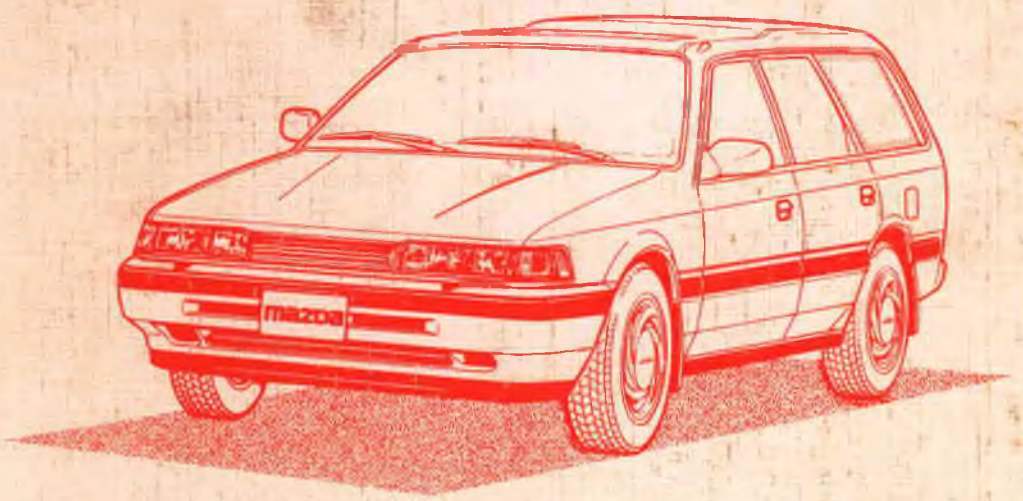
Mazda 626 Station Wagon

Workshop Manual Supplement



JMZ GV1232 01
JMZ GV1234 01
JMZ GV1252 01
JMZ GV1262 01
JMZ GV1272 01
JMZ GV1275 01
JMZ GV1292 01
JMZ GV12D2 01
JMZ GV12E2 01
JMZ GV12H2 01

JMO GV1022 00
GV10E2

11/89 1231-10-89K

mazda

Australia, Europe and General (L.H.D)

Mazda 626 Station Wagon Workshop Manual Supplement 1/89

Printed in Japan
1231-10-89K

Mazda 626 Station Wagon Workshop Manual Supplement

FOREWORD

This is a supplement to the following workshop manual. As to the service points, important safety notices and general service instructions which are not covered by this supplement, please refer to the previous workshop manuals.

626 Workshop Manual 1163-10-87G
626 Workshop Manual 1175-10-87F
626 Workshop Manual Supplement (UNLEADED) 1179-10-87K
626 Station Wagon Workshop Manual Supplement 1182-10-88B

As all information in this supplement was the best available at the time of printing, all alternations related to modifications will be notified by Service Information.

Mazda Motor Corporation
HIROSHIMA, JAPAN

APPLICATION:
This manual is applicable to vehicles beginning with the Vehicle Identification Numbers (VIN) shown on the following page.

Refer to the following wiring diagram if necessary.
Refer to form No. 5157-10-89K
5158-10-89K

CONTENTS

This manual explains only the sections marked with shadows ( )

PRINTED IN JAPAN, NOV., '89 (N)
1231-10-89K

VEHICLE IDENTIFICATION NUMBERS (VIN)

Europe

JMZ GV1232 01	200001 ~
JMZ GV1234 01	200001 ~
JMZ GV1252 01	200001 ~
JMZ GV1262 01	200001 ~
JMZ GV1272 01	200001 ~
JMZ GV1275 01	200001 ~
JMZ GV1292 01	200001 ~
JMZ GV12H2 01	200001 ~
JMZ GV12D2 01	200001 ~
JMZ GV12E2 01	200001 ~

Australia

JM0 GV1022	200001 ~

General (L.H.D.)

GV10E2	200001 ~

PARTS INDEX

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GENERAL INFORMATION

06UGIX-001

IMPORTANT INFORMATION

BASIC ASSUMPTIONS

This workshop manual assumes that you have certain special tools that are necessary for the safe and efficient performance of service operations on Mazda vehicles and that you know how to use them properly. It also assumes that you are familiar with automobile systems and basic service and repair procedures. You should not attempt to use this manual unless these assumptions are correct and you understand the consequences described below.

SAFETY RISK

This manual contains certain notes, warnings, etc., which you should carefully read and follow in order to eliminate the risk of personal injury to yourself or others and the risk of improper service which may damage the vehicle or render it unsafe. The fact that there are no such notes, etc., with respect to any specific service method does not mean that there is no possibility that personal safety or vehicle safety will be jeopardized by the use of incorrect methods or tools.

POSSIBLE LOSS OF WARRANTY

The manufacturer's warranty on Mazda vehicles and engines can be voided if improper service or repairs are performed by persons other than an Authorized Mazda Dealer.

WARNING ON LUBRICANTS AND GREASES

Avoid all prolonged and repeated contact with mineral oils, especially used oils. Used oils contaminated during service (e.g., engine sump oils) are more irritating and more likely to cause serious effects, including skin cancer, in the event of gross and prolonged skin contact.

Wash skin thoroughly after work involving oil.
Protective hand cleaners may be of value provided they can be removed from the skin with water. Do not use gasoline, paraffin, or other solvents to remove oil from the skin.

Lubricants and greases may be slightly irritating to the eyes.

Repeated or prolonged skin contact should be avoided by wearing protective clothing if necessary. Particular care should be taken with used oils and greases containing lead. Do not allow work clothing to be contaminated with oil. Dry clean or launder such clothing at regular intervals.

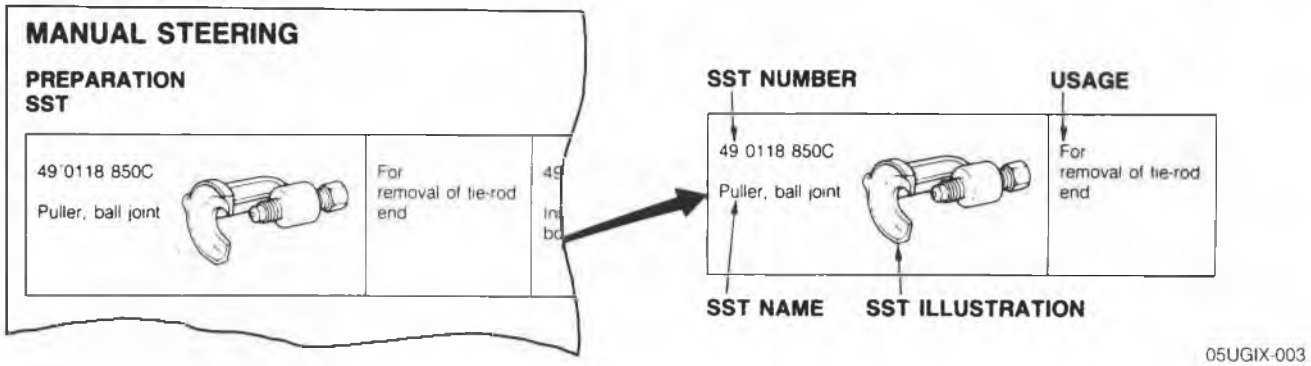
06UGIX-002

HOW TO USE THIS MANUAL

PREPARATION

PREPARATION points out the needed **Special Service Tool (SST)** for the service operation that it preceeds. Gather all necessary **SST** before beginning work.

Example:

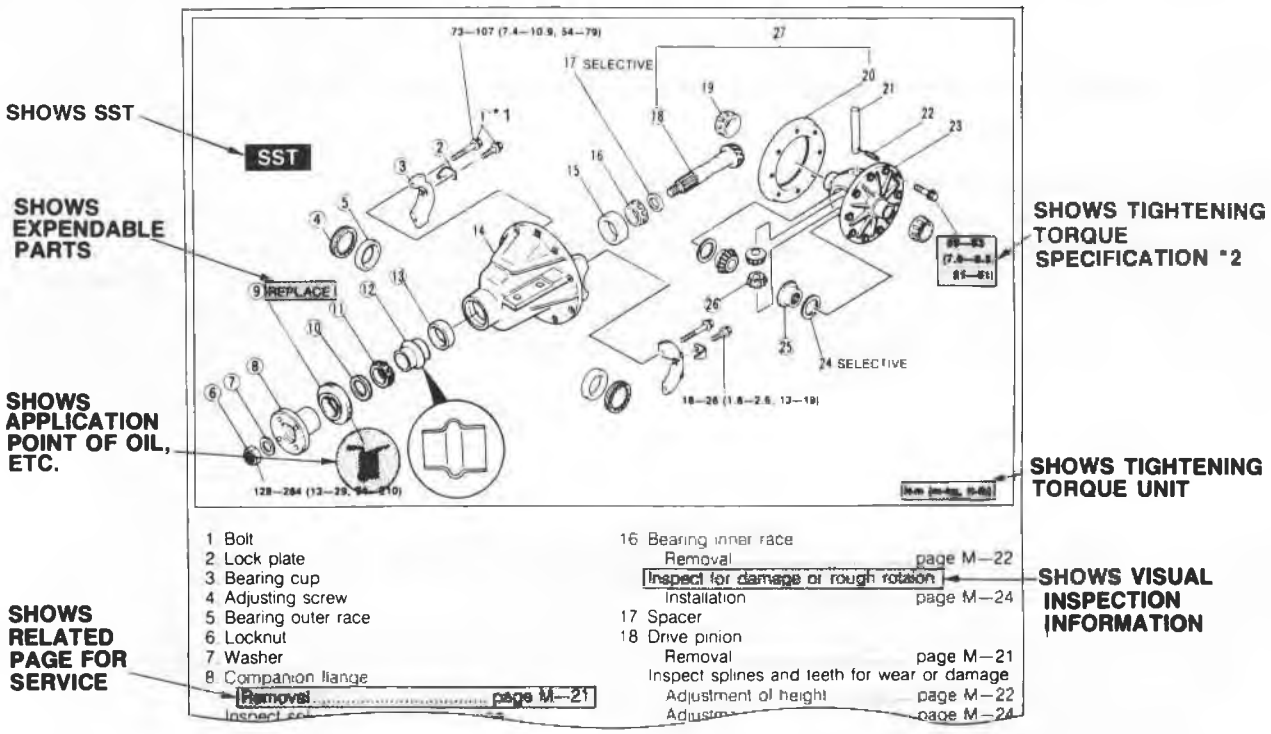


05UGIX-003

REPAIR PROCEDURE

1. Most repair operations begin with an overview illustration. It identifies the components, shows how the parts fit together, and visual parts inspections. If a damaged or worn part is found, repair or replace it as necessary.
2. Expendable parts, tightening torques, and symbols for oil, grease, and sealant are shown in the overview illustration.
3. Pages related to service procedures are shown under the illustration. Refer to this information when servicing the related part.

Example:



*1: The numbering (ex. ①) shown service procedure.
*2: Units shown in N·m (m-kg, ft-lb) unless otherwise specified.

06UGIX-003

SYMBOLS

There are six symbols indicating oil, grease, and sealant. These symbols show the points of applying such materials during service.

Symbol	Meaning	Kind
	Apply oil	New engine oil or gear oil as appropriate
	Apply brake fluid	Only brake fluid
	Apply automatic transmission fluid	Only ATF
	Apply grease	Appropriate grease
	Apply sealant	Appropriate sealant
	Apply petroleum jelly	Appropriate petroleum jelly

05UGIX-005

Note

- **When special oil or grease is needed, this is shown in the illustration.**

NOTES, CAUTIONS, AND WARNINGS

As you read through the procedures, you will come across NOTES, CAUTIONS, and WARNINGS. Each one is there for a specific purpose. **NOTES** give you **added information** that will help you to complete a particular procedure. **CAUTIONS** are given to prevent you from making an error that could **damage the vehicle. WARNINGS** remind you to be especially careful in those areas where carelessness can cause **personal injury.** The following list contains some general WARNINGS you should follow when you work on a vehicle.

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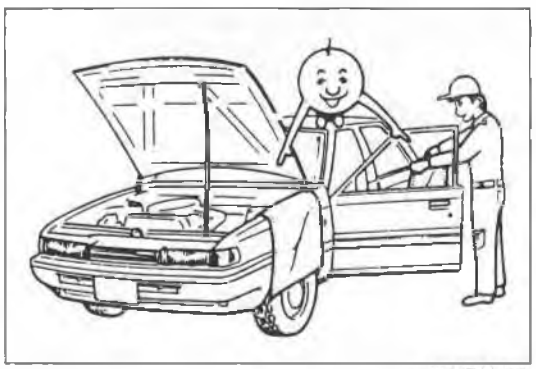
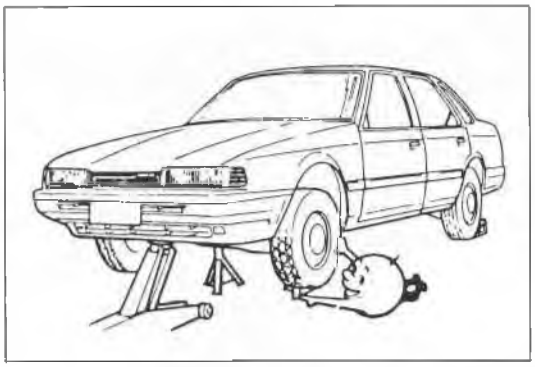


05UGIX-006

FUNDAMENTAL PROCEDURES

PROTECTION OF VEHICLE

Always be sure to cover fenders, seats, and floor areas before starting work.



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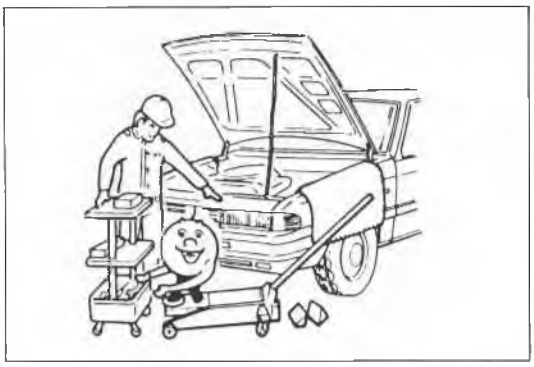
A WORD ABOUT SAFETY

The following precautions must be followed when jacking up the vehicle.

1. Block wheels.
2. Use only specified jacking positions.
3. Support vehicle with safety stands (rigid racks).

Start the engine only after making certain the engine compartment is clear of tools and people.



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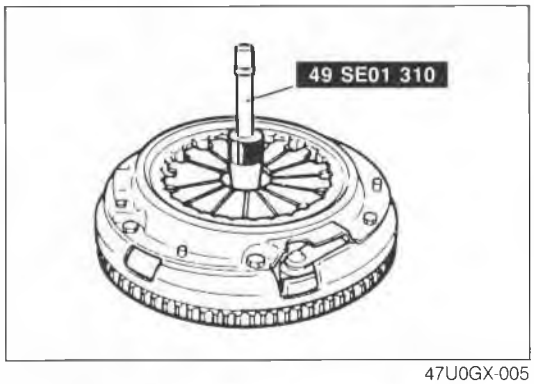
PREPARATION OF TOOLS AND MEASURING EQUIPMENT

Be sure that all necessary tools and measuring equipment are available before starting any work activity.



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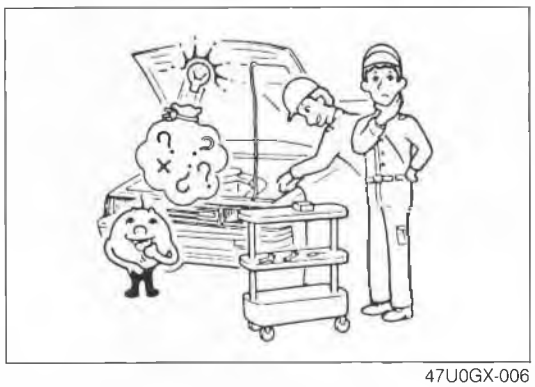
SPECIAL TOOLS

Use special tools when they are required.



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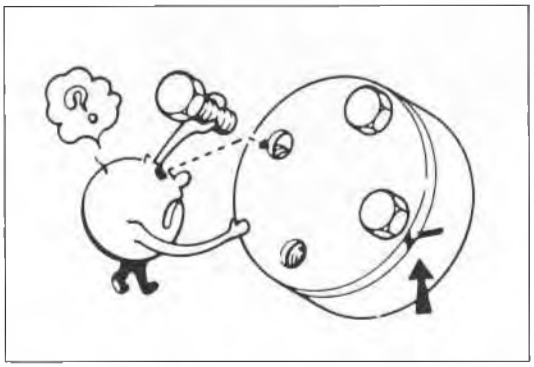
REMOVAL OF PARTS

While correcting a problem, try also to determine its cause. Begin work only after first learning which parts and subassemblies must be removed and disassembled for replacement or repair.



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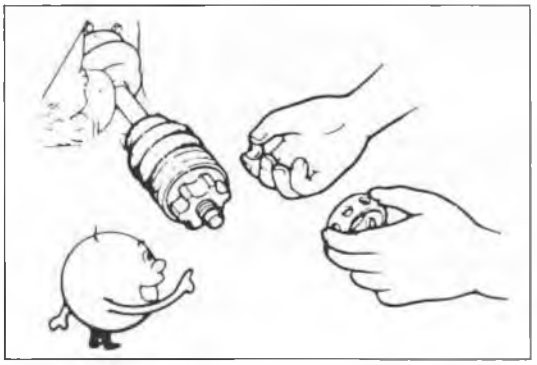
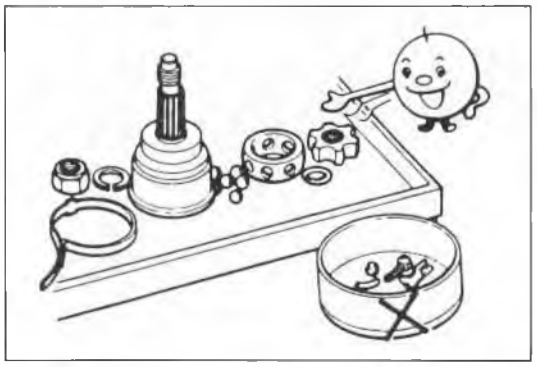
DISASSEMBLY

If the disassembly procedure is complex, requiring many parts to be disassembled, all parts should be disassembled in a way that will not affect their performance or external appearance, and be identified so that reassembly can be performed easily and efficiently.



06UGIX-004

1. Inspection of parts
When removed, each part should be carefully inspected for malfunctioning, deformation, damage, and other problems.



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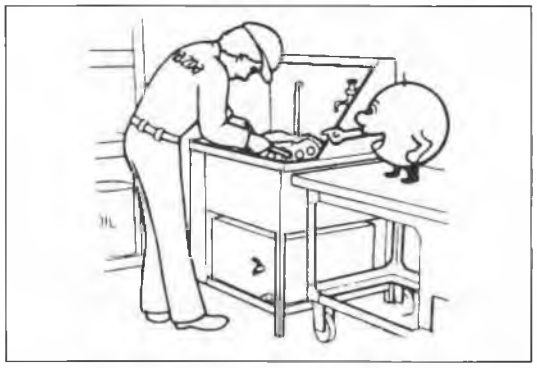
2. Arrangement of parts
All disassembled parts should be carefully arranged for reassembly.
Be sure to separate or otherwise identify the parts to be replaced from those that will be reused.



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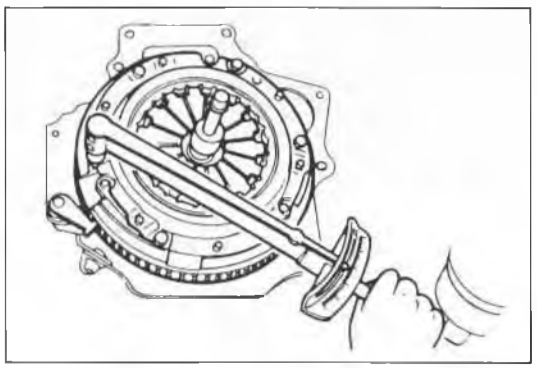
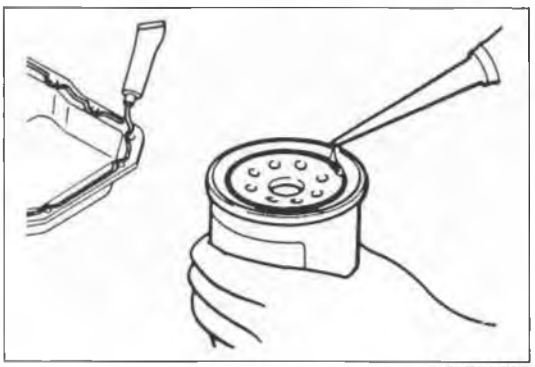
3. Cleaning parts for reuse
All parts to be reused should be carefully and thoroughly cleaned in the appropriate method.



06UGIX-005

ASSEMBLY
Standard values, such as torques and certain adjustments, must be strictly observed in the reassembly of all parts.
Refer to STANDARD BOLT AND NUT TIGHTENING TORQUE in Section TD for tightening torques not mentioned in the main text.
If removed, these parts should be replaced with new ones:

1. Oil seals
2. Gaskets
3. O-rings
4. Lock washers
5. Cotter pins
6. Nylon nuts



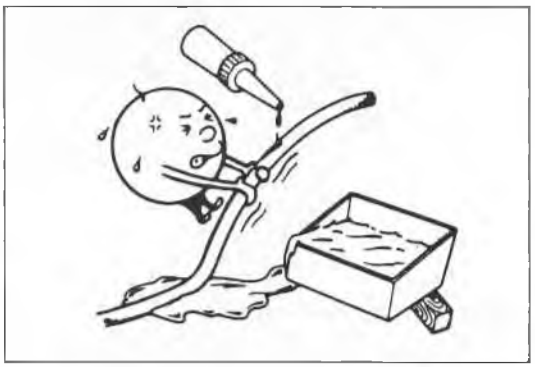
06UGIX-006

Depending on location:
1. Sealant should be applied to gaskets
2. Oil should be applied to the moving components of parts
3. Specified oil or grease should be applied at the prescribed locations (oil seals, etc.) before assembly.

06UGIX-007

ADJUSTMENTS

Use suitable gauges and/or testers when making adjustments.



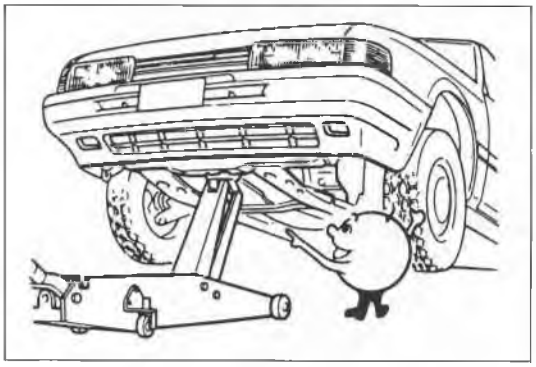
06UGIX-008

RUBBER PARTS AND TUBING

Prevent gasoline or oil from getting on rubber parts or tubing.

JACK AND SAFETY STAND (RIGID RACK) POSITIONS

FRONT END
Jack position:
At the center of the crossmember



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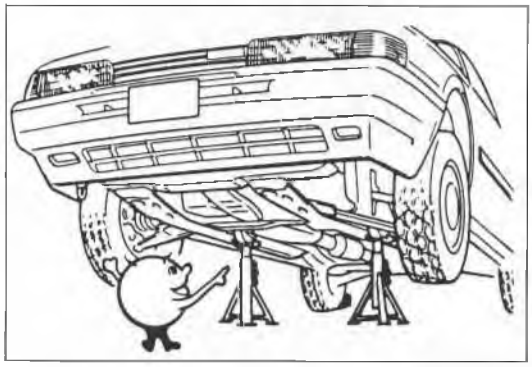
Safety stand positions:
On both sides of the body frame



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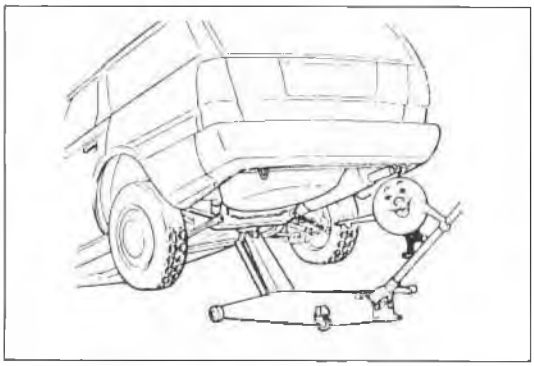
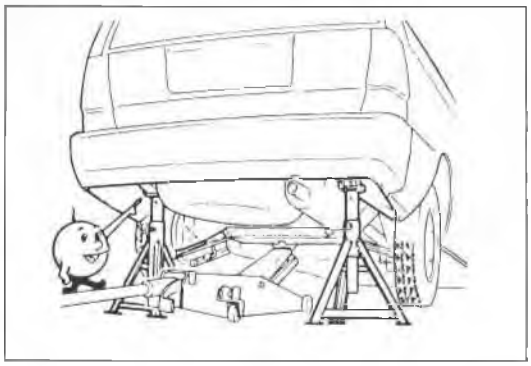
REAR END
Jack position:
At the center of the rear crossmember



86U0GX-003

Safety stand positions:
On both sides of the body frame



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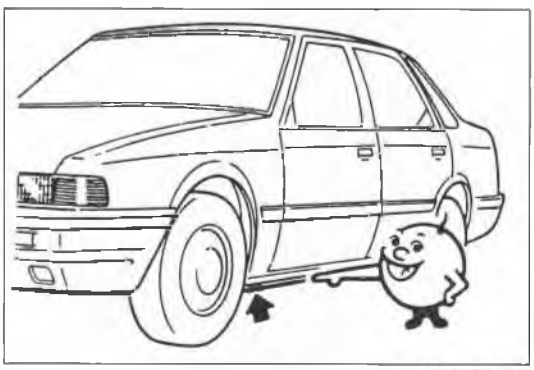
VEHICLE LIFT (2-SUPPORT TYPE) POSITIONS

FRONT END
Frame
Side sills (front)



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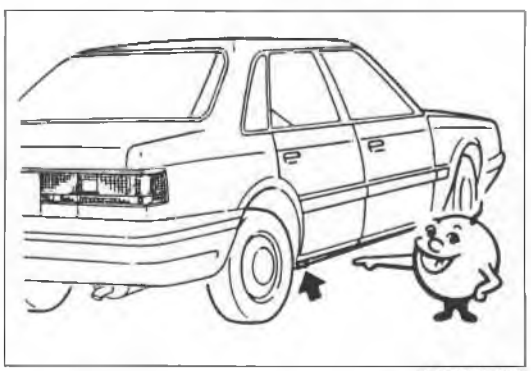
REAR END
Frame
Side sills (rear)



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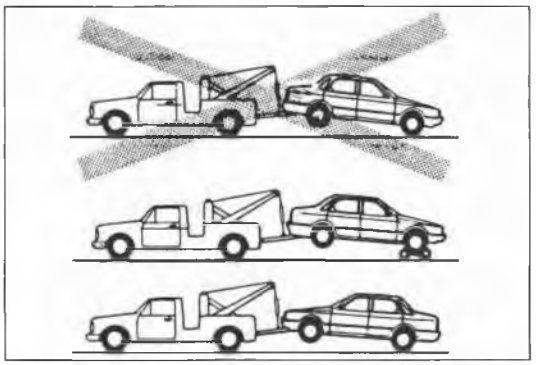

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TOWING

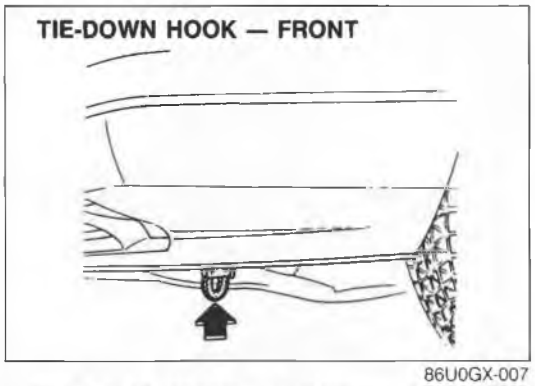
Proper lifting or towing procedures are necessary to prevent damage to the vehicle during any towing operation. State and local laws applicable to vehicles in tow must be followed.

With eigher automatic or manual transaxle, release the parking brake, place the selector lever (or shift lever) in neutral and set the ignition key in the "ACC" position. As a general rule, towed vehicles should be pulled with the driving wheels off the ground.

If excessive damage or other conditions prevent towing the vehicle with the driving wheels off the ground, use wheel dollies.

Caution

- **Do not tow the vehicle backward with driving wheels on the ground.**
- **This may damage the transaxle internal parts.**
- **Do not start or run the engine while vehicle is being towed.**
  (Only for 4WS vehicle)
- **When towing the vehicle with the front wheels, raised, be sure the rear wheels are in the straight-ahead position.**



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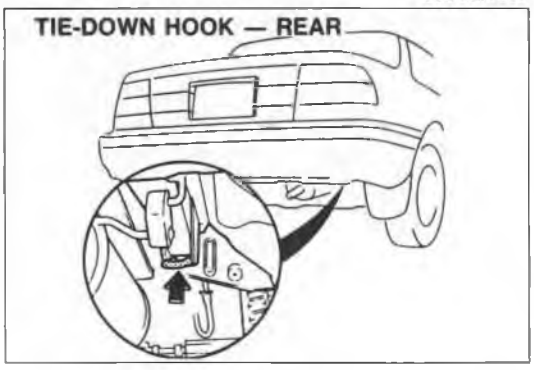
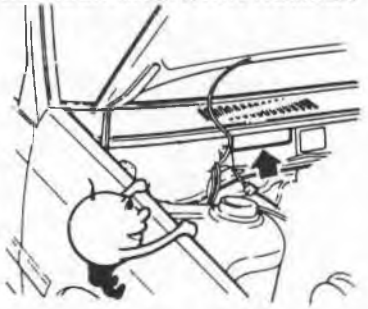


Caution

- **Do not use the hook loops under the front and rear of vehicle for towing purposes. These hook loops are designed ONLY for transport tie-down. If tie-down hook loops are used for towing, front/rear skirt and bumper will be damaged.**

IDENTIFICATION NUMBER LOCATIONS

VEHICLE IDENTIFICATION NUMBER



ENGINE MODEL AND NUMBER

06UGIX-009

UNITS

N·m (m-kg or cm-kg, ft-lb or in-lb)	Torque
rpm	Revolutions per minute
A	Ampere(s)
V	Volt(s)
Ω	Ohm(s) (resistance)
kPa (kg/cm^2 psi)	Pressure (usually positive)
mmHg (in Hg)	Pressure (usually negative)
W	Watt
mm (in)	Length
liters (US qt, Imp qt)	Volume
oz	ounce

96U0GX-002

ABBREVIATIONS

A/C	Air conditioner
ACC	Accessories
ABDC	After bottom dead center
ADD	Additional fan
ATDC	After top dead center
ATX	Automatic transaxle
ATF	Automatic transaxle fluid
ABS	Anti-lock brake system
BBDC	Before bottom dead center
BTDC	Before top dead center
EX	Exhaust
EC-AT	Electronically controlled automatic transaxle
ESPS	Engine speed sensing power steering
ECPS	Electronically-controlled power steering
HLA	Hydraulic Lash Adjuster
IG	Ignition
IN	Intake
IC	Integrated circuit
INT	Intermittent
LH	Left hand
MTX	Manual transaxle
M	Motor
OFF	Switch off
ON	Switch on
PCV	Positive crankcase ventilation
P/S	Power steering
P/W	Power window
RH	Right hand
ST	Start
SW	Switch
SST	Service special tools
4WS	4-wheel steering
2WS	2-wheel steering

96U0GX-003

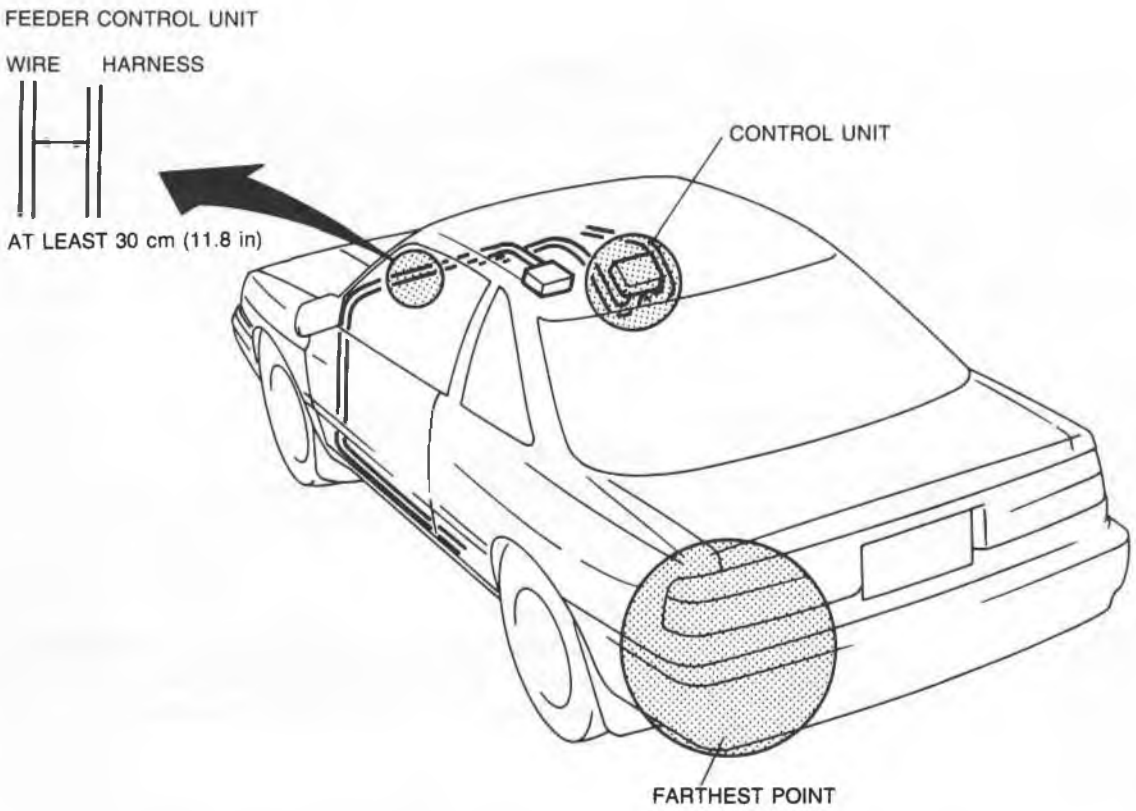
CAUTION

INSTALLATION OF A MOBILE TWO-WAY RADIO SYSTEM

If a mobile two-way radio system is installed improperly, or if a wrong type is used, the Fuel Injection system and other systems may be affected.

When car is equipped with a mobile two-way radio system, observe the following precautions.

1. Install the antenna at the farthest point from the control unit.
2. Keep the antenna feeder away from the control unit harness as far as possible.
   (at least 30 cm (11.8 in))
3. Insure that the antenna and feeder are properly adjusted.
4. Do not install a powerful mobile two-way radio system.



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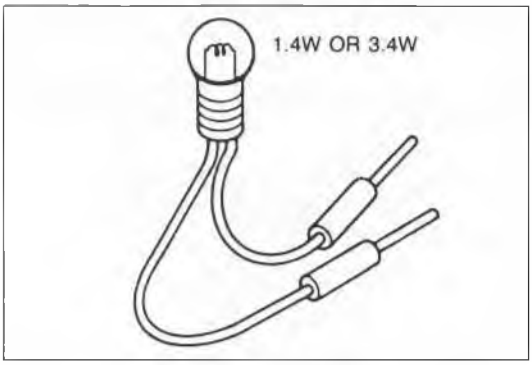
CAUTION



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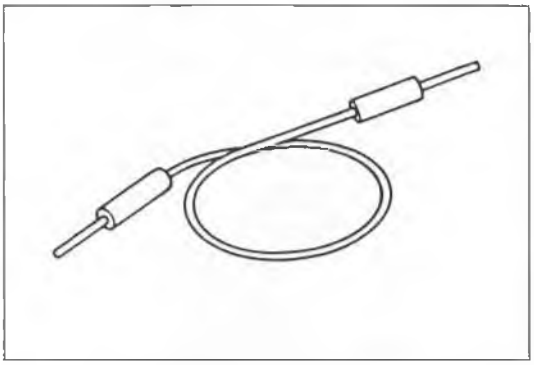

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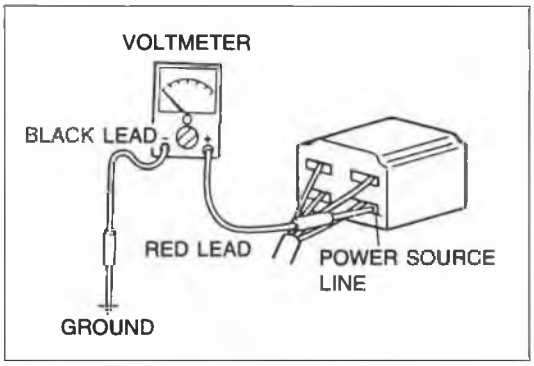

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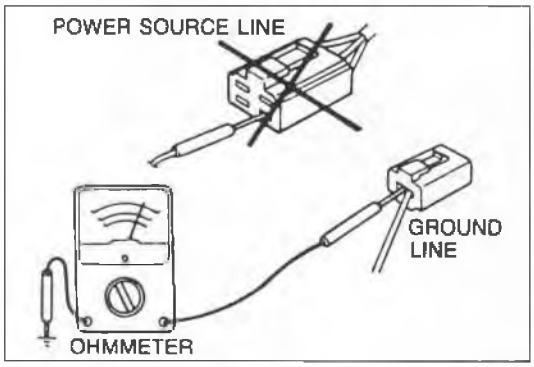

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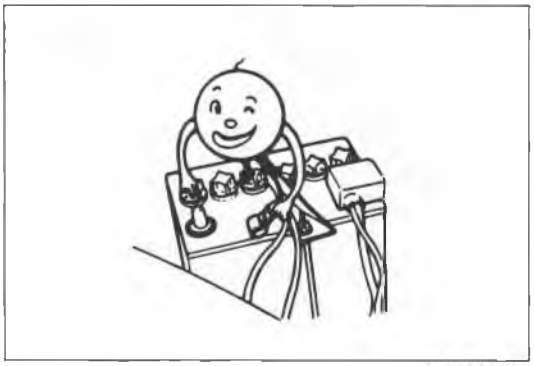


9MUGIX-022

ELECTRICAL TROUBLESHOOTING TOOLS

Test Light

The test light, as shown in the figure, uses a 12V bulb. The two lead wires should be connected to probes.
The test light is used for simple voltage checks and for checking for short circuits.

Caution

- **When checking the control unit, never use a bulb over 3.4W.**

Jumper Wire

The jumper wire is used for testing by shorting across switch terminals and ground connections.

Caution

- **Do not connect a jumper wire from the power source line to a body ground; this may cause burning or other damage to harnesses or electronic components.**

Voltmeter

The DC voltmeter is used to measure of circuit voltage. A voltmeter with a range of 15V or more is used by connecting the positive (+) probe (red lead wire) to the point where voltage is to be measured and the negative (–) probe (black lead wire) to a body ground.

Ohmmeter

The ohmmeter is used to measure the resistance between two points in a circuit and also to check for continuity and diagnosis of short circuits.

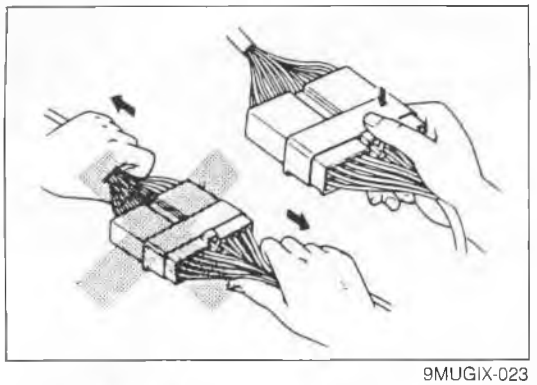
Caution

- **Do not attempt to connect the ohmmeter to any circuit to which voltage is applied; this may burn or otherwise damage the ohmmeter.**

CAUTION WITH ELECTRICAL PARTS

Battery Cable

Before disconnecting connectors or replacing electrical parts, disconnect the negative battery cable.



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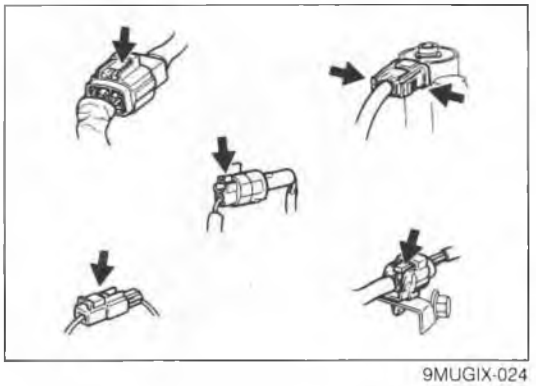
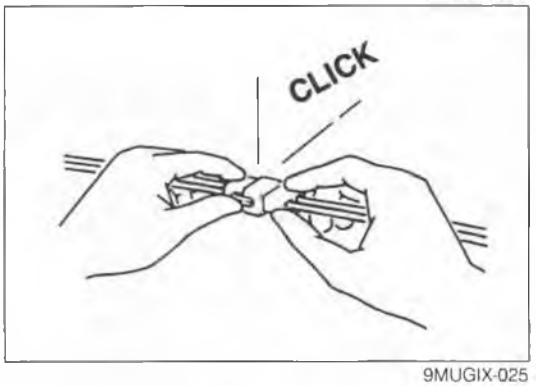
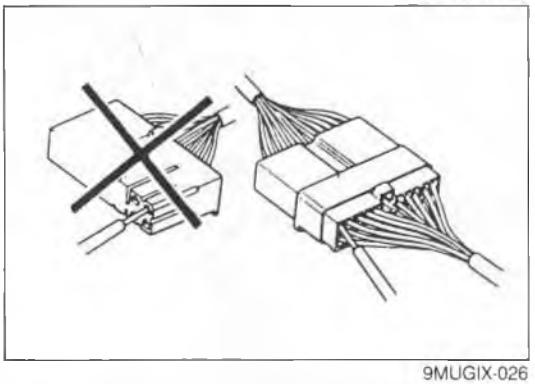


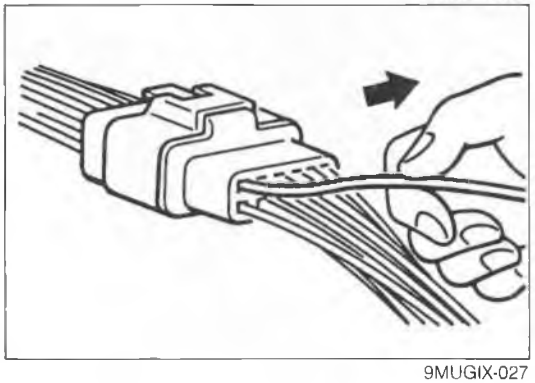
9MUGIX-024



9MUGIX-025



9MUGIX-026



9MUGIX-027

Connectors
Removal of connector
Never pull on the wiring harness when disconnecting connectors.

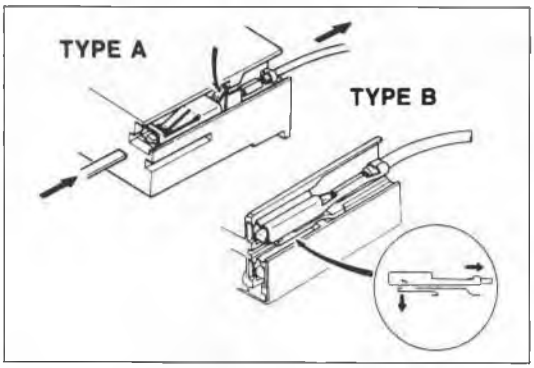
Connectors can be removed by pressing or pulling the lock lever as shown.

Locking of connector
When locking connectors, make sure to listen for a click that will indicate they are securely locked.

Inspection
When a tester is used to check for continuity or to measure voltage, insert the tester probe from the wire harness side.

Terminals
Inspection
Pull lightly on individual wires to check that they are secured in the terminal.

CAUTION

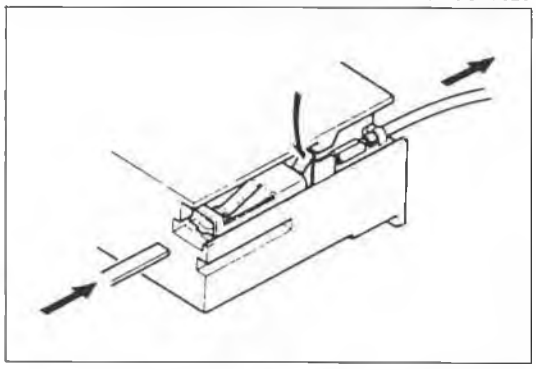


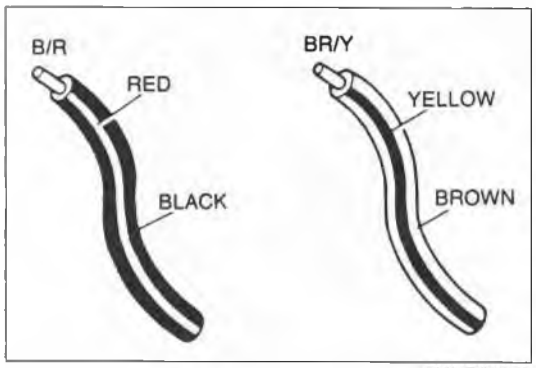
9MUGIX-028

Replacement of terminals
Use the appropriate tools to remove the terminal as shown. When installing the terminal, be sure to insert it until it locks securely.

<Female>
Insert a thin piece of metal from the terminal side of the connector, and then, with the terminal locking tab pressed down, pull the terminal out from the connector.

<Male>
Same as the female type.

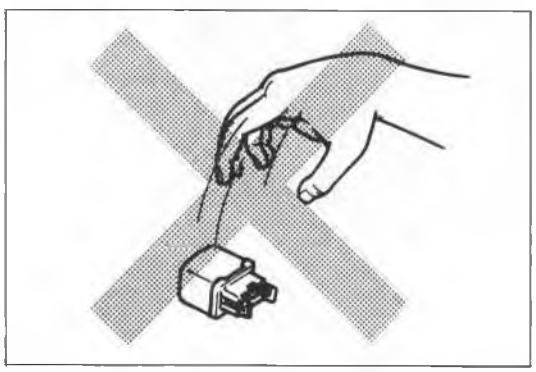




9MUGIX-029

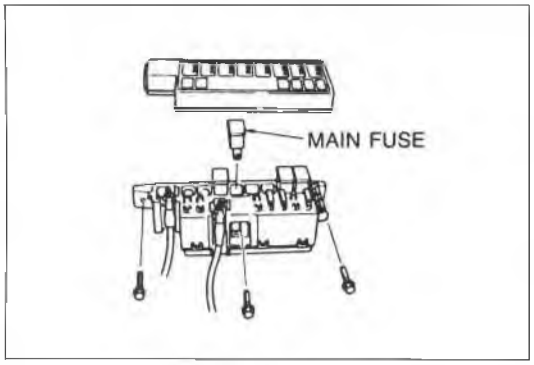
Wiring Harness
Wiring color codes
Two-color wires are indicated by a two-color code symbol. The first letter indicates the base color of the wire and the second the color of the stripe.

CODE	COLOR		CODE	COLOR
B	Black		O	Orange
BR	Brown		P	Pink
G	Green		R	Red
GY	Gray		V	Violet
L	Blue		W	White
LB	Light Blue		Y	Yellow
LG	Light Green		—	—

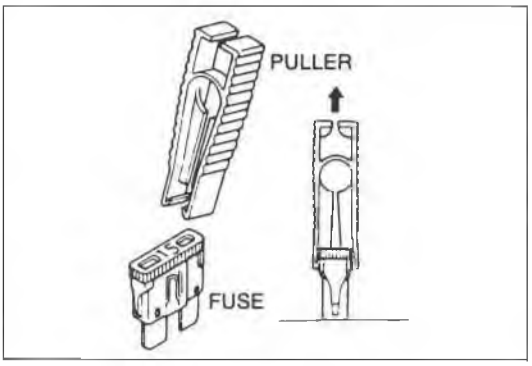


9MUGIX-030

Sensors, Switches, and Relays
Handle sensors, switches, and relays carefully. Do not drop them or strike them against other parts.



06UGIX-011



9MUGIX-032

Fuse
Replacement

1. When replacing a fuse, be sure to replace it with one of specified capacity.
   If a fuse again fails after it has been replaced, the circuit probably has a short circuit and the wiring should be checked.
2. Be sure the negative battery terminal is disconnected before replacing a main fuse (80A and 100A).
3. When replacing a pullout fuse, use the fuse puller supplied in the fuse box cover.

PRE-DELIVERY INSPECTION AND SCHEDULED MAINTENANCE SERVICES

96G0AX-001

PRE-DELIVERY INSPECTION

PRE-DELIVERY INSPECTION TABLE

EXTERIOR

INSPECT and **ADJUST**, if necessary, the following items to the specifications:
- ☐ Glass, exterior bright metal and paint for damage
- ☐ Wheel lug nuts
  88—118 N·m (9—12 m-kg, 65—87 ft-lb)
- ☐ Tire pressures (Refer to Section Q)
- ☐ All weatherstrips for damage or detachment
- ☐ Operation of bonnet release and lock
- ☐ Operation of fuel lid and trunk lid (Back door) opener
- ☐ Door operation and alignment
- ☐ Headlight aiming

INSTALL following parts:
- ☐ Wheel caps or rings (if equipped)
- ☐ Outside rear view mirror(s)

UNDER BONNET—ENGINE OFF

INSPECT and **ADJUST**, if necessary, the following items to the specifications:
- ☐ Fuel, coolant and hydraulic lines, fittings, connections and components for leaks
- ☐ Engine oil level
- ☐ Power steering fluid level (if equipped)
- ☐ Brake and clutch master cylinder fluid level (if equipped)
- ☐ Windshield washer reservoir fluid level
- ☐ Radiator coolant level and specific gravity

Protection °C (°F)	Specific gravity at 20°C (68°F)
–4 (25)	1.028
–16 (3)	1.054
–26 (–15)	1.066
–40 (–40)	1.078

- ☐ Tightness of water hose clamps (including heater hoses)
- ☐ Tightness of battery terminals
- ☐ Manual transaxle oil level
- ☐ Drive belt tensions
- ☐ Accelerator cable and its linkage for free movement
- ☐ Headlight cleaner fluid level (if equipped)

CLEAN spark plugs

INTERIOR

INSTALL the following parts:
- ☐ Rubber stopper for inside rear view mirror
- ☐ Fuse for accessories

CHECK the operations of the following items:
- ☐ Seat controls (sliding and reclining) and head rest
- ☐ Door locks including childproof door locks (if equipped)
- ☐ Seat belts and warning system
- ☐ Ignition switch and steering lock
- ☐ Inhibitor switch (ATX only)
- ☐ All lights including warning and indicator lights
- ☐ Sound warning system
- ☐ Headlight cleaner (if equipped)
- ☐ Horn, wipers and washers (front and rear, if equipped)
- ☐ Radio and antenna (if equipped)
- ☐ Cigarette lighter and clock
- ☐ Remote control outside rear view mirrors (if equipped)
- ☐ Power windows (if equipped)
- ☐ Heater, defroster and air conditioner at various mode selection (if equipped)
- ☐ Sunroof (if equipped)

ADJUST antenna trimmer on radio (if equipped)

CHECK the following items:
- ☐ Presence of spare fuse
- ☐ Upholstery and interior finish

CHECK and **ADJUST**, if necessary, the following items:
- ☐ Operation and fit of windows
- ☐ Pedal height and free play of brake and clutch pedal

	Pedal height mm (in)	Free play mm (in)
Clutch pedal	216.5—221.5 (8.52—8.72)	5—13 (0.2—0.51)
Brake pedal	222—227 (8.74—8.94)	4—7 (0.16—0.28)

- ☐ Parking brake
  5—7 noches/98 N (10 kg, 22lb)

UNDER BONNET—ENGINE RUNNING AT OPERATING TEMPERATURE

CHECK the following items:
- ☐ Operation of idle-up system for air conditioner or power steering (if equipped)
- ☐ Automatic transaxle fluid level
- ☐ Operation of dash pot
- ☐ Initial ignition timing
- ☐ Idle speed

ON HOIST

CHECK the following items:
- ☐ Underside fuel, coolant and hydraulic lines, fittings, connections and components for leaks
- ☐ Tires for cuts or bruises
- ☐ Steering linkage, suspension, exhaust system and all underside hardware for looseness or damage

REMOVE protective cover from brake discs

ROAD TEST

CHECK the following items:
- ☐ Brake operation
- ☐ Clutch operation
- ☐ Steering control
- ☐ Operation of meters and gauge
- ☐ Squeaks, rattles or unusual noise
- ☐ Engine general performance (including turbo)
- ☐ Emergency locking retractors
- ☐ Cruise control system (if equipped)

AFTER ROAD TEST

REMOVE seat and floor mat protective covers

CHECK for necessary owner information materials, tools and spare tire in vehicle

96G0AX-002

SCHEDULED MAINTENANCE SERVICES

MAINTENANCE TABLE (LEADED GASOLINE ENGINE MODEL)

Chart Symbols:

I : Inspect: Visual examination or functional measurement of a system's operation (performance)
A : Adjust: Examination resulting in adjustment or replacement
R : Replace or change
T : Tighten
○ : Applicable
X : Not applicable
◎**1:** F8 engine with carburetor
◎**2:** FE engine with carburetor
◎**3:** FE DOHC engine with fuel injection
◎**4:** RF engine with MTX

Remarks:

Major service interval at 12 months/20,000 km (12,000 Miles), Lubrication service based on distance only 10,000 km (6,000 Miles) not time
After 80,000 km (48,000 Miles) or 48 months, continue to follow the described maintenance items and intervals periodically.
As for * marked items in this maintenance chart, please pay attention to the following points.

*1 Replacement of the timing belt is required at every 100,000 km (60,000 Miles). Failure to replace the timing belt may result in damage to the engine.
*2 If the vehicle is operated under the following conditions, it is suggested that the engine oil and oil filter be changed more often than at usual recommended intervals.
  a) Driving in dusty conditions.
  b) Extended periods of idling or low speed operation.
  c) Driving for a prolonged period in cold temperatures or driving only short distances regularly.
*3 If the vehicle is operated in very dusty or sandy areas, inspect and, if necessary, replace more often than at usual recommended intervals.
*4 This is a full function check of all electrical systems, i.e., all lights, washers (including condition of blades) electrical windows, sunroof, horn, etc....
*5 Replace every two years.
  If there has been continuous hard driving, mountain driving, or if the brakes are used extensively or the vehicle is operated in extremely humid climates, the brake fluid should be changed annually.
*6 Adjust alternator and water pump drive belt, power steering and air conditioner drive belt, if equipped.

Emission Control and Related Systems

The ignition and fuel systems are vitally important to the proper operation of the emissions control and related systems, as well as for efficient engine operation. It is strongly recommended that all servicing related to these systems be done by an Authorized Mazda Dealer.

96G0AX-501

MAINTENANCE TABLE (LEADED GASOLINE ENGINE MODEL)

Interval / Procedure & item	Number of Months or km, whichever comes first										◎1	◎2	◎3	◎4
	Months	—	6	12	18	24	30	36	42	48				
	x1,000 km	1	10	20	30	40	50	60	70	80				
	Miles x1,000	0.6	6	12	18	24	30	36	42	48				
Clutch pedal			I	I	I	I	I	I	I	I	○	○	○	○
Brake pedal			I	I	I	I	I	I	I	I	○	○	○	○
Parking brake				A		A		A		A	○	○	○	○
Power brake unit and hoses				I		I		I		I	○	○	○	○
Brake fluid*5			I	I	I	R	I	I	I	R	○	○	○	○
Clutch fluid			I	I	I	I	I	I	I	I	○	○	○	○
Power steering fluid			I	I	I	I	I	I	I	I	○	○	○	○
Power steering system and hoses				I		I		I		I	○	○	○	○
Air cleaner element*3				I		R		I		R	○	○	○	○
Choke system (Only for Carb.)				I		I		I		I	○	○	X	X
Cooling system (including coolant level adjustment)				I		I		I		I	○	○	○	○
Engine coolant	Replace every 2 years										○	○	○	○
Battery electrolyte level and specific gravity				A		A		A		A	○	○	○	○
Drive belts (I)...For RF engine*6	A	(I)	A	(I)	A	(I)	A	(I)	A		○	○	○	○
Engine timing belt*1	Replace every 100,000 km										○	○	○	○
Engine valve clearance	A		A		A		A		A		○	X	X	○
Intake and exhaust manifold nuts and bolts	T				T				T		○	○	X	X
Engine oil*2	R	R	R	R	R	R	R	R	R		○	○	○	○
Oil filter*2		R	R	R	R	R	R	R	R		○	○	○	○
Fuel filter (R) for carburetor model			(R)		R		(R)		R		○	○	○	○
Fuel lines and hoses			I		I		I		I		○	○	○	○
Spark plugs			A		A		A		A		○	○	○	X
Initial ignition timing		I	I	I	I	I	I	I	I		○	○	○	X
Idle speed (A)...For Carb.	(A)		A		A		A		A		○	○	○	X
Idle mixture (A)...For Carb.	(A)		A		A		A		A		○	○	○	X
Dashpot (MTX)			A		A		A		A		○	○	X	X
Coasting leaner system			I		I		I		I		○ MTX	○	X	X
All electrical system*4		I	I	I	I	I	I	I	I		○	○	○	○
Headlight alignment			A		A		A		A		○	○	○	○
Steering and front suspension			I		I		I		I		○	○	○	○
Wheel bearing grease (if applicable)									A		○	○	○	○
Manual transaxle oil					A				R		○	○	○	○
Automatic transaxle fluid level					A				A		X	○	X	○
Drive shaft dust boots			I		I		I		I		○	○	○	○
Bolts and nuts on chasis and body	T		T		T		T		T		○	○	○	○
Disc brakes			I		I		I		I		○	○	○	○
Brake lines, hoses, and connections			I		I		I		I		○	○	○	○
Body condition, visual only	Inspect annually										○	○	○	○
Tyres (including spare tyre) Infration pressure adjustment			I		I		I		I		○	○	○	○
Hinges and cathes			A		A		A		A		○	○	○	○
Underside of vehicle			I		I		I		I		○	○	○	○
Seat belt			I		I		I		I		○	○	○	○
Road test			I		I		I		I		○	○	○	○

96G0AX-502

MAINTENANCE TABLE (UNLEADED GASOLINE ENGINE MODEL)

Chart Symbols:

I : Inspect: Visual examination or functional measurement of a system's operation (performance)
A : Adjust: Examination resuiting in adjustment or replacement
R : Replace or change
T : Tighten
○ : Applicable
X : Not applicable
◎**1:** FE engine with fuel injection
◎**2:** FE DOHC engine with fuel injection
◎**3:** F2 engine with fuel injection

Remarks:

Major service interval at 12 months/20,000 km (12,000 Miles), Lubrication service based on distance only 10,000 km (6,000 Miles) not time
After 80,000 km (48,000 Miles) or 48 months, continue to follow the described maintenance items and intervals periodically.
As for * marked items in this maintenance chart, please pay attention to the following points.

*1 Replacement of the timing belt is required at every 100,000 km (60,000 Miles). Failure to replace the timing belt may result in damage to the engine.
*2 If the vehicle is operated under the following conditions, it is suggested that the engine oil and oil filter be changed more often than at usual recommended intervals.
a) Driving in dusty conditions.
b) Extended periods of idling or low speed operation.
c) Driving for a prolonged period in cold temperatures or driving only short distances regularly.
*3 If the vehicle is operated in very dusty or sandy areas, inspect and, if necessary, replace more often than at usual recommended intervals.
*4 This is a full function check of all electrical systems, i.e., all lights, washers (including condition of blades) electrical windows, sunroof, horn, etc....
*5 Replace every two years.
If there has been continuous hard driving, mountain driving, or if the brakes are used extensively or the vehicle is operated in extremely humid climates, the brake fluid should be changed annually.
*6 Adjust alternator and water pump drive belt, power steering and air conditioner drive belt, if equipped.

Emission Control and Related Systems

The ignition and fuel systems are vitally important to the proper operation of the emissions control and related systems, as well as for efficient engine operation. It is strongly recommended that all servicing related to these systems be done by an Authorized Mazda Dealer.

96E0AX-008

SCHEDULED MAINTENANCE SERVIES

MAINTENACE TABLE (UNLEADED GASOLINE ENGINE MODEL)

Interval / Procedure & item		Number of Months or km, whichever comes first									◎1	◎2	◎3
	Months	—	6	12	18	24	30	36	42	48			
	x1,000 km	1	10	20	30	40	50	60	70	80			
	Miles x1,000	0.6	6	12	18	24	30	36	42	48			
Clutch pedal			I	I	I	I	I	I	I	I	○	○	○
Brake pedal			I	I	I	I	I	I	I	I	○	○	○
Parking brake				A		A		A		A	○	○	○
Power brake unit and hoses				I		I		I		I	○	○	○
Brake fluid*5			I	I	I	R	I	I	I	R	○	○	○
Clutch fluid			I	I	I	I	I	I	I	I	○	○	○
Power steering fluid			I	I	I	I	I	I	I	I	○	○	○
Power steering system and hoses				I		I		I		I	○	○	○
Air cleaner element*3				I		R		I		R	○	○	○
Cooling system (including coolant level adjustment)				I		I		I		I	○	○	○
Engine coolant		Replace every 2 years									○	○	○
Battery electrolyte level and specific gravity				A		A		A		A	○	○	○
Drive belts		A		A		A		A		A	○	○	○
Engine timing belt*1		Replace every 100,000 km									○	○	○
Engine valve clearance		A		A		A		A		A	○		
Intake and exhaust manifold nuts and bolts		T				T				T	○	X	○
Engine oil*2		R	R	R	R	R	R	R	R	R	○	○	○
Oil filter*2			R	R	R	R	R	R	R	R	○	○	○
Fuel filter						R				R	○	○	○
Fuel lines and hoses				I		I		I		I	○	○	○
Spark plugs	Except Sweden			A		A		A		A	○	○	○
	Sweden	Adjust every 30,000 km									○	○	○
Initial ignition timing			I	I	I	I	I	I	I	I	○	○	○
Idle speed				A		A		A		A	○	○	○
E.G.R. system	Except Sweden			A		A		A		A	○	○	○
	Sweden	Adjust every 80,000 km									○	○	○
Evaporative system (if equipped)	Except Sweden			I		I		I		I	○	○	X
	Sweden	Inspect every 80,000 km									○	○	○
All electrical system*4			I	I	I	I	I	I	I	I	○	○	○
Headlight aligment				A		A		A		A	○	○	○
Steering and front suspension				I		I		I		I	○	○	○
Marual transaxle oil						A				R	○	○	○
Wheel bearing grease (If applicable)										A	○	○	○
Bolts and nuts on chassis and body		T		T		T		T		T	○	○	○
Brake lines, hoses, and connections				I		I		I		I	○	○	○
Disc brakes				I		I		I		I	○	○	○
Exhaust system heat shields (unleaded)						I				I	○	○	○
Body condition visual only		Inspect annually									○	○	○
Tyres (including spare tyre) Infration pressure adjustment				I		I		I		I	○	○	○
Hinges and cathes				A		A		A		A	○	○	○
Underside of vehicle				I		I		I		I	○	○	○
Seat belt				I		I		I		I	○	○	○
Road test				I		I		I		I	○	○	○

96G0AX-503

SCHEDULED MAINTENANCE SERVICES

MAINTENANCE TABLE (AUSTRALIA)

Chart Symbols:

I : Visual examination or functional measurement of a system's operation (performance)
A : Adjust
R : Replace or change
T : Tighten

Note:

As the result of visual examination or functional measurement of a system's operation (performance), correct, clean or replace as required.

Remarks:

After 90,000 km or 72 months, continue to follow the described maintenance items and intervals periodically.
As for * marked items in this maintenance chart, please pay attention to the following points.

*1 If the vehicle is operated under the following conditions, it is suggested that the engine oil and oil filter be changed more often than at usual recommended intervals.
a) Driving in dusty conditions.
b) Extended periods of idling or low speed operation.
c) Driving for a prolonged period in cold temperatures or driving only short distances regularly.

*2 Replacement of the timing belt is required at every 105,000 km. Failure to replace the timing belt may result in damage to the engine.

*3 If the vehicle is operated in very dusty or sandy areas, inspect and, if necessary, replace more often than at usual recommended intervals.

*4 Adjust or inspect alternator drive belt, and power steering and air conditioner drive belt if equipped.

*5 Replace every two years.
If there has been continuous hard driving, mountain driving, or if the brakes are used extensively or the vehicle is operated in extremely humid climates, the brake fluid should be changed annually.

Emission Control and Related Systems

The ignition and fuel systems are vitally important to the proper operation of the emissions control and related systems, as well as for efficient engine operation. It is strongly recommended that all servicing related to these systems be done by an Authorized Mazda Dealer.

96A0AX-003

MAINTENANCE TABLE (AUSTRALIA)

Interval / Procedure & item	Number of months or km whichever comes first												
	Months	**—**	**6**	**12**	**18**	**24**	**30**	**36**	**42**	**48**	**54**	**60**	**66**	**72**
	Kilometers (x1,000)	**1.5**	**7.5**	**15**	**22.5**	**30**	**37.5**	**45**	**52.5**	**60**	**67.5**	**75**	**82.5**	**90**
Steering operation and gear housing		I				I				I				I
Steering linkages, rack guide and tie-rod ends		I				I				I				I
Power steering fluid and line (if equipped)		I		I		I		I		I		I		I
Air cleaner element*3				I		R		I		R		I		R
Cooling system		I		I		I		I		I		I		I
Spark plug				I		I		I		I		I		I
Engine coolant (with reservoir)		Replace every 24 months												
Drive belts*4		A		I		I		I		I		I		I
Fuel filter						R				R				R
Fuel lines and hoses		I		I		I		I		I		I		I
Brake lines, hoses and connections		I		I		I		I		I		I		I
Engine timing belt*2		Replace every 105,000 km												
Engine oil*1		R	R	R	R	R	R	R	R	R	R	R	R	R
Oil filter*1		R		R		R		R		R		R		R
Exhaust manifold bolts and nuts		T						T						T
Idle speed				I		I		I		I	I		I	
Initial ignition timing		I		I		I		I		I		I		I
Evaporative system				I		I		I		I		I		I
Throttle sensor				I		I		I		I		I		I
EGR system						I				I				I
Battery electrolyte level and specific gravity				I		I		I		I		I		I
Brake fluid*5		I	I	I	I	R	I	I	I	R	I	I	I	R
Clutch fluid		I		I		I		I		I		I		I
Manual transaxle oil		I	I	I	I	I	I	I	I	I	I	R	I	I
Automatic transaxle fluid level		I	I	I	I	I	I	I	I	I	I	I	I	I
Clutch pedal						I				I				I
Parking brake				I		I		I		I		I		I
Disc brakes				I		I		I		I		I		I
Front suspension ball joints						I				I				I
Drive shafts dust boots						I				I				I
Exhaust system heat shields								I						I
Bolts and nuts on chassis and body		T		T		T		T		T		T		T

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SCHEDULED MAINTENANCE SERVICES

MAINTENANCE TABLE (GENERAL L.H.D., R.H.D.)

Chart Symbols:

I : Inspect: Visual examination and/or functional measurement of a system's operation (performance)
A : Adjust: Examination resuiting in adjustment or replacement
R : Replace or change
T : Tighten
○ : Applicable
X : Not applicable
◎**1** : FE engine (8-valve) with carburetor
◎**2** : FE engine (12-valve) with carburetor
◎**3** : RF engine

Note:

As the result of visual examination or functional measurement of a system's operation (performance), correct, clean or replace as required.

Remarks:

After 80,000 km (48,000 Miles) or 48 months, continue to follow the described maintenance items and intervals periodically.
As for * marked items in this maintenance chart, please pay attention to the following points.

*1 If the vehicle is operated under the following conditions, it is suggested that the engine oil and oil filter be changed more often than at usual recommended intervals.
a) Driving in dusty conditions.
b) Extended periods of idling or low speed operation.
c) Driving for a prolonged period in cold temperatures or driving only short distances regularly.

*2 Replacement of the timing belt is required at every 100,000 km (60,000 Miles). Failure to replace the timing belt may result in damage to the engine.

*3 If the vehicle is operated in very dusty or sandy areas, inspect and, if necessary, replace more often than at usual recommended intervals.

*4 Adjust or inspect alternator and vacuum pump drive belt, and power steering and air conditioner drive belt, if equipped.

*5 Replace every two years.
If there has been continuous hard driving, mountain driving, or if the brakes are used extensively or the vehicle is operated in extremely humid climates, the brake fluid should be changed annually.

Emission Control and Related Systems

The ignition and fuel systems are vitally important to the proper operation of the emissions control and related systems, as well as for efficient engine operation. It is strongly recommended that all servicing related to these systems be done by an Authorized Mazda Dealer.

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MAINTENANCE TABLE (GENERAL L.H.D., R.H.D.)

Interval / Procedure & item		Number of Months or km, whichever comes first									◎1	◎2	◎3
	Months	—	6	12	18	24	30	36	42	48			
	x1,000 km	1	10	20	30	40	50	60	70	80			
	Miles x1,000	0.6	6	12	18	24	30	36	42	48			
Clutch pedal			I	I	I	I	I	I	I	I	○	○	○
Brake pedal			I	I	I	I	I	I	I	I	○	○	○
Parking brake			I	I	I	I	I	I	I	I	○	○	○
Power brake unit and hoses				I		I		I		I	○	○	○
Brake fluid*5			I	I	I	R	I	I	I	R	○	○	○
Clutch fluid			I	I	I	I	I	I	I	I	○	○	○
Power steering fluid and line (if equipped)			I	I	I	I	I	I	I	I	○	○	○
Steering operation and gear housing			I	I		I		I		I	○	○	○
Air Cleaner element*3						R				R	○	○	○
Choke system (For Carb.)				I		I		I		I	○	○	X
Cooling system				I		I		I		I	○	○	○
Engine coolant		Replace every 2 years									○	○	X
Engine coolant (For DE)						I				I	X	X	○
Battery electrolyte level and specific gravity				I		I		I		I	○	○	○
Engine timing belts*2		Replace every 100,000 km									○	○	○
Drive belts*4		A	I	I	I	I	I	I	I	I	○	○	○
Engine valve clearance	Gasoline engine		I	I	I	I	I	I	I	I	○	○	X
	Diesel engine			I		I		I		I	X	X	○
Exhaust manifold nuts and bolts						T				T	○	○	X
Engine oil*1		Replace every 5,000 km or 6 months									X	X	○
			R	R	R	R	R	R	R	R	○	○	X
Oil filter*1			R	R	R	R	R	R	R	R	○	○	○
Fuel filter (R) only for carburetor				(R)		R		(R)		R	○	○	○
Fuel lines and hoses				I		I		I		I	○	○	○
Spark plugs			I	I	I	I	I	I	I	I	○	○	X
Idle speed (I) only for carburetor		(I)		I		I		I		I	○	○	X
Idle mixture (I) only for carburetor		(I)		I		I		I		I	○	○	X
Evaporative system (only for middle east)				I		I		I		I	○	X	X
Dashpot (If equipped)				I		I		I		I	○	○	X
Coasting leaner system (If equipped)				I		I		I		I	○	○	X
Brake lines, hoses and connections				I		I		I		I	○	○	○
Disc brakes			I	I	I	I	I	I	I	I	○	○	○
Steering linkages, rack guide and tie rod ends			I	I		I		I		I	○	○	○
Manual transaxle oil										R	○	○	○
Automatic transaxle fluid				I		I		I		I	○	○	X
Front suspension ball joints						I				I	○	○	○
Drive shaft dust boots				I		I		I		I	○	○	○
Bolts and nuts on chassis and body		T		T		T		T		T	○	○	○

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ENGINE
(F8, FE, F2 SOHC)

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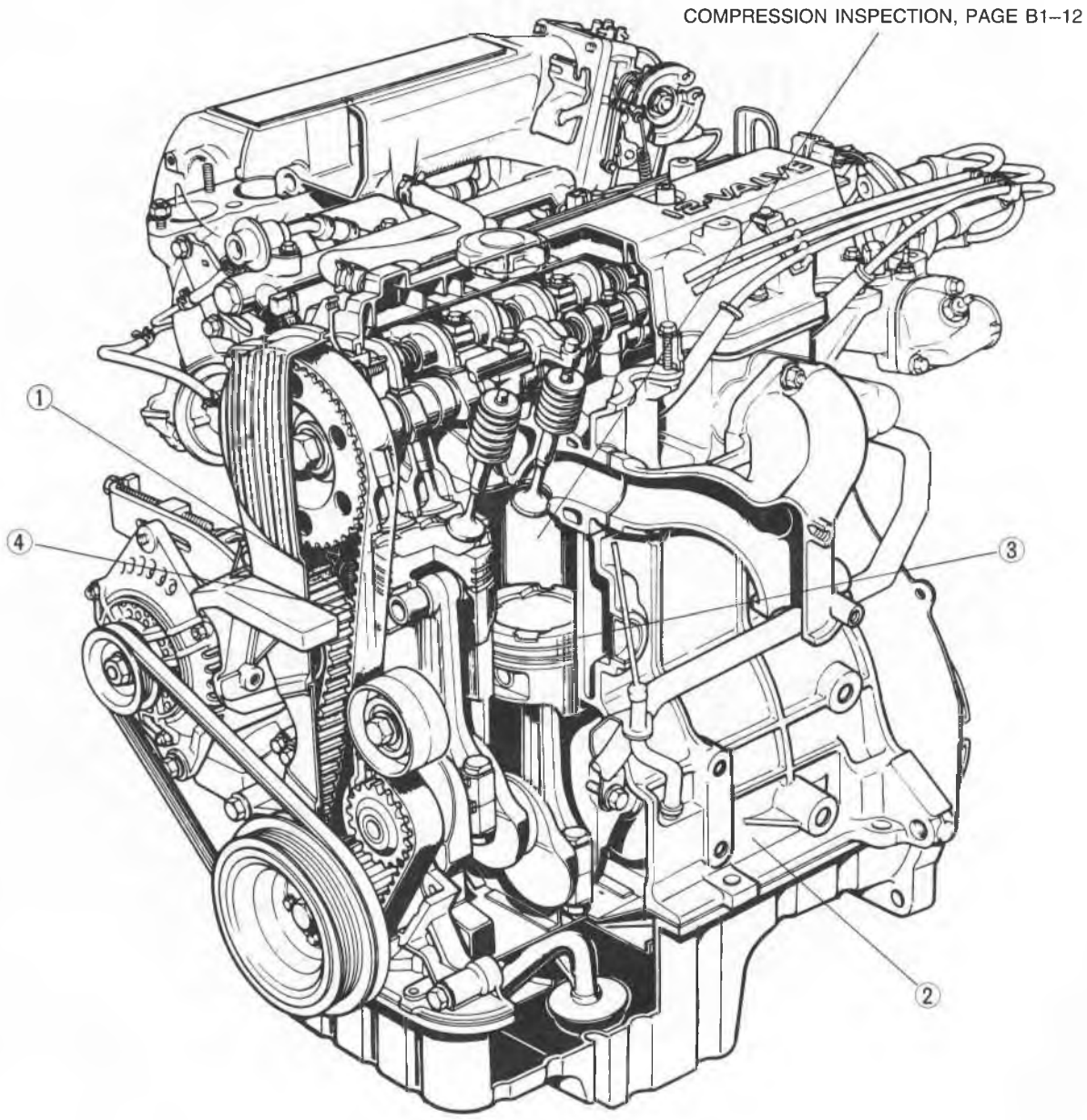

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OUTLINE

OUTLINE OF CONSTRUCTION

This section (B1) explains the F-series SOHC engine.
The variations of the F-series SOHC engine are shown below.

Engine \ Model		Leaded fuel		U.K.		Unleaded fuel	
		New	Previous	New	Previous	New	Previous
F8	8-valve		○		○		
	12-valve	○		○			
FE	8-valve	○					○
	12-valve	○	○	○	○	○	
F2	12-valve					○	○

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1. The FE and F2 engines are basically the same as that of the previous model.
2. The F8 engine is based on the previous model, however, the valve mechanism is changed from two valves per cylinder to three valves per cylinder.
   This valve mechanism (three valves per cylinder) parts are the same as that of the FE 12-valve engine.

