair	19-9
	Poor turning resistance of lower ball joint	Repair	2-40
	Improper tire pressure	Adjust	22-2
	Loose or worn lower arm bushing	Retighten or replace	2-40 2-23
	Loose or worn wheel bearings		

VEHICLE PULLS TO ONE SIDE

Symptom	Probable cause	Remedy	Reference page
Vehicle pulls to one side	Improper front or rear wheel alignment	Adjust	2-14 17-3
	Imbalanced or worn tires	Repair or replace	22-2
	Uneven tire pressure		
	Excessive turning resistance of lower ball joint	Replace	2-40
	Wheel bearing seizure	Replace	2-23
	Broken or worn torsion bar spring	Replace	2-48
	Bend front axle drive shaft	Replace	2-52
	Deformed lower arm	Repair	2-40

STEERING WHEEL SHIMMY

Symptom	Probable cause	Remedy	Reference page
Steering wheel shimmy	Improper front or rear wheel alignment	Adjust	2-14 17-3
	Improper tire pressure	Adjust	22-2
	Imbalanced wheels	Repair	–
	Poor turning resistance of upper or lower ball joint	Replace	2-37 2-40
	Excessive play of steering wheel	Repair	19-9
	Broken or weak stabilizer	Replace	2-51
	Worn lower arm bushing	Replace	2-40
	Malfunctioning shock absorber	Replace	2-35
	Broken or weak torsion bar spring or leaf spring	Replace	2-48 17-4
Wear, play, or seizure of wheel bearing	Replace	2-23	

BOTTOMING

Symptom	Probable cause	Remedy	Reference page
Bottoming	Overloaded vehicle	Correct	–
	Broken or weak torsion bar spring or leaf spring	Replace	2-48 17-4
	Malfunctioning shock absorber	Replace	2-35, 17-4

WHEEL BEARING TROUBLESHOOTING

Trouble	Symptom	probable cause
Pitting	Pitting occurs because of uneven rotation of race and bearing surfaces	Excessive bearing preload Excessive load
Flaking	The surface peels because of uneven rotation of the race and bearing surfaces	End of bearing life Improper bearing assembly
Cracking	Chipping or cracking of cage or roller edges	Impact when bearing was installed (such as being hit with a hammer)
Flat spotting	When large load is applied, race and roller contact surfaces compress, forming indentations	Excessive bearing preload Excessive load Vibration when bearings are not used, such as during shipment on freight cars, transport trucks, etc.
Nicks	Instead of rolling along race surface, rollers slide, thus damaging surface	Improper grease Excessive bearing preload Excessive load Faulty oil seal
Smearing	Damage or wear caused by minute particles adhering to surfaces results in rough movement and such high temperatures that parts of surface melt	Excessive variation of loads on bearings Use of grease other than that specified Improper grease
Rust, corrosion	Appears on various areas of the bearing	Use of grease other than that specified Faulty oil seal Presence of water or moisture
Wear	Wear of surface areas caused by friction	Improper grease Foreign matter Rust or corrosion due to moisture Use of grease other than that specified Faulty oil seal
Discoloration	Grease discoloration results from grease deterioration which causes particles of pigment contained in grease to adhere to surfaces Heat discoloration will appear as a deep brown or purple	Use of grease other than that specified Faulty oil seal Excessive bearing preload Excessive load

LUBRICATION AND MAINTENANCE

CONTENTS

N000A--

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GENERAL INFORMATION

N00PA-B

Maintenance and lubrication service recommendations have been compiled to provide maximum protection for the vehicle owner's investment against all reasonable types of driving conditions. Since these conditions vary with the individual vehicle owner's driving habits, the area in which the vehicle is operated and the type of driving to which the vehicle is subjected, it is necessary to prescribe lubrication and maintenance service on a time frequency as well as mileage interval basis.

Oils, lubricants and greases are classified and graded according to standards recommended by the Society of Automotive Engineers (SAE), the American Petroleum Institute (API) and the National Lubricating Grease Institute (NLGI).

MAINTENANCE SCHEDULES

Information for service maintenance is provided under "SCHEDULED MAINTENANCE TABLE".

Three schedules are provided; one for "Required Maintenance", one for "General Maintenance" and one for "Severe Usage Service".

SEVERE SERVICE

Vehicles operating under severe service conditions will require more frequent service.

Component service information is included in appropriate units for vehicles operating under one or more of the following conditions:

1. Trailer towing or police, taxi, or commercial type operation.
2. Operation of Vehicle
 - (1) Short-trip operation at freezing temperature (engine not thoroughly warmed up)
 - (2) More than 50% operation in heavy city traffic during hot weather above 32°C (90°F)
 - (3) Extensive idling
 - (4) Driving in sandy areas
 - (5) Driving in salty areas
 - (6) Driving in dusty conditions
 - (7) Driving on-off-road

ENGINE OIL

The SAE grade number indicates the viscosity of engine oils, for example, SAE 30, which is a single grade oil. Engine oils are also identified by a dual number, for example, SAE 10W-30, which indicates a multigrade oil.

The API classification system defines oil performance in terms of engine usage. Only engine oil designed "For Service SF" or "For Service SF/CC", when available, should be used. These oils contain sufficient chemical additives to provide maximum engine protection. Both the SAE grade and the API designation can be found on the container.

GEAR LUBRICANTS

The SAE grade number also indicates the viscosity of Multi-Purpose Gear Lubricants.

The API classification system defines gear lubricants in terms of usage. Typically gear lubricants conforming to API GL-4 or GL-5 with a viscosity of SAE 80W, SAE 90 are recommended for manual transmission, front axle and rear axle (conventional differential), and MITSUBISHI genuine gear oil Part No. 8149630EX or equivalent, for rear axle (limited-slip differential).

LUBRICANTS—GREASES

Semi-solid lubricants, bear the NLGI designation and are further classified as grades 0, 1, 2, 3 etc.. Whenever "Chassis Lubricant" is specified, Multi-Purpose Grease, NLGI grade No. 2, should be used.

FUEL USAGE STATEMENT

Use gasolines having a minimum ant-knock index (Octane Value) of 87, $(R + M)/2$. This designation is comparable to a Research Octane Number of 91.

Unleaded gasolines only must be used in vehicles equipped with catalyst emission control systems. All vehicles, so equipped, have labels located on the instrument panel and on the back of fuel filler lid that state, "UNLEADED GASOLINE ONLY". These vehicles also have fuel filler tubes especially designed to accept the smaller diameter unleaded gasoline dispensing nozzles only.

MATERIALS ADDED TO FUEL

Indiscriminate use of fuel system cleaning agents should be avoided. Many of these materials intended for gum and varnish removal may contain highly active solvents or similar ingredients that can be harmful to gasket and diaphragm materials used in fuel system component parts.

SCHEDULED MAINTENANCE TABLE

N000A--

SCHEDULED MAINTENANCE SERVICE FOR EMISSION CONTROL AND PROPER VEHICLE PERFORMANCE

Inspection and Service should be performed any time a malfunction is observed or suspected. Retain receipts for all vehicle emission services to protect your emission warranty.

Emission Control System Maintenance	Service Intervals	Kilometers in Thousands	24	48	72	80	96
		Mileage in Thousands	15	30	45	50	60
Change Engine Oil Every 12 Months	or	Every 12,000 km (7,500 miles)					
Change Engine Oil Filter Every 12 Months	or	x	x	x			x
Replace Drive Belt (for Water Pump, Alternator)	at		x				x
Check Valve Clearance (Jet Valve only); Adjust as Required	at	x	x	x			x
Check Engine Idle Speed* ¹ ; Adjust as Required	at	x	x	x			x
Clean Carburetor Choke Mechanism and Linkage	at		x				x
Replace Fuel Filter Every 5 Years	or					x	
Check Fuel System (Tank, Line and Connection) for Leaks Every 5 Years	or					x	
Replace Vacuum Hoses, Secondary Air Hoses, Crankcase Ventilation Hoses and Water Hoses Every 5 Years	or						x
Replace Fuel Hoses, Vapor Hoses and Fuel Filler Cap Every 5 Years	or					x	
Replace Air Filter	at		x				x
Clean Crankcase Emission Control System (PCV Valve) Every 5 Years	or						x
Check Evaporative Emission Control System (except Canister) for Leaks and Clogging Every 5 Years	or						x
Replace Canister	at					x	
Replace Spark Plugs	at		x				x
Replace Ignition Cables Every 5 Years	or						x
Replace EGR Valve* ²	at					x	
Replace Oxygen Sensor	at					x	
Check Distributor Cap, Rotor and Advanced Angle System * ² Every 5 Years	or						x
Check Intake Temperature Control System * ² Every 5 Years	or						x
Check Secondary Air System * ² Every 5 Years	or						x
Replace Solenoid Valve Air Filter of Vacuum Control System * ² Every 5 Years	or						x

NOTE

(1) *¹: Shows recommended maintenance items for California vehicles only, but are required for vehicles except for California.

(2) *²: Except for California.

