GENERAL

GENERAL

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HOW TO USE THIS MANUAL

SCOPE OF MAINTENANCE, REPAIR AND SERVICING EXPLANATIONS

This manual provides explanations, etc. concerning procedures for the inspection, maintenance, repair and servicing of the subject model. Note, however, that for engine and transmission-related component parts, this manual covers only on-vehicle inspections, adjustments, and the removal and installation procedures for major components. For detailed information concerning the inspection, checking, adjustment, disassembly and reassembly of the engine, transmission and major components after they have been removed from the vehicle, please refer to separate manuals covering the engine and the transmission.

ON-VEHICLE SERVICE

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

INSPECTION

Under this title are presented inspection and checking procedures to be performed by using special tools and measuring instruments and by feeling, but, for actual maintenance and servicing procedures, visual inspections should always be performed as well.

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

MODEL INDICATIONS

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

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

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

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

an engine.

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

DIESEL: Indicates a diesel engine, or models equipped with such an engine.

2WD: Indicates the rear wheel-drive vehicles.4WD: Indicates the 4 wheel-drive vehicles.

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 a 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.

: Indicates that there are essential points for installation or reassembly.

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.



: Grease

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



: Sealant or adhesive



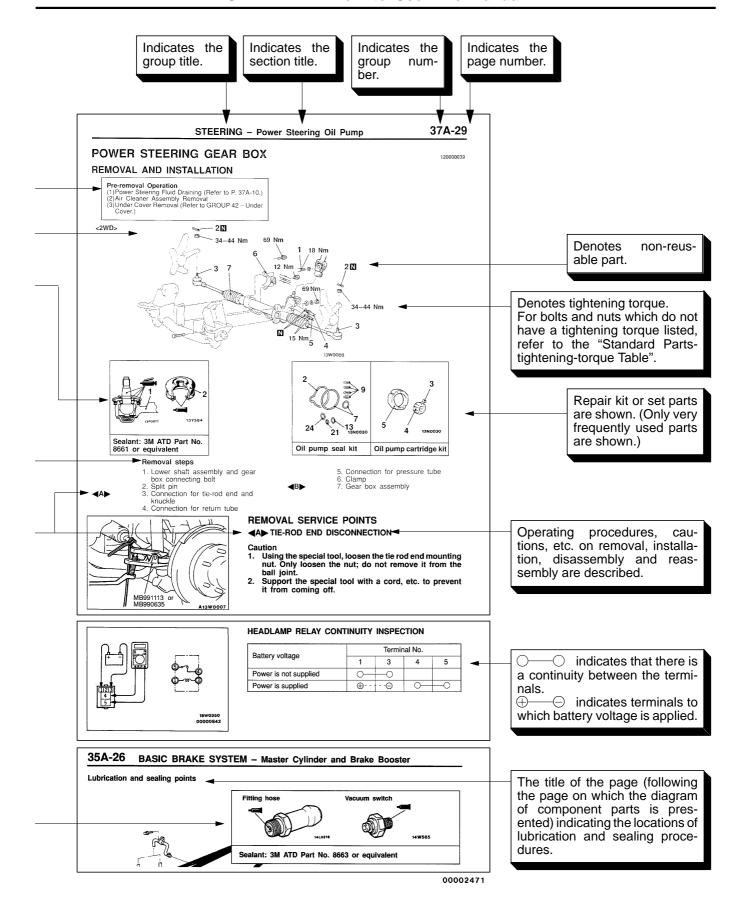
: Brake fluid or automatic transmission fluid