SPECIFICATIONS
Leaded fuel model (U.K., ECE)

Item \ Engine				F2	FE 12-valve	F8	
						12-valve (New)	8-valve (Previous)
Type				Gasoline, 4-cycle			
Cylinder arrangement and number				In-line, 4-cylinders			
Combustion chamber				Pentroof			
Valve system				OHC, belt-driven			
Displacement			cc (cu in)	2,184 (133.2)	1,998 (121.9)	1,789 (109.1)	
Bore × Stroke			mm (in)	86.0 × 94.0 (3.39 × 3.70)	86.0 × 86.0 (3.39 × 3.39)	86.0 × 77.0 (3.39 × 3.03)	
Compression ratio				8.6 : 1	9.5 : 1		
Compression pressure			kPa (kg/cm², psi)-rpm	1,120 (11.4, 162)-270	1,422 (14.5, 206)-280	1,442 (14.7, 209)-290	1,275 (13.0, 185)-270
Valve timing	IN	Open	BTDC	10°	14°	10°	17°
		Close	ABDC	49°	56°	49°	56°
	EX	Open	BBDC	55°	69°	55°	64°
		Close	ATDC	12°	13°	8°	15°
Valve clearance (Engine warm)			IN	0: Maintenance-free			
mm (in)			EX	0: Maintenance-free			

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Leaded fuel model (General)

Item \ Engine				FE 8-valve	FE 12-valve
Type				Gasoline, 4-cycle	
Cylinder arrangement and number				In-line, 4-cylinders	
Combustion chamber				Multispherical	
Valve system				OHC, belt-driven	
Displacement			cc (cu in)	1,998 (121.9)	
Bore × Stroke			mm (in)	86.0 × 86.0 (3.39 × 3.39)	
Compression ratio				8.6 : 1	
Compression pressure			kPa (kg/cm², psi)-rpm	1,275 (13.0, 185)-270	
Valve timing	IN	Open	BTDC	16°	
		Close	ABDC	54°	
	EX	Open	BBDC	54°	
		Close	ATDC	16°	
Valve clearance (Engine warm)			IN	0.30 (0.012)	
mm (in)			EX	0.30 (0.012)	

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Unleaded fuel model (Swiss, Sweden)

Item \ Engine				F2	FE 12-Valve
Type				Gasoline, 4-cycle	
Cylinder arrangement and number				In-line, 4-cylinders	
Combustion chamber				Pentroof	Multispherical
Valve system				OHC, belt-driven	
Displacement			cc (cu in)	2,184 (133.2)	1,998 (121.9)
Bore × Stroke			mm (in)	86.0 × 94.0 (3.39 × 3.70)	86.0 × 86.0 (3.39 × 3.39)
Compression ratio				8.6 : 1	
Compression pressure			kPa (kg/cm^2, psi)-rpm	1,120 (11.4, 162)-270	1,275 (13.0, 185)-270
Valve timing	IN	Open	BTDC	10°	16°
		Close	ABDC	49°	54°
	EX	Open	BBDC	55°	54°
		Close	ATDC	12°	16°
Valve clearance (Engine warm)			mm (in) IN	0: Maintenance-free	0.30 (0.012)
			mm (in) EX	0: Maintenance-free	0.30 (0.012)

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Unleaded fuel model (Australia)

Item \ Engine				F2
Type				Gasoline, 4-cycle
Cylinder arrangement and number				In-line, 4-cylinders
Combustion chamber				Pentroof
Valve system				OHC, belt-driven
Displacement			cc (cu in)	2,184 (133.2)
Bore × Stroke			mm (in)	86.0 × 94.0 (3.39 × 3.70)
Compression ratio				8.6 : 1
Compression pressure			kPa (kg/cm^2, psi)-rpm	1,120 (11.4, 162)-270
Valve timing	IN	Open	BTDC	10°
		Close	ABDC	49°
	EX	Open	BBDC	55°
		Close	ATDC	12°
Valve clearance (Engine warm)			mm (in) IN	0: Maintenance-free
			mm (in) EX	0: Maintenance-free

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INTERCHANGEABILITY

1. F8 12-valve ↔ F8 8-valve (Leaded fuel model, U.K.)

The following chart shows interchangeability of the main parts of the new F8 12-valve engine and the previous F8 8-valve engine.

Symbols

○..... Interchangeable ×..... Not interchangeable

Part name			Interchangeability	Remark
Cylinder block related	Cylinder block		○	
	Cylinder head		×	Three valve configuration
	Cylinder head gasket		○	
	Cylinder head cover		×	Shape different
	Oil pan		×	Baffle added
	Vibration reducing stiffener		×	Newly added
	Timing belt cover		○	
	Front housing		×	Shape different
	Rear housing		×	Shape different
	Front oil seal		○	
	Rear oil seal			
Crankshaft related	Crankshaft		○	
	Main bearing			
	Connecting rod and cap		○	
	Crankpin bearing			
	Piston		×	Dome design different
	Piston pin		○	
	Piston ring			
	Crankshaft pulley		○	
	Flywheel		○	
Timing belt related	Timing belt		○	
	Timing belt pulley			
	Timing belt tensioner	Pulley		
		Spring		
	Camshaft pulley			
Valve related	Camshaft		×	Valve layout changed
	Rocker arm		×	Rocker arm shaft diameter increased
	Rocker arm shaft			
	HLA		×	Newly added
	Valve		×	Specification different
	Valve spring and seat		×	Specification different
	Valve guide		×	Inner diameter different
	Valve seal		×	Size different
Lubrication related	Oil pump		○	
	Oil strainer			
	Oil cooler			
	Oil filter			
Cooling related	Water pump		○	
	Thermostat			
	Cooling fan			

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2. F8 12-valve ↔ FE 12-valve (Leaded fuel model, U.K.)

The following chart shows interchangeability of the main parts of the new F8 12-valve engine and the new FE 12-valve engine.

Symbols

○..... Interchangeable ×..... Not interchangeable

Part name			Interchangeability	Remark
Cylinder block related	Cylinder block		×	Block height different
	Cylinder head		○	
	Cylinder head gasket			
	Cylinder head cover			
	Oil pan		○	
	Vibration reducing stiffener			
	Timing belt cover		×	Cylinder block height different
	Front housing		×	Size different
	Rear housing		○	
	Front oil seal		○	
	Rear oil seal			
Crankshaft related	Crankshaft		×	Piston stroke different
	Main bearing		○	
	Connecting rod and cap		×	Length different
	Crankpin bearing		○	
	Piston		×	Dome design different
	Piston pin		○	
	Piston ring			
	Crankshaft pulley		○	
	Flywheel		○	
Timing belt related	Timing belt		×	Length different
	Timing belt pulley		○	
	Timing belt tensioner	Pulley		
		Spring		
	Camshaft pulley			
Valve related	Camshaft		×	Valve timing different
	Rocker arm		○	
	Rocker arm shaft			
	HLA			
	Valve			
	Valve spring and seat			
	Valve guide			
	Valve seal			
Lubrication related	Oil pump		○	
	Oil strainer			
	Oil cooler			
	Oil filter			
Cooling related	Water pump		○	
	Thermostat			
	Cooling fan			

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3. FE 12-valve (Leaded fuel model, U.K.)

The following chart shows interchangeability of the main parts of the new FE 12-valve engine and the previous FE 12-valve engine.

Symbols

○..... Interchangeable ×..... Not interchangeable

Part name			Interchangeability	Remark
Cylinder block related	Cylinder block		○	
	Cylinder head			
	Cylinder head gasket			
	Cylinder head cover			
	Oil pan			
	Vibration reducing stiffener			
	Timing belt cover			
	Front housing			
	Rear housing			
	Front oil seal			
	Rear oil seal			
Crankshaft related	Crankshaft		○	
	Main bearing			
	Connecting rod and cap			
	Crankpin bearing			
	Piston			
	Piston pin			
	Piston ring			
	Crankshaft pulley			
	Flywheel			
Timing belt related	Timing belt		○	
	Timing belt pulley			
	Timing belt tensioner	Pulley		
		Spring		
	Camshaft pulley			
Valve related	Camshaft		○	
	Rocker arm			
	Rocker arm shaft			
	HLA			
	Valve			
	Valve spring and seat			
	Valve guide			
	Valve seal			
Lubrication related	Oil pump		○	
	Oil strainer			
	Oil cooler			
	Oil filter			
Cooling related	Water pump		○	
	Thermostat			
	Cooling fan			

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4. F2 ↔ FE 12-valve (U.K.)

The following chart shows interchangeability of the main parts of the new F2 engine and the new FE 12-valve engine.

Symbols

○..... Interchangeable ×..... Not interchangeable

Part name			Interchangeability	Remark
Cylinder block related	Cylinder block		×	Block height different
	Cylinder head		○	
	Cylinder head gasket			
	Cylinder head cover			
	Oil pan		×	Shape different
	Vibration reducing stiffener		○	
	Timing belt cover		×	Cylinder block height different
	Front housing		×	Size different
	Rear housing		○	
	Front oil seal		○	
	Rear oil seal			
Crankshaft related	Crankshaft		×	Piston stroke different
	Main bearing		○	
	Connecting rod and cap		×	Length different
	Crankpin bearing		○	
	Piston		×	Dome design different
	Piston pin		○	
	Piston ring			
	Crankshaft pulley		×	Diameter different
	Flywheel		×	Weight different
Timing belt related	Timing belt		×	Length different
	Timing belt pulley		○	
	Timing belt tensioner	Pulley		
		Spring		
	Camshaft pulley			
Valve related	Camshaft		×	Valve timing different
	Rocker arm		○	
	Rocker arm shaft			
	HLA			
	Valve			
	Valve spring and seat			
	Valve guide			
	Valve seal			
Lubrication related	Oil pump		×	Gear type and width different
	Oil strainer		×	Shape different
	Oil filter		○	
Cooling related	Water pump		○	
	Thermostat		×	Two-stage type used
	Cooling fan		○	

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5. F2 (Unleaded fuel model)

The following chart shows interchangeability of the main parts of the new F2 engine and the previous F2 engine.

Symbols

○..... Interchangeable ×..... Not interchangeable

Part name			Interchangeability	Remark
Cylinder block related	Cylinder block		○	
	Cylinder head			
	Cylinder head gasket			
	Cylinder head cover			
	Oil pan			
	Vibration reducing stiffener			
	Timing belt cover			
	Front housing			
	Rear housing			
	Front oil seal			
	Rear oil seal			
Crankshaft related	Crankshaft		○	
	Main bearing			
	Connecting rod and cap			
	Crankpin bearing			
	Piston			
	Piston pin			
	Piston ring			
	Crankshaft pulley		×	Diameter different
	Flywheel		○	
Timing belt related	Timing belt		○	
	Timing belt pulley			
	Timing belt tensioner	Pulley		
		Spring		
	Camshaft pulley			
Valve related	Camshaft		○	
	Rocker arm			
	Rocker arm shaft			
	HLA			
	Valve			
	Valve spring and seat			
	Valve guide			
	Valve seal			
Lubrication related	Oil pump		○	
	Oil strainer			
	Oil cooler (ATX)			
	Oil filter			
Cooling related	Water pump		○	
	Thermostat			
	Cooling fan			

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SUPPLEMENTAL SERVICE INFORMATION

The following points in this section are changed in comparison with the Mazda 626 Workshop Manual 7/87 (1163-10-87G) and the Mazda 626 Station Wagon Workshop Manual Supplementt 2/88 (1182-10-88B).

Compression
- F2 engine compression inspection procedure is added.

Note
- **The included changes relate to F-series SOHC engines produced after July 1988.**

Timing belt
- F2 engine timing belt removal and installation procedure is added.

Note
- **The included changes relate to F-series SOHC engines produced after July 1988.**

Cylinder block, piston, and timing belt tensioner spring
- The related F2 engine inspection / repair procedures are added.

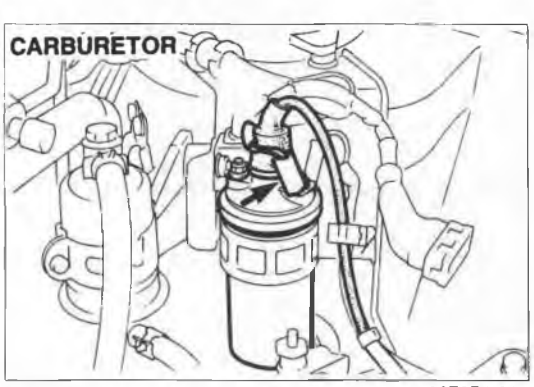
Note
- **The included changes relate to F-series SOHC engines produced after July 1988.**

96G0B1-509

COMPRESSION

If the engine exhibits low power, poor fuel economy, or poor idle, check the following:
1. Ignition system
2. Compression
3. Fuel system

96E0B1-016



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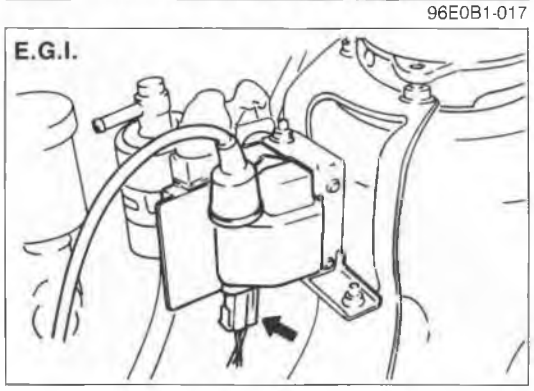
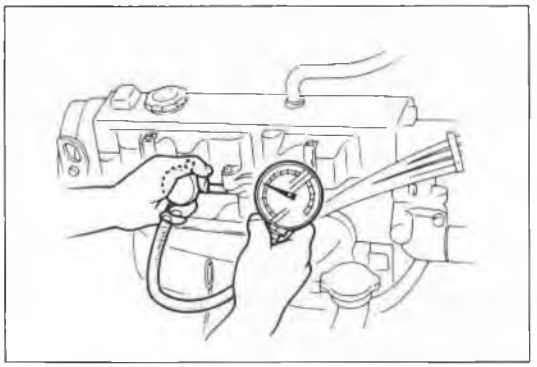


INSPECTION
1. Verify that the battery is fully charged. Recharge it if necessary.
2. Warm up the engine to the normal operating temperature.
3. Turn the engine OFF.
4. Remove all spark plugs.
5. Disconnect the primary wire connector from the ignition coil.



96G0B1-510

6. Connect a compression gauge to the No.1 spark plug hole.
7. Fully open the throttle valve and crank the engine.
8. Record the maximum gauge reading.
9. Check each cylinder.

Compression:

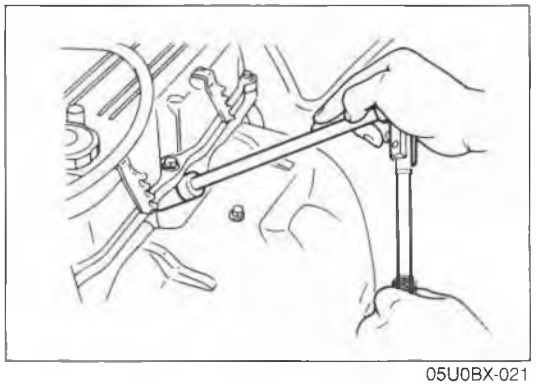
kPa (kg/cm^2, psi)-rpm

		Standard	Minimum
F8		1,442 (14.7, 209)-290	1,010 (10.3, 146)-290
FE	8-valve	1,275 (13.0, 185)-270	893 (9.1, 129)-270
	12-valve	1,422 (14.5, 206)-280	1,001 (10.2, 145)-280
F2		1,120 (11.4, 162)-270	785 (8.0, 114)-270

Allowable variation between cylinders:
196 kPa (2.0 kg/cm^2, 28 psi) max.

10. If the compression in one or more cylinders is low, pour a small amount of engine oil into the cylinder and recheck the compression.
    (1) If the compression increases, the piston, piston rings, or cylinder wall may be worn.
    (2) If the compression stays low, the valve may be stuck or seating improperly.
    (3) If the compression in adjacent cylinder(s) stays low, the cylinder head gasket may be defective or the cylinder head distorted.
11. Connect the ignition coil connector.

96E0B1-039



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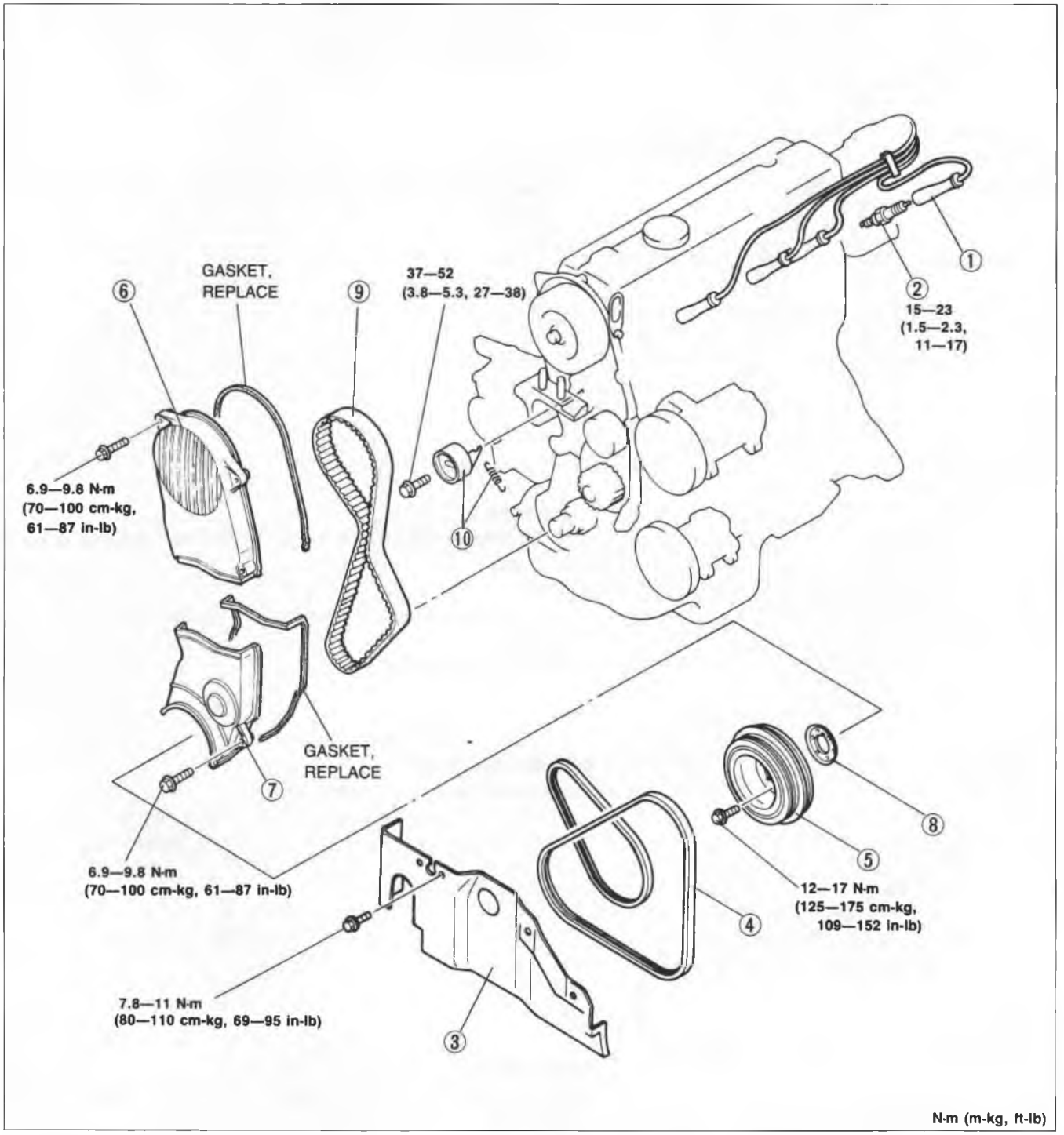
12. Apply antiseize compound or molybdenum-based lubricant to the spark plug threads.
13. Install the spark plugs.

Tightening torque:
15—23 N·m (1.5—2.3 m-kg, 11—17 ft-lb)

TIMING BELT

REMOVAL / INSTALLATION

1. Disconnect the negative battery cable.
2. Remove in the order shown in the figure, referring to **Removal Note**.
3. Install in the reverse order of removal, referring to **Installation Note**.



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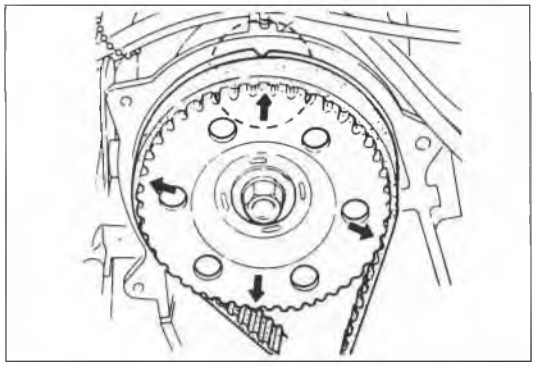
1. High-tension lead
2. Spark plug
3. Side cover (right)
4. Drive belt
5. Crankshaft pulley
6. Upper timing belt cover
7. Lower timing belt cover
8. Baffle plate
   Installation Note..... page B1–15
9. Timing belt
   Removal Note..... page B1–14
   Installation Note..... page B1–14
10. Tensioner and tensioner spring
    Installation Note..... page B1–14



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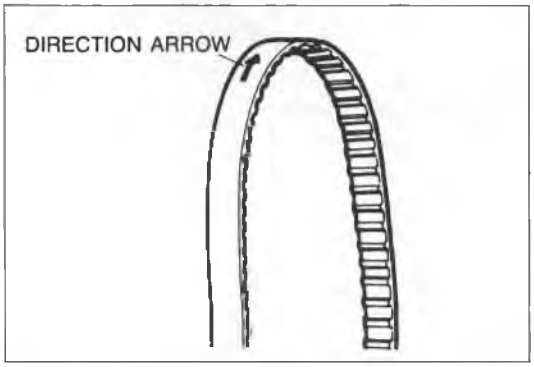

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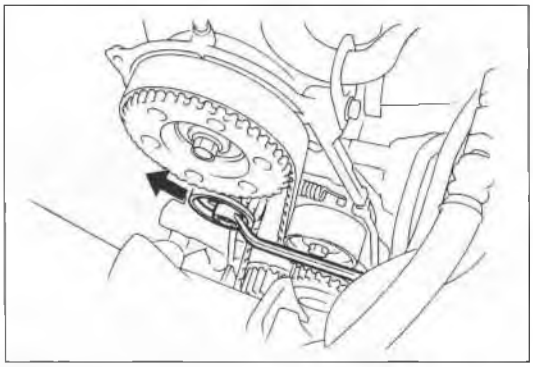

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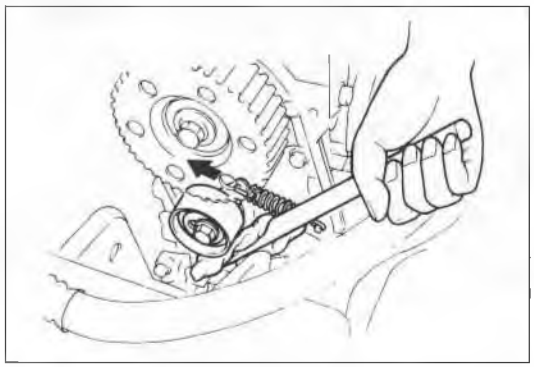

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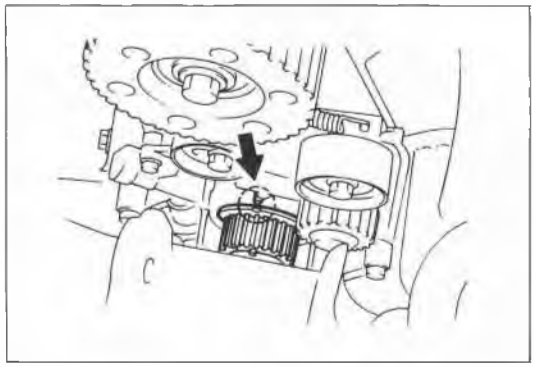


05U0BX-028

Removal Note
Timing belt

1. Turn the crankshaft and align the mark of the camshaft pulley with the front housing mark.

Caution
- **F2 engine: "1" mark**
- **FE engine: "2" mark**
- **F8 engine: "3" mark**

Note
- **Mark the timing belt rotation for proper reinstallation.**

2. Loosen the tensioner lock bolt.

Caution
- **To prevent damage to the tensioner, secure it with a rag.**

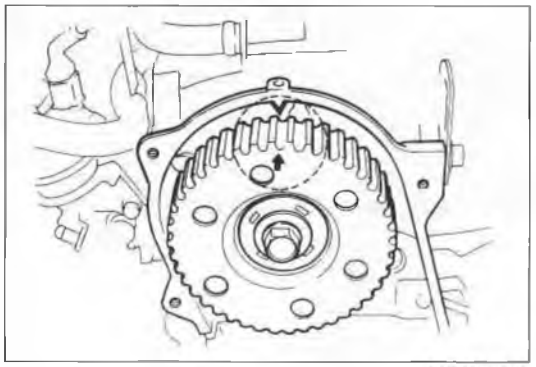
3. Temporarily secure the tensioner with the spring fully extended.
4. Remove the timing belt.

Installation Note
Tensioner and tensioner spring

1. Install the tensioner and the tensioner spring.
2. Temporarily secure the tensioner with the spring fully extended.

Timing belt

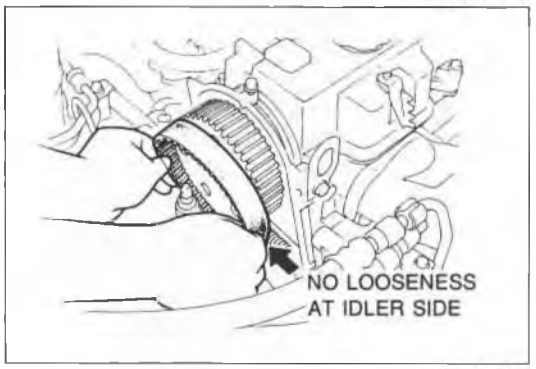
1. Verify that the timing belt pulley mark is aligned with the timing mark.



96G0B1-513

2. Verify that the camshaft pulley mark is aligned with the front housing mark.

Caution
- **F2 engine: "1" mark**
- **FE engine: "2" mark**
- **F8 engine: "3" mark**



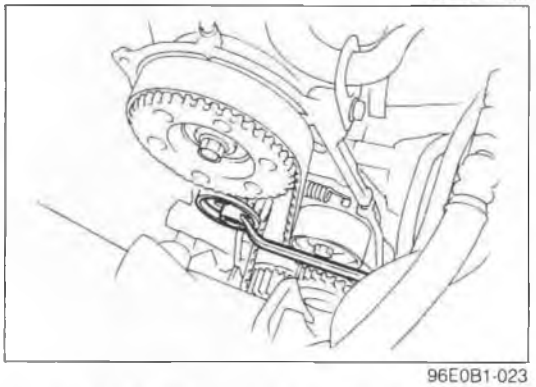
96E0B1-022

3. Install the timing belt so that there is no looseness at the idler side.

Caution
- **Do not turn the crankshaft counterclockwise.**

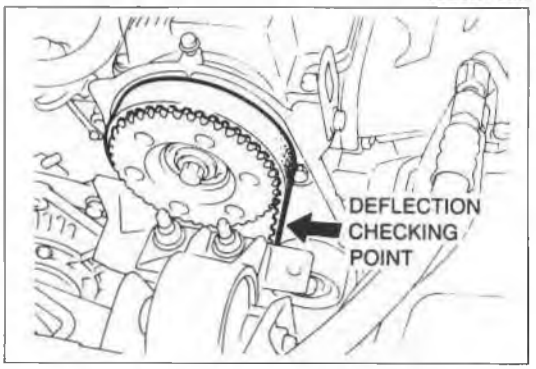
4. Turn the crankshaft two turns clockwise, and align the timing belt pulley mark with the timing mark.
5. Verify that the camshaft pulley mark is aligned with the front housing mark.
   If not aligned, remove the timing belt and repeat from tensioner installation.
6. Loosen the tensioner lock bolt to apply tension to the timing belt.
7. Tighten the tensioner lock bolt.

Tightening torque:
37—52 N·m (3.8—5.3 m-kg, 27—38 ft-lb)



96E0B1-023

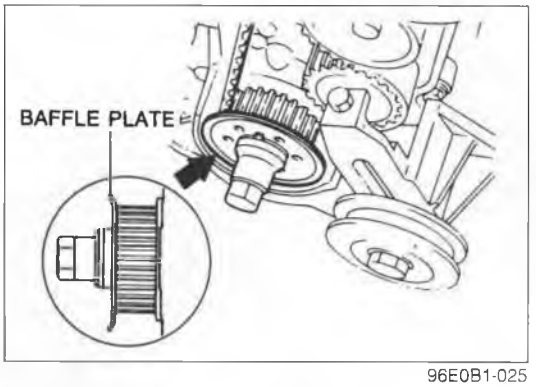
8. Turn the crankshaft two turns clockwise and verify that the timing marks are correctly aligned.



96G0B1-514

9. Measure the timing belt deflection by applying moderate pressure **(98 N, 10 kg, 22 lb)** at the point shown in the figure.
   If the deflection is not correct, repeat from Step 6 above.

Deflection
F2 engine: 8.0—9.0mm (0.31—0.35 in)
FE engine: 5.5—6.5mm (0.22—0.26 in)
F8 engine: 4.0—5.0mm (0.16—0.20 in)

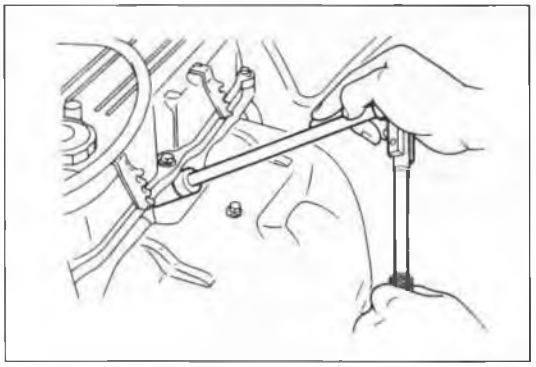


96E0B1-025

Baffle plate

Caution
- **Make sure the baffle plate is installed in the proper direction.**

1. Install the baffle plate.



05U0BX-286

Steps After Installation
1. Connect the negative battery cable.
2. Start the engine and check as follows:
   (1) Engine coolant leakage.
   (2) Ignition timing.
3. Check the engine coolant level.
4. Check the drive belt deflection.

Spark plug
1. Apply antiseize compound or molybdenum-based lubricant to the spark plug threads.
2. Install the spark plugs.

Tightening torque:
15—23 N·m (1.5—2.3 m-kg, 11—17 ft-lb)

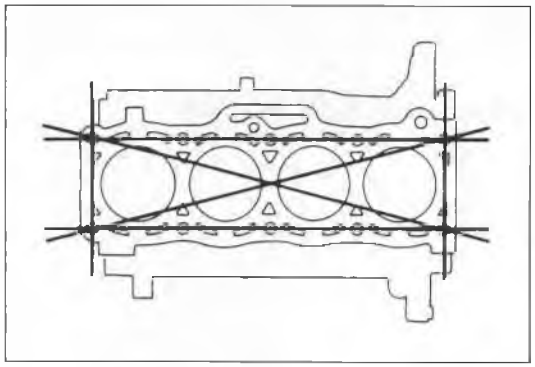
96E0B1-026

INSPECTION / REPAIR

1. Clean all parts, being sure to remove all gasket fragments, dirt, oil, and other foreign materials.
2. Inspection and repairs must be performed in the order specified.

Caution
- **Do not damage the joints or friction surfaces of aluminum alloy components (such as the cylinder head or pistons).**

96E0B1-028



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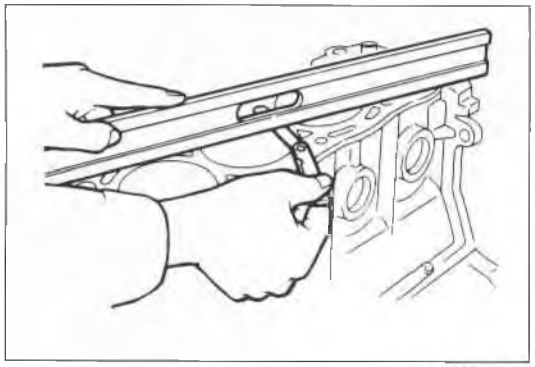

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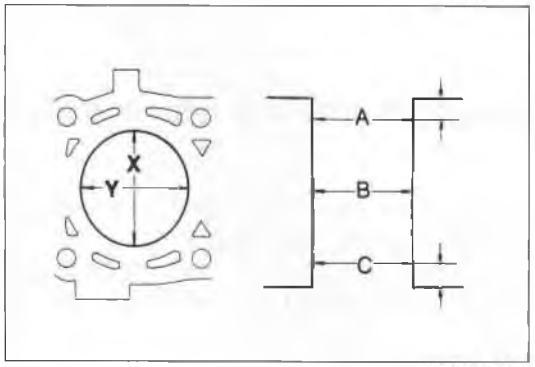


96G0B1-516

CYLINDER BLOCK

1. Inspect the cylinder block for the following. Repair or replace the cylinder block as necessary.
   (1) Leakage damage.
   (2) Cracks.
   (3) Scoring of wall.
2. Measure the distortion of the top surface of the cylinder block in the six directions shown in the figure.

   Distortion: 0.15mm (0.006 in) max.

3. If the distortion exceeds specification, repair by grinding or replace the cylinder block.

   Height
   F2 engine: 301.5mm (11.87 in)
   FE engine: 289.0mm (11.38 in)
   F8 engine: 268.5mm (10.57 in)
   Grinding: 0.20mm (0.008 in) max.

4. Measure the cylinder bores in X and Y directions at three levels (A, B, and C) in each cylinder as shown.

Cylinder bore

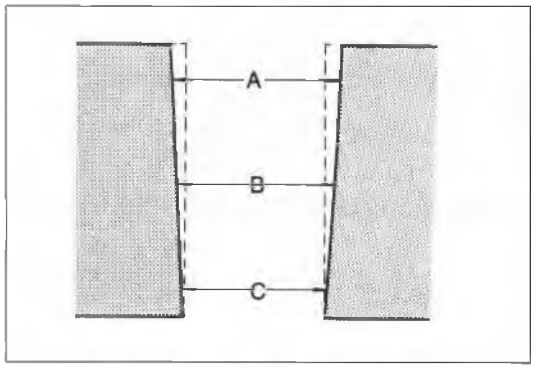
mm (in)

	Bore size	Diameter
F2 FE F8	Standard size	86.000—86.019 (3.3858—3.3866)
	0.25 (0.010) oversize	86.250—86.269 (3.3957—3.3964)
	0.50 (0.020) oversize	86.500—86.519 (3.4055—3.4062)

Caution
- **The boring size should be based on the size of an oversize piston and be the same for all cylinders.**

5. If the cylinder bore exceeds the maximum, rebore the cylinder to oversize.

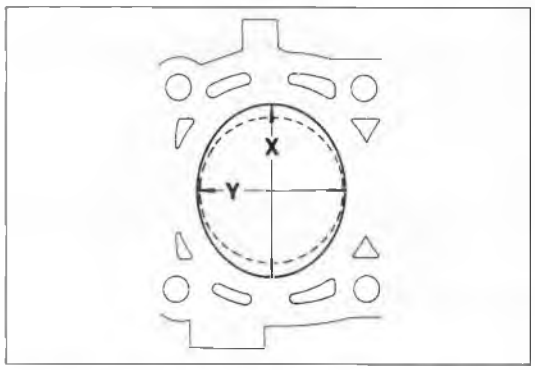
96E0B1-031



96E0B1-032

6. If the difference between measurements A and C exceeds the maximum taper, rebore the cylinder to oversize.

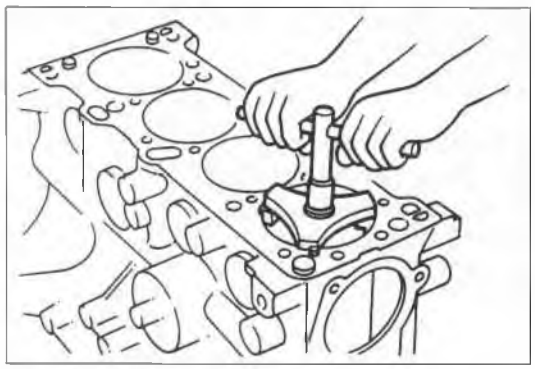
Taper: 0.019mm (0.0007 in) max.



96E0B1-033

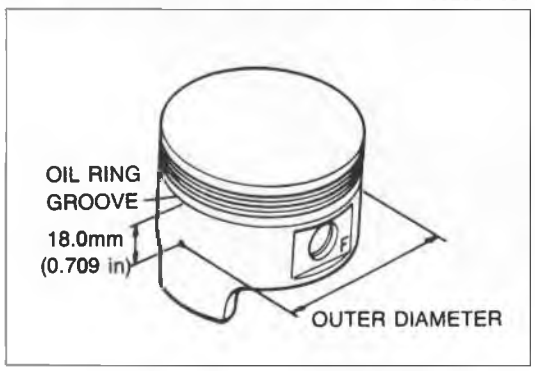
7. If the difference between measurements X and Y exceeds the maximum out-of-round, rebore the cylinder to oversize.

Out-of-round: 0.019mm (0.0007 in) max.



96E0B1-034

8. If the upper part of a cylinder wall shows uneven wear, remove the ridge with a ridge reamer.



96G0B1-517

PISTON

Caution
- **If the piston is replaced, the piston rings must also be replaced.**

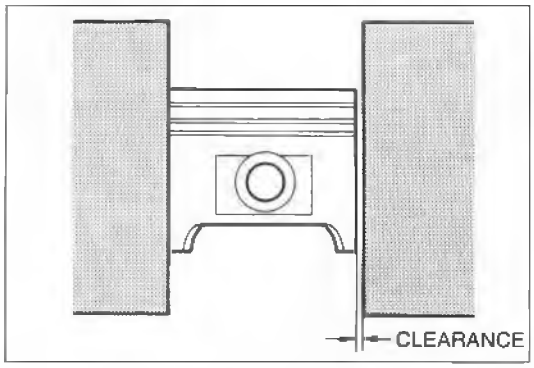
1. Inspect the outer circumferences of all pistons for seizure or scoring. Replace the piston if necessary.
2. Measure the outer diameter of each piston at a right angle **(90°)** to the piston pin, **18.0mm (0.709 in)** below the oil ring land lower edge.

Piston diameter

mm (in)

	Piston size	Diameter
F2 FE F8	Standard size	85.944—85.964 (3.3836—3.3844)
	0.25 (0.010) oversize	86.194—86.214 (3.3935—3.3942)
	0.50 (0.020) oversize	86.444—86.464 (3.4033—3.4041)

96G0B1-518

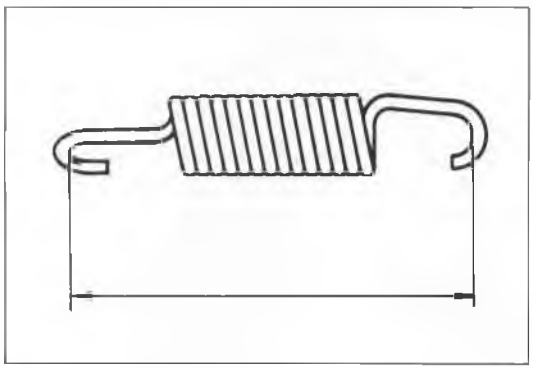


96E0B1-037

3. Measure the piston-to-cylinder clearance.

Clearance: 0.036—0.075mm (0.0014—0.0030 in)
Maximum : 0.15mm (0.006 in)

4. If the clearance exceeds the maximum, replace the piston or rebore the cylinders to fit oversize pistons.



96G0B1-519

TIMING BELT TENSIONER SPRING

1. Measure the free length of the tensioner spring. Replace the tensioner spring if necessary.

Free length
F2, F8 engine : 63.0mm (2.480 in)
FE 12-valve engine: 53.9mm (2.122 in)
FE 8-valve engine : 56.9mm (2.240 in)

LUBRICATION SYSTEM (GASOLINE)

96G0D1-501

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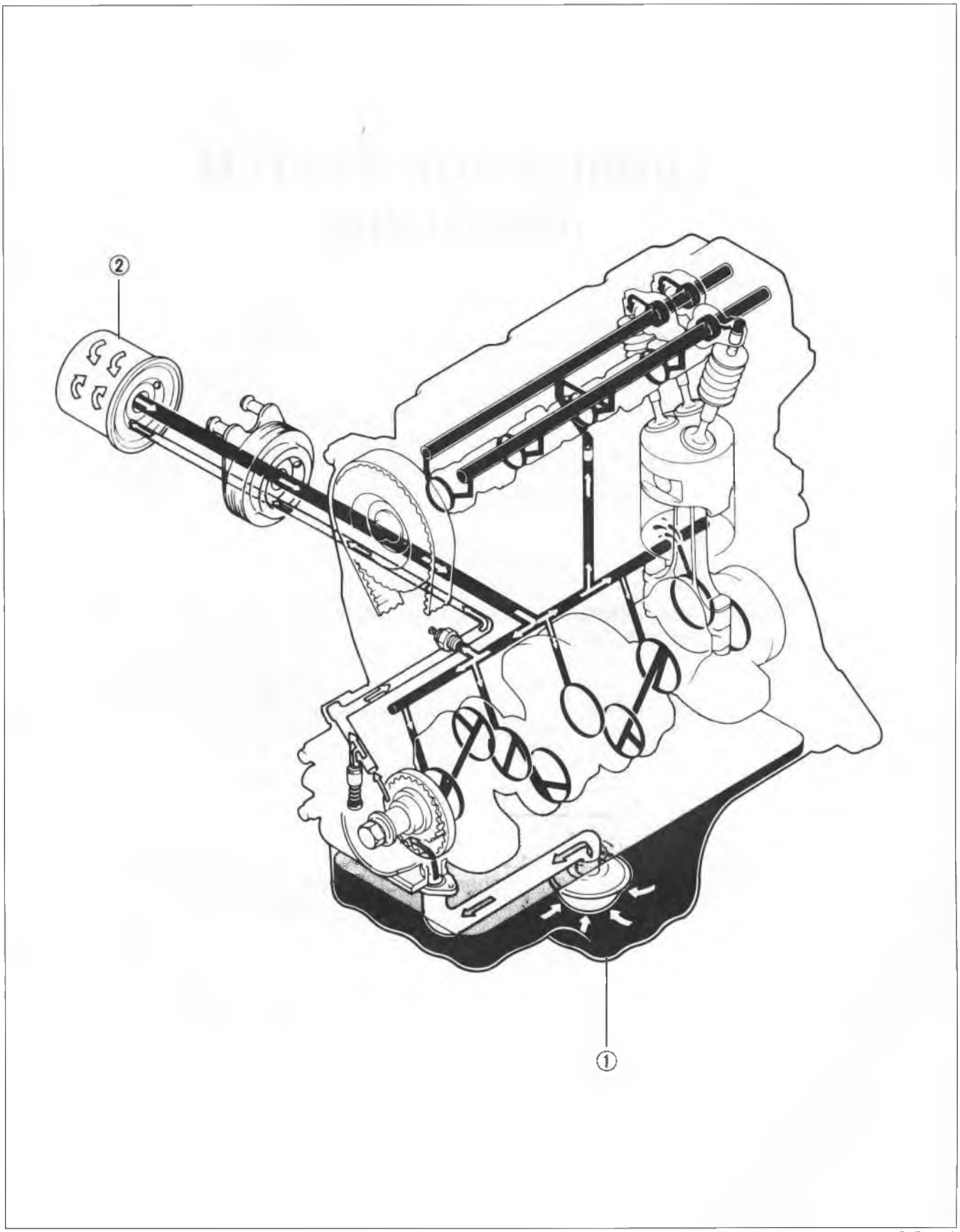


96G0D1-502

OUTLINE

OUTLINE OF CONSTRUCTION

The lubrication system in the new 626 Station Wagon is basically the same as in the previous 626 Station Wagon, with exception of some changes.

- The F-series engine (F8, FE, F2) uses small size oil-filter.

96G0D1-503

SPECIFICATIONS

Item \ Engine			FE DOHC	F2	FE SOHC, F8
Lubrication system			Force-fed type		
Oil pump	Type		Trochoid gear		Crescent gear
	Regulated pressure kPa (kg/cm^2, psi)		490 (5.0, 71)	392 (4.0, 57)	
	Oil pressure kPa (kg/cm^2, psi)	1,000 rpm	147—245 (1.5—2.5, 21—36)		
		3,000 rpm	343—441 (3.5—4.5, 50—64)	294—392 (3.0—4.0, 43—57)	
Oil filter	Type		Full-flow, paper element		
	Relief pressure differential kPa (kg/cm^2, psi)		78—118 (0.8—1.2, 11—17)		
Oil cooler	Type		Water-cooled		
Oil capacity liters (US qt, Imp qt)		Total (dry engine)	4.3 (4.5, 3.8)	4.6 (4.9, 4.0)	4.3 (4.5, 3.8)
		Oil pan	3.6 (3.8, 3.2)	3.9 (4.1, 3.4)	3.6 (3.8, 3.2)
		Oil filter	0.22 (0.23, 0.19)		
Engine oil (API service)			SD, SE, or SF		

96G0D1-504

SUPPLEMENTAL SERVICE INFORMATION

The following points in this section are changed in comparison with the Mazda 626 Workshop Manual 7/87 (1163-10-87G) and the Mazda 626 Station Wagon Workshop Manual Supplement 2/88 (1182-10-88B).

Engine oil
- Engine oil inspection and replacement procedure is added.

Note
- **The included changes relate to F-series engines produced after July 1988.**

Oil filter
- Replacement procedure

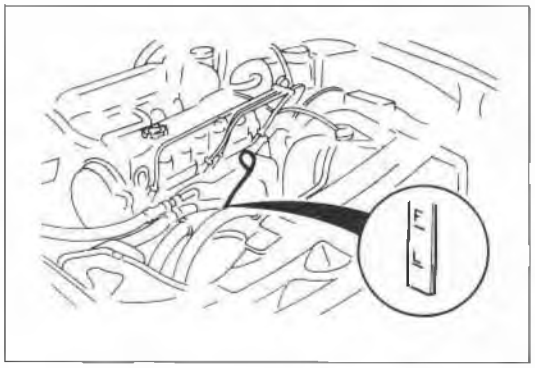
96G0D1-505

ENGINE OIL

INSPECTION

1. Be sure the vehicle is on level ground.
2. Warm up the engine to normal operating temperature and stop it.
3. Wait for five minutes.
4. Remove the oil level gauge and check the oil level and condition.
5. Add or replace oil as necessary.

Note
- **The distance between the L and F marks on the level gauge represents 1.0 liter (1.06 US qt, 0.88 Imp qt).**



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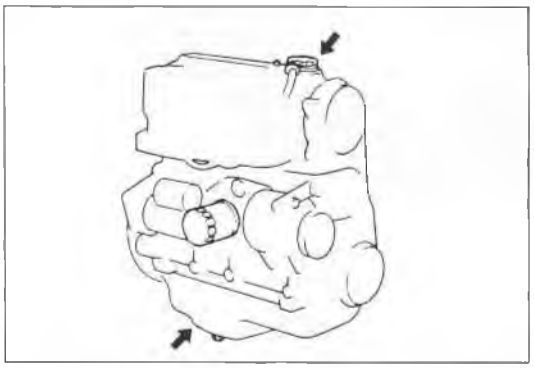

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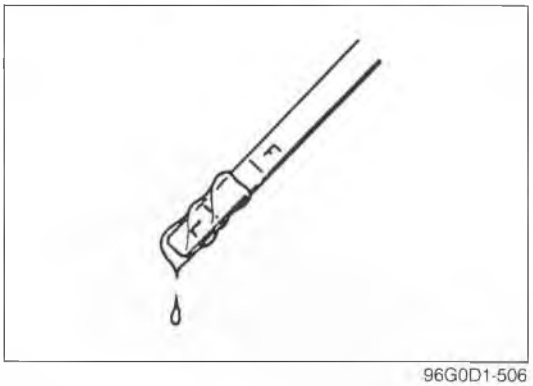


96G0D1-506

REPLACEMENT

Warning
- **Be careful when draining; the oil is hot.**

1. Warm up the engine to normal operating temperature and stop it.
2. Remove the oil filler cap and the oil pan drain plug.
3. Drain the oil into a suitable container.
4. Install a new gasket and the drain plug.

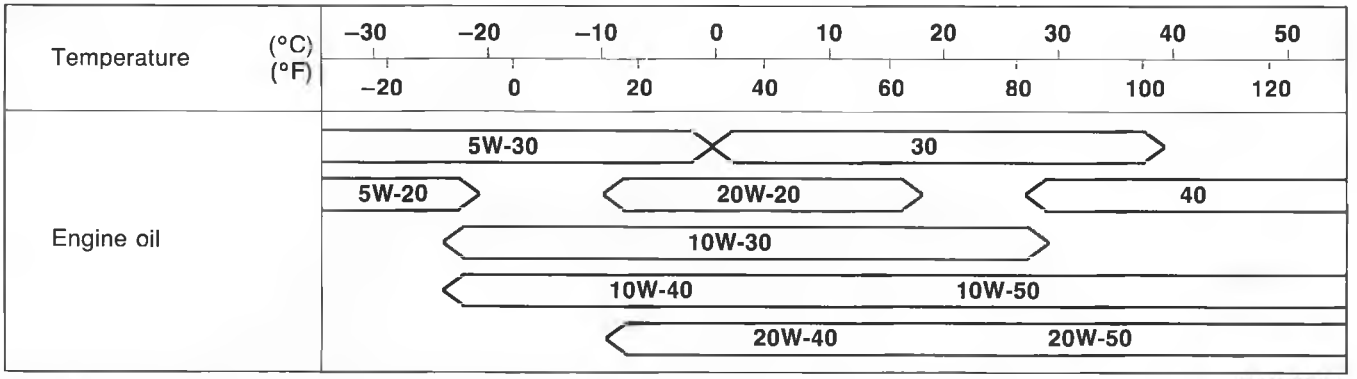
Tightening torque:
29—41 N·m (3.0—4.2 m-kg, 22—30 ft-lb)

5. Refill the engine with the specified type and amount of engine oil.
6. Refit the oil filler cap.

Oil pan capacity
F2: 3.9 liters (4.1 US qt, 3.4 Imp qt)
FE, F8: 3.6 liters (3.8 US qt, 3.2 Imp qt)

7. Run the engine and check for leaks.
8. Recheck the oil level and add oil if necessary.

Recommended SAE Viscosity



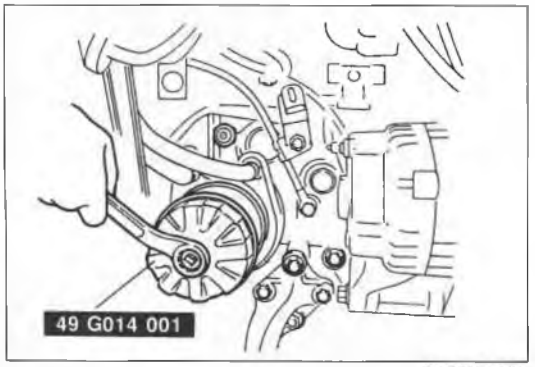
Anticipated ambient temperature range before succeeding oil change, °C (°F). 05U0DX-004

OIL FILTER

PREPARATION
SST

49 G014 001 Oil filter wrench (Only Europe)		For removal and installation of oil filter

96G0D1-507



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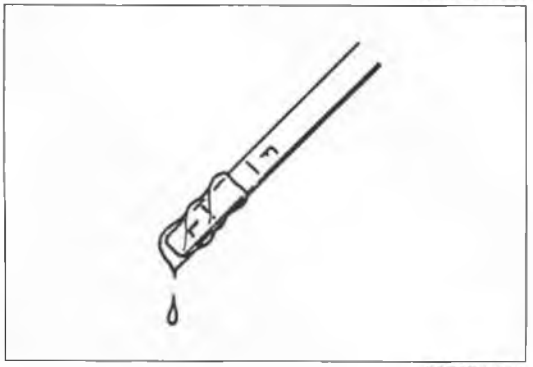

96E0D1-011

REPLACEMENT

1. Remove the oil filter with the **SST**. (Only Europe)
2. Use a clean rag to wipe off the mounting surface on the engine.
3. Apply a small amount of engine oil to the rubber seal of the new filter.
4. Install the oil filter until the rubber seal contacts the base. Then tighten the filter 1 and 1/6 turn with the **SST**.
5. Start the engine and inspect for leaks around the filter.
6. Recheck the oil level and add oil if necessary.

Oil filter capacity:
0.22 liter (0.23 US qt, 0.19 Imp qt)

COOLING SYSTEM

96E0EX-001

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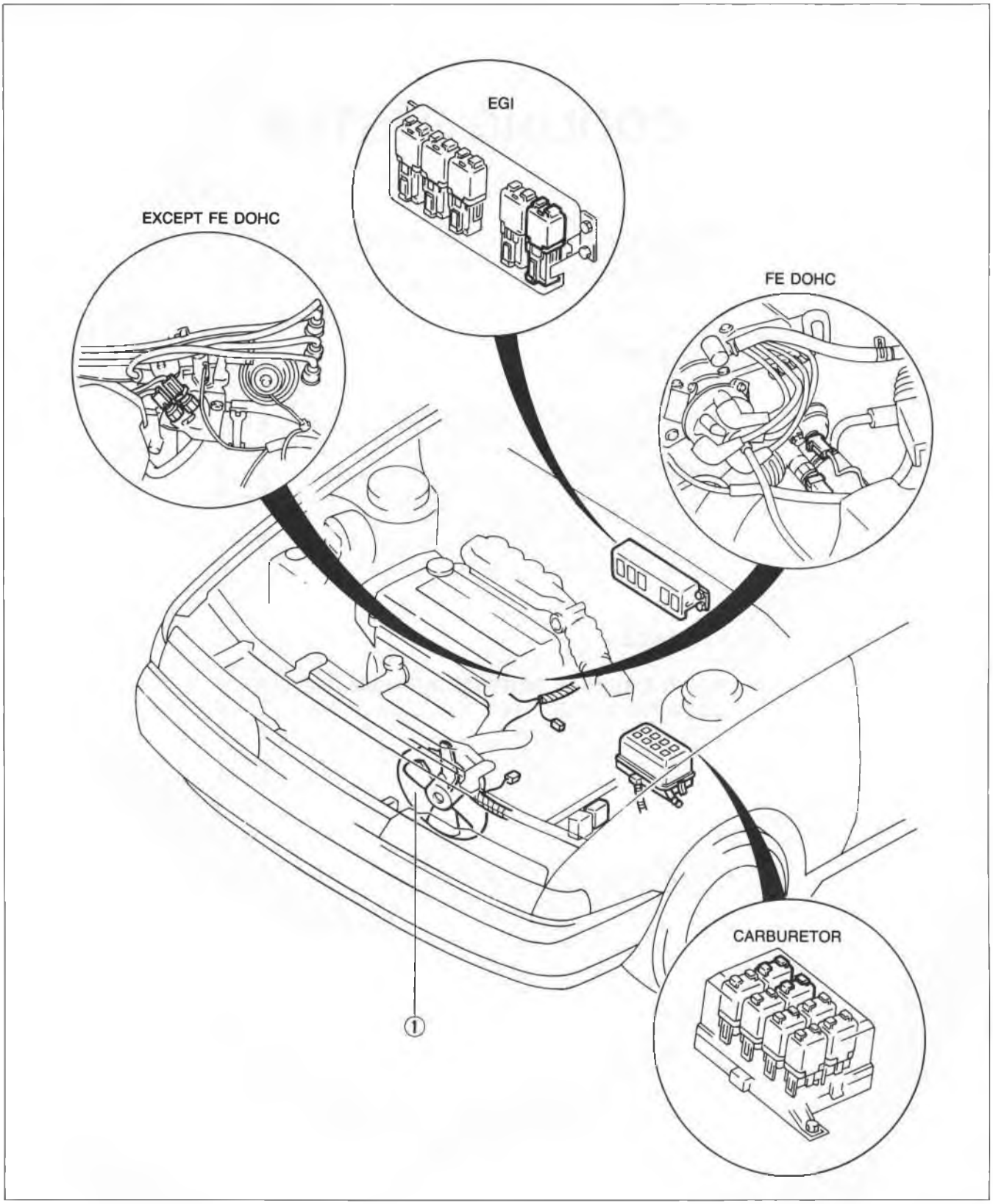
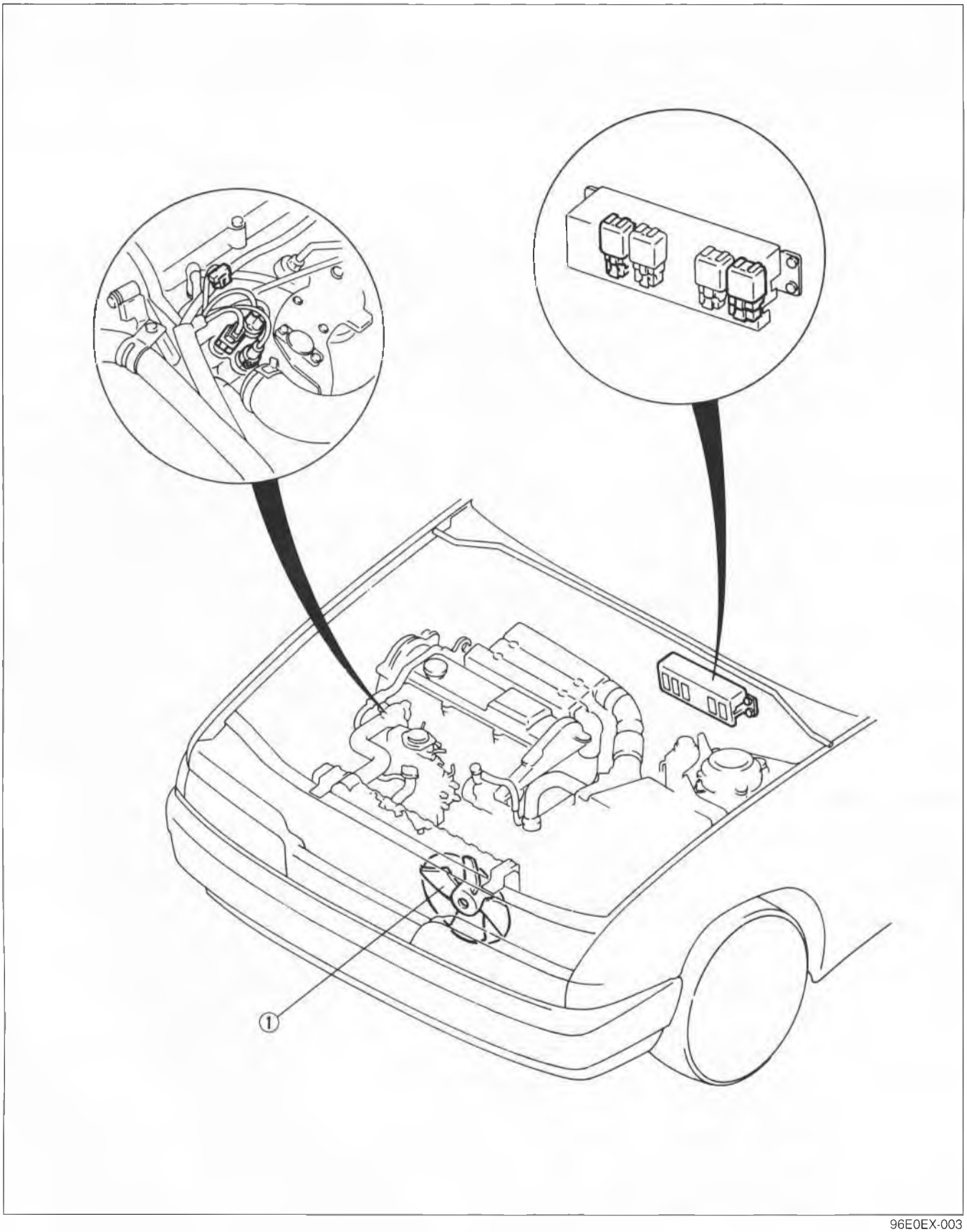
GASOLINE ENGINE



96E0EX-002

1. Cooling fan system
   System inspection..... page E– 9
   Water thermoswitch..... page E–10
   Cooling fan relay..... page E–10

DIESEL ENGINE



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1. Cooling fan system
   - System inspection..... page E– 9
   - Water thermoswitch..... page E–10
   - Cooling fan relay..... page E–10

OUTLINE

OUTLINE OF CONSTRUCTION

The cooling system in the new 626 Station Wagon is basically the same as in the previous model; however, the following changes have been made.

1. The electrical circuit of the cooling fan system is changed.
2. The F2 engine uses two-stage type thermostat.

96G0EX-501

SPECIFICATIONS

Gasoline Engine

Item \ Engine			F2	FE DOHC	FE SOHC, F8
Cooling method			Water cooled, forced circulation		
Coolant capacity liters (US qt, Imp qt)		With heater	7.5 (7.9, 6.6)		
		Without heater	7.0 (7.4, 6.2)		
Water pump	Type		Centrifugal, timing belt driven		
	Water seal type		Unified mechanical seal		
Thermostat	Type		Wax, two-stage		Wax
	Opening temperature °C (°F)		Main: 86.5—89.5 (188—193) Sub: 83.5—86.5 (182—188)		86.5—89.5 (188—193)
	Full-open temperature °C (°F)		100 (212)		
	Full-open lift mm (in)		Main: 8.0 (0.31) min. Sub: 1.5 (0.06) min.		8.5 (0.33) min.
Radiator	Type		Corrugated fin		
	Cap valve opening pressure kPa (kg/cm^2, psi)		74—103 (0.75—1.05, 11—15)		
Cooling fan	Type		Electric		
	Capacity W		MTX: 80, ATX: 120		
	Number of blade		4		
	Outer diameter of blade mm (in)		MTX: 320 (12.6), ATX: 340 (13.4)		

96G0EX-502

Diesel Engine

Item \ Engine			RF
Cooling method			Water cooled, forced circulation
Coolant capacity liters (US qt, Imp qt)		With heater	9.5 (10.0, 8.4)
		Without heater	9.0 (9.5, 7.9)
Water pump	Type		Centrifugal, timing belt driven
	Water seal type		Unified mechanical seal
Thermostat	Type		Wax, two-stage
	Opening temperature °C (°F)	Main	86.5—89.5 (188—193)
		Sub	78.5—81.5 (173—179)
	Full-open temperature °C (°F)		100 (212)
	Full-open lift mm (in)	Main	8.0 (0.31) min.
		Sub	1.5 (0.06) min.
Radiator	Type		Corrugated fin
	Cap valve opening pressure kPa (kg/cm^2, psi)		74—103 (0.75—1.05, 11—15)
Cooling fan	Type		Electric
	Capacity W		120
	Number of blade		4
	Outer diameter of blade mm (in)		340 (13.4)

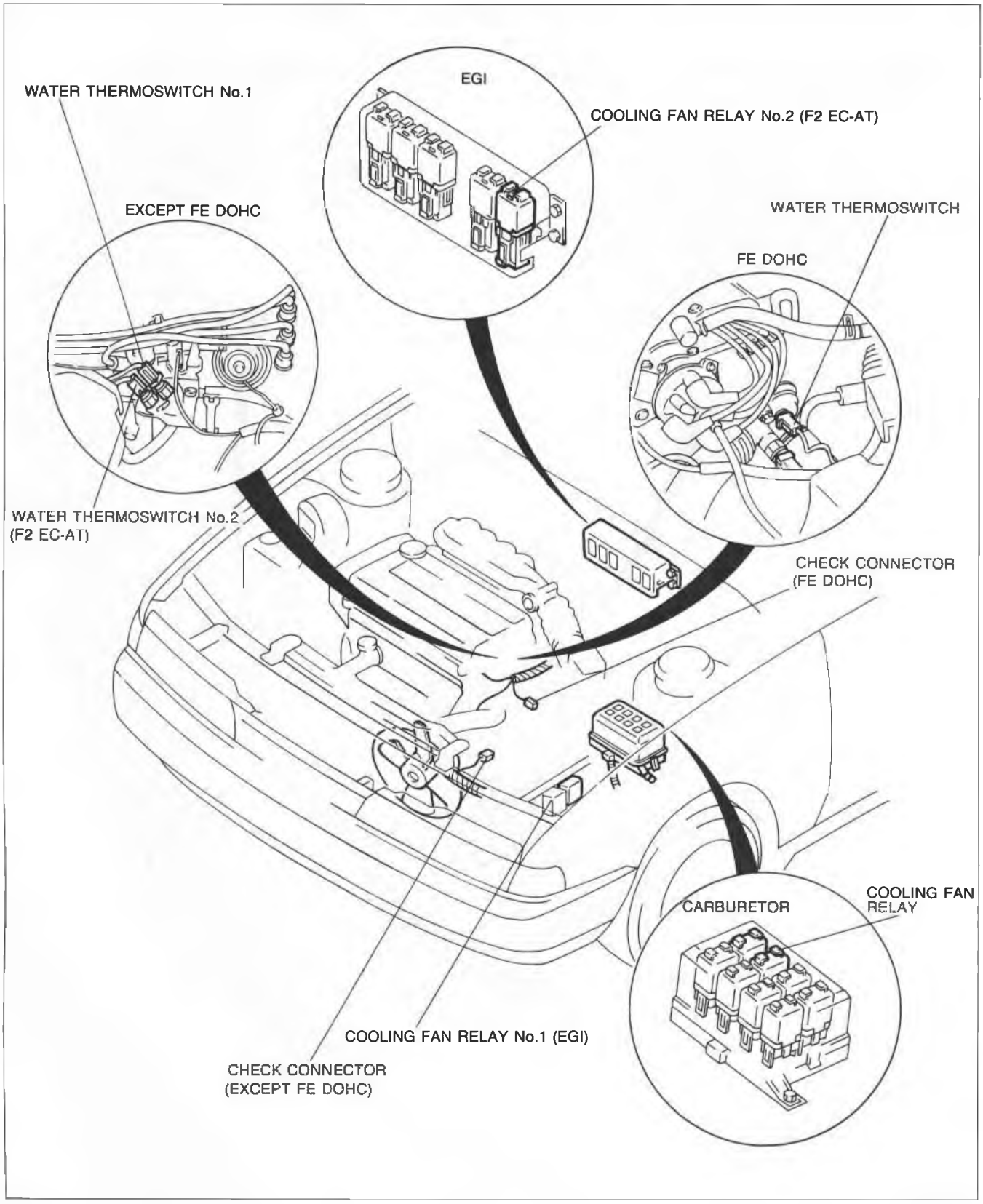
96G0EX-503

COOLING FAN

COOLING FAN CHECK CONNECTOR

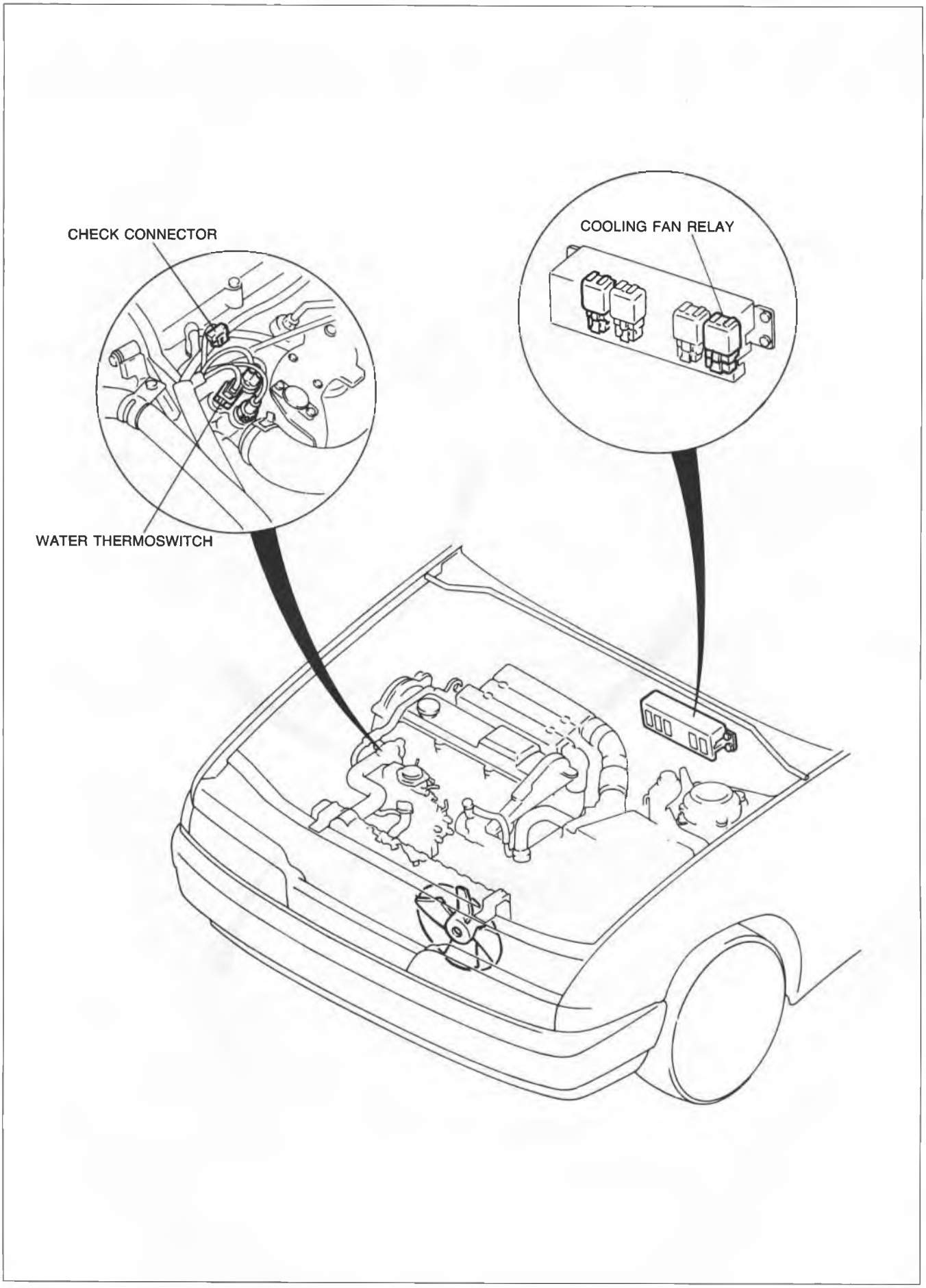
A special check connector for the cooling fan is adopted for quick system inspection.
When the check connector terminal is grounded with the ignition switch ON, the cooling fan should operate.
The check connector of F2 EC-AT model has two terminals to check low- and high-speed fan operation.

Gasoline Engine



96E0EX-007

Diesel Engine



96E0EX-008

WATER THERMOSWITCH AND COOLING FAN RELAY

Normally-open type switches (OFF when cold) are used for the water thermoswitches and normally-open type relays (OFF when not energized) are used for the cooling fan relays to simplify the cooling fan circuits.

96E0EX-009

Water Thermoswitch Operation
Gasoline engine

Model / Coolant temperature	New 626 Station Wagon		Previous 626 Station Wagon	
	Switch No.1	Switch No.2 (F2 EC-AT)	Switch No.1	Switch No.2 (F2 EC-AT)
Below 97°C (207°F)	OFF	OFF	ON	OFF
Above 97°C (207°F)	ON	OFF	OFF	OFF
Above 108°C (226°F)	ON	ON	OFF	ON

96G0EX-504

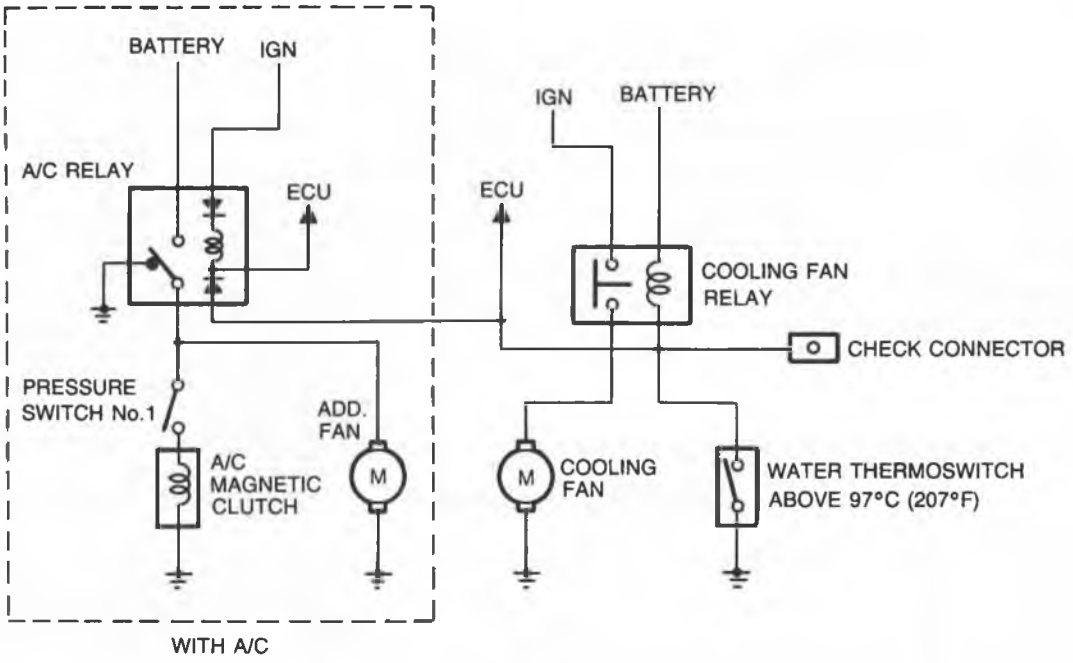
Diesel engine

Model / Coolant temperature	New 626 Station Wagon	Previous 626 Station Wagon
Below 91°C (196°F)	OFF	ON
Above 91°C (196°F)	ON	OFF

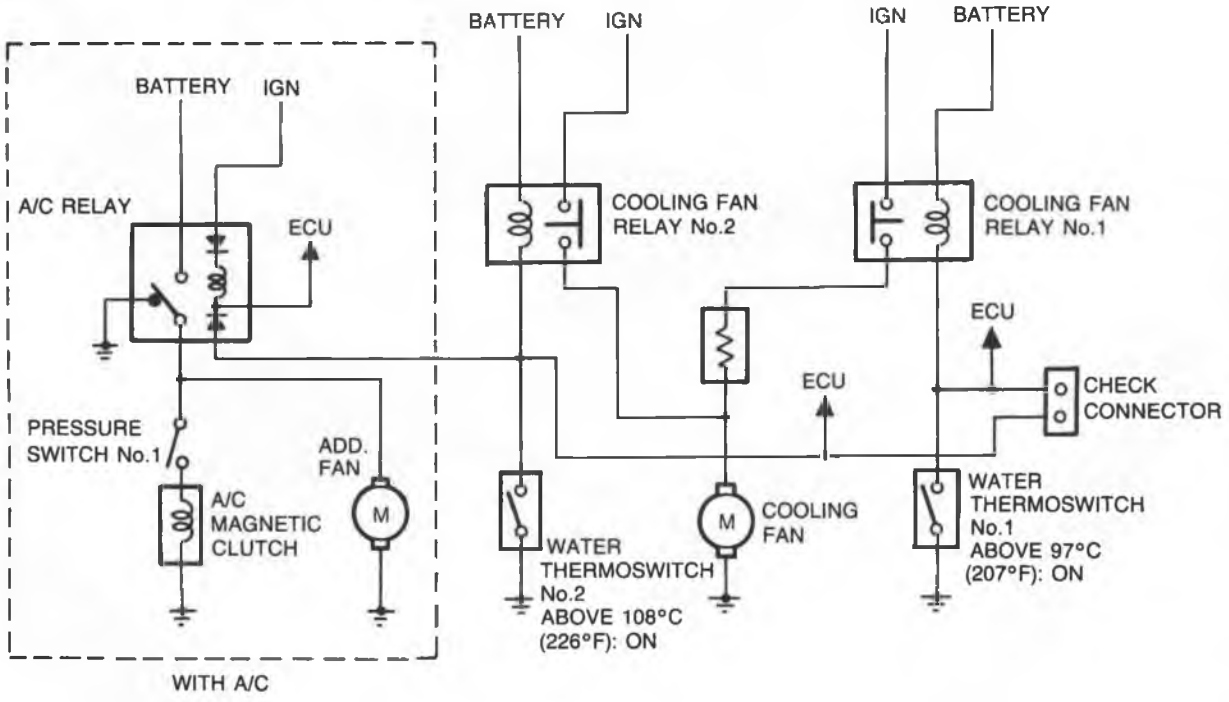
96G0EX-505

SYSTEM CIRCUIT
Gasoline Engine

EXCEPT F2 EC-AT

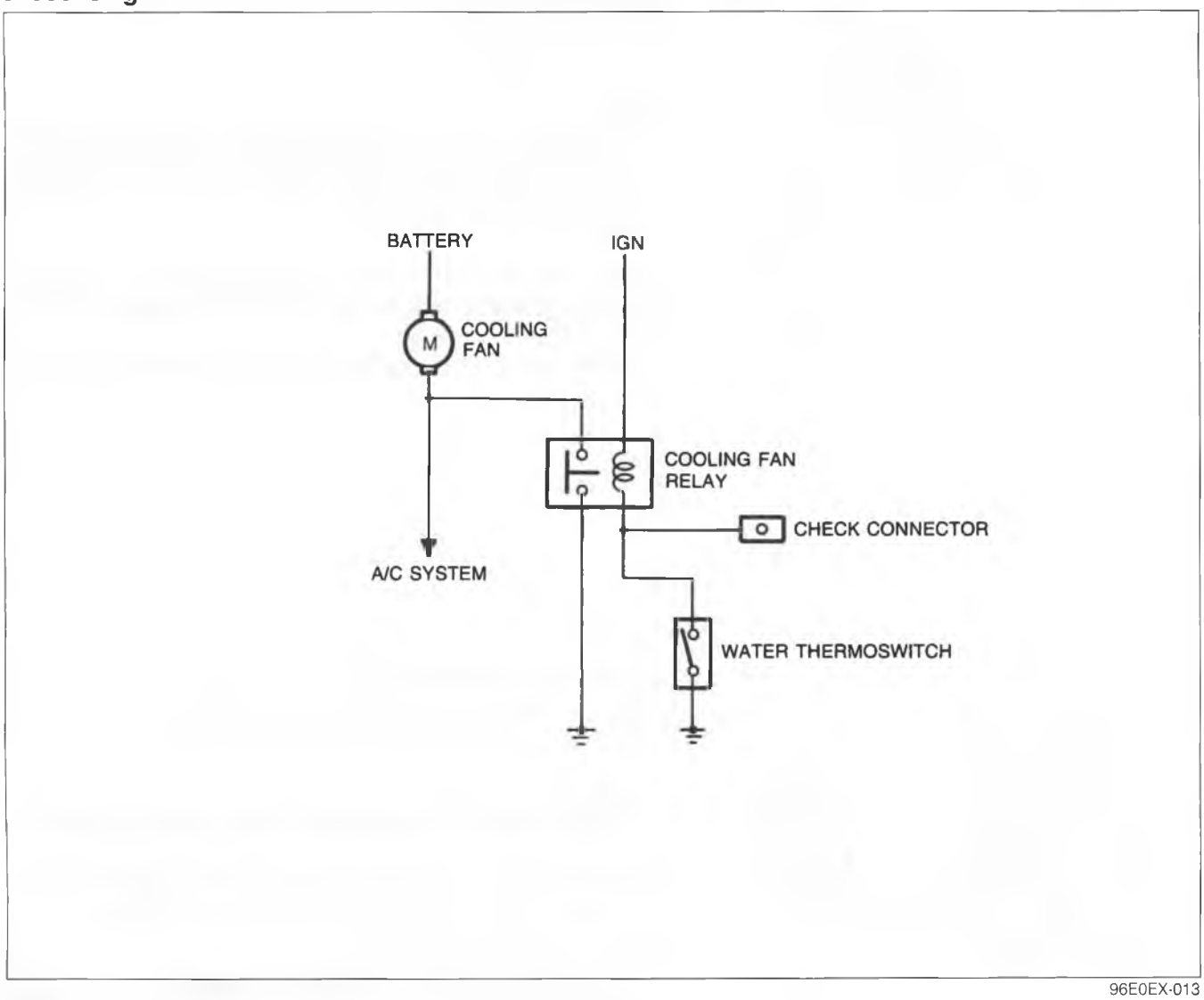


F2 EC-AT



96E0EX-012

Diesel Engine



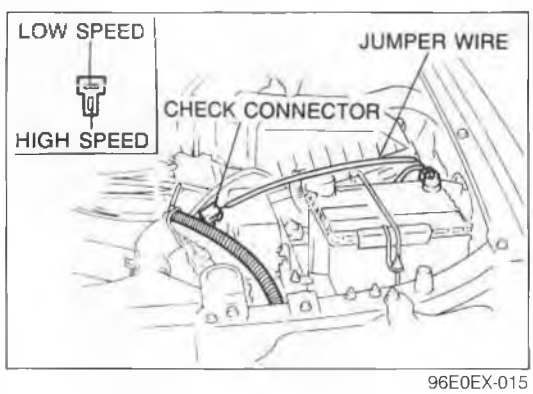
96E0EX-013

SUPPLEMENTAL SERVICE INFORMATION

The following points shown in this section are changed in comparison with the Mazda 626 Workshop Manual 7/87 (No.1163-10-87G) and the Mazda 626 Station Wagon Workshop Manual Supplement 2/88 (1182-10-88B).