GENERAL MAINTENANCE SERVICE FOR PROPER VEHICLE PERFORMANCE

General Maintenance		Service Interval	Kilometers in Thou-	24	48	72	80	96
			sands					
			Mileage in Thousands	15	30	45	50	60
Carburetor or Body Mounting* ¹		Check	at				x	
Manual Transmission Oil		Check Oil Level	at		x			x
Automatic Transmission Fluid		Check Fluid Level Every 12 Months	or	x	x	x		x
		Change Fluid	at		x			x
Cooling System		Check and Service as Required Every 12 Months	or	x	x	x		x
		Change Coolant Every 2 Years	or		x			x
Front Disc Brake Pads		Inspect for Wear Every 12 Months	or	x	x	x		x
Rear Drum Brake Linings and Wheel Cylinders		Inspect for Wear and Leaks Every 2 Years	or		x			x
Brake Hoses		Check for Deterioration or Leaks Every 12 Months	or	x	x	x		x
Brake Fluid		Replace Every 4 Years	or					x
Ball Joint, Steering Linkage Seals and Drive Shaft Boots		Inspect for Grease Leaks and Damage Every 2 Years	or		x			x
Ball Joints with Grease Nipple		Lubricate Grease Every 12 Months	or	x	x	x		x
Front Wheel Bearing		Lubricate Grease Every 2 Years	or		x			x
Front Axle and Rear Axle		With LSD* ²	at	x	x	x		x
		Without LSD* ²	at		x			x
Propeller Shaft Joint		Lubricate Grease Every 2 Years	or		x			x
Exhaust System (Connection Portion of Muffler, Pipings and Keeping Warmth Covers)		Check and Service as Required Every 12 Months	or	x	x	x		x

NOTE

(1) *¹: Except for California.(2) *²: LSD—Limited slip differential

SCHEDULED MAINTENANCE UNDER SEVERE USAGE CONDITIONS

The maintenance items should be performed according to the following table:

Maintenance Item	Service to be Performed	Mileage Intervals Kilometers in Thousands (Miles in Thousands)				Severe Usage Conditions								
		24 (15)	48 (30)	72 (45)	96 (60)	A	B	C	D	E	F	G	H	
Engine Oil	Change Every 3 Months or	Every 4,800 km (3,000 miles)				x	x	x	x				x	
Engine Oil filter	Replace Every 6 Months or	Every 9,600 km (6,000 miles)				x	x	x	x				x	
Air Filter	Replace	More Frequently				x				x				
Crankcase Emission Control System	Check and Clean as Required	More Frequently				x								
Spark Plugs	Replace at	x	x	x	x		x		x					
Front Disc Brake Pads	Inspect for Wear	More Frequently				x						x		
Rear Drum Brake Linings and Rear Wheel Cylinders	Inspect for Wear and Leaks	More Frequently				x						x		
Manual Transmission and Transfer Case	Change oil at		x		x		x					x	x	

Severe usage conditions

- A—Driving in dusty conditions
- B—Trailer towing, or police, taxi, or commercial type operation
- C—Extensive idling
- D—Short-trip operation at freezing temperatures (engine not thoroughly warmed up)
- E—Driving in dandy areas
- F—Driving in salty areas
- G—More than 50% operation in heavy city traffic during hot weather above 32°C (90°F)
- H—Driving on off-road

RECOMMENDED LUBRICANTS AND LUBRICANT CAPACITIES TABLE

RECOMMENDED LUBRICANTS

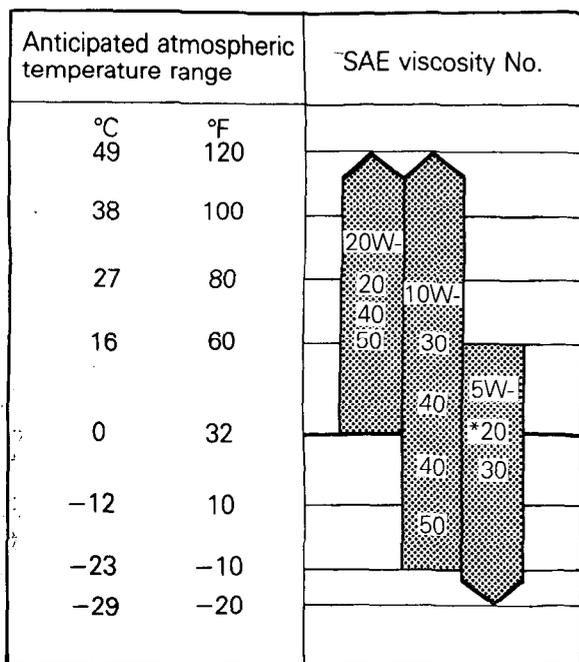
N00RA-B

Parts	Specifications	Remarks
Engine oil	API classification SF or SF/CC	For further details, refer to SAE viscosity number
Manual transmission	API classification GL-4 or higher	SAE grade number: SAE 80W or 75W/85W
Automatic transmission	Automatic transmission fluid "DEXRON II" type	–
Transfer case	API classification GL-4 or higher	SAE grade number: SAE 80W or 75W/85W
Front axle	API classification GL-4 or higher	For further details, refer to SAE viscosity number
Rear axle Conventional differential	API classification GL-4 or higher	For further details, refer to SAE viscosity number
Limited-slip differential	–	Mitsubishi Genuine Gear Oil Part No. 8149630EX or equivalent
Power steering	Automatic transmission fluid "DEXRON" or "DEXRON II" type	–
Brakes and clutch	Conforming to DOT 3	
Front wheel bearings	Multipurpose grease NLGI Grade 2	
Hood lock catch, door lock strikers, seat adjusters, back door lock, parking brake cable mechanism	Multipurpose grease NLGI Grade 2	
Engine coolant		DIA-QUEEN LONG-LIFE COOLANT (Part No. 0103044) or HIGH QUALITY ETHLENE GLYCOL ANTIFREEZE COOLANT
Door hinges, back door hinges	Engine oil	–

LUBRICANT CAPACITIES TABLE

Description	Metric measure	U.S. measure	Imperial measure
Engine oil			
Crankcase (include oil filter)	5.0 liters	5.3 qts.	4.4 qts.
Oil filter	0.5 liter	.53 qt.	.44 qt.
Cooling system (including heater and coolant reserve tank)	8.0 liters	8.45 qts.	7.04 qts.
Manual transmission	2.2 liters	4.7 pints	3.9 pints
Automatic transmission	7.2 liters	15.2 pints	12.7 pints
Transfer case	2.2 liters	4.7 pints	3.9 pints
Front axle	1.1 liters	2.3 pints	1.9 pints
Rear axle			
Conventional differential	1.1 liters	2.3 pints	1.9 pints
Limited-slip differential	1.8 liters	3.8 pints	3.2 pints
Power steering	0.9 liter	1.9 pints	1.6 pints
Fuel tank	60 liters	15.9 gals.	13.2 gals.

**SELECTION OF LUBRICANTS
ENGINE OIL**



53E531

*SAE 5W-20 Not recommended for sustained high speed vehicle operation.

FRONT AXLE/REAR AXLE (CONVENTIONAL DIFFERENTIAL)

Lubricant	API classification GL-4 or higher
Anticipated temperature range	Viscosity range
Above -23°C (-10°F)	SAE 90 SAE 85W-90 SAE 80W-90
-23°C to -34°C (-10°F to -30°F)	SAE 80W
Below -34°C (-30°F)	SAE 80W-90 SAE 75W

REAR AXLE (LIMITED-SLIP DIFFERENTIAL)

Refer to P.3-11.

COOLANT

Relation between Coolant Concentration and Specific Gravity

Coolant temperature °C (°F) and specific gravity					Freezing temperature °C (°F)	Safe operating temperature °C (°F)	Coolant concentration (Specific volume)
10 (50)	20 (68)	30 (86)	40 (104)	50 (122)			
1.054	1.050	1.046	1.042	1.036	-16 (3.2)	-11 (12.2)	30%
1.063	1.058	1.054	1.049	1.044	-20 (-4)	-15 (5)	35%
1.071	1.067	1.062	1.057	1.052	-25 (-13)	-20 (-4)	40%
1.079	1.074	1.069	1.064	1.058	-30 (-22)	-25 (-13)	45%
1.087	1.082	1.076	1.070	1.064	-36 (-32.8)	-31 (-23.8)	50%
1.095	1.090	1.084	1.077	1.070	-42 (-44)	-37 (-35)	55%
1.103	1.098	1.092	1.084	1.076	-50 (-58)	-45 (-49)	60%

Example
The safe operating temperature is -15°C (5°F) when the measured specific gravity is 1.058 at the coolant temperature of 20°C (68°F).

Cautions

- If the concentration of the coolant is below 30%, the anti-corrosion property will be adversely affected. In addition, if the concentration is above 60%, both the anti-freeze and engine cooling properties will decrease, affecting the engine adversely. For these reasons, be sure to maintain the concentration level within the specified range.**
- Do not use a mixture of different brands of anti-freeze.**

MAINTENANCE SERVICE

N00SAAC

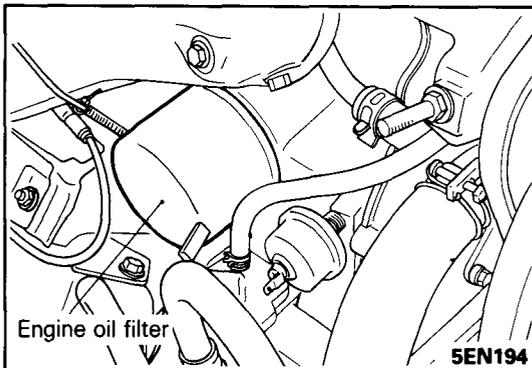
ENGINE OIL (Change)

Always use lubricants which conform to the requirements of the API classification "For Service SF/CC" when available, and have the proper SAE grade number for the expected temperature range.

Never use nondetergent or straight mineral oil.

- (1) After warming up the engine, remove the oil filler cap.
- (2) Remove the drain plug to allow the engine oil to drain.
- (3) Replace the drain plug gasket with a new one and tighten the drain plug.
- (4) Pour new engine oil through the oil filler.

Engine oil total quantity : 5.0 liters (5.3 U.S. qts., 4.4 Imp.qts.)

**ENGINE OIL FILTER (Replace)**

N00SABC

The quality of replacement filters varies considerably. Only high quality filters should be used to assure most efficient service. Genuine oil filters require that the filter be capable of withstanding a pressure of 1800kPa (256 psi) are, high quality filters and are recommended as follows:

Oil Filter Part Number

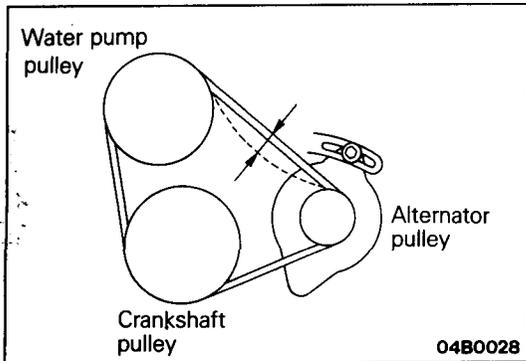
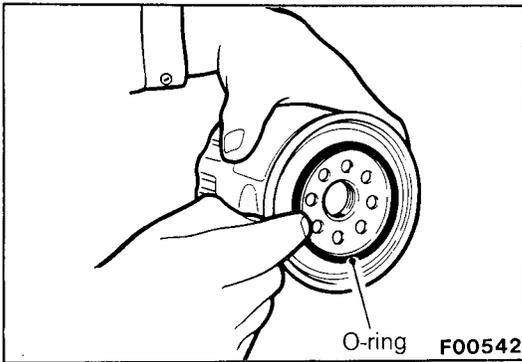
Mitsubishi Genuine Parts : MD031805 or equivalent

ENGINE OIL FILTER SELECTION

This vehicle is equipped with a full-flow, throw-away oil filter. The same type of replacement filter is recommended as a replacement filter for this vehicle. It is possible, particularly in cold weather, that this vehicle may develop high oil pressure for a short duration. You should be sure that any replacement filter used on this vehicle is a high-quality filter and is capable of withstanding a pressure of 1800kPa (256 psi) (manufacturer's specifications) to avoid filter and engine damage. The following is a high-quality filter and is strongly recommended for use on this vehicle: Mitsubishi Engine Oil Filter Part No. MD084693 or MD031805. Any replacement oil filter should be installed in accordance with the oil filter manufacturer's installation instructions.

