

Service Manual

Colt/Summit **Colt Series 2000**

1989

Volume-1
Engine,
Chassis & Body

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.



Chrysler Motors 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.

GROUP INDEX

N00AA-

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NOTE:
For Electrical, refer to ...
Volume-2 "Electrical".

HOW TO USE THIS MANUAL

N00BAAO

CONTENTS

The preceding page contains 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.

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, transaxle type, etc.). A description of these designations is covered in this unit under "VEHICLE IDENTIFICATION".

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.

Indicates tightening torque.

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

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.

MODEL INDICATIONS

The following abbreviations are used in this manual for classification of model types.

1500: Indicates models equipped with the 1.5 L (4G15) engine.

1600: Indicates models equipped with the 1.6 L (4G61) engine.

M/T: Indicates the manual transaxle, or models equipped with the manual transaxle.

A/T: Indicates the automatic transaxle, or models equipped with the automatic transaxle.

MPI: Indicates the multi-point injection, or engines equipped with the multi-point injection.

SOHC: Indicates an engine with the single overhead camshaft, or a model equipped with such an engine.

DOHC: Indicates an engine with the double overhead camshaft, or a model equipped with such an engine.

T/C: Indicates an engine with turbocharger, or a model equipped with such an engine.

N/A: Indicates an engine without turbocharger, or a model equipped with such an engine.

Page number

Group title

Section title

Indicates the incidental operation to be performed before removal or after installation.

5-44

BRAKES — Rear Brake Wheel Cylinder

REAR BRAKE WHEEL CYLINDER REMOVAL AND INSTALLATION

NO5VA

Pre-removal Operation
• Draining Brake Fluid

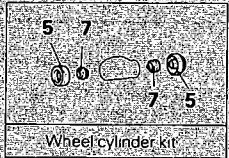
Post-installation Operation
• Filling Brake Fluid
• Bleeding Brake Line
(Refer to R.5.2.1)

Indicates non-reusable part.

18-21 Nm
13-15 ft. lbs.

2 7-9 Nm
5-7 ft. lbs.

3 13-17 Nm
9-12 ft. lbs.



Removal steps

- 1 Brake drum
- 2 Bleeder screw
- 3 Brake tube
- 4 Wheel cylinder assembly
- 5 Wheel cylinder boot
- 6 Piston assembly
- 7 Piston cup

NOTE

- (1) Reverse the removal procedures to reinstall.
- (2) Refer to "Service Points of Removal."
- (3) Refer to "Service Points of Installation."
- (4) Non-reusable parts.

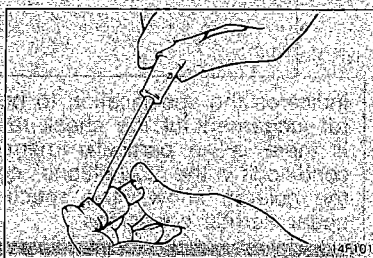
14W600

SERVICE POINTS OF REMOVAL

NO5VBAA

7. REMOVAL OF PISTON CUP

Using a screwdriver, remove the piston cup from the piston.



Classification of SERVICE POINTS

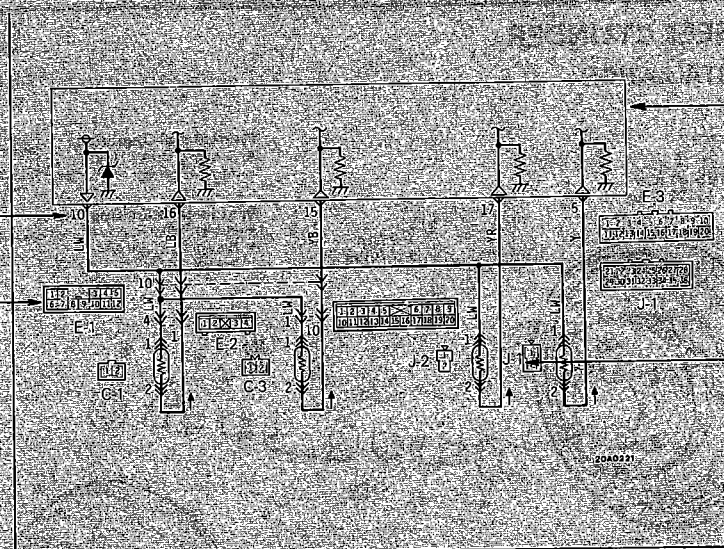
- Removal
- Installation
- Disassembly
- Reassembly

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

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

EXPLANATION OF THE TROUBLESHOOTING GUIDE

3 Checking the passenger compartment temperature sensor, outside-air sensor, air-thermostat sensor and refrigerant temperature sensor circuits



Operation description

A negative characteristic thermistor is employed for each sensor in order to convert the ambient temperature of the sensor part to resistance. The sensor power supply (2.5V) of the air conditioner control unit is applied to each sensor, and the voltages of terminals (16), (15), (17) and (5) are divided by the resistance values of each sensor and resistance R.

Troubleshooting hints

Diagnosis

- No. 11: The passenger compartment temperature sensor input signal is held to 25°C (77°F).
- No. 12: The outside-air sensor input signal is held to 15°C (59°F).
- No. 13: The air-thermostat sensor input signal is held to 4°C (39°F).

Air conditioner control unit terminal voltage

Terminal No.	Signal	Conditions	Terminal voltage
5	Outside-air sensor	Sensor part temperature 25°C (77°F) 4 kΩ	1.0-1.6V
10	Sensor power supply	At all times	2.45-2.55V
15	Refrigerant temperature sensor	Sensor part temperature 25°C (77°F) when air conditioner is OFF: 80 Ω	Approx. 0.15V
16	Passenger compartment temperature sensor	Sensor part temperature 25°C (77°F) 4 kΩ	1.0-1.6V
17	Air-thermostat sensor	Sensor part temperature 25°C (77°F) when air conditioner is OFF: 4 kΩ	1.0-1.6V

Indicates connector's terminal number.

Indicates the circuit diagram for checking (including the interface of the air conditioner control unit).

Provides the necessary description of circuit operation for basic understanding.

Indicates the connector number: Numbers are used in the operation descriptions only as necessary, and these numbers correspond to the numbers used in harness and component layout diagrams.

Provides hints (including standards for judgement) when troubleshooting procedures are followed.

Indicates the check to be made.

Indicates the diagnosis output code No. and the system conditions during output.

Indicates the terminals to be checked.

Indicates the conditions under which the check should be made.

