# BackupServiceManual

# 3000GT

# 1992-1996 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.





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### **GROUP INDEX**

General	00
Engine	11
Fuel	13
Engine Cooling	14
Intake and Exhaust	15
Engine and Emission Control	17
Clutch	21
Manual Transaxle	<b>2</b> 2
Automatic Transaxle	23
Propeller Shaft	25
Front Axle	26
Rear Axle	27
Wheel and Tire	31
Power Plant Mount	32
Front Suspension	33
Rear Suspension	34
Service Brakes	35
Parking Brakes	36
Steering	37
Body	42
Exterior	51
Interior and Supplemental Restraint System (SRS)	52
Heater, Air Conditioning and Ventilation	55
Alphabetical Index	Ų:

NOTE: Electrial system information is contained in Volume 2 "Electrical" of this paired Service Manual. For overhaul procedures of engines or transmissions, refer to the separately issued Engine Service Manual or Manual/Automatic Transmission Service Manual.

### WARNINGS REGARDING SERVICING OF SUPPLEMENTAL RESTRAINT SYSTEM (SRS) EQUIPPED VEHICLES

### **WARNING!**

(1) Improper service or maintenance of any component of the SRS, or any SRS-related component, can lead to personal injury or death to service personnel (from inadvertent firing of the air bag) or to the driver (from rendering the SRS inoperative).

(2) If it is possible that the SRS components are subjected to heat over 93°C (200°F) in baking or in drying after painting, remove the SRS components (air bag module, SRS diagnosis unit,

front impact sensors) beforehand.

(3) Service or maintenance of any SRS component or SRS-related component must'be performed

only at an authorized MITSUBISHI dealer.

(4) MITSUBISHI dealer personnel must thoroughly review this manual, and especially its GROUP 52B - Supplemental Restraint System (SRS) and GROUP 00 - Maintenance Service, before beginning any service or maintenance of any component of the SRS or any SRS-related component.

### NOTE

Section titles with asterisks (\*) in the table of contents in each group indicate operations requiring warnings.

# GENERAL

### **CONTENTS**

GENERAL DATA AND SPECIFICATIONS	26	Fuel Hoses	45
HOW TO USE THIS MANUAL	2	Fuel System (Tank, Pipe Line, Connections and Fuel Tank Filler Tube Cap)	45
Definition of Terms	2	Ignition Cables	46
Explanation of Circuit Diagrams	3	Manual Transmission Oil	48
Explanation of Manual Contents	4	Rear Axle Oil	52
Explanation of the Troubleshooting Guide	6	Spark Plugs	46
Maintenance, Repair and Servicing	•	SRS Maintenance	53
Explanations	2	Timing Belt	46
Model Indications	2	Transfer Oil	51
Special Tool Note	2	MASTER TROUBLESHOOTING	20
Troubleshooting	2	MASTER TROUBLESHOOTING	29
HOW TO USE TROUBLESHOOTING/		PRECAUTIONS BEFORE SERVICE	18
INSPECTION SERVICE POINTS	7	RECOMMENDED LUBRICANTS AND	
LUBRICATION AND MAINTENANCE	36	LUBRICANT CAPACITIES TABLE	38
MAIN SEALANT AND ADHESIVE TABLE	61	SCHEDULED MAINTENANCE TABLE	41
	<b>45</b> 45	SPECIAL HANDLING INSTRUCTIONS FOR AWD MODELS	25
Automatic Transmission Fluid	49	TIGHTENING TORQUE	28
Ball Joint and Steering Linkage Seals	52	TOWING AND LIGISTING	0.4
Brake Hoses	52	TOWING AND HOISTING	21
Disc Brake Pads	52	VEHICLE IDENTIFICATION	11
Drive Belt (For Generator, Water Pump, Power	17	Chassis Number	14
Steering Pump)	47 52	Engine Model Stamping	14
Drive Shaft Boots  Engine Coolant	52 51	Theft Protection	15
-	47	Vehicle Identification Code Chart Plate	. 11
	48	Vehicle Identification Number List	12
Engine Oil Filter	_	Vehicle Identification Number Location	. 11
	46	Vehicle Information Code Plate	13
Exhaust System	60	Vehicle Safety Certification Label	14

### HOW TO USE THIS MANUAL

### MAINTENANCE, REPAIR AND SERVICING EXPLANATIONS

This manual provides explanations, etc. concerning procedures for the inspection, maintenance, repair and servicing of the subject model. 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 manual under "VEHICLE IDENTIFICATION".

### SERVICE ADJUSTMENT PROCEDURES

"Service Adjustment Procedures" are procedures for performing inspections and adjustments of particularly important locations with regard to the construction and for maintenance and servicing, but other inspections (for looseness, play, cracking, damage, etc.) must also be performed.

### SERVICE PROCEDURES

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

### **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.

# 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.

### REFERENCE VALUE

Indicates the adjustment value prior to starting the work (presented in order to facilitate assembly and adjustment procedures, and so they can be completed in a shorter time).

### **CAUTION**

Indicates the presentation of information particularly vital to the worker during the performance of maintenance and servicing procedures in order to avoid the possibility of injury to the worker; or damage to component parts, or a reduction of component or vehicle function or performance, etc.

### INDICATION OF TIGHTENING TORQUE

The tightening torque shown in this manual is a basic value with a tolerance of  $\pm 10\%$  except the following cases when the upper and lower limits of tightening torque are given.

- (1) The tolerance for the basic value is within  $\pm 10\%$ .
- (2) Special bolts or the like are in use.
- (3) Special tightening methods are used.

### SPECIAL TOOL NOTE

Only MMC special tool part numbers are called out in the repair sections of this manual. Please refer to the special tool cross reference chart, which is located in the service manual at the beginning of each group, for a cross reference from the MMC special tool number to the special tool number that is available in your market.