REPLACEMENT OF ENGINE OIL FILTER

1. Remove the engine oil filler cap.
2. Remove the engine oil drain plug and drain the engine oil.
3. Using the oil filter wrench, remove the engine oil filter.



- After putting a small amount of engine oil on the O-ring of the new oil filter, turn it with hand and install it in the block.

CAUTION

Make sure the installation surfaces are clean.

- Pour in the engine oil.

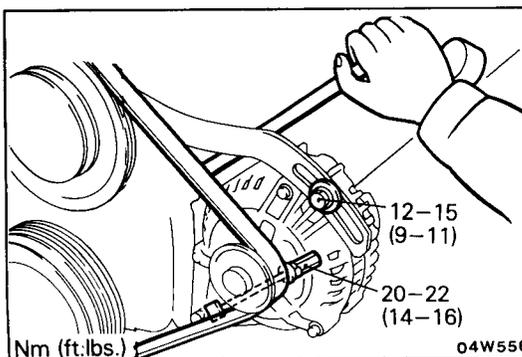
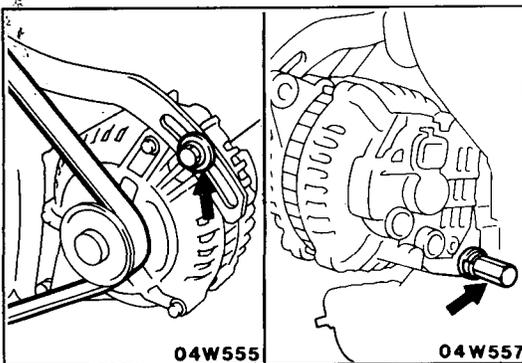
DRIVE BELT (Replace)

N00SBBA

- Inspect the drive belts for evidence of cuts and cracks. Replace, if necessary.
- Check belt for proper deflection. If necessary, adjust the belt deflection as follows.
 - Push the belt with a force of 100 N (22 lbs.) at a point halfway between the alternator pulley and water pump pulley. The belt deflection should be the standard value.

Standard value: : 9–12 mm (.35–.47 in.)

- If belt deflection is not within the standard value, loosen alternator support nut and alternator brace bolt, and move alternator to obtain proper belt deflection at 100N (22 lbs.) force.

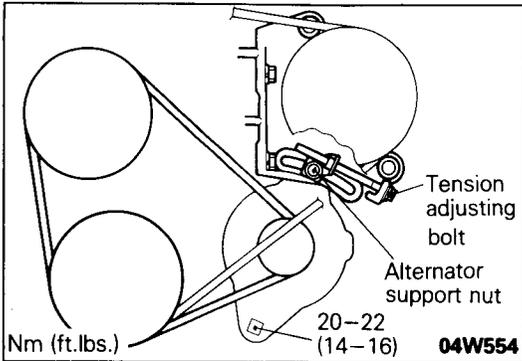
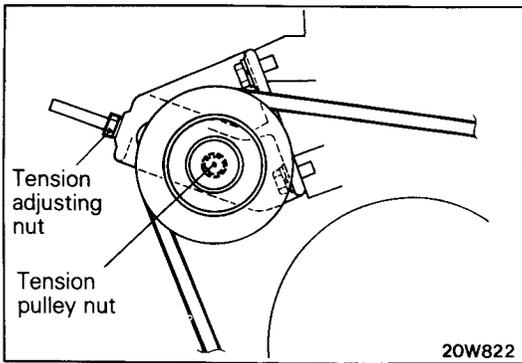
**REPLACEMENT OF DRIVE BELT****Vehicles without an air conditioner**

- Loosen the alternator brace bolt and alternator support nut, and then remove the alternator drive belt.
- Install a new alternator drive belt.

- Contact a bar or similar object to the stator part of the alternator in order to provide the appropriate tension, and then adjust the amount of belt deflection.

Standard value : 9–12 mm (.35–.47 in.)

- Tighten the alternator brace bolt and alternator support nut at the specified torque.



Vehicles with an air conditioner

1. Loosen the tension pulley nut.
2. Loosen the tension adjustment nut and then remove the air conditioner compressor's drive belt.

3. Loosen the alternator brace bolt and alternator support nut.
4. Loosen the tension adjustment bolt, and remove the alternator drive belt.
5. Install a new alternator drive belt.
6. Adjust the amount of deflection of the belt by using the tension adjustment bolt.

Standard value : 9-12mm (.35-.47 in.)

7. Tighten the alternator support nut, and the alternator brace bolt at the specified torque.
8. Install the air conditioner compressor's drive belt, and adjust the amount of deflection of the drive belt. Refer to GROUP 24 HEATERS AND AIR CONDITIONING – Service Adjustment Procedures.

VALVE CLEARANCE (Check and adjust as required)

NOOSACD

Incorrect valve clearances will not only result in unsteady engine operation, but will also cause excessive noise and reduced engine output.

Check the valve clearances and adjust as required while the engine is hot.

Valve-to-rocker arm clearances :

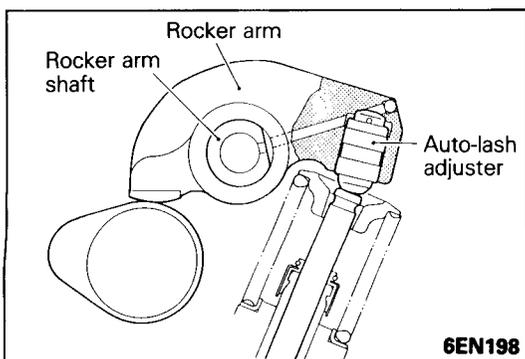
Jet valves 0.25 mm (.0098 in.)

VALVE CLEARANCE ADJUSTMENT

Intake and Exhaust Valves

The auto-lash adjuster is installed to the rocker arm so that the valve clearance adjustment is maintenance-free.

For additional information regarding the auto-lash adjuster, refer to GROUP 9 ENGINE.

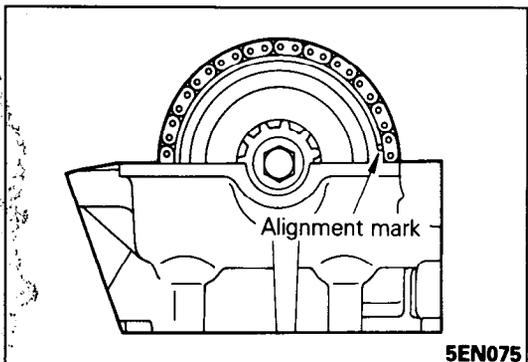
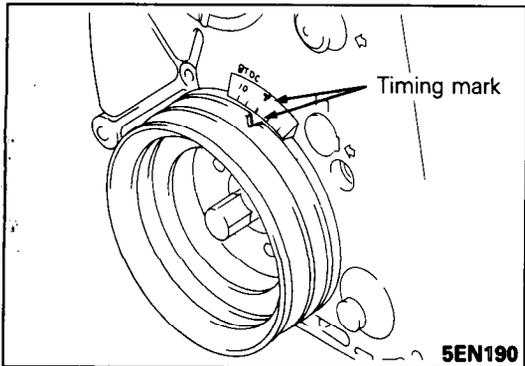


Jet valves

Caution

The cylinder head bolts should be retightened before attempting this adjustment.

1. Warm up the engine until the coolant temperature reaches 85°–95°C (185°–205°F).
2. Remove the air filter assembly.
3. In order to facilitate the work, remove all spark plugs from the cylinder head.
4. Remove the rocker cover.
Move the No. 1 cylinder to top dead center.
5. Align the notch in the crankshaft pulley with the "T" mark on the timing chain cover.
Check to be sure that the camshaft sprocket and the timing chain's mating mark are in the position shown in the figure.

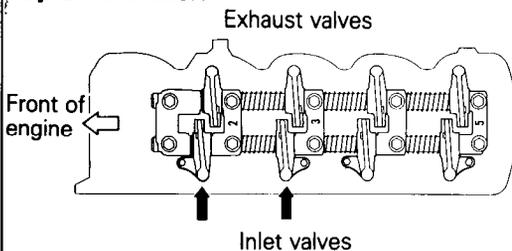
**Caution**

Be sure to turn the crankshaft in the forward rotation direction (right rotation).

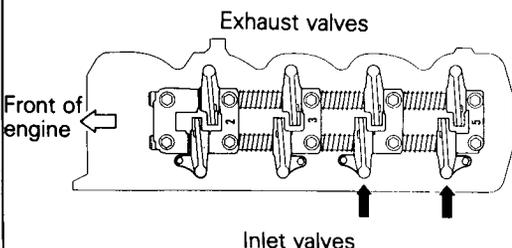
Note

If the camshaft sprocket's mating mark is at the 180° opposite position, the No. 4 cylinder is at top dead center.

With the No. 1 cylinder at compression top dead center.



With the No. 4 cylinder at compression top dead center.