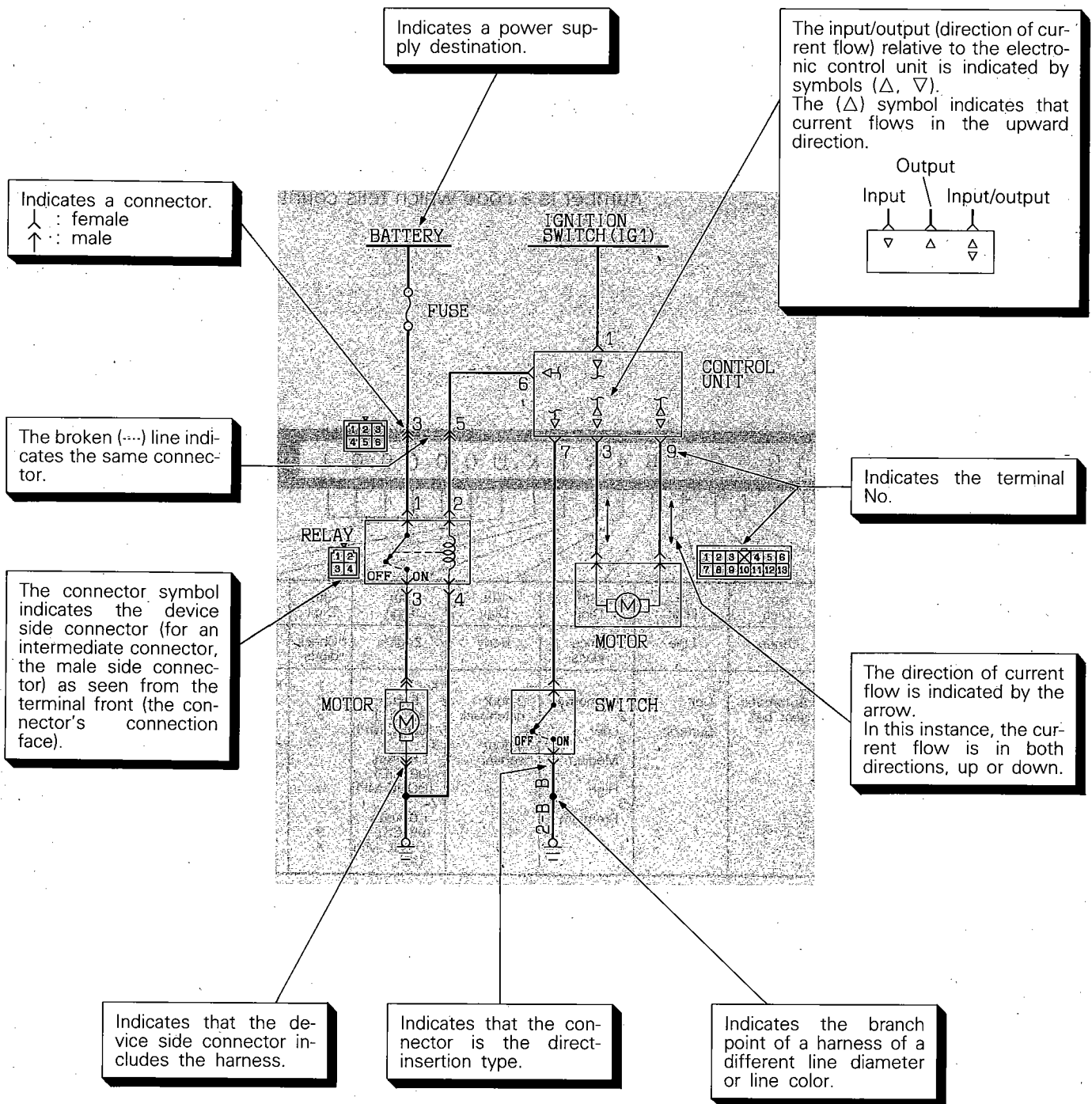
Indicates the specification to be used for judgement of the check results. If there is no particular mention of conditions in the "Conditions" column, the column shows the specification under normal conditions.

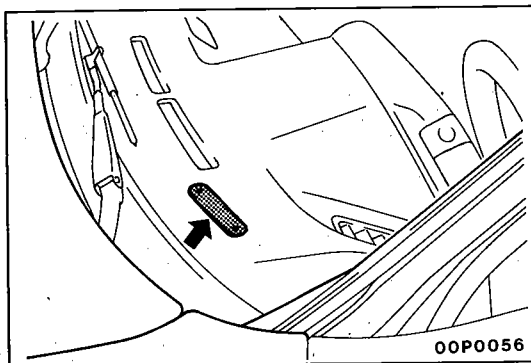
EXPLANATION OF CIRCUIT DIAGRAMS

The symbols used in circuit diagrams are used as described below.

NOTE

For detailed information concerning the reading of circuit diagrams, refer to GROUP 8 — Wiring Harness.





VEHICLE IDENTIFICATION

N00CA--

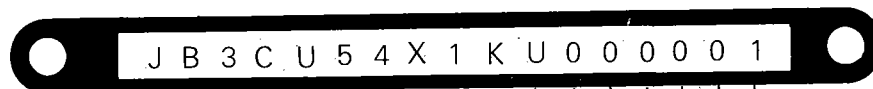
VEHICLE IDENTIFICATION NUMBER LOCATION

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--

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 to 17th Digits
Country	Make	Vehicle type	Others	Line	Price class	Body	Engine	*Check-digits	Model year	Plant	Serial number
J— Japan	B— Dodge P— Plymouth E— Eagle	3— Passenger car	C— Automatic seat belt	U— Colt or Summit	1— Economy 2— Low 3— Medium 4— High 5— Premium	4— 3-door hatchback 6— 4-door sedan	X— 1.5 liters (96 CID) [SOHC-MPI] Y— 1.6 liters (98 CID) [DOHC-MPI] Z— 1.6 liters (98 CID) [DOHC-MPI-T/C]	1 2 3 9 X	K— 1989 year	U— Mizushima Plant	000001 to 999999

NOTE

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

VEHICLE IDENTIFICATION NUMBER LIST

HATCHBACK FOR FEDERAL

N00CC-

V.I.N. (except sequence number)	Brand	Engine displacement	Models code
JB3CU24X□KU	Dodge Colt	1.5 liter (96 CID) [SOHC-MPI]	C52AMNMEL2D
JB3CU34X□KU			C52AMNDEL2D
JB3CU14X□KU			C52AMKDEL2D
JB3CU54Z□KU			C52AMFSEL2D
JB3CU24X□KU	Plymouth Colt	1.6 liter (98 CID) [DOHC-MPI-T/C]	C53AMNPTL2D
JP3CU24X□KU		1.5 liter (96 CID) [SOHC-MPI]	C52AMNMEL2D
JP3CU34X□KU			C52AMNDEL2D
JP3CU14X□KU			C52AMKDEL2D
JP3CU54Z□KU		1.6 liter (98 CID) [DOHC-MPI-T/C]	C52AMFSEL2D
			C53AMNPTL2D

HATCHBACK FOR CALIFORNIA (Can also be sold in Federal States.)

V.I.N. (except sequence number)	Brand	Engine displacement	Models code
JB3CU24X□KU	Dodge Colt	1.5 liter (96 CID) [SOHC-MPI]	C52AMNMEL7D
JB3CU34X□KU			C52AMNDEL7D
JB3CU14X□KU			C52AMKDEL7D
JB3CU54Z□KU			C52AMFSEL7D
JB3CU24X□KU	Plymouth Colt	1.6 liter (98 CID) [DOHC-MPI-T/C]	C53AMNPTL7D
JP3CU24X□KU		1.5 liter (96 CID) [SOHC-MPI]	C52AMNMEL7D
JP3CU34X□KU			C52AMNDEL7D
JP3CU14X□KU			C52AMKDEL7D
JP3CU54Z□KU		1.6 liter (98 CID) [DOHC-MPI-T/C]	C52AMFSEL7D
			C53AMNPTL7D

HATCHBACK FOR CANADA

V.I.N. (except sequence number)	Brand	Engine displacement	Models code
JB3CU24X□KU	Dodge Colt Series 2000	1.5 liter (96 CID) [SOHC-MPI]	C52AMNMEL3D
JB3CU34X□KU			C52AMNDEL3D
			C52AMKDEL3D
			C52AMFSEL3D
JB3CU14X□KU		1.6 liter (98 CID) [DOHC-MPI-T/C]	C53AMNPTL3D
JB3CU54Z□KU			
JP3CU24X□KU	Plymouth Colt Series 2000	1.5 liter (96 CID) [SOHC-MPI]	C52AMNMEL3D
JP3CU34X□KU			C52AMNDEL3D
			C52AMKDEL3D
			C52AMFSEL3D
JP3CU14X□KU		1.6 liter (98 CID) [DOHC-MPI-T/C]	C53AMNPTL3D
JP3CU54Z□KU			

SEDAN FOR FEDERAL

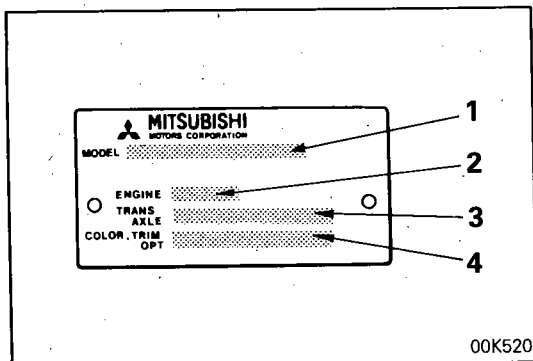
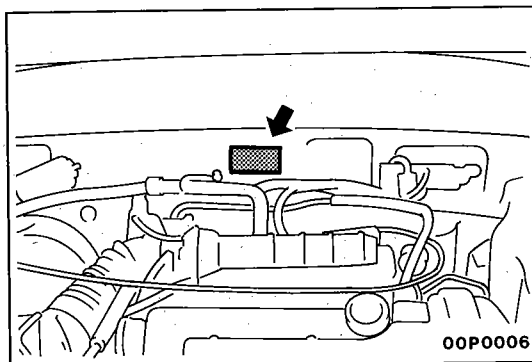
V.I.N. (except sequence number)	Brand	Engine displacement	Models code
JE3CU26X□KU	Eagle Summit	1.5 liter (96 CID) [SOHC-MPI]	C62ASNMEL2E
			C62ASKMEL2E
JE3CU36X□KU			C62ASNDEL2E
			C62ASKDEL2E
JE3CU46X□KU			C62ASNJEL2E
			C62ASKJEL2E
JE3CU56Y□KU		1.6 liter (98 CID) [DOHC-MPI]	C63ASNPML2E
			C63ASRPML2E

SEDAN FOR CALIFORNIA (Can also be sold in Federal States.)