Cooling fan system
- System inspection procedure
- Water thermoswitch specification
- Cooling fan relay inspection procedure

96G0EX-506

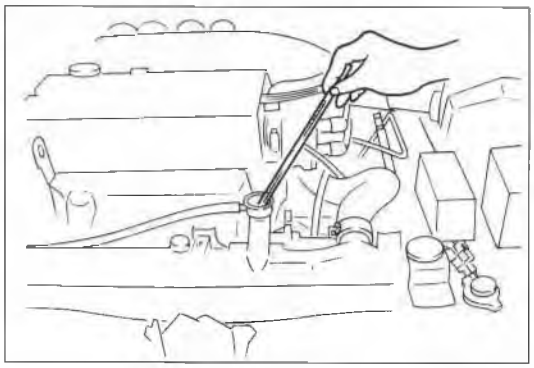


96E0EX-015

COOLING FAN SYSTEM

SYSTEM INSPECTION

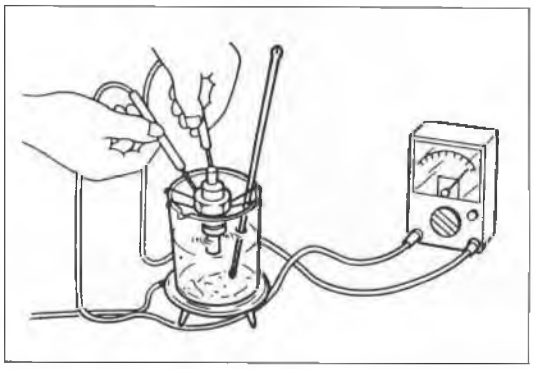
1. Ground the check connector to a ground with a jumper wire.
2. Turn the ignition switch ON and verify that the fan operates. If the fan does not operate, inspect the cooling fan system components and harness.


96E0EX-016

3. Remove the radiator cap and place a thermometer in the radiator filler neck.
4. Start the engine.

Note
- **The high-speed operation (provided only for F2 EC-AT) cannot be checked by the inspection procedures below. The high-speed operation requires above 108°C (226°F).**

5. Verify that the fan operates when the coolant temperature reaches **gasoline engine: 97°C (207°F), diesel engine: 91°C (196°F)**.
   If the fan does not operate, the water thermoswitch is probably at fault.


96E0EX-017

WATER THERMOSWITCH
1. Remove the cooling fan water thermoswitch.
2. Place the water thermoswitch in engine oil.

Warning
- **Do not heat the engine oil above 120°C (248°F).**

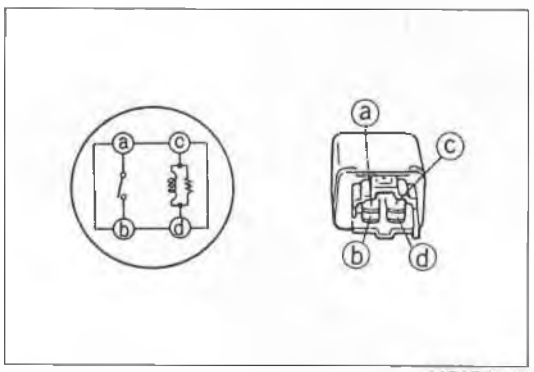
3. Heat the engine oil gradually, and check for continuity of the switch with an ohmmeter. Replace if necessary.

No.1 water thermoswitch:	
Gasoline engine over 97°C (207°F)	**OFF → ON**
Diesel engine over 91°C (196°F)	
No.2 water thermoswitch (F2 EC-AT):	
over 108°C (226°F)	**OFF → ON**

Caution
- **Do not use sealing tape.**

4. Install the water thermoswitch and a new O-ring.

Tightening torque:
5.9—8.8 N·m (60—90 cm-kg, 52—78 in-lb)



96E0EX-019

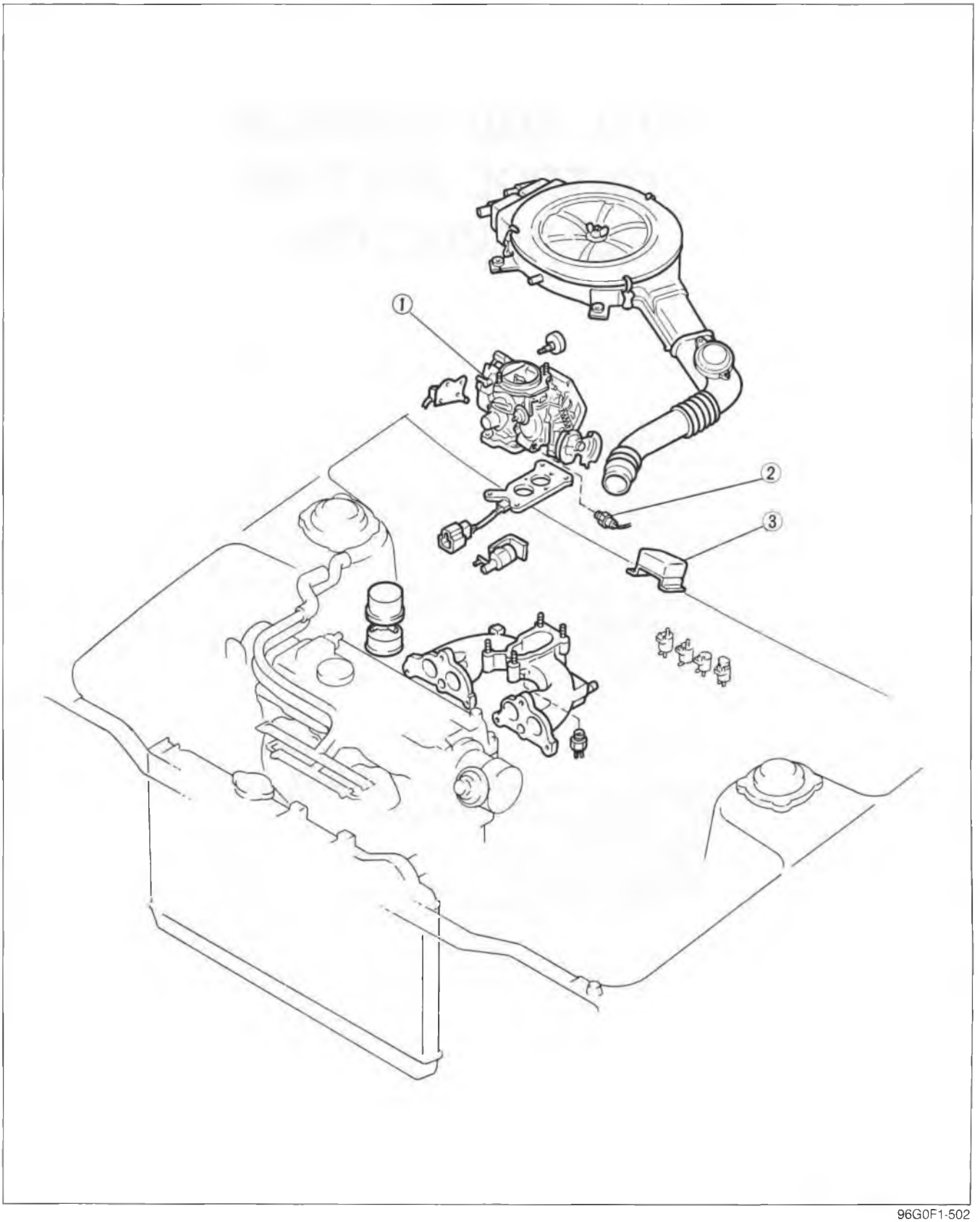
COOLING FAN RELAY
Inspection
1. Check for continuity between terminals c and d.
2. Check for no continuity between terminals a and b.
3. Apply battery voltage between terminal c and terminal d, and check for continuity between terminals a and b.
4. If necessary, replace the fan relay.

FUEL AND EMISSION CONTROL SYSTEMS (CARBURETOR)

96G0F1-501

INDEX

F8 ENGINE



96G0F1-502

1. Carburetor
2. RPM limiter solenoid valve
   Inspection ..... page F1–8
3. Engine control unit
   Inspection ..... page F1–9

OUTLINE

OUTLINE OF CONSTRUCTION

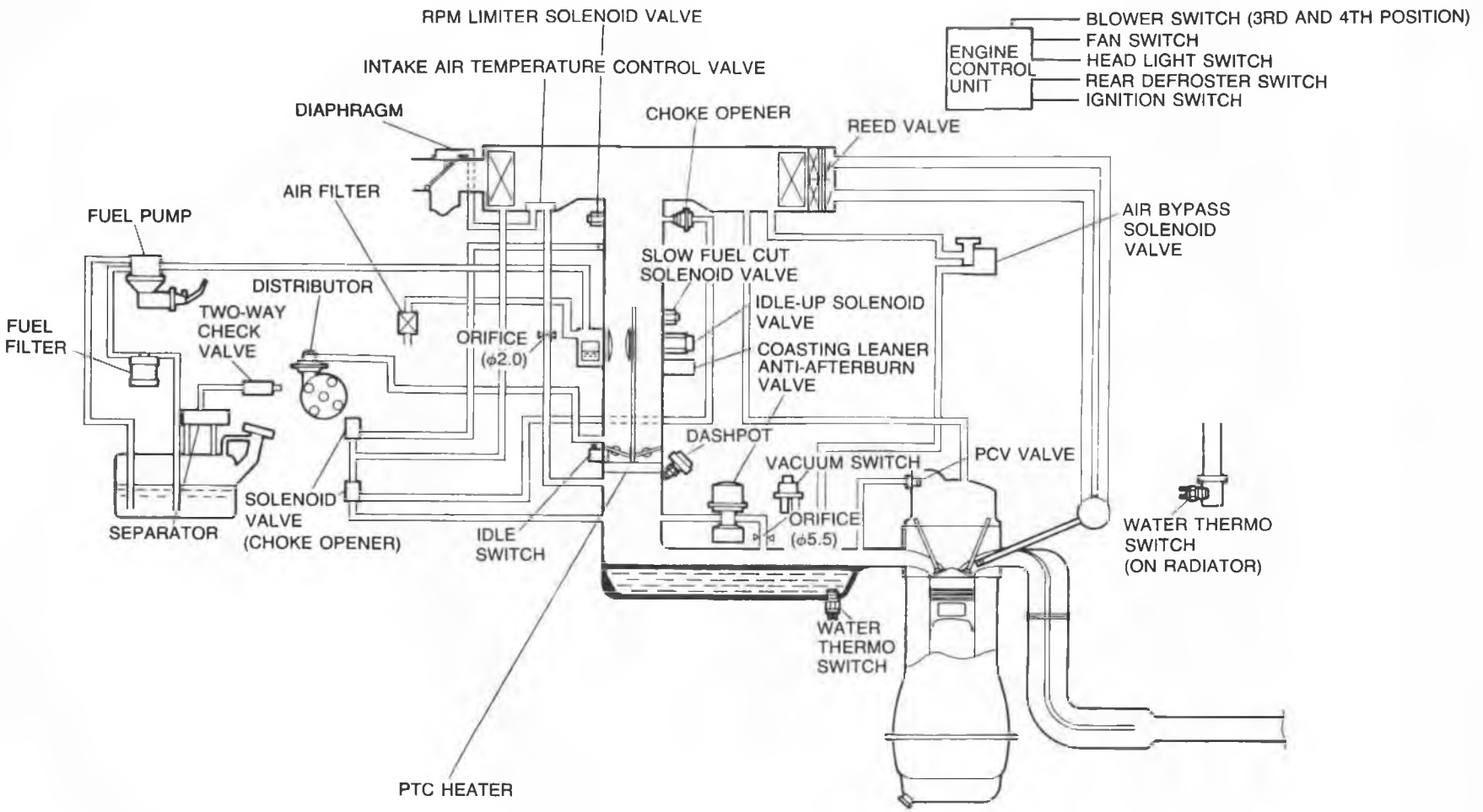
The fuel and emission control system of the new 626 Station Wagon is basically the same as that of the previous model, however some modifications have been made to the F8 engine system.
A comparison of the major parts of the new F8 engines model and the previous F8 engines model are as follows.

96G0F1-503

F8 Engine

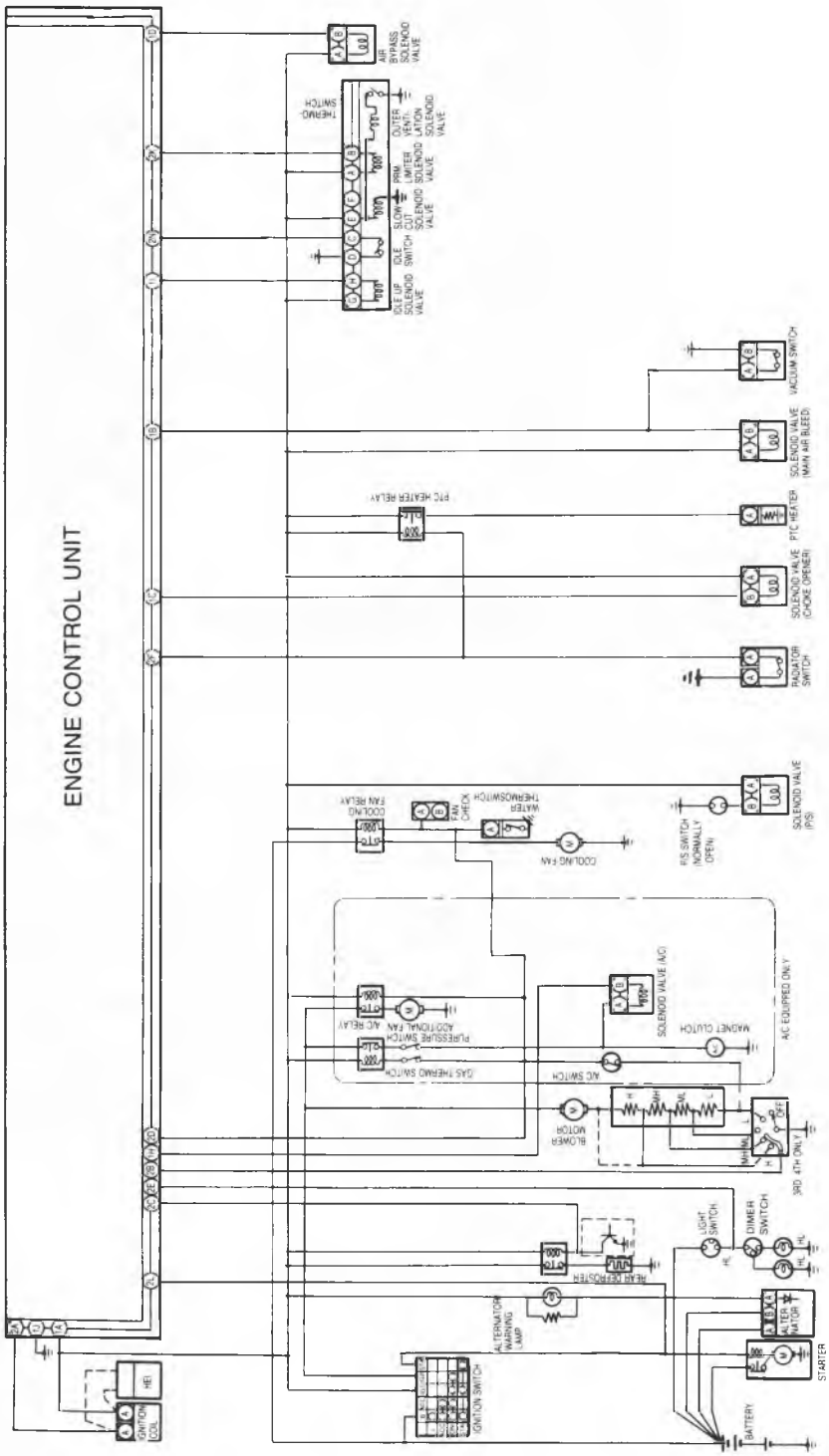
Item		Application		Remarks
		New model	Previous model	
Fuel system	Carburetor	○	○	Specification changed Shape changed
RPM Limiter control system	RPM Limiter solenoid valve	○	X	For drivability

96G0F1-504


RPM LIMITER SOLENOID VALVE
INTAKE AIR TEMPERATURE CONTROL VALVE
DIAPHRAGM
CHOKE OPENER
REED VALVE
ENGINE CONTROL UNIT
BLOWER SWITCH (3RD AND 4TH POSITION)
FAN SWITCH
HEAD LIGHT SWITCH
REAR DEFROSTER SWITCH
IGNITION SWITCH
AIR FILTER
FUEL PUMP
AIR BYPASS SOLENOID VALVE
SLOW FUEL CUT SOLENOID VALVE
DISTRIBUTOR
IDLE-UP SOLENOID VALVE
TWO-WAY CHECK VALVE
FUEL FILTER
ORIFICE (φ2.0)
COASTING LEANER ANTI-AFTERBURN VALVE
DASHPOT
VACUUM SWITCH
PCV VALVE
SOLENOID VALVE (CHOKE OPENER)
IDLE SWITCH
ORIFICE (φ5.5)
WATER THERMO SWITCH (ON RADIATOR)
SEPARATOR
WATER THERMO SWITCH
PTC HEATER

96EOF1-004

WIRING DIAGRAM
F8 Engine



SECIFICATIONS

Item \ Engine			F8
Idle speed		rpm	800 $^{+50}_{-0}$
CO concentration		%	2.0 ± 0.5
Carburetor			
Type			Down draft, two barrel
Throat diameter	mm (in)	Primary	30 (1.18)
		Secondary	34 (1.34)
Venturi diameter	mm (in)	Primary	23.5 (0.93)
		Secondary	29.0 (1.14)
Main nozzle	mm (in)	Primary	2.6 (0.10)
		Secondary	2.8 (0.11)
Main jet	mm (in)	Primary	1.14 (0.045)
		Secondary	1.45 (0.057)
Main air bleed	mm (in)	Primary	0.55 (0.022)
		Secondary	0.44 (0.017)
Slow jet	mm (in)	Primary	0.46 (0.018)
		Secondary	1.10 (0.043)
Slow air bleed mm (in)	Primary	No.1	0.80 (0.031)
		No.2	2.00 (0.079)
	Secondary	No.1	0.80 (0.031)
		No.2	0.50 (0.020)
Power jet		mm (in)	0.50 (0.020)
Fast idle adjustment Clearance between primary throttle valve and bore		mm (in)	0.48—0.64 (0.019—0.025)
Float level adjustment mm (in)	Max. fuel flow "L" Clearance between float and air horn without gasket		44 (17.3)
	Fuel stop "H" Clearance between float and air horn gasket; float lowered by own weight		12.5 (0.49)
Choke breaker diaphragm	mmHg (inHg)	Start	100—160 (3.9—6.3)
		Stop	220—280 (8.7—11.0)
Choke opener	mmHg (inHg)	Start	30—70 (1.18—2.76)
		Stop	130—190 (5.1—7.5)
Fuel tank capacity		liters (US gal, Imp gal)	60 (15.9, 13.2)
Fuel pump			
Delivery pressure		kPa (kg/cm^2, psi)	20—26 (0.20—0.27, 2.8—3.8)
Feeding capacity		cc/min (cu in/min)	More than 860 (52.5) at idle
Fuel filter			
Type			Paper element with magnet
Air cleaner			
Fresh-Hot switching			Diaphragm type
Element type			Oil permeated paper
Fuel specification			Leaded regular

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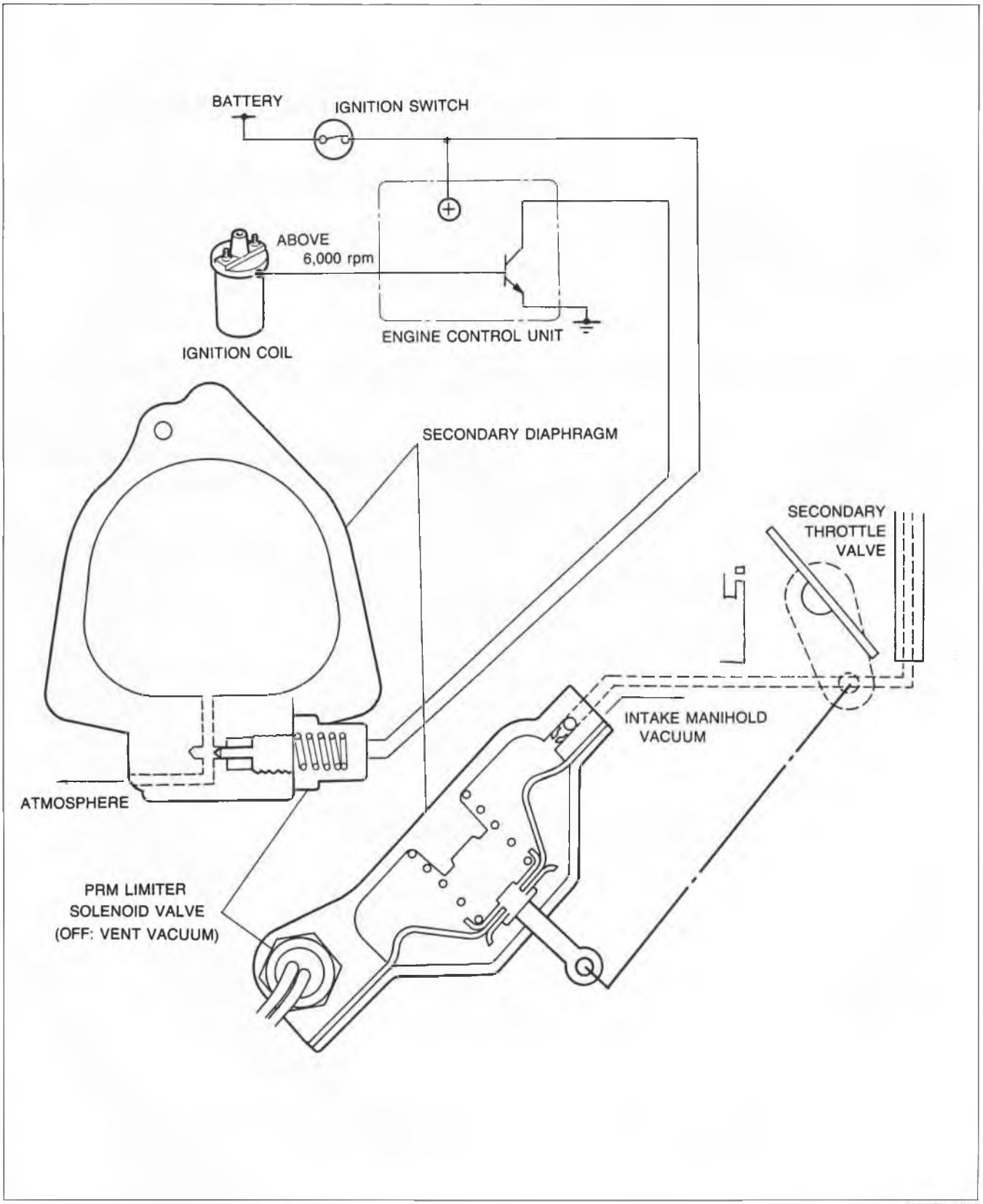
RPM LIMITER CONTROL SYSTEM (F8 ENGINE)

DESCRIPTION

This system operates when engine speed exceeds approx. 6,000 rpm. If the engine speed exceeds the specified speed, the RPM limiter solenoid valve opens the passage from the secondary diaphragm to atmosphere to limit rpm to prevent damage of the engine by overspeeding.

SYSTEM OPERATION



96E0F1-009

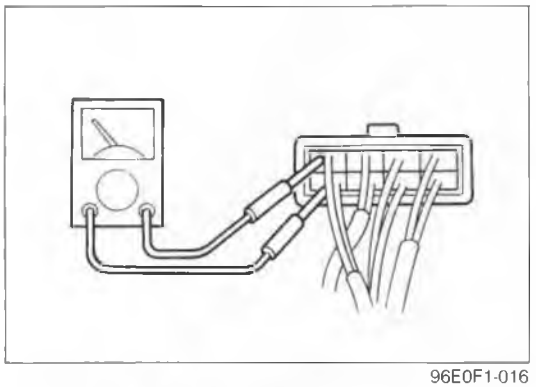
SUPPLEMENTAL SERVICE INFORMATION

The following points shown in this section are changed in comparison to Mazda 626 Workshop Manual (1163-10-87G) and Mazda 626 Station Wagon Workshop Manual Supplement (1182-10-88B).

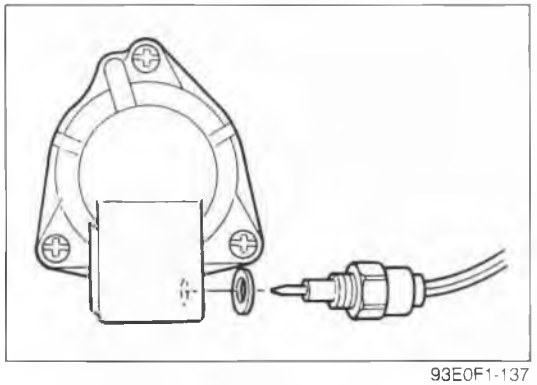
RPM limiter control system (F8 engine)
- Newly equipped RPM limiter control system

Control system (F8 engine)
- Inspection of engine control unit terminal voltage

96G0F1-506



96E0F1-016



93E0F1-137

RPM LIMITER CONTROL SYSTEM (F8 ENGINE)

RPM LIMITER SOLENOID VALVE

Inspection

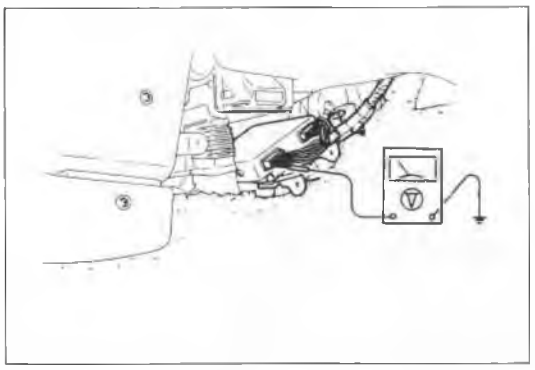
1. Measure the resistance of the solenoid valve.

   Standard resistance: 34—41Ω

2. Replace the solenoid valve, if not as specified.

   Note
   - **Use a new aluminum gasket when reinstalling the valve.**

   Tightening torque:
   7.8—11 N-m (0.8—1.1 m-kg, 5.8—8.0 ft-lb)



96E0F1-017

CONTROL SYSTEM

ENGINE CONTROL UNIT

Check the engine control unit terminal voltages with a voltmeter.

Caution

- **Warm up the engine before checking the control unit.**
- **If the proper voltage is not obtained, check the wiring, connections and finally, check the component.**

F8 Engine

Terminal	Connected to	Condition	Voltage
1A	Ignition switch	Ignition switch ON.	Battery voltage
1B	Solenoid valve (Main air bleed control)	Others	Battery voltage
		Radiator coolant temperature below 17°C (63°F) or intake manifold vacuum more than 300 mmHg (11.8 inHg)	Below 1.5V
1C	Solenoid valve (Choke opener)	Radiator coolant temperature below 17°C (63°F) or during cranking and 27 sec. after engine starts	Below 1.5V
		Others	Battery voltage
1D	Air bypass solenoid valve	Idle switch OFF and engine speed above approx. 2,300 rpm	Below 1.5V
		Others	Battery voltage
1E,1F,1G	—	—	—
1H	Solenoid valve (A/C)	A/C switch ON and engine speed below approx. 1,500 rpm	Below 1.5V
		Others	Battery voltage
1I	Idle-up solenoid valve	Headlight switch ON, rear defroster switch ON, fan speed control switch is 3rd or 4th position, A/C operated, or engine coolant temperature below 17°C (63°F)	Below 1.5V
		Others	Battery voltage
1J	Ground	—	Below 1.5V
2A	Ignition coil	Ignition switch ON or engine running	Battery voltage
2B	Fan speed control switch	Fan speed control switch in 3rd or 4th position	Below 1.5V
		Fan speed control switch OFF	Battery voltage
2C	Rear defroster switch	Rear defroster switch ON	Below 1.5V
		Rear defroster switch OFF	Battery voltage
2D	A/C switch	A/C operated	Below 1.5V
		A/C not operated	Battery voltage
2E	Headlight switch	Headlight switch OFF	Below 1.5V
		Headlight switch ON	Battery voltage
2F	Water thermoswitch (Radiator)	Radiator coolant temperature below 17°C (63°F)	Below 1.5V
		Radiator coolant temperature above 17°C (63°F)	Battery voltage
2G,2H,2I,2J	—	—	—
2K	RPM limter selenoid valve	Engine speed more than 6,000 rpm	Battery voltage
		Engine speed less than 6,000 rpm	Below 1.5V
2L	Ignition switch (START position)	Ignition switch ON	Below 1.5V
		Cranking	Battery voltage
2M	—	—	—
2N	Idle switch	Idling	Battery voltage
		Accelerator pedal depressed	Below 1.5V

96G0F1-507

2M	2K	2I		2E	2C	2A
2N	2L	2J	2H	2F	2D	2B

1I			1C	1A
1J	1H		1D	1B

FUEL AND EMISSION CONTROL SYSTEMS (FUEL INJECTION FE)

96E0F2-001

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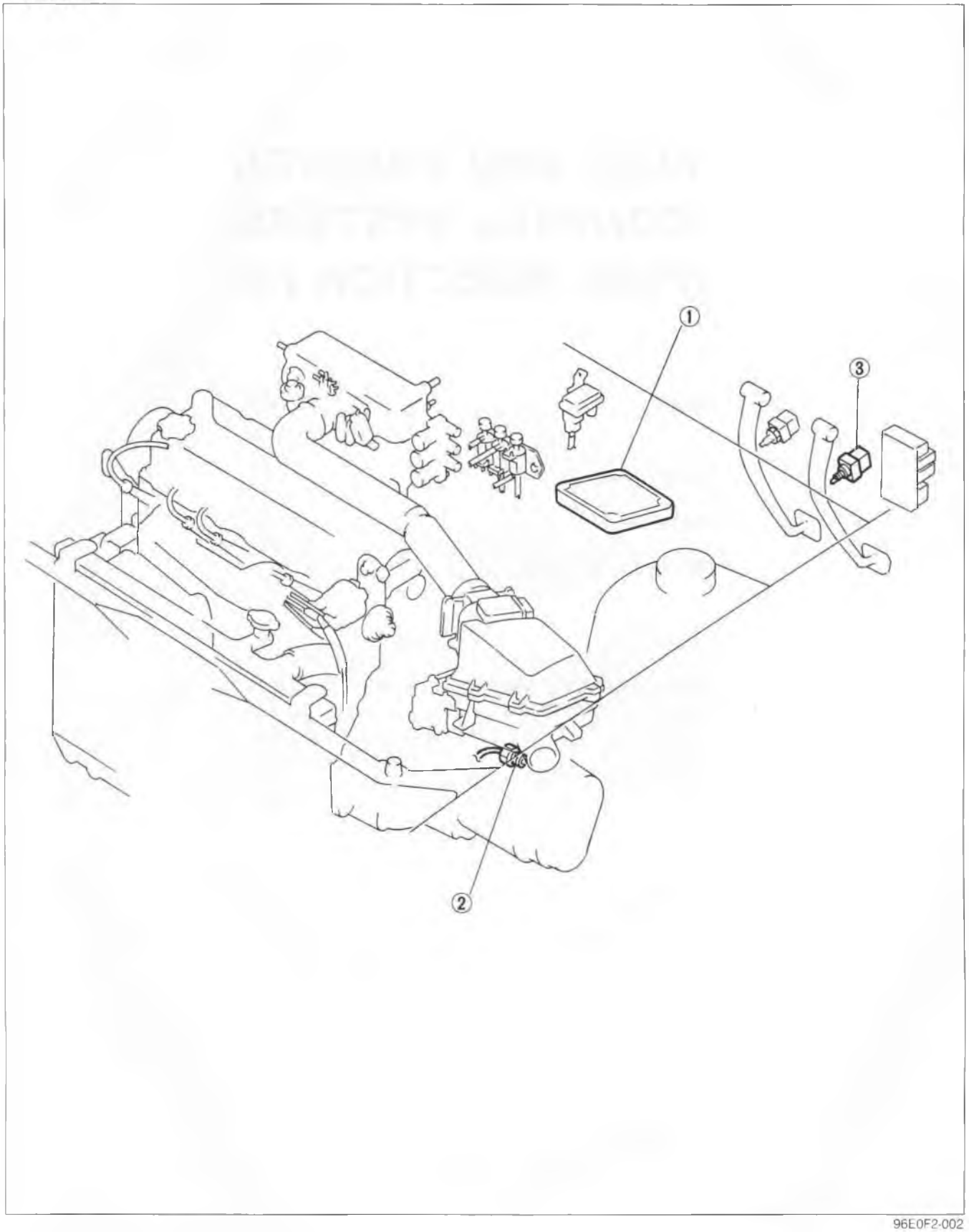


96E0F2-002

OUTLINE

OUTLINE OF CONSTRUCTION

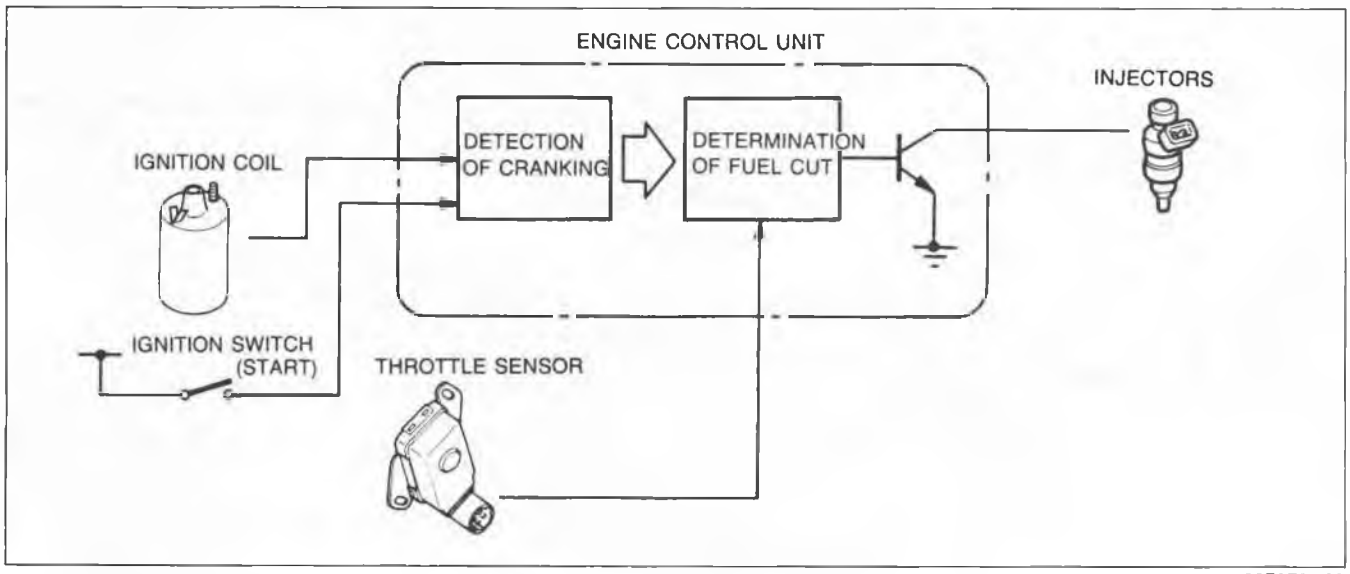
The fuel and emission control system of the new 626 Station Wagon is basically the same as that of the previous model, however certain changes have been made.
A comparison of the major parts of the new model and previous model is as follows

Item		Application		Purpose
		New model	Previous model	
Input sensors and switchs	Clutch switch (MTX)	○ Normally open type	○ Normally closed type	For high durability
	Neutral switch (MTX)	○ Normally open type	○ Normally closed type	
Dechoke system		○	X	For good starting

96G0F2-501

DECHOKE SYSTEM

To clean out excess fuel in the cylinders, as is the case of engine flooding, no fuel is injected when the accelerator is held fully depressed while cranking the engine.



96E0F2-008

SUPPLEMENTAL SERVICE INFORMATION

The following points shown in this section are changed in comparison to Mazda 626 Workshop Manual (1163-10-87G) and Mazda 626 Station Wagon Workshop Manual Supplement (1182-10-88B).

Control system

- Inspection of engine control unit terminal voltage
- Inspection of neutral switch
- Inspection of clutch switch

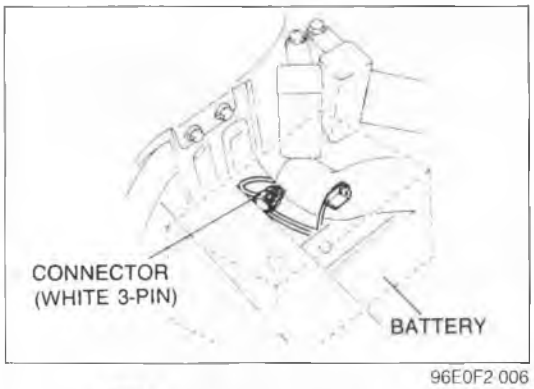
96G0F2-502

CONTROL SYSTEM

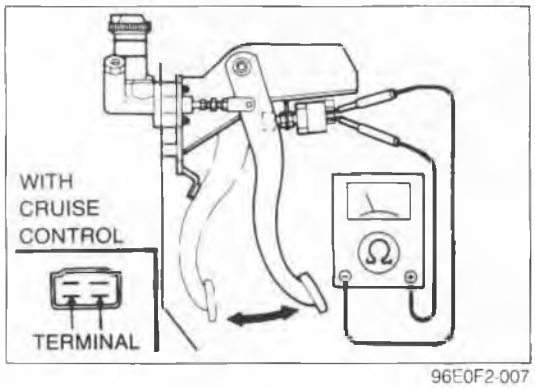
ENGINE CONTROL UNIT
Terminal Voltage

Terminal	Input	Output	Connection to	Voltage (After warming-up)		Remarks
				IGN: ON	Idle	
1V	○		MTX Neutral and clutch switch	In-gear condition Clutch pedal depressed: below 1.5V Clutch pedal released: battery voltage		Neutral: constant below 1,5V

96E0F2-005



96E0F2-006



96E0F2-007

NEUTRAL SWITCH
Inspection

1. Disconnect the neutral switch connector.
2. Connect an ohmmeter to the switch.
3. Check continuity of the switch.

Transmission	Continuity
In neutral	Yes
In other ranges	No

4. After checking, connect the switch connector.

Note
- **Refer to Section J for replacement of the neutral switch.**

CLUTCH SWITCH
Inspection

1. Disconnect the clutch switch connector.
2. Connect an ohmmeter to the switch.
3. Check continuity of the switch.

Pedal	Continuity
Depressed	Yes
Released	No

4. After checking, connect the switch connector.

Note
- **Refer to Section H for replacement of the clutch switch.**

FUEL AND EMISSION CONTROL SYSTEMS (FUEL INJECTION FE DOHC)

96E0F3-001

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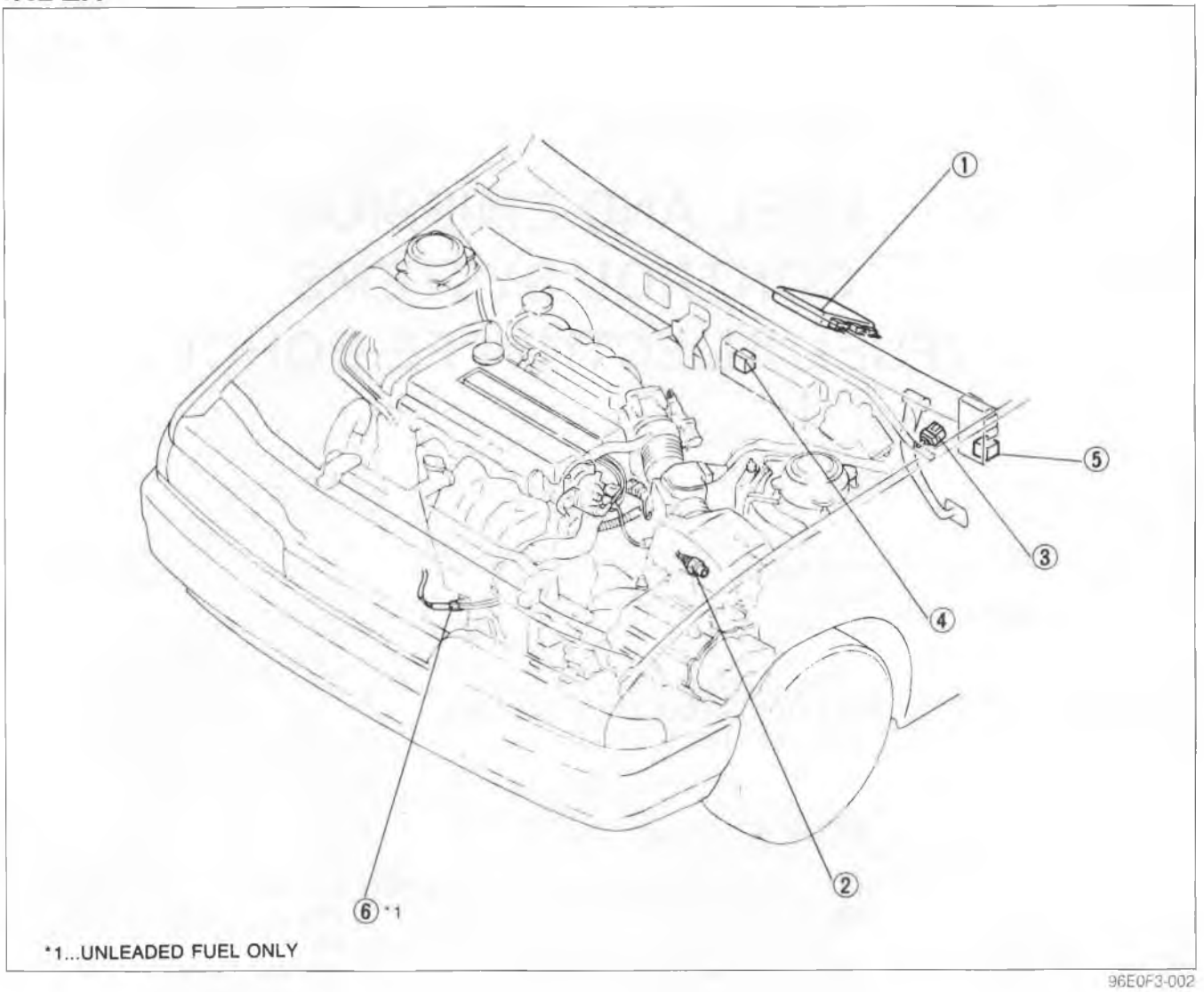


96E0F3-002

OUTLINE

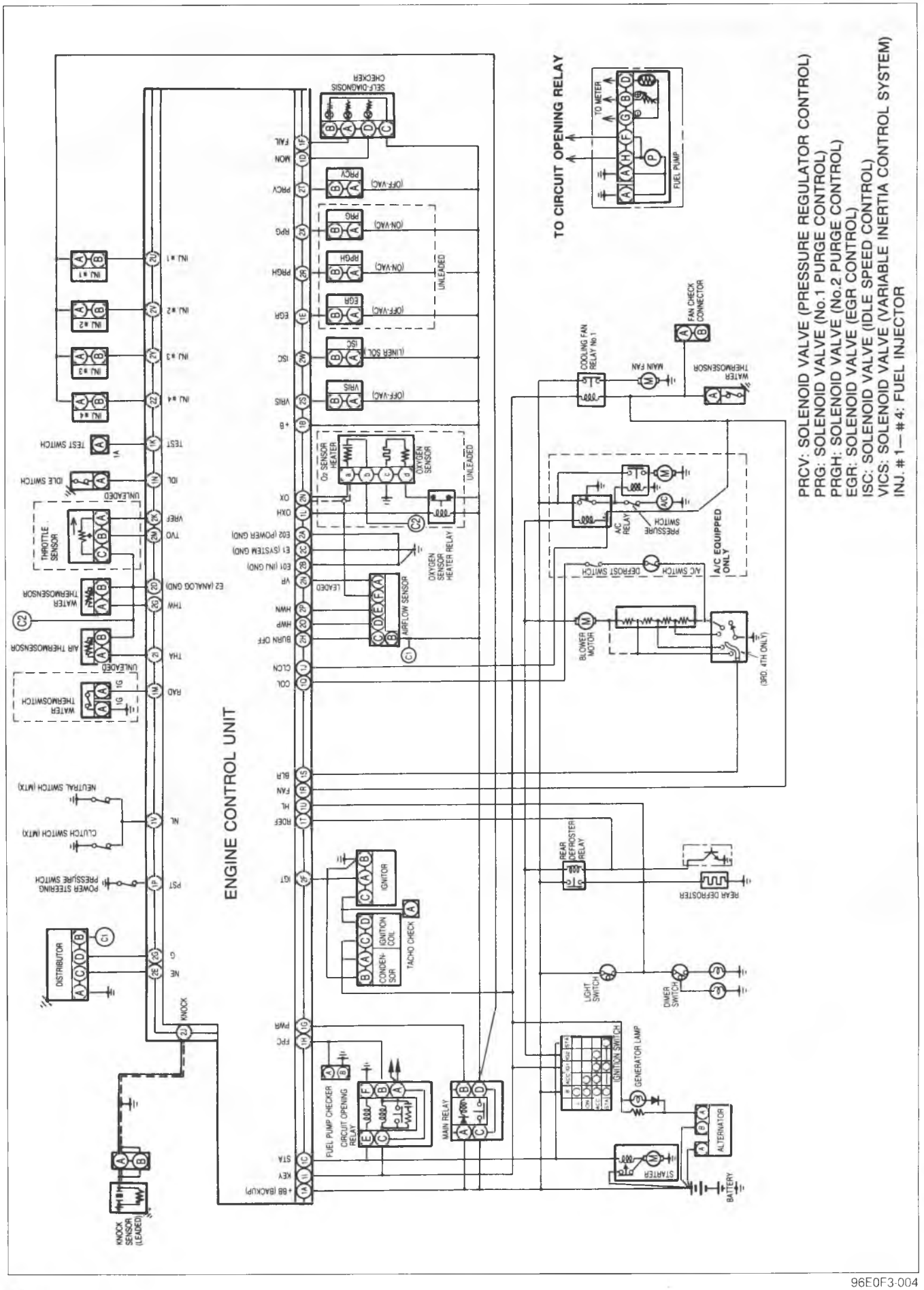
OUTLINE OF CONSTRUCTION

The fuel and emission control system of the new 626 Station Wagon is basically the same as that of the previous model, however certain changes have been mode.
A comparison of the major parts of the new model and previous model is as follow.

Item		Application		Purpose
		New model	Previous model	
Input sensors and switches	Clutch switch (MTX)	○ Normally open type	○ Normally closed type	For high durability
	Neutral switch (MTX)	○ Normally open type	○ Normally closed type	
	Oxygen sensor (Unleaded fuel)	○ (4-pin connector)	○ (3-pin connector)	For high durability
Pressure regulator control (PRC) system		○ Any coolant temperature	○ Only when engine is cold	For good starting
Engine control unit (ECU)		○ 48-pin type	○ 52-pin type	—
Control system	Control relay	X	○	For high durability
	Main relay	○	X	
	Circuit opening relay	○	X	
	E/L control unit	X In ECU	○	System simplified

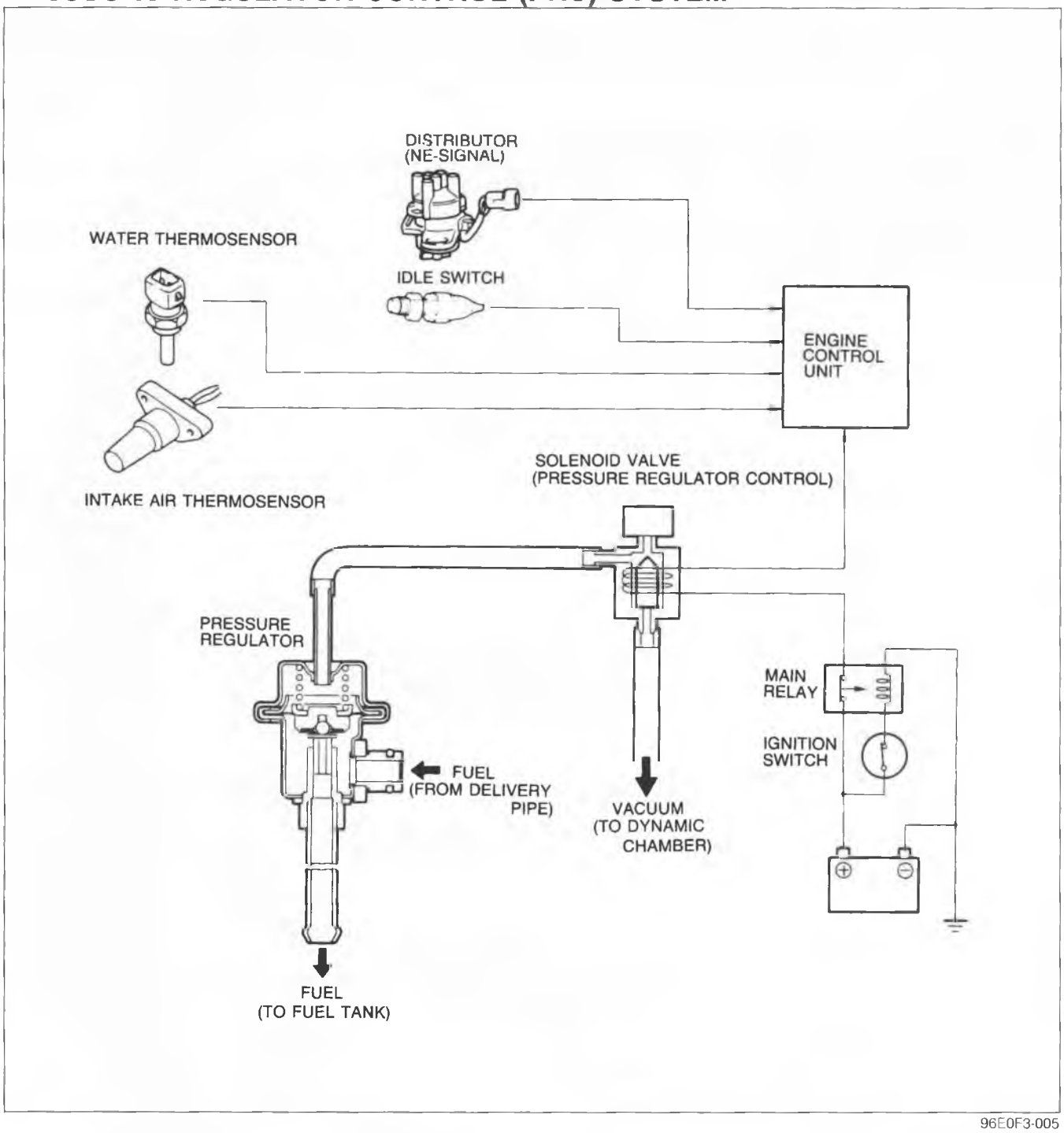
96G0F3-501

WIRING DIAGRAM



96E0F3-004

PRESSURE REGULATOR CONTROL (PRC) SYSTEM



96E0F3-005

To prevent percolation of the fuel during idle after the engine is restarted, vacuum is cut to the pressure regulator, increasing the fuel pressure.

Specified time: Approx. 120 sec.
Operating condition: Coolant temperature — above 70°C (158°F)
Intake air temperature — above 30°C (86°F)....Unleaded fuel
above 50°C (122°F)....Leaded fuel

Specified time: Approx. 3 sec.
Operating condition: Coolant temperature — above 17°C (63°F)

Specified time: Approx. 10 sec.
Operating condition: Coolant temperature — Between -5°C (23°F) to 17°C (63°F)

SUPPLEMENTAL SERVICE INFORMATION

The following point shown in this section are changed in comparison to Mazda 626 Workshop Manual (1163-10-87G) and Mazda 626 Station Wagon Workshop Manual Supplement (1182-10-88B).

Control system

- Inspection of engine control unit terminal voltage
- Inspection of neutral switch
- Inspection of clutch switch
- Newly equipped main relay
- Newly equipped circuit opening relay
- Inspection of oxygen sensor

96G0F3-502

CONTROL SYSTEM

ENGINE CONTROL UNIT (ECU)

Terminal Voltage

If the input and output devices wiring are normal, but the engine control unit terminal voltage is incorrect, replace the engine control unit.

Terminal	Input	Output	Connection to	Voltage (After warming-up)		Remark
				Ign: ON	Idle	
1A	—	—	Battery	Approx.12V		For back-up
1B	○	—	Control relay	Approx. 12V		—
1C	○		Ignition switch (Start position)	Below 2.5V		While cranking: Approx. 10V
1D		○	Self-Diagnosis Checker (Monitor lamp)	For 3 sec.after ignition switch OFF → ON: Approx. 5V (light illuminates) After 3 sec.: Approx. 12V (light does not illuminate)	(Test connector grounded) Approx. 5V (Test connector not grounded) Monitor lamp ON: Approx. 5V Monitor lamp OFF: Approx. 12V	With Self-Diagnosis Checker
1E (U/F)		○	Solenoid valve (EGR)	Below 2.5V		• Radiator temp. below 17°C (62.6°F) or coolant temp. below 70°C (158°F): constant below 2.5V • 1,500—3,500 rpm: Approx. 12V
1F		○	Self-Diagnosis Checker (Code No.)	For 3 sec. after ignition switch OFF → ON: Below 2.5V (Buzzer sounds) After 3 sec.: Approx. 12V (Buzzer does not sound)		• Using Self-Diagnosis Checker and test connector grounded • Buzzer sounds: Below 2.5V • Buzzer does not sound: Approx. 12V
1G		○	Main relay	Below 2.5V		Ignition switch OFF: Approx. 12V
1H		○	Circuit opening relay	Approx. 12V	Below 2.5V	—
1I	○		Ignition switch (ON position)	Approx 12V		—
1J		○	A/C relay	A/C switch ON: Below 2.5V A/C switch OFF: Approx. 12V		Blower motor ON
1K	○		Test connector	Test connector grounded: 0V Test connector not grounded: Approx. 12V		Green connector, 1-pin
1L (U/F)		○	Oxygen sensor heater (Relay)	Approx. 12V		Above 3,000 rpm: Below 2.5V
1M (U/F)	○		Water thermoswitch	Approx.12V		Radiator temp.: Below 17°C (63°F)
				0V		Radiator temp.: Above 17°C (63°F)
1N	○		Idle switch	Accelerator pedal released: 0V Accelerator pedal depressed: approx. 12V		—
1O	—	—	—	—		—
1P	○		P/S pressure switch	Constant approx. 12V	P/S ON: Below 2.5V P/S OFF: Approx. 12V	—
1Q	○		A/C switch	A/C switch ON: Below 2.5V A/C switch OFF: Approx. 12V		Blower motor: ON

Note

- **Terminals labeled "U/F" are only for unleaded fuel.**

Terminal	Input	Output	Connection to	Voltage (After warming-up)		Remark
				Ign: ON	Idle	
1R	○		Electrical fan (Water thermoswitch)	Battery voltage		Coolant temp.: Below 97°C (207°F)
				Below 1.5V		Coolant temp.: Above 97°C (207°F)
1S	○		Blower fan switch	• Switch less than 2nd position: Battery voltage • Switch 3rd or 4th position: Bolow 1.5V		—
1T	○		Rear defroster switch	• Switch OFF: Battery voltage • Switch ON: Below 1.5V		—
1U	○		Headlight switch	• Headlight OFF: Below 1.5V • Headlight ON: Battery voltage		—
1V	○		Neutral or clutch switch	In-gear condition Clutch pedal depressed: 0V Clutch pedal released: Approx. 12V		MTX (Neutral: constant 0V)
2A	—	—	Ground (E_{02})	0V		—
2B	—	—	Ground (E_{01})	0V		—
2C	—	—	Ground (E1)	0V		—
2D	—	—	Ground (E2)	0V		—
2E	○		Distributor (Ne signal)	0V or 5V	Approx. 2.0V	—
2F		○	Igniter	Approx. 12V	*Approx. 1V	*Engine Signal Monitor: green and red lights flash
2G	○		Distributor (G signal)	0V or 5V	Approx. 1.2V	
2H		○	Airflow sensor (Burn-off control)	Below 2.5V		While burning off: Approx. 8—12V
2I	○		Intake air thermosensor (Dynamic chamber)	Approx. 2.5V at 20°C (68°F)		—
2J (L/F)	○		Knock sensor	Approx. 0V		—
2K (U/F)		○	V ref	4.5—5.5V		—
2L	—	—	—	—		—
2M (U/F)	○		Throttle sensor	Accelerator pedal released: Approx. 0.5V		Max. voltage (Throttle valve fully opened): Approx. .4.3V
2N (U/F)	○		Oxygen sensor	0V	0—1.0V	• Cold engine: 0V at idle • After warming-up: Increase engine speed: 0.7—1.0V Deceleration: 0—0.2V
2N (L/F)	○		Airflow sensor (Variable resister)	0—5V		Depends on adjustment
2O	○		Airflow sensor (Intake air mass)	1.0—1.6V	1.7—2.3V	Increase engine speed: voltage increases
2P	○		Airflow sensor (Ground)	0V		—
2Q	○		Water thermosensor	Approx. 0.4V		Engine coolant temp. 20°C (68°F): Approx. 2.5
2R (U/F)		○	Solenoid valve (No.2 purge control)	Approx. 12V		• Coolant temp. Below 75°C (167°F): Constant approx. 12V • During medium and high load of above 1,700 rpm: Below 2.5V

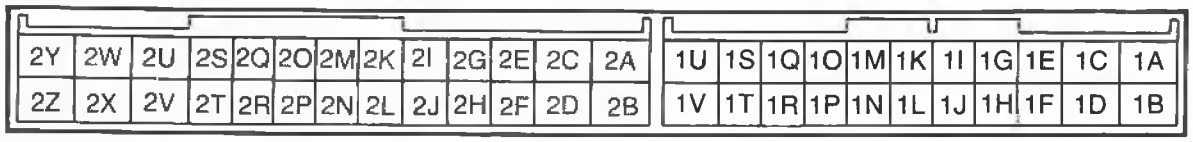
Note
- **Terminals labeled "U/F" are only for unleaded fuel.**
- **Terminals labeled "L/F" are only for leaded fuel.**

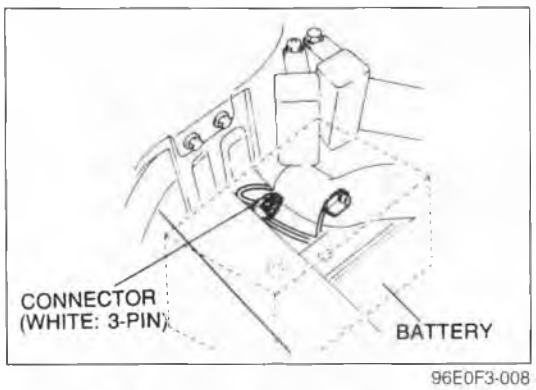
Terminal	Input	Output	Connection to	Voltage (After warming-up)		Remark
				Ign: ON	Idle	
2S		○	Solenoid valve (Variable inertia control)	Approx. 12V		Above 5,200 rpm (Unleaded fuel) or 5,400 rpm (Leaded fuel): Below 2.5V
2T		○	Solenoid valve (Pressure regulator control)	For 120 sec. after ignition switch OFF → ON: Below 2.5V	For 120. sec after starting: Below 2.5V	During hot condition: Coolant temp. Above 70°C (158°F) Intake air temp. Above 30°C (86°F) ...Unleaded fuel Above 50°C (122°F) ...Leaded fuel
				Approx. 12V		Other conditions
2U		○	Injector (No.1)	Approx. 12V	*1 Approx. 12V	*1 Engine Signal Monitor: green and red lights flash
2V		○	Injector (No.2)	Approx. 12V	*1 Approx. 12V	*1 Engine Signal Monitor green and red lights flash
2W		○	Solenoid valve (Idle speed control)	Approx. 9—11V		—
2X (U/F)		○	Solenoid valve (No.1 purge control)	Below 2.5V		Coolant temp. below 70°C (158°F): Approx. 12V
2Y		○	Injector (No.3)	Approx. 12V	*Approx. 12V	*1 Engine Signal Monitor: green and red lights flash
2Z		○	Injector (No.4)	Approx. 12V	*1 Approx. 12V	*1 Engine Signal Monitor: green and red lights flash

96G0F3-503

Note

- **Terminals labeled "U/F" are only for unleaded fuel.**





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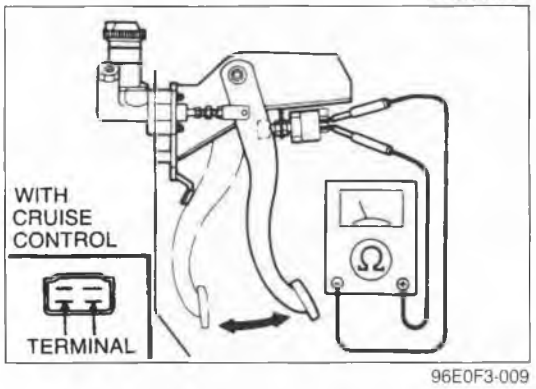


96E0F3-009

NEUTRAL SWITCH

Inspection

1. Disconnect the neutral switch connector.
2. Connect an ohmmeter to the switch.
3. Check continuity of the switch.

Transmission	Continuity
In neutral	Yes
In other ranges	No

4. Reconnect the switch connector.

Note

- **Refer to Section J for replacement of the neutral switch.**

CLUTCH SWITCH

Inspection

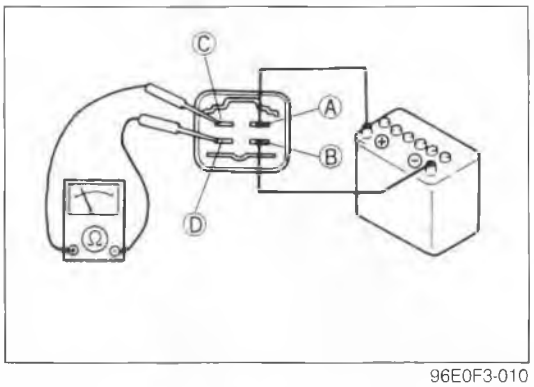
1. Disconnect the clutch switch connector.
2. Connect an ohmmeter to the switch.
3. Check continuity of the switch.

Pedal	Continuity
Depressed	Yes
Released	No

4. Reconnect the switch connector.

Note

- **Refer to Section H for replacement of the clutch switch.**



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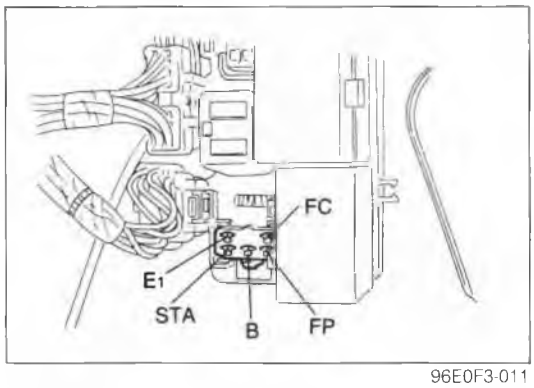

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MAIN RELAY

Inspection

1. Check that a "clicking" sound is heard at the main relay when turning the ignition switch ON and OFF.
2. Apply 12V and a ground to (A) and (B) terminals of the main relay.
3. Check continuity at terminals using an ohmmeter.

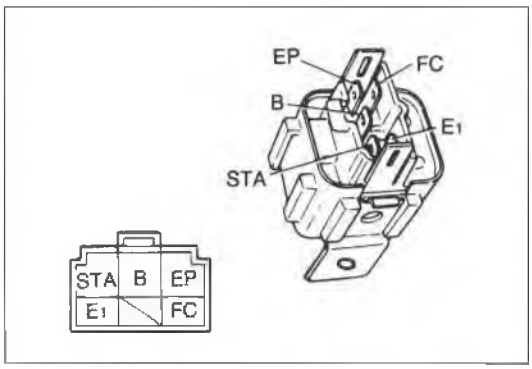
Operation / Terminals	12V Not applied	12V Applied
Ⓒ — Ⓓ	No continuity	Continuity

CIRCUIT OPENING RELAY

Relay Circuit Inspection

1. Remove the circuit opening relay.
2. Check the circuit as described.

Terminal	Checking item	Correct result
Fp	Resistance	0.2—30Ω
Fc	Continuity (cranking)	∞
B	Voltage (Ign: ON)	Battery voltage
STA	Voltage (Cranking)	Approx. 9V
E_1	Continuity	∞



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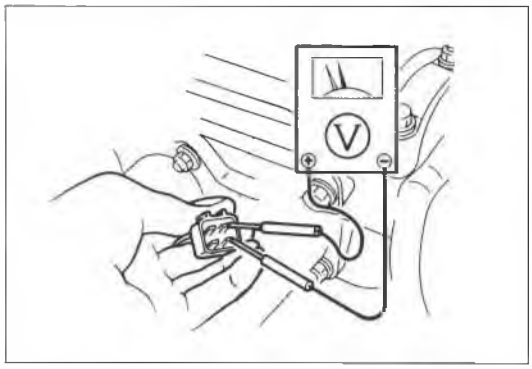

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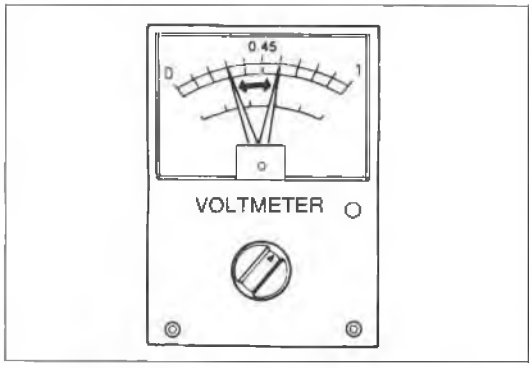

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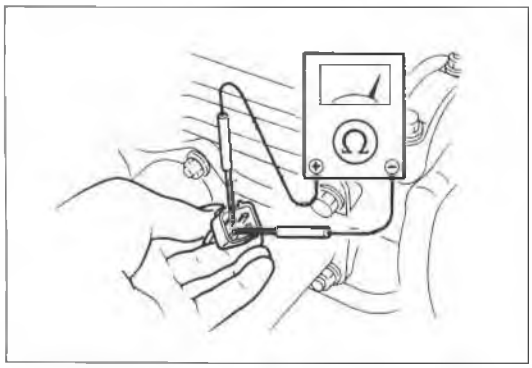

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Circuit Opening Relay Inspection

Apply 12V and a ground to the terminals below and check the circuit opening relay as described.

12V	Grounded	Correct result
STA	E_1	B ↔ FP: Continuity
B	Fc	Fp: Battery voltage

Resistance

Check the resistance between the terminals using an ohmmeter.

Between terminals	Resistance (Ω)
STA ↔ E1	21—43
B ↔ Fc	109—226
B ↔ Fp	∞

OXYGEN SENSOR

Inspection of Output Voltage

1. Warm up the engine and run it at idle.
2. Disconnect the oxygen sensor connector.
3. Connect a voltmeter between terminals A and B.
4. Run the engine at **4,500 rpm** until the voltmeter indicates **approx. 0.7V**.
5. Increase and decrease the engine speed suddenly several times. Check to see that when the speed is increased, the meter reads between **0.5V—1.0V**, and when the speed is decreased, it reads between **0V—0.4V**.
6. If the voltmeter does not indicate as specified, replace the oxygen sensor.

Oxygen Sensor Heater

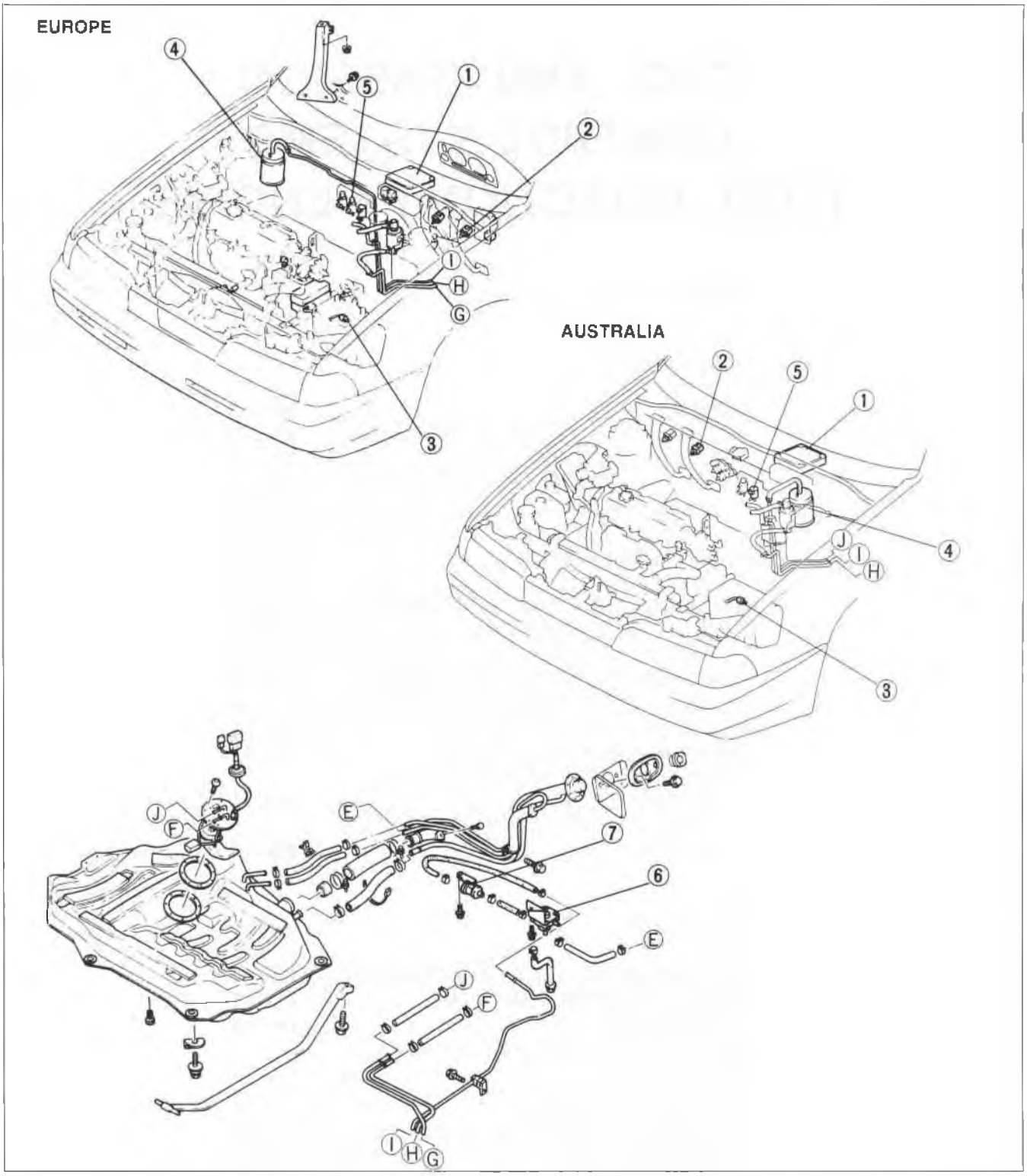
1. Disconnect the oxygen sensor connector.
2. Check resistance between terminals C and D.

Specification: approx. 6Ω

FUEL AND EMISSION CONTROL SYSTEMS (FUEL INJECTION F2 ENGINE)

96G0F5-501

INDEX



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OUTLINE

OUTLINE OF CONSTRUCTION

The fuel and emission control system of the new 626 Station Wagon is basically the same as that of the previous model, however certain changes have been made.
A comparison of the major parts of the new model and the previous model is as follows.