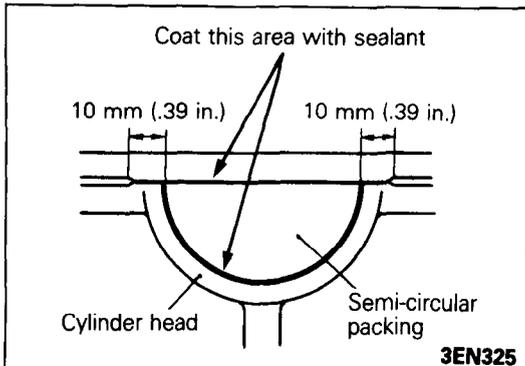
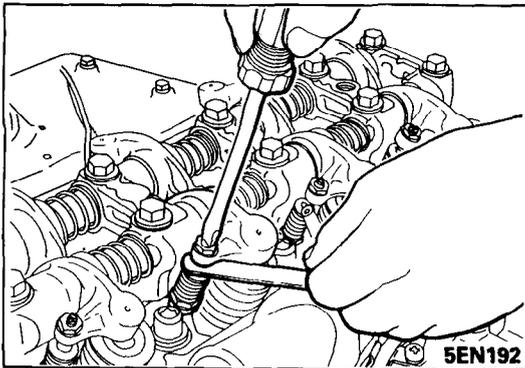


6. Measure the jet valve clearance at the places shown by the arrows in the figure.

Standard value (when warm) : 0.25 mm (.0098 in.)

Note

The valve clearance when cold is 0.17 mm (.007 in.)



7. If the measured value is not the standard value, loosen the lock nut, and, while turning the adjustment screw, adjust the clearance by using the thickness gauge.

Caution

Be careful not to press the jet valve in, because the jet valve spring's force is not strong.

8. Hold the adjustment screw (so that it won't turn) by using a screwdriver, and tighten the lock nut at the specified torque.
9. Rotate the crankshaft 360° in the forward rotation direction, and align the notch in the pulley with the "T" mark on the timing chain cover.
10. Measuring the remaining valves; if the result is not the standard value, adjust by following steps 7 and 8.
11. Apply a coating of the designated sealant to the semi-circular packing, at the places shown in the figure.

Specified sealant : 3M ART Part No. 8660 or equivalent

12. Install the rocker cover.
13. Install the air cleaner.
14. Install the spark plugs.

INSPECTION AND ADJUSTMENT OF ENGINE IDLING SPEED

NOOSADC

Caution

The improper setting (throttle value opening) will increase exhaust gas temperature at deceleration, reducing catalyst life greatly and deteriorating exhaust gas cleaning performance. It also has effect on fuel consumption and engine braking.

Inspection Conditions

- Engine coolant temperature: 85–95°C (185–205°F)
 - Lights and accessories (air-conditioner, etc.): OFF
 - Transmission: Neutral
 - Steering wheel: Centered (for power steering equipped vehicles)
1. Prepare a timing light and tachometer.
 2. Start the engine and allow it to idle.
 3. Inspect the ignition timing. Adjust the ignition timing if necessary.

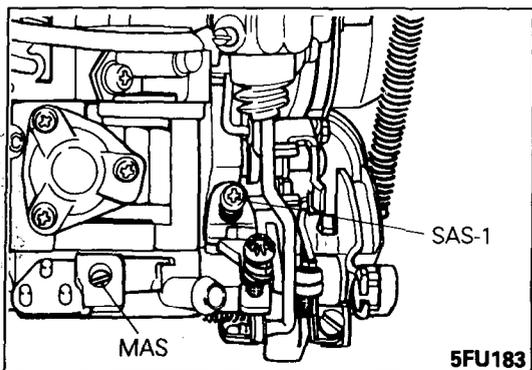
Standard ignition timing : 7° BTDC ± 2°*

*: When inspecting the standard ignition timing at high altitudes, disconnect the white striped vacuum hose from the distributor auxiliary compression chamber and temporarily close the end of the hose with a blind plug. (Federal indicated high-altitude specification vehicles, California).

NOTE

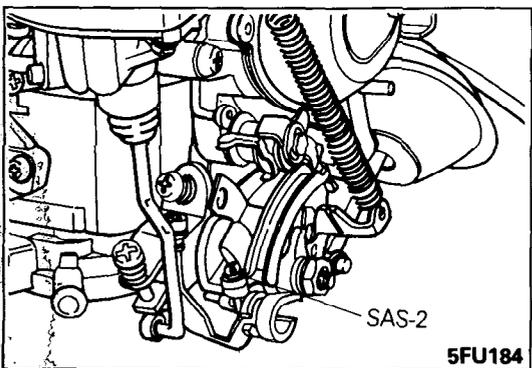
Inspect and adjust ignition timing as described in GROUP 8 ELECTRICAL–Ignition System.

4. Run the engine for more than 5 seconds at an engine speed of 2,000 to 3,000 rpm.
5. Run the engine at idle for 2 minutes.



6. Read the idling speed.
If outside specified limits, readjust the speed to the specified value by adjusting the idle speed adjusting screw No. 1 (SAS-1).

Transmission	Curb idle speed (rpm)	
	For the First 500 km (300 miles)	After 500 km (300 miles)
M/T and A/T	725 \pm 150 - 100	800 \pm 100

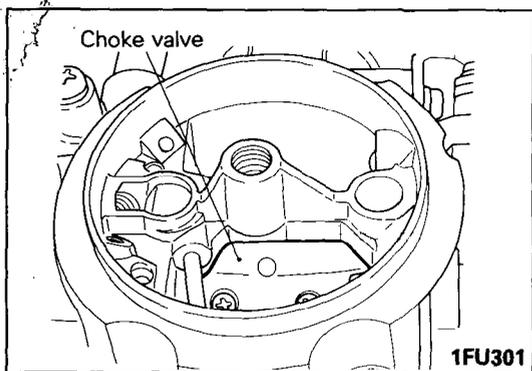


NOTE

M/T : Manual transmission
A/T : Automatic transmission

Caution

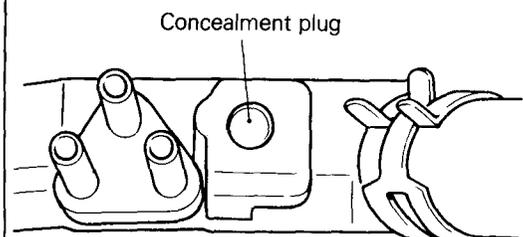
DO NOT TOUCH SAS-2. The idle speed adjusting screw (SAS-2) is the preset screw that determines the relationship between the throttle valve and free lever, and has been accurately set at the factory. If this setting is disturbed, throttle opener adjustment and dash pot adjustment cannot be done accurately.



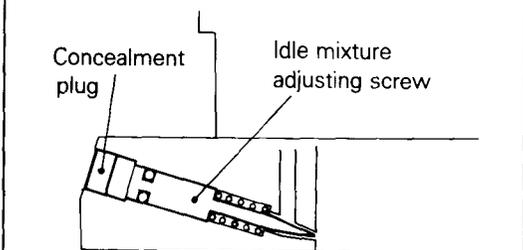
CARBURETOR CHOKE MECHANISM AND LINKAGE (Clean)

N00SAEB

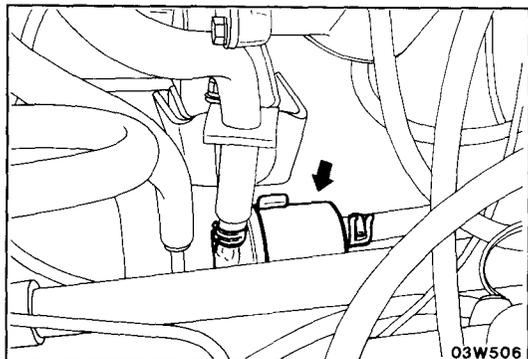
The choke mechanism is used to facilitate engine starting during cold weather. Inject a solvent into the end of the auto-choke and the throttle valves (where they pass through the air horn) to prevent the choke from becoming stuck by gum deposits on the shaft. At the same time, inject a solvent to clean dirt from the fast idle cam and link.

Tamper Prevention

1FU345



1FU346



03W506

Caution

1. All carburetors have a tamper-proof choke. The choke-related parts are factory adjusted. The choke adjustment is required during service, except when major carburetor service or overhaul choke calibration related parts adjustments are needed by state or local inspections.
2. All carburetors also have a tamper-resistant idle mixture adjusting screw. The CO setting has been done as a factory adjustment. Neither removal of the plug nor adjustment of the mixture screw is required during service unless a major carburetor overhaul, throttle body replacement, or high idle-CO adjustments are needed by state or local inspections.

FUEL FILTER (Replace)

N00SAFA

The fuel filter should be replaced regularly because its performance is reduced by dirt and water collected over an extended period of use. Replace as required.

FUEL SYSTEM (Check for leaks)

N00SAGA

TANK, LINES AND CONNECTIONS

1. Check for damage or leakage in the fuel lines and connections.
2. Inspect the surface of fuel hoses for heat and mechanical damage. Hard and brittle rubber, cracking, checking, tears, cuts, abrasions and excessive swelling indicate deterioration of the rubber.
3. If the fabric casing of the rubber hose is exposed by cracks and abrasions in the fuel system, the hoses should be changed.

VACUUM HOSES, SECONDARY AIR HOSES, CRANKCASE VENTILATION HOSES AND WATER HOSES (Replace)

N00SAHA

Replace them and then make sure that the hoses do not come in contact with any heat source or moving component which might cause heat damage or mechanical wear.

FUEL HOSES, VAPOR HOSES AND FUEL FILLER CAP (Replace)

N00SAIC

Service procedures to check the hoses for damage are the same as those described in the section "Vacuum hoses, secondary air hoses, crankcase ventilation hoses and water hoses".