: Engine oil, gear oil or air conditioner compressor oil



: Adhesive tape or butyl rubber tape



HOW TO USE TROUBLESHOOTING/INSPECTION SERVICE POINTS

00100020091

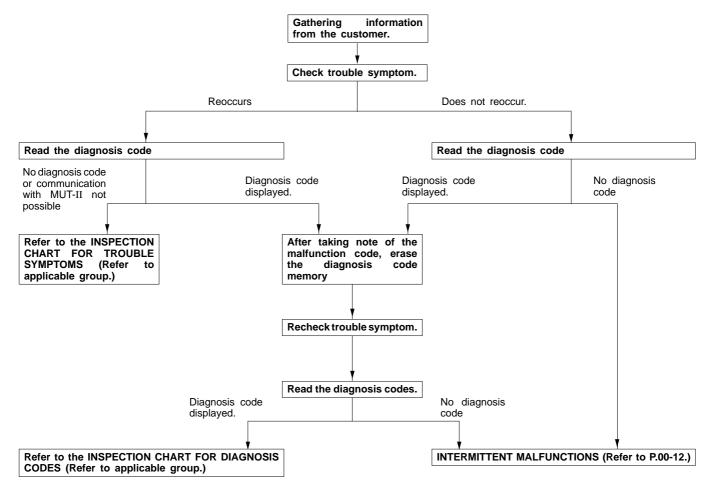
Troubleshooting of electronic control systems for which the MUT-II can be used follows the basic outline described below. Furthermore, even in systems for which the MUT-II cannot be used, part of these systems still follow this outline.

TROUBLESHOOTING CONTENTS

1. STANDARD FLOW OF DIAGNOSIS TROUBLESHOOTING

The troubleshooting sections follow the basic diagnosis flow which is given below. If the diagnosis flow is different from that given below, or if additional explanation is required, the details of such differences or additions will also be listed.

Diagnosis method



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. DIAGNOSIS FUNCTION

Details which are different from those in the "Diagnosis Function" section on the next page are listed.

4. INSPECTION CHART FOR DIAGNOSIS CODES

5. INSPECTION PROCEDURE FOR DIAGNOSIS CODES

Indicates the inspection procedures corresponding to each diagnosis code. (Refer to P.00-9 for how to read the inspection procedures.)

6. INSPECTION CHART FOR TROUBLE SYMPTOMS

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

7. INSPECTION PROCEDURE FOR TROUBLE SYMPTOM

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

8. SERVICE DATA REFERENCE TABLE

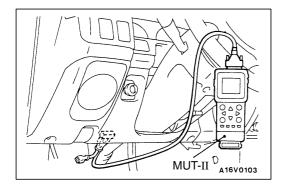
Inspection items and normal judgement values have been provided in this chart as reference information.

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.

10. INSPECTION PROCEDURES USING AN OSCILLOSCOPE

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

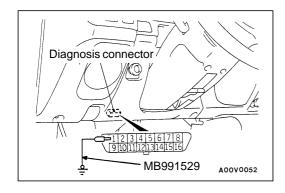


DIAGNOSIS FUNCTION METHOD OF READING DIAGNOSIS CODES WHEN USING THE MUT-II

Connect the MUT-II to the diagnosis connector and take a reading of the diagnosis codes.

Caution

Turn off the ignition switch before connecting or disconnecting the MUT-II.



WHEN USING THE WARNING LAMP

- 1. Use the special tool to earth No.1 terminal (diagnosis control terminal) of the diagnosis connector.
- 2. To check ABS system, remove the valve relay.

NOTE

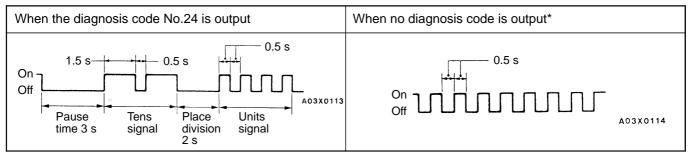
That is because the valve relay is off and the warning lamp remains illuminated if there is a fault in the ABS system.

- 3. Turn off the ignition switch.
- 4. Read out a diagnosis code by observing how the warning lamp flashes.

Applicable systems

System name	Warning lamp name
MPI	Engine warning lamp
ABS	ABS warning lamp

Indication of diagnosis code by warning lamp



NOTE

*: Even if the ABS system is normal, removing the valve relay causes the diagnosis code No.51 to be output.