Item		Application		Purpose
		New model	Previous model	
Input sensors and switches	Engine control unit (ECU)	○ 48-pin type (MTX) 64-pin type (ATX)	○ 52-pin type	—
	Electrical load unit	X	○	System simplified
	Clutch switch (MTX)	○ Normally open type	○ Normally closed type	For high durability
	Neutral switch (MTX)	○ Normally open type	○ Normally closed type	
	Water thermoswitch	X	○	System simplified
Dechoke system		○	X	For good starting
Evaporative emission control system	System operation	Duty control	Vacuum control	For emission
	Solenoid valve (Purge control)	○ Duty solenoid	○ ON-OFF solenoid	
	Two-way check valve	○	X	
	Check-and-cut valve	○	X	
	Charcoal canister	○	○ With No.1 and No.2 purge control valve	
	Vacuum switch valve	X	○	
	Water thermovalve	X	○	
	Three-way check valve	X	○	

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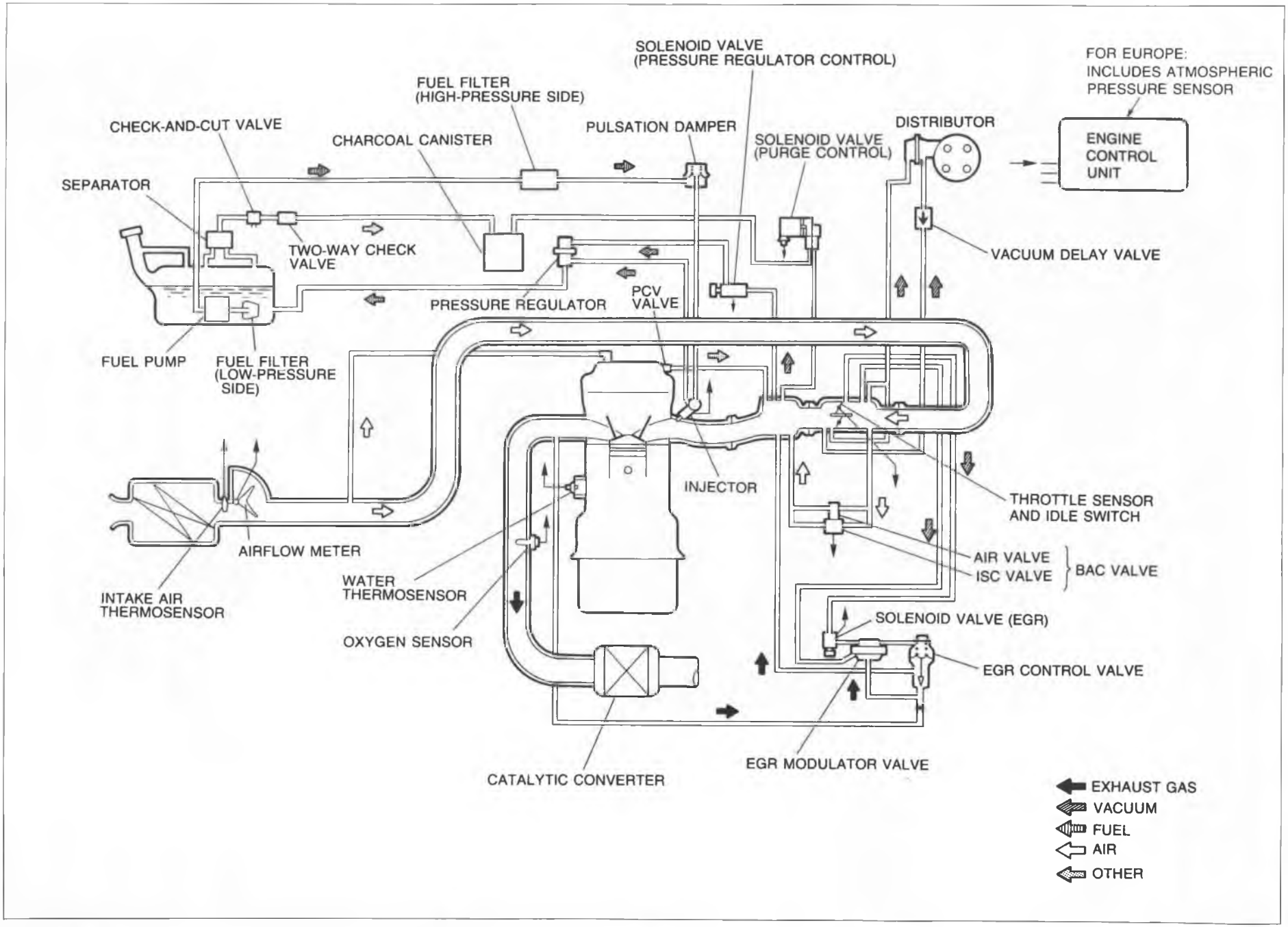
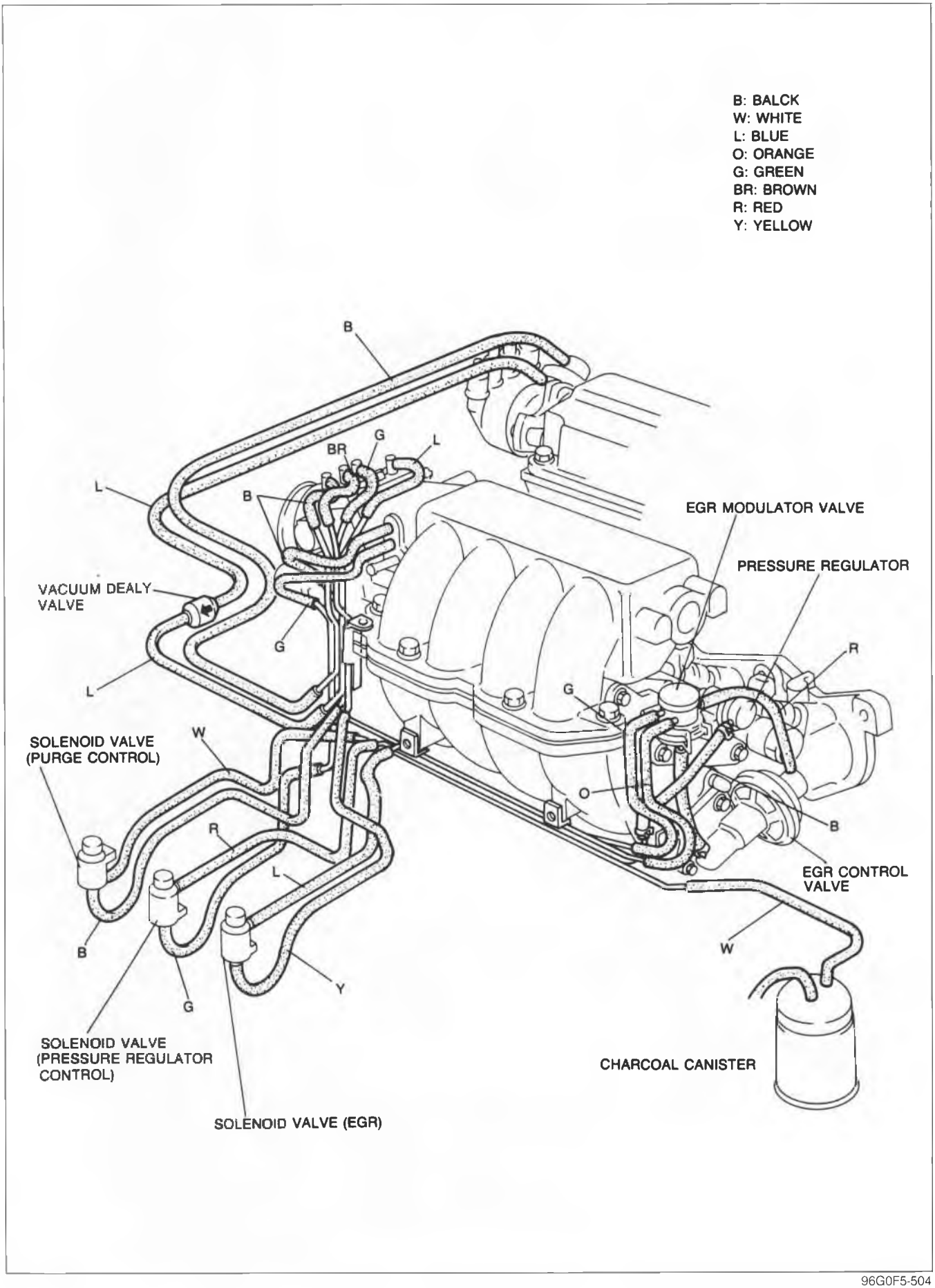

SOLENOID VALVE
(PRESSURE REGULATOR CONTROL)
FOR EUROPE:
INCLUDES ATMOSPHERIC
PRESSURE SENSOR
FUEL FILTER
(HIGH-PRESSURE SIDE)
CHECK-AND-CUT VALVE
CHARCOAL CANISTER
PULSATION DAMPER
SOLENOID VALVE
(PURGE CONTROL)
DISTRIBUTOR
ENGINE
CONTROL
UNIT
SEPARATOR
TWO-WAY CHECK
VALVE
VACUUM DELAY VALVE
PRESSURE REGULATOR
PCV
VALVE
FUEL PUMP
FUEL FILTER
(LOW-PRESSURE
SIDE)
INJECTOR
THROTTLE SENSOR
AND IDLE SWITCH
AIRFLOW METER
AIR VALVE
ISC VALVE
BAC VALVE
WATER
THERMOSENSOR
INTAKE AIR
THERMOSENSOR
SOLENOID VALVE (EGR)
OXYGEN SENSOR
EGR CONTROL VALVE
CATALYTIC CONVERTER
EGR MODULATOR VALVE
EXHAUST GAS
VACUUM
FUEL
AIR
OTHER

96E0F4-004

VACUUM HOSE ROUTING DIAGRAM
Europe



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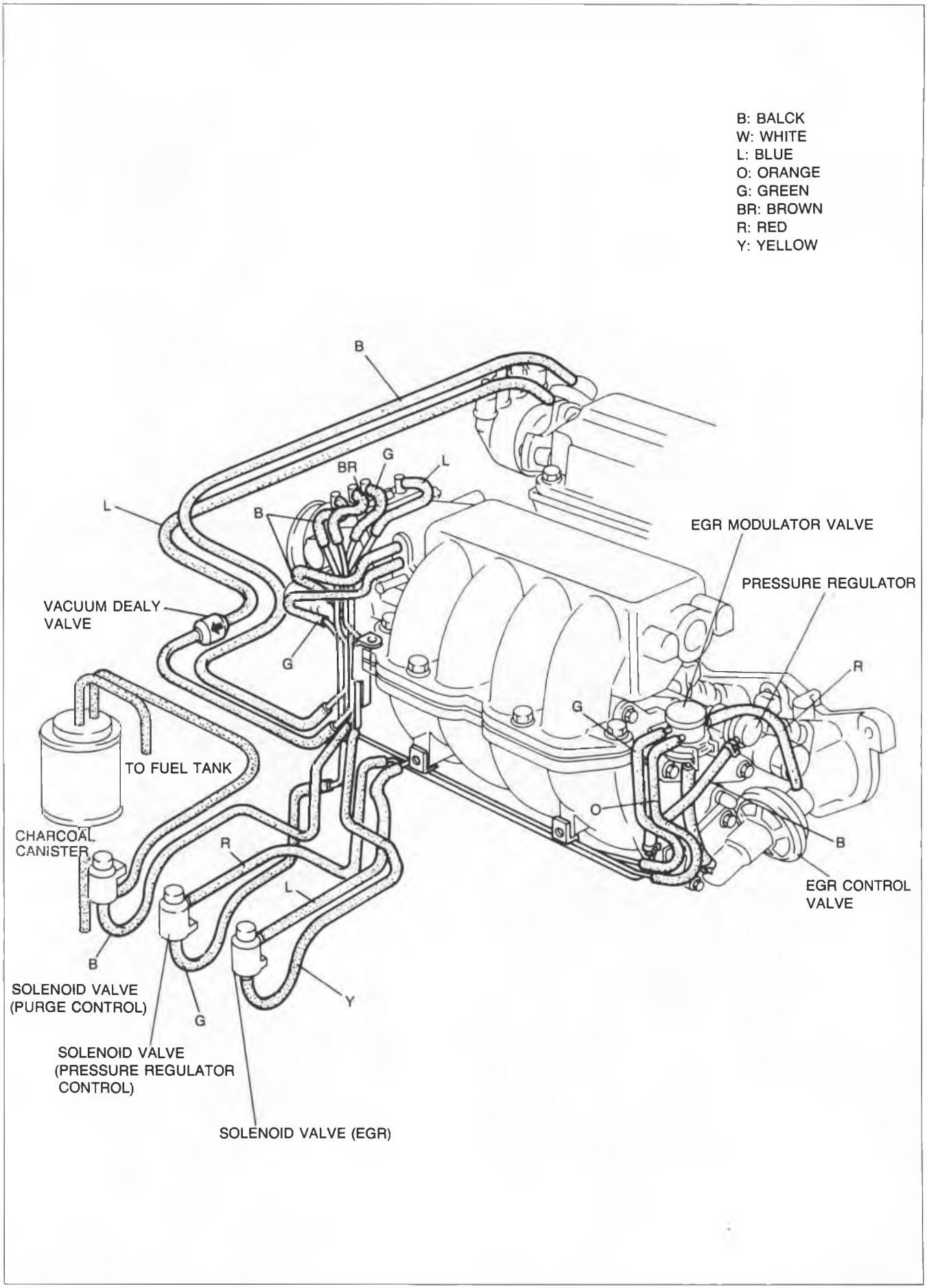
Australia



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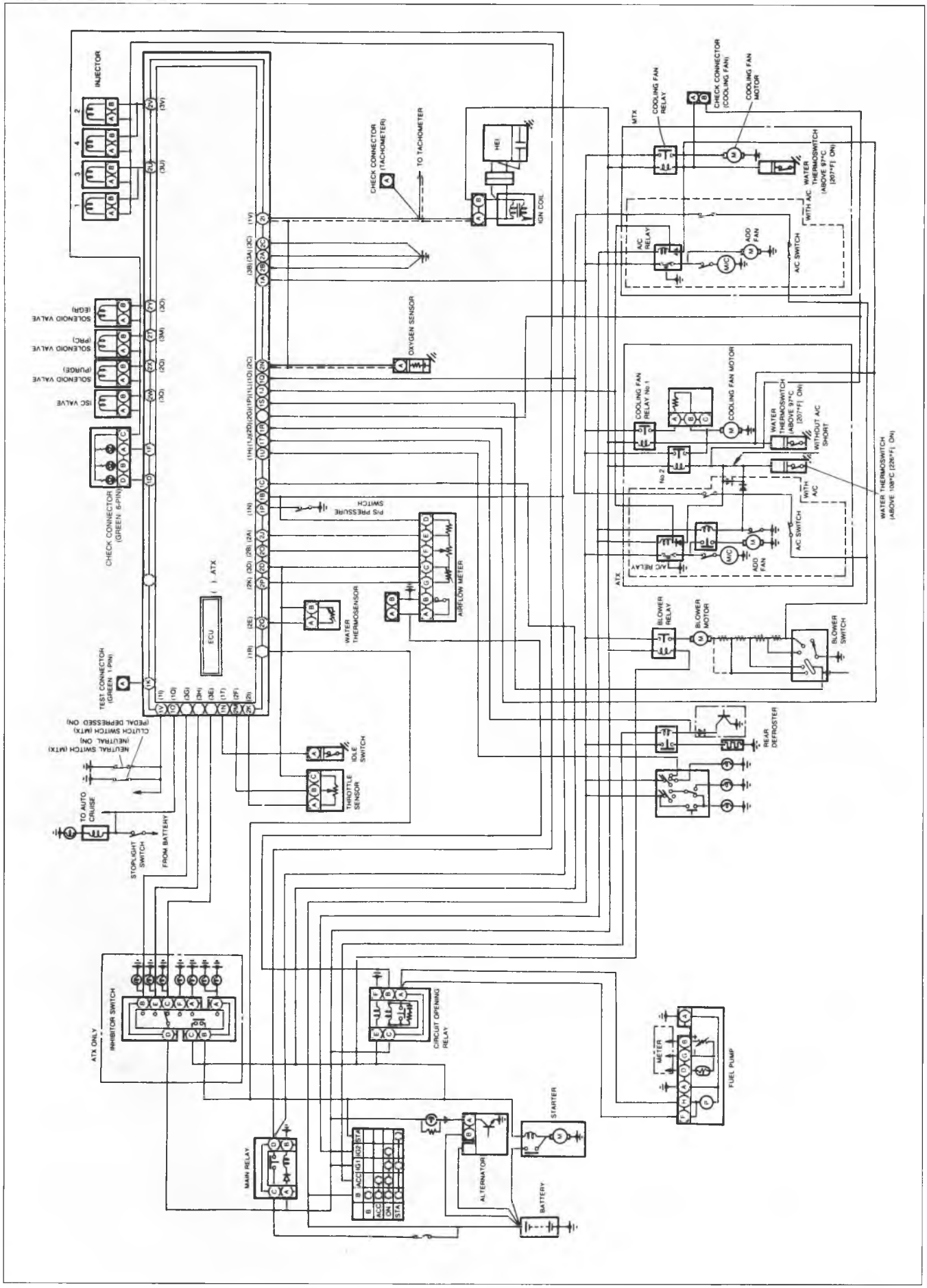
WIRING DIAGRAM

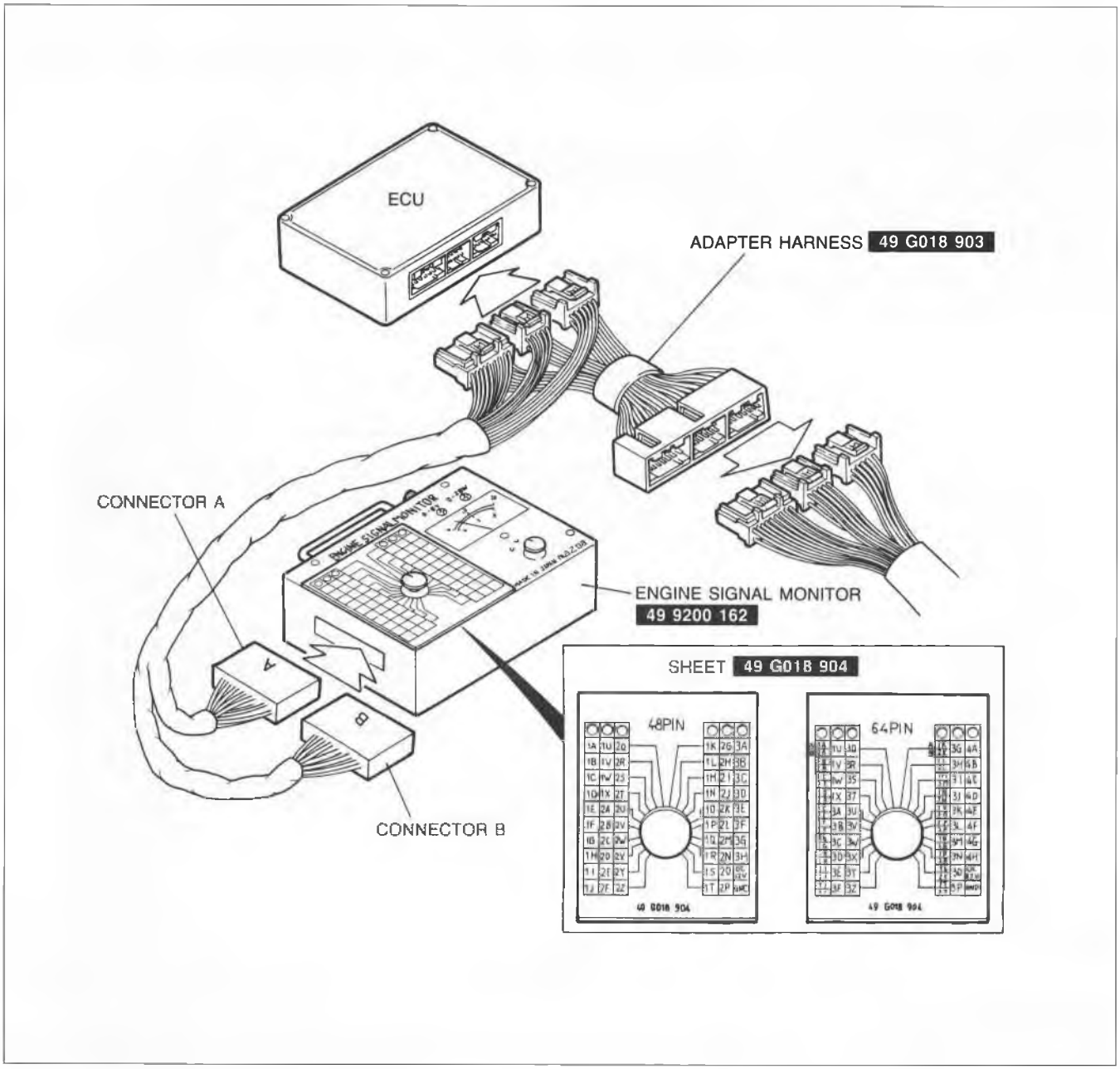


SPECIFICATIONS

Item \ Engine			F2 EGI
Idle speed		rpm	With test connector grounded 750 ± 25 (ATX: P range)
Throttle body			
Type			Horizontal draft (2-barrel)
Throat diameter	mm (in)	No.1	MTX: 40 (1.6), ATX: 46 (1.8)
		No.2	MTX: 46 (1.8), ATX: 40 (1.6)
Airflow meter			
Resistor	Ω	E_2—V_S	Fully closed: 20—400 Fully open: 20—1,000
		E_2—V_C	100—400
		E_2—V_B	200—400
		E_2—THA	−20°C (−4°F) 13,600—18,400 20°C (68°F) 2,210— 2,690 60°C (140°F) 493— 667
Fuel pump			
Type			Impeller (in tank)
Output pressure		kPa (kg/cm², psi)	441—588 (4.5—6.0, 64—85)
Feeding capacity		cc (cu in)/10 seconds	220 (13.4) min.
Fuel filter			
Type	Low-pressure side		Nylon element
	High-pressure side		Paper element
Pressure regulator			
Type			Diaphragm
Regulating pressure		kPa (kg/cm², psi)	235—275 (2.4—2.8, 34—40)
Injector			
Type			High-ohmic
Type of drive			Voltage
Resistance		Ω	12—16
Injection amount		cc (cu in)/15 seconds	44—61 (2.68—3.72)
Idle speed control valve			
Solenoid resistance		Ω	6.3—9.9
Fuel tank			
Capacity		liters (US gal, Imp gal)	60 (15.9, 13.2)
Air cleaner			
Element type			Oil permeated
Fuel			
Specification			Unleaded regular

96G0F5-506

ENGINE CONTROL UNIT



96E0F4-007

A 64-pin type ECU is equipped on ATX models. The MTX models get a 48-pin type ECU.
The EC-AT control function is added to the ECU. (ATX.)

SERVICE POINT
To check the ECU terminal voltages using the **SST (Engine Signal Monitor)**, two new **SST (Adapter harness and Sheet)** are necessary.

ECU Terminal Valtage Checking Procedure
1. Connect the **SST (Engine Signal Monitor)** between the ECU and the wire harness using the **SST (Adapter)**.

   Note
   - **For MTX models, use connector A of the Adapter.**
   - **For ATX models, use connector A of the Adapter to check voltages at terminals 1A through 1V and 3A through 3Z, and use connector B to check the voltage at terminals 2A through 2P.**

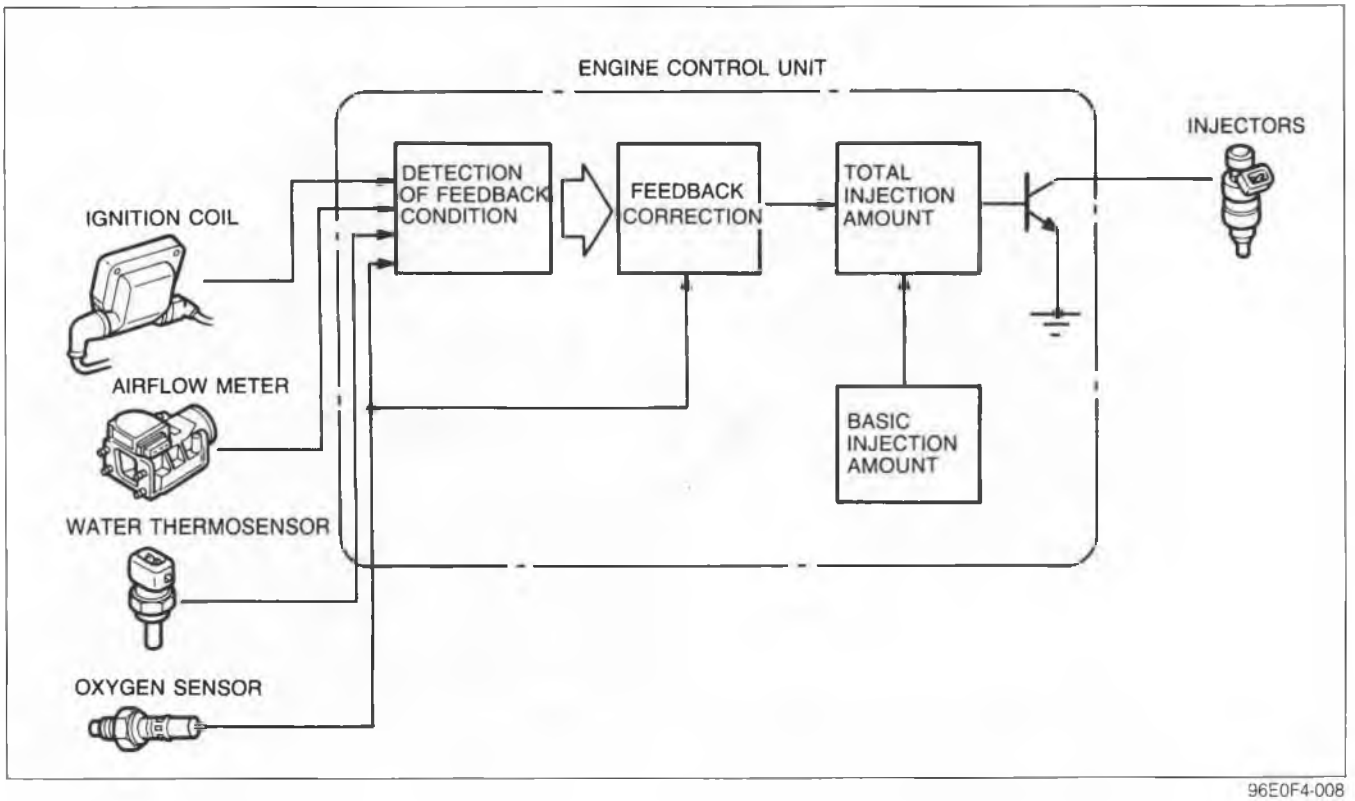
2. Place the **SST (Sheet)** on the **SST (Engine Signal Monitor)** and check the voltage at each terminal.

FUEL INJECTION CONTROL SYSTEM

The fuel injection control system is basically the same as that of the previous model, however, the engine coolant temperature specification to inhibit feedback correction is changed and a dechoke system is added.

FEEDBACK CORRECTION

The feedback correction is NOT made under the following conditions:
(1) Engine coolant temperature **below 30°C (86°F)** at idle (MTX: in gear, ATX: in D range).
(2) Engine coolant temperature **below 50°C (122°F)** cruising.
(3) Airflow meter malfunction.
(4) Oxgen sensor malfunction.
(5) Engine speed **more than approx. 4,200 rpm**.
(6) Driving under heavy load.



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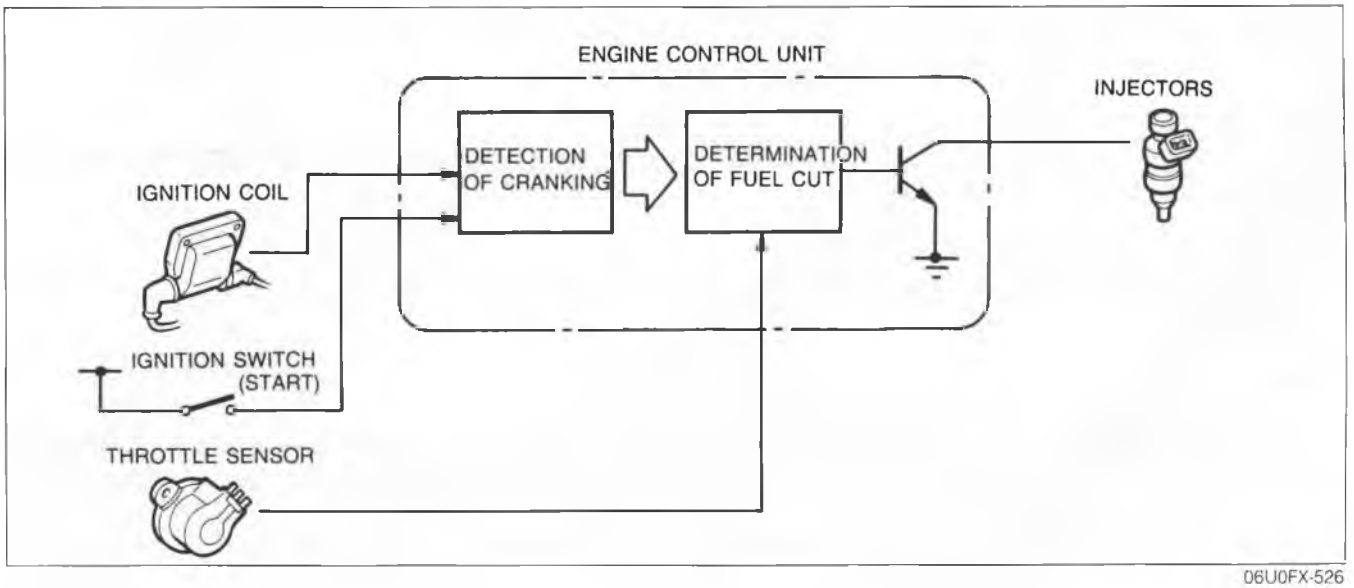
DECHOKE SYSTEM

To clean out excess fuel in the cylinders, as is the case of engine flooding, no fuel is injected when the accelerator is held fully depressed while cranking the engine.



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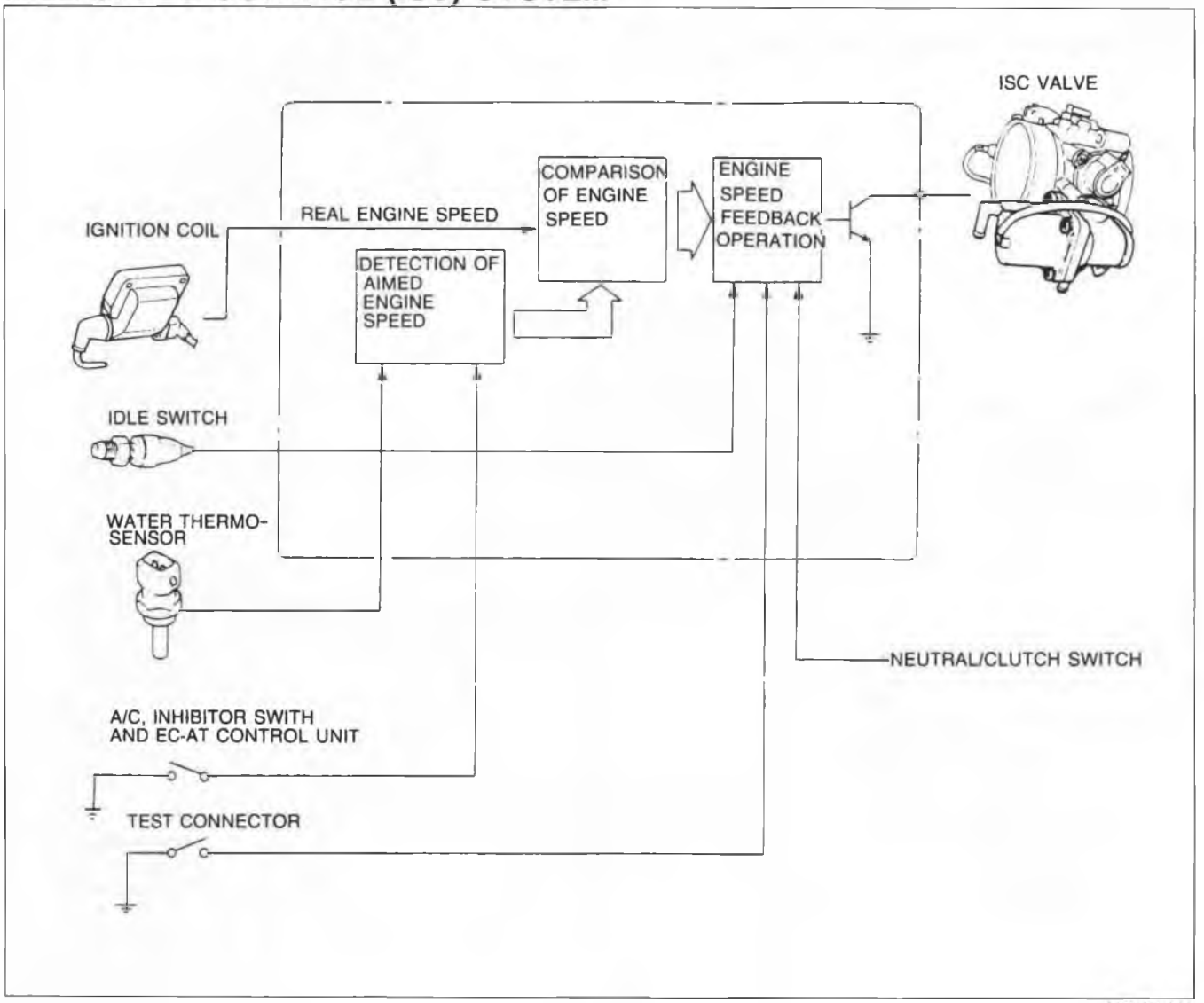
IDLE SPEED CONTROL (ISC) SYSTEM



96E0F4-009

This system is basically the same as that of the previous model, however, some specifications for engine speed feedback are changed.

ENGINE SPEED FEEDBACK SYSTEM

Engine speed is controlled as follows:

Engine condition	Engine speed		Remark
	New model	Previous model	
During warm-up	Set according to coolant temperature		MTX: Neutral, ATX: N or P range
Idle (after warm-up)	Approx. 750 rpm		Including P/S or E/L operation
A/C: ON	MTX: Approx. 800 rpm ATX (N or P range): Approx. 850 rpm ATX (D range): Approx. 825 rpm	Approx. 800 rpm	At idle
ATX: D, 1, 2 and R ranges	Set according to coolant temperature		—

96E0F4-010

Note

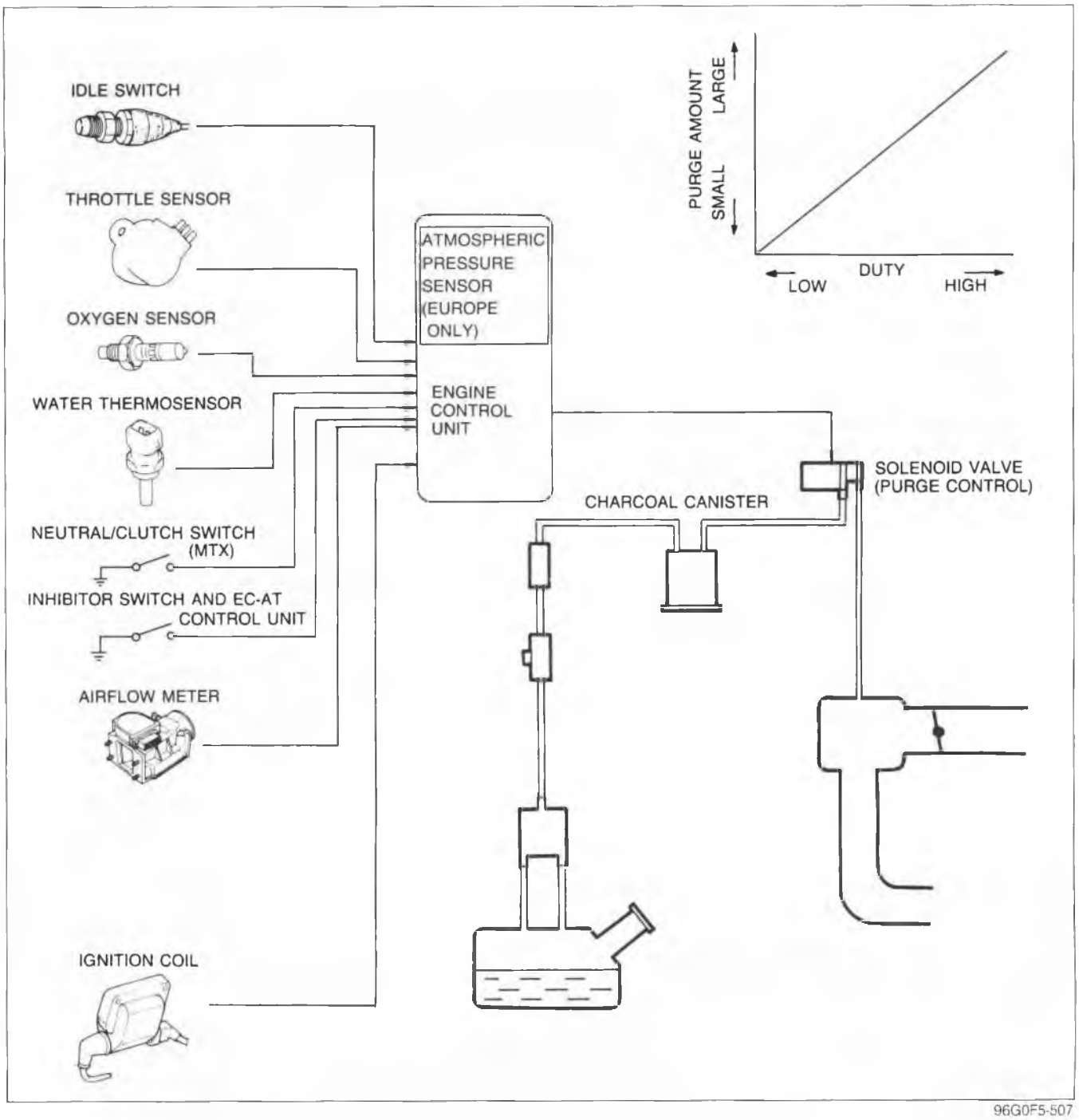
- **When the test connector is grounded, this system is canceled.**
- **The test connector must be grounded to adjust base idle speed.**

ELECTRICAL LOAD SIGNAL

The electrical load is detected directly by the ECU.

EMISSION CONTROL SYSTEM

EVAPORATIVE EMISSION CONTROL SYSTEM



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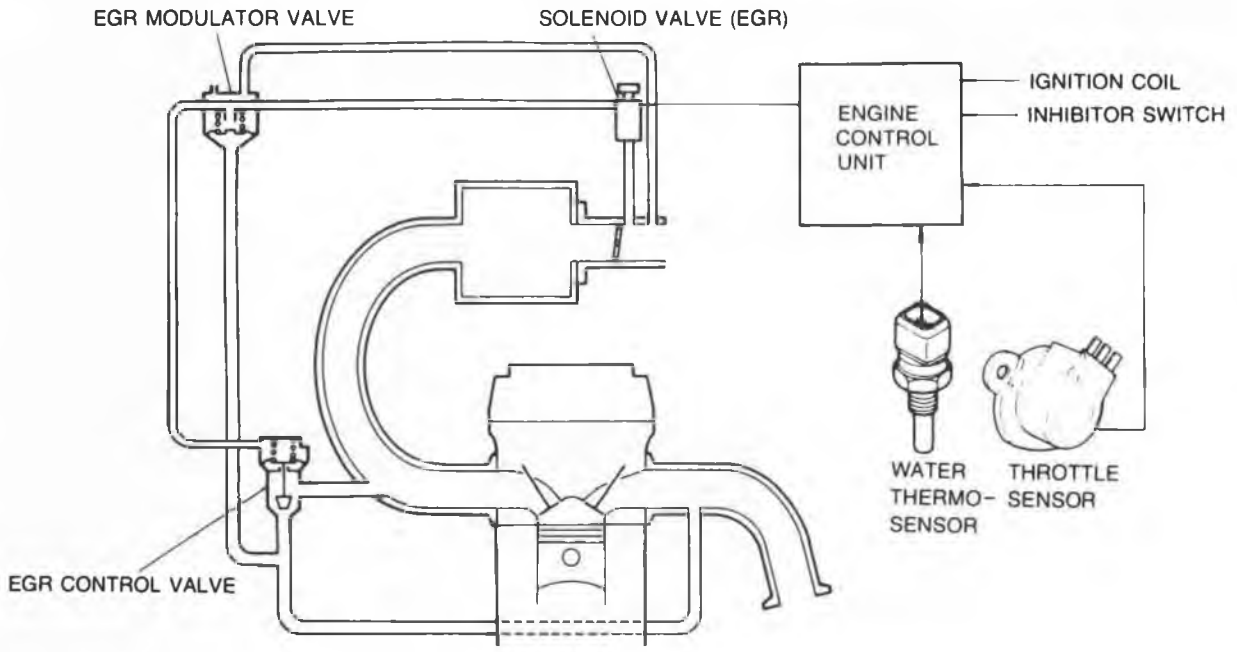
The evaporative emission control system for New 626 Station Wagon is duty controlled. It consists of the solenoid valve (purge control), the charcoal canister, the two-way check valve, the check-and-cut valve, the separator, the ECU, and the input devices, The amount of evaporative gases drawn into the engine and burned is regulated by the solenoid valve.
The engine control unit detects the engine's operating condition by the various input devices. It also contains preset values for the purge amount to correspond to the operating conditions, and controls the solenoid valve operation by electrical signals (duty signals) according to these values.
The solenoid valve operates when the following conditions are met.
(1) After warm-up.
(2) Driving in gear.
(3) Accelerator depressed (Idle switch: OFF).
(4) Oxygen sensor functioning normally.

EXHAUST GAS RECIRCULATION (EGR) SYSTEM



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This system is basically the same as that of the previous model, however, the EGR cut-off specification for coolant temperature is changed.

EGR cut-off

Condition	New model	Previous model
Driving	Sudden acceleration or deceleration	
Coolant temperature	Engine coolant: Below 50°C (122°F)	Radiator coolant: Below 17°C (63°F) Engine coolant: Below 70°C (158°F)
Engine speed* (MTX, ATX N and P ranges)	Below 1,500 rpm	

* At idle in D range: EGR is cut-off because the vacuum applied to the EGR modulator valve is then not produced at the throttle body.

SUPPLEMENTAL SERVICE INFORMATION

The following points shown in this section are changed in comparison Mazda 626 Workshop Manual Supplement (1179-10-87K) (Europe), Workshop Manual (1175-10-87F) (Australia), and Mazda 626 Station Wagon Workshop Manual Supplement (1182-10-88B).

Switch monitor function
- Inspection procedure of switch monitor function

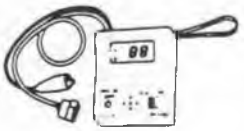
Evaporative emission control system
- Inspection of solenoid valve (Purge control)
- Newly equipped two-way check valve
- Newly equipped check-and-cut valve
- Inspection of charcoal canister

Control system
- Inspection of engine control unit (ECU) terminal voltage
- Inspection of neutral switch
- Inspection of clutch switch

96G0F5-508

SWITCH MONITOR FUNCTION

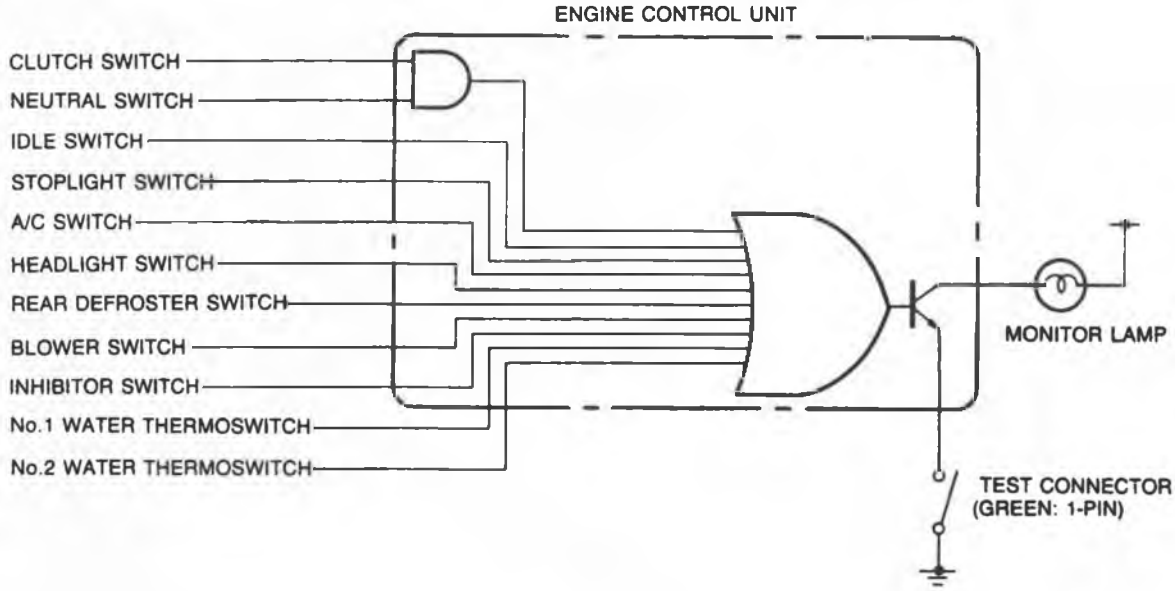
PREPARATION
SST

49 H018 9A1 Self-Diagnosis Checker		For diagnosis

06U0F2-031

Individual switches can be monitored by the **SST**.

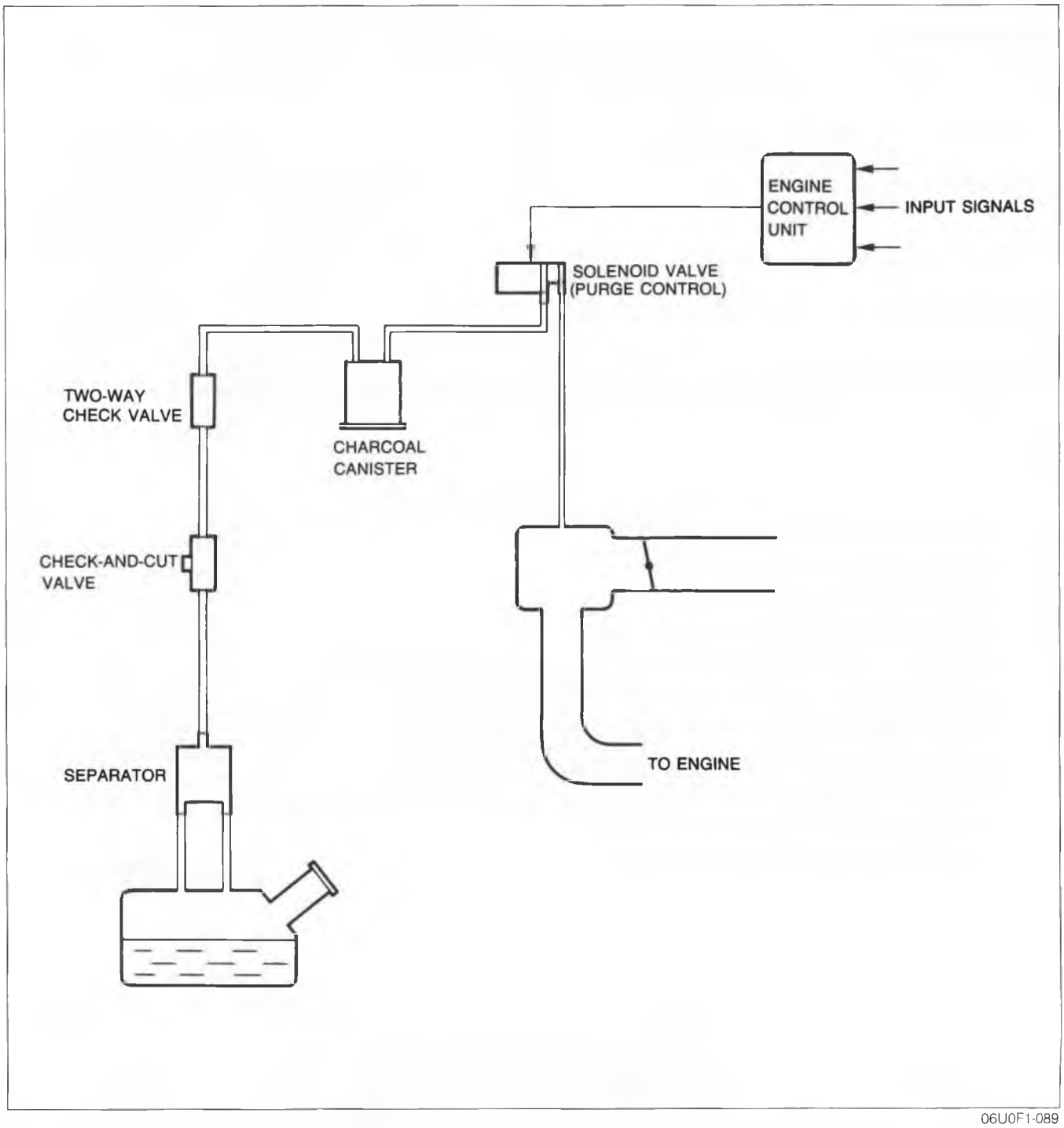
Note
- **The test connector must be grounded and the ignition switch ON (engine stopped).**



96E0F4-014

Switch	Self-Diagnosis Checker (Monitor lamp)		Remarks
	Light ON	Light OFF	
Clutch switch	Pedal released	Pedal depressed	Gear: IN
Neutral switch	In gear	Neutral	Clutch pedal released
Idle switch	Pedal depressed	Pedal released	—
Stoplight switch (MTX)	Pedal depressed	Pedal released	—
A/C switch	ON	OFF	Blower motor position: "1" position
Headlight switch	ON	OFF	—
Rear defroster switch	ON	OFF	—
Blower switch	ON	OFF	Blower motor position: "3" or "4" position
Inhibitor switch	D, 1, 2, and R ranges	P and N ranges	—
No.1 water thermoswitch (Electrical fan)	Check connector (for electrical fan) (B/L) terminal grounded	Check connector (for electrical fan) (B/L) terminal not grounded	While fan not operating
No.2 water thermoswitch (Electrical fan) (ATX)	Check connector (for electrical fan) (L/R) terminal grounded	Check connector (for electrical fan) (L/R) terminal not grounded	Whiel fan not operating

EVAPORATIVE EMISSION CONTROL SYSTEM



06U0F1-089

The evaporative emission control system consists of the separator. The check-and-cut valve, the two-way check valve, the charcoal canister, the solenoid valve (purge control), the engine control unit, and the input devices. The amount of evaporative fumes introduced into the engine and burned is controlled by the solenoid valve to correspond to the engine's operating conditions. To maintain best engine performance, the solenoid valve is controlled by the engine control unit.

Operation

The solenoid valve (purge control) is controlled by duty signals from the engine control unit to perform purging of the charcoal canister. Purging is done when these conditions are met:

(1) After warm up
(2) Driving in gear
(3) Accelerator pedal depressed (idle switch OFF)
(4) Oxygen sensor functioning normally

COMPONENT DESCRIPTIONS

Component	Function	Remarks
Airflow meter	Detects amount of intake air; sends signal to control unit	Intake air temp sensor and fuel pump switch are integrated
Charcoal canister	Stores gas tank fumes when engine stopped	
Check-and-cut valve	Releases excessive pressure or vacuum in fuel tank to atmosphere	
Clutch switch	Detects in-gear condition; sends signal to control unit	Switch ON when clutch pedal released
Engine control unit	Detects signals from input sensors and switches; controls solenoid valve (Purge control)	
Idle switch	Detects when throttle valve fully closed; sends signal to control unit	Installed on throttle body
Ignition coil (–) terminal	Detects engine speed; sends signal to control unit	
Inhibitor switch	Detects in-gear condition; sends signal to control unit	Switch On in "N" or "P" range
Neutral switch	Detects in-gear condition; sends signal to control unit	Switch ON when in-gear
Oxygen sensor	Detects Oxygen concentration; siends signal to control unit	Zirconia ceramic and platinum coating
Separator	Prevents fuel from flowing into charcoal canister	
Solenoid valve (Purge control)	Controls vacuum line to vacuum switch valve	
Two-way check valve	Controls pressure in fuel tank	
Water thermosensor	Detects coolant temperature; sends signal to control unit	

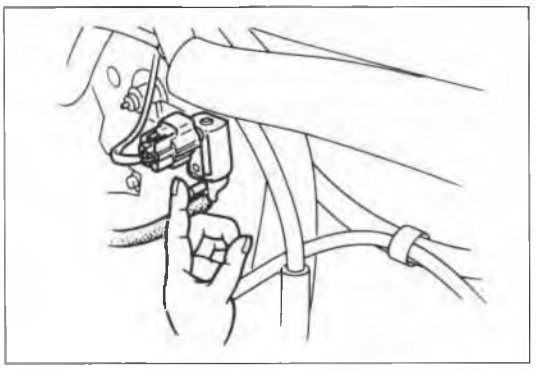
06U0F1-090

TROUBLESHOOTING

Check the condition of the wiring harness or connectors before checking the sensors or switches.

Possibel cause	Solenoid valve (Purge control)	Two-way check valve	Check-and-cut valve	Separator	Engine control unit
					2X (MTX) 2O (ATX)
Page	**F5–18**	**F5–18**	**F5–19**	—	**F5–25 F5–27**
Checking order	1	3	4	5	2

96G0F5-509

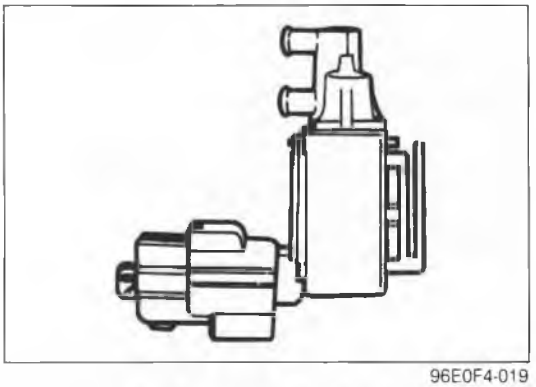


96E0F4-018

SOLENOID VALVE (PURGE CONTROL)

On-vehicle Inspection

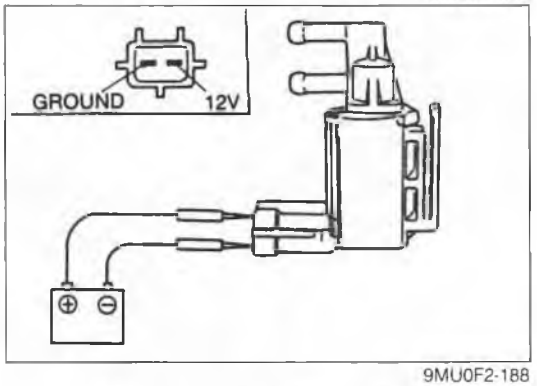
1. Warm up the engine to normal operating temperature.
2. Run the engine at idle.
3. Disconnect the vacuum hose (White) from the solenoid valve and check that no vacuum is felt at the solenoid valve.
4. If not as specified, check the solenoid valve.



96E0F4-019

Inspection

1. Disconnect the vacuum hoses from the charcoal canister and the dynamic chamber.
2. Check that no air flows through the valve.



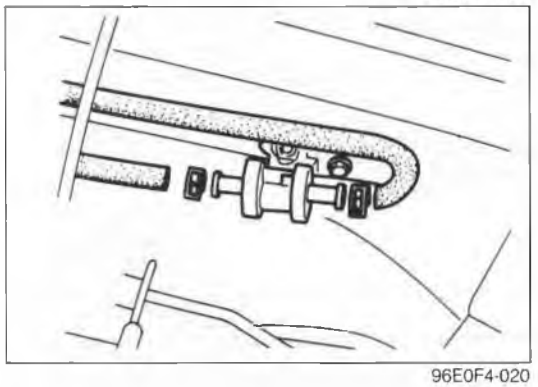
9MU0F2-188

3. Disconnect the solenoid valve connector and connect **12V** and a ground to the terminals of the solenoid valve.
4. Check that the air flows through the valve.
5. If not as specified, replace the solenoid valve.

TWO-WAY CHECK VALVE

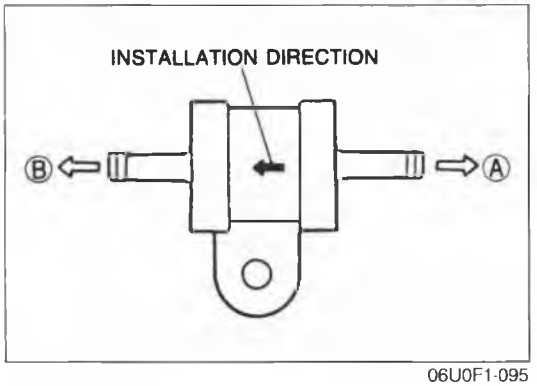
Inspection

1. Remove the valve.



96E0F4-020

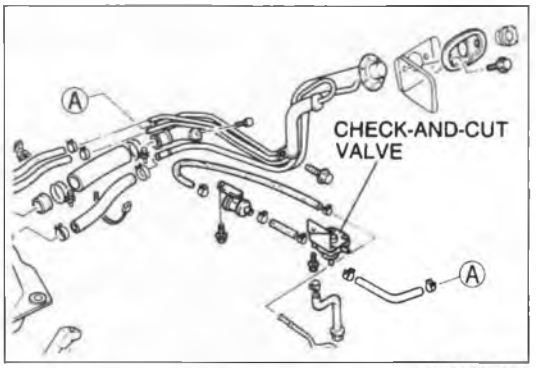
2. Check the operation of the valve with a vacuum pump.



06U0F1-095

Apply approx. 37 mmHg (1.46 inHg) vacuum at port A	Airflow
Apply approx. 44 mmHg (1.73 inHg) vacuum at port B	Ariflow

3. Replace the valve, if necessary.

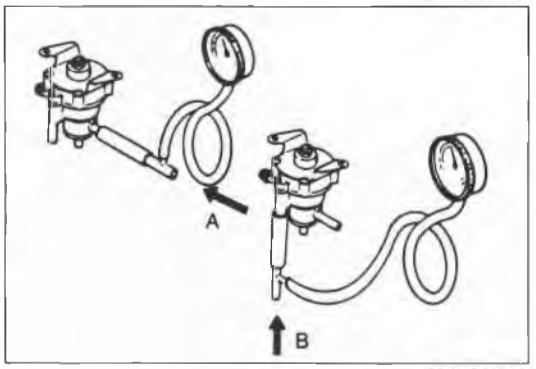


96A0FX-017

CHECK-AND-CUT VALVE

Inspection

1. Remove the check-and-cut valve.

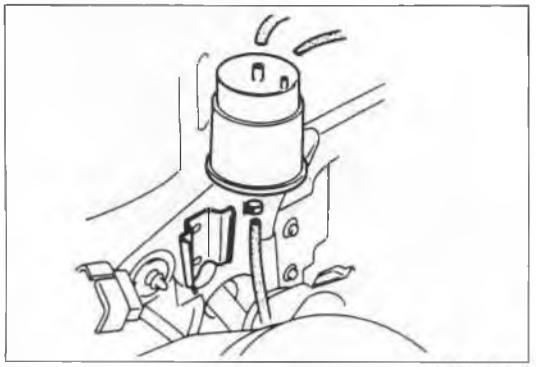


06U0F1-097

2. Connect a pressure gauge to the passage connected to the fuel tank.
3. Blow through the valve from port A and verify that the valve opens at **5.39—6.87 kPa (0.055—0.07 kg/cm^2, 0.78—1.00 psi)**.
4. Remove the pressure gauge and connect it to the passage to atmosphere.
5. Blow through the valve from port B and verify that the valve opens at **0.98—4.91 kPa (0.01—0.05 kg/cm^2, 0.14—0.71 psi)**.

Note

- **The test must be performed with the valve held horizontally. Otherwise, the ball in the valve will move out of position and close the passage.**



96A0FX-018

CHARCOAL CANISTER

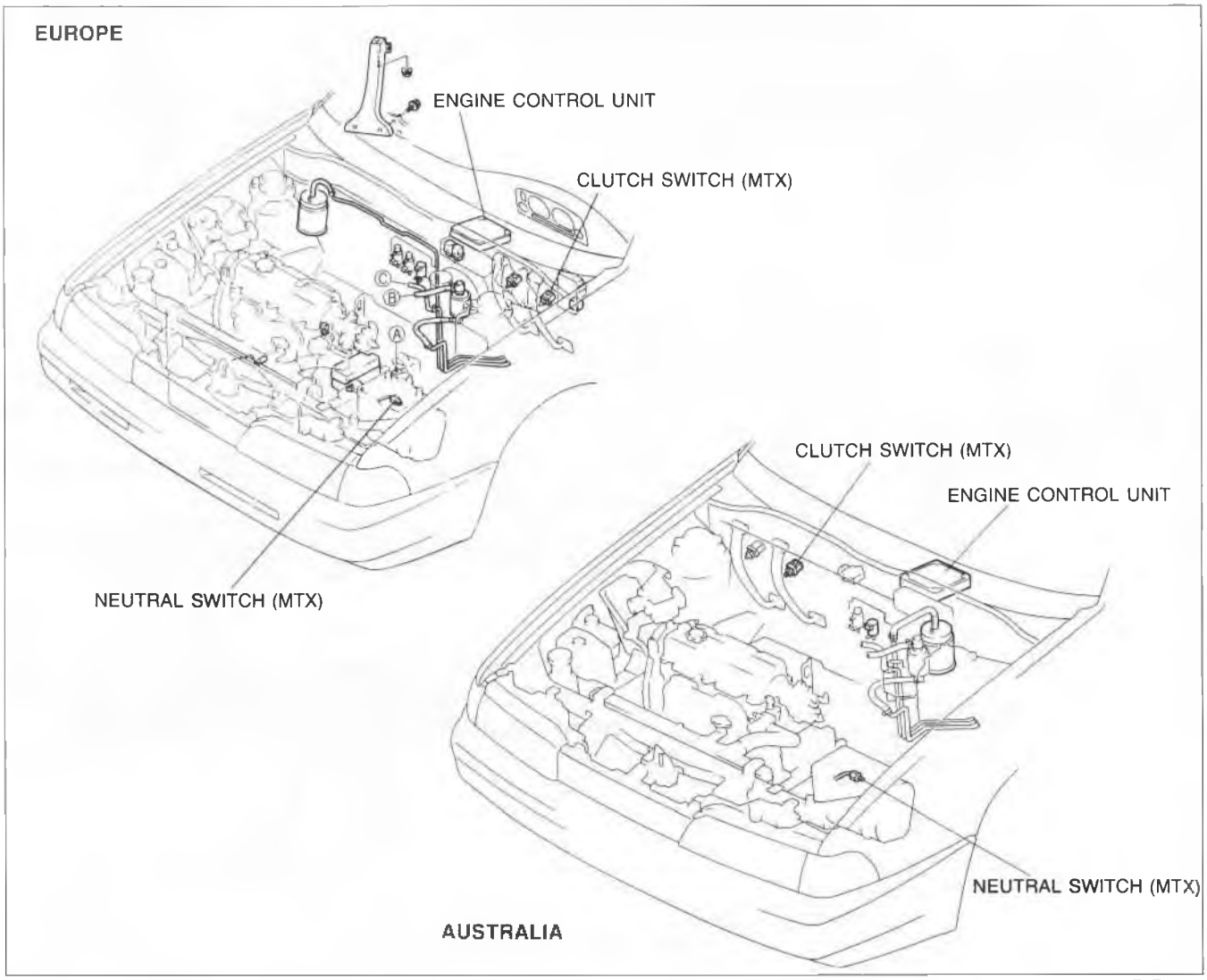
Inspection

Visually check for damage and replace the charcoal canister if necessary.

Replacement

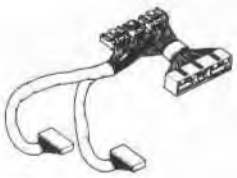
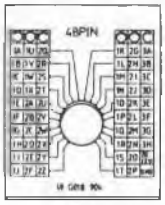
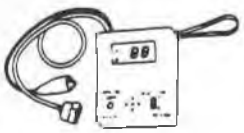
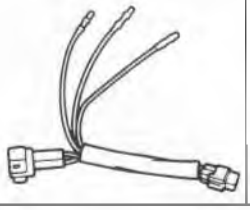
1. Slide the charcoal canister out of the bracket.
2. Disconnect the three hoses.
3. Install in the reverse order of removal.

CONTROL SYSTEM



96E0F4-024

PREPARATION
SST

49 9200 162 Engine Signal Monitor		For inspection of engine control unit	49 G018 903 Adapter harness 	For inspection of engine control unit
49 G018 904 Sheet		For inspection of engine control unit	49 H018 9A1 Self-Diagnosis Checker 	For inspection of oxygen sensor
49 G018 901 Adapter harness		For inspection of throttle sensor		

06U0F1-100

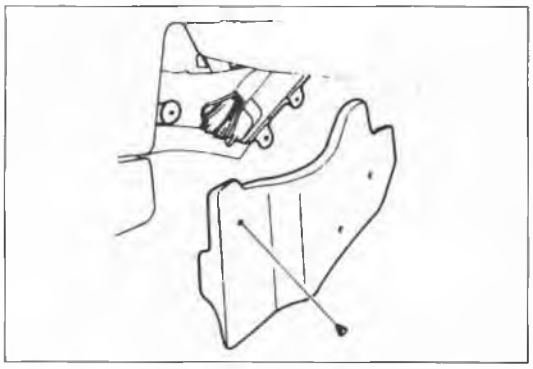
RELATIONSHIP CHART
Output Devices and Input Devices

○: Related ×: Not related

INPUT DEVICES \ OUTPUT DEVICES	INJECTOR: FUEL INJECTION AMOUNT	INJECTOR: FUEL INJECTION TIMING	BAC VALVE: AIR VALVE	BAC VALVE: ISC VALVE	SOLENOID VALVE (EGR)	SOLENOID VALVE (PURGE)	SOLENOID VALVE (PRESSURE REGULATOR)
TEST CONNECTOR	×	×	×	○	×	×	×
STOPLIGHT SWITCH	○	×	×	×	×	×	×
ELECTRICAL LOAD	×	×	×	○	×	×	×
P/S PRESSURE SWITCH	×	×	×	○	×	×	×
A/C SWITCH	○	×	×	○	×	×	×
IGNITION SWITCH (STA POSITION)	○	○	×	×	×	×	○
INHIBITIOR SWITCH	○	×	×	○	○	○	×
NEUTRAL AND CLUTCH SWITCH	○	×	×	○	×	○	×
OXYGEN SENSOR	○	×	×	×	×	○	×
ATMOSPHERIC PRESSURE SENSOR (EUROPE ONLY)	○	×	×	○	×	○	×
INTAKE AIR THERMOSENSOR	○	×	×	○	×	○	○
WATER THERMOSENSOR	○	×	×	○	○	○	○
IDLE SWITCH	○	○	×	○	×	×	×
THROTTLE SENSOR	○	○	×	○	○	○	○
AIRFLOW METER	○	×	×	×	×	○	×
IGNITION COIL	○	○	×	○	○	○	○

96G0F5-510

ENGINE CONDITIONS / OUTPUT DEVICES		CRANKING (COLD ENGINE)	WARNING UP (DURING IDLE)	MEDIUM LOAD		ACCEL-ERATION	HEAVY LOAD	DECEL-ERATION	IDLE (THROT-TLE VALVE FULLY CLOSED)	IGN: ON (ENGINE NOT RUNNING)	REMARKS
				COLD	WARM						
INJECTOR	INJECTION	Rich			Rich and lean	Rich		Fuel cut	Rich and lean	No injection	
	INJECTION TIMING	1 group (once per revolution)				1 group (once per revolution) (once per two revolutions)*			1 group (once per revolution)		Above 6,300 rpm: fuel cut *Above 4,500 rpm
BAC VALVE	AIR VALVE	Open*			Close						*Coolant temp: below 50°C (122°F)
	ISC VALVE	Large amount of bypass air	Large amount of bypass air*	Small amount of bypass air						No bypass	*In extreme cold condition
SOLENOID VALVE (EGR)		ON (EGR cut)			OFF (EGR)	ON (EGR cut)	OFF (EGR)	ON (EGR cut)	ON (EGR cut)*	ON	*ATX D range: OFF (NO EGR due to no vacuum to system)
SOLENOID VALVE (PURGE)		OFF (Purge cut)			Operates (Duty valves [purge gas amount] change*)			OFF (Purge cut)			*Depends on engine condition
SOLENOID VALVE (PRESSURE REGULATOR CONTROL)		OFF (Vacuum to pressure regulator)							After starting*: ON (Vacuum cut)	OFF	*During hot start only



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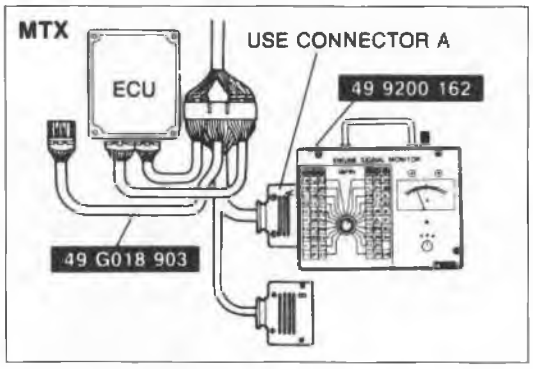

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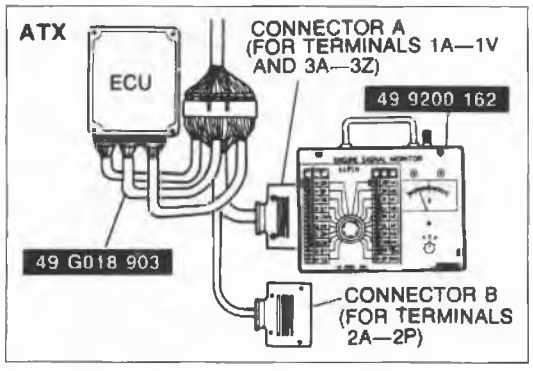

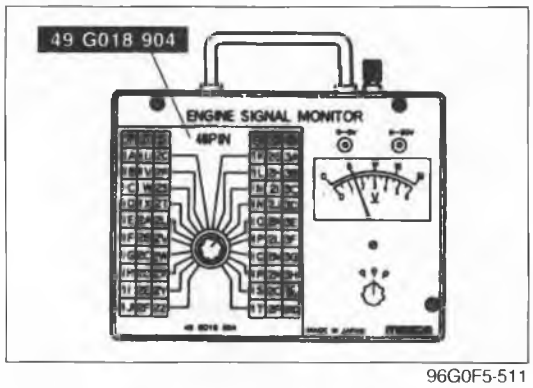

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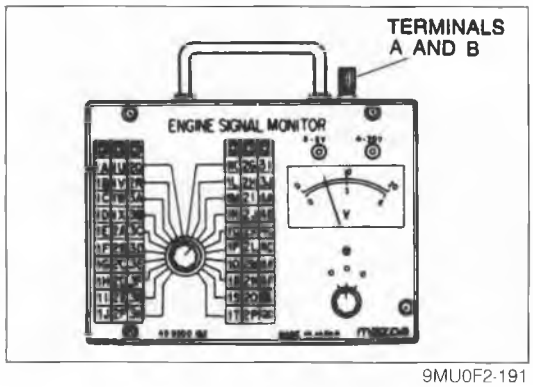


9MU0F2-191

ENGINE CONTROL UNIT

Inspection

1. Remove the front console cover of the passenger's side.
2. Connect the **SST (Engine Signal Monitor)** between the engine control unit and the wiring harness using the **SST (Adapter)** as shown.

Note

- **For MTX models, use connector A of the Adapter.**
- **For ATX models, use connector A of the Adapter to check voltages at the terminals 1A through 1V and 3A through 3Z, and use connector B to check the voltages at the terminals 2A through 2P.**

3. Place the **SST (Sheet)** on the **SST (Engine Signal Monitor)**.
4. Measure the voltage at each terminal.
   (Refer to pages F5–24 to F5–28.)
5. If any engine control unit terminal voltage is incorrect, check the input or output device and related wiring.
   If they are normal, replace the engine control unit.