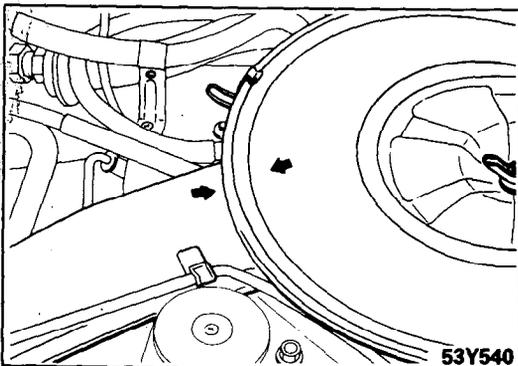
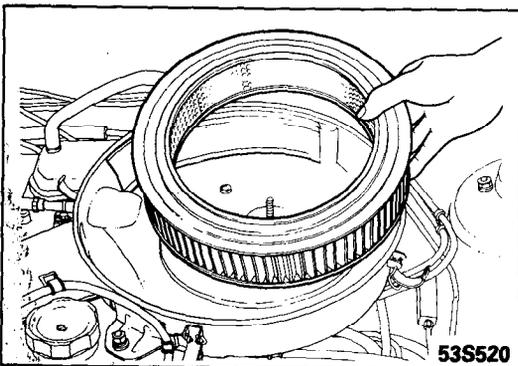
AIR FILTER (Replace)

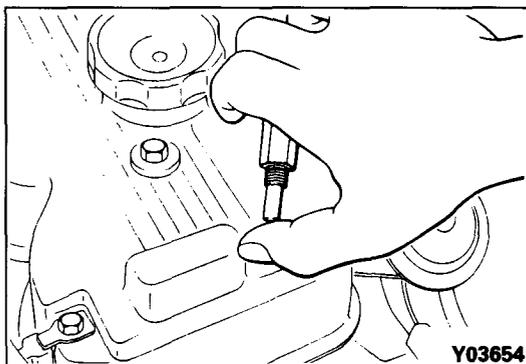
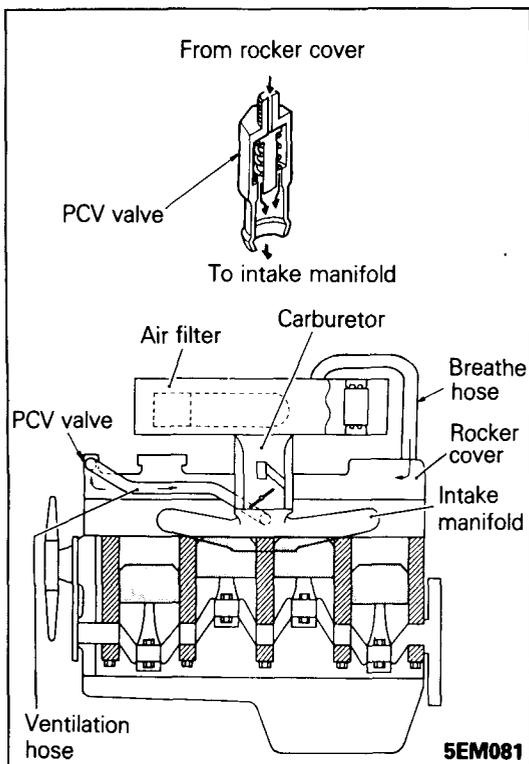
N00SAKC

The air filter will become dirty and loaded with dust during use, and the filtering effect will be substantially reduced. Replace it with a new one.

REPLACEMENT OF AIR FILTER

1. Remove the wing nut. Use pliers only if the wing nut is difficult to remove.
2. Unsnap the finger clips.
3. Remove the filter by hand, and replace it with a new filter.
4. Install the air filter, and then install the cover and housing, taking care that the arrows are aligned.
5. Tighten the wing nut by hand.





CRANKCASE EMISSION CONTROL SYSTEM (PCV valve) (Clean)

NOOSALA

The crankcase ventilation system must be kept clean to maintain good engine performance.

Periodic servicing is required to remove combustion products from the PCV valve.

1. Disconnect the ventilation hose from the positive crankcase ventilation (PCV) valve. Then, remove PCV valve from the rocker cover and reconnect it to the ventilation hose.
2. Idle the engine and put a finger to the open end of PCV valve to make sure that intake manifold vacuum is felt on the finger.

NOTE

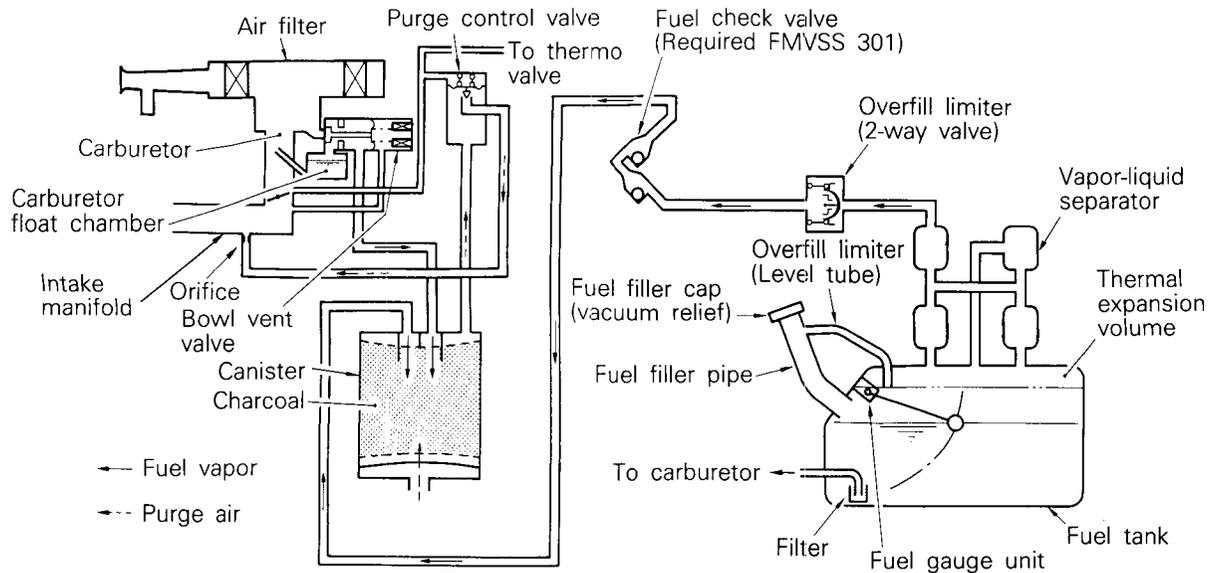
At this time, the plunger inside the PCV valve moves back and forth.

3. If vacuum is not felt on finger, clean the PCV valve and ventilation hose in cleaning solvent or replace if necessary.

EVAPORATIVE EMISSION CONTROL SYSTEM (Check for leaks and clogging) – except canisters

NOOSAMB

1. If the fuel-vapor vent line is clogged or damaged, a fuel-vapor mixture escapes into the atmosphere causing excessive emissions. Disconnect the line at both ends, and blow it clean with compressed air. Remove the filler cap from the filler pipe and check to see if there is evidence that the packing makes improper contact to the filler pipe.
2. The overfill limiter (2-way valve) installed on the vapor line should be checked for correct operation.



03W527

CANISTER (Replace)

N00SANC

If or when the canister filter becomes clogged, the purge air volume will decrease and consequently, the canister capacity will be reduced.

SPARK PLUGS (Replace)

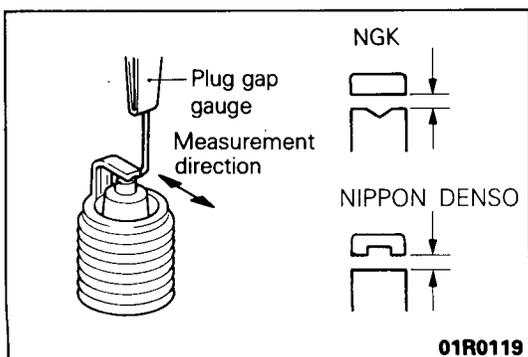
N00SAOB

- Spark plugs must fire properly to assure proper engine performance and emission-control. Therefore, they should be replaced periodically with new ones.

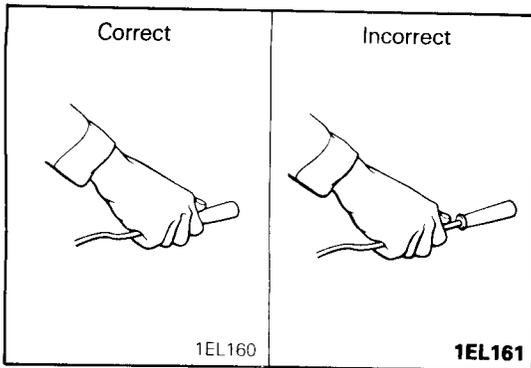
- The new plugs should be checked for the proper gap.

Spark plug gap :
W20EP-U10, W20EPR-U10 0.9–1.0 mm (.035–.039 in.)

Other type 1.0–1.1 mm (.039–.043 in.)



01R0119

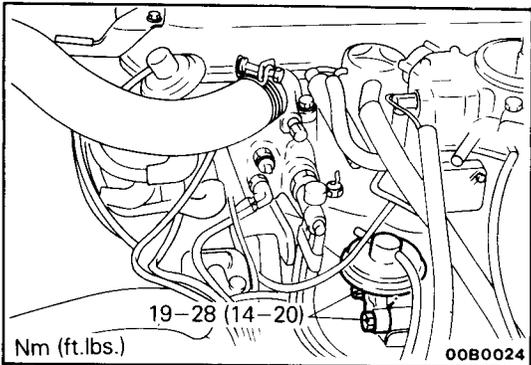
**IGNITION CABLES (Replace)**

N00SAPB

The ignition cables should be replaced periodically with new ones. After replacing, make sure that the ignition cables and terminals are properly connected.

NOTE

When disconnecting an ignition cable, be sure to hold cable cap. If the cable is disconnected by pulling on the cable alone, an open circuit might result.

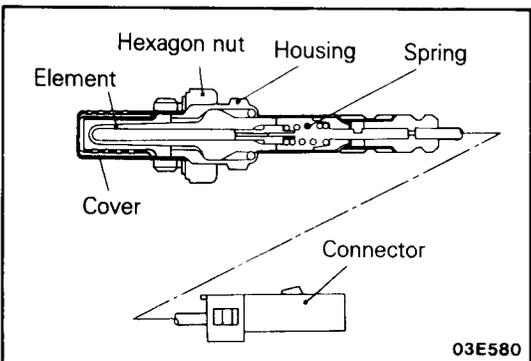
**EGR VALVE (Replace)**

N00SARA

Replace EGR valve to a new one.