V.I.N. (except sequence number)	Brand	Engine displacement	Models code
JE3CU26X□KU	Eagle Summit	1.5 liter (96 CID) [SOHC-MPI]	C62ASNME7E
			C62ASKME7E
C62ASNDE7E			
C62ASKDE7E			
C62ASNJE7E			
C62ASKJE7E			
JE3CU46X□KU		1.6 liter (98 CID) [DOHC-MPI]	C63ASNPML7E
			C63ASRPML7E
JE3CU56Y□KU			

SEDAN FOR CANADA

V.I.N. (except sequence number)	Brand	Engine displacement	Models code
JB3CU26X□KU	Dodge Colt Series 2000	1.5 liter (96 CID) [SOHC-MPI]	C62ASNME3D
			C62ASKME3D
JB3CU36X□KU			C62ASNDE3D
			C62ASKDE3D
JB3CU46X□KU			C62ASNJE3D
			C62ASKJE3D
JB3CU56Y□KU	Plymouth Colt Series 2000	1.6 liter (98 CID) [DOHC-MPI]	C63ASNPM3D
			C63ASRP3D
JP3CU26X□KU		1.5 liter (96 CID) [SOHC-MPI]	C62ASNME3D
			C62ASKME3D
JP3CU36X□KU			C62ASNDE3D
			C62ASKDE3D
JP3CU46X□KU			C62ASNJE3D
			C62ASKJE3D
JP3CU56Y□KU		1.6 liter (98 CID) [DOHC-MPI]	C63ASNPM3D
			C63ASRP3D



VEHICLE INFORMATION CODE PLATE

N00CD--

Vehicle information code plate is riveted onto the bulkhead in the engine compartment.

The plate shows model code, engine model, transaxle model, and body color code.

1. MODEL

C53AMNPTL2D

Model series

Vehicle model

2. ENGINE

4G61

Engine model

3. TRANSAXLE

KM210

Transaxle model

4. COLOR, TRIM OPT

H84

Monotone exterior
color code

R6HR48H39

Two color code

Exterior code

Two-tone exterior is shown by the exterior code followed by the two color codes.

BODY COLOR CODE

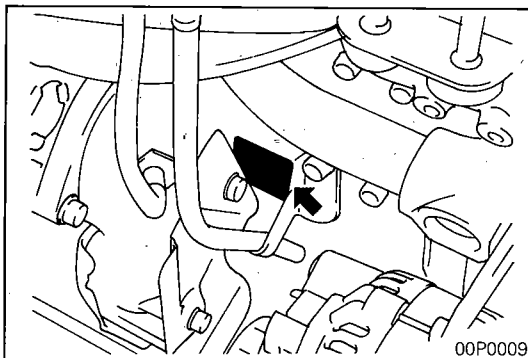
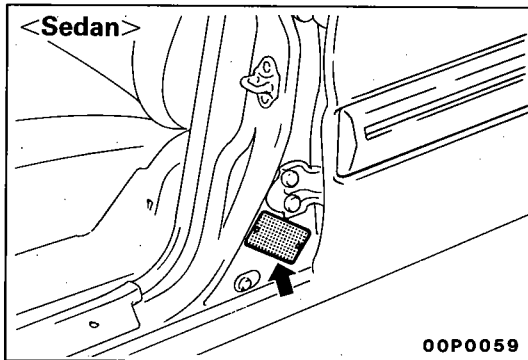
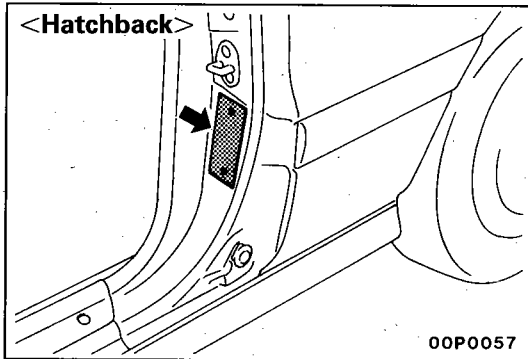
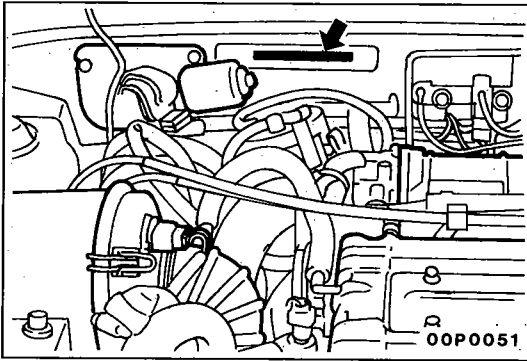
Exterior code	Body color
Monotone	
B80	Light Blue (M)
C46	Brown (M)
H84	Silver (M)
L83	Light Gray (M)
P89*1	Pink (M)
R48*1	Red (M)
R52	Red
T86	Blue (M)
T93*2	Blue (M)
W09	White
X09*1	Black
X15	Black
Two-tone	
R6HR48H39*1	Red (M)/Dark Gray (M)
T5HT86H84*1	Blue (M)/Silver (M)

NOTE

(1) M: Metallic

(2) *1: <Sedan>

(3) *2: <Hatchback>



CHASSIS NUMBER
STAMPING LOCATION

NOOCE- -

The chassis number is stamped on the top center of the firewall located in the engine compartment.

CHASSIS NUMBER CODE CHART

C 5 0 A K U 1 0 0 0 0 1
 1 2

1. Vehicle line
C50A – COLT or SUMMIT
2. Refer to 10th thru 17th digits of V.I.N. plate.

VEHICLE SAFETY CERTIFICATION LABEL

N00CF- -

1. The vehicle safety certification label is attached to the face of left door pillar.
2. This label indicates the month and year of manufacture, Gross Vehicle Weight Rating (G.V.W.R.), Gross Axle Weight Rating (G.A.W.R.) front and rear, and Vehicle Identification Number (V.I.N.).

ENGINE MODEL STAMPING

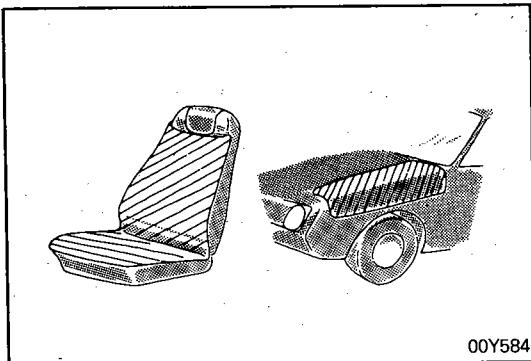
N00CG- -

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

Engine model	Engine displacement
4G15	1.5 liter (96 CID) [SOHC-MPI]
4G61	1.6 liter (98 CID) [DOHC-MPI] or [DOHC-MPI-T/C]

2. 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	<div>AA0201 -----> AA9999</div> <div>AB0001 -----> AY9999</div> <div>BA0001 -----> YY9999</div>



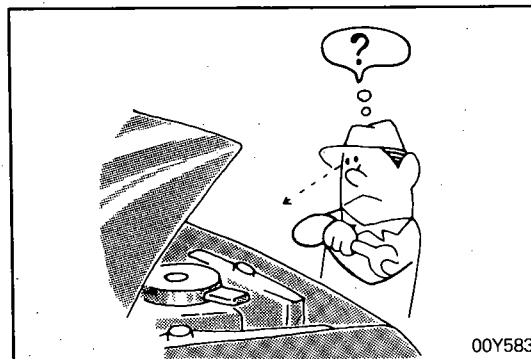
00Y584

PRECAUTIONS BEFORE SERVICE

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PROTECTING VEHICLE

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.).