Caution

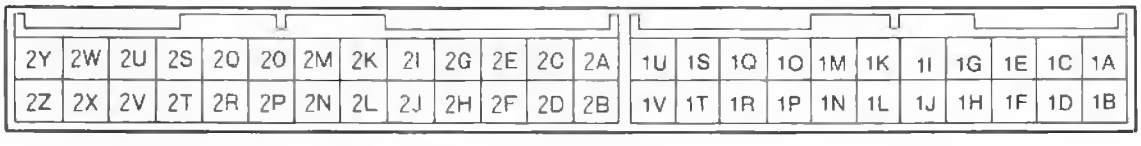
- **Never apply voltage to SST terminals A and B.**

Terminal voltage
MTX

Terminal	Input	Output	Connected to	Voltage (After warming-up)		Remark
				IGN: ON	Idle	
1A	—	—	Battery	Battery voltage		For back-up
1B	—	—	Main relay	Battery voltage		—
1C	○		Ign. switch (START)	Below 2.5V		While cranking: Battery voltage
1D		○	Self-Diagnosis Checker (Monitor lamp)	Test connector grounded • For 3 sec. after ign switch OFF→ON: Below 6.2V (lamp illuminates) • After 3 sec.: Battery voltage (lamp not illuminate)	Test connector not grounded • Lamp illuminates: Below 6.2V • Lamp not illuminate: Battery voltage Test connector grounded: Approx. 5V	Using Self-Diagnosis Checker
1E	—	—	—	—		—
1F		○	Self-Diagnosis Checker (Code number)	• For 3 sec. after ign. switch OFF→ON: Below 6.2V (Buzzer sounds) • After 3 sec. : Battery voltage (Buzzer not sound)		• Using Self-Diagnosis Checker and test connector grounded • Buzzer sounds: Below 6.2V • Buzzer not sound: Battery voltage
1G	—	—	—	—		—
1H	—	—	—	—		—
1I	—	—	—	—		—
1J		○	A/C relay	Battery voltage	• A/C switch ON: Below 2.5V • A/C switch OFF: Battery voltage	Blower motor ON
1K	○		Test connector	• Test connector grounded: Below 1.5V • Test connector not grounded: Above 10.5V		Test connector: 1-pin, Green connector
1L	—	—	—	—		—
1M	—	—	—	—		—
1N	○		Idle switch	• Accelerator pedal released: Below 0.5V • Accelerator pedal depressed: Above 7.7V		—
1O	○		Stoplight switch	• Brake pedal released: Below 3.6V • Brake pedal depressed: Above 10.0V		—
1P	○		Power steering pressure switch	Above 10.5V	• P/S ON: Below 1.5V • P/S OFF: Above 10.5V	—
1Q			A/C switch	• A/C switch ON: Below 1.5V • A/C switch OFF: Above 10.0V		Blower motor ON
1R	○		Electrical fan (Water thermoswitch)	Battery voltage		Coolant temp. : Below 97C° (207°F)
				Below 1.5V		Coolant temp. : Above 97C° (207°F)
1S	○		Blower fan switch	• Switch less than 2nd position: Battery voltage • Switch 3rd or 4th position: Below 1.5V		—
1T	○		Rear window defroster switch	• Switch OFF: Battery voltage • Switch ON: Below 1.5V		—
1U	○		Headlight switch	• Headlight OFF: Below 1.5V • Headlight ON: Battery voltage		—
1V	○		Neutral and clutch switch	In-gear condition • Clutch pedal depressed: Below 0.5V • Clutch pedal released: Battery voltage		Neutral: Below 0.5V

Terminal	Input	Output	Connected to	Voltage (After warming-up)		Remark
				IGN: ON	Idle	
2A	—	—	Ground (EO1)	0V		—
2B	—	—	Ground (EO2)	0V		—
2C	—	—	Ground (E1)	0V		—
2D	—	—	Ground (E2)	0V		—
2E	—	—	—	—		—
2F	—	—	—	—		—
2G	—	—	—	—		—
2H	—	—	—	—		—
2I	○		ignition coil-terminal	Battery voltage	*Battery voltage	*Engine signal monitor green and red lamp flash
2J	○		Airflow meter (Vc)	7—9V		—
2K	—	—	Vref	4.5—5.5V		—
2L	—	—	—	—		—
2M	○		Throttle sensor	Accelerator pedal released: Approx. 0.5V (depends on 2K terminal voltage)		Throttle valve fully open: 4.3V
2N	○		Oxygen sensor	0V	0—1.0V	• Cold engine at idle: 0V • After warming-up Acceleration: 0.5—1.0V Deceleration: 0—0.4V
2O	○		Airflow meter (Vs)	Approx. 1.7V	Approx. 3—5V	Increase engine speed: voltage increase
2P	○		Airflow meter (Intake air thermosensor)	Approx. 2.5V at 20°C (68°F)		—
2Q	○		Water thermosensor	0.3—0.6V		Coolant temp. 20°C (68°F): Approx. 2.5V
2R	—	—	—	—		—
2S	—	—	—	—		—
2T		○	Solenoid valve (Pressure regulator control)	For 120 sec. after ign. switch OFF ON: Below 3.5V	For 120 sec. after starting: Below 3.5V	Coolant temp. above 70°C (158°F) and intake air temp. above 20°C (68°F)
2U		○	Injector (No.1 and No.3)	Battery voltage	*Battery voltage	*Engine signal monitor green and red lamps flash
2V		○	Injector (No.2 and No.4)	Battery voltage	*Battery voltage	*Engine signal monitor green and red lamps flash
2W		○	ISC valve	Engine signal monitor green and red lamps flash		—
2X		○	Solenoid valve (Purge control)	Battery voltage		—
2Y		○	Solenoid valve (EGR)	Below 3.5V		• Engine coolant temp —below 50°C (122°F) Below 3.5V • Engine speed above approx. 1,500 rpm: Battery voltage
2Z	—	—	—	—		—

Terminal locations



96G0F5-512

ATX

Terminal	Input	Output	Connected to	Voltage (After warming-up)		Remark
				IGN: ON	Idle	
1A	—	—	Battery	Battery voltage		For back-up
1B	—	—	Main relay	Battery voltage		—
1C	○		Inhibitor switch	Below 2.5V		While cranking: Battery voltage
1D		○	Self-Diagnosis Cheker (Monitor lamp)	Test connect grounded • For 3 sec. after ign. switch OFF→ON: Below 6.2V (lamp illuminates) • After 3 sec.: Battery voltage (lamp not illuminate)	Test connector not grounded • Lamp illuminates: Below 6.2V • Lamp not illuminate: Battery voltage Test connector grounded: Approx. 5V	Using Self-Diagnosis Checker
1E	—	—	—	—		—
1F		○	Self-Diagnosis Checker (Code number)	• For 3 sec. after ign. switch OFF→ON: Below 6.2V (Buzzer sounds) • After 3 sec.: Battery voltage (Buzzer not sound)		• Using Self-Diagnosis Checker and test connector grounded • Buzzer sounds: Below 6.2V • Buzzer not sound: Battery voltage
1G	—	—	—	—		—
1H	○		Headlight switch	• Headlight OFF: Below 1.5V • Headlight ON: Battery voltage		—
1I	○		Test connector	• Test connector grounded: Below 1.5V • Test connector not grounded: Above 10.5V		Test connector: 1-pin, Green connector
1J	○		Rear window defroster switch	• Switch OFF: Battery voltage • Switch ON: Below 1.5V		—
1K	—	—	—	—		—
1L		○	A/C relay	Battery voltage	• A/C switch ON: Below 2.5V • A/C switch OFF: Battery voltage	Blower motor ON
1M	○		Vehicle speed sensor	Approx. 4.5V or below 1.5V		During driving: Approx. 4.5V
1N	○		Power steering pressure switch	Above 10.5V	• P/S ON: Below 1.5V • P/S OFF: Above 10.5V	—
1O			A/C switch	• A/C switch ON: Below 1.5V • A/C switch OFF: above 10.0V		Blower motor ON
1P	○		Blower fan switch	• Switch less than 2nd position: Battery voltage • Switch 3rd or 4th position: Below 1.5V		—
1Q	○		Stoplight switch	• Brake pedal released: Below 3.6V • Brake pedal depressed: Above 10.0V		—
1R	○		Inhibitor switch (N and P range)	• N or P range: Below 1.5V • Others: Battery voltage		—
1S	—	—	—	—		—
1T	○		Idle switch	• Accelerator pedal released: Below 0.5V • Accelerator pedal depressed: Above 7.7V		—
1U	—	—	Ignition switch (IG1)	Battery voltage		For EC-AT shift-solenoid valves
1V	○		Ignition coil ⊖ terminal	Battery voltage	*Battery voltage	*Engine signal monitor: green and red lamp flash

Terminal	Input	Output	Connected to	Voltage (After warming-up)		Remark
				IGN: ON	Idle	
2A	○		Airflow meter (Vc)	7—9V		—
2B	○		Airflow meter (Vs)	Approx. 1.7V	Approx. 3—5V	Increase engine speed: voltage increase
2C	○		Oxygen sensor	0V	0—10V	• Cold engine at idle: 0V • After warming-up Acceleration: 0.5—1.0V Deceleration: 0—0.4V
2D	○		Electrical fan [Low] (No.1 water thermoswitch)	Battery voltage		Coolant temp.: Below 97°C (207°F)
				Below 1.5V		Coolant temp.: Above 97°C (207°F)
2E	○		Water thermosensor	0.3—0.6V		Coolant temp. 20°C (68°F): Approx. 2.5V
2F	○		Throttle sensor	Accelerator pedal released: Approx. 0.5V (depends on 2I terminal voltage)		Throttle valve fully open: 4.3V
2G	○		Electrical fan [High] (No.2 thermoswitch)	Battery voltage		Coolant temp.: Below 108°C (226°F)
				Below 1.5V		Coolant temp.: Above 108°C (226F°)
2H	○		Hold switch	• Switch depressed: Battery voltage • Switch released: Below 1.5V		—
2I	—	—	Vref	4.5—5.5V		—
2J	—	—	—	—		—
2K	○		Airflow meter (Intake air thermosensor)	Approx. 2.5V at 20°C (68°F)		—
2L	○		Mode switch (Power side)	• POWER mode: Below 1.5V • ECONOMY mode or HOLD mode: Battery voltage		—
2M	○		Pulse generator	Below 1.5V	*Battery voltage	*P or N range
2N	—	—	Pulse generator	Below 1.5V		Ground
2O		○	Solenoid valve (Purge control)	Battery voltage		—
2P		○	Hold indicator	• Hold mode: Below 1.5V • Other modes: Battery voltage		—
3A	—	—	Ground (EO1)	0V		—
3B	—	—	Ground (EO2)	0V		—
3C	—	—	Ground (E1)	0V		—
3D	—	—	Ground (E2)	0V		—
3E	○		Inhibitor switch (D range)	• D range: Battery voltage • Other range: Below 1.5V		—
3F	—	—	—	—		—
3G	○		Inhibitor switch (L range)	• L range: Battery to voltage • Other range: Below 1.5V		—
3H	○		Inhibitor switch (S range)	• S range: Battery voltage • Other range: Below 1.5V		—
3I	—	—	—	—		—
3J	—	—	—	—		—
3K	—	—	—	—		—
3L		○	Mode indicator	• HOLD mode: Battery voltage • POWER or ECONOMY mode: Below 1.5V		—

Terminal	Input	Output	Connected to	Voltage (After warming-up)		Remark
				IGN: ON	Idle	
3M		○	Solenoid valve (Pressure regulator control)	For 120 sec. after ign. Switch OFF→ON: Below 3.5V	For 120 sec. after starting: Below 3.5V	Coolant temp. above 70°C (158°F) and intake air temp. above 20°C (63°F)
3N	○		Fluid thermoswitch	• Fluid temp. below 143°C (389°F): Approx.10—12V • Fluid temp. above 150°C (302°F): Below 1.5V		—
3O		○	Solenoid valve (EGR)	Below 3.5V		• Engine coolant temp. —below 50°C Below 3.5V • Engine speed above approx. 1,500 rpm: Battery voltage
3P	—	—	—	—		—
3Q		○	ISC valve	Engine signal monitor green and red lamps flash		—
3R	—	—	—	—		—
3S	—	—	—	—		—
3T	—	—	—	—		—
3U		○	Injector (No.1 and No.3)	Battery voltage	*Battery voltage	*Engine signal monitor green and red lamps flash
3V		○	Injector (No.2 and No.4)	Battery voltage	*Battery voltage	*Engine signal monitor green and red lamps flash
3W		○	1—2 shift solenoid valve	• Solenoid valve ON: Battery voltage • Solenoid valve OFF: Below 1.5V		Refer to next page
3X		○	2—3 shift solenoid valve	• Solenoid valve ON: Battery voltage • Solenoid valve OFF: Below 1.5V		Refer to next page
3Y		○	3—4 shift solenoid valve	• Solenoid valve ON: Battery voltage • Solenoid valve OFF: Below 1.5V		Refer to next page
3Z		○	Lockup solenoid valve	• Lock-up: Battery voltage • Not lock-up: Below voltage		Refer to next page

Terminal locations

3Y	3W	3U	3S	3Q	3O	3M	3K	3I	3G	3E	3C	3A	2O	2M	2K	2I	2G	2E	2C	2A	1U	1S	1Q	1O	1M	1K	1I	1G	1E	1C	1A
3Z	3X	3V	3T	3R	3P	3N	3L	3J	3H	3F	3D	3B	2P	2N	2L	2J	2H	2F	2D	2B	1V	1T	1R	1P	1N	1L	1J	1H	1F	1D	1B

96G0F5-513

Solenoid valve operation table

RANGE	GEAR			SOLENOID VALVES			
				1-2	2-3	3-4	Lock-up
P	Non					ON	
R	Reverse			ON			
N	—	Below approx. 6 km/h (3.7 mph)				ON	
		Above approx. 6 km/h (3.7 mph)		ON			
D	1st				ON	ON	
	2nd			ON	ON	ON	
	3rd	Below approx. 40 km/h (25 mph)					
		Above approx. 40 km/h (25 mph)	Lock-up OFF	ON			
			Lock-up ON	ON			ON
	OD	Lock-up OFF		ON		ON	
		Lock-up ON		ON		ON	ON
S	1st				ON	ON	
	2nd			ON	ON	ON	
	3rd	Below approx. 40 km/h (25 mph)					
		Above approx. 40 km/h (25 mph)		ON			
L	1st				ON	ON	
	2nd	Below approx. 110 km/h (68 mph)		ON	ON		
		Above approx. 110 km/h (68 mph)		ON			
HOLD	D	2nd		ON	ON	ON	
		3rd	Below approx. 40 km/h (25 mph)				
			Above approx. 40 km/h (25 mph)	ON			
	S	2nd		ON	ON		
		3rd	Below approx. 40 km/h (25 mph)				
			Above approx. 40 km/h (25 mph)	ON			
	L	1st			ON		
		2nd	Below approx. 110 km/h (68 mph)	ON	ON		
			Above approx. 110 km/h (68 mph)	ON			

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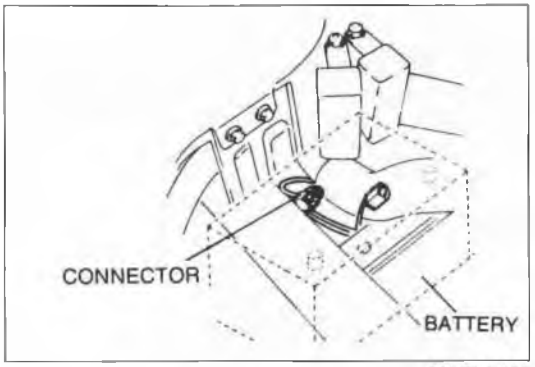

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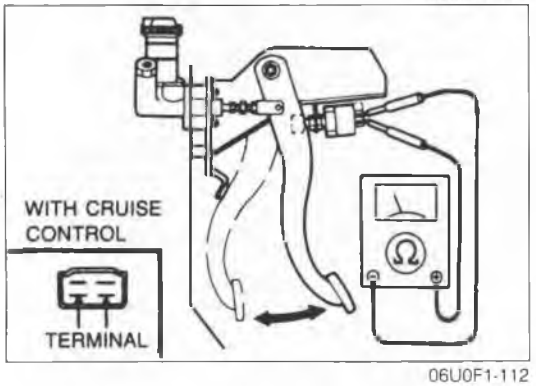


06U0F1-112

NEUTRAL SWITCH (MTX)

Inspection

1. Disconnect the neutral switch connector.
2. Connect an ohmmeter to the switch.
3. Check continuity of the switch.

Transmission	Continuity
In neutral	Yes
In other ranges	No

4. After checking, connect the switch connector.

Note

- **Refer to Section J for replacement of the neutral switch.**

CLUTCH SWITCH (MTX)

Inspection

1. Disconnect the clutch switch connector.
2. Connect an ohmmeter to the switch.
3. Check continuity of the switch.

Pedal	Continuity
Depressed	Yes
Released	No

4. After checking, connect the switch connector.

Note

- **Refer to Section H for replacement of the clutch switch.**

CLUTCH

FEATURES

96G0HX-501

OUTLINE

OUTLINE OF CONSTRUCTION

1. The basic construction is the same as that of the previous model, however, some specifications are changed for improved reliability.
2. Rubber dampers replace the torsion springs of the clutch disc for improved dampening and reduction of vibration during acceleration and deceleration for F8, FE and FE DOHC engine models.

96G0HX-502

SPECIFICATIONS

Item \ Engine				F8	FE	FE DOHC	F2	RF
Clutch control type				Hydraulic				
Clutch cover type				Diaphragm spring				
Clutch disc	Set load N (kg, lb)		General	—	4,316 (440, 968)	—		4,022 (410, 902)
			ECE (Except UK)	4,022 (410, 902)	4,316 (440, 968)		4,611 (470, 1,034)	4,022 (410, 902)
			UK	3,846 (392, 862)	4,316 (440, 968)		—	3,846 (392, 862)
			Australia	—			4,316 (440, 968)	—
	Outer diameter mm (in)			215 (8.465)	225 (8.858)			
	Inner diameter mm (in)			150 (5.906)				
	Thickness mm (in)	Pressure plate side	General	—	4.1 (0.16)	—		4.1 (0.16)
			ECE (Except UK)	3.8 (0.15)				
			UK	4.1 (0.16)			—	4.1 (0.16)
			Australia	—			4.1 (0.16)	—
		Flywheel side		3.5 (0.14)				
Clutch pedal	Type			Suspended				
	Pedal ratio		LHD	6.00 : 1				
			RHD	5.96 : 1				
	Full stroke mm (in)			135 (5.31)				
	Height mm (in)			216.5—221.5 (8.524—8.720)				
Master cylinder	Inner diameter mm (in)			15.87 (0.625)				
Release cylinder	Inner diameter mm (in)			19.05 (0.750)				
Clutch fluid type				SAE J1703 or FMVSS 116, DOT-3				

Changed from previous model.

96G0HX-503

MANUAL TRANSAXLE

FEATURES

96G0JX-501

OUTLINE

OUTLINE OF CONSTRUCTION

1. The basic construction is the same as that of the previous model, however, the gears of F2 engine equipped models for unleaded area are shot peened for improved durability.
   (Transaxles for other engine previously received the same treatment.)

96G0JX-502

SPECIFICATIONS

Item \ Engine		F8	FE 8-valve	FE 8-valve FI	FE 12-valve	FE DOHC	F2	RF-N
Transaxle control		Floor shift						
Synchromesh system		Forward.....synchromesh, Reverse.....selective sliding and synchromesh						
Gear ratio	1st	3.307						3.666
	2nd	1.833						
	3rd	1.233			1.310		1.233	
	4th	0.970		0.914	1.030		0.914	
	5th	0.795		0.717	0.837		0.717	0.755
	Reverse	3.166						3.454
Final gear ratio		4.105			3.850	4.105		4.388
Oil	Type	ATF: DEXRON-II Above 0°F (–18°C): API: GL-4 or GL-5 SAE: 80W-90 or SAE 90						
	Capacity liters (US qt, Imp qt)	3.35 (3.6, 3.9)						

▒▒ Changed from previous model.

96G0JX-503

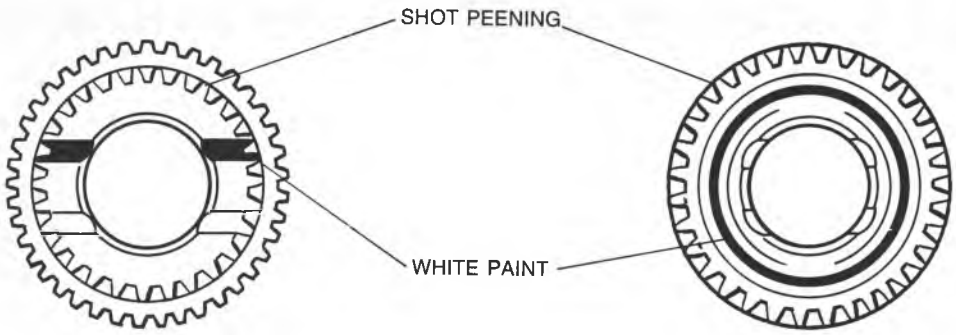
TRANSAXLE

3RD GEAR, 4TH GEAR, 5TH GEAR, AND SECONDARY SHAFT

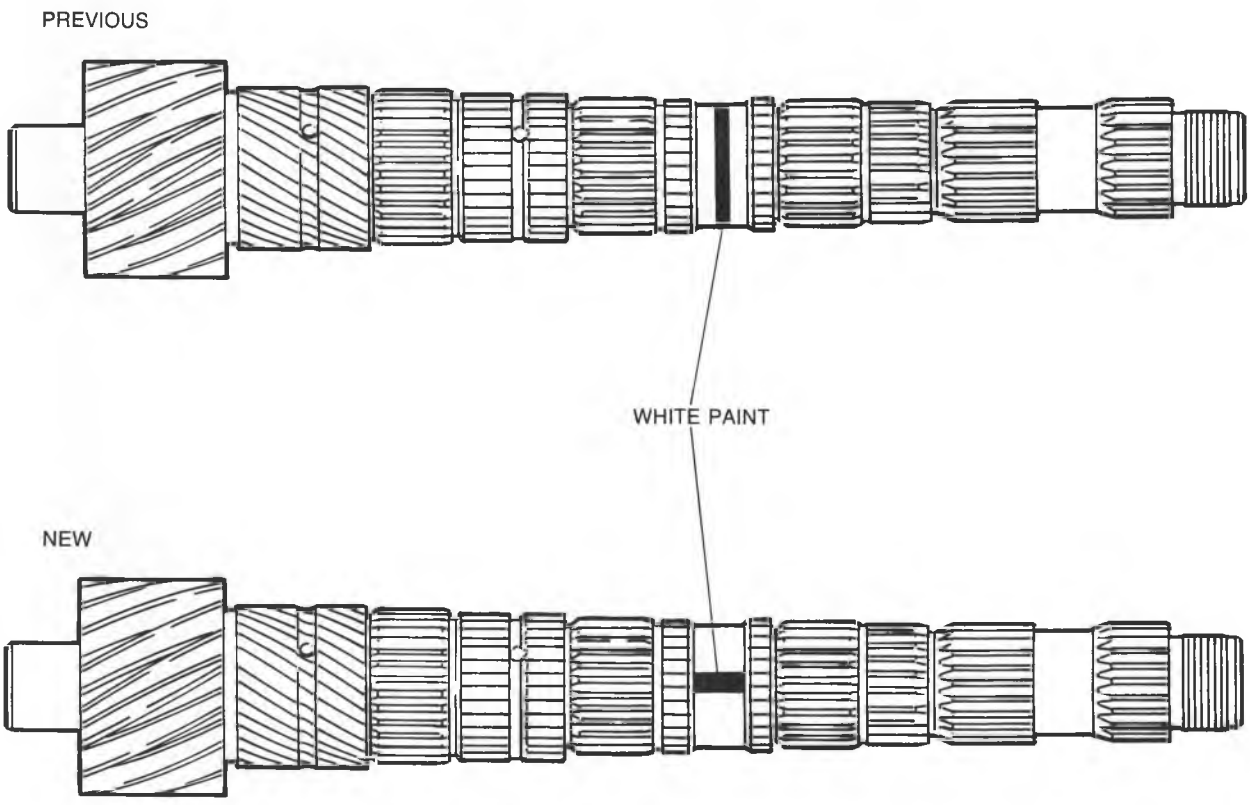
The gear teeth of 3rd gear, 4th gear, 5th gear, and secondary shaft are shot peened for improved strength and durability.

The gears are marked with white paint to distinguish them from the previous gears.

3RD GEAR **EXCEPT 3RD GEAR**



SECONDARY SHAFT

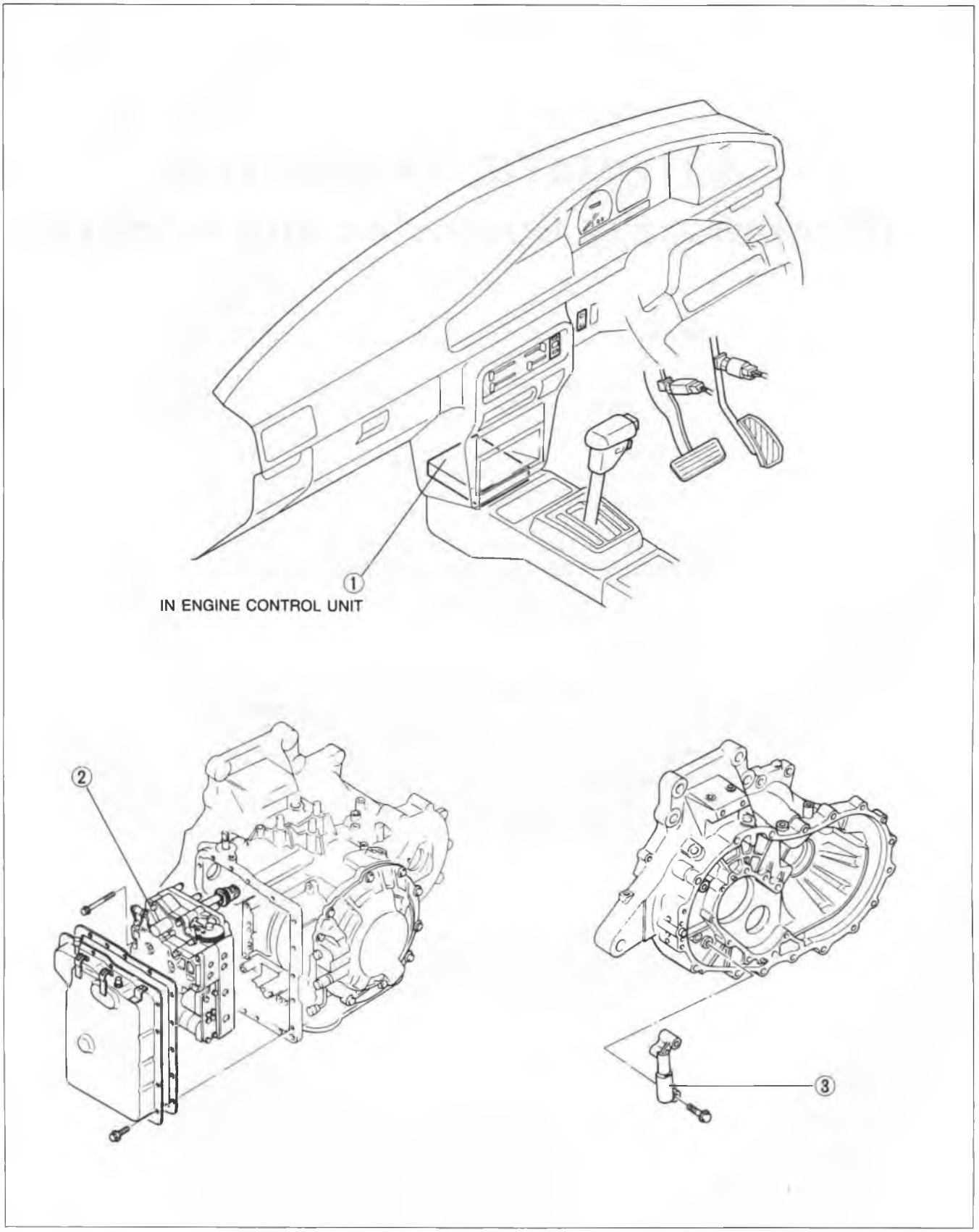


96G0JX-504

AUTOMATIC TRANSAXLE (Electronically Controlled and 4-Speed)

96G0K1-501

INDEX



96G0K1-502

OUTLINE

OUTLINE OF CONSTRUCTION

EC-AT Control Unit (EC-AT only)

1. The EC-AT system is changed as follows.
   1) The EC-AT control system is programmed within the engine control unit (ECU).
   2) The service connectors (1-pin and 6-pin) for the EC-AT system are made common with the connectors of the engine control system (In engine compartment).
   3) The display of the malfunction codes is changed.
2. Shift and lockup points are changed to improve drivability.
3. A new EC-AT tester harness is established to check all input/output signals of the EC-AT control unit.

Transaxle

EC-AT

1. The size of the 2-3 and 1-2 accumulators is enlarged to reduce shift shock.
2. The specifications of the springs and orifices in the control body are redefined to improve drivability.
3. A hydraulic circuit of the bypass valve in the control body is changed.

HAT*

The construction is the same as that of the previous models.

96G0K1-503

SPECIFICATIONS

Model		G4A-EL (EC-AT)	G4A-HL (4-speed)
		F2 engine	FE engine
Torque converter stall torque ratio		1.700—1.900 : 1	1.900—2.100 : 1
Gear ratio	First	2.800	
	Second	1.540	
	Third	1.000	
	Fourth (OD)	0.700	
	Reverse	2.333	
Final gear ratio		3.700 : 1	
Number of drive plates/ driven plates	Forward clutch	3/3	
	Coasting clutch	2/2	
	3-4 clutch	5/5	4/4
	Reverse clutch	2/2	
	Low and reverse brake	4/4	
Servo diameter (Piston outer dia./Retainer inner dia.) mm (in)		78/40 (3.07/1.57)	78/49 (3.07/1.93)
Speedometer gear ratio (Driven/Drive gear)		20/25 or 21/25	
Automatic transaxle fluid	Type	Dexron-II or M-III	
	Capacity liters (US qt, Imp qt)	6.8 (7.2, 6.0)	

*: Hydraulically controlled automatic transmission

96G0K1-504

INTERCHANGEABILITY (EC-AT)

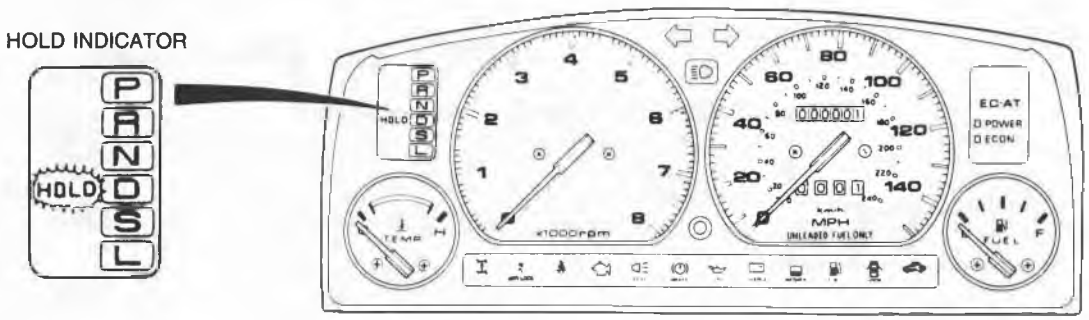
The following chart shows interchangeability of the major parts between the new transaxles and the previous transaxles.

Symbols: ○....Interchangeable X... Not interchangeable

Part name		Interchangeability	Remark
EC-AT control unit		X	EC-AT controlled by ECU
Converter housing		○	
Transaxle case		○	
Torque converter		○	
Oil pump assembly		○	
Differential gear set		○	
2-3 accumulator piston		X	Diameter enlarged
2-3 accumulator spring		X	Free length increased
Control valve body	Solenoid valve assembly	○	
	Front control body	X	Shape changed
	Premain control body	X	Shape changed
	Main control body	○	
	Rear control body	○	
	1-2 accumulator piston	X	Diameter enlarged
	1-2 accumulator small spring	X	Free length increased
	1-2 accumulator large spring	X	Free length increased
	N-D accumulator piston	○	
	N-D accumulator spring	X	Free length increased
	N-R accumulator piston	○	
	N-R accumulator spring	○	
Clutch (Reverse/forward) assembly		○	
3-4 clutch assembly		○	
Low and reverse brake		○	
Carrier hub assembly		○	
One-way clutch		○	
Output gear		○	
Idler gear		○	
2nd band servo		○	
Turbine shaft		○	
Oil pump shaft		○	
Bearing cover assembly		○	
Bearing housing		○	
Throttle cable		X	Length increased

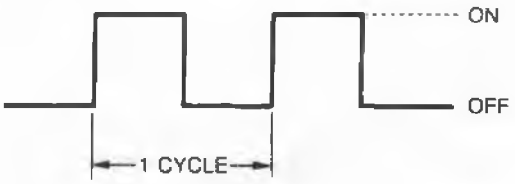
96G0K1-505

DISPLAY OF MALFUNCTION CODE NO. (EC-AT)



96G0K1-506

The display of malfunction code numbers is changed as follows because the ECU now controls the EC-AT.

	HOLD INDICATOR ILLUMINATION	
	NEW	PREVIOUS
WITHOUT 1-pin connector grounded		
WITH 1-pin connector grounded	No illumination	Shows specified malfunction signal pattern Example: Throttle sensor No.12 

96E0KX-007

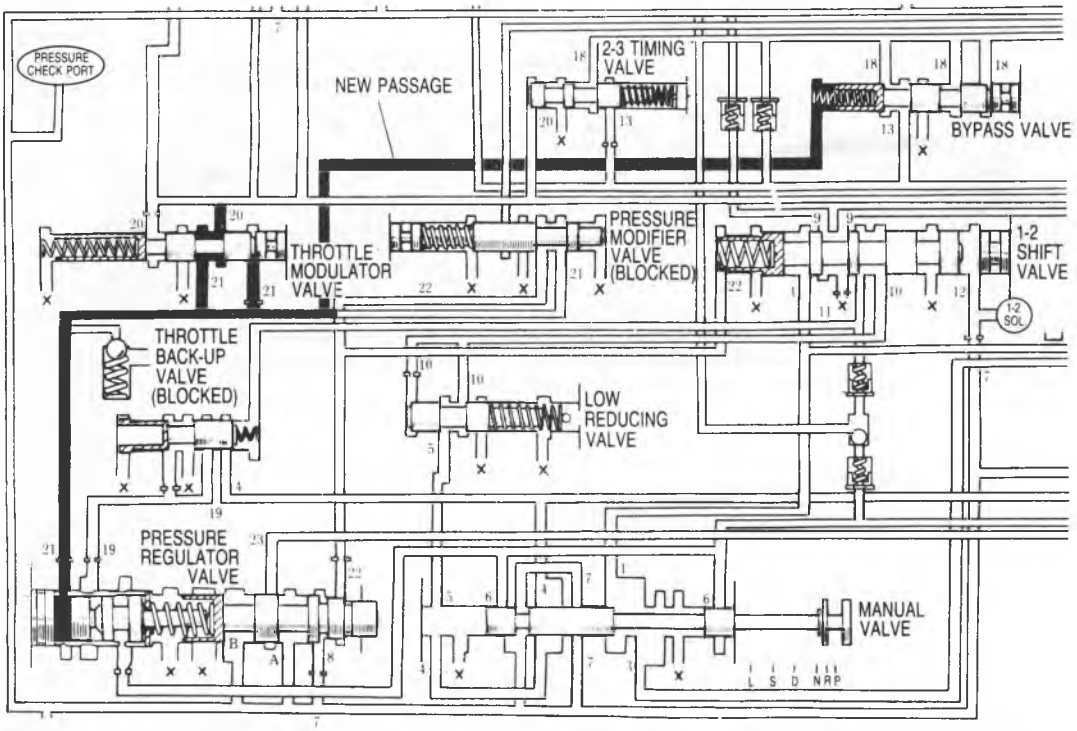
Note

- **1-pin connector is common for the EC-AT and engine control system.**
- **The malfunction code No. of the EC-AT system is output at the service connector (Green 6-pin) in the engine compartment.**

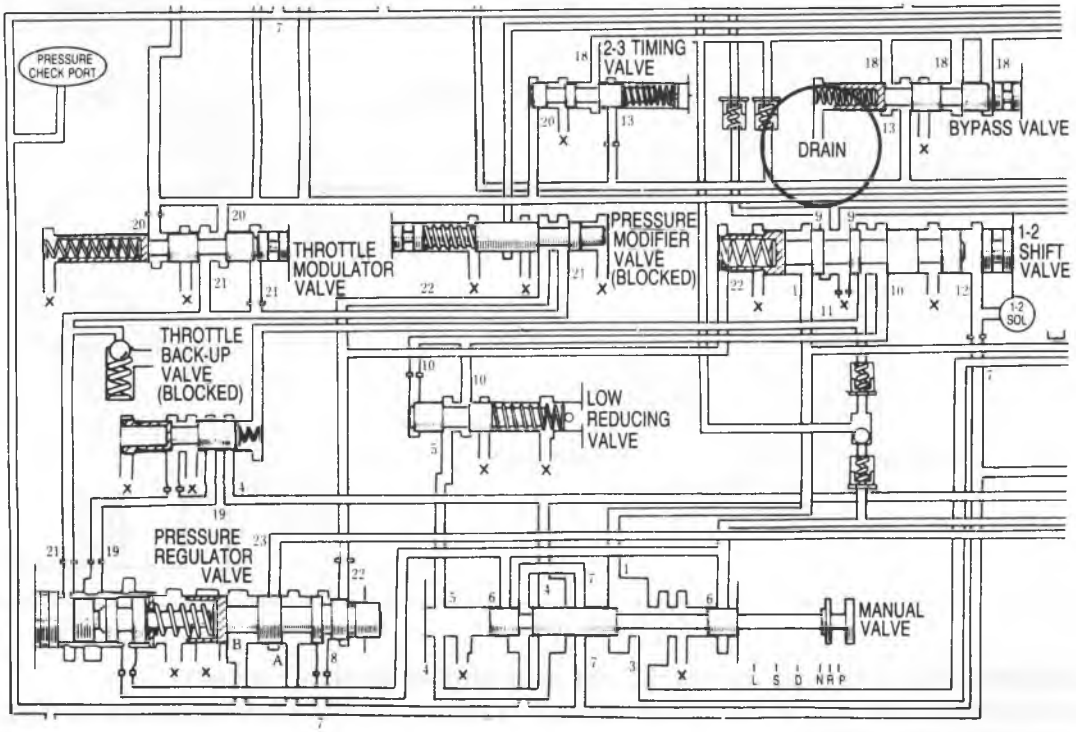
BYPASS VALVE HYDRAULIC CIRCUIT (EC-AT)

The former drain circuit at the left end of the bypass valve is changed to the throttle modulator valve. By this new circuit, the 3-4 clutch hydraulic pressure is controlled based on the throttle valve opening during the 2-3 upshift.
When the throttle valve is wide open, the throttle modulated pressure is high, moving the bypass valve to the right. This provides a rapidly rising line pressure at the 3-4 clutch to give positive engagement against the strong engine torque.

NEW



PREVIOUS



96E0KX-008

SUPPLEMENTAL SERVICE INFORMATION

The following points in this section are changed in comparison with the following manuals.
- Mazda 626 Workshop Manual 7/87 (1163-10-87G) for Europe and General
- Mazda 626/MX-6 Workshop Manual 6/87 (1175-10-87F) for Australia
- Mazda 626 Station Wagon Workshop Manual Supplement 2/88 (1182-10-88B)

Road test (EC-AT)
- Shift and lockup point

EC-AT tester
- EC-AT tester components

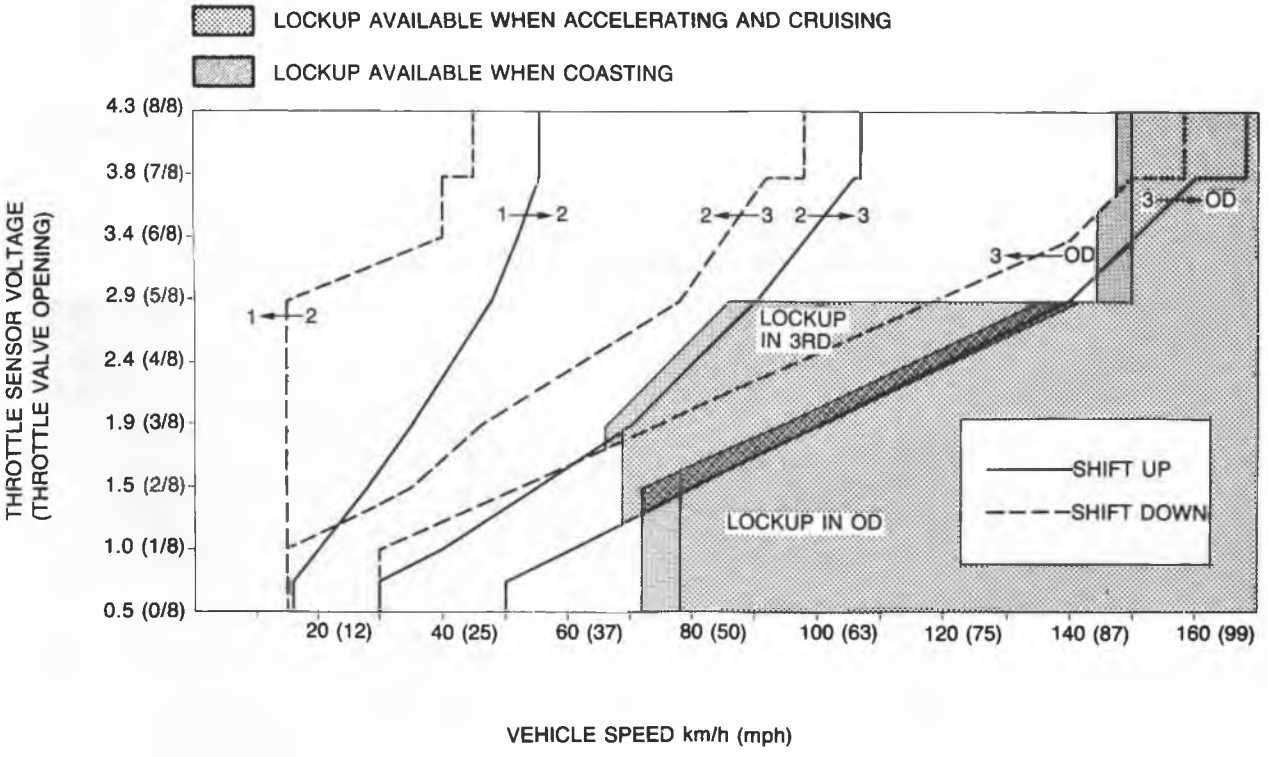
Control valve body (EC-AT)
- Orifice specifications
- Spring specifications

96G0K1-507

ROAD TEST (EC-AT)

Caution
- **Perform the road test at normal ATF operating temperature (60—70°C, 140—158°F).**

F2
D RANGE (POWER)



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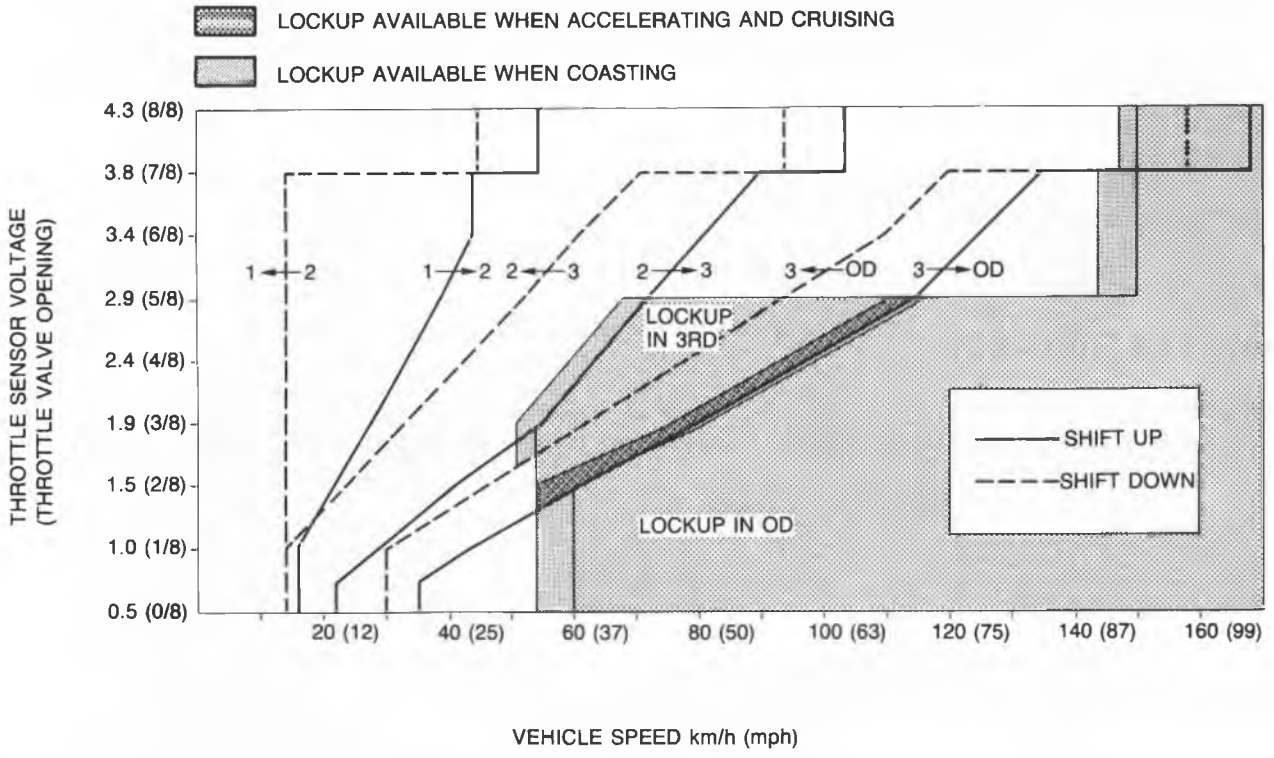
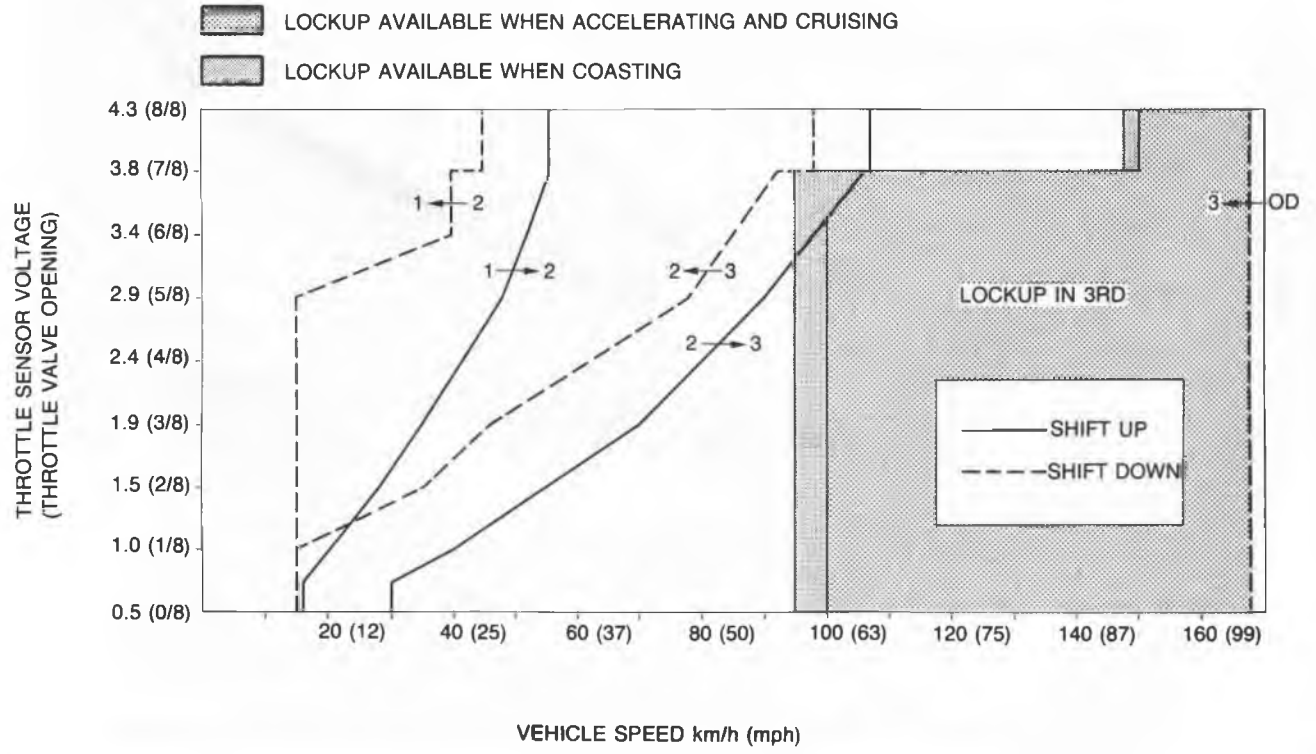
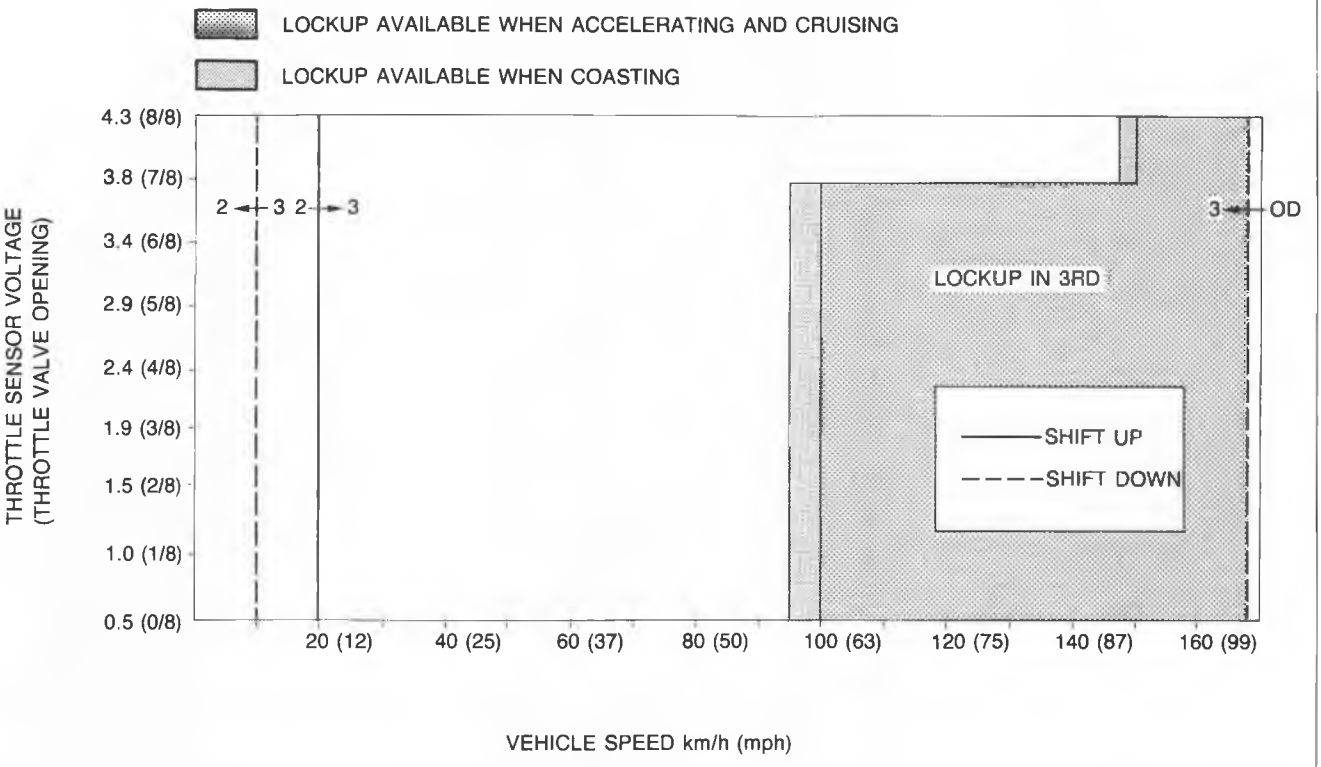
F2
D RANGE (ECONOMY)



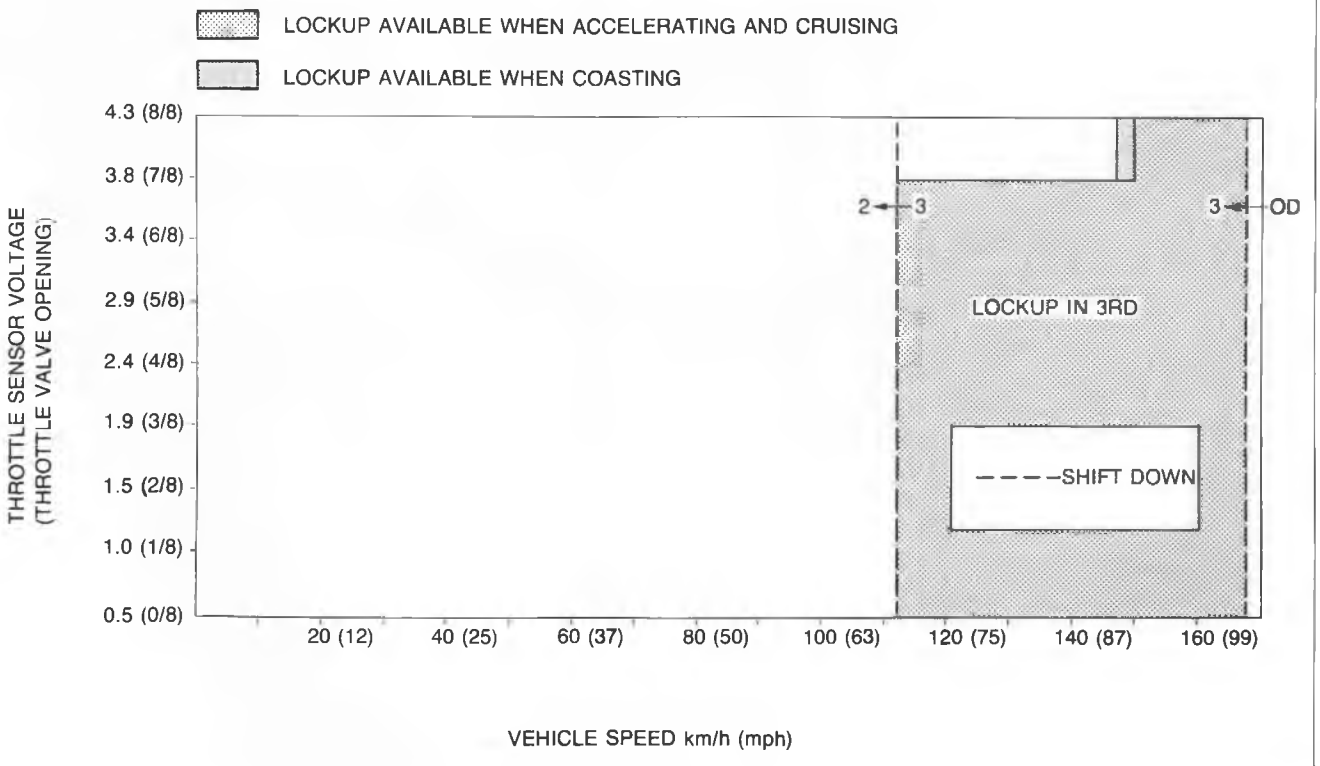
F2
S RANGE (POWER/ECONOMY)



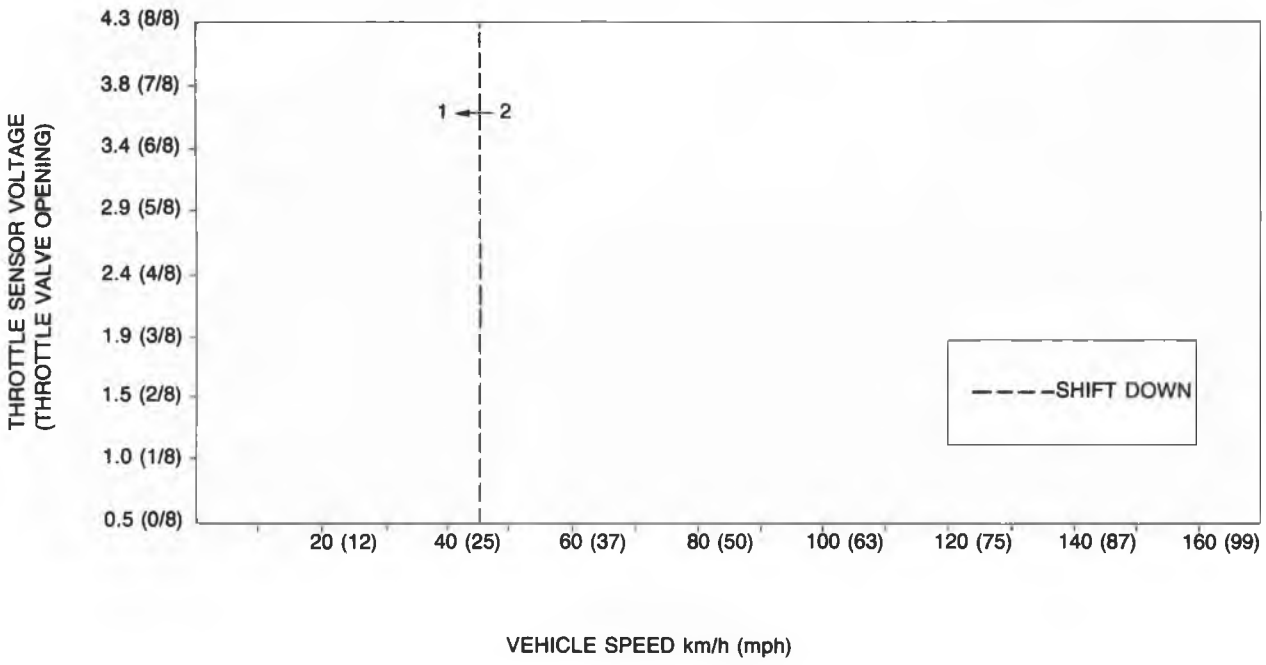
F2
D RANGE (HOLD)



F2
S RANGE (HOLD)



F2
L RANGE (HOLD)



VEHICLE SPEED AT GEARSHIFT TABLE

Range/Mode		Throttle condition (Throttle sensor voltage)	Shift	Drum speed rpm	Vehicle speed km/h (mph)
Power	D	Fully open (4.3 volt)	$D_1 \rightarrow D_2$	4,900—5,550	54—61 (33—38)
			$D_2 \rightarrow D_3$	5,250—5,750	105—115 (65—72)
			Lockup ON (D_3)	4,900—5,150	148—156 (93—98)
			$D_3 \rightarrow$ OD	5,450—5,800	165—175 (102—109)
			Lockup ON (OD)	3,400—3,600	147—157 (92—98)
		Half throttle (1.6—2.2 volt)	$D_1 \rightarrow D_2$	3,350—4,200	37—46 (23—29)
			$D_2 \rightarrow D_3$	3,500—4,400	70—88 (44—55)
			Lockup ON (D_3)	2,300—2,850	69—87 (43—54)
			$D_3 \rightarrow$ OD	3,500—4,400	106—133 (66—83)
			Lockup ON (OD)	2,450—3,100	106—135 (66—84)
		Fully closed (0.5 volt)	OD $\rightarrow D_3$	600—750	27—33 (17—21)
			$D_3 \rightarrow D_1$	400—600	12—18 (8—11)
		Kickdown	OD $\rightarrow D_3$	3,500—3,750	153—163 (95—101)
			$D_3 \rightarrow D_2$	3,100—3,350	94—102 (40—63)
			$D_2 \rightarrow D_1$	2,100—2,400	42—48 (26—30)
Economy		Fully open (4.3 volt)	$D_1 \rightarrow D_2$	4,900—5,450	54—60 (33—37)
			$D_2 \rightarrow D_3$	5,100—5,500	102—110 (63—68)
			Lockup ON (D_3)	4,900—5,150	148—156 (93—98)
			$D_3 \rightarrow$ OD	5,450—5,800	165—175 (102—109)
			Lockup ON (OD)	3,400—3,600	147—157 (92—98)
		Half throttle (1.6—2.2 volt)	$D_1 \rightarrow D_2$	2,650—3,350	29—37 (18—23)
			$D_2 \rightarrow D_3$	2,750—3,600	55—72 (34—45)
			Lockup ON (D_3)	1,800—2,750	54—83 (34—52)
			$D_3 \rightarrow$ OD	2,800—3,650	85—111 (53—69)
			Lockup ON (OD)	2,000—2,600	86—113 (54—71)
		Fully closed (0.5 volt)	OD $\rightarrow D_3$	600—750	27—33 (17—21)
			$D_3 \rightarrow D_1$	350—550	11—17 (7—11)
		Kickdown	OD $\rightarrow D_3$	3,500—3,750	153—163 (95—101)
			$D_3 \rightarrow D_2$	2,950—3,250	90—98 (56—61)
			$D_2 \rightarrow D_1$	2,100—2,400	42—48 (26—30)
S		Fully open (4.3 volt)	$S_1 \rightarrow S_2$	5,000—5,550	55—61 (34—38)
			$S_2 \rightarrow S_3$	5,250—5,650	105—113 (65—70)
			Lockup ON (S_3)	4,900—5,150	148—156 (93—98)
		Half throttle (1.6—2.2 volt)	$S_1 \rightarrow S_2$	3,350—4,200	37—46 (23—29)
			$S_2 \rightarrow S_3$	3,500—4,450	70—89 (44—56)
			Lockup ON (S_3)	3,100—3,500	94—106 (59—66)
		Fully closed (0.5 volt)	$S_4 \rightarrow S_3$	3,800—3,950	165—171 (103—107)
			$S_3 \rightarrow S_1$	400—600	12—18 (8—11)
		Kickdown	$S_4 \rightarrow S_3$	3,750—4,000	163—173 (102—108)
			$S_3 \rightarrow S_2$	3,100—3,350	94—102 (59—64)
			$S_2 \rightarrow S_1$	2,100—2,400	42—48 (26—30)
L		Fully open (4.3 volt)	$L_1 \rightarrow L_2$	5,000—5,550	55—61 (34—38)
		Half throttle (1.6—2.2 volt)	$L_1 \rightarrow L_2$	3,350—4,200	37—46 (23—29)
		Fully closed (0.5 volt)	$L_2 \rightarrow L_1$	600—900	12—18 (8—11)
		Kickdown	$L_2 \rightarrow L_1$	2,100—2,400	42—48 (26—30)

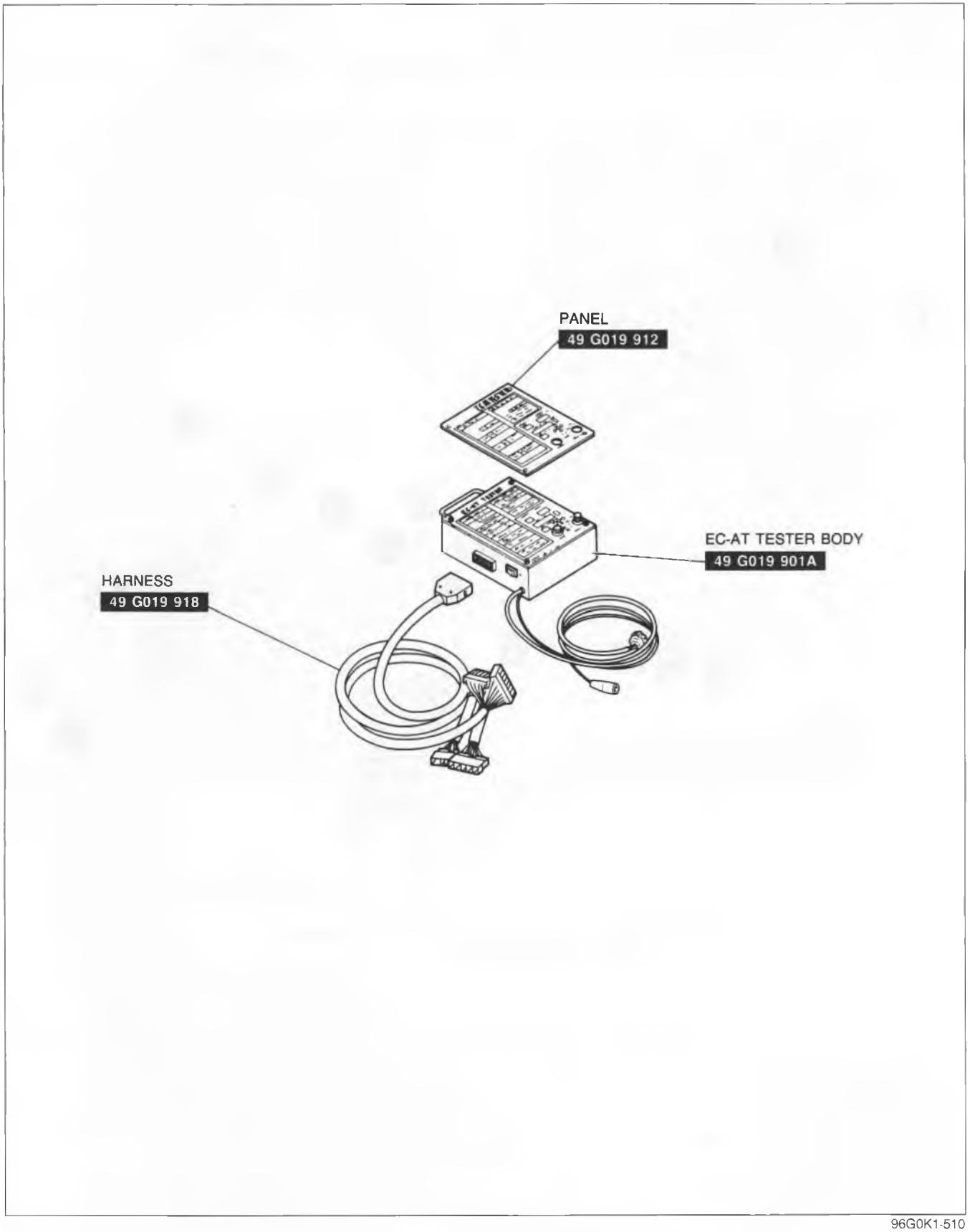
Range/Mode		Throttle condition (Throttle sensor voltage)	Shift	Drum speed rpm	Vehicle speed km/h (mph)
HOLD	D	Any condition	$D_2 \rightarrow D_3$	750—1,250	15—25 (9—16)
			Lockup ON (D_3)	3,150—3,450*1 4,800—5,100*2	95—105 (59—66)*1 145—155 (91—97)*2
			OD → D_3	3,800—3,950	165—171 (103—107)
			$D_3 \rightarrow D_2$	250—450	7—13 (4—8)
	S		Lockup ON (S_3)	3,150—3,450*1 4,800—5,100*2	95—105 (59—66)*1 145—155 (91—97)*2
			$S_4 \rightarrow S_3$	3,750—4,000	165—171 (103—107)
			$S_3 \rightarrow S_2$	3,600—3,800	109—115 (68—72)
	L		$L_2 \rightarrow L_1$	2,150—2,450	43—49 (27—31)

*1: Less than 7/8 throttle opening
*2: More than 7/8 throttle opening

96G0K1-509

EC-AT TESTER

A new EC-AT tester adapter harness is established to inspect the EC-AT system.



96G0K1-510

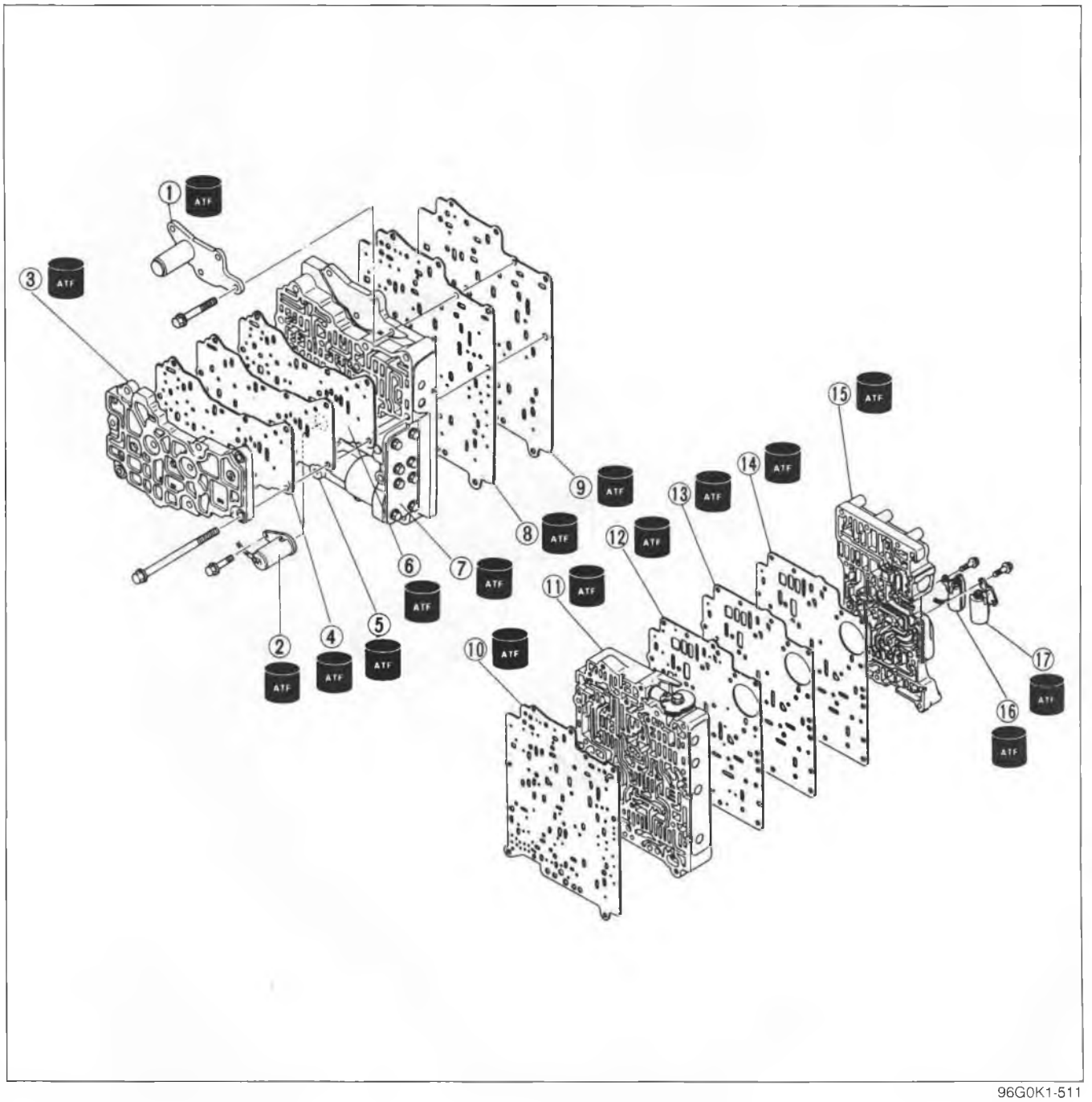
Set the new **Harness** (49 G019 918) and the **Panel** (49 G019 912) onto the **EC-AT Tester Body** (49 G019 901A).

TRANSAXLE (EC-AT)

CONTROL VALVE BODY

Disassembly / Assembly

1. Disassemble in the sequence shown in the figure.
2. Assemble in the reverse order of the disassembly, referring to the **Assembly Note**.

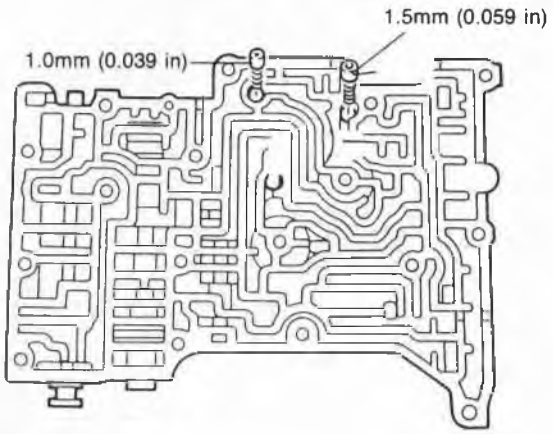


96G0K1-511

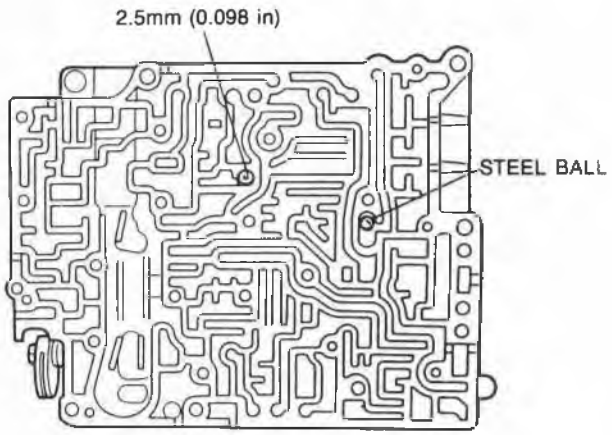
1. 1-2 solenoid valve
2. 2-3 solenoid valve
3. Front control body
4. Front/premain front gasket
5. Premain separator
6. Front/premain rear gasket
7. Premain control body
   Assembly Note ..... page K1–23
8. Premain/main front gasket
9. Main separator
10. Premain/main rear gasket
11. Main control body
    Assembly Note ..... page K1–23
12. Main/rear front gasket
13. Rear separator
14. Main/rear rear gasket
15. Rear control body
    Assembly Note ..... page K1–23
16. 3-4 solenoid valve
17. Lockup solenoid valve

Assembly note
Locations of orifices and check balls

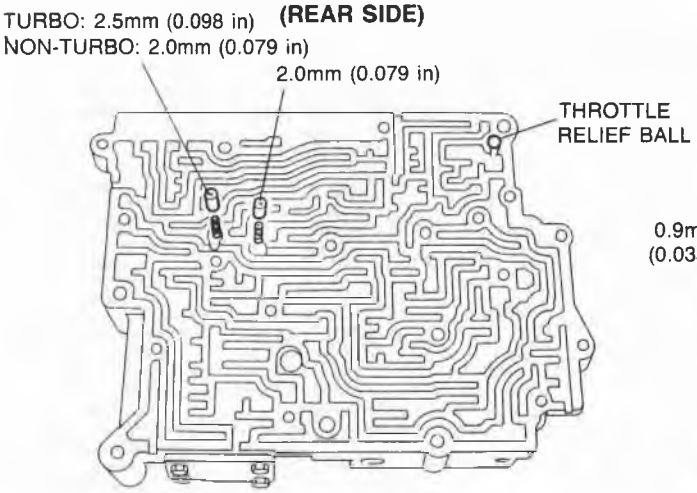
REAR CONTROL BODY



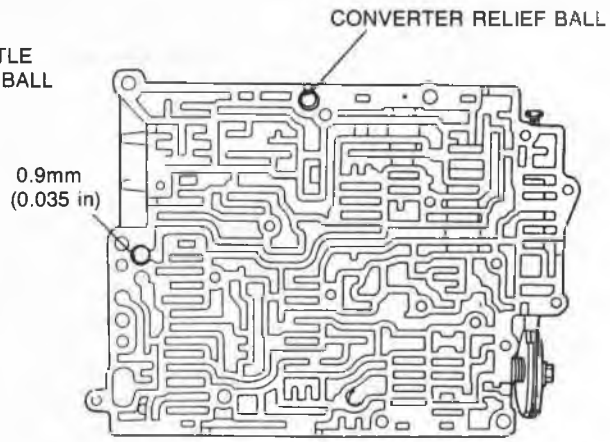
MAIN CONTROL BODY (REAR SIDE)



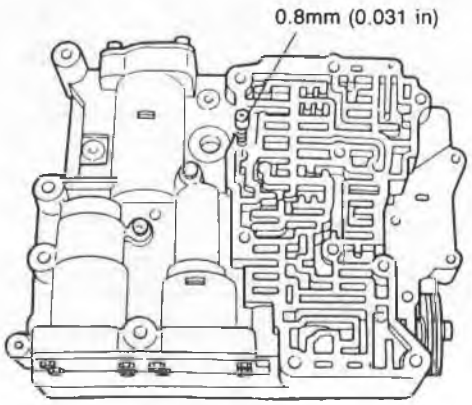
PREMAIN CONTROL BODY (REAR SIDE)



MAIN CONTROL BODY (FRONT SIDE)



PREMAIN CONTROL BODY (FRONT SIDE)



Premain Control Body
Inspection
Spring
1. Measure the outer diameter and free length of the spring.

Spring		Outer diameter mm (in)	Free length mm (in)	Color
N-D accumulator spring		9.8 (0.386)	68.0 (2.677)	Orange
1-2 accumulator small spring	Non-turbo	14.4 (0.567)	86.0 (3.386)	—
	Turbo	14.4 (0.567)	73.8 (2.906)	Gray
1-2 accumulator large spring		20.0 (0.787)	97.1 (3.823)	Gray
Bypass valve spring		4.9 (0.193)	27.6 (1.087)	Yellow
Servo control valve spring		4.9 (0.193)	27.6 (1.087)	Yellow
2-3 timing spring		8.3 (0.327)	26.5 (1.043)	—
N-R accumulator spring		11.1 (0.437)	62.0 (2.441)	Light green
Coasting bypass spring		5.8 (0.228)	37.7 (1.484)	Dark blue
3-2 timing spring		8.2 (0.323)	28.6 (1.126)	Red
3-2 capacity spring		5.4 (0.213)	30.6 (1.205)	White

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Main Control Body
Inspection
Spring
1. Measure the outer diameter and free length of the spring.

Spring	Outer diameter mm (in)	Free length mm (in)	Color
Pressure modifier spring	8.3 (0.327)	26.5 (1.043)	—
Low reducing spring	8.7 (0.343)	38.3 (1.508)	Black
1-2 shift spring	8.7 (0.343)	41.3 (1.626)	Yellow
2-3 shift spring	7.4 (0.291)	36.6 (1.441)	Gray
3-4 shift spring	7.4 (0.291)	36.6 (1.441)	Gray
Throttle backup spring	9.65 (0.380)	26.9 (1.059)	Red
Throttle modulator spring	6.3 (0.248)	47.9 (1.886)	—
Throttle spring	5.4 (0.213)	47.2 (1.858)	Pink
Throttle assist spring	5.15 (0.203)	32.3 (1.272)	Dark green

96A0KX-020

Rear Control Body
Inspection
Spring
1. Measure the outer diameter and free length of the spring.

Spring	Outer diameter mm (in)	Free length mm (in)	Color
Pressure regulator spring	11.5 (0.453)	26.5 (1.043)	Maroon
Lockup control spring	5.0 (0.197)	35.2 (1.386)	Purple

96A0KX-021

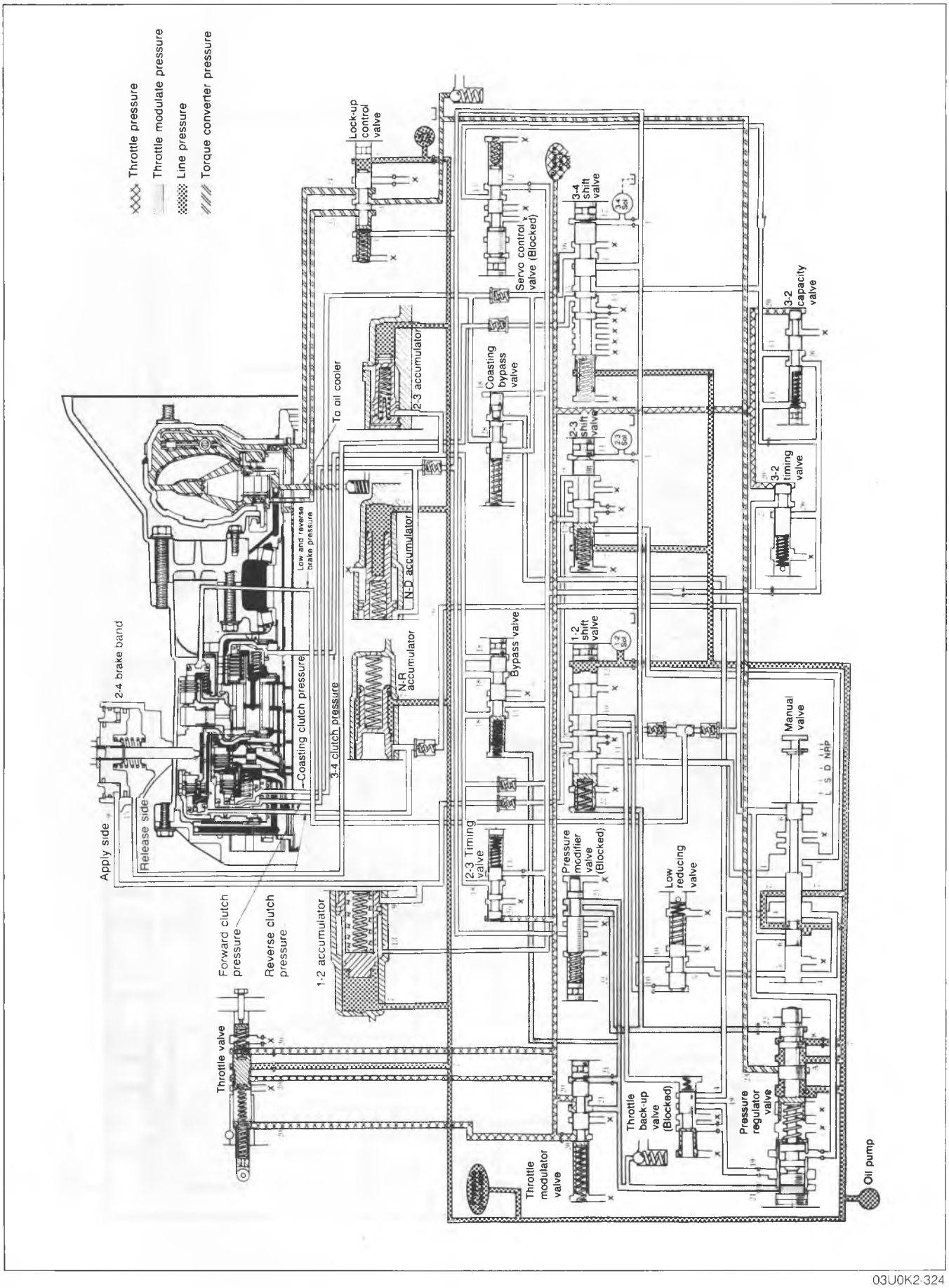
2-3 Accumulator
1. Measure the outer diameter and free length of the spring.