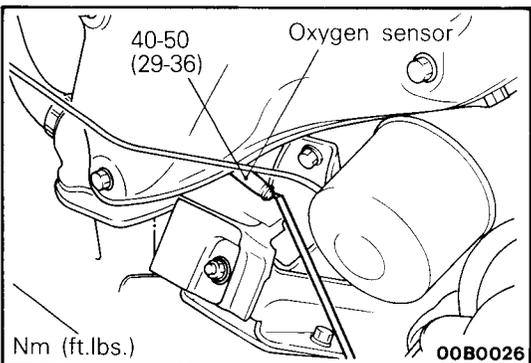
REMOVAL OF EGR VALVE

1. Disconnect the vacuum hoses from the EGR valve.
2. Disconnect the EGR valve from the intake manifold.
3. Replace the EGR valve gasket with a new one.
4. Install the EGR valve on the intake manifold and tighten to the specified torque.

**OXYGEN SENSOR (Replace)**

N00SAQB

The oxygen sensor is a device which controls the fuel mixture. If the oxygen sensor is damaged, the exhaust-gas cleaning effect as well as driveability deteriorates. Therefore, it should be replaced periodically with a new one.

**REMOVAL OF OXYGEN SENSOR**

1. Cut off the connector of the oxygen sensor.
2. Remove the oxygen sensor from the exhaust manifold.
3. Replace the oxygen sensor on the exhaust manifold and tighten to the specified torque.

DISTRIBUTOR CAP, ROTOR AND ADVANCED ANGLE SYSTEM (Check)

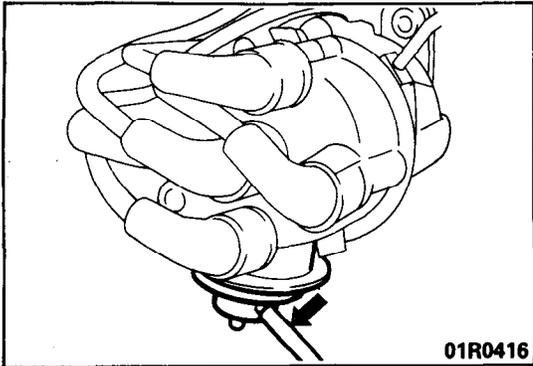
N00SASA

Check the distributor cap, rotor and spark advance system to maintain driveability and good exhaust gas.

INSPECTION OF DISTRIBUTOR CAP AND ROTOR

Inspect in accordance with the following procedure. Repair or replace as necessary.

- Check the cap for cracks.
- Check the cap and rotor electrodes for damage.
- Wipe clean the cap and rotor.



01R0416

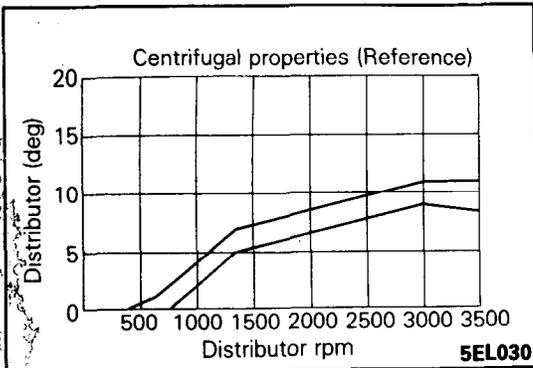
INSPECTION OF CENTRIFUGAL SPARK ADVANCE DEVICE

1. Start the engine and allow it to idle.
2. Disconnect the vacuum hoses from the vacuum chambers*.
 - *: Disconnect the vacuum hoses from both the main and sub vacuum chambers. (High-altitude areas nationwide, California)
3. Inspect the advance angle while slowly increasing engine speed. The advance angle should change smoothly as engine speed increases.

NOTE

Symptom	Probable Cause
Advance angle is too large	Governor spring weak or missing
Advance angle changes suddenly	Spring is broken
Angle too small or hysteresis is too large	Poor governor weight or cam operation

4. When any of the above symptoms appear, disassemble and inspect the distributor.



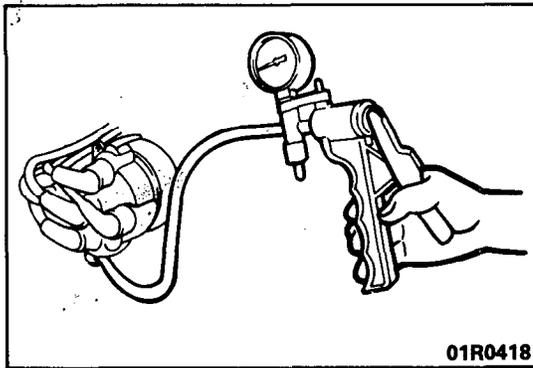
5EL030

INSPECTION OF VACUUM ADVANCE DEVICE

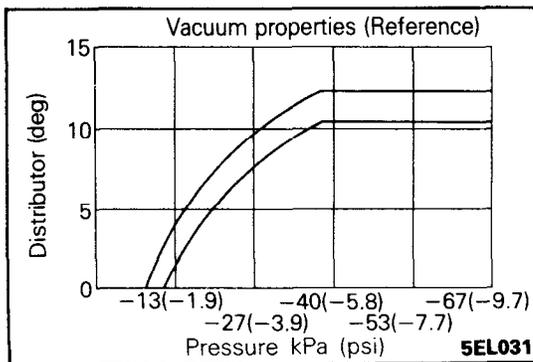
1. Start the engine and allow it to idle.
2. Disconnect the vacuum hoses from the vacuum chamber*. Connect a vacuum pump to the nipple.
 - *: Disconnect the vacuum hoses from the main vacuum chambers. (High-altitude areas nationwide, California)
3. Slowly apply vacuum with the vacuum pump and inspect the advance angle. The advance angle should change smoothly as the vacuum increases.

NOTE

Symptom	Probable Cause
Advance angle is too large	Vacuum controller spring is weak or missing
Advance angle changes suddenly	Spring is broken
Angle too small or hysteresis is too large	Poor breaker base operation
Does not advance	Diaphragm is damaged



01R0418



5EL031

4. When any of the above symptoms appear, disassemble and inspect the distributor.
After removing the distributor, inspect each part as described in GROUP 8 ELECTRICAL-Ignition System.

INTAKE TEMPERATURE CONTROL SYSTEM (Check)

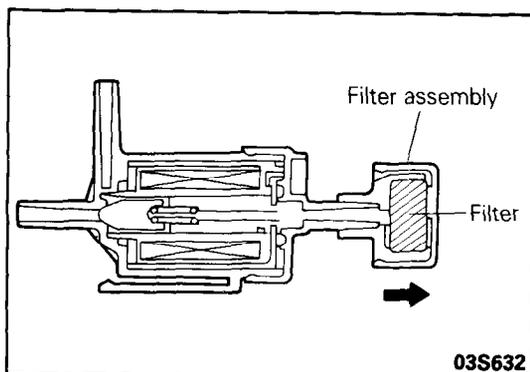
N00SATA

Check the vacuum motor of the intake temperature control system to protect driveability and fuel consumption. Refer to GROUP 25 EMISSION CONTROL SYSTEMS-Exhaust Emission Control System, for the inspection procedure.

SECONDARY AIR SYSTEM (Check)

N00SAUA

Refer to GROUP 25 EMISSION CONTROL SYSTEMS-Exhaust Emission Control System, for the inspection procedure.



SOLENOID VALVE AIR FILTER OF VACUUM CONTROL SYSTEM (Replace)

[Secondary air control solenoid valve, throttle opener control solenoid valve]

N00SAVA

Pull out the filter assembly in the direction of the arrow and replace with a new filter assembly.

CARBURETOR OR BODY MOUNTING (Check)

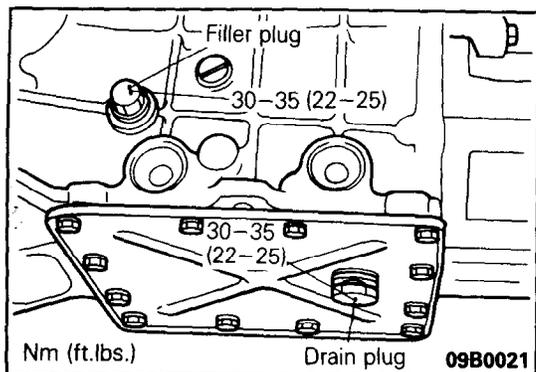
N00SBMA

Check carburetor attachment to inlet manifold and carburetor assembly. And check body mounting. Check the looseness of the carburetor installation bolts and mounting screws.

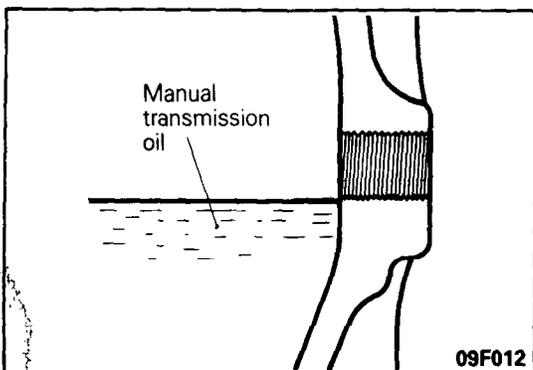
MANUAL TRANSMISSION (Check oil level)

N00SBCC

Inspect each component for evidence of leakage, and check the oil level by removing the filler plug. If the oil is contaminated, it is necessary to replace it with new oil.

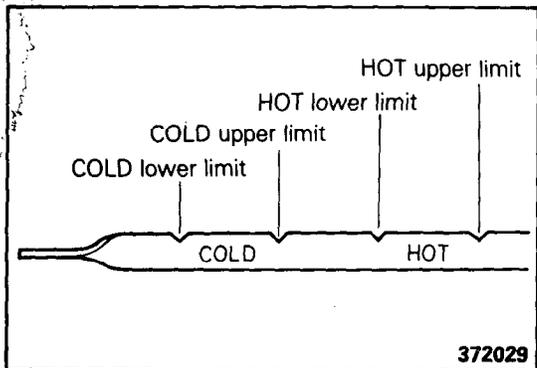
**INSPECTION**

- With the vehicle on a level surface, remove the filler plug and check whether or not the oil is at the same level as the bottom of the threads.
- Check whether or not the transmission oil is excessively dirty, and if the viscosity is normal.

**REPLACING TRANSMISSION OIL**

1. Remove the drain plug and drain the transmission oil.
2. Replace the gasket with a new one and tighten the drain plug.
3. Fill with new oil through the filler plug until the oil level reaches the plug hole.