00Y583

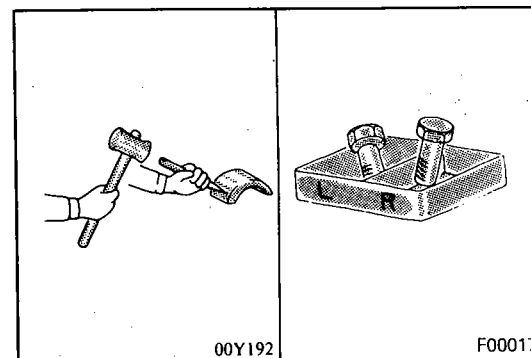
REMOVAL AND DISASSEMBLY

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 Service Manual.

If punch marks or mating marks are made to avoid error in assembly and to 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.

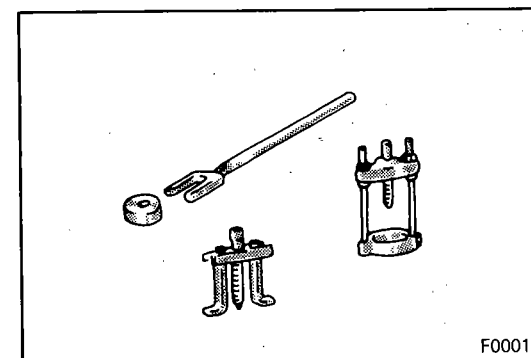


00Y192

F00017

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 technician might be injured; therefore, be sure to use the special tool whenever doing any work for which the use of one is specified.

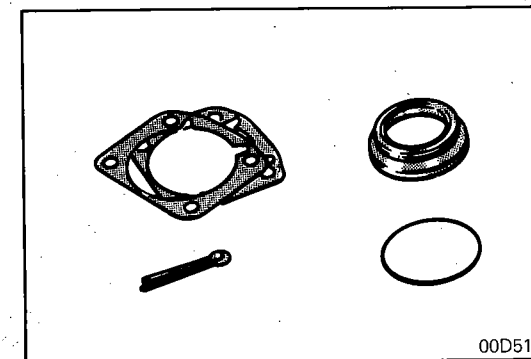


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PARTS TO BE REPLACED

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

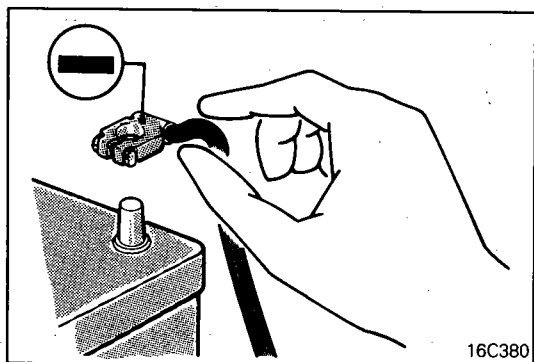
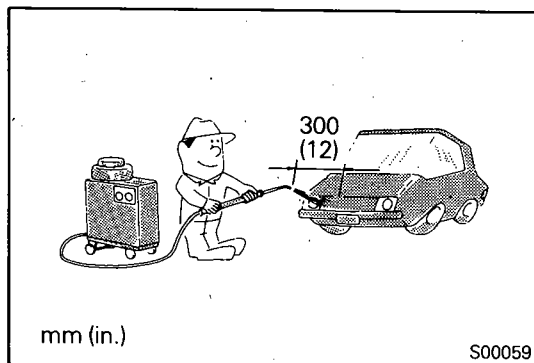
1. Oil seals
2. Gaskets (except rocker cover gasket)
3. Packings
4. O-rings
5. Lock washers
6. Cotter pins
7. Self-locking nuts



00D511

PARTS

When replacing parts, use MOPAR 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 (12 in.) from any plastic parts and all opening parts (doors, luggage compartment, etc.).

SERVICING ELECTRICAL SYSTEM

1. When servicing the electrical system, pay attention to the following.
Never attempt to modify an electrical unit or to change wirings, which may otherwise cause not only a vehicle failure but a vehicle fire due to over-capacity load or short-circuit.
2. Before servicing the electrical system, disconnect the negative cable terminal from the battery.

Caution

1. **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 semi-conductor parts being damaged.)
2. For MPI-equipped models, after completion of the work steps (the battery's negative (-) terminal reconnected), warm up the engine and allow the engine to idle for approximately five minutes under the conditions described below in order to stabilize the engine control conditions. Once this time has elapsed, check that the idling is satisfactory.

Engine coolant temperature: 85 – 95°C (185 – 203°F)

Lights, electric fans, accessories: OFF

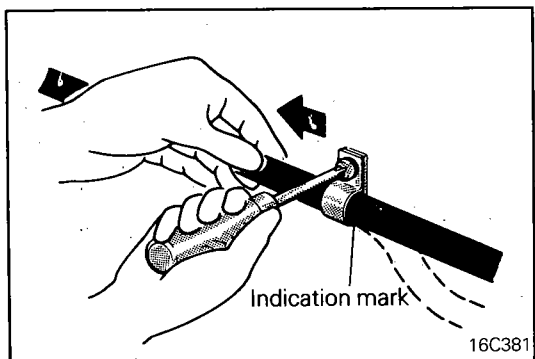
Transaxle: neutral position

(A/T models: "N" or "P")

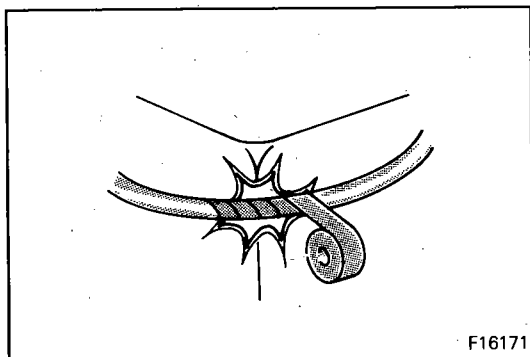
Steering wheel: neutral (center) position

WIRING HARNESSSES

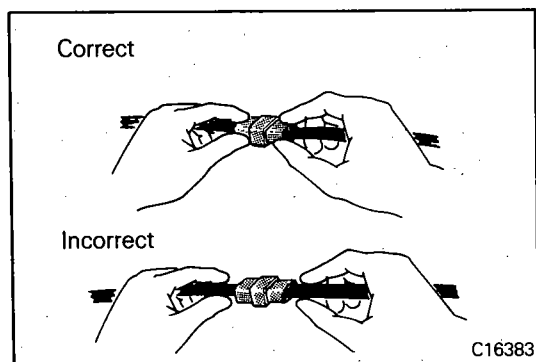
1. Secure the wiring harnesses by using clamps. However, for any harness which passes to the engine or other vibrating parts of the vehicle, allow some slack within a range that does not allow the engine vibrations to cause the harness to come into contact with any of the surrounding parts. Then secure 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.



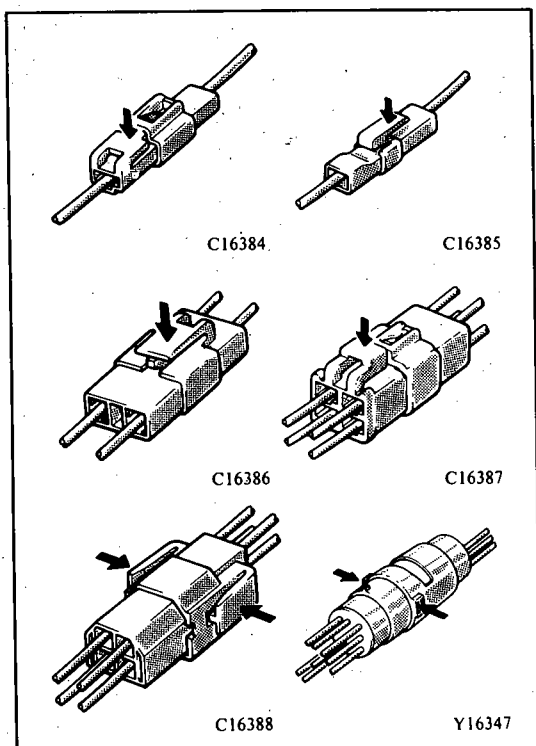
2. If any section of a wiring harness contacts the edge of a part, or a corner, wrap the section of the harness with tape or something similar in order to protect it from damage.