### **MODEL INDICATIONS**

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

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.

MFI: Indicates the multiport fuel injection, or engines equipped with the multiport fuel injection.

Turbo: Indicates an engine with turbocharger, or a model equipped with such an engine.

Non-Turbo: Indicates an engine without turbocharger, or a model equipped with such an engine.

FWD: Indicates the front wheel drive vehicles.

AWD: Indicates the all wheel drive vehicles.

ABS: Indicates the anti-lock braking system or models equipped with the anti-lock braking system.

ECS: Indicates the electronic control suspension or models equipped with the electronic control

suspension.

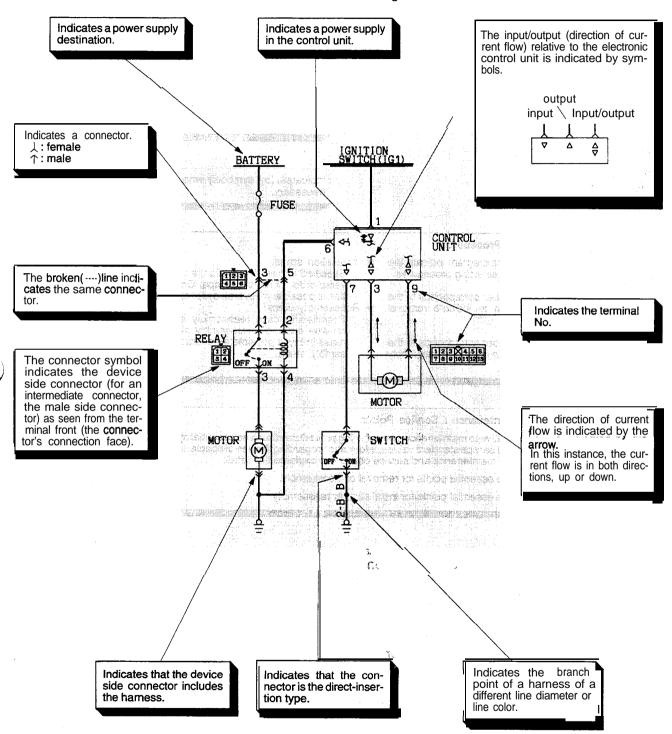
4WS: Indicates the 4-wheel steering system or models equipped with the 4-wheel steering system.

### **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 Volume 2 – Circuit D i a g r a m s .



### EXPLANATION OF MANUAL CONTENTS

Indicates procedures to be performed before the work in that section is started, and procedures to be performed after the work in that section is finished.

### Component Diagram

A diagram of the component parts is provided near the front of each section in order to give the reader a better understanding of the installed condition of component parts.

Indicates (by symbols) where lubrication is necessary.

### Maintenance and Servicing Procedures

The numbers provided within the diagram indicate the sequence for maintenance and servicing procedures.

- Removal steps:
  - The part designation number corresponds to the number in the illustration to indicate removal steps.
- Disassembly steps:
  - The part designation number corresponds to the number in the illustration to indicate disassembly steps.
- Installation steps:
  - Specified in case installation is impossible in reverse order of removal steps. Omitted if installation is possible in reverse order of removal steps.
- Reassembly steps: Specified in case reassembly is impossible in reverse order of disassembly steps. Omitted if reassembly is possible in reverse order of disassembly steps.

### Classifications of Major Maintenance / Service Points

When there are major points relative to maintenance and servicing procedures (such as essential maintenance and service points, maintenance and service standard values, information regarding the use of special tools, etc.), these are arranged together as major maintenance and service points and explained in detail.

Indicates that there are essential points for removal or disassembly.

►A<: Indicates that there are essential points for installation or reassembly.</p>

### Symbols for Lubrication, Sealants and Adhesives

Information concerning the locations for lubrication and for application of sealants and adhesives is provided, by using symbols, in the diagram of component parts or on the page following the component parts page, and explained.



EMBER 1

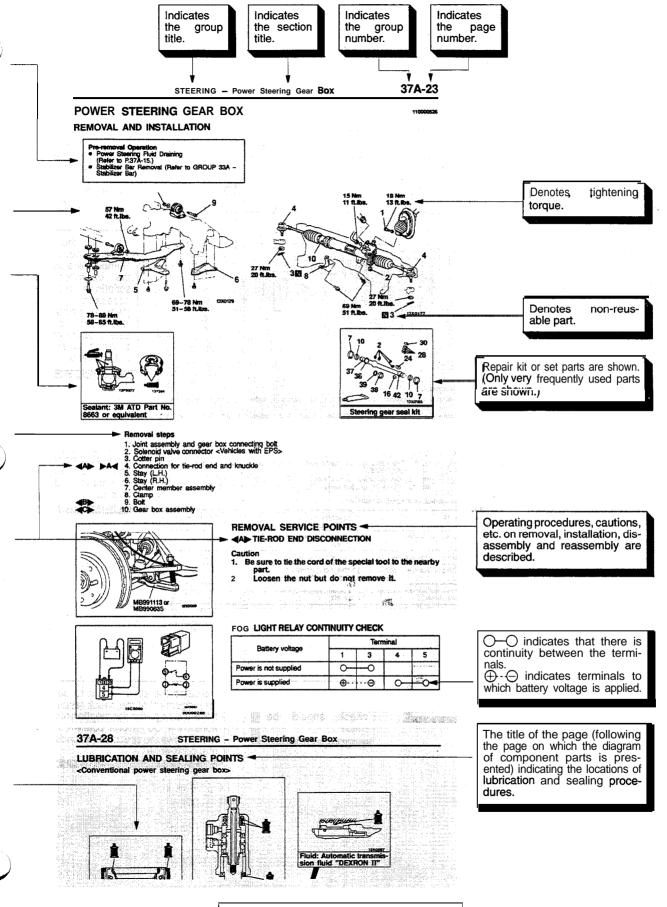
(multipurpose grease unless there is a brand or type specified)