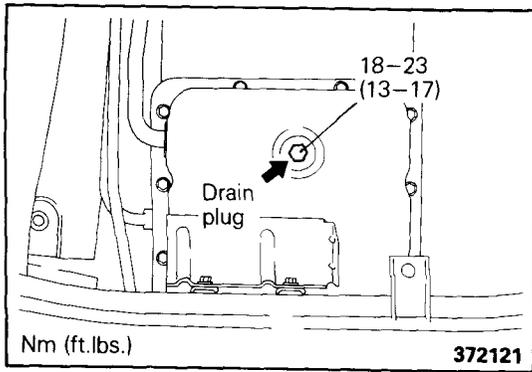
Manual transmission oil capacity : 2.2 liters (4.7 U.S. pints., 3.9 Imperial pints.)

**AUTOMATIC TRANSMISSION (Check fluid level)**

N00SBDB

Check the fluid level by removing the fluid level gauge. If the fluid is contaminated, it is necessary to replace it with new fluid.

1. Place the vehicle on a level surface.
2. Wipe the area around the oil dipstick to remove accumulated dirt and then pull out the oil dipstick.
3. Set the selector lever to the "P" (Park) position and apply the parking brake. Next, start the engine.
4. Check if the engine idle speed and fluid operating temperature (50–80°C; 122–176°F) are normal.
5. Move the selector lever to each position in turn to fill the torque converter and hydraulic system with fluid and then return the selector lever to the "N" (Neutral) position.
6. Make sure the fluid level is in the "HOT" range of the oil dipstick. If the fluid level is low, add fluid until it reaches the "HOT" range.

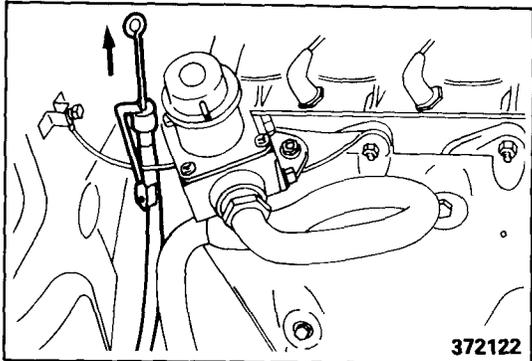


REPLACEMENT OF AUTOMATIC TRANSMISSION FLUID

Drain the fluid and check whether there is any evidence of contamination.

Replenish with new fluid after the cause of any contamination has been corrected.

1. Place a large flat container beneath the drain plug.
2. Remove the drain plug and drain the fluid.
3. Replace the gasket with a new one and tighten the drain plug.

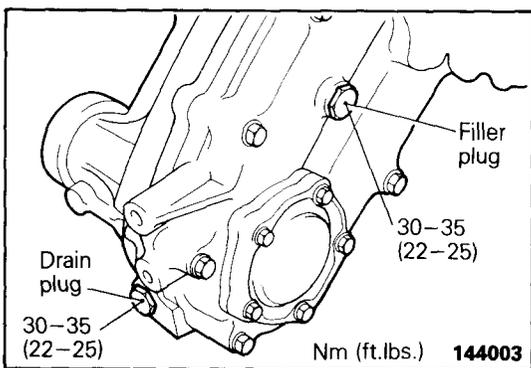


4. Pour 5 liters (10.6 U.S. pints., 8.8 Imp.pints.) of "DEXRON II" ATF into case through dipstick hole. [Total quantity of ATF required is approx. 7 liters (14.8 U.S. pints., 12.3 Imp. pints.). Actually however, approx. 5.5 liters (11.6 U.S. pints., 9.7 Imp. pints.) of fluid can be replaced because rest of fluid remains in torque converter.]
5. Check the fluid level.

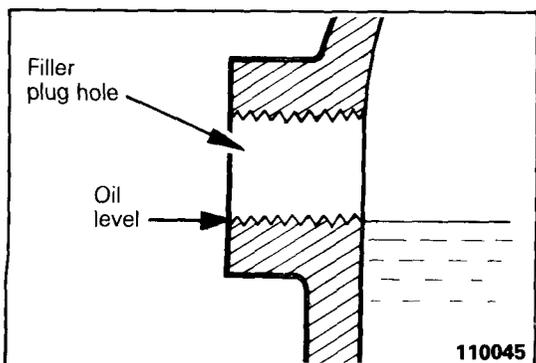
TRANSFER CASE (Change oil)

N005BNB

Drain the fluid and check whether there is any evidence of contamination. Replenish with new fluid after the cause of any contamination has been corrected.



1. With the vehicle on a flat, level surface, drain out the transfer case oil.
2. Replace the packing with a new one, and close the drain plug.



3. Supply new transfer case oil through the filler plug until it reaches the same level as the plug hole.

Transfer case oil total capacity : 2.2 liters (4.7 U.S. pints, 3.9 Imp. pints)

COOLING SYSTEM (Check and service as required)

N00SBEA

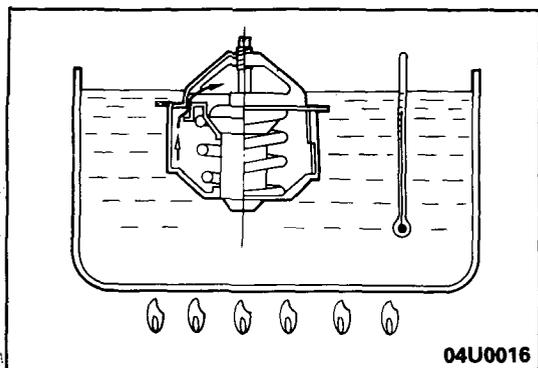
Check the cooling system parts, such as radiator, heater, and oil cooler hoses, thermostat and connections for leakage and damage.

CHECKING THERMOSTAT

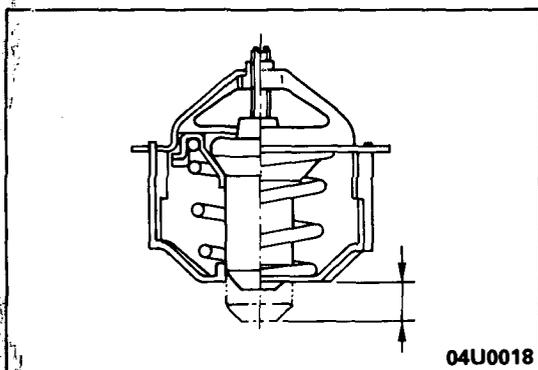
Remove the thermostat. (Refer to GROUP 7 COOLING-Thermostat.)

Inspection

- Replace the thermostat if there is even the slightest opening of the valve at room temperature.
- Replace if the exterior of the thermostat is noticeably deformed, or if it is damaged or broken.
- Clean away any corrosion or sediment adhered to the valve.
- Fill a container with water, and immerse the thermostat in it; increase the water temperature and check whether or not the thermostat's initial opening temperature and fully opened temperature [valve lift amount when fully opened: 8 mm (.31 in.) or more] are the specified values.



04U0016



04U0018

Standard value : Initial valve-opening temperature:
 $88^{\circ} \pm 1.5^{\circ}\text{C}$ ($190^{\circ} \pm 3^{\circ}\text{F}$)
Fully opened valve temperature:
 100°C (212°F) or higher

NOTE

The lift amount is calculated by first measuring the valve height when fully closed, and then measuring the height at the fully open temperature.

ANTIFREEZE

The engine cooling system is provided with a mixture of 50% ethylene glycol anti-freeze and 50% water at the time of manufacture.

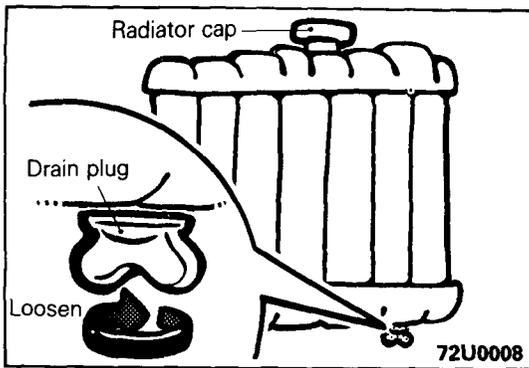
Since the cylinder head and water pump body are made of aluminum alloy casting, be sure to use a 30 to 60% ethylene glycol antifreeze coolant to provide corrosion protection and freezing prevention.

Caution

If the concentration of the antifreeze is below 30%, the anticorrosion property will be adversely affected. In addition, if the concentration is above 60%, both the antifreezing and engine cooling properties will decrease, adversely affecting the engine. For these reasons, be sure to maintain the concentration level within the specified range.

MEASUREMENT OF ANTIFREEZE CONCENTRATION

Run the engine until coolant is fully mixed. Drain some coolant (antifreeze), and measure temperature and specific gravity of the coolant. Determine concentration and safe working temperature. If the coolant is short of antifreeze, add antifreeze up to a concentration of 50%.



CHANGING COOLANT

1. Set the temperature control lever to the hot position.
2. Remove the radiator cap, radiator drain plug and engine drain plug to drain the coolant.

Caution

When removing the radiator cap, use care to avoid contact with hot coolant or steam. Place a shop towel over the cap and turn the cap counterclockwise a little to let pressure escape through the vinyl tube. After relieving the steam pressure, remove the cap by slowly turning it counterclockwise.

3. Remove the reserve tank and drain the coolant.
4. After draining coolant completely, reinstall the drain plugs and flush the engine and radiator using a radiator cleaning fluid.
5. After the flushing is completed, completely drain the cleaning fluid and install the radiator and engine drain plugs.
6. By referring to the section on coolant (P.0-xx), select an appropriate concentration for safe operating temperature within the range of 30 to 60%. Refill the system with a high quality ethylene glycol antifreeze at the selected concentration. A convenient mixture is a 50% water and 50% antifreeze solution [Freezing point: -36°C (-32.8°F)]. Reinstall the radiator cap.
7. After running the engine a while, check the coolant level and add coolant until the specified coolant level is maintained.
8. Add coolant to the reserve tank between the "FULL" and "LOW" mark if necessary.

Caution

Do not overfill the reserve tank.

FRONT DISC BRAKE PADS (Inspect for wear)

N00SBFA

Check for fluid contamination and wear. Replace complete set of pads if defective.

Thickness of lining (A)

Limit : 1.0 mm (.04 in.)