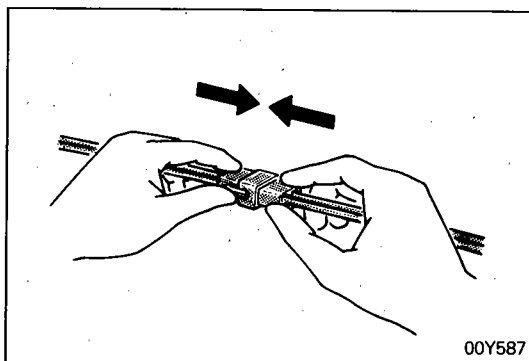


3. When disconnecting a connector, be sure to pull only the connector, not the harness.

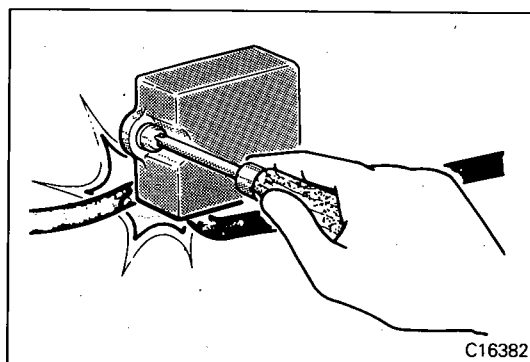


4. Disconnect connectors which have catches by pressing in the direction indicated by the arrows in the illustration.



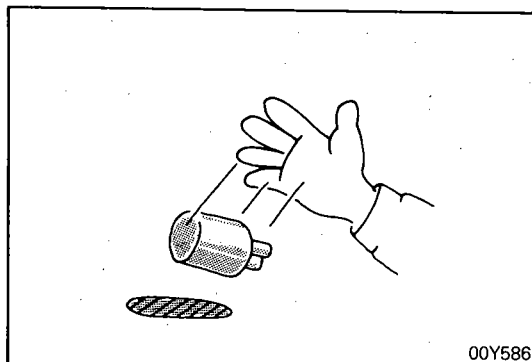


5. Connect connectors which have catches by inserting the connectors until they snap.

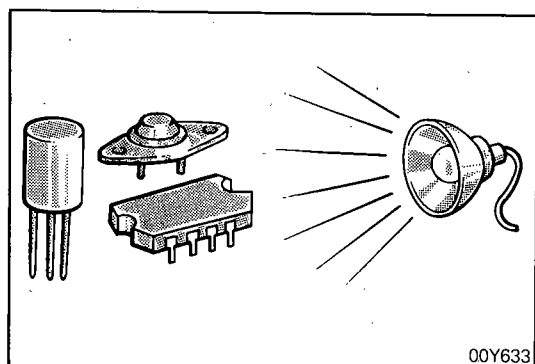


ELECTRICAL COMPONENTS

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.



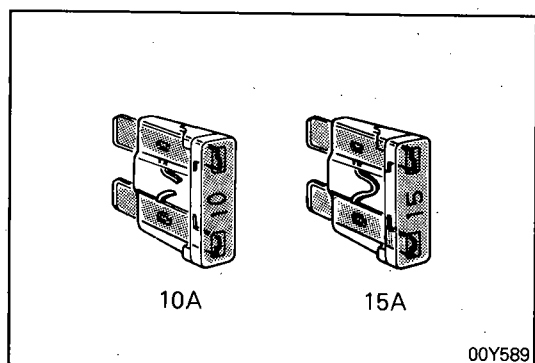
3. The electronic parts used for relays, etc., are sensitive to heat. If any service which causes a temperature of 80°C (176°F) or more is performed, remove the part or parts in question before carrying out the service.

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.

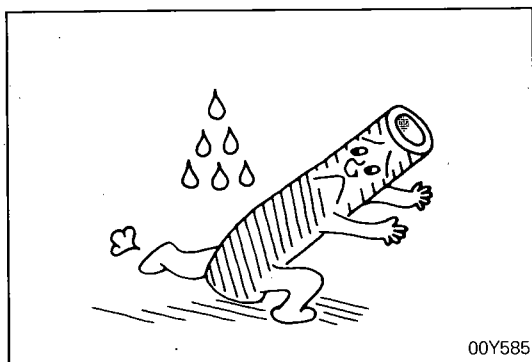
1. If a fuse is blown-out, be sure to eliminate the cause of the problem before installing a new fuse.
2. Check the condition of fuse holders. If rust or dirt is found, clean metal parts with a fine-grained sandpaper until proper metal-to-metal contact is made. Poor contact of any fuse holder will often lead to voltage drop or heating in the circuit and could result in improper circuit operation.



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

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:

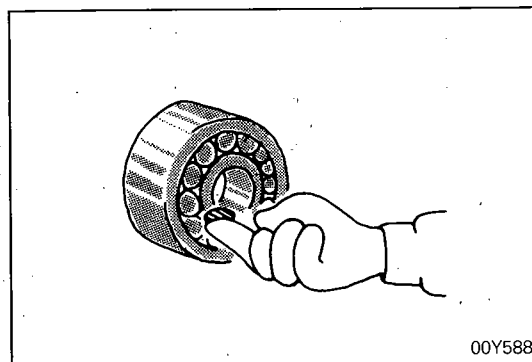
- (1) In order to avoid overloading the wiring, take the electrical current load of the optional equipment into consideration, and determine the appropriate wire size.
- (2) Where possible, route the wiring through the existing harnesses.
- (3) If an ammeter or similar instrument is to be connected to 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.



00Y585

TUBES AND OTHER RUBBER PARTS

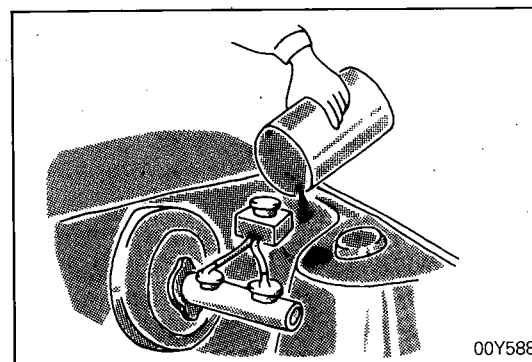
Be careful to avoid spilling any gasoline, oil, etc., because if it adheres to any tubes or other rubber parts, they might be adversely affected.



00Y588

LUBRICANTS

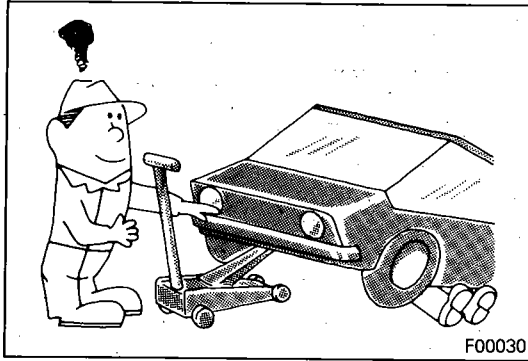
In accordance with the instructions in this Service Manual, apply the specified lubricants in the specified locations during assembly and installation.



00Y588

BRAKE FLUID

Be careful to avoid spilling any brake fluid on painted surfaces, because the paint coat might be discolored or damaged.



DOING SERVICE WORK IN GROUPS OF TWO OR MORE TECHNICIANS

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

NOTE ON INSTALLATION OF RADIO EQUIPMENT

N00EA-

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.

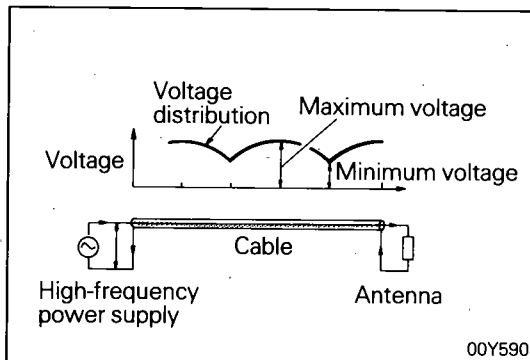
1. Install the antenna on the roof or rear bumper.
2. Because radio waves are emitted from the coaxial cable of the antenna, keep it 200 mm (8 in.) away from the computers and the wiring harness. If the cable must cross the wiring harness, route it so that it runs at right angles to the wiring harness.
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.