: Sealant or adhesive

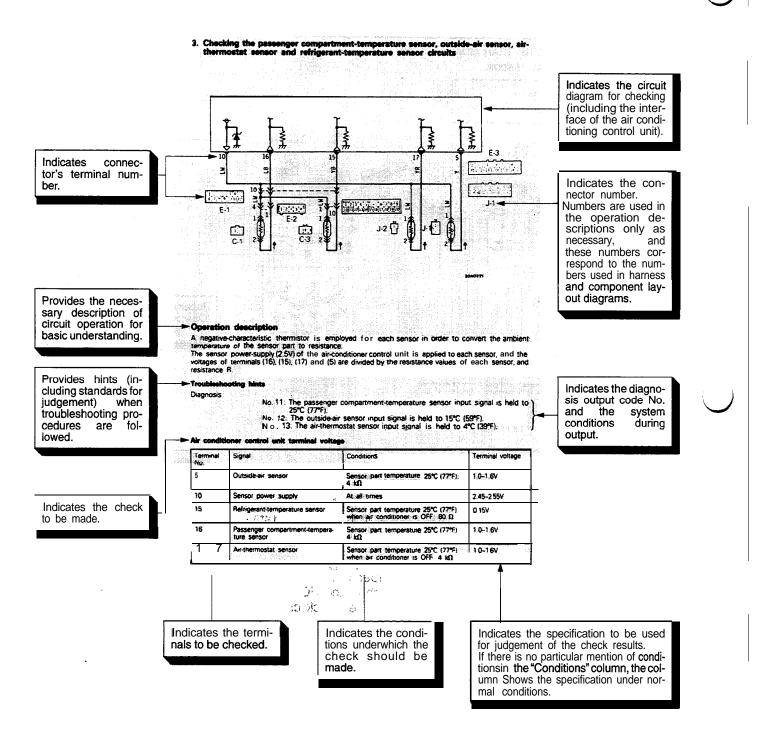
Brake fluid or automatic transmission fluid

Engine oil, gear oil or air conditioning compressor oil

Adhesive tape or butyl rubber tape



### EXPLANATION OF THE TROUBLESHOOTING GUIDE



### HOW TO USE TROUBLESHOOTING/INSPECTION SERVICE POINT

Troubleshooting of electronic control systems for which the scan tool can be used follows the basic outline described below. Furthermore, even in systems for which the scan tool cannot be used, part of these systems still follow this outline.

### TROUBLESHOOTING CONTENTS

### 1. STANDARD FLOW OF DIAGNOSTIC TROUBLESHOOTING

The main procedures for diagnostic troubleshooting are shown.

### 2. SYSTEM OPERATION AND SYMPTOM VERIFICATION TESTS

If verification of the trouble symptoms is difficult, procedures for checking operation and verifying trouble symptoms are shown.

### 3. DIAGNOSTIC FUNCTION

The following diagnostic functions are shown.

- Method of reading diagnostic trouble codes
- Method of erasing diagnostic trouble codes
- Input inspection service points

### 4. INSPECTION CHART FOR DIAGNOSTIC TROUBLE CODES

### 5. INSPECTION PROCEDURE FOR DIAGNOSTIC TROUBLE CODES

Indicates the inspection procedures corresponding to each diagnostic trouble code. (Refer to P.OO-9 – how to use the inspection procedures.)

### 6. INSPECTION CHART FOR TROUBLE SYMPTOMS

If there are trouble symptoms, even though the results of inspection using the scan tool show that all diagnostic trouble codes are normal, inspection procedures for each trouble symptom will be found by means of this chart.

### 7. INSPECTION PROCEDURE FOR DIAGNOSTIC SYMPTOM

Indicates the inspection procedures corresponding to each trouble symptoms classified in the Inspection Chart for Trouble Symptoms. (Refer to P.00-9 – how to use the inspection procedures.)

### 8. SERVICE DATA REFERENCE TABLE

Inspection items and normal judgement values have been provided in this chart as reference information.

### 9. CHECK AT ECU TERMINALS

Terminal numbers for the ECU connectors, inspection items and standard values have been provided in this chart as reference information.

### **Terminal Voltage Checks**

- 1. Connect a needle-nosed wire probe or paper clip to a voltmeter probe.
- 2. Insert the needle-nosed wire probe into each of the ECU connector terminals from the wire side, and measure the voltage while referring to the check chart.

#### NOTE

- 1. Measure voltage with the ECU connectors connected.
- 2. You may find it convenient to pull out the ECU to make it easier to reach the connector terminals.
- Checks don't have to be carried out in the order given in the chart.

#### Caution

Short-circuiting the positive (+) probe between a connector terminal and ground could damage the vehicle wiring, the sensor, the ECU, or all three.

### Use care to prevent this!

- 3. If voltage readings differ from Normal Condition values, check related sensors, actuators, and wiring, then replace or repair.
- 4. After repair or replacement, recheck with the voltmeter to confirm that the repair has corrected the problem.

### Terminal Resistance and Continuity Checks

- 1. Turn off the ignition switch.
- 2. Disconnect the ECU connector.
- 3. Measure the resistance and check for continuity between the terminals of the ECU harness-side connector while referring to the check chart.

#### NOTE

Checks don't have to be carried out in the order given in the chart.

#### Caution

If resistance and continuity checks are performed on the wrong terminals, damage to the vehicle wiring, sensors, ECU, and/or ohmmeter may occur.
Use care to prevent this!