Caution

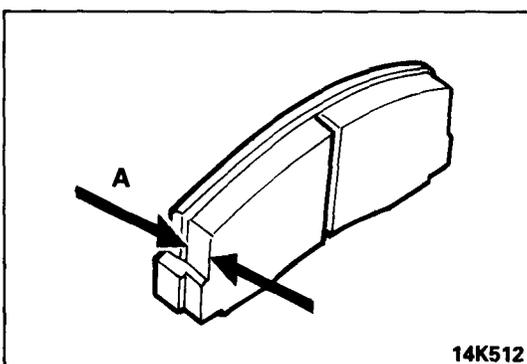
The pads for the right and left wheels should be replaced at the same time. Never "split" or intermix brake pad sets. All four pads must be replaced as a complete set.

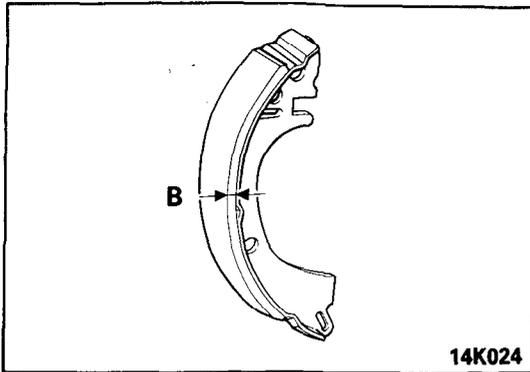
REAR DRUM BRAKE LININGS AND REAR WHEEL CYLINDERS (Inspect for wear and leaks)

N00SBGC

1. Remove the brake drum and check the thickness of brake shoe lining for wear. Check the automatic brake adjusting system by hand to see if it operates smoothly. Also see if the gears are in proper mesh with each other. To assure smooth functioning, apply a very thin coat of grease to the friction surface of adjuster and link shaft.

Specified grease : Brake grease SAE J310, NLGI No.1





14K024

2. Inspect the wheel cylinder boots for evidence of a brake fluid leak. Visually check the boots for cuts, tears or heat cracks. (A slight amount of fluid on the boot may not be a leak, but may be preservative fluid used at assembly.)

(1) Checking the Brake Shoes for Wear.

Thickness of lining (B)
Limit : 1.0 mm (.04 in.)

BRAKE HOSES (Check for deterioration or leaks)

N00SBHA

Inspection of brake hoses and tubing should be included in all brake service operations.

The hoses should be checked for:

1. Correct length, severe surface cracking, pulling, scuffing or worn spots. (If the fabric casing of the hoses is exposed by cracks or abrasion in the rubber hose cover, the hoses should be replaced. Eventual deterioration of hose may occur with possible bursting failure.)
2. Faulty installation, casing twisting or interference with wheel, tire or chassis.

BRAKE FLUID (Replace)

N00SBIB

1. Check the brake system for leakage before replacing brake fluid. Completely drain the brake fluid with the bleeder screws loosened on each brake and refill the brake system with new brake fluid.

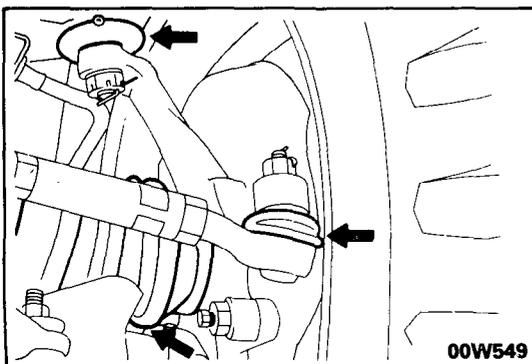
Specified brake fluid : DOT3

2. The reservoir cap must be fully tightened to avoid contamination from foreign matter or moisture.

DO NOT ALLOW PETROLEUM BASE FLUID TO CONTAMINATE THE BRAKE FLUID—SEAL DAMAGE WILL RESULT—

Caution

Take care in handling brake fluid as it is harmful to the eyes and may also cause damage to painted surfaces.

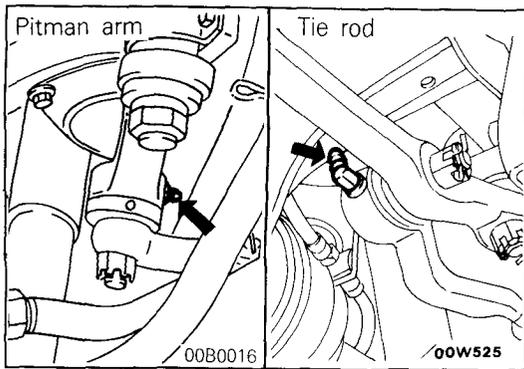


00W549

BALL JOINT, STEERING LINKAGE SEALS AND DRIVE SHAFT BOOTS (Inspect for grease leaks and damage)

N00SBJA

1. These components, which are permanently lubricated at the factory, do not require periodic lubrication. Damaged seals and boots should be replaced to prevent leakage or contamination of the grease.
2. Inspect the dust cover and boots for proper sealing, leakage and damage. Replace them if defective.

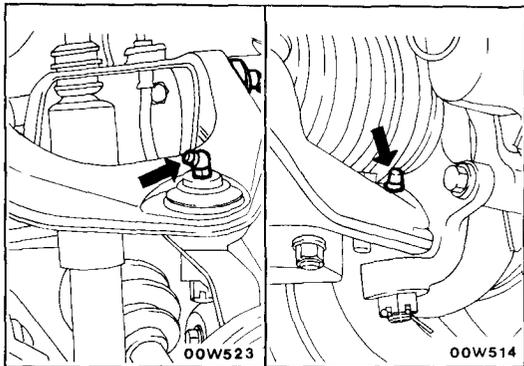


BALL JOINTS WITH GREASE NIPPLE (Lubricate grease)

N00SBOB

Fill the specified grease at the grease nipple till the grease come out of the dust seal of the pitman arm, tie rod, lower control arm and upper control arm.

Specified grease : Multipurpose grease SAE J310, NLGI No. 2



FRONT WHEEL BEARINGS (Lubricate grease)

N00SBKD

Inspect for evidence of grease leakage around the hub cap and the back of the hub. If there is leakage of grease, remove the hub and inspect its oil seal for damage. Clean the grease off the hub and bearing and repack with specified new grease.

Specified grease : Multipurpose grease SAE J310, NLGI No. 2

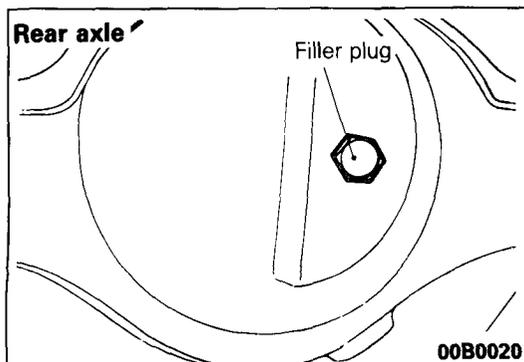
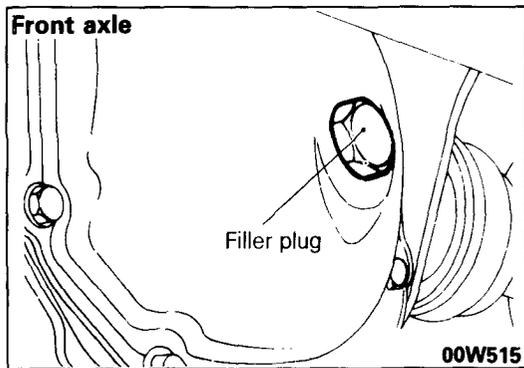
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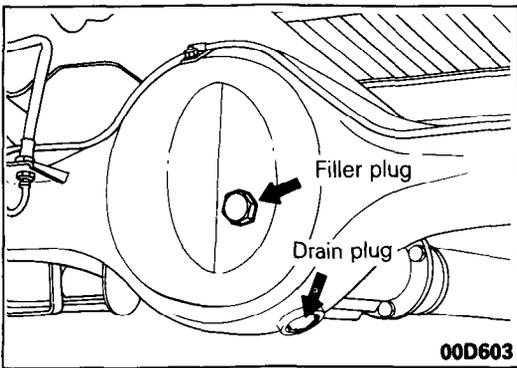
Refer to GROUP 2 FRONT SUSPENSION—Axle Hub and Free-wheeling Hub, for the removal procedures of the front hub.

FRONT AXLE AND REAR AXLE (CONVENTIONAL DIFFERENTIAL)(Inspect oil level)

N00SBPA

Remove the filler plug and inspect the oil level at bottom of filler hole. If the oil level is slightly below the filler hole, it is in satisfactory condition.

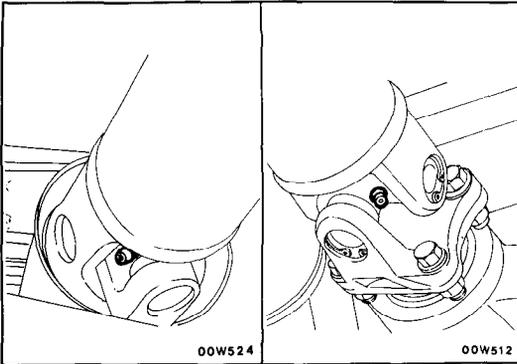




REAR AXLE OIL (LIMITED-SLIP DIFFERENTIAL) (Change) N00SBQA

Before changing the rear axle oil, check to make sure that there is no oil leakage from the rear axle housing.
Remove the drain plug and drain out of the oil.
Put the oil plug back in place, and then pour new oil in through the filler hole.

Oil capacity : 1.8 liter (3.2 U.S.pints., 2.6 Imp.pints.)



PROPELLER SHAFT JOINTS (Lubricate grease) N00SBRB

Lubricate grease to the propeller shaft joints.
The propeller shaft joints should be repacked with specified grease.

Specified grease : Multipurpose grease SAE J310, NLGI No. 2

EXHAUST SYSTEM (CONNECTION PORTION OF MUFFLER AND PIPINGS AND KEEPING WARMTH COVERS) (Check and service as required) N00SBLA

1. Check for holes and gas leaks due to damage, corrosion, etc.
2. Check the joints and connections for looseness and gas leaks.
3. Check the hanger rubber and brackets for damage.