METHOD OF ERASING DIAGNOSIS CODES

WHEN USING THE MUT-II

Connect the MUT-II to the diagnosis connector and erase the diagnosis code.

Caution

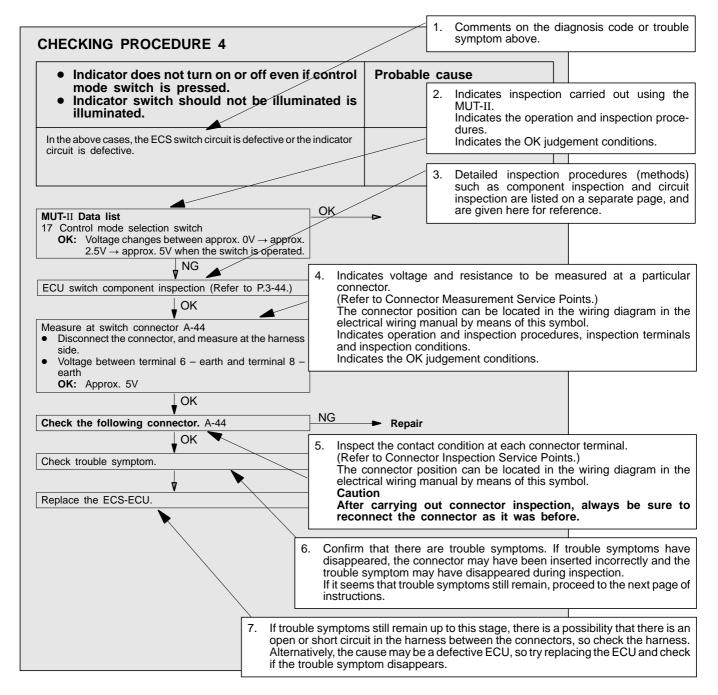
Turn off the ignition switch before connecting or disconnecting the MUT-II.

WHEN NOT USING THE MUT-II

- (1) Turn the ignition switch to OFF.
- (2) After disconnecting the battery cable from the battery (–) terminal for 10 seconds or more, reconnect the cable.
- (3) After the engine has warmed up, run it at idle for about 15 minutes.

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

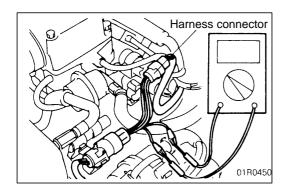
Check for an open or short circuit in the harness between the terminals which were defective according to the connector measurements. Carry out this inspection while referring to the electrical wiring manual. Here, "Check harness between power supply and terminal xx" also includes checking for blown 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.

CONNECTOR MEASUREMENT SERVICE POINTS

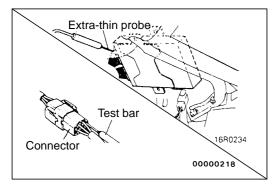
Turn the ignition switch to OFF when connecting disconnecting the connectors, and turn the ignition switch to ON when measuring if there are no instructions to be contrary.



IF INSPECTING WITH THE CONNECTOR CONNECTED (WITH CIRCUIT IN A CONDITION OF CONTINUITY)

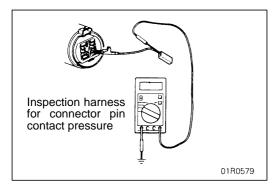
Waterproof Connectors

Be sure to use the special tool (harness connector). Never insert a test bar from the harness side, because to do so will reduce the waterproof performance and result in corrosion.



Ordinary (non-waterproof) Connectors

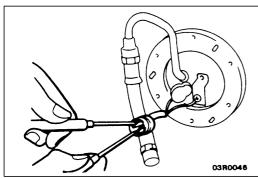
Check by inserting the test bar from the harness side. Note that if the connector (control unit, etc.) is too small to permit insertion of the test bar, it should not be forced; use a special tool (the extra-thin probe in the harness set for checking for this purpose.



IF INSPECTING WITH THE CONNECTOR DISCONNECTED <When Inspecting a Female Pin>

Use the special tool (inspection harness for connector pin contact pressure in the harness set for inspection).