TOWING AND HOISTING

N00GA--

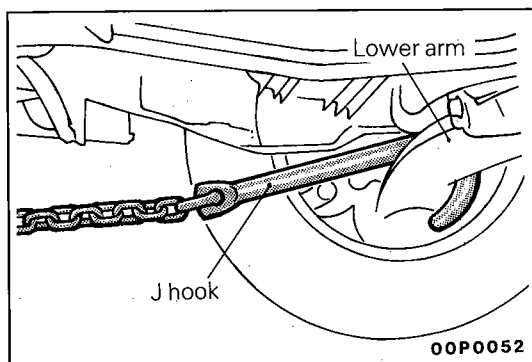
WRECKER TOWING RECOMMENDATION

This vehicle can be towed from the front by the following procedures with conventional sling type equipment.

Two beams of lumber 4" x 4" x 60" and a pair of spacer blocks are also required.

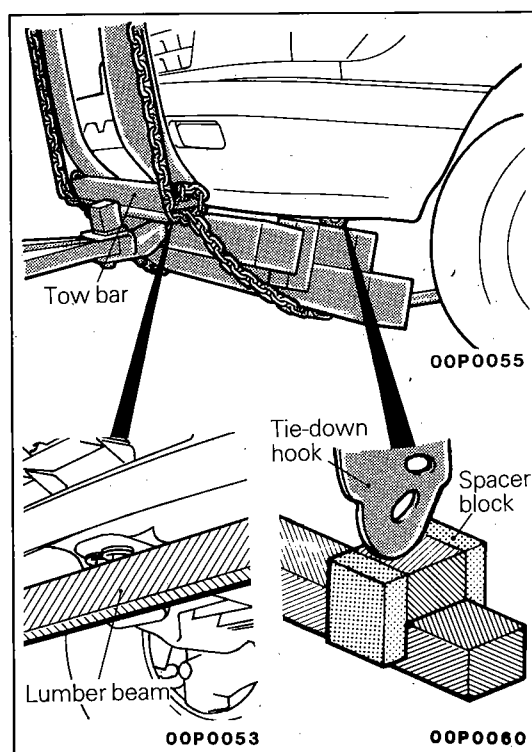
Caution

1. This vehicle cannot be towed by a wrecker using rear sling-type equipment.
2. If a vehicle is towed from the rear, use wheel lift or flat bed equipment.
3. For vehicles provided with a large size air dam skirt, remove the skirt before towing. (Refer to GROUP 23 – Loose Panel.)



FRONT PICKUP METHOD

- (1) Attach the J hooks to the lower arm as illustrated.



- (2) Mount a spacer block on one of the 4" x 4" x 60" beams and set the bottom end of the tie down hook on it. Then apply the other 4" x 4" x 60" beam to the attachment section of the center member.

- (3) Position the tow bar under the bumper and attach the safety chains as illustrated.

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 or rotors and ground.

TOWING WHEN KEYS ARE NOT AVAILABLE

When a locked vehicle must be towed and keys are not available, the vehicle may be lifted and towed from the front, provided the parking brake is released. If not released, the rear wheels should be placed on a tow dolly.

SAFETY PRECAUTIONS

The following precautions should be taken when towing the vehicle.

1. Padding (heavy cloth or carpeting) should be placed between the towing sling cross bar and any painted surfaces.
2. Never attach a hook for towing to any parts other than those specified.
3. DO NOT LIFT OR TOW THE VEHICLE BY ATTACHING TO OR WRAPPING AROUND THE BUMPER.
4. A safety chain system completely independent of the primary lifting and towing attachment must be used.
5. Any loose or protruding parts of damaged vehicle such as hoods, doors, fenders, trim, etc., should be secured prior to moving the vehicle.
6. Operator should refrain from going under a vehicle while it is lifted by the towing equipment, unless the vehicle is adequately supported by safety stands.
7. Never allow passengers to ride in a towed vehicle.
8. State and local rules and regulations must be followed when towing a vehicle.

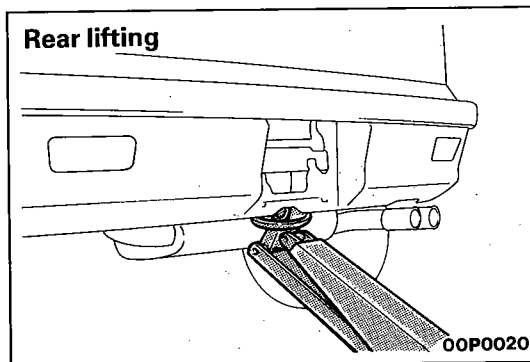
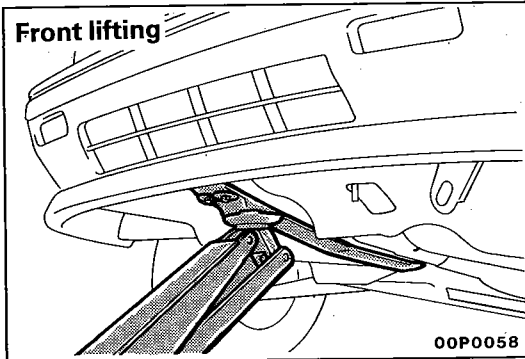
HOISTING

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. (Refer to P.21.)

Caution

When service procedures require removing rear suspension, fuel tank, spare tire and lift gate, place additional weight on rear end of vehicle or anchor vehicle to hoist to prevent tipping of center of gravity changes.



FLOOR JACK

A regular floor jack may be used under the mid point of center member, or the jack up bracket under the fuel tank.

Caution

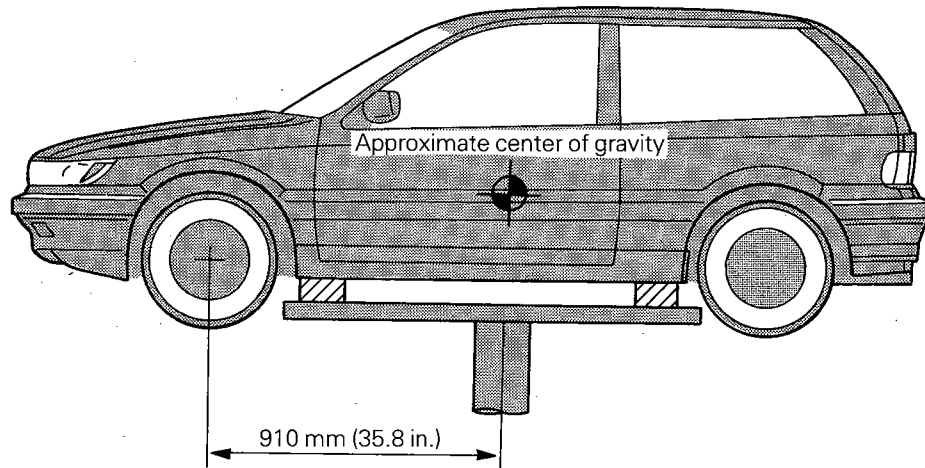
1. **Never use a jack at the lateral rod or rear suspension assembly.**
2. **When lifting the front crossmember, do not allow jack lifting plate to contact stabilizer.**
3. **In order to prevent scarring the center member, place a piece of cloth on the jack's contact surface (to prevent corrosion caused by damage to the coating).**
4. **A floor jack must never be used on any part of the underbody.**
5. **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 body sills to accept the scissors jack supplied with the vehicle for emergency road service. Always block opposite wheels and jack on level surface.