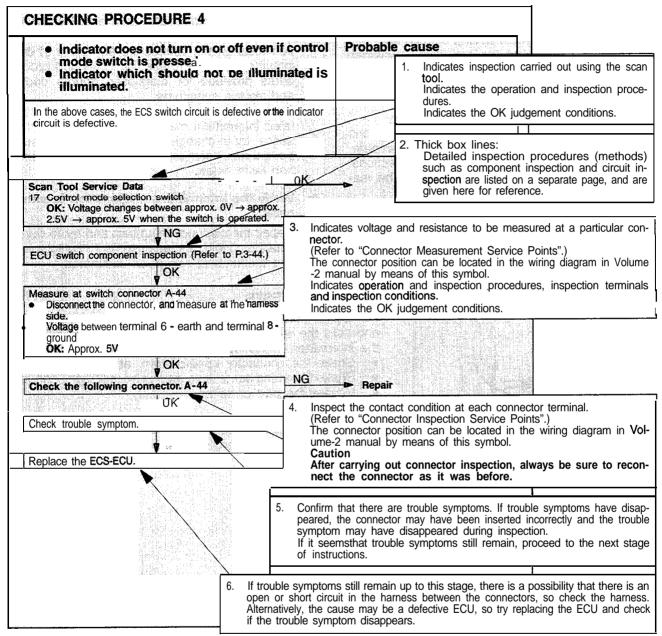
- 4. If the ohmmeter shows any deviation from the Normal Condition value, check the corresponding sensor, actuator and related electrical wiring, then repair or replace.
- 5. After repair or replacement, recheck with the ohmmeter to confirm that the repair has corrected the problem.

### 10. INSPECTION PROCEDURES USING AN OSCILLOSCOPE

When there are inspection procedures using an oscilloscope, these are listed here.

### HOW TO USE THE INSPECTION PROCEDURES

The causes of a high frequency of problems occurring in electronic circuitry are generally the connectors, components, the ECU and the harnesses between connectors, in that order. These inspection procedures follow this order, and they first try to discover a problem with a connector or a defective component.



### HARNESS INSPECTION

Check for an open or short circuit in the harness between the terminals which were defective according to the connector measurements. Carry out this inspection while referring to Volume 2 Electrical manual. Here, "Check harness between power supply and terminal xx" also includes checking for blown fuses. For inspection service points when there is a blown fuse, refer to "Inspection Service Points for a Blown Fuse".

### MEASURES TO TAKE AFTER REPLACING THE ECU

If the trouble symptoms have not disappeared even after replacing the ECU, repeat the inspection procedure from the beginning.

### HOW TO COPE WITH INTERMITTENT MALFUNCTIONS

Most intermittent malfunctions occur under certain conditions. If those conditions can be identified, the cause will be easier to find.

### TO COPE WITH INTERMITTENT MALFUNCTION;

### 1. Ask the customer about the malfunction

Ask what it feels like, what it sounds like, etc. Then ask about driving conditions, weather, frequency of occurrence, and so on.

### 2. Determine the conditions from the customer's responses

Typically, almost all intermittent malfunctions occur from conditions like vibration, temperature and/or moisture change, poor connections. From the customer's replies, it should be reasoned which condition is influenced.

### 3. Use simulation test

In the cases of vibration or poor connections, use the simulation tests below to attempt to

duplicate the customer's complaint. Determine the most likely circuit(s) and perform the simulation tests on the connectors and parts of that circuit(s). Be sure to use the inspection procedures provided for diagnostic trouble codes and trouble symptoms.

For temperature and/or moisture conditions related intermittent malfunctions, using common sense, try to change the conditions of the suspected circuit components, then use the simulation tests below.

### 4. Verify the intermittent malfunction is eliminated

Repair the malfunctioning part and try to duplicate the condition(s) again to verify the intermittent malfunction has been eliminated.

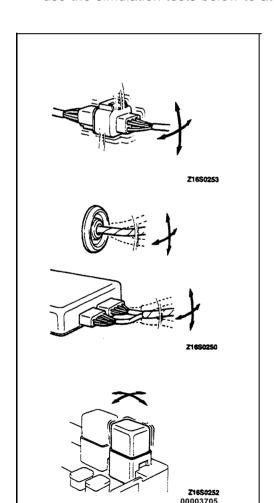
### SIMULATION TESTS

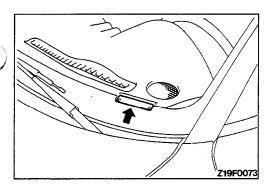
For these simulation tests, shake, then gently bend, pull, and twist the wiring of each of these examples to duplicate the intermittent malfunction.

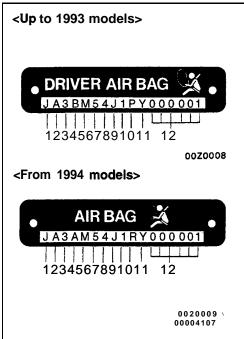
- Shake the connector up-and-down, and right-and-left.
- Shake the wiring harness up-and-down, and right-and-left.
- Vibrate the part or sensor.

### NOTE

In case of difficulty in finding the cause of the intermittent malfunction, the data recorder function in the scan tool (MUT-II) is effective.







### **VEHICLE IDENTIFICATION**

### 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

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

etc.			
Vo.	Item	Contents	
1	Country	J: Japan	
2	Make	A: Mitsubishi	
3	Vehicle t <b>ype</b>	3: Passenger Car	
4	Others	X: (1992 models) Driver Air Ba Manual Seat A: (From 1994 Driver and Pa models) Bag	
5	Line	D: 3000GTFWD   1992 models E: 3000GT AWD M: 3000GT FWD   1993, 1994, (Hatchback)	and from 1995 models
		Convertible models W: 3000GT AWD Convertible	(Convertible)
6	Price	4: High	
	class	5: Sports (1994 models only), Pr	
		6: Premium (1994 models only),	Special
		7: Ultimate	
		8: Sports (1995 and 1996 models	s)
7	Body	4: 3-door Hatchback	
		5: 2-door Convertible	
8	Engine	B: 3.0 dm <sup>3</sup> (181.4 cu.in.) <dohc-mfi></dohc-mfi>	up to 1993 models
		C: 3.0 dm <sup>3</sup> (181.4 cu.in.) <dohc-mfi-turbo></dohc-mfi-turbo>	
		J: 3.0 dm <sup>3</sup> (181.4 cu.in.) <dohc-mfi></dohc-mfi>	From 1994 models
		K: 3.0 dm <sup>3</sup> (181.4 cu.in.) <dohc-mfi-turbo></dohc-mfi-turbo>	
9	Check digits	)* >*	
10	Model	N: 1992 Year	
	year	P: 1993 Year	
		R: 1994 Year	
		S: 1995 Year	
		T: 1996 Year	
11	Plant	Y: Nagoya-I Plant	
12	Serial number	000001 to 999999	