The inspection harness for connector pin contact pressure should be used. the test bar should never be forcibly inserted, as it may cause a defective contact.

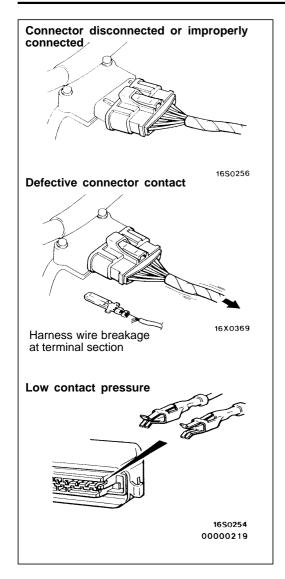


<When Inspecting a Male Pin>

Touch the pin directly with the test bar.

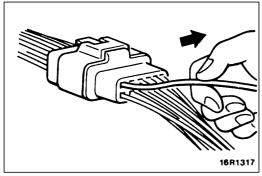
Caution

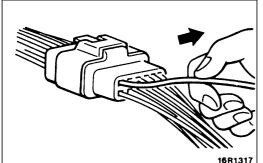
At this time, be careful not to short the connector pins with the test bars. To do so may damage the circuits inside the ECU.



CONNECTOR INSPECTION VISUAL INSPECTION

- Connector is disconnected or improperly connected
- Connector pins are pulled out
- Due to harness tension at terminal section
- Low contact pressure between male and female terminals
- Low connection pressure due to rusted terminals or foreign matter lodged in terminals





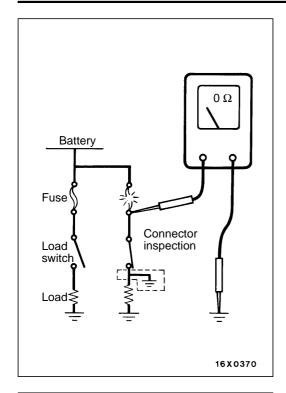
MB991219 16R1318

CONNECTOR PIN INSPECTION

If the connector pin stopper is damaged, the terminal connections (male and female pins) will not be perfect even if the connector body is connected, and the pins may pull out of the reverse side of the connector. Therefore, gently pull the harnesses one by one to make sure that no pins pull out of the connector.

CONNECTOR ENGAGEMENT INSPECTION

Use the special tool (connector pin connection pressure inspection harness of the inspection harness set) to inspect the engagement of the male pins and females pins. (Pin drawing force: 1 N or more)

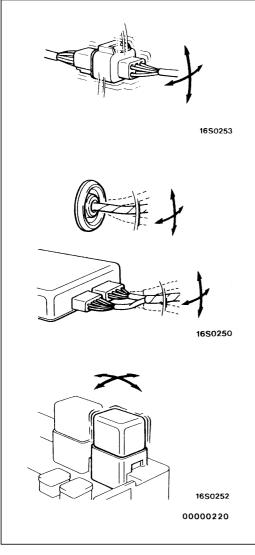


INSPECTION SERVICE POINTS FOR A BLOWN FUSE

Remove the fuse and measure the resistance between the load side of the fuse and the earth. Set the switches of all circuits which are connected to this fuse to a condition of continuity. If the resistance is almost 0 Ω at this time, there is a short somewhere between these switches and the load. If the resistance is not 0 Ω , there is no short at the present time, but a momentary short has probably caused the fuse to blow.

The main causes of a short circuit are the following.

- Harness being clamped by the vehicle body
- Damage to the outer casing of the harness due to wear or heat
- Water getting into the connector or circuitry
- Human error (mistakenly shorting a circuit, etc.)



POINTS TO NOTE FOR INTERMITTENT MALFUNCTIONS

Intermittent malfunctions often occur under certain conditions, and if these conditions can be ascertained, determining the cause becomes simple. In order to ascertain the conditions under which an intermittent malfunction occurs, first ask the customer for details about the driving conditions, weather conditions, frequency of occurrence and trouble symptoms, and then try to recreate the trouble symptoms. Next, ascertain whether the reason why the trouble symptom occurred under these conditions is due to vibration, temperature or some other factor. If vibration is thought to be the cause, carry out the following checks with the connectors and components to confirm whether the trouble symptom occurs.