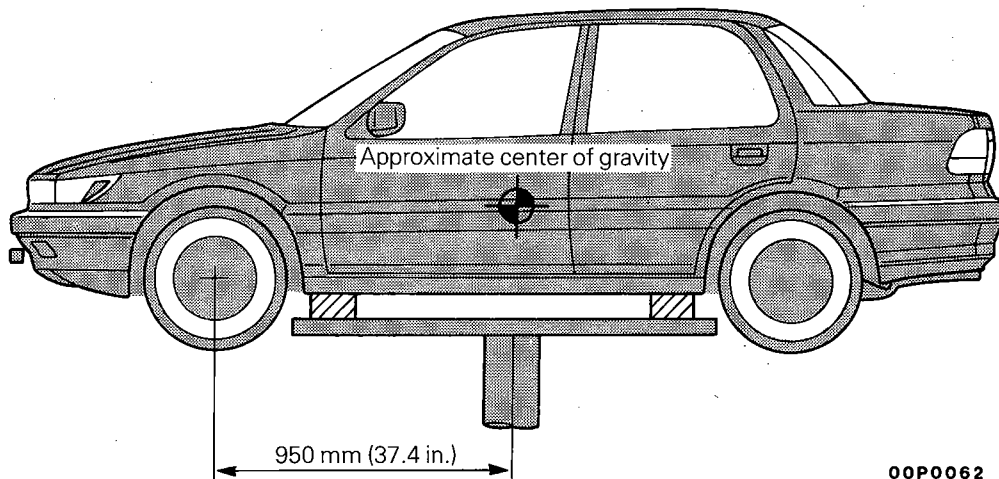
FRAME CONTACT SUPPORT LOCATION

<Hatchback>



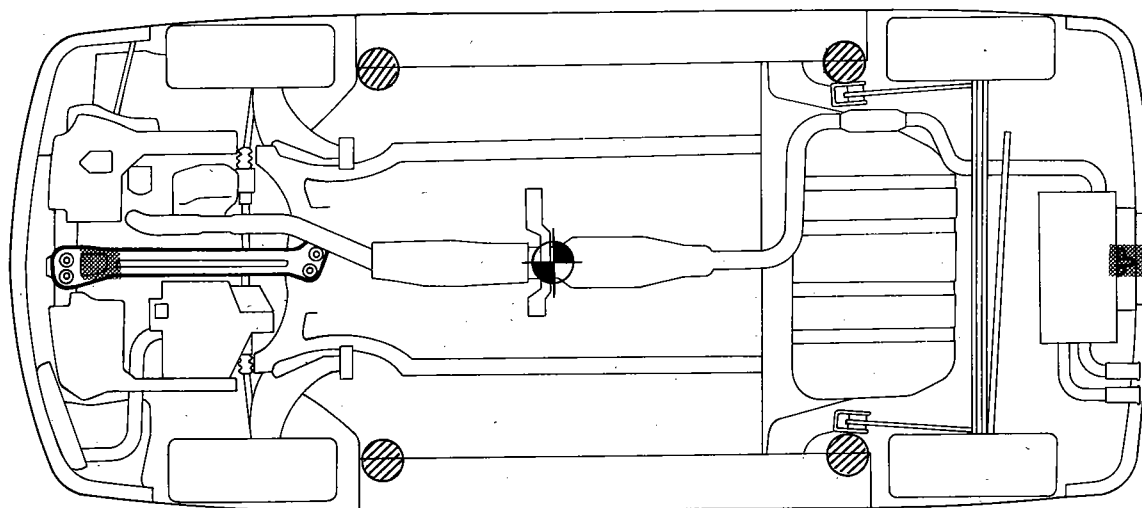
00P0061

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00P0062


LIFTING, JACKING SUPPORT LOCATION



00P0024

 Floor jack locations

 Approximate center of gravity

 Frame contact hoist, twin post hoist or scissors jack (emergency) locations

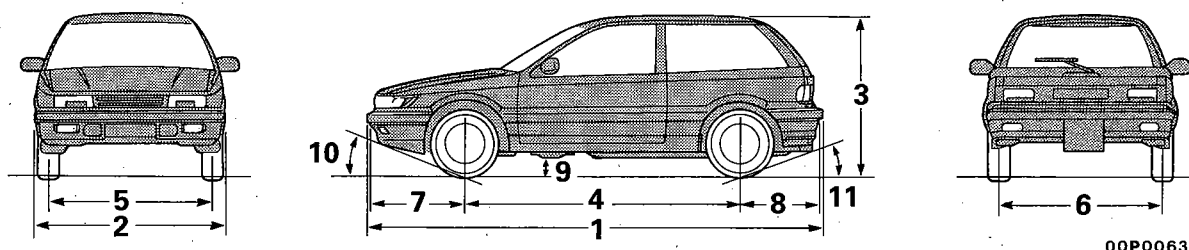
Caution

- Never use a jack at the lateral rod or rear suspension assembly.
- In order to prevent scarring the center member, place a piece of cloth on the jack's contact surface (to prevent corrosion caused by damage to the coating).
- Never attempt to position a floor jack on any part of the vehicle underbody.
- Do not attempt to raise one entire side of the vehicle by placing a jack midway between the front and rear wheels. To do so could result in permanent damage to the body.

GENERAL DATA AND SPECIFICATIONS

N00HA--

<Hatchback>



00P0063

Items			C52AMFSEL2D/7D/3D	C52AMNMEL2D/7D/3D C52AMNDEL2D/7D/3D C52AMKDEL2D/7D/3D	C53AMNPTL2D/7D/3D
Vehicle dimensions mm (in.)					
Overall length		1	4,030 (158.7)	4,030 (158.7)	4,030 (158.7)
Overall width		2	1,665 (65.5)	1,670 (65.7)	1,670 (65.7)
Overall height		3	1,375 (54.1)	1,375 (54.1)	1,375 (54.1)
Wheel base		4	2,385 (93.9)	2,385 (93.9)	2,385 (93.9)
Tread	Front	5	1,430 (56.3)	1,430 (56.3)	1,430 (56.3)
	Rear	6	1,430 (56.3)	1,430 (56.3)	1,430 (56.3)
Overhang	Front	7	900 (35.4)	900 (35.4)	900 (35.4)
	Rear	8	745 (29.3)	745 (29.3)	745 (29.3)
Minimum running ground clearance mm (in.)		9	155 (6.1)	155 (6.1)	155 (6.1)
Angle of approach degrees		10	23.5°	23.5°	23.5°
Angle of departure degrees		11	25°	25°	25°
Vehicle weight kg (lbs.)					
Curb weights			996 (2,195)	998 (2,200) or *1,013 (2,233)	1,133 (2,497)
Gross vehicle weight rating			1,435 (3,163)	1,435 (3,163)	1,580 (3,483)
Gross axle weight rating	Front		750 (1,653)	800 (1,763)	860 (1,895)
	Rear		720 (1,587)	720 (1,587)	720 (1,587)
Seating capacity			5	5	5
Engine					
Model No.			4G15	4G15	4G61
Transaxle					
Model No.					
Manual transaxle			KM200	KM201	KM210
Automatic transaxle			—	KM171	—

NOTE

*1: <3-A/T>

26 INTRODUCTION AND MASTER TROUBLESHOOTING — General Data and Specifications

Items	C62ASNMEL2E/7E/3D C62ASKMEL2E/7E/3D C62ASNDEL2E/7E/3D C62ASKDEL2E/7E/3D	C62ASNJEL2E/7E/3D C62ASKJEL2E/7E/3D	C63ASNPML2E/7E/3D C63ASRPML2E/7E/3D
Clutch Type	*6Dry-single disc & diaphragm spring	*6Dry-single disc & diaphragm spring	*6Dry-single disc & diaphragm spring
Chassis Tire	P155/80R13	P175/70R13	P195/60R14
Front suspension Type	Independent strut	Independent strut	Independent strut
Rear suspension Type	3-link torsion axle	3-link torsion axle	3-link torsion axle
Brake Type	Disc	Disc	Disc
Front	Disc	Disc	Disc
Rear	Drum	Drum	Disc
Steering Gear type	Rack and pinion	Rack and pinion	Rack and pinion
Gear ratio	∞	∞	∞
Fuel tank Capacity liters (gals.)	50 (13.2)	50 (13.2)	50 (13.2)

NOTE

*6: <M/T>

ENGINE SPECIFICATIONS

Items	4G15	4G61
Type	In-line SOHC	In-line DOHC
Number of cylinders	4	4
Bore mm (in.)	75.5 (2.97)	82.3 (3.24)
Stroke mm (in.)	82.0 (3.23)	75.0 (2.95)
Piston displacement cm ³ (CID)	1,468 (89.6)	1,595 (97.3)
Compression ratio	9.4	8.0
Firing order	1-3-4-2	1-3-4-2