Spring	Outer diameter mm (in)	Free length mm (in)	Color
2-3 accumulator spring	11.3 (0.445)	85.0 (3.346)	Blue

96A0KX-022

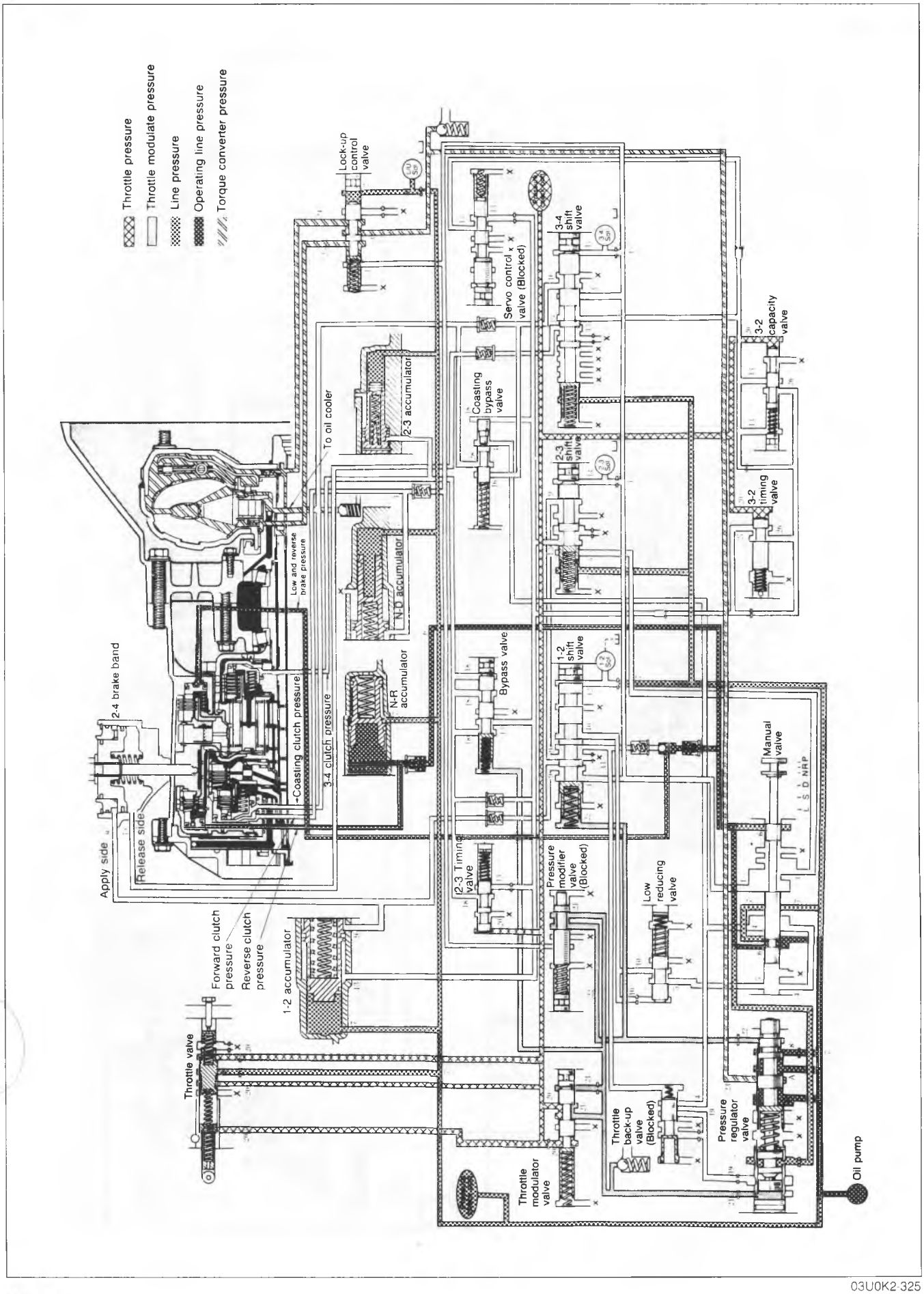
HYDRAULIC CIRCUIT

P RANGE



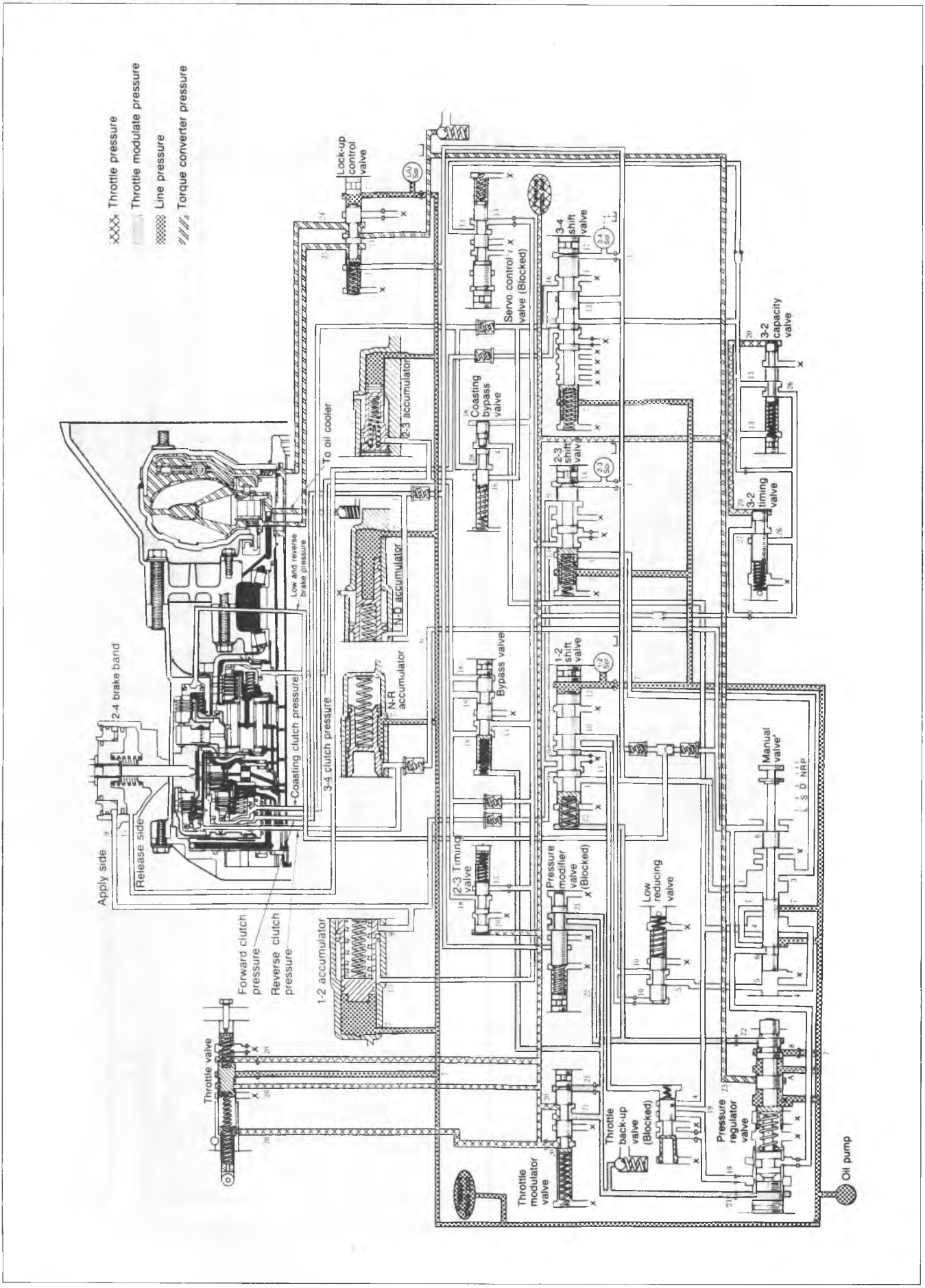
HYDRAULIC CIRCUIT

R RANGE

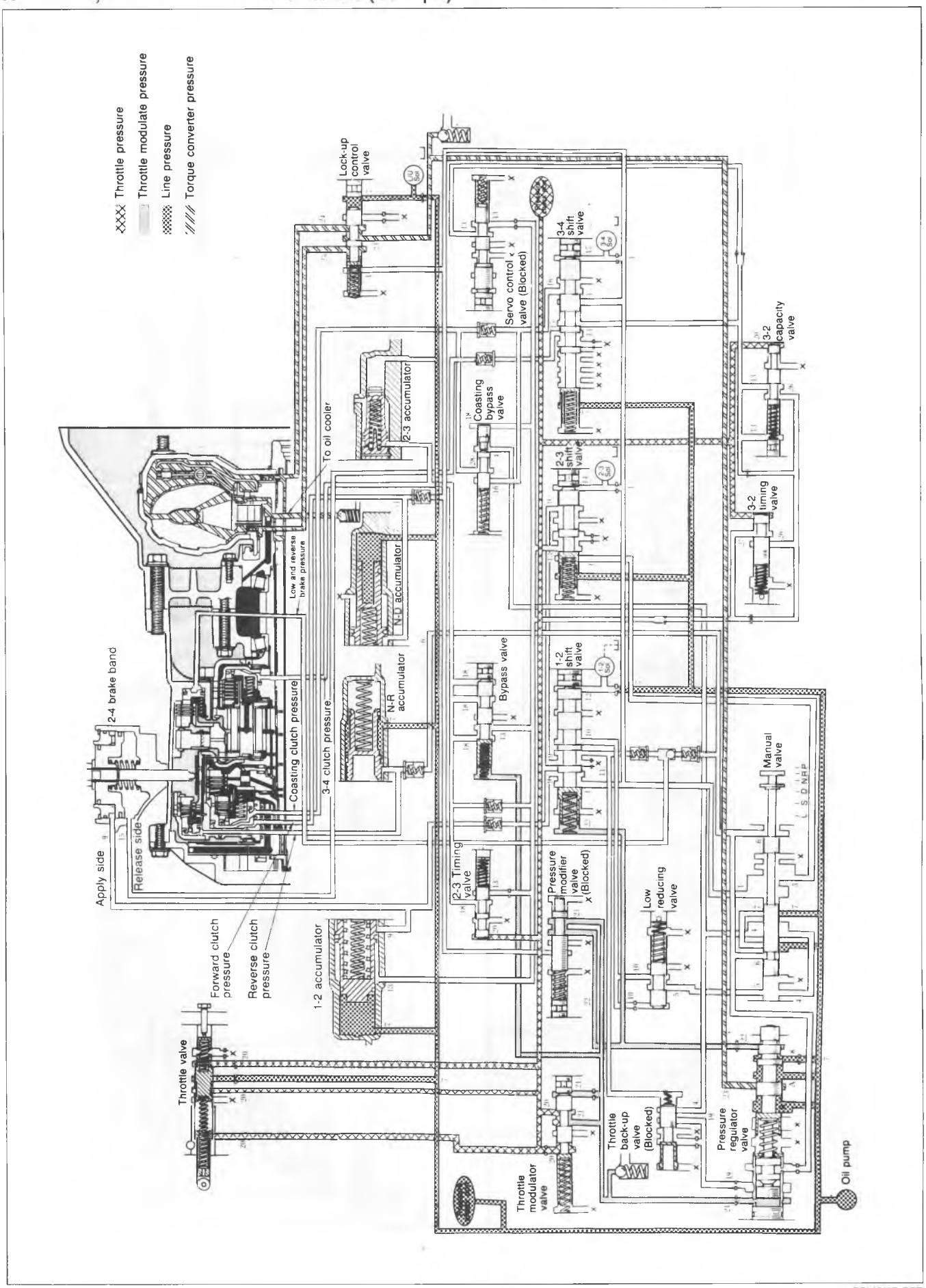


03U0K2-325

N RANGE; BELOW APPROX. 18 km/h (11 mph)

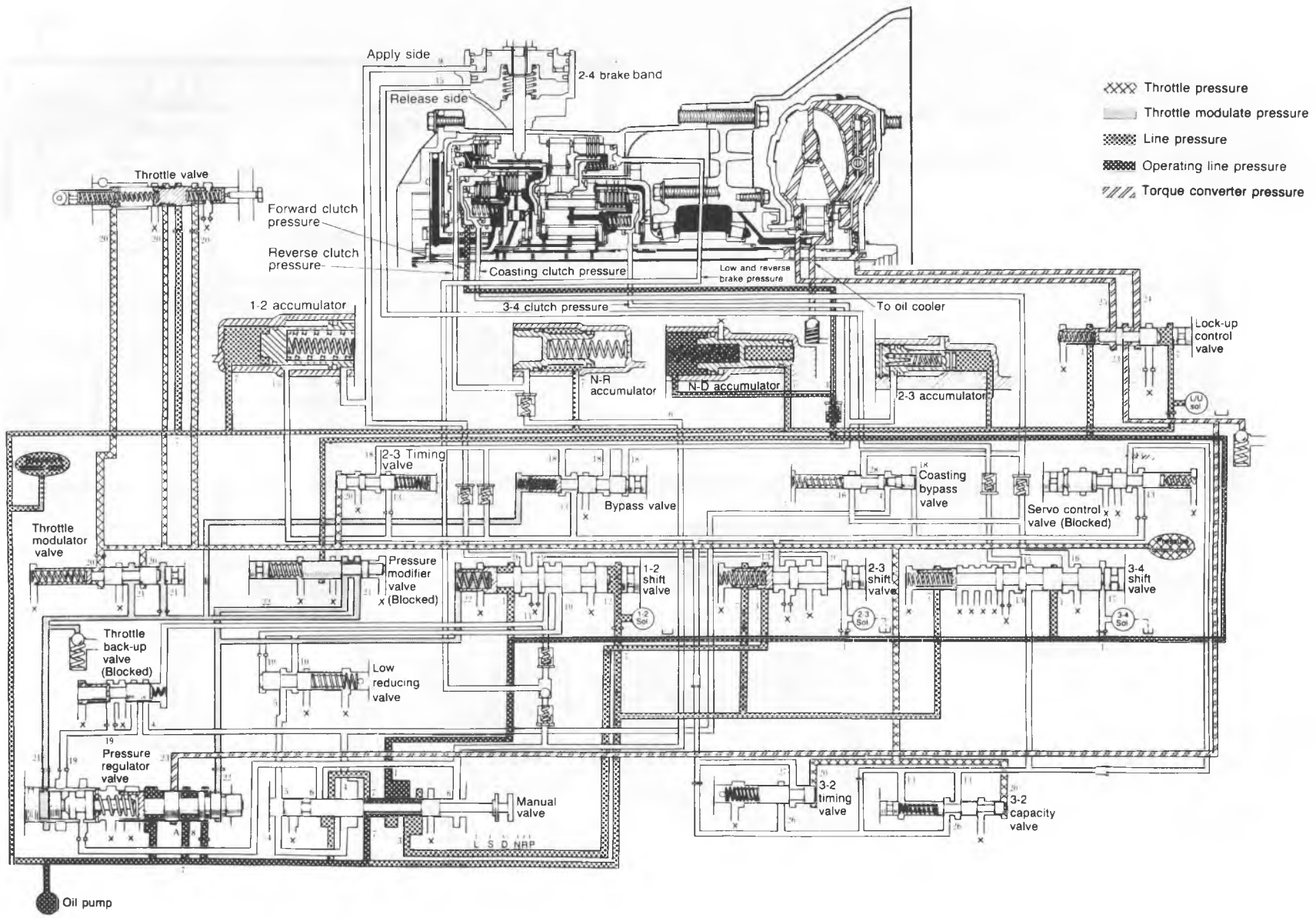


N RANGE; ABOVE APPROX. 18 km/h (11 mph)



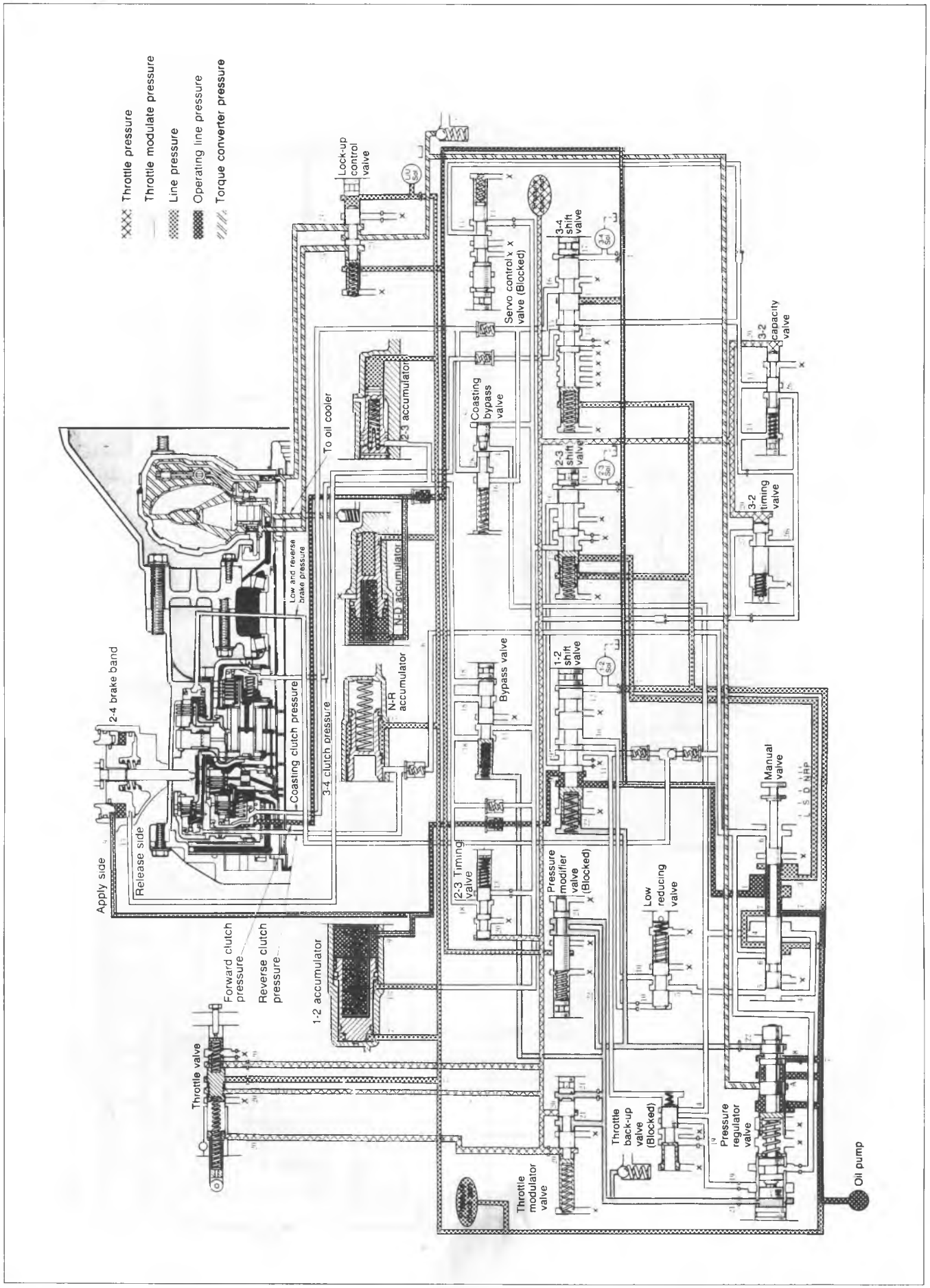
03U0K2-327

D RANGE; 1ST GEAR



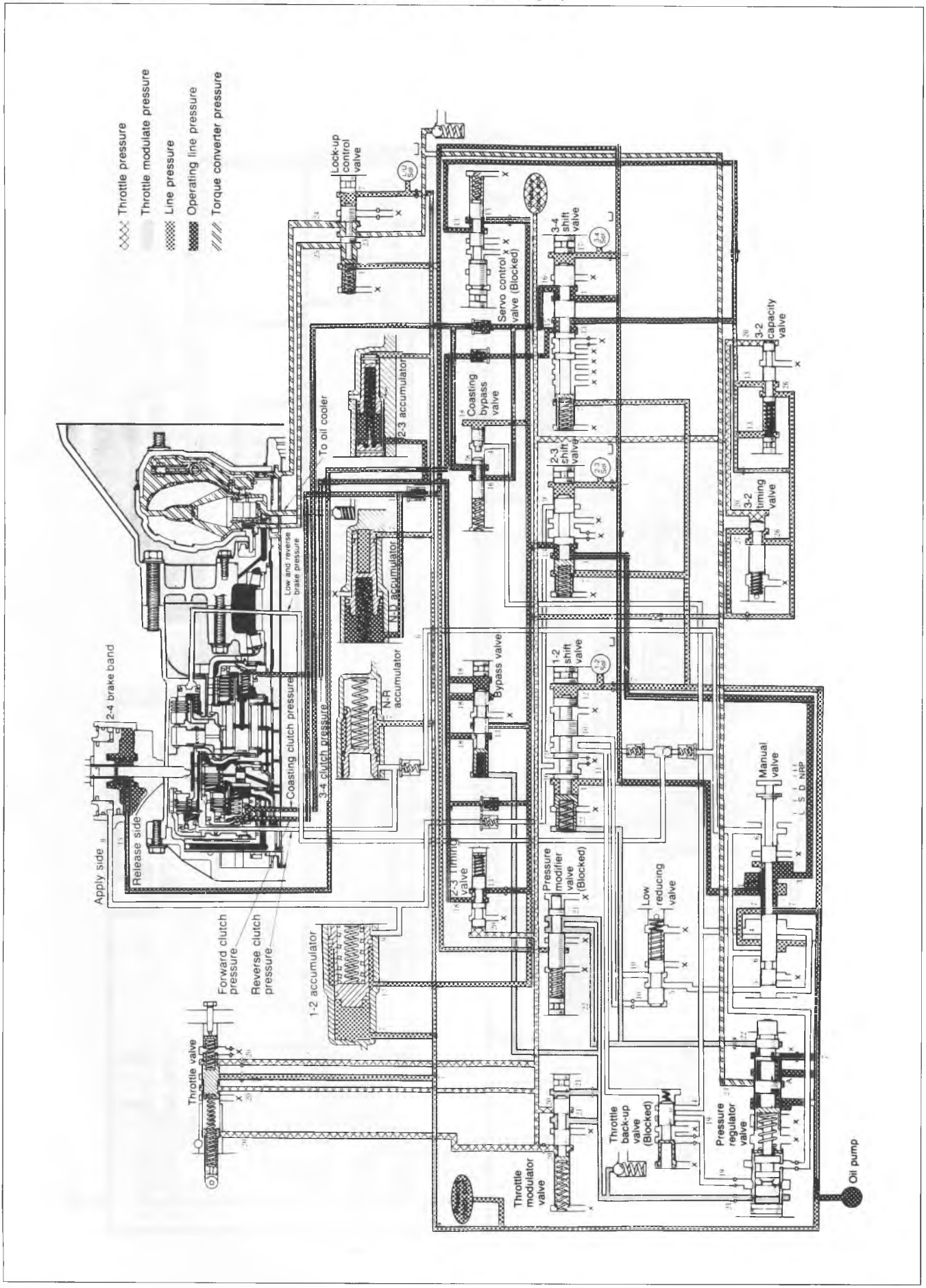
HYDRAULIC CIRCUIT

D RANGE; 2ND GEAR

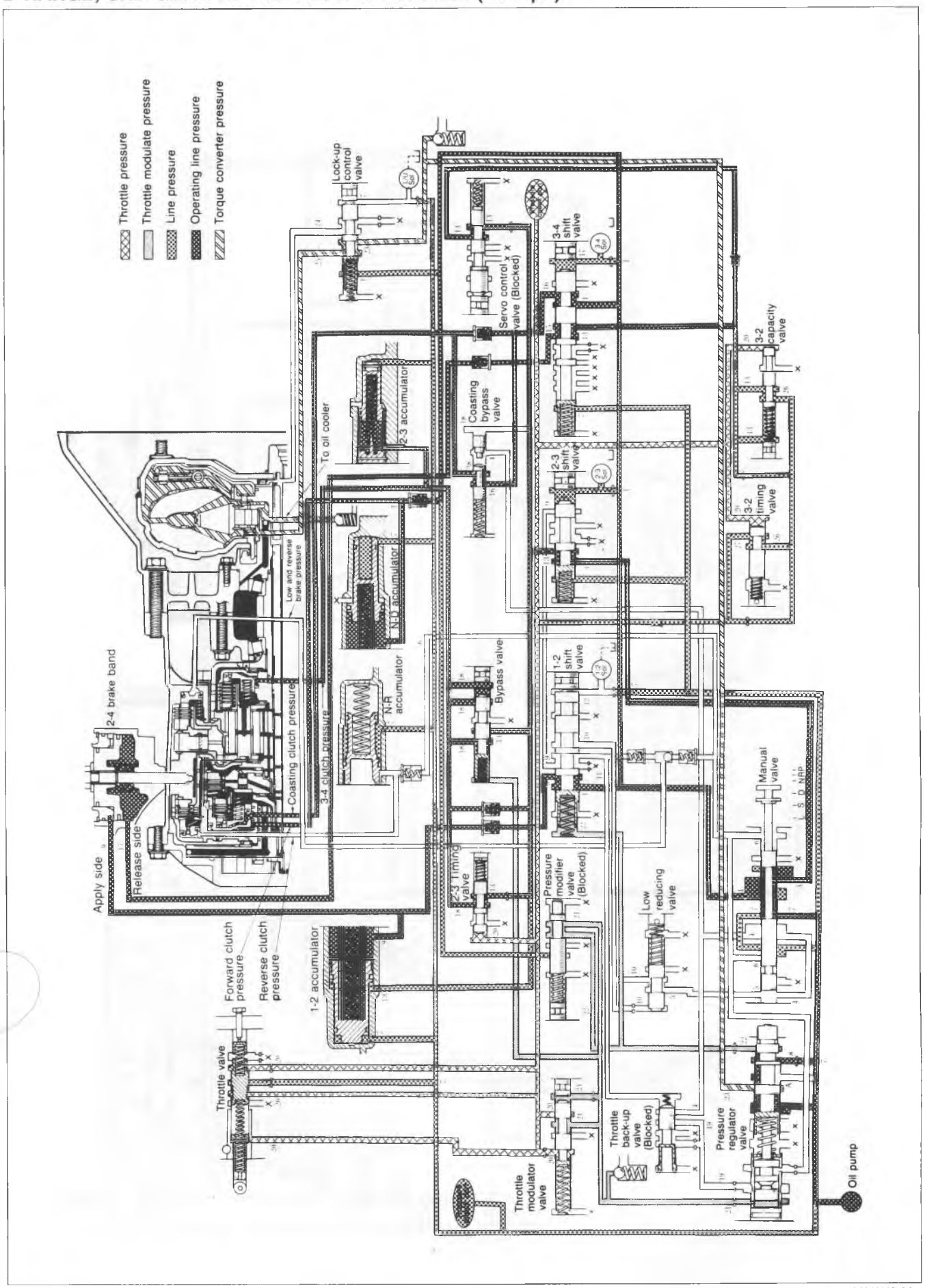


03U0K2-329

D RANGE; 3RD GEAR BELOW APPROX. 40 km/h (25 mph)

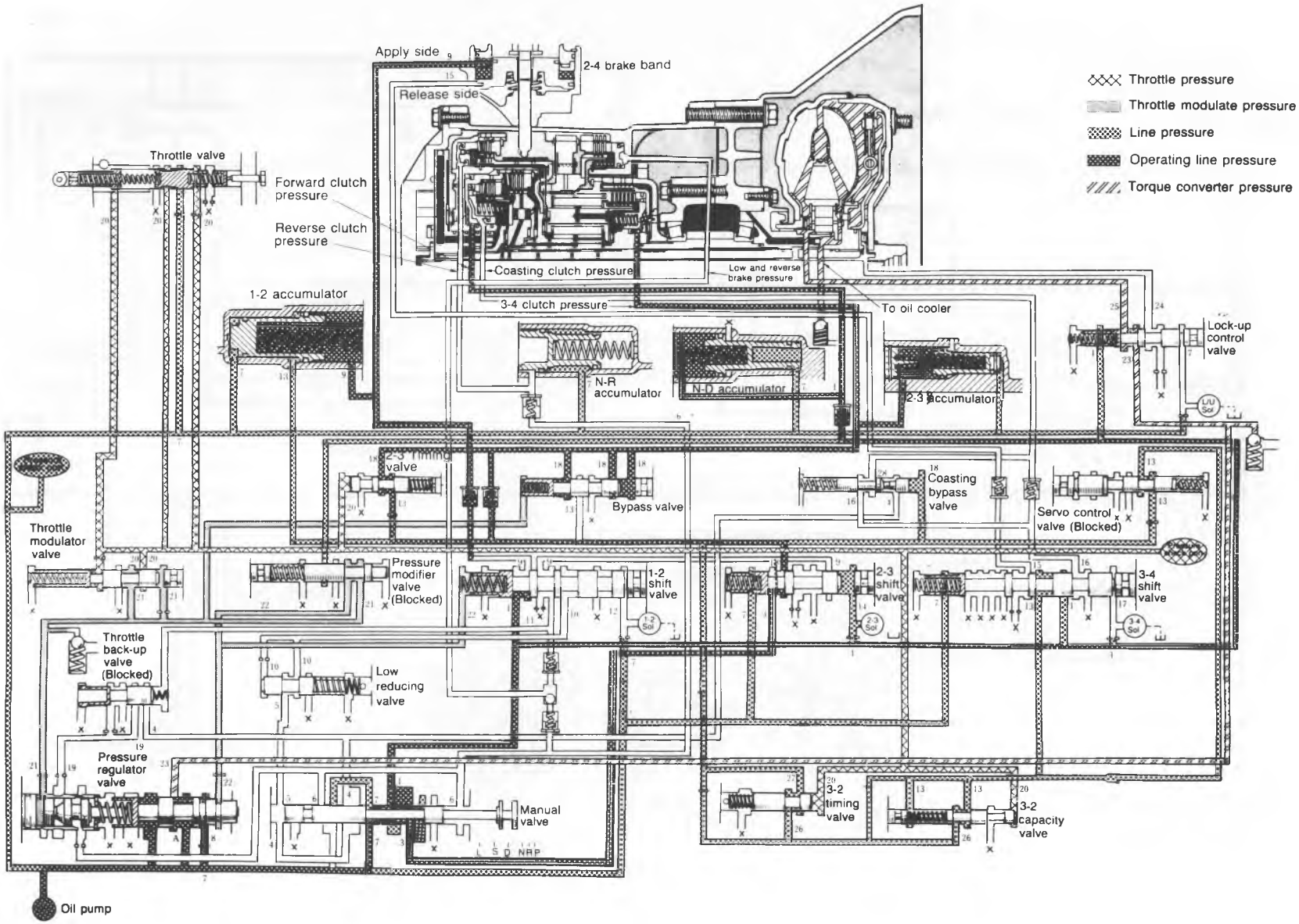


D RANGE; 3RD GEAR ABOVE APPROX. 40 km/h (25 mph)



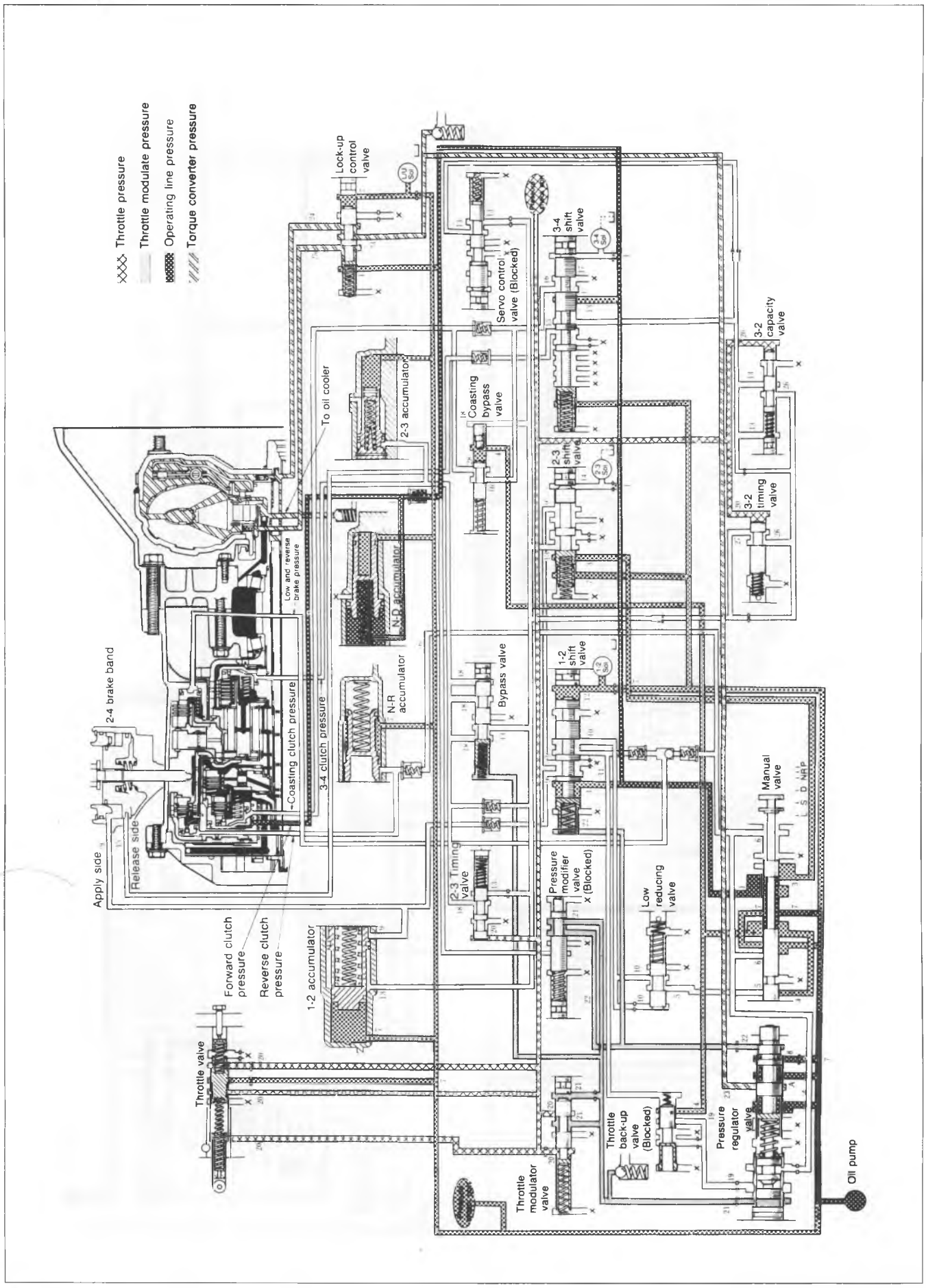
03U0K2-331

D RANGE; OVERDRIVE LOCKUP ON

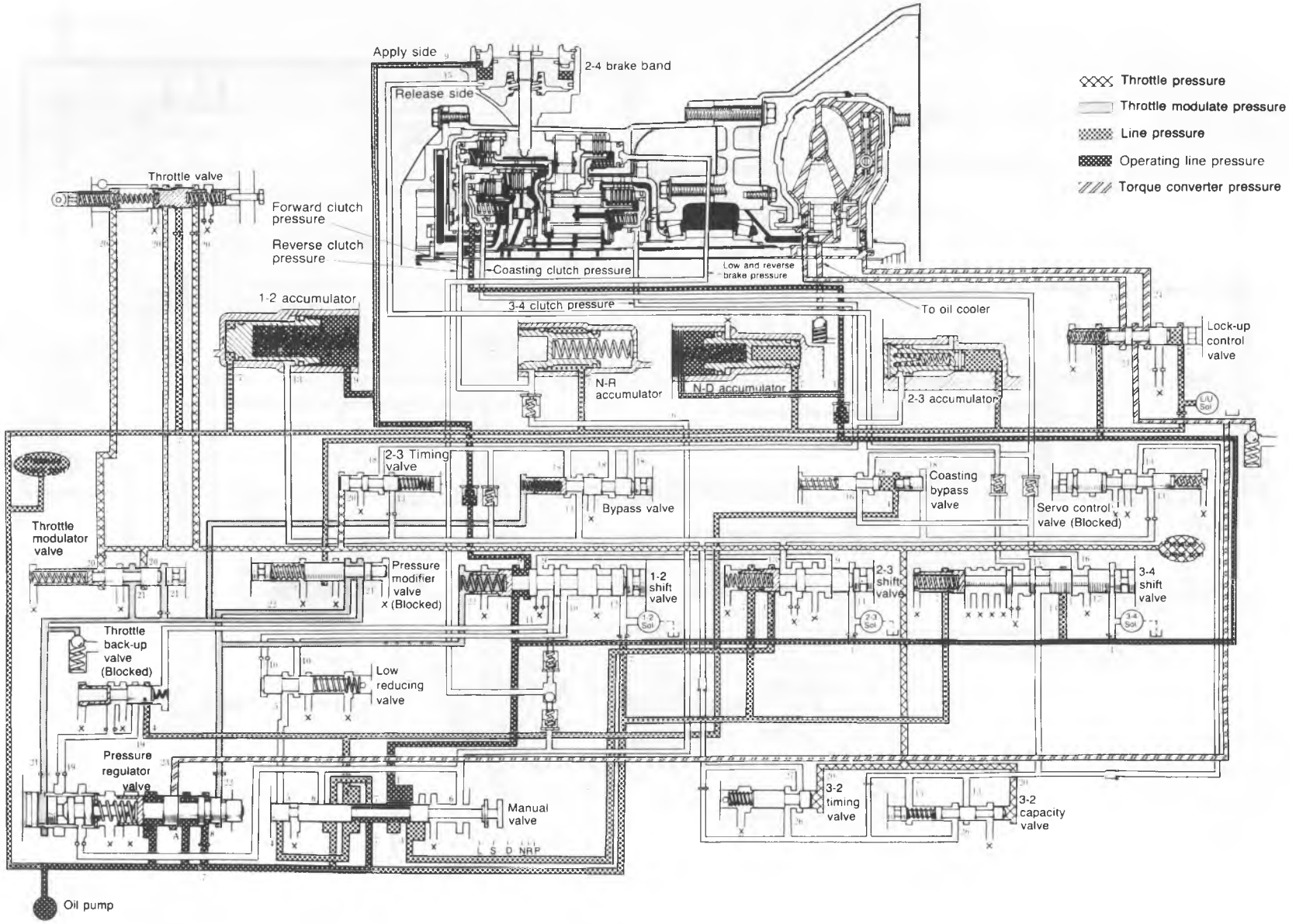


HYDRAULIC CIRCUIT

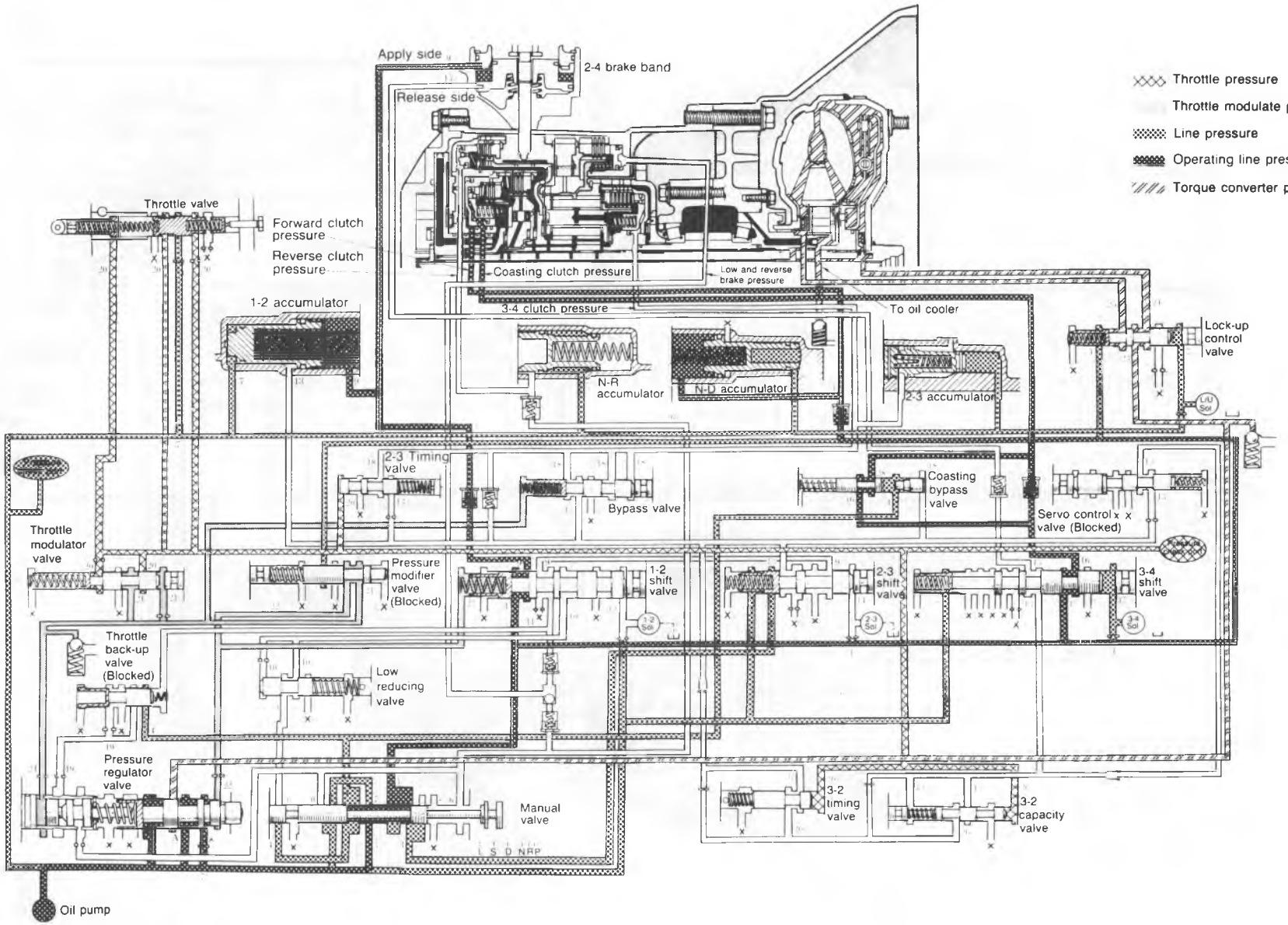
S RANGE; 1ST GEAR



03U0K2-333

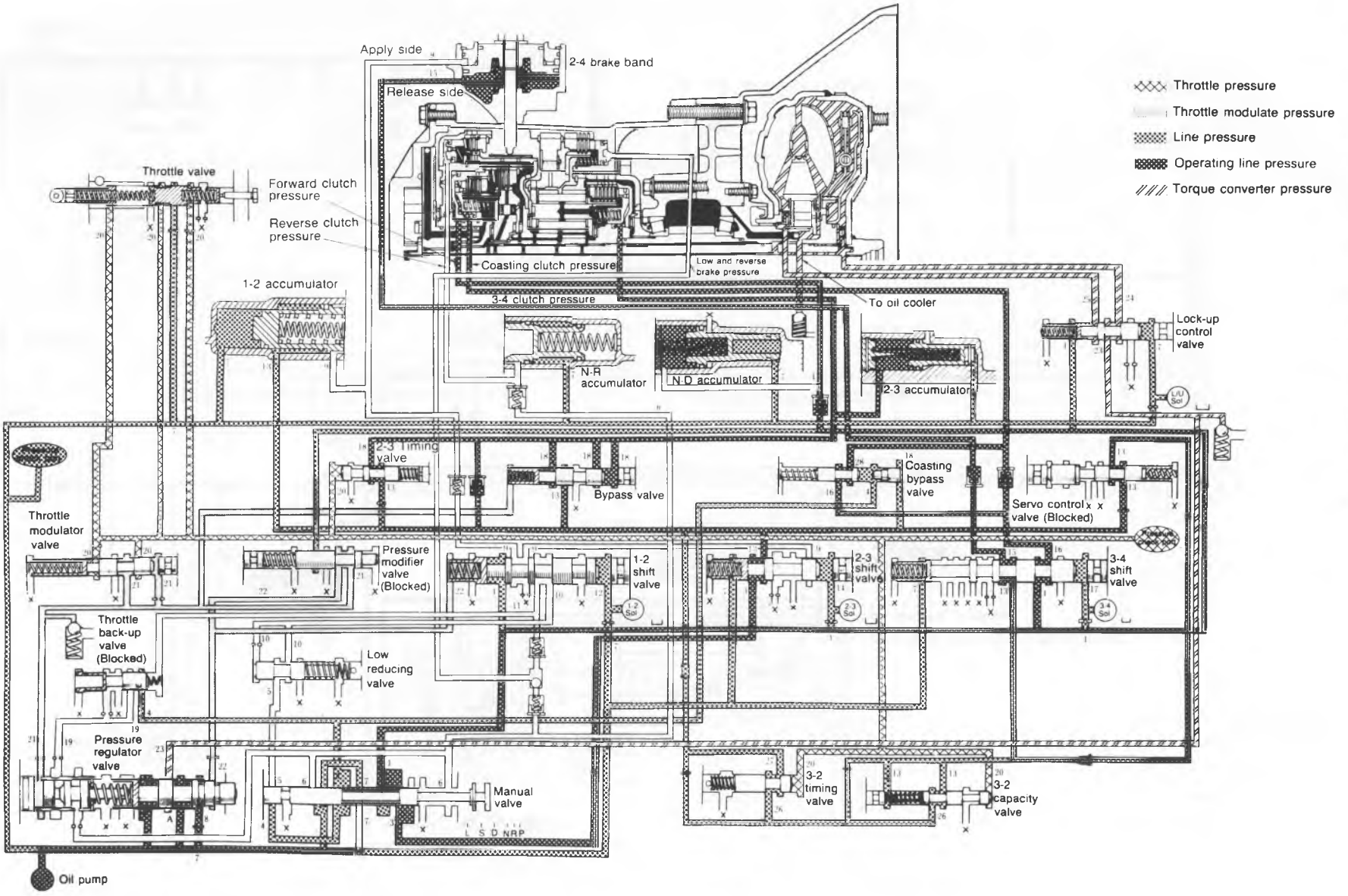

Throttle pressure
Throttle modulate pressure
Line pressure
Operating line pressure
Torque converter pressure
Apply side
2-4 brake band
Release side
Throttle valve
Forward clutch pressure
Reverse clutch pressure
Coasting clutch pressure
Low and reverse brake pressure
1-2 accumulator
3-4 clutch pressure
To oil cooler
Lock-up control valve
N-R accumulator
N-D accumulator
2-3 accumulator
2-3 Timing valve
Bypass valve
Coasting bypass valve
Servo control valve (Blocked)
Throttle modulator valve
Pressure modifier valve
x (Blocked)
1-2 shift valve
2-3 shift valve
3-4 shift valve
Throttle back-up valve (Blocked)
Low reducing valve
Pressure regulator valve
Manual valve
3-2 timing valve
3-2 capacity valve
Oil pump

S RANGE; HOLD 2ND GEAR

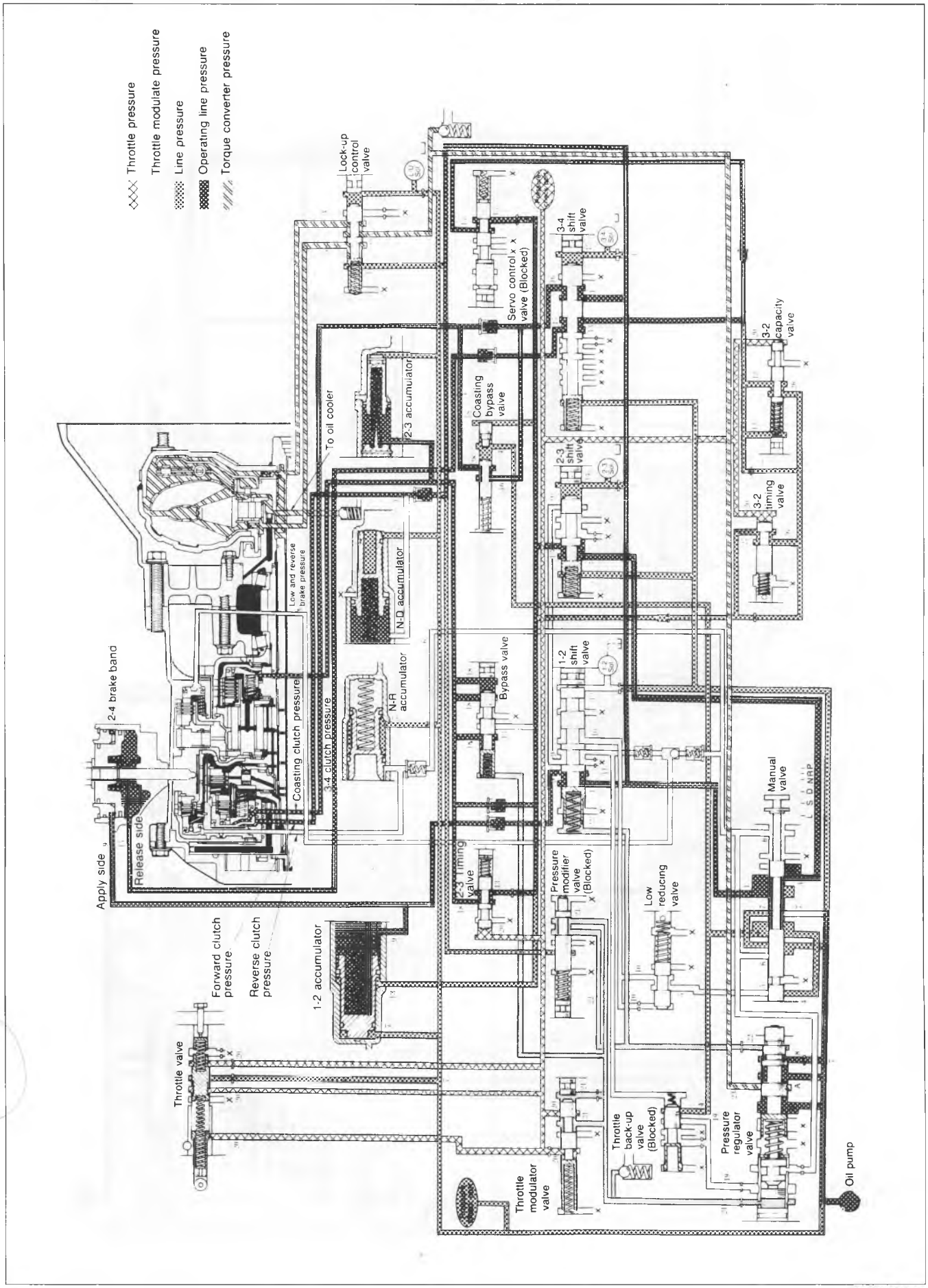


03U0K2335

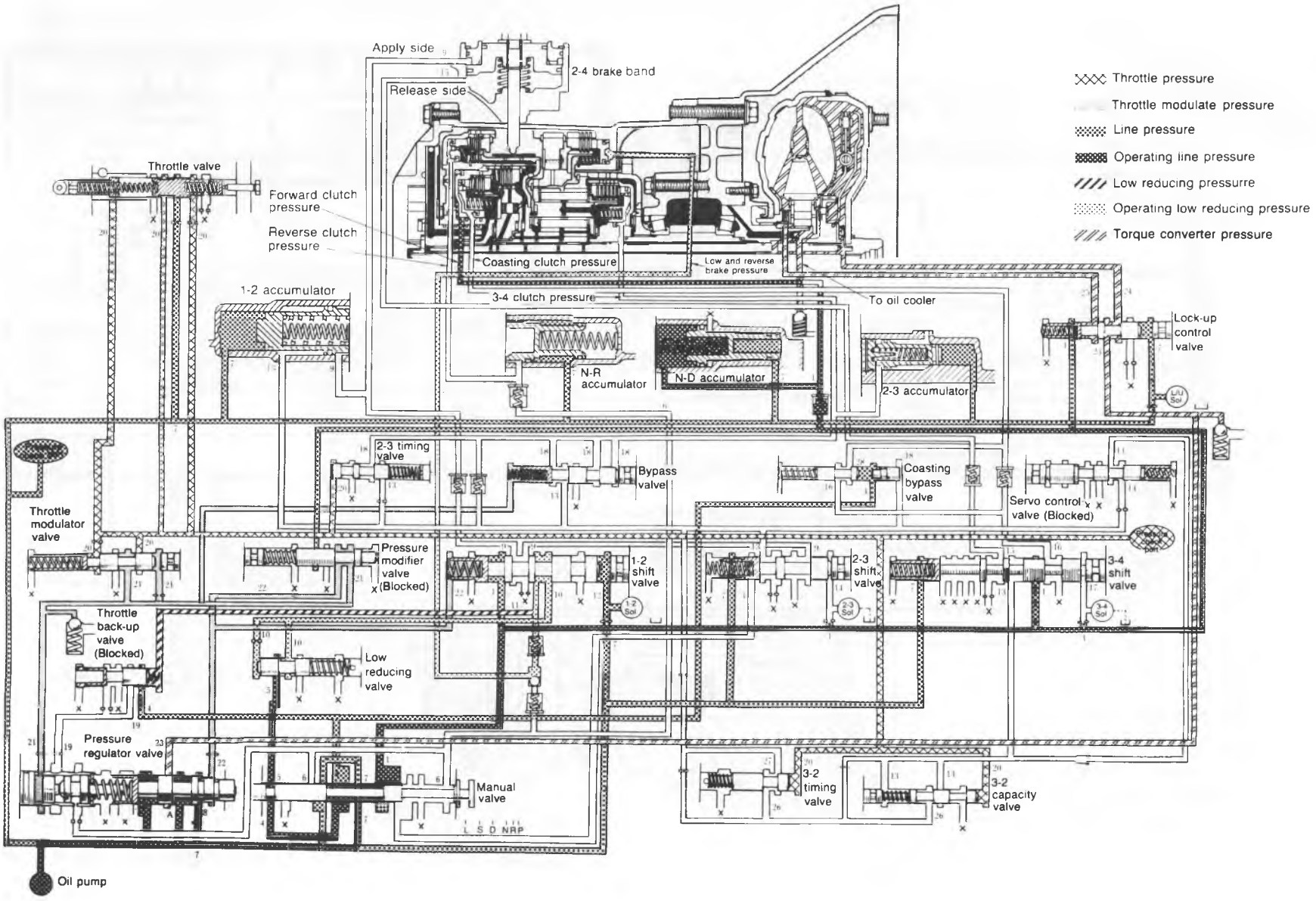
S RANGE; 3RD GEAR BELOW APPROX. 40 km/h (25 mph)

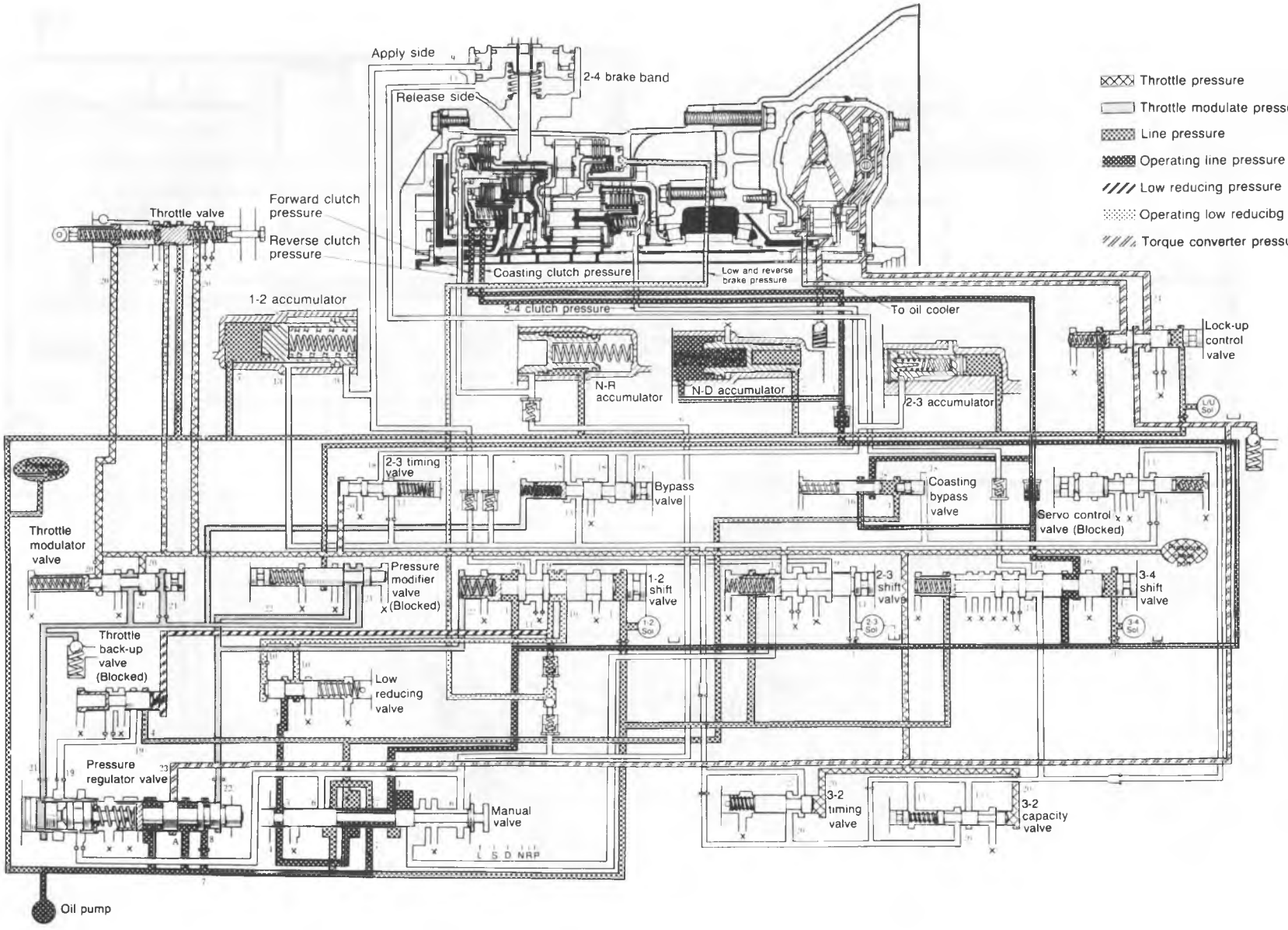


S RANGE; 3RD GEAR ABOVE APPROX. 40 km/h (25 mph)



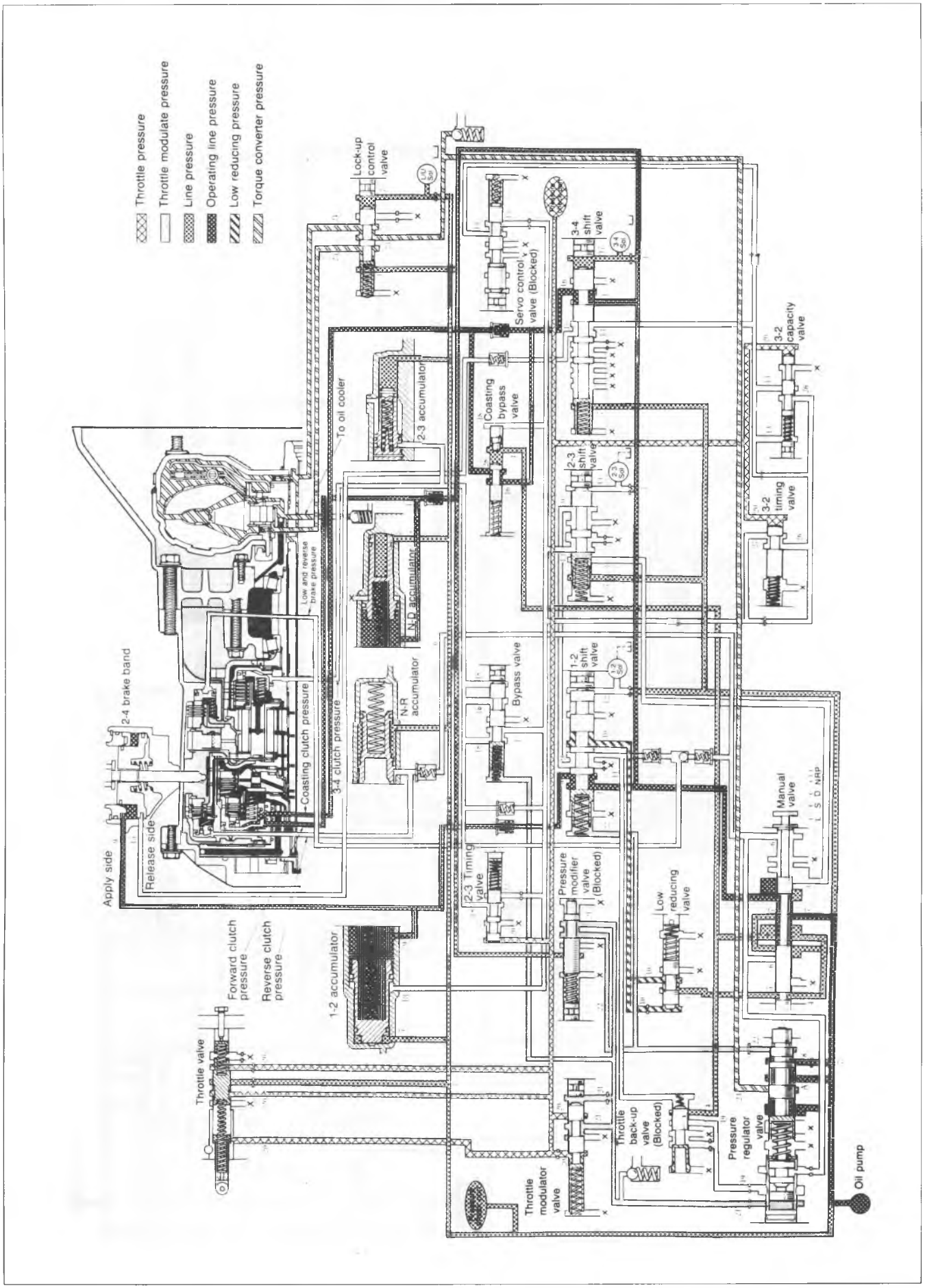
03U0K2-337


Throttle pressure
Throttle modulate pressure
Line pressure
Operating line pressure
Low reducing pressurre
Operating low reducing pressure
Torque converter pressure
Apply side
Release side
2-4 brake band
Throttle valve
Forward clutch pressure
Reverse clutch pressure
Coasting clutch pressure
Low and reverse brake pressure
3-4 clutch pressure
To oil cooler
1-2 accumulator
N-R accumulator
N-D accumulator
2-3 accumulator
Lock-up control valve
2-3 timing valve
Bypass valve
Coasting bypass valve
Servo control valve (Blocked)
Throttle modulator valve
Pressure modifier valve (Blocked)
1-2 shift valve
2-3 shift valve
3-4 shift valve
Throttle back-up valve (Blocked)
Low reducing valve
Pressure regulator valve
Manual valve
L S D NRP
3-2 timing valve
3-2 capacity valve
Oil pump


Apply side
Release side
2-4 brake band
Throttle valve
Forward clutch pressure
Reverse clutch pressure
Coasting clutch pressure
Low and reverse brake pressure
3-4 clutch pressure
To oil cooler
1-2 accumulator
N-R accumulator
N-D accumulator
2-3 accumulator
Lock-up control valve
2-3 timing valve
Bypass valve
Coasting bypass valve
Servo control valve (Blocked)
Throttle modulator valve
Pressure modifier valve (Blocked)
1-2 shift valve
2-3 shift valve
3-4 shift valve
Throttle back-up valve (Blocked)
Low reducing valve
Pressure regulator valve
Manual valve
L S D NRP
3-2 timing valve
3-2 capacity valve
Oil pump
Throttle pressure
Throttle modulate pressure
Line pressure
Operating line pressure
Low reducing pressure
Operating low reducibg pressure
Torque converter pressure

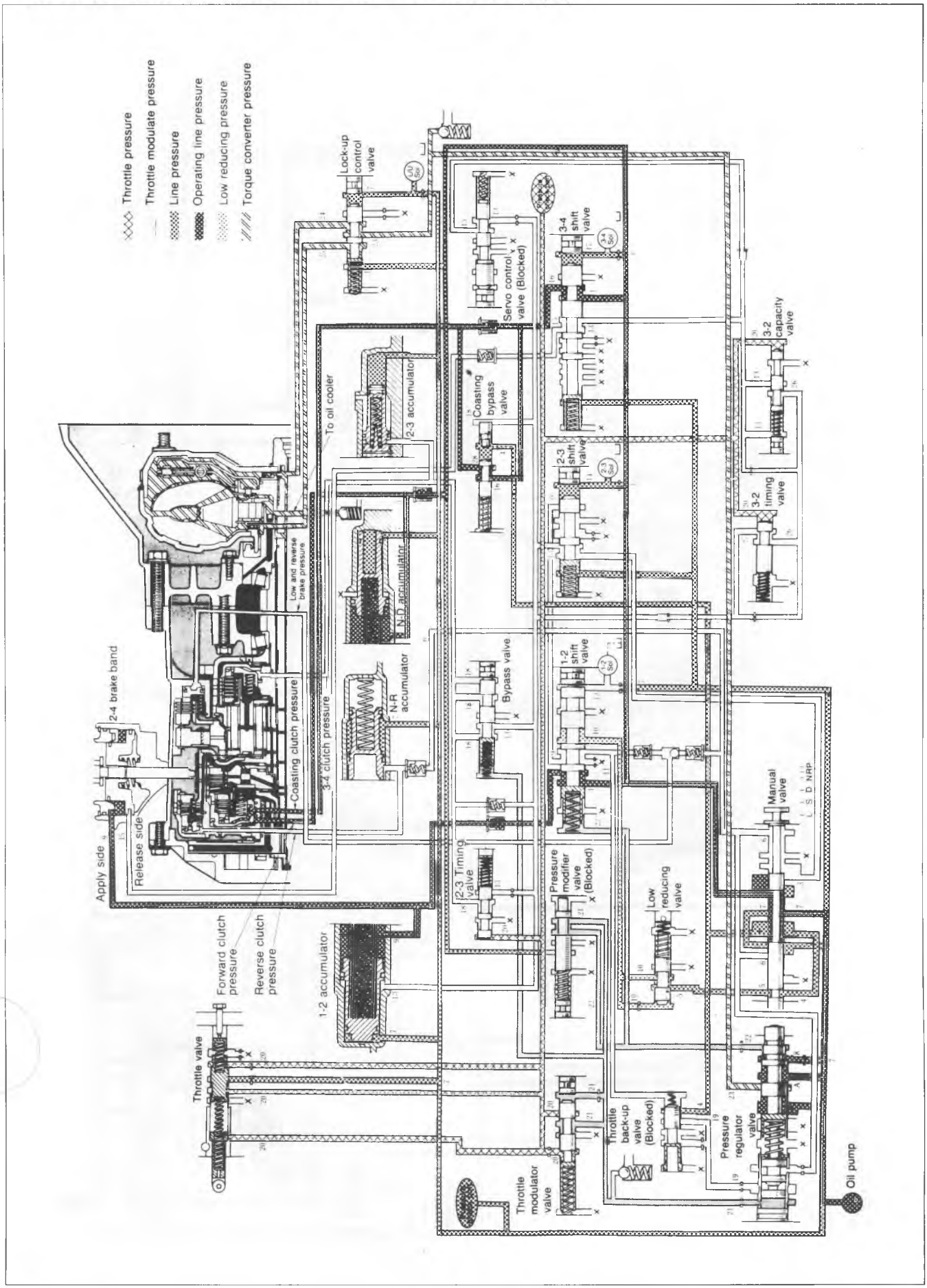
03U0K2-339

L RANGE; 2ND GEAR BELOW APPROX. 110 km/h (68 mph)



HYDRAULIC CIRCUIT

L RANGE; 2ND GEAR ABOVE APPROX. 110 km/h (68 mph)

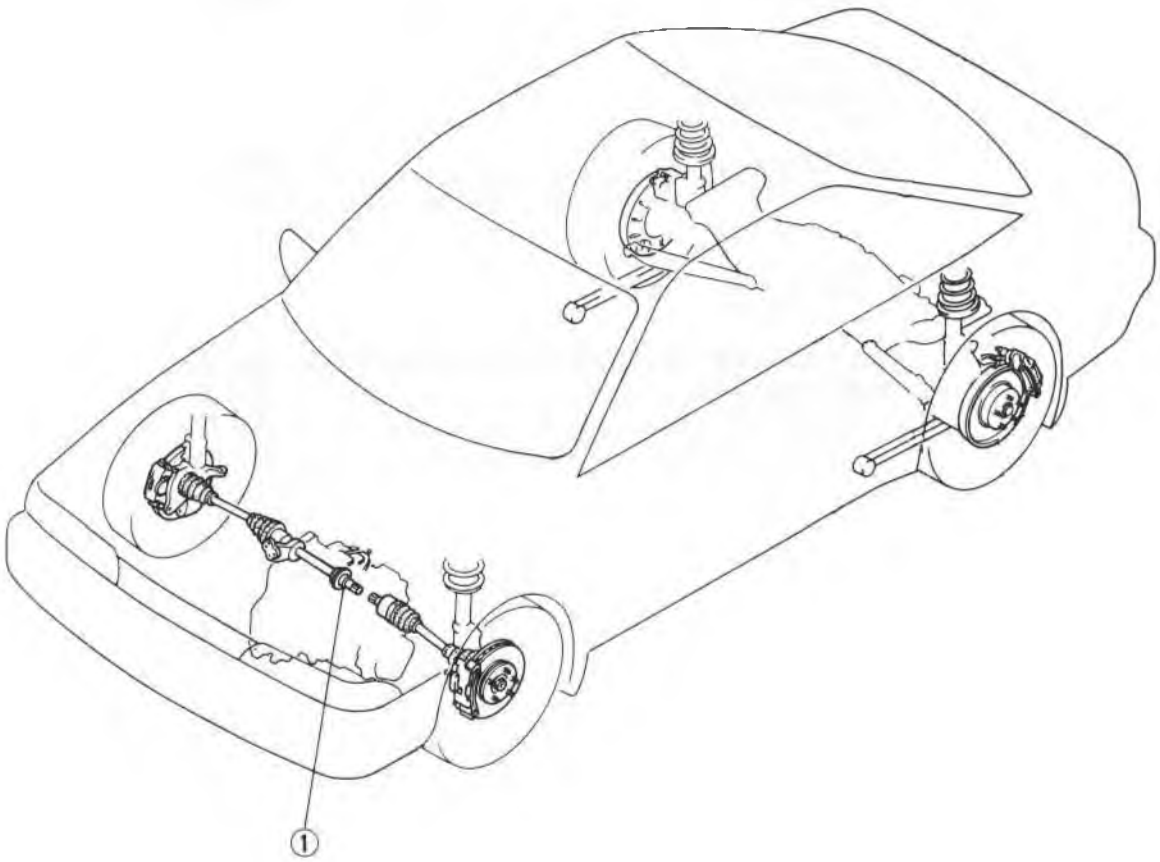


03U0K2-341

FRONT AND REAR AXLES

96G0MX-501

INDEX



96G0MX-502

OUTLINE

OUTLINE OF CONSTRUCTION

- The construction of front and rear axle is the same as the previous model.
- The construction of driveshaft is the same as the previous model.
- Dust seal for joint shaft is redesigned to improve reliability.

96G0MX-503

SUPPLEMENTAL SERVICE INFORMATION

The following point in this section is changed in comparison with Workshop Manuals (1163-10-87G), (1179-10-87K), (1175-10-87F) and (1182-10-88B).

Joint shaft

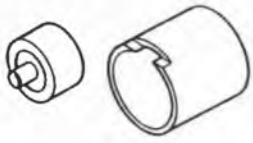
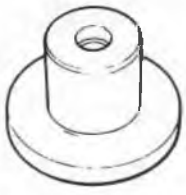
- Overhaul procedure

96G0MX-504

DRIVESHAFT

PREPARATION

SST

49 H034 2A0 Lower arm bushing puller & installer 	For support of bracket	49 H034 201 Support block (Part of 49 H034 2A0) 	For support of bracket
49 F026 102 Installer, bearing 	For removal of bearing and rear oil seal	49 G030 795 Installer, oil seal 	For installation of front oil seal and bearing
49 M005 795 Installer set, oil seal 	For installation of rear oil seal		

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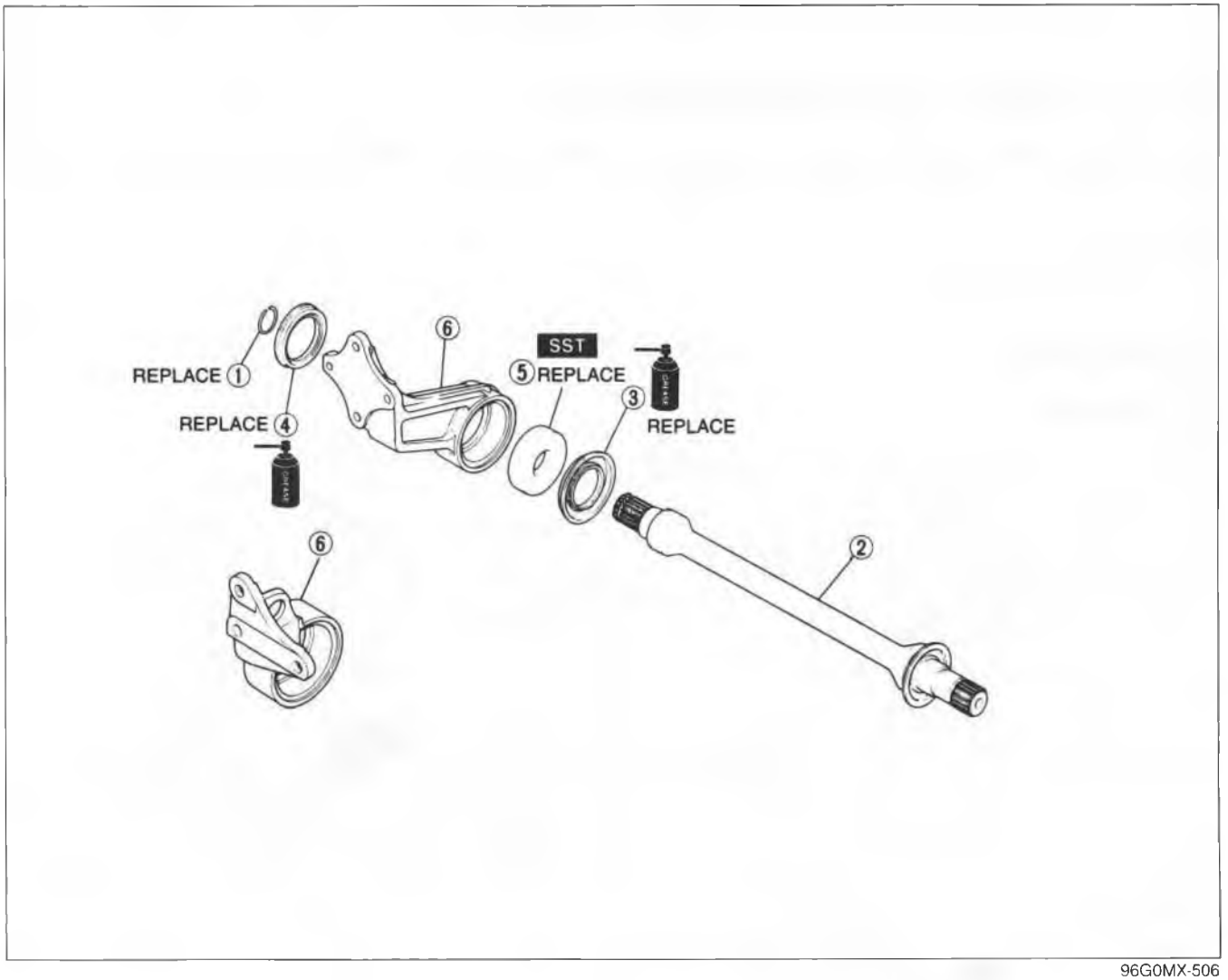
JOINT SHAFT

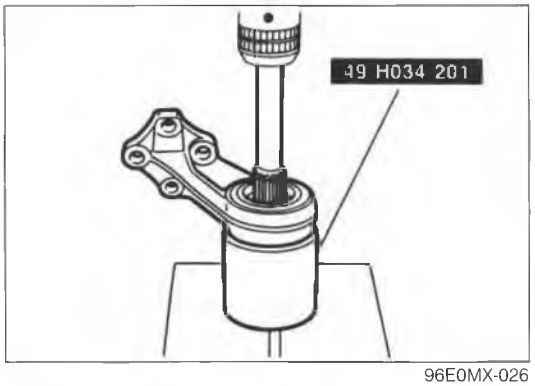
Overhaul

1. Disassemble in the order shown in the figure, referring to **Disassembly Note**.
2. Inspect all parts, and repair or replace as necessary.
3. Assemble in the reverse order of disassembly, referring to **Assembly Note**.



96G0MX-506

1. Clip
2. Joint shaft
   - Disassembly note ..... page M–4
   - Assembly note ..... page M–5
   - Inspect splines for damage and wear
3. Dust seal (Differential-side)
   - Assembly note ..... page M–5
4. Dust seal (Wheel-side)
   - Assembly note ..... page M–5
5. Ball bearing
   - Disassembly note ..... page M–5
   - Assembly note ..... page M–5
   - Inspect for damage, wear and rough rotation
6. Joint shaft mounting bracket

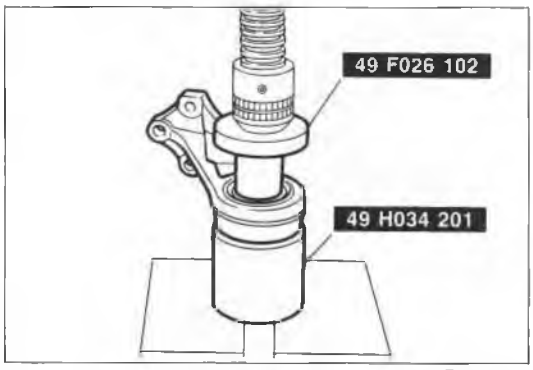


96E0MX-026

Disassembly Note

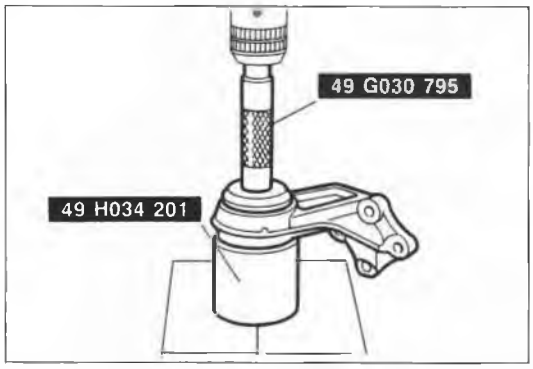
Joint shaft

1. Support the joint shaft bracket with the **SST**.
2. Remove the joint shaft with a press and a suitable pipe.



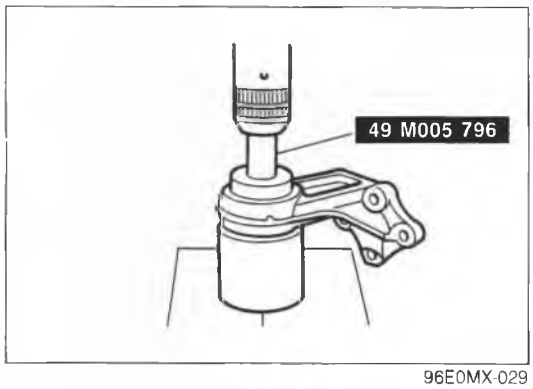
96E0MX-027

Ball bearing
1. Remove the ball bearing from joint shaft bracket with the **SST**.