NOTE

<sup>\*:</sup> Check digit means a single number or letter X used to verify the accuracy of transcription of vehicle identification number.

### VEHICLE IDENTIFICATION NUMBER LIST

<1 992 MODELS>

<1993 MODELS>

### **VEHICLES FOR FEDERAL**

V.I.N. (except sequence number)	Brand	Engine displacement	Models code
JA3BM54J□PY (1993 model)	Mitsubishi 30000	GT 3.0 dm <sup>3</sup> (181.4 cu.in.	Z11AMNXML2M
JA3XD54B□NY (1992 model)	<fwd></fwd>	[DOHC-MFI]	Z11AMRXML2M
JA3BM64J□PY (1993 model) JA3XD64B□NY (1992 model)			Z11AMNPML2M Z11AMRPML2M
JA3BN74K□PY (1993 model)	Mitsubishi 3000G	GT 3.0 dm <sup>3</sup> (181.4 cu.in.	Z15AMNGFL2M
JA3XE74C□NY (1992 model)	<awd></awd>	[DOHC-MFI-Turbo]	Z16AMNGFL2M

### **VEHICLES FOR CALIFORNIA**

V.I.N. (except sequence number)	Brand	Engine displacement	Models code
JA3BM54J□PY (1993 model)	Mitsubishi 3000GT	3.0 dm <sup>3</sup> (181.4 cu.in.)	Z11AMNXML7M
JA3XD54B□NY (1992 model)	<fwd></fwd>	[DOHC-MFI]	Z11AMRXML7M
JA3BM64J□PY (1993 model) JA3XD64B□NY (1992 model)			Z11AMNPML7M Z11AMRPML7M
JA3BN74K□PY* (1993 model)	Mitsubishi 3000GT	3.0 dm <sup>3</sup> (181.4 cu.in.	Z15AMNGFL7M
JA3XE74C□NY* (1992 model)	<awd></awd>	[DOHC-MFI-Turbo]	Z16AMNGFL7M

NOTE

AWD marked with • can also be sold in Federal States.

### <1 994 MODELS>

### **VEHICLES FOR FEDERAL**

V.I.N. (except sequ	ience r	iumber)	Brand			Engine displacement	Models code
J4Mìtsubishi⊒BY <fwd></fwd>	0	0	0	G	Т	3.0 dm <sup>3</sup> (181.4 cu.in. [DOHC-MFI]	Z11AMNXML2M Z11AMRXML2M
JA3AM64J⊡RY							Z11AMNPML2M Z11AMRPML2M
JA3AN74K□RY			Mitsub <awd:< td=""><td>ishi 30 &gt;</td><td>000GT</td><td>3.0 dm<sup>3</sup> (181.4 cu.in.) [DOHC-MFI-Turbo]</td><td>Z16AMJGFL2M</td></awd:<>	ishi 30 >	000GT	3.0 dm <sup>3</sup> (181.4 cu.in.) [DOHC-MFI-Turbo]	Z16AMJGFL2M

### **VEHICLES FOR CALIFORNIA**

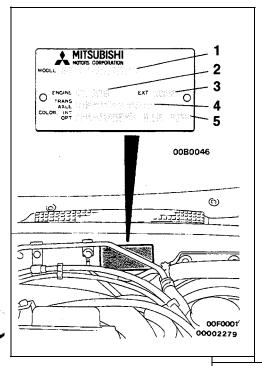
V.I.N. (except sequ	ence nu	ımber)	Brand			Engine displacement	Models code
JA3AM54J⊟RY;	0	0	0	G	Т	3.0 dm <sup>3</sup> (181.4 cu.in. [DOHC-MFI]	Z11AMNXML7M Z11AMRXML7M
JA3AM64J⊡RY			•				Z11AMNPML7M Z11AMRPML7M
JA3AN74K□RY			Mitsub <awd></awd>	ishi 300	00GT	3.0 dm <sup>3</sup> (181.4 cu.in.) [DOHC-MFI-Turbo]	Z16AMJGFL7M

### <1995 MODELS> cl996 MODELS> VEHICLES FOR FEDERAL

V.I.N. (except sequence number)	Brand		Engine displacement	Models code
JA3AM54J⊡SY	Mitsubishi 3000GT	FWD	3.0 dm <sup>3</sup> (181.4 cu.in. [DOHC-MFI]	Z11AMNPML2M Z11AMRPML2M
JA3AM84J□SY				Z11AMNXML2M Z11AMRXML2M
JA3AN74K□SY		AWD	3.0 dm <sup>3</sup> (181.4 cu.in.) [DOHC-MFI-Turbo]	Z16AMJGFL2M