The objects to be checked are connectors and components which are indicated by inspection procedures or given as probable causes (which generates diagnosis codes or trouble symptoms.)

- Gently shake the connector up, down and to the left and right.
- Gently shake the wiring harness up, down and to the left and right.
- Gently rock each sensor and relay, etc. by hand.
- Gently shake the wiring harness at suspensions and other moving parts.

NOTE

If determining the cause is difficult, the flight recorder function of the MUT-II can also be used.

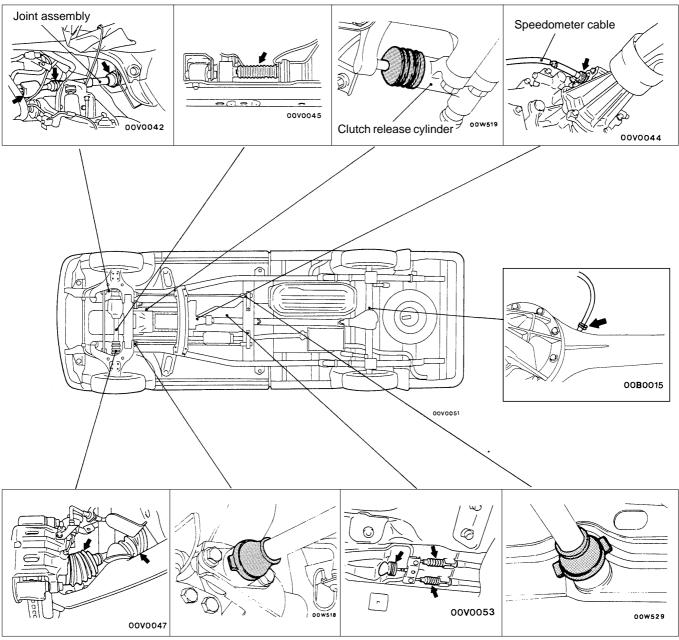
TREATMENT BEFORE/AFTER THE FORDING OF A STREAM (4WD VEHICLES)

00100060031

INSPECTION AND SERVICE BEFORE FORDING A STREAM

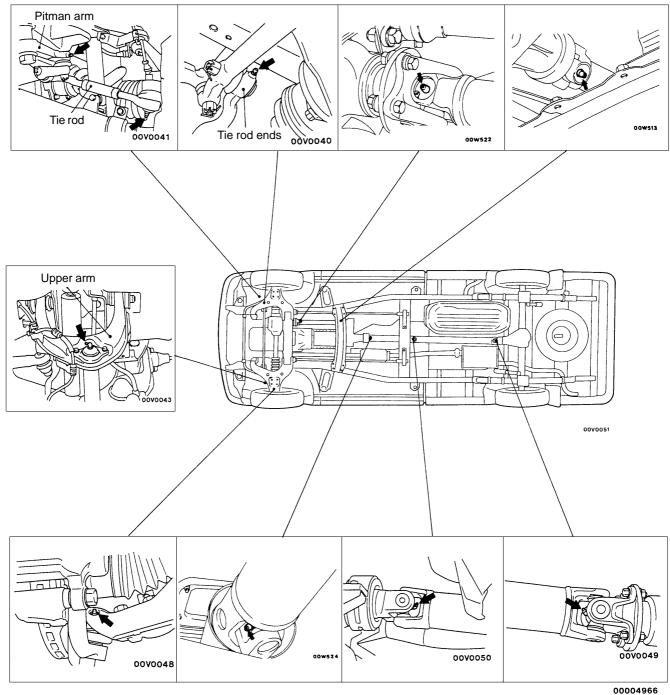
Vehicles which are driven through water, or which may possibly be driven through water, should be subjected to the following inspections and maintenance procedures in advance.

- 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.