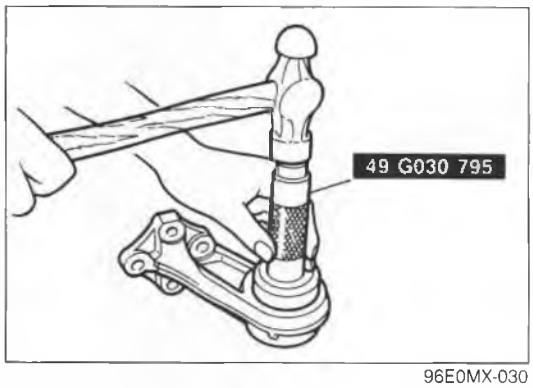
96E0MX-028

Assembly Note
Ball bearing
1. Install the ball bearing with the **SST**.



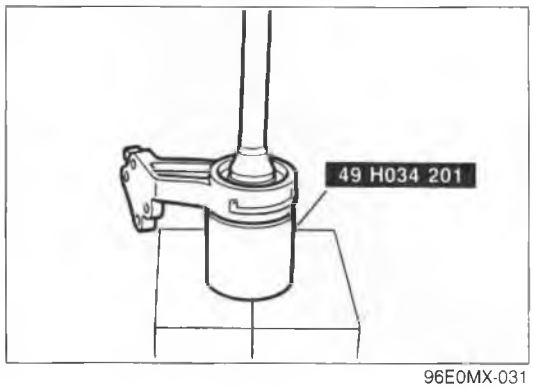
96E0MX-029

Dust seal (Differential-side)
1. Install the new dust seal with the **SST**.



96E0MX-030

Dust seal (Wheel-side)
1. Install the new dust seal with the **SST**.



96E0MX-031

Joint shaft
1. Support the joint shaft bracket with the **SST**.
2. Install the joint shaft with a press.

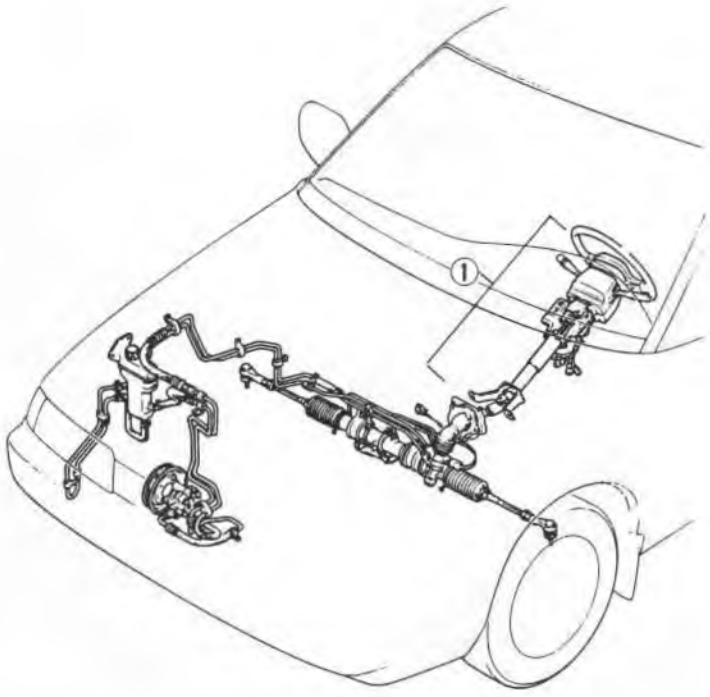
STEERING SYSTEM

96G0NX-501

INDEX

MANUAL STEERING

ENGINE SPEED SENSING POWER STEERING (ESPS)



96G0NX-502

OUTLINE

1. Manual steering and engine speed sensing power steering (ESPS) are available.
2. The construction of the steering system is the same as the previous model.

96G0NX-503

SUPPLEMENTAL SERVICE INFORMATION

The following point in this section is changed in comparison with Workshop Manuals (1163-10-87G), (1175-10-87F), (1179-10-87K) and (1182-10-88B).

Steering wheel and column

- Removal / Inspection / Installation procedure (Automatic transaxle only)

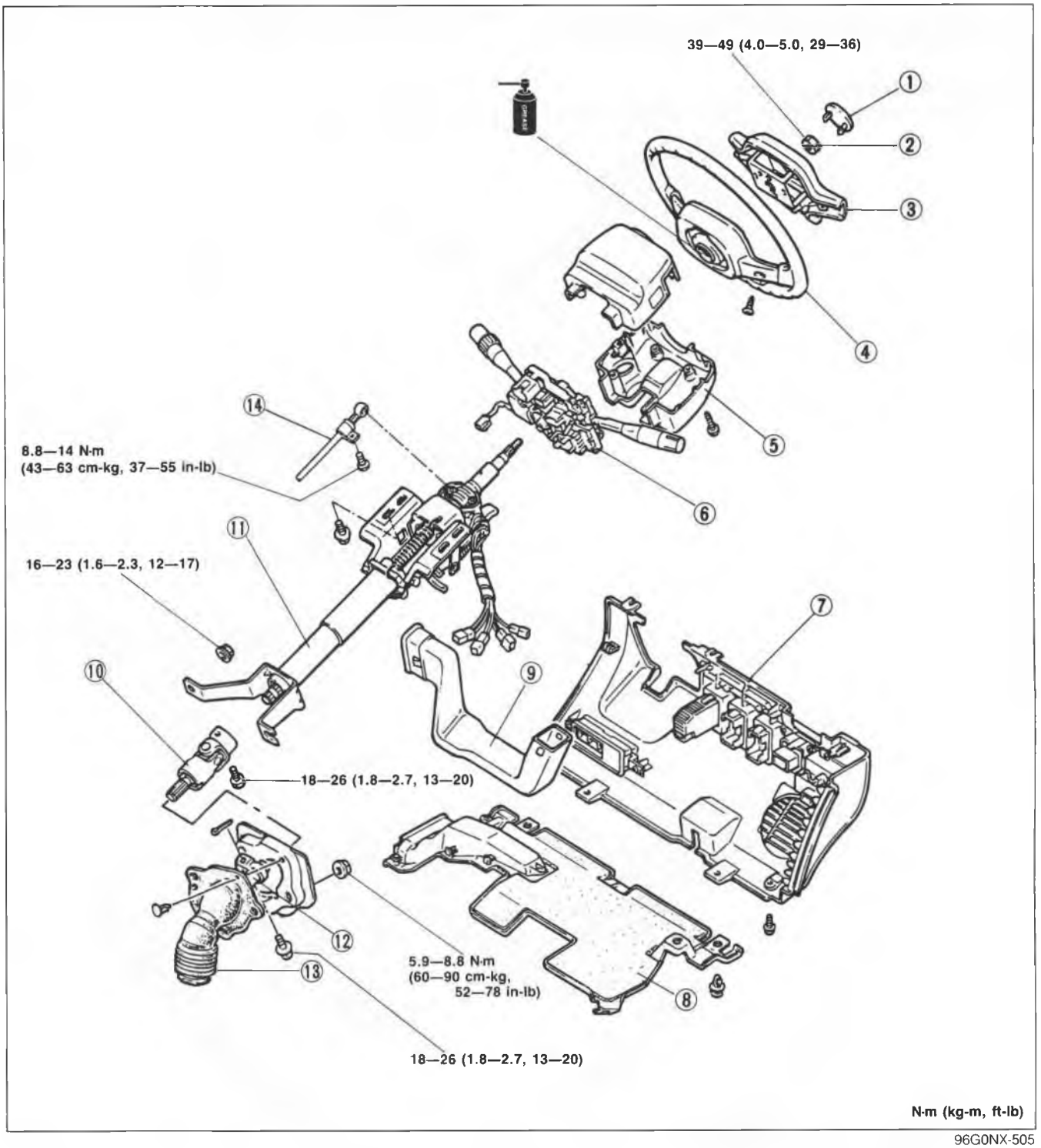
96G0NX-504

MANUAL STEERING

STEERING WHEEL AND COLUMN

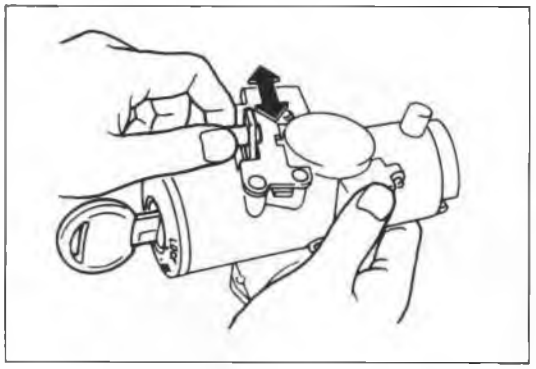
Removal / Inspection / Installation

1. Remove in the order shown in the figure.
2. Install in the reverse order of removal.
3. Inspect all parts and repair or replace as necessary.



96G0NX-505

1. Ornament
2. Locknut
3. Horn cap
4. Steering wheel
5. Column cover
6. Combination switch
7. Switch panel
8. Lower panel
9. Duct
10. Universal joint
11. Steering shaft assembly
    Inspection ..... page N–5
12. Intermediate shaft
13. Dust boot
14. Key interlock cable (ATX)



96E0NX-009

Inspection

Steering shaft (ATX only)

Verify that the cable connector does not move when the key is in the LOCK position and that it moves freely with the key in other positions.

WHEELS AND TIRES

96G0QX-501

OUTLINE

- The front tire pressure is increased from 196 kPa (2.0 kg/cm^2, 28 psi) to 216 kPa (2.2 kg/cm^2, 32 psi) on European models.

96G0QX-502

SPECIFICATIONS

Item			Standard tire and wheel			Temporary spare tire and wheel (If equipped)
			Europe, UK, Switz	Australia	New Zealand LHD and RHD General	
Wheels	Size		14x5 1/2-JJ, 15 x 6-JJ	14 x 5 1/2-JJ		4T x 15
	Offset mm (in)		42 (1.65)			53 (2.09)
	Diameter of pitch circle mm (in)		114.3 (4.5)			
	Material		Steel or aluminum alloy			Steel
Tires	Size		185/70HR14 185/70R14 87H 185/70R14 88H 195/70R15 86H	185/70HR14 185/70R14 87H		T125/70D15
	Air pressure kPa (kg/cm^2, psi)	Front	216 (2.2, 32)...up to 5 passengers 216 (2.2, 32)...full load	196 (2.0, 28)...up to 5 passengers 206 (2.1, 30)...full load		412 (4.2, 60)
		Rear	196 (2.0, 28)...up to 5 passengers 235 (2.4, 35)...full load	196 (2.0, 28)...up to 5 passengers 240 (2.4, 34)...full load		412 (4.2, 60)

96G0QX-503

SUSPENSION

96G0RX-501

OUTLINE

OUTLINE OF CONSTRUCTION

The suspension system is the same as the previous models, however, coil spring specifications are different.

96G0RX-502

SPECIFICATIONS

Front Suspension

Item			Specifications				
Suspension type			Strut				
Front wheel alignment (Unladed*1)	Toe-in (Total toe-in)	mm (in)	0 ± 3 (0 ± 0.12)				
		degree	0° ± 18'				
	Camber angle		0°17' ± 45'				
	Caster angle		1°13' ± 45'				
	King pin angle		12°47'				
Maximum front steering angle	Inner		36°00' ± 2°				
	Outer		31°00' ± 2°				
Stabilizer	Type		Torsion bar				
	Diameter	mm (in)	Australia: 20.0 (0.79) Except Australia: 24.2 (0.95)				
Shock absorbers	Type		Oil type				
Coil springs*2	Identification mark color		Blue	Gray	Pink	Light Green	Green
	Wire diameter	mm (in)	13.7 (0.54)	13.6 (0.54)	13.4 (0.53)	13.2 (0.52)	13.1 (0.52)
	Coil inner diameter	mm (in)	147.5 (5.81)				
	Free length	mm (in)	358.0 (14.09)	350.5 (13.80)	347.5 (13.68)	340.0 (13.39)	331.5 (13.05)
	Coil number		3.68	3.57	3.44	3.23	3.13

96G0RX-503

Rear Suspension

Item			Specifications		
Suspension type			Strut		
Rear wheel alignment (Unladed*1)	Toe-in (Total toe-in)	mm (in)	0 ± 3 (0 ± 0.12)		
		degree	0° ± 18'		
	Camber angle		−0°30' ± 45'		
Stabilizer	Type		Torsion bar		
	Diameter	mm (in)	16 (0.63)		
Shock absorbers	Type		Oil type		
Coil springs*2	Identification mark color		Orange	Pink	Yellow
	Wire diameter	mm (in)	13.9 (0.55)		
	Coil inner diameter	mm (in)	115.4 (4.54)—159.4 (6.28)		
	Free length	mm (in)	339.5 (13.37)	356.0 (14.00)	372.0 (14.65)
	Coil number		6.69	6.74	6.77

96G0RX-504

*1 Fuel tank full; radiator coolant and engine oil at specified levels; and spare tire, jack, and tools in designated position.
*2 Refer to pages R–3, 4 for coil spring applications

Front Coil Springs

Market	Engine	Transaxle	Sun roof	Identification mark color				
				Blue	Gray	Pink	Light Green	Green
Europe	FE DOHC	M5	○			○		
			—			○		
	FE (12-valve)	M5	○				○	
			—				○	
		4AT	○			○		
			—			○		
	RF	M5	—			○		
Switzerland	FE DOHC	M5	○	○				
			—				○	
	F2 EGI	M5	○				○	
			—				○	
	FE EGI	M5	○				○	
			—				○	
Left Hand General	FE (8-valve)	M5	—				○	
		4AT	—			○		
UK	FE DOHC	M5	○			○		
			—			○		
	FE (12-valve)	M5	○				○	
			—				○	
		4AT	○			○		
			—			○		
	F8 (8-valve)	M5	—					○
	RF	M5	—			○		
Australia	F2 EGI	M5	—		○			
		EC-AT	—	○				
New Zealand	FE (12-valve)	M5	—				○	
Right Hand General	FE (12-valve)	M5	—					○
	RF	M5	—			○		

○ ..... Applicable
— ..... Not applicable

M5..... Manual Transaxle (5-speed)
4AT ..... Automatic Transaxle (4-spped)
EC-AT..... Electronically Controlled Automatic Trasaxle

96G0RX-505

Rear Coil Springs

Market	Engine	Transaxle	Sun roof	Identification mark color		
				Orange	Pink	Yellow
Europe	FE DOHC	M5	○		R	L
			—		R	L
	FE (12-valve)	M5	○		R	L
			—	R	L	
		4AT	○		R	L
			—	R	L	
	RF	M5	—	R	L	
Switzerland	FE DOHC	M5	○		R	L
			—		R	L
	F2 EGI	M5	○	R	L	
			—	R	L	
	FE EGI	M5	○	R	L	
			—	R	L	
Left Hand General	FE (8-valve)	M5	—		R	L
		4AT	—		R	L
UK	FE DOHC	M5	○		L	R
			—		L	R
	FE (12-valve)	M5	○		L	R
			—	L	R	
		4AT	○		L	R
			—	L	R	
	F8	M5	—	L	R	
	RF	M5	—	L	R	
Australia	F2 EGI	M5	—		L	R
		EC-AT	—		L	R
New Zealand	FE (12-valve)	M5	—	L	R	
Right Hand General	FE (12-valve)	M5	—	L	R	
	RF	M5	—		L	R

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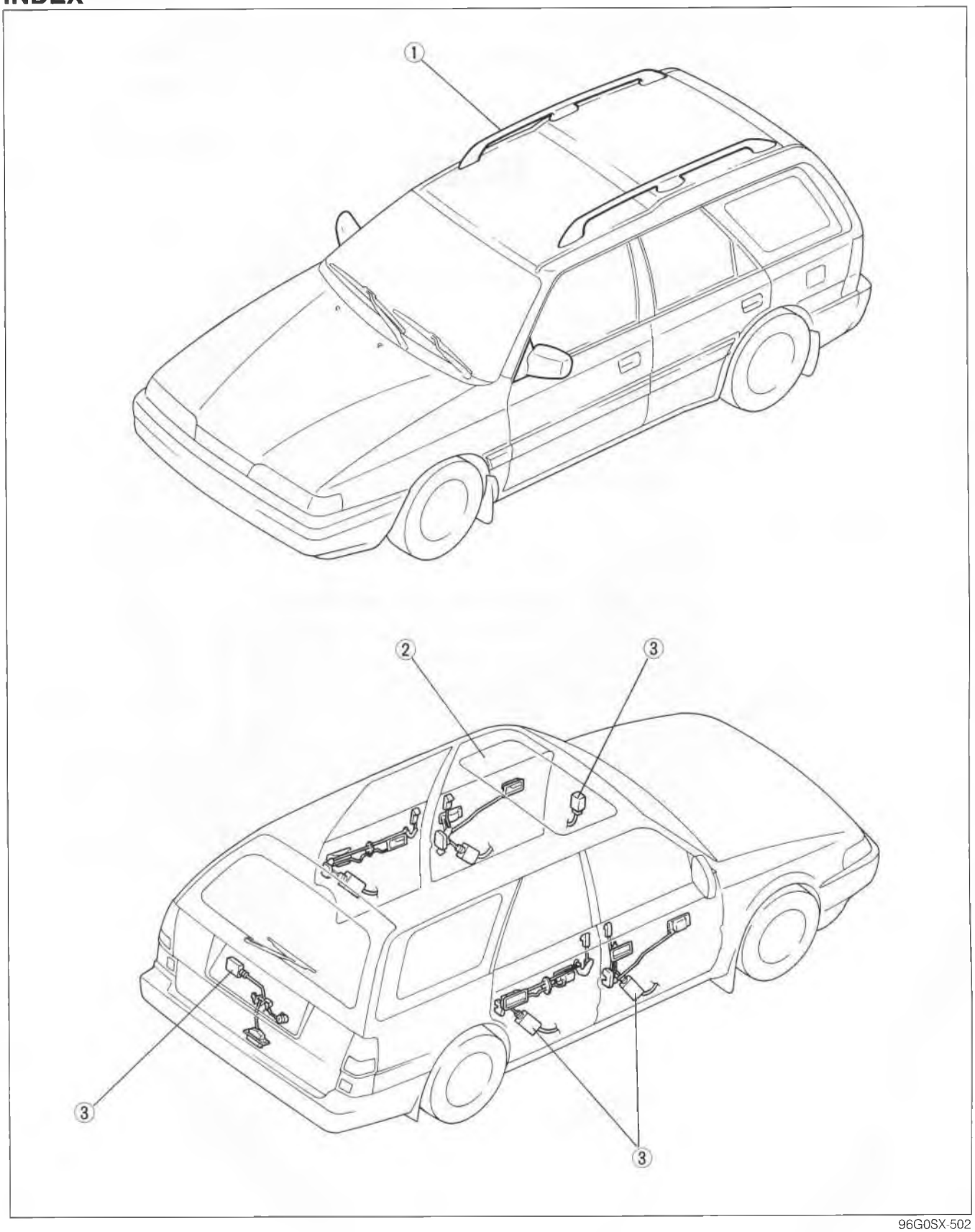
○ ..... Applicable
— ..... Not applicabe
R..... Right side
L..... Left side
M5..... Manual Transaxle (5-speed)
4AT ..... Automatic Transaxle (4-speed)
EC-AT..... Electronically Controlled Automatic Transaxle

BODY

96G0SX-501

INDEX



96G0SX-502

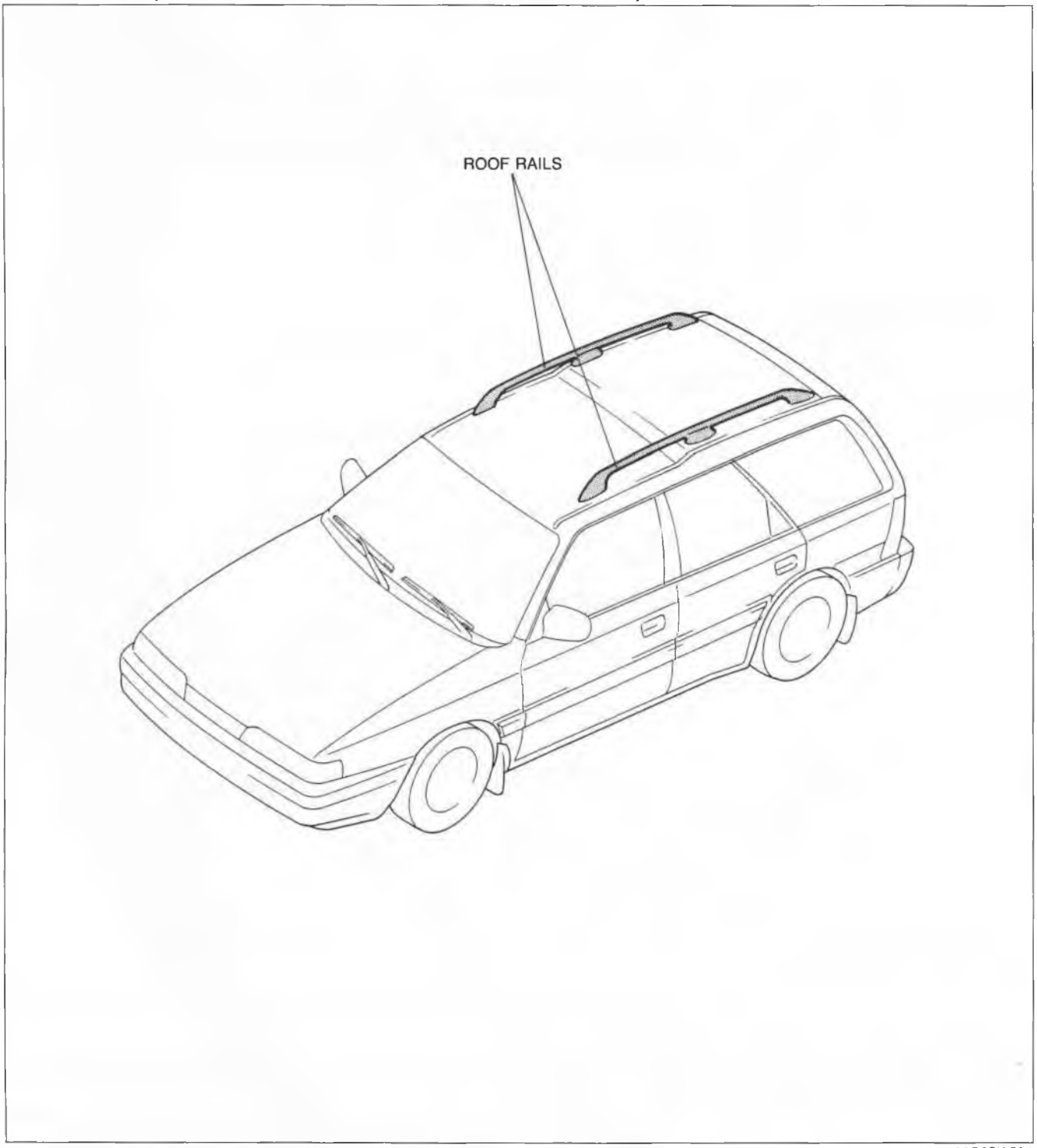
OUTLINE

OUTLINE OF CONSTRUCTION

1. The radiator grille is redesigned.
2. The hood molding is deleted. (Europe, Swiss, Sweden)
3. The power door lock system is modified. (Europe, Swiss, Sweden)
4. Roof rails are added. (Europe, Swiss, Sweden; without sunroof)
5. The capacity of the seat cushion and seat back warmers is increased from 35W to 60W. (ECE, Swiss, Sweden)

96G0SX-503

ROOF RAILS (EUROPE, SWISS, SWEDEN; without sunroof)

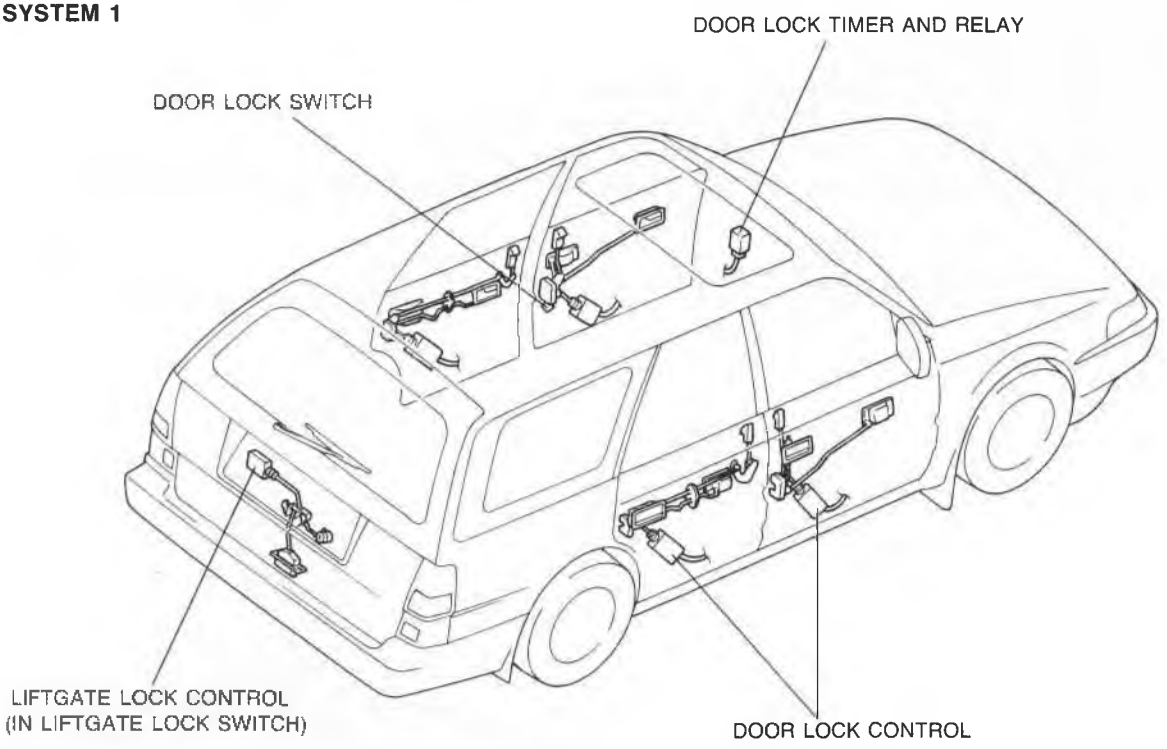


96G0SX-504

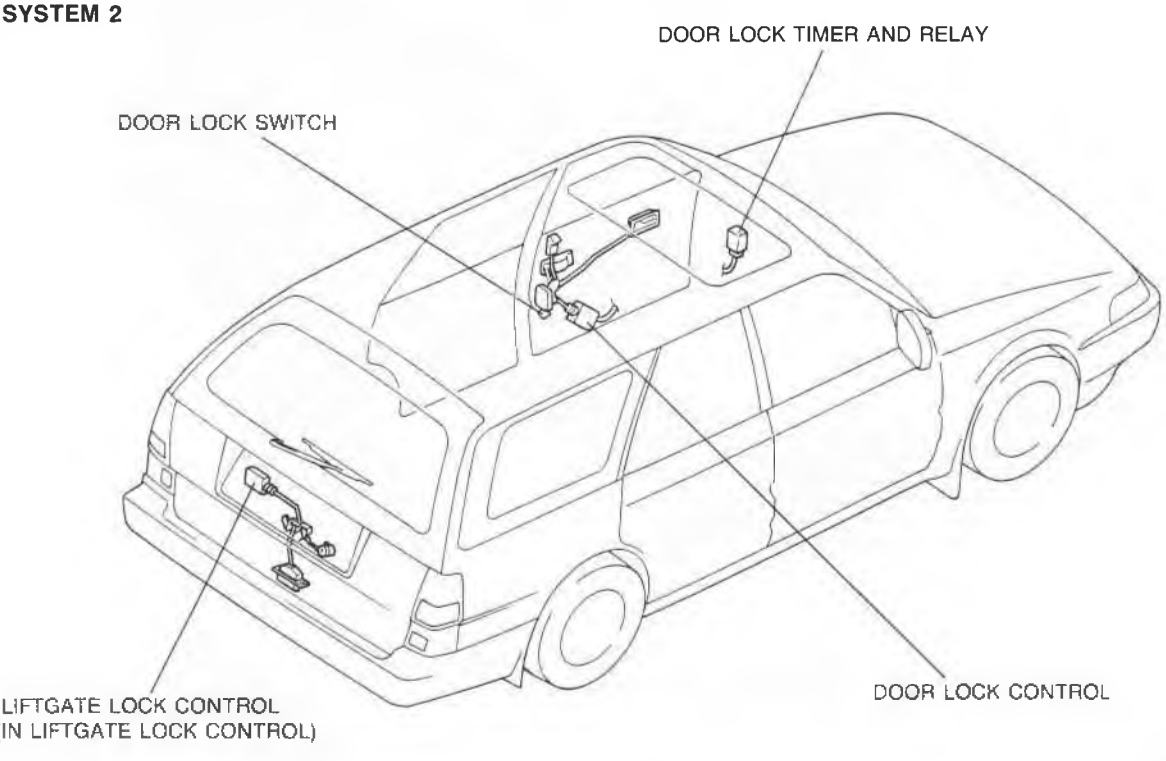
Roof rails are added for increased utility and improved appearance.

POWER DOOR LOCK SYSTEM (EUROPE, SWISS, SWEDEN)

SYSTEM 1



SYSTEM 2



96G0SX-505

Two power door lock systems are available.
System 1 locks all doors and the liftgate when either the driver door lock or the liftgate lock is locked. The previous lock/unlock switch is deleted.
With system 2 the driver door lock and the liftgate lock are interconnected. When one is locked, the other also locks.
The previous self-locking mechanism is deleted.

SUPPLEMENTAL SERVICE INFORMATION

The following points in this section are changed in comparison to Mazda 626 Station Wagon Workshop Manual Supplement (1182-10-88B).

Roof rails (Europe, Swiss, Sweden)
- Removal / Installation

Sliding sunroof
- Adjustment

Power door lock system (Europe, Swiss, Sweden)
- Troubleshooting guide
- Inspection

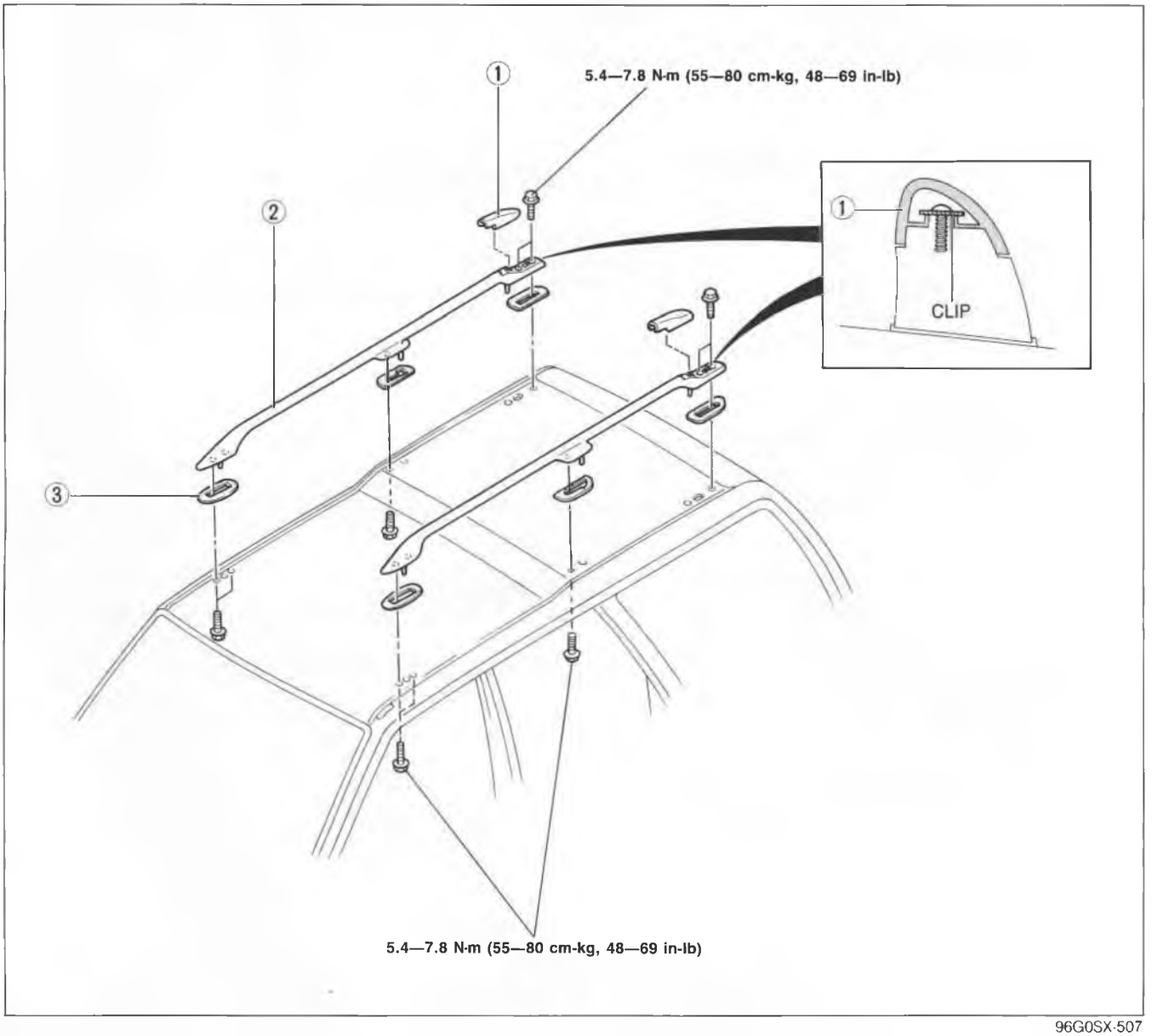
96G0SX-506

ROOF RAILS

COMPONENTS

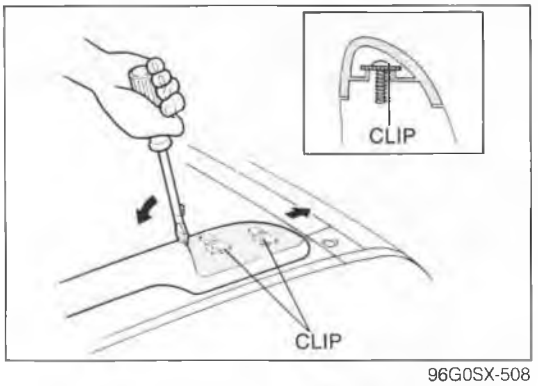
Removal / Installation

1. Remove the front and rear headliner. (Refer to Mazda 626 Station Wagon Workshop Manual Supplement 1182-10-88B, page 14–17.)
2. Removal in the order shown in the figure, referring to **Removal Note**.
3. Install in the reverse order of removal, referring to **Installation Note**.

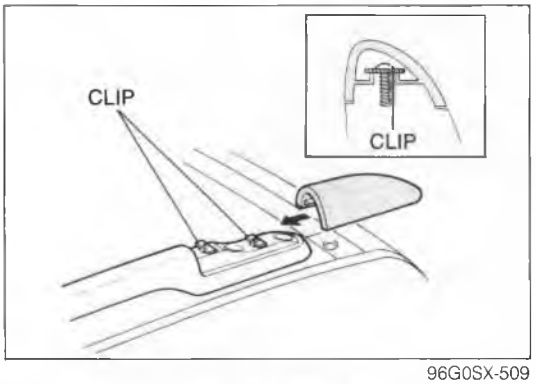


96G0SX-507

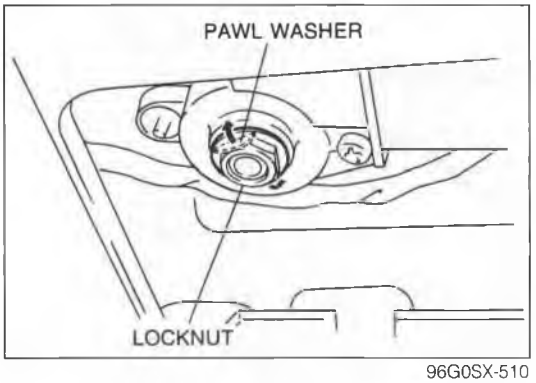
1. End cap
   Removal Note ..... page S–6
   Installation Note ..... page S–6
2. Roof rail
3. Protector



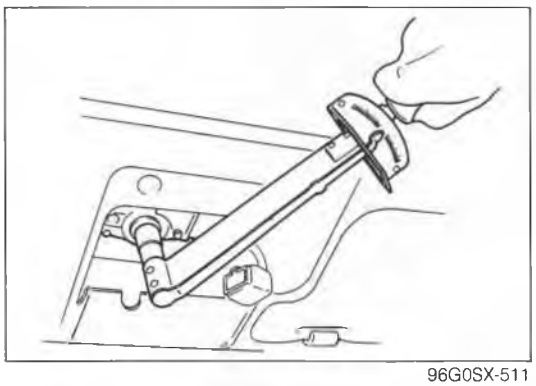
96G0SX-508



96G0SX-509



96G0SX-510


96G0SX-511

Removal Note
End cap
1. Insert a screwdriver protected with tape between the end cap and the roof rail.
2. Slide the end cap backward, and remove it from the roof rail.

Installation Note
End cap
1. Slide the end cap forward to hook it onto the roof rail.

Caution
- **Verify that the end cap is secure.**

SLIDING SUNROOF

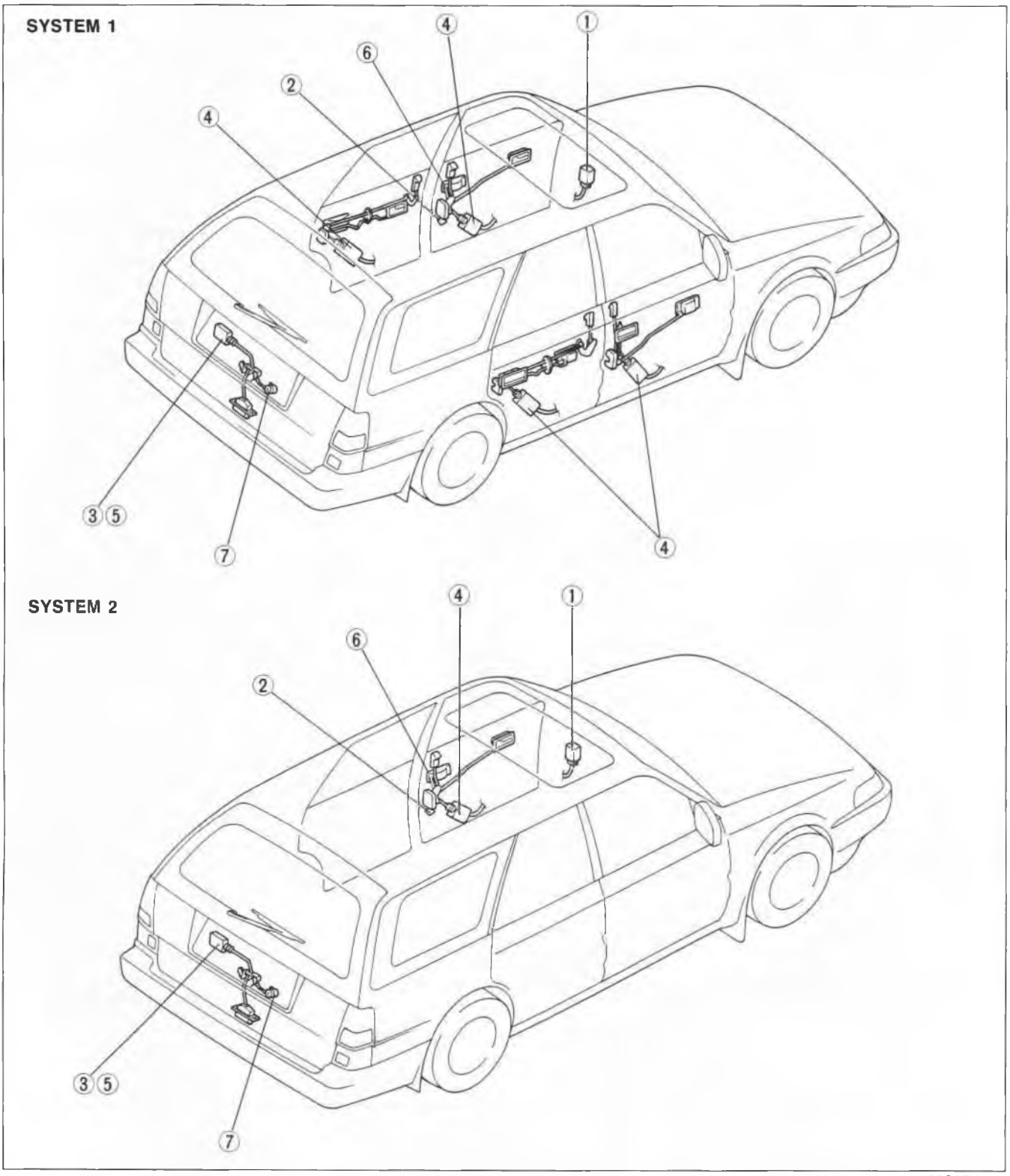
Adjustment
Motor assembly
1. Uncrimp the pawl washer and loosen the locknut.
2. Use a torque wrench to tighten the locknut (set motor torque).

Tightening torque:
2.9—3.9 N·m (30—40 cm-kg, 26—35 in-lb)

3. Lock the locknut with the pawl washer.

POWER DOOR LOCK SYSTEM

STRUCTURAL VIEW

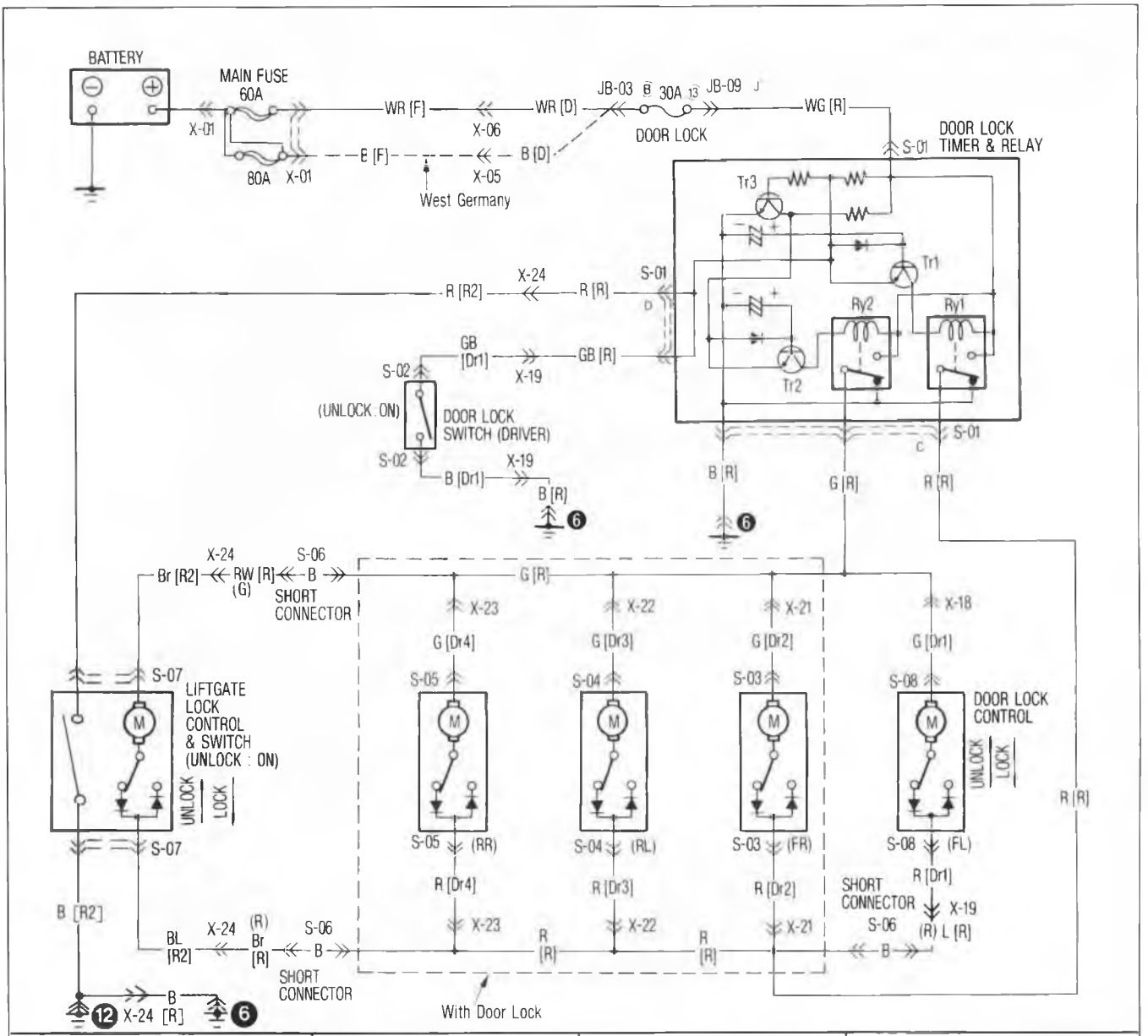


96G0SX-512

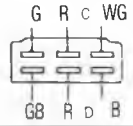
1. Door lock timer and relay
   Inspection ..... page S–11
2. Door lock switch
   Inspection ..... page S–12
3. Liftgate lock switch (in liftgate lock control)
   Inspection ..... page S–12
4. Door lock control
   Inspection ..... page S–12
5. Liftgate lock control
   Inspection ..... page S–12
6. Door key cylinder
7. Liftgate key cylinder

POWER DOOR LOCK SYSTEM

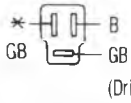
TROUBLESHOOTING GUIDE



S-01 Door Lock Timer & Relay [R]



S-02 Door Lock Switch [Dr1]

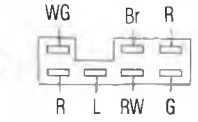


S-03 Door Lock Control (FR) [Dr2]

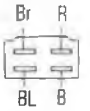
S-04 Door Lock Control (RL) [Dr3]

S-05 Door Lock Control (RR) [Dr4]

S-06 Short Connector [R]



S-07 Liftgate Lock Control & Switch [R2]



S-08 Door Lock Control (FL) [Dr1]

96G0SX-513

Symptom: Power door lock system does not operate.

Normal operation of power door lock system

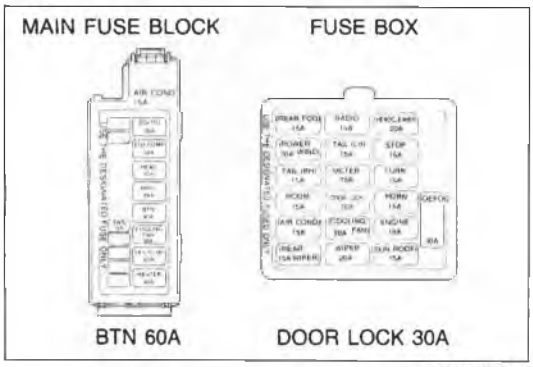
System 1

All doors and liftgate lock/unlock with driver door lock or liftgate lock.

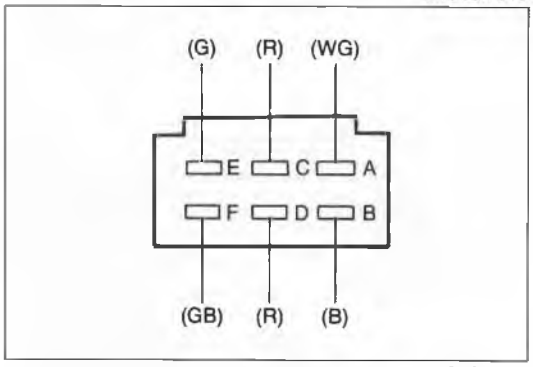
System 2

Driver door and liftgate lock/unlock with driver door lock or liftgate lock.

96G0SX-514



96G0SX-515



96G0SX-516

Step 1

1. Check the following fuses.

Fuse	Amperage	Location
BTN	60A	In main fuse block
DOOR LOCK	30A	In fuse box

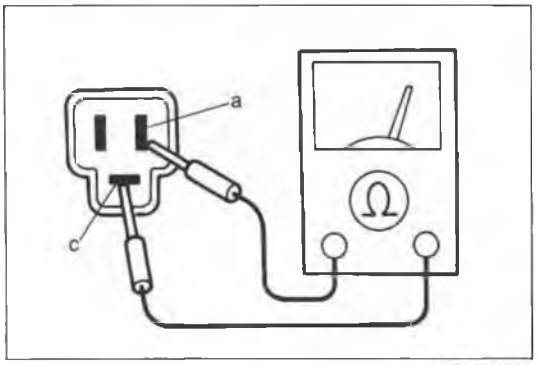
2. If the fuses are OK, go to Step 2.
3. If a fuse is burned, check for a short circuit in the wiring harness before replacing the fuse.

Step 2

1. Measure the voltage at the terminals of the door lock timer and relay connector.

Terminal	Wire color	Connected to	Test condition	Voltage	Action
A	(WG)	DOOR LOCK 30A fuse	Constant	12V	Next, check terminal B
				0V	Repair wiring harness (Fuse box-Door lock timer and relay)
B	(B)	Ground	Constant	0V	Next, check terminal F
				12V	Repair wiring harness (Door lock timer and relay-Ground)
F	(GB)	Door lock switch	Locked	12V	Check next condition
				0V	Replace door lock timer and relay
			Unlocked	0V	Next, check terminal D
				12V	Go to Step 3
D	(R)	Liftgate lock switch	Locked	12V	Check next condition
				0V	Replace door lock timer and relay
			Unlocked	0V	Next, check terminal C
				12V	Go to Step 4
C	(R)	Door lock controls and liftgate lock control	Locked	0V	Check next condition
				12V	Replace door lock timer and relay
			Unlocked	12V	Next, check terminal E
				0V	Replace door lock timer and relay
E	(G)		Locked	12V	Check next condition
				0V	Replace door lock timer and relay
			Unlocked	0V	Go to Step 5
				12V	Replace door lock timer and relay

96G0SX-517



96G0SX-518

Step 3

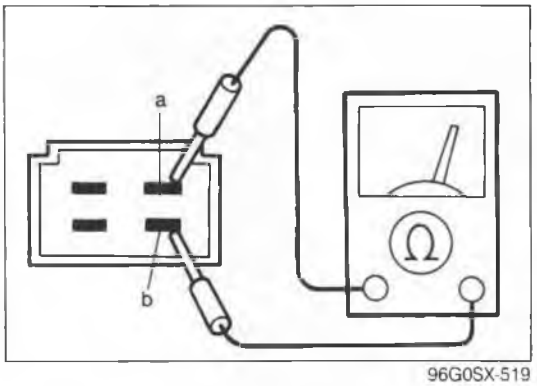
1. Check continuity of the door lock switch with an ohmmeter.

Note

- **Set the ohmmeter to x1,000 range.**

Terminal	Condition	Continuity
a—c	Locked	No
	Unlocked	Yes

2. If not as specified, replace the door lock switch.
3. If as specified, repair the wiring harness from the door lock switch to the door lock timer and relay or ground.



96G0SX-519

Step 4

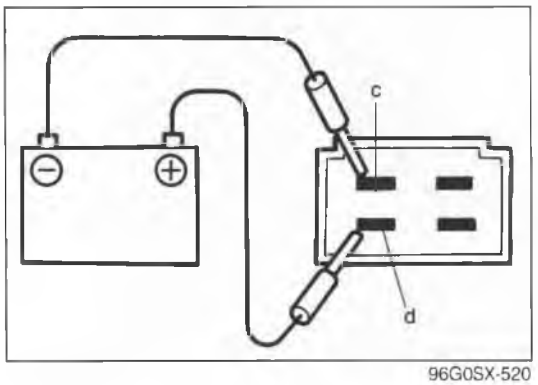
1. Check continuity of the liftgate lock switch with an ohmmeter.

Note

- **Set the ohmmeter to x1,000 range.**

Terminal	Condition	Continuity
a—b	Locked	No
	Unlocked	Yes

2. If not as specified, replace the liftgate lock switch.
3. If as specified, repair the wiring harness from the liftgate lock switch to the door lock timer and relay or ground.



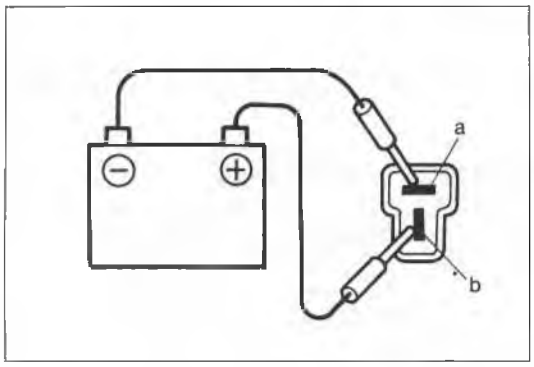
96G0SX-520

Step 5

1. Apply 12V to the following terminals, and verify operation of the liftgate lock control.

Order	Terminal condition		Operation of control
	c	d	
1	12V	Ground	Lock
2	Ground	12V	Unlock

2. If not as specified, replace the liftgate lock control.
3. If as specified, go to Step 6.



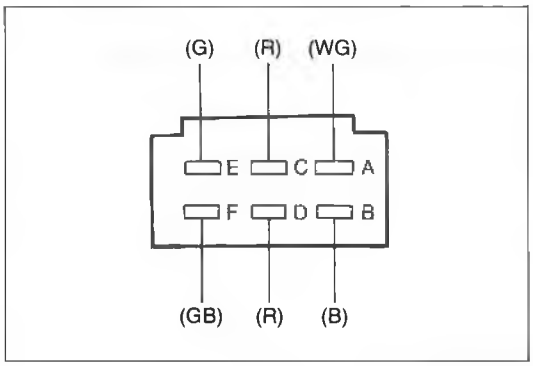
96G0SX-521

Step 6

1. Apply 12V to the follwing terminals, and verify operation of the door lock control.

Order	Terminal condition		Operation of control
	a	b	
1	Ground	12V	Lock
2	12V	Ground	Unlock

2. If not as specified, replace the door lock control.
3. If as specified, repair the wiring harness from the door lock timer and relay to the door lock control.



96G0SX-522

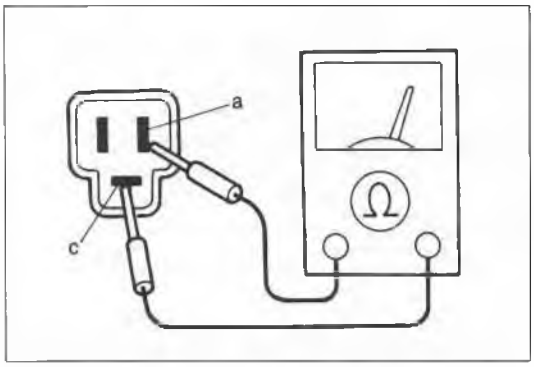
DOOR LOCK TIMER AND RELAY

Inspection

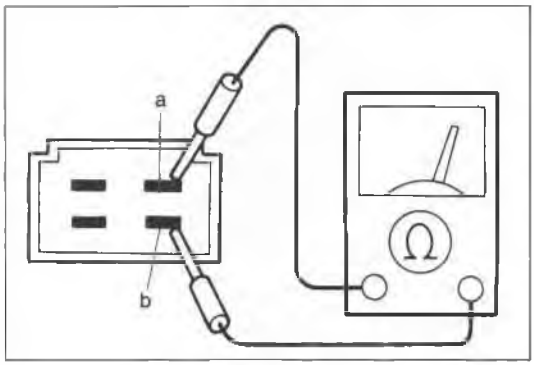
1. Measure the voltage at the terminals of the door lock timer and relay.
2. If not as specified, replace the door lock timer and relay.
3. If the terminal voltages are as specified, check the door lock control and the liftgate lock control.
   (Refer to page S–12.)

Terminal	Wire color	Connected to	Test condition	Voltage	Action
A	(WG)	DOOR LOCK 30A fuse	Constant	12V	Repair wire (WG)
B	(B)	Ground	Constant	0V	Repair wire (B)
C	(R)	Door lock controls and liftgate lock control	Locked	0V	Replace door lock timer and relay
			Unlocked	12V	
D	(R)	Liftgate lock switch	Locked	12V	Replace door lock timer and relay
			Unlocked	0V	Check liftgate lock switch (Refer to page S–12)
E	(G)	Door lock controls and liftgate lock control	Locked	12V	Replace door lock timer and relay
			Unlocked	0V	
F	(GB)	Door lock switch	Locked	12V	Replace door lock timer and relay
			Unlocked	0V	Check door lock switch (Refer to page S–12)

96G0SX-523



96G0SX-524



96G0SX-525

DOOR LOCK SWITCH

Inspection

1. Check continuity of the door lock switch with an ohmmeter.

Note

- **Set the ohmmeter to x1,000 range.**

Terminal	Condition	Continuity
a—c	Locked	No
	Unlocked	Yes

2. If not as specified, replace the door lock switch.

LIFTGATE LOCK SWITCH (IN LIFTGTE LOCK CONTROL)

Inspection

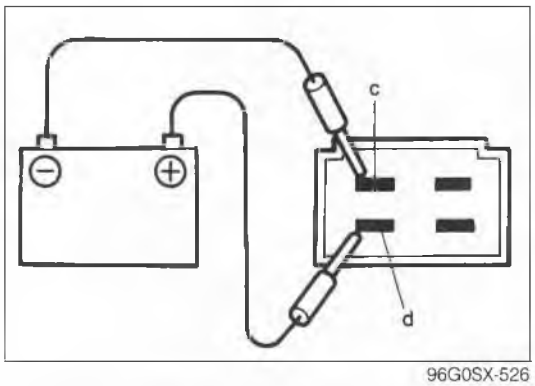
1. Check continuity of the liftgate lock switch with an ohmmeter.

Note

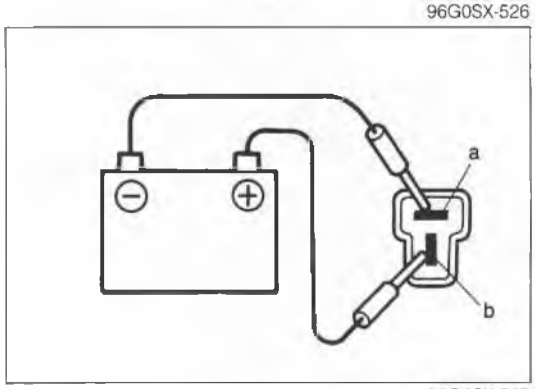
- **Set the ohmmeter to x1,000 range.**

Terminal	Condition	Continuity
a—b	Locked	No
	Unlocked	Yes

2. If not as specified, replace the liftgate lock switch.



96G0SX-526



96G0SX-527

LIFTGATE LOCK CONTROL

Inspection

1. Apply 12V to the following terminals, and verify operation of the liftgate lock control.

Order	Terminal condition		Operation of control
	c	d	
1	12V	Ground	Lock
2	Ground	12V	Unlock

2. If not as specified, replace the liftgate lock control.

DOOR LOCK CONTROL

Inspection

1. Apply 12V to the following terminals, and verify operation of the door lock control.

Order	Terminal condition		Operation of control
	a	b	
1	Ground	12V	Lock
2	12V	Ground	Unlock

2. If not as specified, replace the door lock control.

SPECIAL TOOLS

96GSTX-001

GENERAL INFORMATION

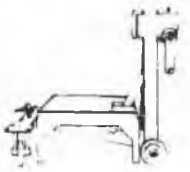
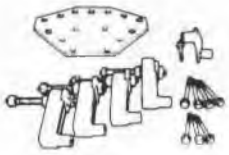
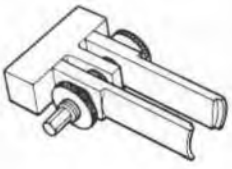
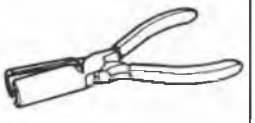
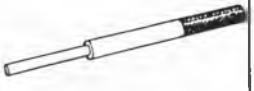
The letters A and B in the priority column indicate the degree of importance of each tool.
A.....Indispensable
The tools ranked A in this list are indispensable for performing operations satisfactorily, easily, safely, and efficiently. It is, therefore advisable that all service shops have these tools.
B.....Selective
The tools in this list are not as necessary as tools ranked A, but all service shops should have these tools to perform repairs more easily and more efficiently.

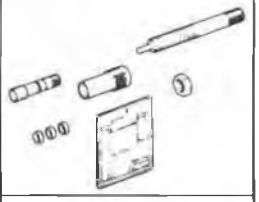
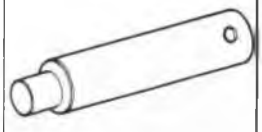
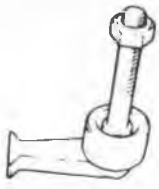
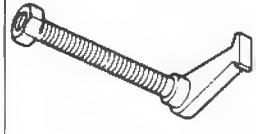
Note

- **When ordering tool sets that consist of several tools, check the List in the Parts Catalogue to make sure that some tools are not duplicated in other sets you may already have. If they are, instead of ordering the set, order only those new tools that are needed.**

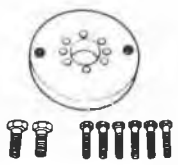
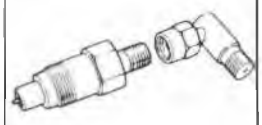
96GSTX-002

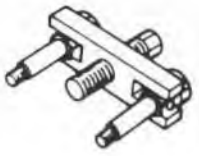
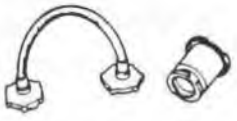
ENGINE

TOOL NUMBER & DESCRIPTION	PRIORITY	ILLUSTRATION
49 0107 680A Engine stand	A	
49 L010 1A0 Hanger set, engine stand	A	
49 0636 100A Lifter arm, valve spring	A	
49 B012 0A2 Pivot	A	
49 S120 170 Remover valve seal (RF, FE-DOHC)	A	
49 0249 010A Remover & installer, valve guide (F8, FE-3V, F2)	A	
49 0221 251A Remover & installer, valve guide (FE-2V)	A	
49 B012 005 Remover & installer, valve guide (FE-DOHC)	A	

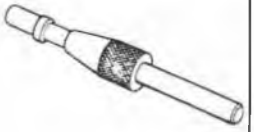
TOOL NUMBER & DESCRIPTION	PRIORITY	ILLUSTRATION
49 0636 165A Remover & installer, valve guide (RF)	A	
49 L012 0A0 Installer set, valve seal & valve guide	A	
49 G030 040 Setting tool set, piston pin (F8, FE-2V, FE-3V)	A	
49 0223 061 Remover & installer, piston pin (FE-DOHC)	B	
49 G011 001 Replacer, piston pin (RF)	B	
49 E301 060 Brake, ring gear (Except RF)	A	
49 V101 060A Brake, ring gear (RF)	A	
49 H011 101A Lock tool, crankshaft (Except RF)	A	

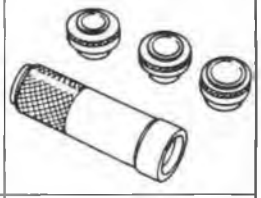
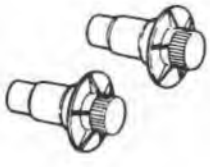
ENGINE (CONT'D)

TOOL NUMBER & DESCRIPTION	PRIORITY	ILLUSTRATION
49 G011 101 Lock tool, crankshaft (RF)	A	
49 S120 710 Holder, coupling flange	A	
49 S120 220 Holder, tappet (RF)	A	
49 1456 010 Adapter, compression gauge (RF)	A	

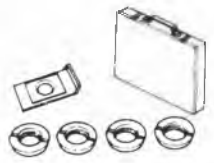
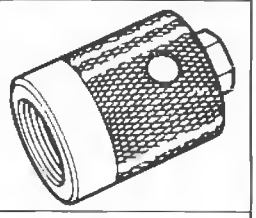
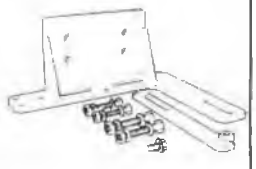
TOOL NUMBER & DESCRIPTION	PRIORITY	ILLUSTRATION
49 1285 071 Puller, bearing	A	
49 S120 215A Puller, pulley (RF)	A	
49 9200 145 Radiator cap tester adapter set	A	
49 G014 001 Wrench, oil filter (Except RF)	A	

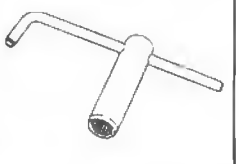
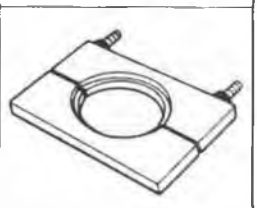
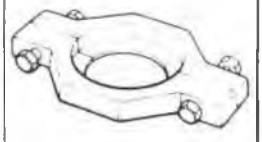
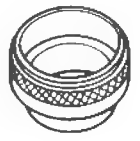
CLUTCH AND MANUAL TRANSAXLE

TOOL NUMBER & DESCRIPTION	PRIORITY	ILLUSTRATION
49 G017 5A0 Engine support	A	
49 G030 029 Chain	B	
49 SE01 310 Centering tool, clutch disc	A	

TOOL NUMBER & DESCRIPTION	PRIORITY	ILLUSTRATION
49 F401 330B Installer set, bearing	A	
49 G030 380C Shim selector set	A	
49 G030 455 Holder, diff. side gear	A	

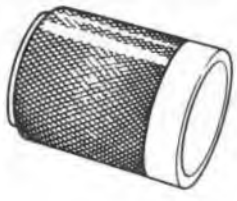
CLUTCH AND MANUAL TRANSAXLE (CONT'D)

TOOL NUMBER & DESCRIPTION	PRIORITY	ILLUSTRATION
49 G017 1A0 Remover set, bearing	A	
49 B017 102 Preload adapter	A	
49 FT01 361 Remover, bearing	A	
49 G019 0A0 Hanger, transaxle	A	
49 0839 425C Puller set, bearing	A	

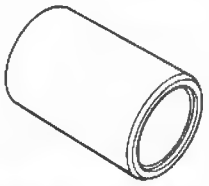
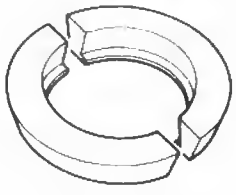
TOOL NUMBER & DESCRIPTION	PRIORITY	ILLUSTRATION
49 G030 440 Holder, primary shaft	A	
49 G030 795 Installer, oil seal	A	
49 G030 370 Removing plate	A	
49 0636 145 Puller, fan pulley boss	A	
49 G030 338 Attachment E	A	

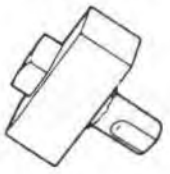
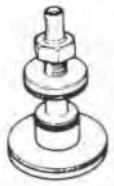
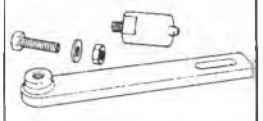
AUTOMATIC TRANSAXLE

TOOL NUMBER & DESCRIPTION	PRIORITY	ILLUSTRATION
49 G019 0A7A Compressor set, return spring	A	
49 G019 0A5A Shim selector set	A	

TOOL NUMBER & DESCRIPTION	PRIORITY	ILLUSTRATION
49 0378 400A Oil pressure gauge set	A	
49 G019 011 Installer, bearing	A	

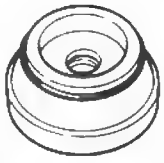
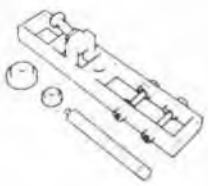
AUTOMATIC TRANSAXLE (CONT'D)

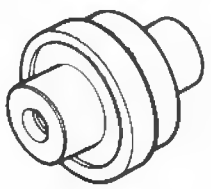
TOOL NUMBER & DESCRIPTION	PRIORITY	ILLUSTRATION
49 S120 785 Installer, dust boot	A	
49 B019 9A0 Oil pressure gauge set *1	A	
49 B019 901 Oil pressure gauge *2	A	
49 G019 013 Remover, bearing	A	
49 G019 022 Attachment K	A	

TOOL NUMBER & DESCRIPTION	PRIORITY	ILLUSTRATION
49 FT01 439 Holder, idle gear shaft	A	
49 G019 012 Leak checker	A	
49 G019 0A2 Holder, turbine shaft	A	
49 G019 017 Installer, oil seal	A	
—	—	—

*1 Only Europe
*2 Australia and General

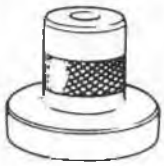
FRONT AND REAR AXLES

TOOL NUMBER & DESCRIPTION	PRIORITY	ILLUSTRATION
49 F027 007 Attachment ϕ72	A	
49 G033 1A1 Puller set, wheel hub	A	

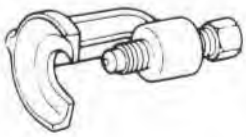
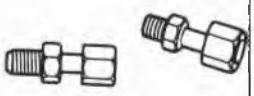
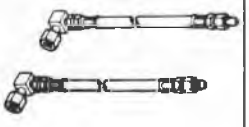
TOOL NUMBER & DESCRIPTION	PRIORITY	ILLUSTRATION
49 G026 101 Replacer, bearing	A	
49 G026 102 Replacer, bearing	A	

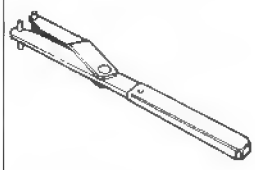
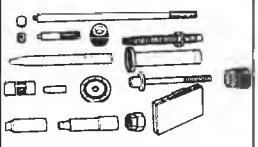
FRONT AND REAR AXLES (CONT'D)

TOOL NUMBER & DESCRIPTION	PRIORITY	ILLUSTRATION
49 H034 201 Support block	A	
49 F026 102 Puller & installer, bearing	A	
49 G033 107 Installer, dust cover	A	

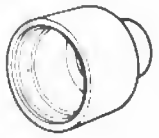
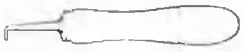
TOOL NUMBER & DESCRIPTION	PRIORITY	ILLUSTRATION
49 G026 103 Support block	A	
49 V001 795 Installer, oil seal	A	
49 F027 005 Attachment ϕ62	A	

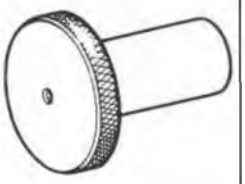
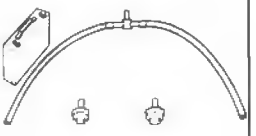
STEERING

TOOL NUMBER & DESCRIPTION	PRIORITY	ILLUSTRATION
49 0118 850C Puller, ball joint	B	
49 0180 510B Preload, attachment	B	
49 B032 302 Adapter	A	
49 H002 671 Adapter	A	

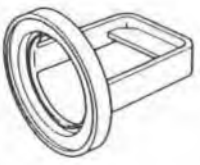
TOOL NUMBER & DESCRIPTION	PRIORITY	ILLUSTRATION
49 W023 585A Adjust wrench	A	
49 G032 3A0 Repair set, power steering	A	
49 G032 334 Installer, pinion seal	A	
49 G032 335 Guid	A	

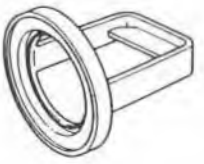
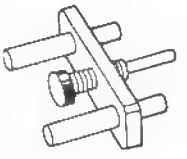
STEERING (CONT'D)

TOOL NUMBER & DESCRIPTION	PRIORITY	ILLUSTRATION
49 1243 785 Installer, dust boot	A	
49 0208 701A Air out tool, boot	B	
49 1232 670A Power steering gauge set	A	

TOOL NUMBER & DESCRIPTION	PRIORITY	ILLUSTRATION
49 G033 108 Caster camber gauge adapter	A	
49 G032 3A1 Joint hose set	A	
49 F032 301 Hanger, power steering pump	A	

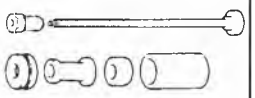
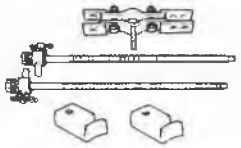
BRAKE

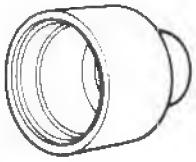
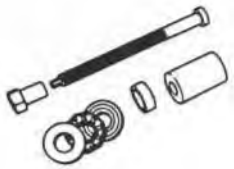
TOOL NUMBER & DESCRIPTION	PRIORITY	ILLUSTRATION
49 0259 770B Wrench, flare nut	A	
49 0221 600C Expand tool, disc brake	B	
49 FA18 602 Wrench, disc brake piston	B	
49 H026 101A Installer, sensor rotor *1	A	

TOOL NUMBER & DESCRIPTION	PRIORITY	ILLUSTRATION
49 B043 002 Installer, bearing	A	
49 H017 101 Hook *1	A	
49 G025 001 Installer, sensor rotor *1	A	
49 F043 001 Adjust gauge	A	

*1 Only Europe

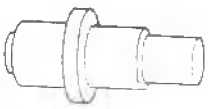
SUSPENSION

TOOL NUMBER & DESCRIPTION	PRIORITY	ILLUSTRATION
49 G034 2A0 Replacer, lower arm bush	A	
49 G034 1A0 Compressor, coil spring	A	

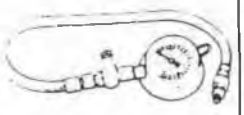
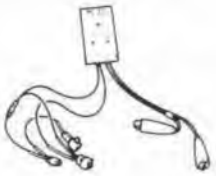
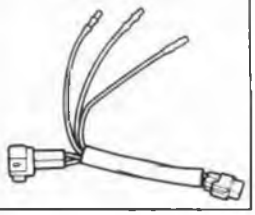
TOOL NUMBER & DESCRIPTION	PRIORITY	ILLUSTRATION
49 8038 785 Installer, dust boot	A	
49 U034 2A0 Replacer, rubber bush	A	

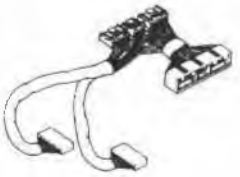
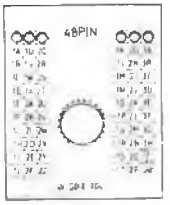
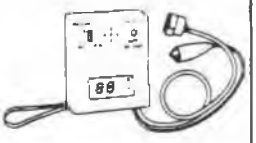
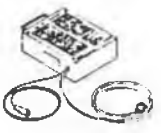
HEATER AND AIR CONDITIONER SYSTEMS

TOOL NUMBER & DESCRIPTION	PRIORITY	ILLUSTRATION
49 9201 010 Holder, drive place	A	
49 9201 020 Puller, drive plate	A	
49 9201 030 Puller, center, pulley	A	
49 9201 050 Remover, seal seat	A	

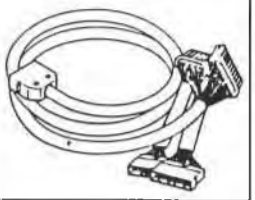
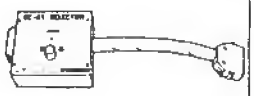
TOOL NUMBER & DESCRIPTION	PRIORITY	ILLUSTRATION
49 9201 060 Remover, shaft seal	A	
49 H061 004 Replace, seal seat	A	
49 9201 040 Installer, pulley ass'y	A	
49 9201 080 Valve ass'y	A	

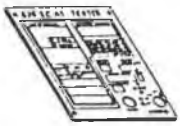
CHECKER AND OTHER

TOOL NUMBER & DESCRIPTION	PRIORITY	ILLUSTRATION
49 0187 280 Oil pressure gauge	A	
49 0305 870A Tool set, window	A	
49 0839 285 Checker, fuel & thermometer	A	
49 F018 002 Checker, igniter	A	
49 H018 910 Adapter harness	A	
49 G018 902 Checker, injector	A	
49 9200 020 Tension gauge, V-ribbed belt	B	
49 G018 901 Adapter harness	A	

TOOL NUMBER & DESCRIPTION	PRIORITY	ILLUSTRATION
49 9200 162 Engine signal monitor	A	
49 G018 903 Adapter harness	A	
49 G018 904 Sheet	A	
49 H018 9A1 Self-diagnosis checker	A	
49 F018 001 Checker lamp	A	
49 U018 003 Adapter harness	A	
49 G018 001 Adapter harness	A	
49 G019 901A EC-AT tester	A	

CHECKER AND OTHER (CONT'D)

TOOL NUMBER & DESCRIPTION	PRIORITY	ILLUSTRATION
49 F019 901 Harness (FE)	A	
49 B019 9A1 EC-AT selector	A	

TOOL NUMBER & DESCRIPTION	PRIORITY	ILLUSTRATION
49 G019 918 Harness (F2)	A	
49 G019 912 Panel (FE, F2)	A	

BODY ELECTRICAL SYSTEM

FEATURES

SERVICE

96G0TX-501

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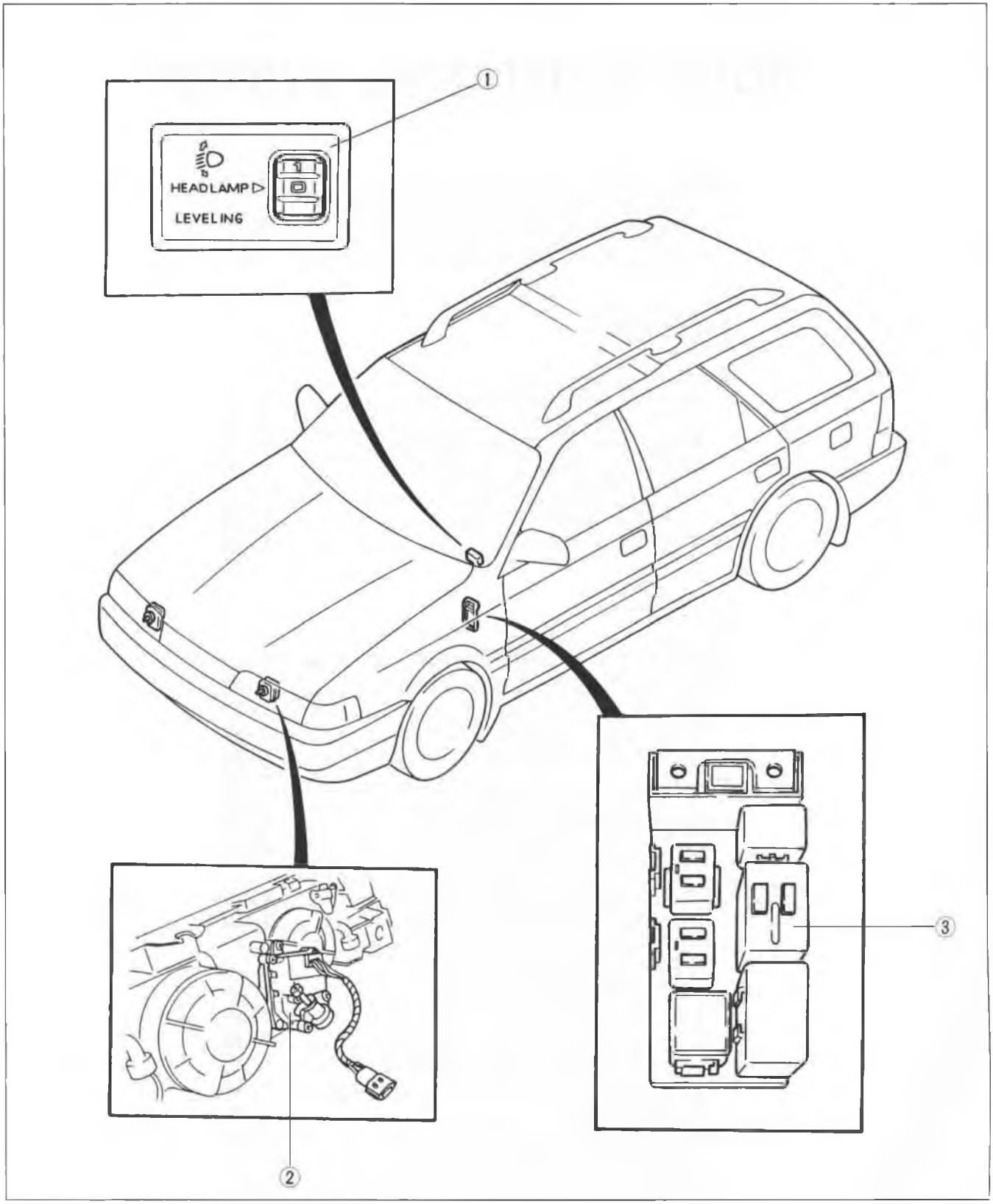
HEADLIGHT LEVELING SYSTEM AND LIGHT CHECK RELAY



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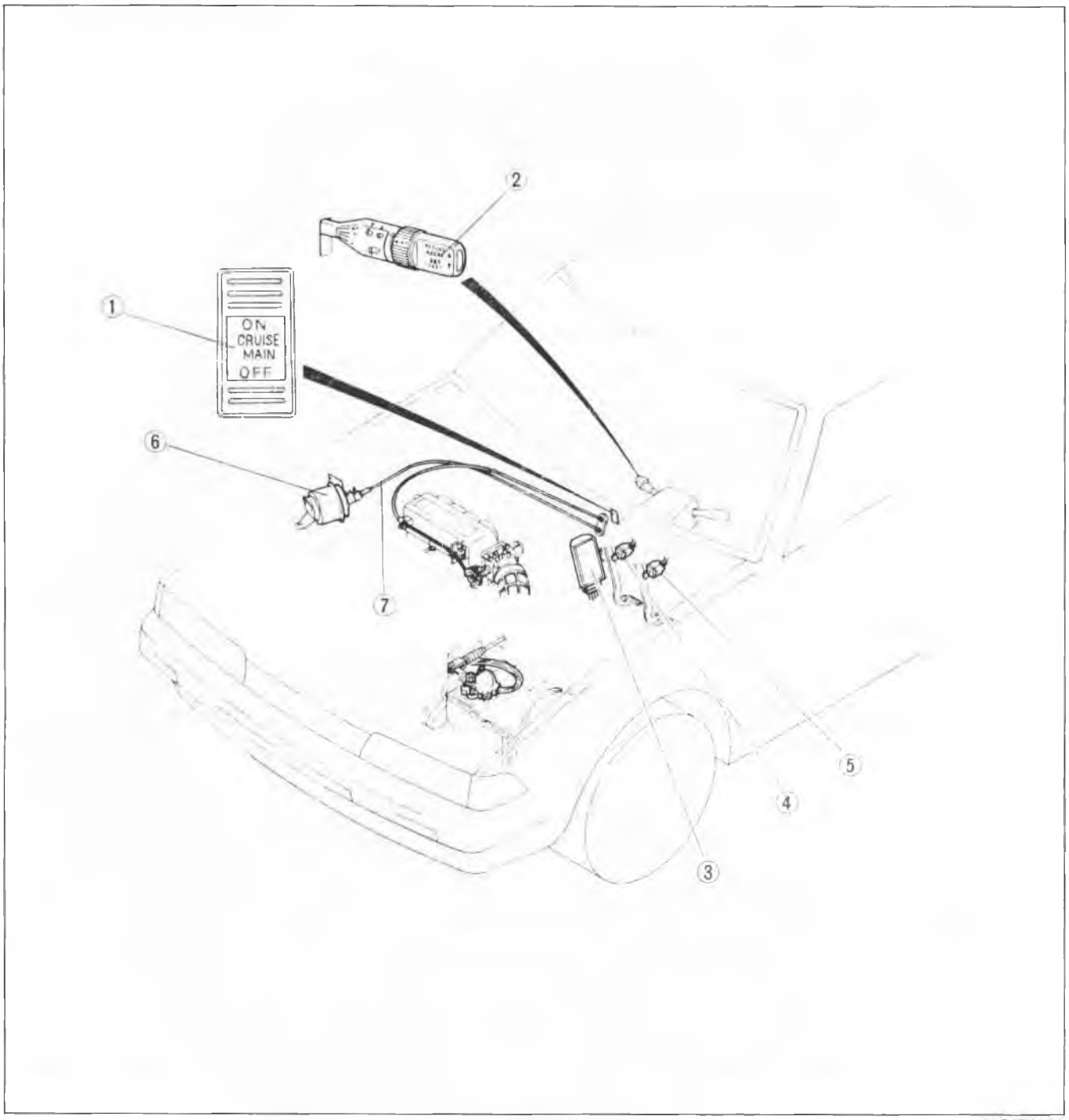
1. Headlight leveling switch
   Inspection ..... page T–25
2. Headlight and combination light
   Removal / Installation ..... page T–26
3. Stoplight check relay
   Inspection ..... page T–27

CRUISE CONTROL SYSTEM



96G0TX-503

OUTLINE

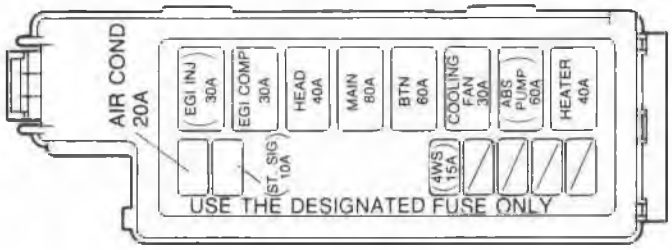
OUTLINE OF CONSTRUCTION

1. The steering angle sensor in the combination switch is discontinued.
2. The rear combination light and rear finisher design are changed.
3. A headlight leveling system is included for West Germany specification vehicles.
4. In addition to the stoplight check function, a fuse check function is included in the stoplight relay. (West Germany, Swiss)
5. The instrument cluster is upgraded.
6. The cruise control system now has a self-diagnostic function for easing inspection.
7. The available audio systems are changed (3 types).