### **VEHICLES FOR CALIFORNIA**

V.I.N. (except sequence number)	Brand		Engine displacement	Models code
JA3AM54J⊡SY	Mitsubishi 3000GT back		3.0 dm <sup>3</sup> (181.4 cu.in.) [DOHC-MFI]	Z11AMNPML7M Z11AMRPML7M
JA3AM84J⊡SY	<			Z11AMNXML7M Z11AMRXML7M
JA3AV65J⊡SY		Con- vertible		Z11ABRPML7M
JA3AN74K□SY	Mitsubishi 3000GT	Hatch- back	3.0 dm <sup>3</sup> (181.4 cu.in.) [DOHC-MFI-Turbo]	Z16AMJGFL7M
JA3AW75K□SY	<awd></awd>	Con- vertible		Z16ABJGFL7M

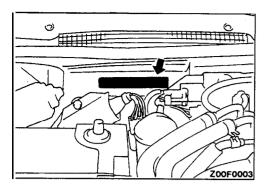


### VEHICLE INFORMATION CODE PLATE

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

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

No.	Items	Contents	
1	MODEL	Z11AM	Z11AM: Vehicle model
	1	NXML2M	NXML2M: Model series
2	ENGINE	6G72	Engine model
3	EXT	CA6A	Exterior code
4	TRANS-	<b>F5M3</b> 3 3307	F5M33: Transaxle model
	AXLE		3307: Rear differential reduction
5	COLOR,	R25 87V 03V	R25: Body color code
	INT OPT		87V: Interior code
	-		03V: Equipment code

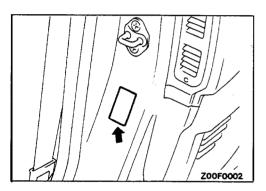


# CHASSIS NUMBER STAMPING LOCATION

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

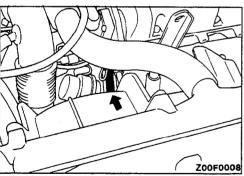
### CHASSIS NUMBER CODE CHART

Chassis number code	Contents
Z1 🚨 ARY000001	Z1 CIA: Indicates 3000GT-series.
	RY000001: Refer to 10th thru 17th digits of V.I.N. plate.



### VEHICLE SAFETY CERTIFICATION LABEL

- 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.), and Gross Axle Weight Rating (G.A.W.R.), front and rear, and Vehicle Identification Number (V.I.N.).

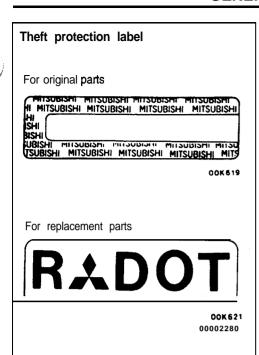


### **ENGINE MODEL STAMPING**

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
6G72	3.0 dm <sup>3</sup> (181.4 cu.in.)

2. The engine serial number is stamped near the engine model number.



### THEFT PROTECTION

In order to protect against theft, a Vehicle Identification Number (VIN) is stamped in, or attached as a label to, the following major parts of the engine and transaxle, as well as main outer panels:

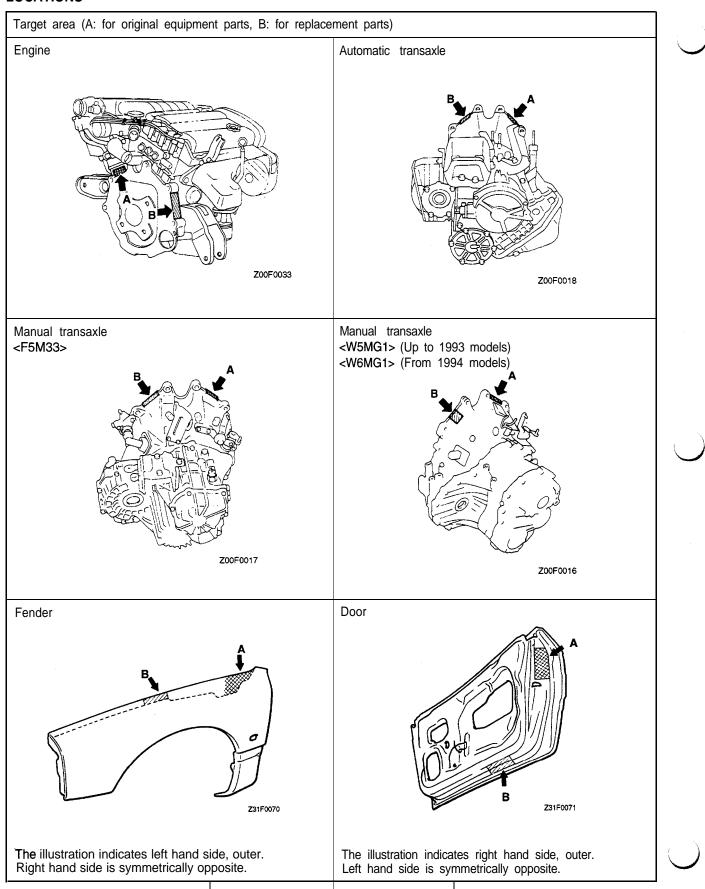
Engine cylinder block, Transaxle housing, Fender, Door, Quarter panel, Hood, Liftgate, Bumpers