00004965

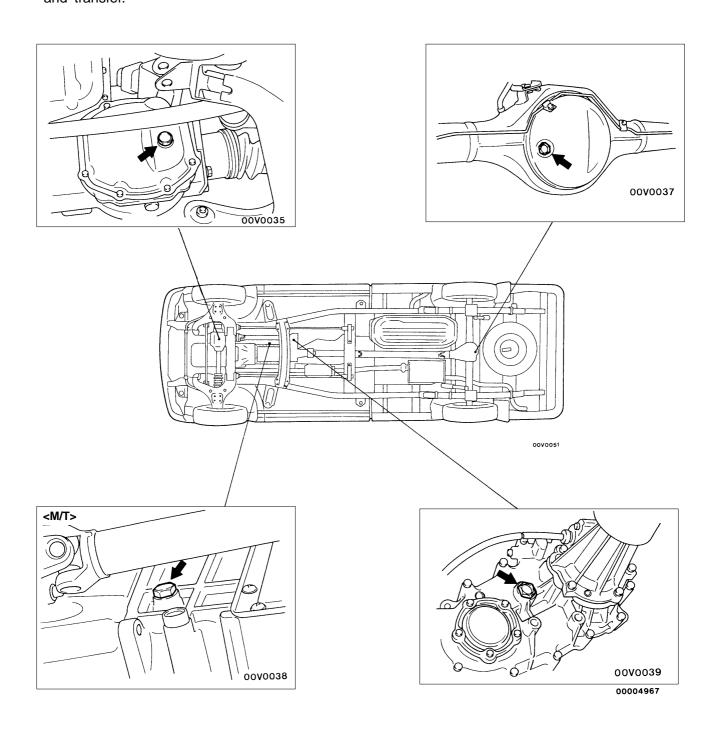
Apply grease to the lubricating points of the front suspension, steering linkage and propeller shaft.

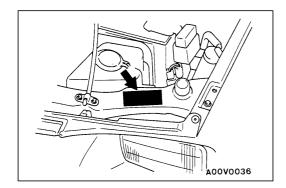


INSPECTION AND SERVICE AFTER FORDING A STREAM

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.
- 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.





MMC SITTIPOL COMPANY LIMITED MODEL O TRANS O TRANS COLOR, TRIM OPT A00V0061

VEHICLE IDENTIFICATION

00100540061

VEHICLE INFORMATION CODE PLATE LOCATION

Vehicle information code plate is riveted on the upside of the headlamp support panel inside the engine compartment.

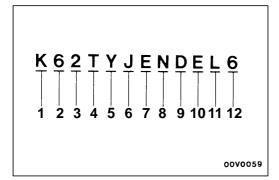
CODE PLATE DESCRIPTION

The plate shows model code, engine model, transmission model, and body colour code.

No.	Item	Contents			
1	MODEL	K62T	K62T: Vehicle model		
	JERDEL	JERDELO	JERDEL6: Model series		
2	ENGINE	4G63	Engine model		
3	TRANS	R4AW2	R4AW2: Transmission code		
	AXLE 4636		4636: Rear differential reduction		
4	COLOR B60 41H 03V		B60: Body colour code		
-	TRIM OPT		41H: Interior code		
			03V: Equipment code		

For monotone colour vehicles, the body colour code shall be indicated. For two-tone colour vehicles, each colour code only shall be indicated in series. MODELS 00100550064