TRANSAXLE SPECIFICATIONS

Items	KM201	KM206	KM171	KM176
Type	5-speed M/T	5-speed M/T	3-speed A/T	4-speed A/T
Gear ratio				
1st	3.363	3.083	2.846	2.846
2nd	1.947	1.947	1.581	1.581
3rd	1.285	1.285	1.000	1.000
4th	0.939	0.939	—	0.685
5th	0.777	0.777	—	—
Reverse	3.083	3.083	2.176	2.176
Final drive gear ratio	3.363	4.592	3.600	4.062

TIGHTENING TORQUE

N00JA--

Items	Head mark ④		Head mark ⑦	
	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	260 – 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
Items	Nm	ft.lbs.	Remarks	
Taper thread for pipes (size)				
PT 1/8	7.9 – 12	5.8 – 8.7	Internal thread: Aluminum	
	16 – 19	12 – 14	Internal thread: Cast iron	
PT 1/4	19 – 30	14 – 22	Internal thread: Aluminum	
	34 – 45	25 – 33	Internal thread: Cast iron	
PT 3/8	39 – 54	29 – 40	Internal thread: Aluminum	
	58 – 73	43 – 54	Internal thread: Cast iron	
Taper thread for dry sealed pipes (size)				
NPTF 1/16	4.9 – 7.8	3.6 – 5.8	Internal thread: Aluminum	
	7.9 – 12	5.8 – 8.7	Internal thread: Cast iron	
NPTF 1/8	7.9 – 12	5.8 – 8.7	Internal thread: Aluminum	
	16 – 19	12 – 14	Internal thread: Cast iron	
NPTF 1/4	19 – 30	14 – 22	Internal thread: Aluminum	
	34 – 45	25 – 33	Internal thread: Cast iron	

MASTER TROUBLESHOOTING

N00KAAB

ENGINE OVERHEATS

Symptom	Probable cause	Reference page
Engine overheats	Cooling system faulty	7–5
	Incorrect ignition timing	8–192, 193

ENGINE WILL NOT CRANK OR CRANKS SLOWLY

Symptom	Probable cause	Reference page
Engine will not crank or cranks slowly	Starting system faulty	8–172

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

Symptom	Probable cause	Reference page
Engine will not start or hard to start (Crank OK)	No fuel supply to injector	14–10, 74, 77
	Injection system problems	14–10
	Ignition system problems	8–187
	Vacuum leaks <ul style="list-style-type: none">● Purge control valve hose● Vacuum hoses● Intake manifold● Air intake plenum● Throttle body● EGR valve	9–22 25–3
	Compression too low	9–22, 69, 136

ROUGH IDLE OR ENGINE STALLS

Symptom	Probable cause	Reference page or remedy
Rough idle or engine stalls	Vacuum leaks <ul style="list-style-type: none"> • Purge control valve hose • Vacuum hoses • Intake manifold • Air intake plenum • Throttle body • EGR valve 	9–22 25–3
	Ignition system problems	8–187
	Idle speed set too low	Check idle speed control system
	Idle mixture too lean or too rich	14–10
	Fuel injection system problems	14–10
	Exhaust gas recirculation (EGR) system problems	25–15
	Engine overheats	7–5, 10
	Compression too low	9–22, 69, 136

ENGINE HESITATES OR POOR ACCELERATION

Symptom	Probable cause	Reference page
Engine hesitates or poor acceleration	Ignition system problem	8–187, 14–10
	Vacuum leaks <ul style="list-style-type: none"> • Purge control valve hose • Vacuum hoses • Intake manifold • Air intake plenum • Throttle body • EGR valve 	9–22 25–3
	Air cleaner clogged	0–9
	Fuel line clogged	14–91
	Fuel injection system problem	14–10
	Emission control system problem <ul style="list-style-type: none"> • EGR system always on 	25–15
	Engine overheats	7–5, 10
	Compression too low	9–22, 69, 136

ENGINE DIESELING

Symptom	Probable cause	Reference page
Engine dieseling (runs after ignition switch is turned off)	Incorrect ignition timing	8–192, 193

EXCESSIVE OIL CONSUMPTION

Symptom	Probable cause	Reference page or remedy
Excessive oil consumption	Oil leak	Repair as necessary
	Positive crankcase ventilation line clogged	25–7
	Valve stem seal worn or damaged	9–60, 124
	Valve stem worn	9–60, 124
	Piston ring worn or damaged	9–69, 136

POOR FUEL MILEAGE

Symptom	Probable cause	Reference page or remedy
Poor fuel mileage	Fuel leak	Repair as necessary
	Air cleaner clogged	0–9
	Ignition problems	8–187
	Fuel injection system problems	14–10
	Compression too low	9–22, 69, 136
	Tires improperly inflated	22–3
	Clutch slips	6–3
	Brakes drag	5–6, 14

NOISE

Symptom	Probable cause	Reference page or remedy
Noise	Loose bolts and nuts	Retighten as necessary
	Engine noise	9–22

HARD STEERING

Symptom	Probable cause	Reference page or remedy
Hard steering	Loose power steering oil pump belt	19–12
	Low fluid level	Replenish
	Air in power steering system	19–13
	Low tire pressure	22–3
	Excessive turning resistance of lower arm ball joint	2–39
	Excessively tightened steering gear box rack support cover	19–23, 30
	Improper front wheel alignment	2–9
	Excessive turning resistance of tie-rod ball joint	19–8, 10
	Sticky flow control valve	19–42
	Bent rack in steering gear box	19–23, 30

POOR RETURN OF STEERING WHEEL TO CENTER

Symptom	Probable cause	Reference page
Poor return of steering wheel to center	Improper front wheel alignment	2–9
	Improper tire pressure	22–3
	Excessive tightened rack support cover	19–23, 30
	Damaged front wheel bearing	2–13

POOR RIDING

Symptom	Probable cause	Reference page or remedy
Poor riding	Improper tire pressure	22–3
	Imbalanced wheels	Repair
	Improper front or rear wheel alignment	2–9, 32 17–5, 12
	Malfunctioning shock absorber	
	Broken or worn stabilizer	2–34, 43 17–12
	Broken or worn coil spring	
	Loose suspension securing bolt(s)	Retighten
	Worn lower arm bushing	2–39
	Worn suspension arm bushing	17–16, 18

ABNORMAL TIRE WEAR

Symptom	Probable cause	Reference page
Abnormal tire wear	Improper front or rear wheel alignment	2–9, 17–5
	Improper tire pressure	22–3, 4
	Imbalanced wheels	
	Loose wheel bearings	17–20
	Malfunctioning shock absorber	2–32, 17–11

ROAD WANDER

Symptom	Probable cause	Reference page
Road wander	Improper front or rear wheel alignment	2–9, 17–5
	Excessive play of steering wheel	19–7, 10
	Poor turning resistance of lower arm ball joint	2–39
	Improper tire pressure	22–3
	Loose or worn lower arm bushing	2–13, 39
	Loose or worn wheel bearings	
	Loose rack support cover in steering gear box	19–23, 30

VEHICLE PULLS TO ONE SIDE

Symptom	Probable cause	Reference page or remedy
Vehicle pulls to one side	Improper front or rear wheel alignment	2-9, 17-5
	Imbalanced or worn tires	22-3, 4
	Uneven tire pressure	
	Excessive turning resistance of lower arm ball joint	2-39
	Wheel bearing seizure	Replace
	Broken or worn coil spring	2-34, 17-11
	Bent front axle drive shaft	2-15
	Deformed lower arm	2-38

STEERING WHEEL SHIMMY

Symptom	Probable cause	Reference page or remedy
Steering wheel shimmy	Improper front or rear wheel alignment	2-9, 17-5
	Improper tire pressure	22-3
	Imbalanced wheels	Replace
	Poor turning resistance of lower arm ball joint	2-39
	Excessive play of steering wheel	19-7, 10
	Broken or weak front stabilizer	2-43
	Worn lower arm bushing	2-39
	Malfunctioning shock absorber	2-34, 17-11
	Broken or weak coil spring	
	Wear, play, or seizure of wheel bearing	Replace
	Wear, play, or seizure of drive shaft ball joint	2-15

BOTTOMING

Symptom	Probable cause	Reference page or remedy
Bottoming	Overloaded vehicle	Correct
	Broken or weak coil spring	2-34 17-11
	Malfunctioning shock absorber	

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	Insufficient 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 Insufficient 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	Insufficient 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