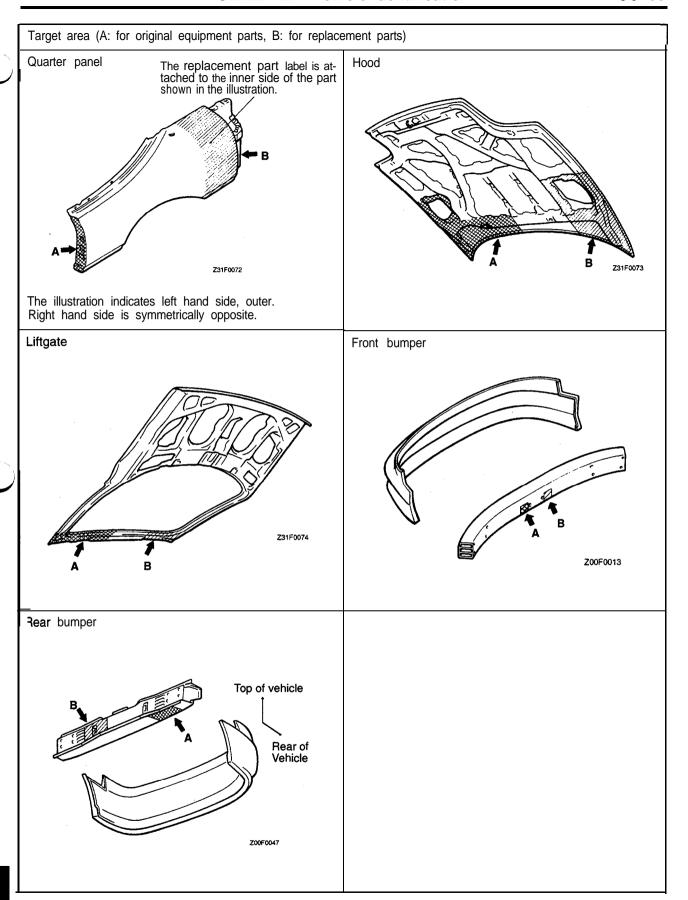
In addition, a theft-protection label is attached to replacement parts for the body outer panel main components, and the same data are stamped into replacement parts for the engine and the transaxle.

Cautions regarding panel repairs:

- When repainting original parts, do so after first masking the theft-protection label, and, after painting, be sure to peel off the masking tape.
- The theft-protection label for replacement parts is covered by masking tape, so such parts can be painted as is. The masking tape should be removed after painting is finished.
- 3. The theft-protection label should not be removed from original parts or replacement parts.

### **LOCATIONS**

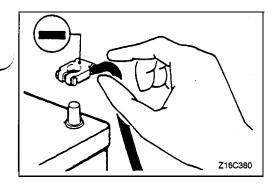




### PRECAUTIONS BEFORE SERVICE

### SUPPLEMENTAL RESTRAINT SYSTEM (SRS)

- 1. Items to follow when servicing SRS
  - (1) Be sure to be read GROUP 52B Supplemental Restraint System (SRS). For safe operations, please follow the directions and heed all warnings.
  - (2) Always use the designated special tools and test equipment.
  - (3) Wait at least 60 seconds after disconnecting the battery cable before doing any further work. The SRS system is designed to retain enough voltage to deploy the air bag even after the battery has been disconnected. Serious injury may result from unintended air bag deployment if work is done on the SRS system immediately after the battery cable is disconnected.
  - (4) Never attempt to disassemble or repair the SRS components (front impact sensors, SRS diagnosis unit, air bag module and clock spring). If faulty, replace it.
  - (5) Warning labels must be heeded when servicing or handling SRS components. Warning labels are located in the following locations.
    - . Hood
    - Sun visor
    - Glove box
    - SRS diagnosis unit
    - Steering wheel
    - Air bag module
    - Clock spring
    - Steering gear and linkage clamp
  - (6) Store components removed from the SRS in a clean and dry place.
    - The air bag module should be stored on a flat surface and placed so that the pad surface is facing upward.
      - Do not place anything on top of it.
  - (7) Be sure to deploy the air bag before disposing of the air bag module or disposing of a vehicle equipped with an air bag. (Refer to GROUP 52B Air Bag Module Disposal Procedures.)
  - (8) Whenever you finish servicing the SRS, check the SRS warning light operation to make sure that the system functions properly.
- 2. Observe the following when carrying out operations on places where SRS components are installed, including operations not directly related to the SRS air bag.
  - (1) When removing or installing parts do not allow any impact or shock to the SRS components.
  - (2) SRS components should not be subjected to heat over 93°C (200°F), so remove the SRS components before drying or baking the vehicle after painting.
    - After re-installing them, check the SRS warning light operation to make sure that the system functions properly.



### SERVICING ELECTRICAL SYSTEM

1. Note the following before proceeding with work on the electrical system.

Note that the following must never be done:

Unauthorized modifications of any electrical device or wiring, because such modifications might lead to a vehicle malfunction, over-capacity or short-circuit that could result in a fire in the vehicle.

When 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 semiconductor parts being damaged.)

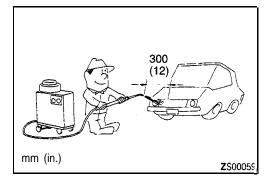
2. After completion of the work steps [when the battery's negative (-) terminal is connected], warm up the engine and allow it to idle for approximately ten minutes under the conditions described below, in order to stabilize the engine control conditions, and then check to be sure that the idling is satisfactory.

Engine coolant temperature: 80-95°C (176-203°F)

Lights, electric fans, accessories: OFF

Transaxle: Neutral position (A/T models: "N" or "P")

Steering wheel: neutral (center) position



### **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.).

### APPLYING RUST PREVENTIVES, UNDERCOAT, ETC.

Heated oxygen sensors have their functional efficiency decreased if they are smeared with oil or grease. When applying rust preventives, undercoat, etc., be sure to protect the heated oxygen sensor with a protective cover or the like.

### Scan tool (Multi-Use Tester < MUT>)



### ROM pack



00002282

### Scan tool <MUT-II>



**z**16X0606

ROM pack



Z16X0607

### SCAN TOOL (MUT) <Up to 1993 models>

(1) To operate the scan tool, refer to the "MULTI-USE TESTER OPERATION INSTRUCTIONS".

#### Caution

Connection and disconnection of the scan tool should always be made with the ignition switch in the OFF position.

(2) Always use a ROM pack that is appropriate for the vehicle.