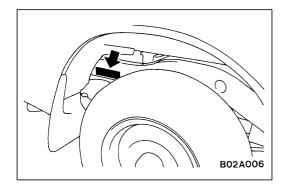
Model Co	ode	Engine model	Transmission model	Fuel supply system	
K62T	JERDEL6	4G63-SOHC (1,997 mℓ)	R4AW2 (2WD-4A/T)	MPI	
ENDEL6			R5M21 (2WD-5M/T)	7	
K64T	YNDL6	4D56 (2,477mℓ)	R5M21 (2WD-5M/T)	Fuel injection	
	ZNDL6				
	ENDL6				
	ENDR6				
	CENDL6				
	JENDL6				
K75T	CENDEL6	4G64-SOHC (2,351 mℓ)	V5M21 (4WD-5M/T)	MPI	
K74T	YNDFL6	4D56-Turbocharger with intercooler (2,477 mℓ)	V5MT1 (4WD-5M/T)	Fuel injection	
	ZNDFL6	Intercooler (2,477 mt)			
	ENDFR6				
	JERDFL6		V4AW2 (4WD-4A/T)		
	GJENXFL6		V5MT1(4WD-5M/T)		
	CENDFL6				
	JENDFL6				
	JENHFL6				



MODEL CODE

00100040134

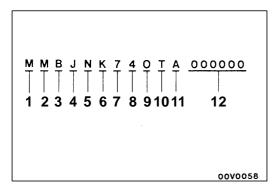
No.	Items	Contents
1	Vehicle line	K: L200
2	Drive system	6: 2WD
		7: 4WD
3	Engine type	2: 1,997 mℓ Petrol engine
		4: 2,477 mℓ Diesel engine
		5: 2,351 mℓ Petrol engine
4	Group	T: Truck
5	Vehicle wide, Cargo bed	None: Standard wide, With cargo bed
		G: Wide fender, with cargo bed
		Y: Without cargo bed (Cab and chassis, Single cab)
		Z: Without cargo bed (Cab and chassis, Double cab)
6	Cabin shape	None: Single cab
· _		J: Double cab
		C: Club cab
7	Rear body shape	None: Cab and chassis
		E: Smooth surface and low floor
8	Transmission type	N: 5-speed manual transmission (Floor shift)
		R: 4-speed automatic transmission (Floor shift)
9	Vehicle grade	D: GL
		H: GLX
		X: GLS
10	Specified engine feature	None: N/A
		E: MPI
		F: I/C T/C
11	Steering wheel location	L: Left hand
		R: Right hand
12	Destination	6: For Europe



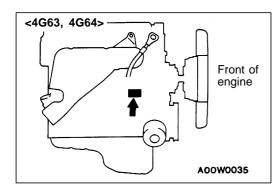
CHASSIS NUMBER

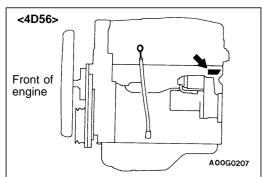
00100560067

The chassis number is stamped on the side wall of the frame near the rear wheel (R.H.).



No.	Items		Contents
1	Continent	М	ASIA
2	Country	М	THAILAND
3	Register code	В	Follow register
4	Body shape	С	Club cab
		J	Double cab
		0	Single cab
		Υ	Single cab without rear body
		Z	Double cab without rear body
5	Transmission type	N	5-speed manual transmission
		R	4-speed automatic transmission
6	Vehicle line	К	Mitsubushi L200
7	Body type	6	Long wheelbase
		7	4WD, Long wheelbase
8	Engine type	2	4G63: 1,997 mℓ petrol engine
		4	4D56: 2,477 mℓ diesel engine
		5	4G64: 2,351 mℓ petrol engine
9	International production control code	0	A, B, C, etc. 0 (zero): No meaning
10	Model year	Т	1996
11	Plant	А	A, C: LARDKRABANG factory D,F: LAEMCHABANG factory
12	Serial number	-	-





ENGINE MODEL NUMBER

00100570060

1. The engine model number is stamped at the cylinder block as shown in the following.

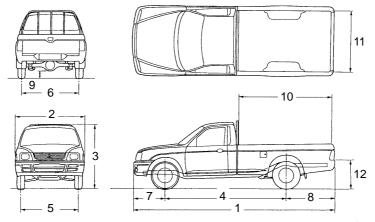
Engine model	Engine displacement mℓ		
4G63	1,997		
4G64	2,351		
4D56	2,477		