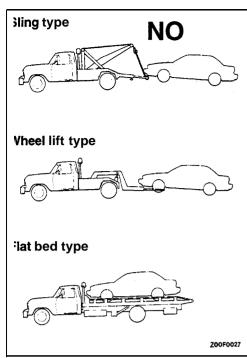
ROM Pack	Applicable Model
MB991423	1992 model
MB991466	1992.1993 model

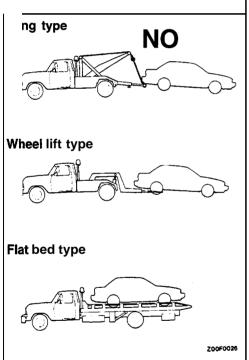
# SCAN TOOL (MUT-II) <From 1994 models> <All models>

To operate the scan tool, refer to the "MUT-II OPERATING INSTRUCTIONS".

### Caution

Connection and disconnection of the scan tool should always be made with the ignition switch in the OFF position.





### TOWING AND HOISTING

# WRECKER TOWING RECOMMENDATION <FWD>

### FRONT TOWING PICKUP

### Caution

This vehicle cannot be towed by a wrecker using slingtype equipment to prevent the bumper from deformation. If this vehicle is towed, use wheel lift or flat bed equipment.

The vehicle may be towed on its rear wheels for extended distances provided the parking brake is released. It is recommended that vehicles be towed using the front pickup whenever possible.

### **REAR TOWING PICKUP**

### Caution

This vehicle cannot be towed by a wrecker using slingtype equipment to prevent the bumper from deformation. If this vehicle is towed, use wheel lift or flat bed equipment.

Manual transaxle vehicles may be towed on the front wheels, provided the transaxle is in neutral and the drive-line has not been damaged. The steering wheel must be clamped in the straight-ahead position with a steering wheel clamping device designed for towing service use.

### Caution

- 1. Do not use steering column lock to secure front wheel position for towing.
- \*2. Make sure the transaxle is in Neutral if vehicle will be with drive wheels on the ground.

Automatic transaxle vehicle may be towed on the front wheels at speeds not to exceed 50 km/h (30 mph) for distances not to exceed 30 km (18 miles).

### Caution

If these limits cannot be met, the front wheels must be placed on a tow dolly.

### NOTE

\*: <From 1994 models>

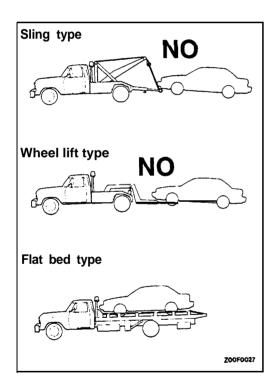
### TOWING WHEN KEYS ARE NOT AVAILABLE

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.

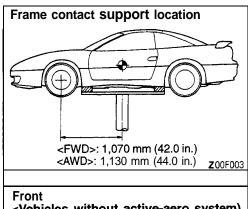
- 1. DO NOT LIFT OR TOW THE VEHICLE BY ATTACHING TO OR WRAPPING AROUND THE BUMPER.
- 2. Any loose or protruding parts of damaged vehicle'such as hoods, doors, fenders, trim, etc., should be secured or removed prior to moving the vehicle.
- 3. Operator should refrain from going under a vehicle while it is lifted by the towing equipment, unless the vehicle is adequately supported by safety stands.
- 4. Never allow passengers to ride in a towed vehicle.
- 5. State and local rules and regulations must be followed when towing a vehicle.

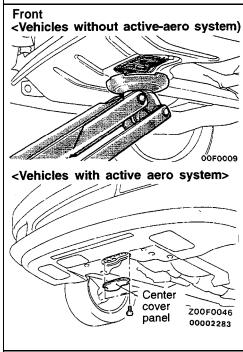


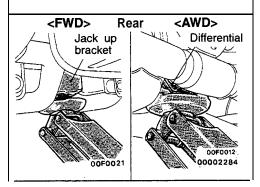
### <AWD>

### Caution

- If only the front wheels or only the rear wheels are lifted for towing, the bumper will be damaged. In addition, lifting of the rear wheels causes the oil to flow forward, and may result in heat damage to the rear bushing of the transfer, and so should never be done.
- 2. The vehicle must not be towed by placing only its front wheels or only the rear wheels on a rolling dolly, because to do so will result in deterioration of the viscous coupling and in the viscous coupling causing the vehicle to jump forward suddenly.
- 3. If this vehicle is towed, use flat bed equipment.







### **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.

### Caution

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

### FLOOR JACK

The usual type of floor jack is used at the following locations. Front: Under the mid point of No. 1 crossmember

### NOTE

On vehicles with active-aero system, the front jacking point can be accessed by removing the center cover panel from the under cover. Be sure to reinstall the center cover panel after jack-up operation.

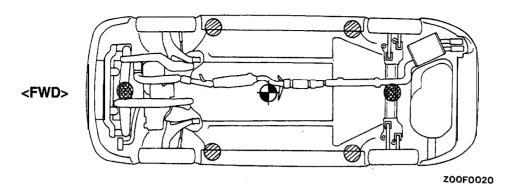
Rear:

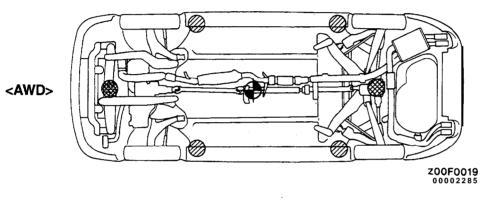
<FWD> Under the jack up bracket of crossmember <AWD> Under the rear differential

### Caution

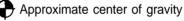
- 1. When lifting the No. 1 crossmember, do not allow jack lifting plate to contact under cover.
- 2. In order to prevent scarring the crossmember, place a piece of cloth on the jack's contact surface (to prevent corrosion caused by damage to the coating).
- 3. A floor jack must never be used on any part of the underbody.
- 4. 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.

### 'LIFTING, JACKING SUPPORT LOCATION





₩ Floor jack locations



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

### **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.