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

Engine serial number	AA0201 to YY9999

MAJOR SPECIFICATIONS

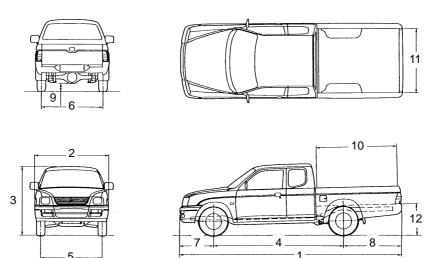
00100090146



P01A038

<2WD Single cab>

Items				K62T ENDEL6	K64T ENDL6	K64T YNDL6	K64T ENDR6
Vehicle	Overall length		1	4,935	4,935	4,775	4,935
dimensions mm	Overall width	Overall width		1,695	1,695	1,695	1,695
	Overall height (un	laden)	3	1,585	1,585	1,585	1,585
	Wheelbase		4	2,950	2,950	2,950	2,950
	Track-front		5	1,450	1,450	1,450	1,450
	Track-rear		6	1,435	1,435	1,435	1,435
	Overhang-front		7	775	775	775	775
	Overhang-rear		8	1,210	1,210	1,210	1,210
	Ground clearance	(unladen)	9	190	190	190	190
	Cargo area length	1	10	2,245	2,245	_	2,245
	Cargo area width		11	1,470	1,470	_	1,470
	Cargo bed height 12			680	680	_	680
Vehicle	Kerb weight			1,315	1,365	1,235	1,365
weight kg	Max. gross vehicle weight rating			2,520	2,570	2,570	2,570
	Max. axle weight rating-front			1,000	1,000	1,000	1,000
	Max. axle weight rating-rear			1,700	1,700	1,700	1,700
	Max. trailer	With brake	;	1,500	1,500	1,500	1,500
	weight	Without brake		500	500	500	500
	Max. trailer-nose weight			75	75	75	75
Seating capac	city			2	2	2	2
Engine	Model No.			4G63	4D56	4D56	4D56
	Total displacement mℓ			1,997	2,477	2,477	2,477
Transmis-	Model No.	Model No.			R5M21	R5M21	R5M21
sion	Туре			5-speed manual	5-speed manual	5-speed manual	5-speed manual
Fuel system	Fuel supply system			MPI	Fuel injection	Fuel injection	Fuel injection



00V0018

<2WD Double cab, Club cab>

Items				K64T CENDL6	K62T JERDEL6	K64T JENDL6	K64T ZENDL6
Vehicle	Overall length			5,050	4,935	4,935	4,775
dimensions mm	Overall width			1,695	1,695	1,695	1,695
	Overall height (un	laden)	3	1,605	1,610	1,610	1,625
	Wheelbase		4	2,950	2,950	2,950	2,950
	Track-front		5	1,450	1,450	1,450	1,450
	Track-rear		6	1,435	1,435	1,435	1,435
	Overhang-front		7	775	775	775	775
	Overhang-rear		8	1,325	1,210	1,210	1,210
	Ground clearance	(unladen)	9	190	190	190	190
	Cargo area length		10	1,830	1,500	1,500	_
	Cargo area width		11	1,470	1,470	1,470	_
	Cargo bed height 12			695	680	680	_
Vehicle	Kerb weight			1,440	1,435	1,465	1,335
weight kg	Max. gross vehicle weight rating			2,570	2,520	2,570	2,570
	Max. axle weight rating-front			1,000	1,000	1,000	1,000
	Max. axle weight rating-rear			1,700	1,700	1,700	1,700
	Max. trailer			1,500	1,500	1,500	1,500
	weight Without br		ake	500	500	500	500
	Max. trailer-nose weight			75	75	75	75
Seating capac	city			4	5	5	5
Engine	Model No.			4D56	4G63	4D56	4D56
	Total displacement mℓ			2,477	1,997	2,477	2,477
Transmis-	Model No.			R5M21	R4AW2	R5M21	R5M21
sion	Туре			5-speed manual	4-speed automatic	5-speed manual	5-speed manual
Fuel system	Fuel supply system			Fuel injection	MPI	Fuel injection	Fuel injection