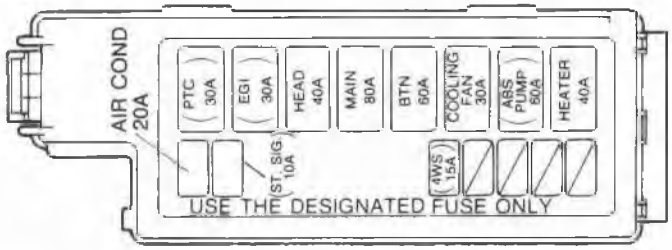
96G0TX-504

MAIN FUSE BLOCK

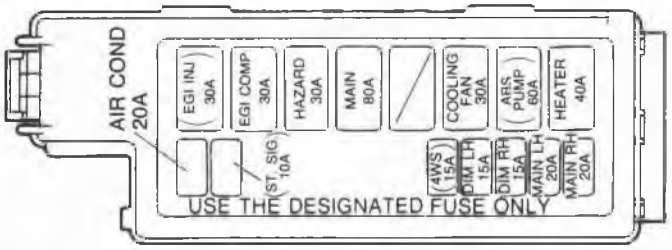
ECE (EGI MODEL), SWISS (EGI MODEL WITH RUNNING LIGHTS)



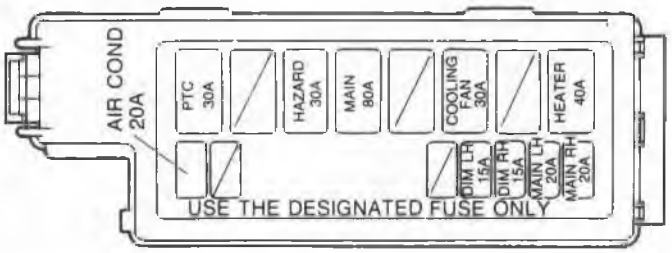
ECE (CARBURETOR MODEL), LHD



WEST GERMANY (EGI MODEL), SWISS (EGI MODEL WITHOUT RUNNING LIGHTS)



WEST GERMANY (CARBURETOR MODEL)



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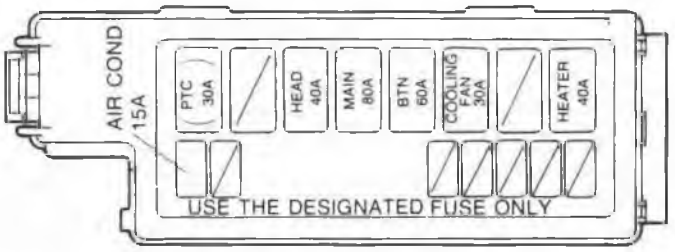
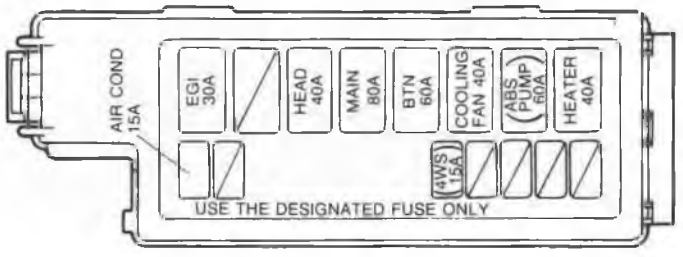
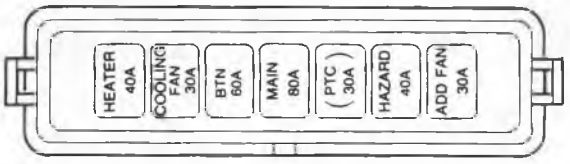
UK (CARBURETOR MODEL), RHD



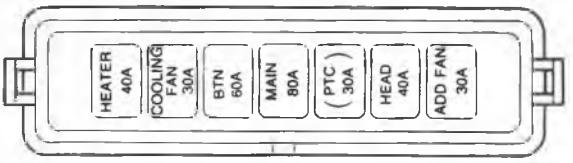
ADR



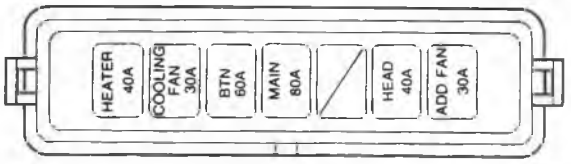
ECE (DIESEL WITH MTX), UK



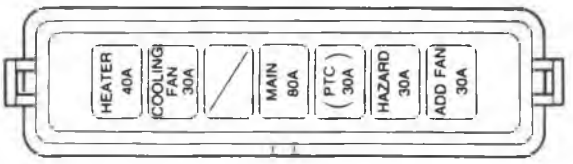
ECE (DIESEL WITH ATX), RHD (DIESEL)



WEST GERMANY (DIESEL WITH MTX)



WEST GERMANY (DIESEL WITH ATX)



96E0TX-005

Slow blow type main fuses are used for improved reliability and serviceability.

HEADLIGHT LEVELING SYSTEM

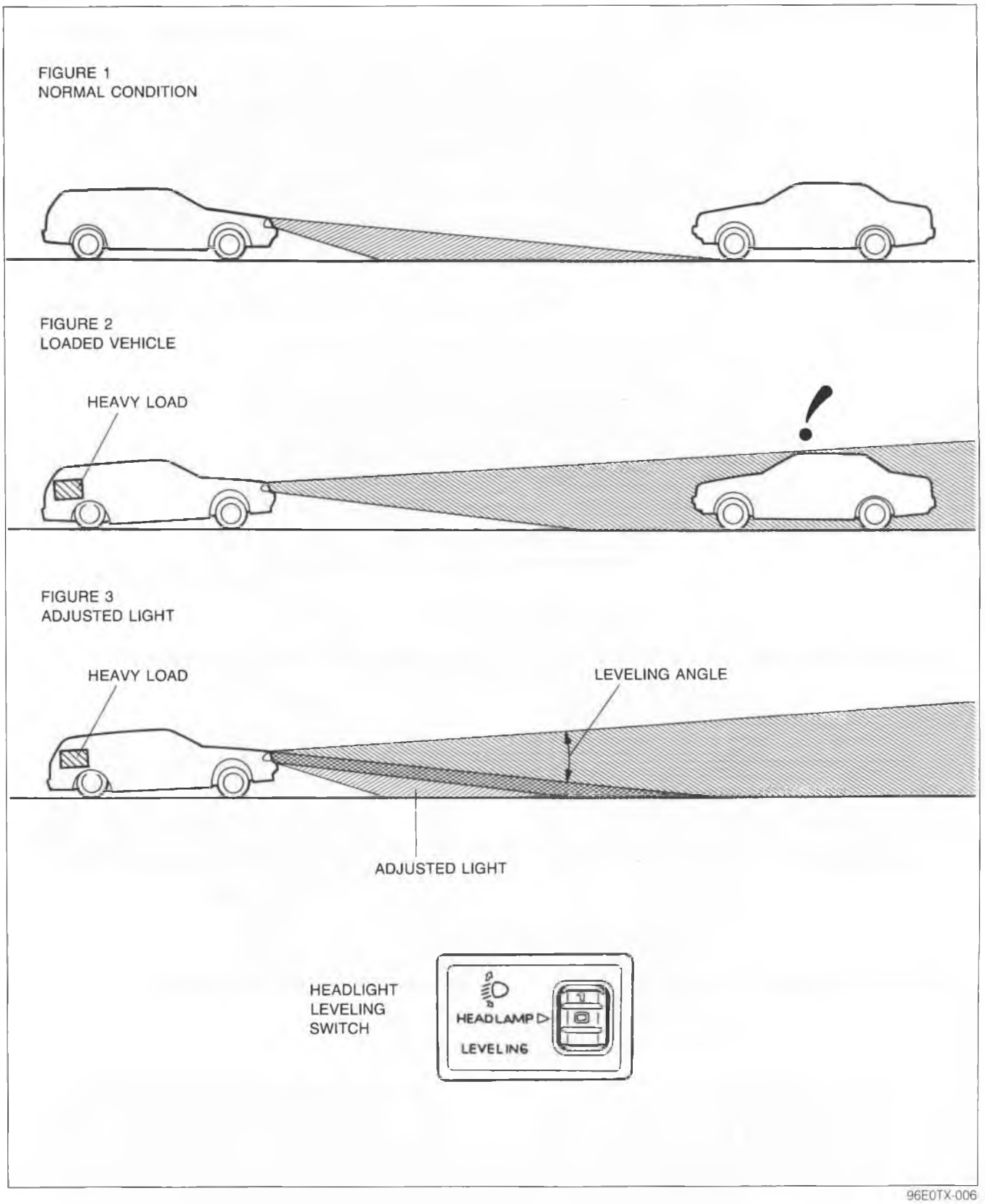
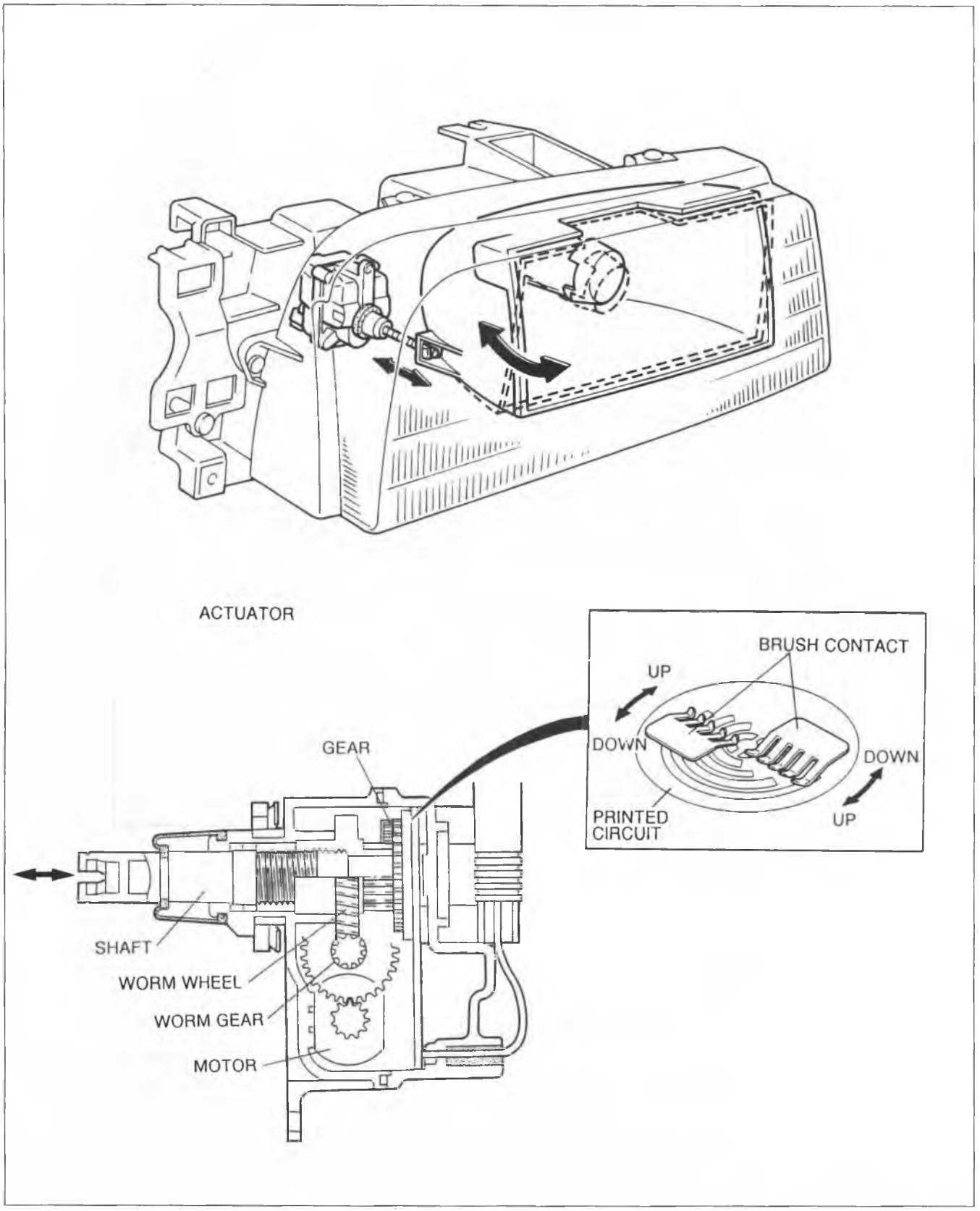


Figure 1 is an illustration of the headlight illumination pattern of a normally loaded vehicle.
When additional cargo is loaded into the rear of the vehicle, the front of the vehicle will lift, causing the headlights to shine higher than usual. As illustrated in figure 2, this causes discomfort to drivers of oncoming vehicles. West Germany specification vehicles have a driver-operated headlight leveling system to prevent such an occurance.
The headlight leveling switch can be used to lower the headlights in three steps.

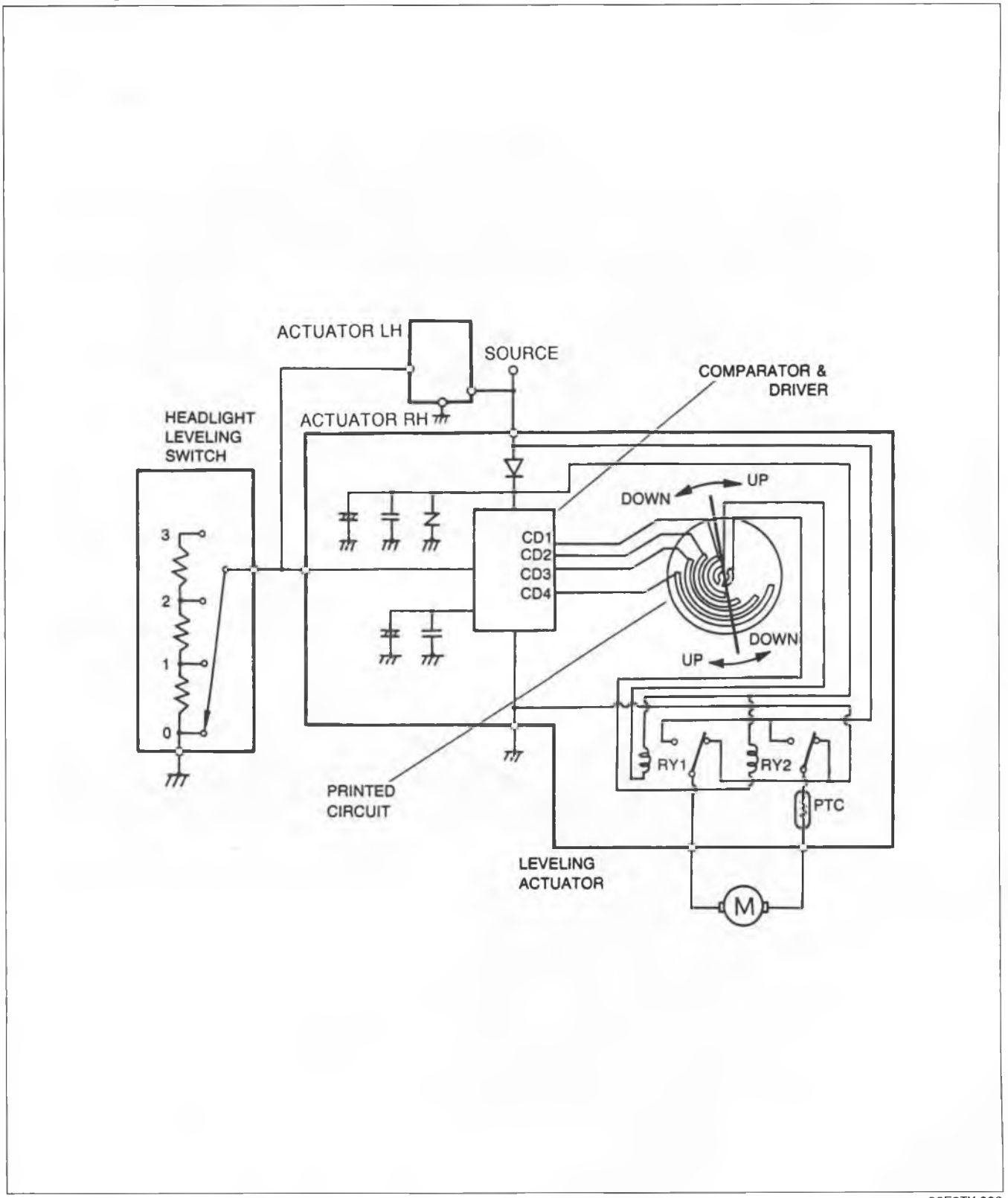
System Operation



96E0TX-007

The actuator is connected to the headlihgt bracket at the bottom of the bracket to move the headlight up or down as dictated by the load carried in the vehicle.
When the headlight leveling switch is activated, the motor moves the actuator shaft in or out, via the worm wheel and worm gear.
The amount of in-and-out movement of the actuator shaft is regulated by the printed contact circuit on gear A.

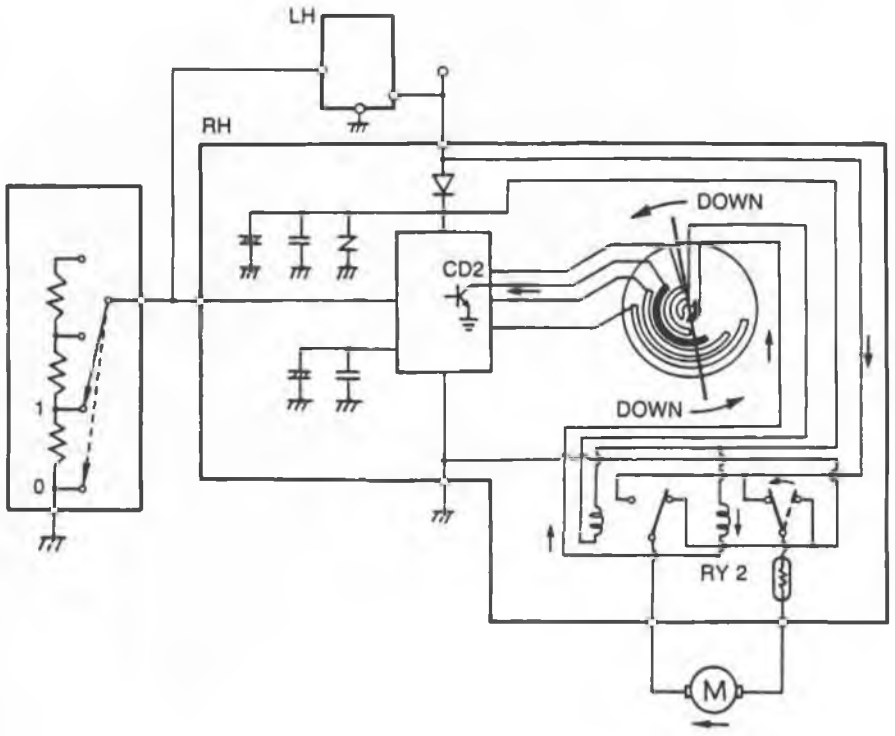
Circuit diagram



96E0TX-008

By selecting one of the adjustment positions (0—3) of the headlight leveling switch, the corresponding comparator and driver (CD1—CD4) in the actuator will be turned ON.
Current flows from the relay, through the brush contact and printed circuit, to the driver that is ON.
The current also flows to the motor to move the actuator shaft.
Two brush contacts the printed circuit on gear A as the gear rotates.
The movement of the printed circuit on gear A controls the operation of the motor and, consequently, the amount and direction of the actuator shaft movement.

Operation



START

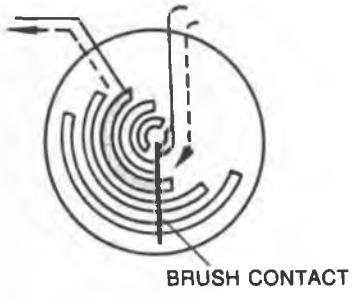


FIGURE A

FINISH

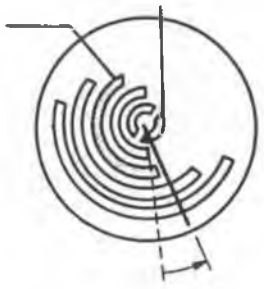


FIGURE B

96E0TX-009

Headlight leveling switch changed form 0 to 1

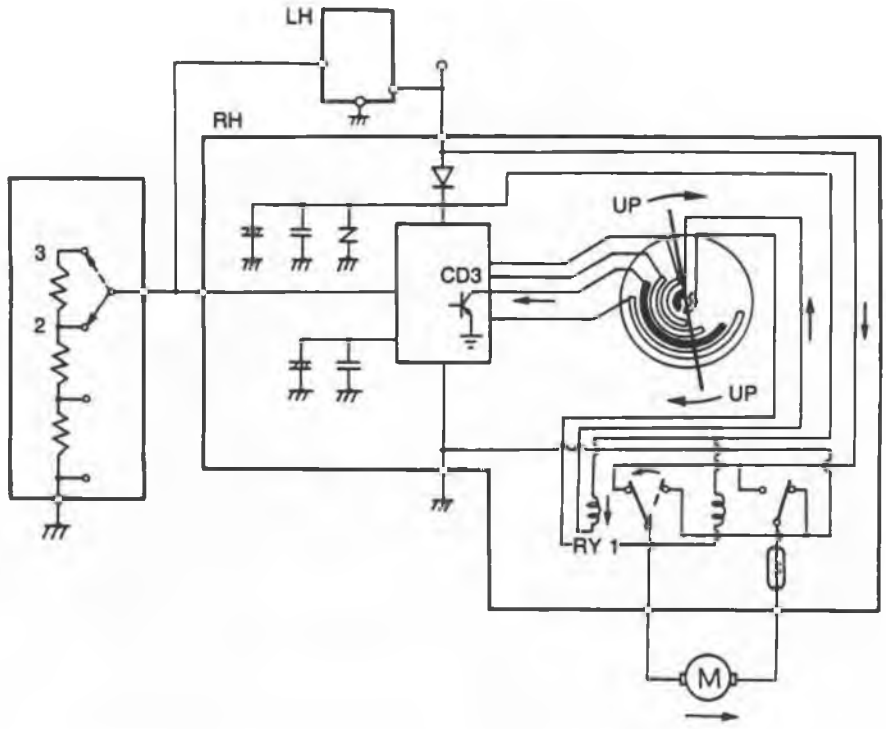
1. When the switch is changed from 0 to 1, CD2 of the comparator and driver comes ON.
2. Current flows as shown by the arrow in Figure A; turning relay 2 ON, and operating the motor.
3. When the motor rotates, gear A rotates and the actuator shaft is moved rearward.
4. As gear A rotates, the brush contact slides against the printed circuit. (Fig. B)
5. When the brush contant reaches the end of the pattern, the current to the motor is stopped, stopping the motor.

Headlight leveling switch changed from 1 to 2

1. CD3 of the comparator and driver is turned ON, and the procedure described above takes place.

Headlight leveling switch changed from 2 to 3

1. CD4 of the comparator and driver is turned ON, and the procedure described above takes place.



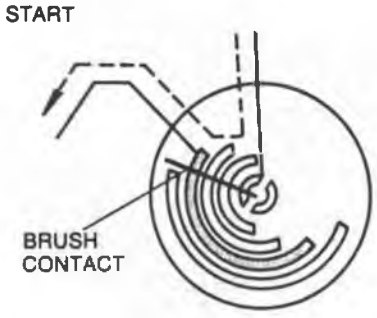


FIGURE D

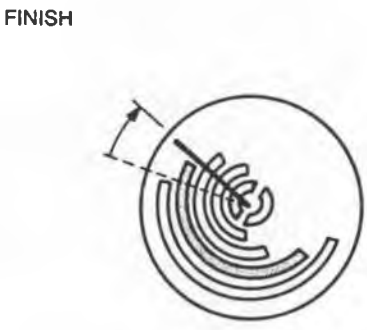


FIGURE E

96E0TX-010

Headlight leveling switch changed from 3 to 2

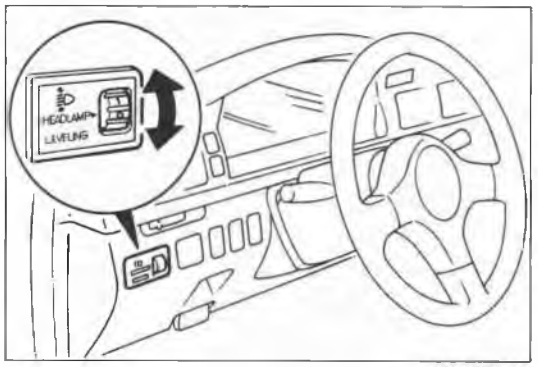
1. When the switch is changed from 3 to 2, CD3 of the comparator and driver comes ON.
2. Current flows as shown by the arrow in Figure D; turning relay 1 ON, and operating the motor.
3. When the motor rotates, gear A rotates and the actuator shaft is moved forward.
4. As gear A rotates, the brush contact slides against the printed circuit. (Fig. E)
5. When the brush contact reaches the end of the pattern, the current to the motor is stopped, stopping the motor.

Headlight leveling switch changed from 2 to 1

1. CD2 of the comparator and driver is turned ON, and the procedure described above takes place.

Headlight leveling switch changed from 1 to 0

1. CD1 of the comparator and driver is turned ON, and the procedure described above takes place.



96E0TX-011

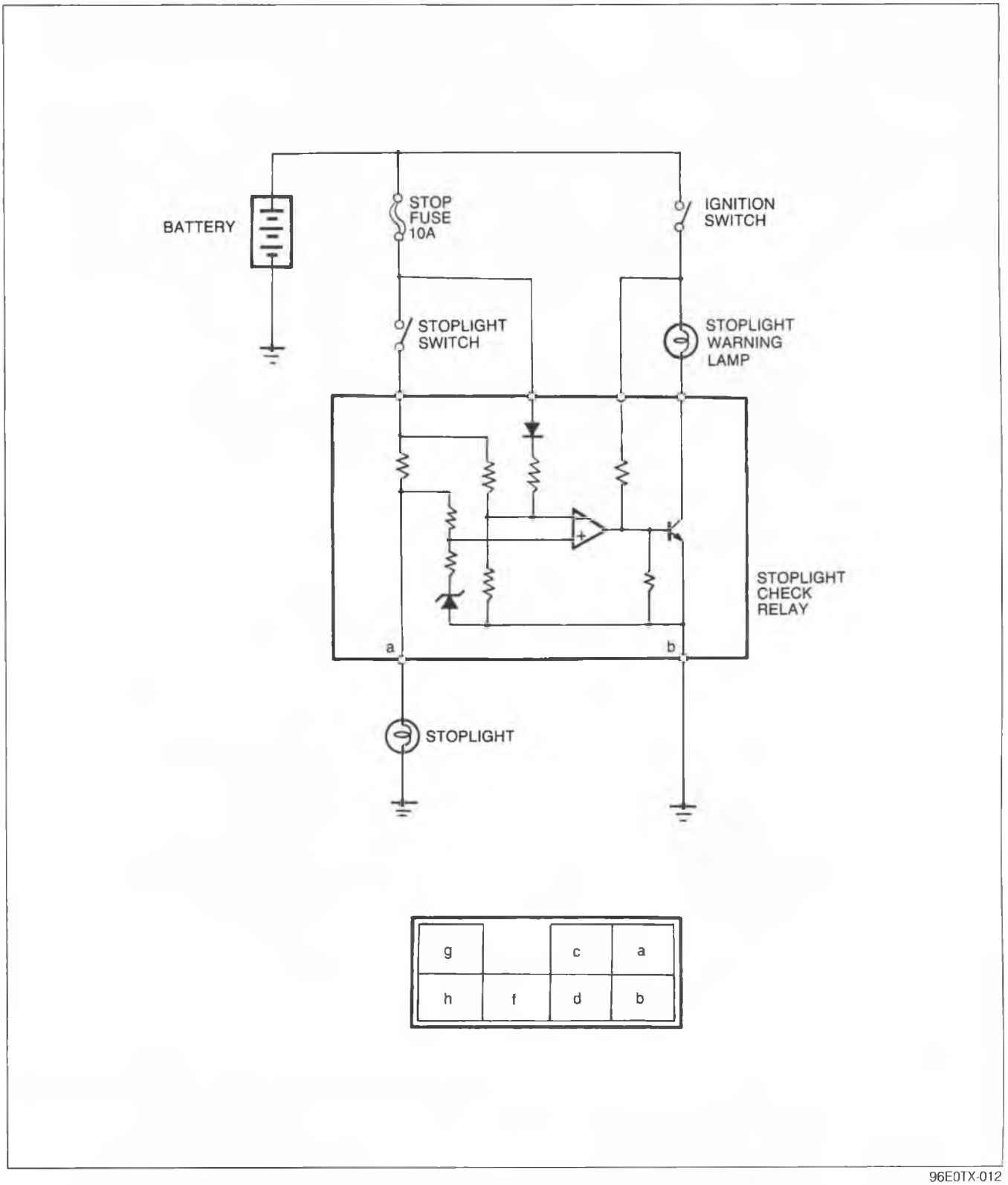
Leveling Switch Position

The headlight projected angle changes with the number of occupants and load in the cargo area. This switch is used to adjust the projected headlight angle. Select the proper setting by referring to the chart.

Front seat		Rear seat	Load	Switch position
Driver	Passenger			
X	—	—	—	0
X	X	—	—	0
X	X	X	—	1
X	X	X	X	2
X	—	—	X	3

X: Yes —: No

STOPLIGHT CHECK RELAY (WEST GERMANY, SWISS)



96E0TX-012

In addition to the stoplight check function, a fuse check function is included in the relay. If a stoplight or the stoplight fuse fails, the warning indicator lamp will illuminate.

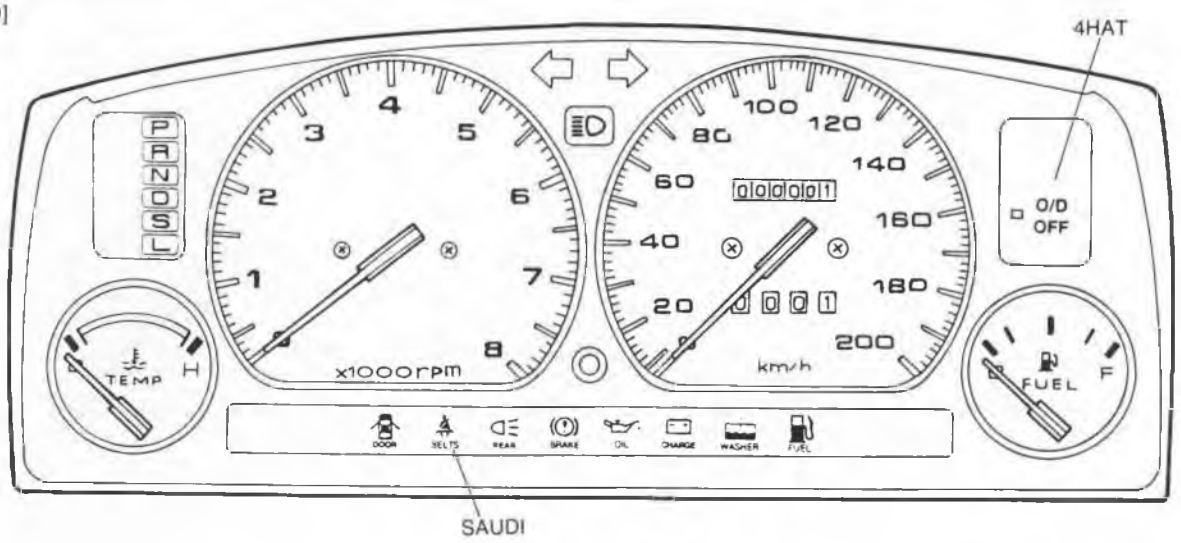
Function

When the ignition is switched ON and the stoplight switch is activated, current flows through the stoplight check relay and the stoplights come ON.

If a stoplight has failed or the fuse (10A) is burned, the current stops and the comparator allows base current to turn on the transistor and illuminate the warning lamp.

INSTRUMENT CLUSTER
Analog (Dial) Display

WITH TACHOMETER
[LHD]



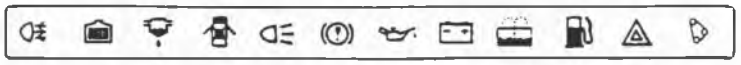
[ECE, SWISS]

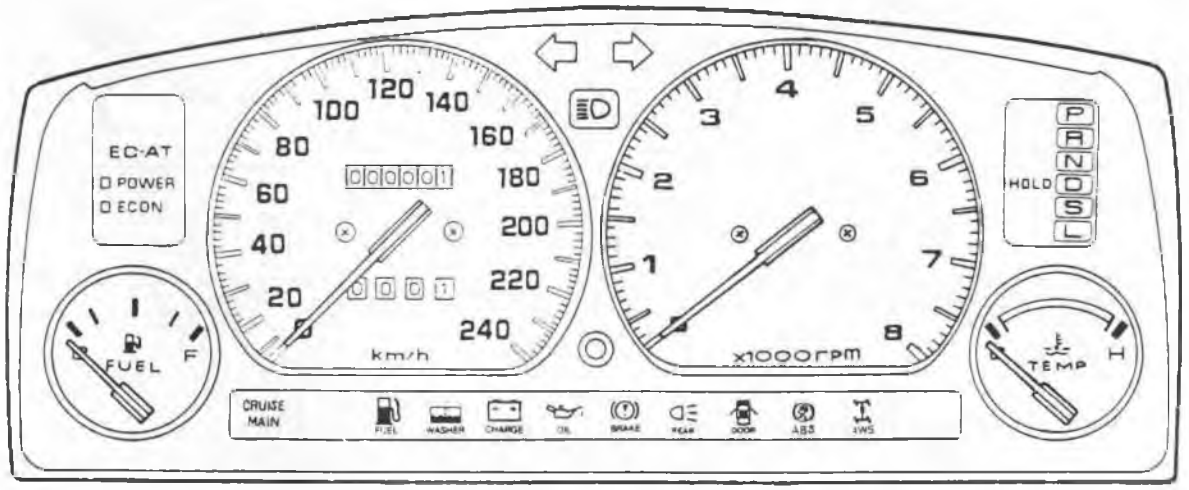
WITH ABS

[ITALY, SPAIN]

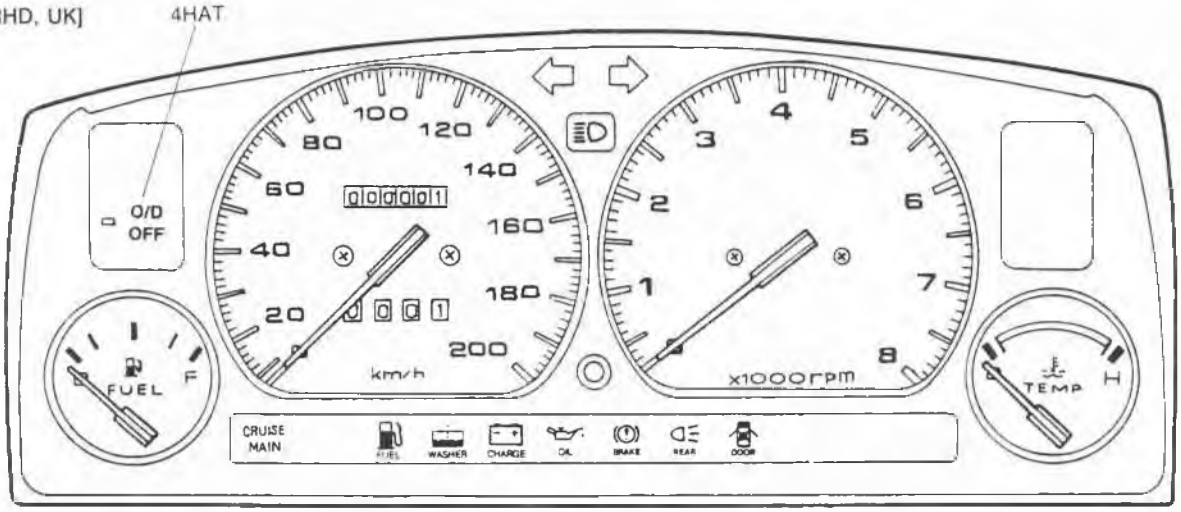
WITH ABS

[ECE DIESEL]

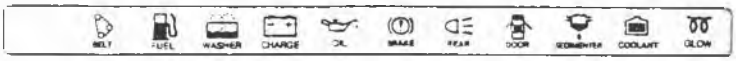




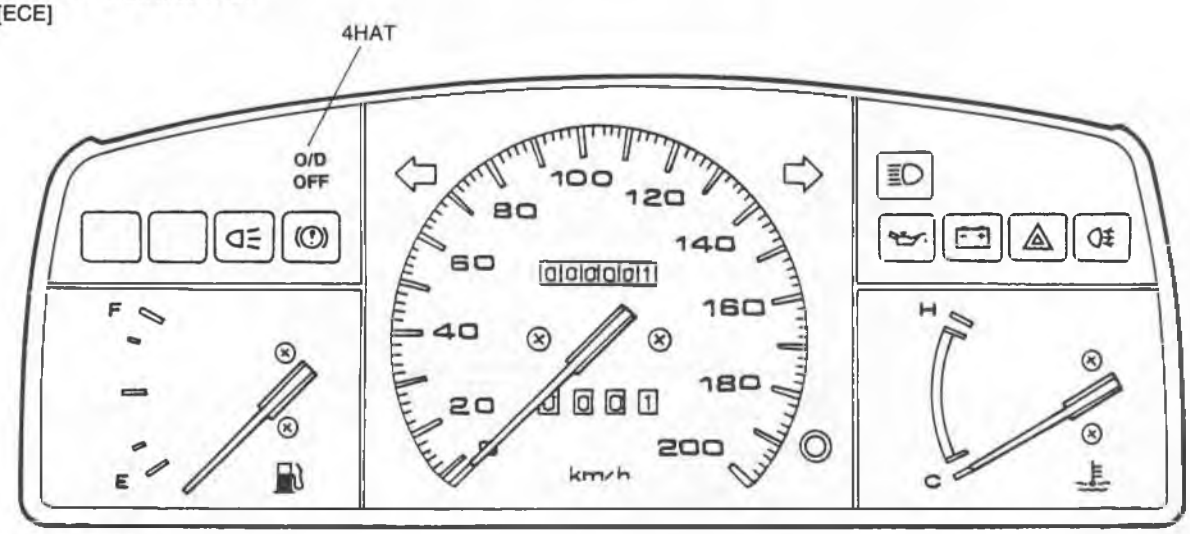
[RHD, UK]



[UK DIESEL, RHD DIESEL]



WITHOUT TACHOMETER
[ECE]

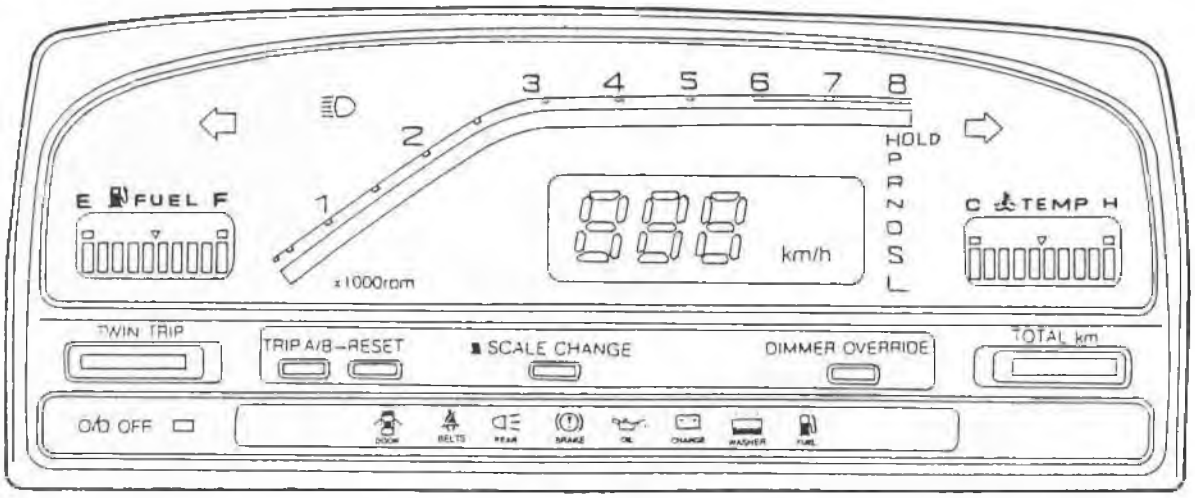


[ECE DIESEL]

[UK, LHD, RHD]

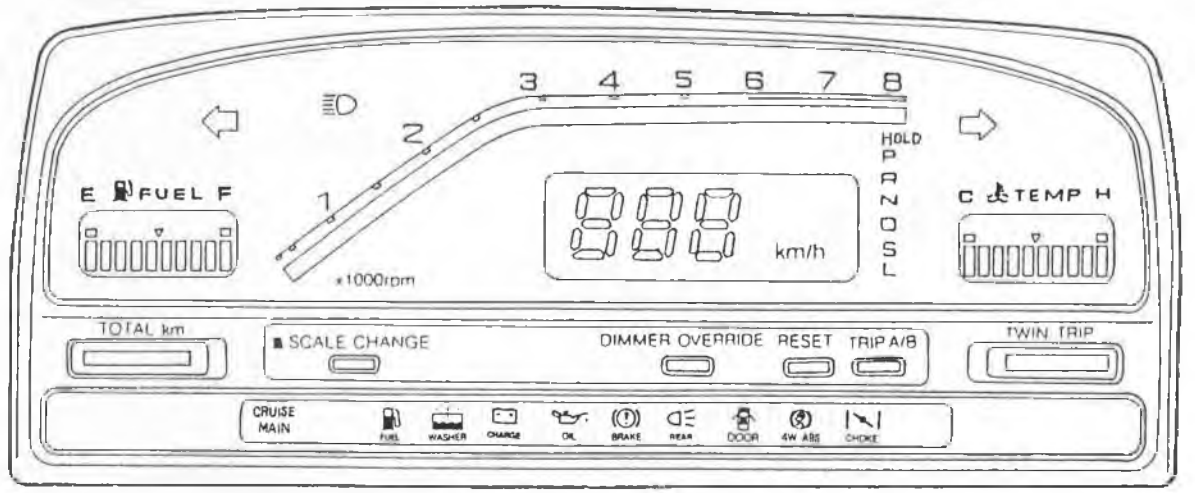
Digital Electonic Display

[LHD]



[ECE]

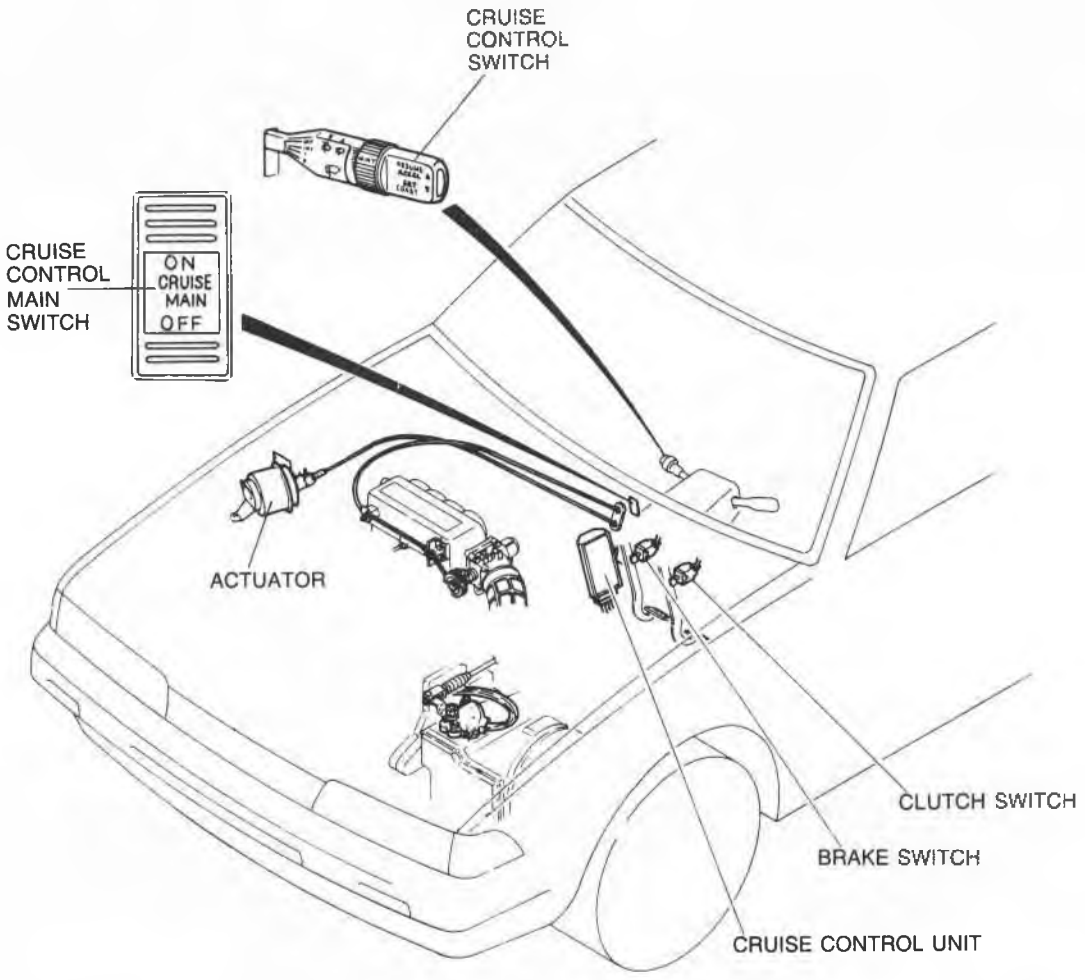
[RHD]



96G0TX-006

The instument cluster is similar to that in the previous model; however, the arrangement of the warning and indicator lamps have been changed as shown in the illustration.
The fuel gauge is designed to continue indicating the amount of fuel remaining in the fuel tank when the ignition switch is OFF. (Analog display)

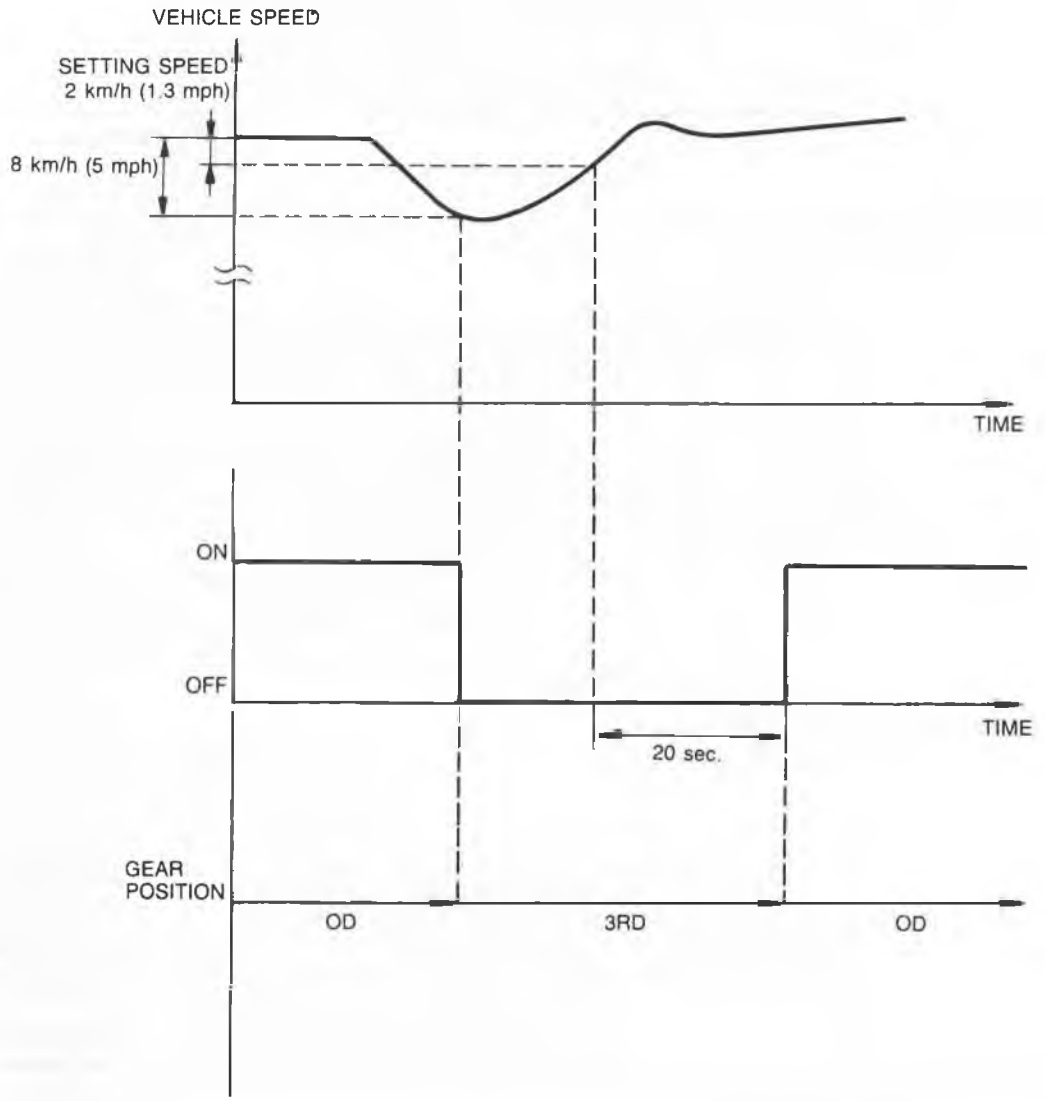
CRUISE CONTROL SYSTEM



96E0TX-015

A self-diagnostic function is added for improved serviceability.

A/T Control Operation (FE Engine)



96G0TX-506

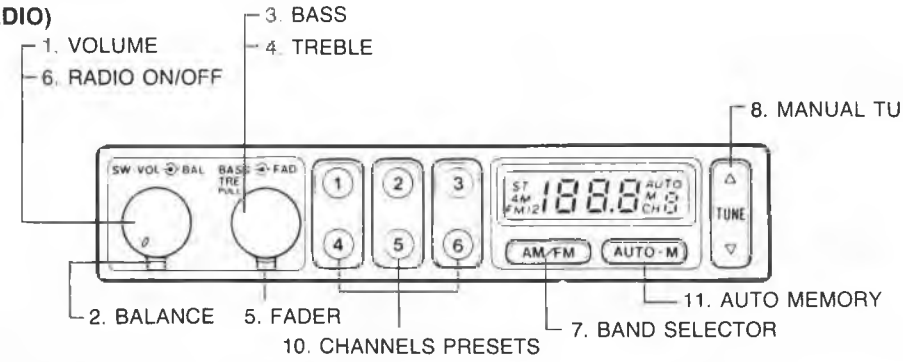
When the vehicle speed drops 8 km/h (5 mph) below the set speed, OD is canceled or prevented by the cruise control unit sending a signal to the EC-AT control unit for a downshift.
After the vehicle speed returns to within 2 km/h (1.3 mph) of the set speed, and remains there for 20 seconds, OD again becomes available.

Note

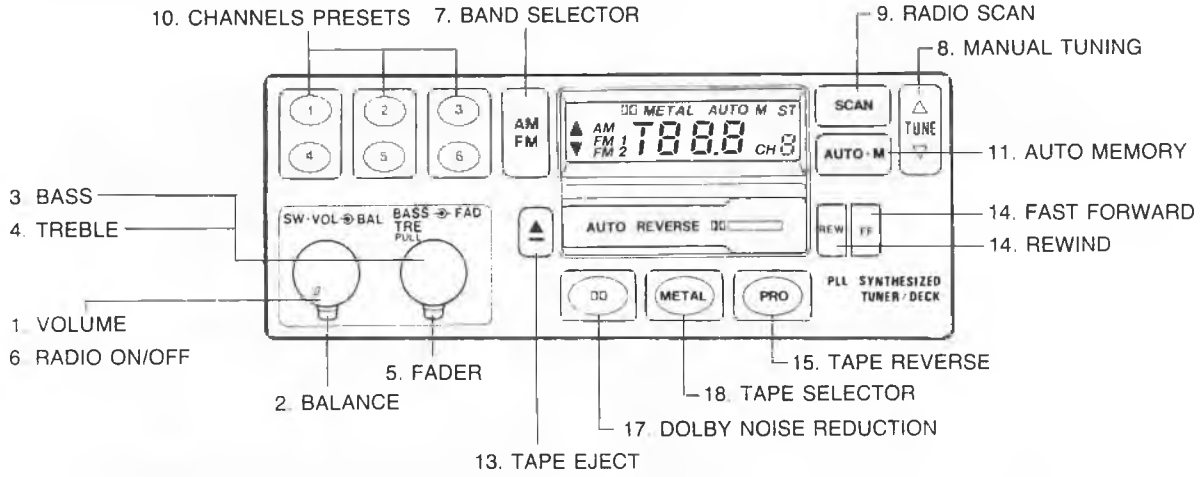
- **If the vehicle speed drops 15 km/h (9.3 mph) below the set speed or the brake is depressed, cruise control operation is canceled by the cruise control unit.**

AUDIO SYSTEM
Function and Operation

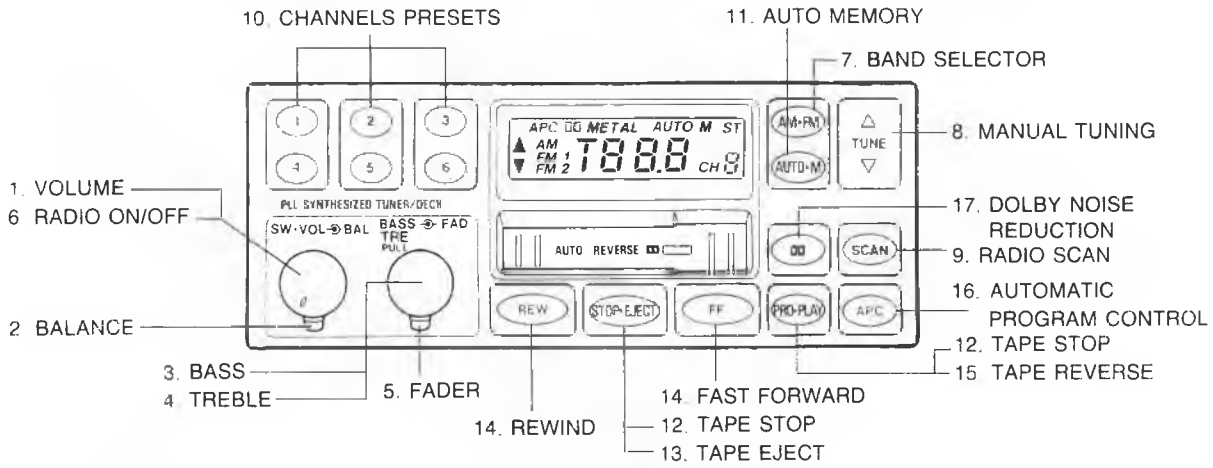
TYPE A (FM/AM RADIO)



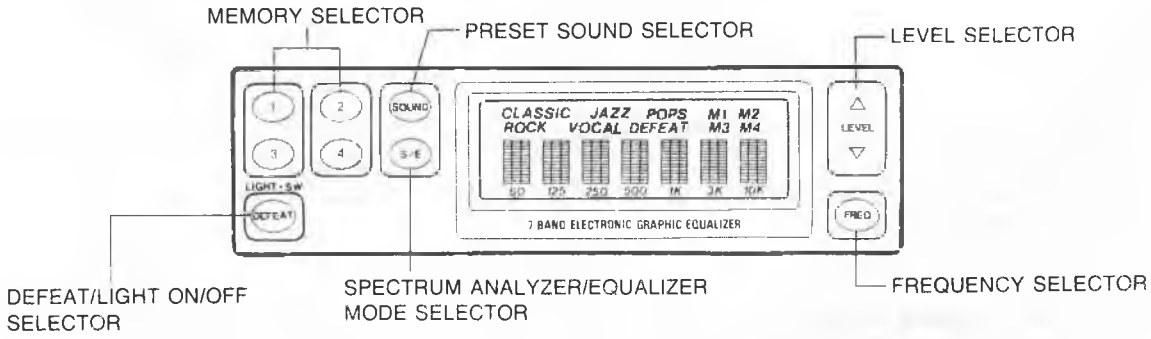
TYPE B (FM/AM RADIO, CASSETTE PLAYER)



TYPE C (FM/AM RADIO, CASSETTE PLAYER)



GRAPHIC EQUALIZER



96G0TX-008

How to use audio system

Radio

1. Volume
Turn the knob to adjust the volume.

2. Balance
This control adjusts the sound distribution between the right and left speakers. Turn it clockwise to shift the sound to the left speakers; counterclockwise to shift the sound to the right speakers.

3. Bass
This controls the lower tonal qualities. If your listening preference is for more lows, turn the control clockwise; for less lows, turn the control counterclockwise.

4. Treble
Pull and turn the knob to control the higher tonal qualities. If your listening preference is for more highs, turn the control clockwise; for less highs, turn the control counterclockwise.

5. Fader
Turn the knob clockwise to gradually shift the stereo sound to the rear speakers; counterclockwise to shift it to the front.

6. Radio ON/OFF
To operate the radio, turn the ignition switch to ACC or ON.
To select radio operation, press the knob (no need to eject tape), it will revert to the previously selected station and its frequency will be displayed. Press again to turn the radio OFF.

7. Band selector
Press AM/FM to choose either an AM or FM. Pressing AM/FM alternates AM, FM1, and FM2. The corresponding indicator will light.

8. Manual tuning
To manually tune a station, press △ for a higher frequency, and press ▽ for a lower frequency. Holding either switch down for more than one second before releasing will begin automatic seeking of the next receivable higher or lower frequency station.

9. Radio scan
(Type B, Type C)
Press SCAN to automatically sample strong stations, SCAN will be displayed. Scanning stops at each station for about five seconds. To hold a station, simply press SCAN again during this five seconds.

10. Channel presets
The three channel preset buttons can be used to store, 6 AM and 12 FM stations. First select AM1, FM1, or FM2 by pressing the AM/FM. AM, FM1, or FM2 will be displayed. Tune the desired station and press one of the channel preset bottons. Hold the button until a beep is heard and sound returns. The channel number and station frequency will be displayed. The station is now held in memory. Repeat this operation for other stations and bands.

11. Auto memory
Press and hold AUTO M for about two seconds. The system will automatically scan and temporarily store the six strongest stations of the selected band in that area. After scanning is completed, the strongest station will be tuned and its frequency will be displayed.

Cassette tape

12. Tape PLAY/STOP
(Type C)
To stop tape play during playback without ejecting the tape, press STOP/EJECT. The tape will be in a pause mode. By pressing the PRO/PLAY button, tape play restarts. To listen to the tape directly from radio mode while the tape is inserted, press PRO/PLAY.

96G0TX-009

13. Tape eject
(Type A, Type B)
The tape can be ejected at any time by pressing TAPE EJECT.
(Type C)
The tape can be ejected while in the pause mode by pressing STOP/EJECT.

14. Fast forward/Rewind
(Type B, C)
Press FF or REW to operate. The tape direction indicator will flash while the tape is in fast forward or rewind. To stop this operation, press STOP/EJECT.

15. Tape reverse
To change tape play direction, press PRO/PLAY (Type C) or PRO (Type B). When the upper triangle (▲) in the display is lit, the top side of the tape is being played. When lower triangle (▼) is lit, the bottom side of the tape is being played.

16. Automatic program control
(Type C)
When APC is on, after 15 seconds blank space is detected, the player automatically advances the tape to the next selection.

17. Dolby noise reduction
When using a tape encoded with Dolby NR, press the Dolby button. To play a normal tape, push the button once again.

18. Tape selector
To play a metal tape, press METAL. To play a normal tape, press the button once again.

96G0TX-010

Graghic equalizer

1. Spectrum analyzer/equalizer mode selector

Spectrum analyzer mode

Pressing the button to the spectrum analyzer mode enables the user to see the frequency band output of the music being listened to in this mode selected.

Equalizer mode

Pressing the button to the equalizer mode enables the user to see the selected adjustment level of the various frequency ranges in this mode selected.

2. Preset Sound Selector

Pressing the button to the preset sound mode allows the user to select the output characteristics for the type of music being played. There are five selections that fit the average listener's expectations.

SETTING	CHARACTERISTICS
JAZZ	Extended high range and emphasized transient response
ROCK	Characteristics adapted to high speed, intense sonic changes
CLASSIS	Balanced response for different instruments together with a sense of scale and impact of a large performance hall
POPS	Slight echo for emotional response in vocals
VOCAL	Vocals reproduced with maximum fidelity

3. Defeat/Light ON-OFF selector

To control operation of the graphic equalizer, press this button to select defeat mode ON or OFF. Defeat is shown in the equalizer display when selected. Hold the button for about two seconds to select ON or OFF of the graphic equalizer display.

4. Manual adjustment of frequency bands

1. Press the Frequency Selector to change the unit to the manual adjustment mode irregardless of the previous mode selected.
2. Select the band to be set. Each subsequent press of the button selects a band from 60 to 10K. The indicator bar of the band selected will flash for about 30 seconds.
3. Adjust the output level of the selected band up or down by pressing the Level Selector within 30 seconds.

5. Setting memory

Four adjustable memory selections are available to set for recall manually adjusted frequency range output patterns. These can be used in addition to the preset ranges.

96G0TX-011

SUPPLEMENTAL SERVICE INFORMATION

The following points shown in this section are changed in comparison with Mazda 626 Station Wagon Workshop Manual Supplement (1182-10-88B)

Headlight leveling system
- Troubleshooting
- Inspection
- Removal / Installation

Stoplight check relay
- Inspection
- Removal / Installation

Cruise control system
- Self-diagnostic inspection
- Troubleshooting

Audio system
- Troubleshooting

96G0TX-507

HEADLIGHT LEVELING SYSTEM

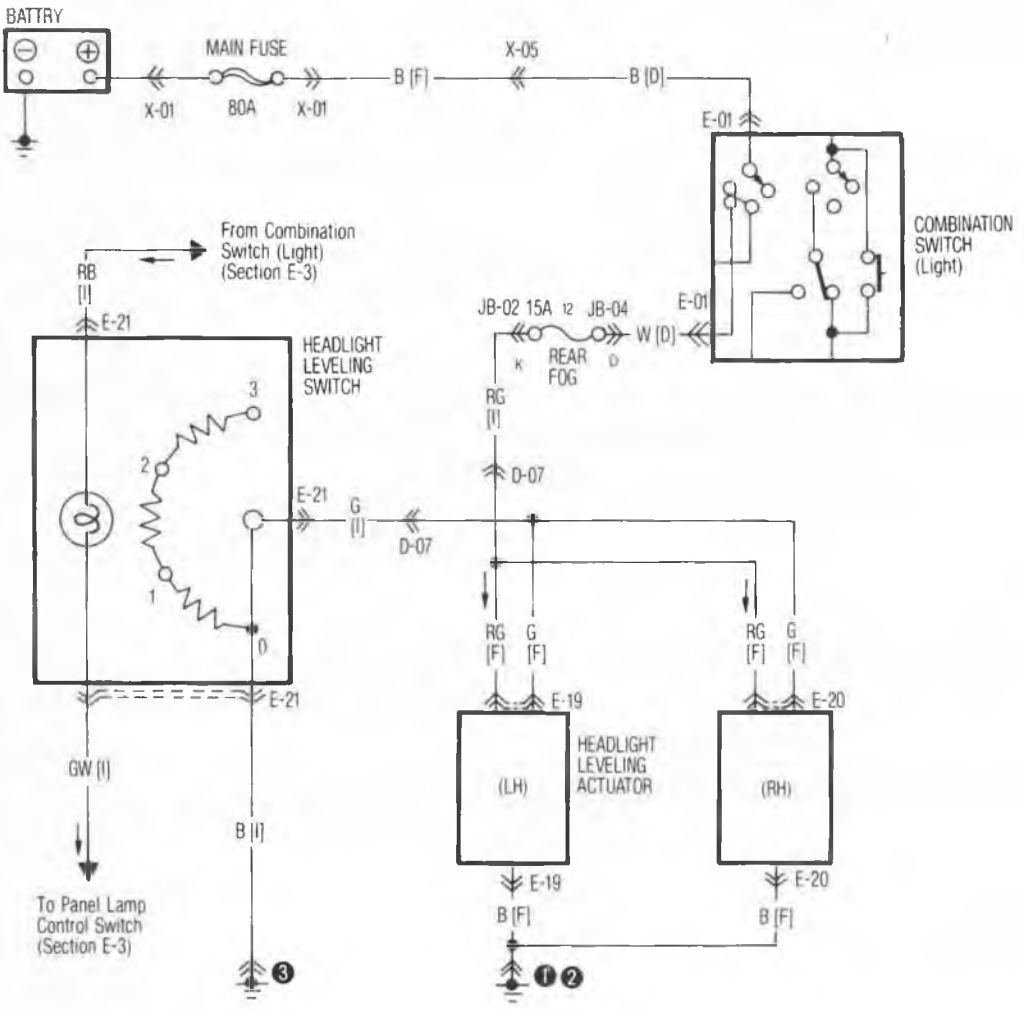
TROUBLESHOOTING

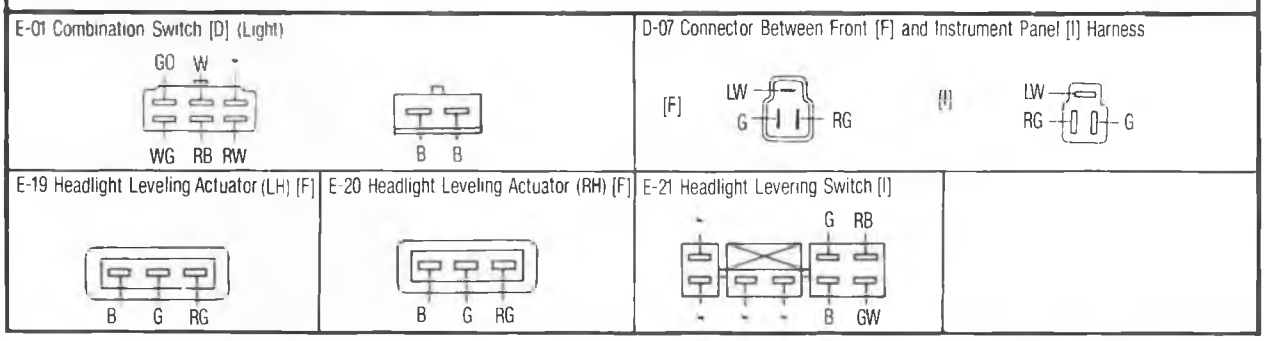
Circuit Diagram

FE, FE DOHC & F2 ENGINE (Fuel Injection)

E-4 West Germany

■ HEADLIGHT LEVELING SYSTEM





HEADLIGHT LEVELING SYSTEM

Headlight leveling does not operate

Check if REAR FOG (15A) fuse is good
- NO → Short circuit
- YES ↓

Verify 12V at B wires of combination switch
- NO → Repair wiring harness (Main fuse—Combination switch)
- YES ↓

Turn ON light switch (second position)

Verify 12V at C (w) terminal of combination switch
- NO → Check combination switch
- YES ↓

Verify 12V at A (RG) terminal of headlight leveling actuator
- NO → Repair wiring harness (Combination switch—Fuse box—Headlight leveling actuator)
- YES ↓

Verify continuity between RO wire of headlight leveling actuator and headlight leveling switch
- NO → Repair wiring harness (Headlight leveling actuator—Headlight leveling switch)
- YES ↓

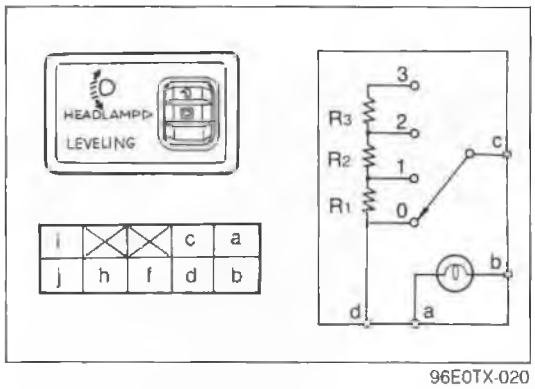
Check if headlight leveling swtich is good (Refer to page T–25)
- NO → Replace headlight leveling switch
- YES ↓

Verify continuity of C (B) termianl of headlight leveling actuator to ground
- NO → Repair wiring harness (Headlight leveling actuator—Ground)
- YES ↓

Verify continuity of D (B) terminal of headlight leveling switch to ground
- NO → Repair wiring harness (Headlight leveling switch—Ground)
- YES ↓

Replace headlight leveling actuator

96G0TX-508



96E0TX-020

HEADLIGHT LEVELING SWITCH

Inspection

1. Disconnect the headlight leveling switch connector.
2. Measure resistance of the switch as shown.

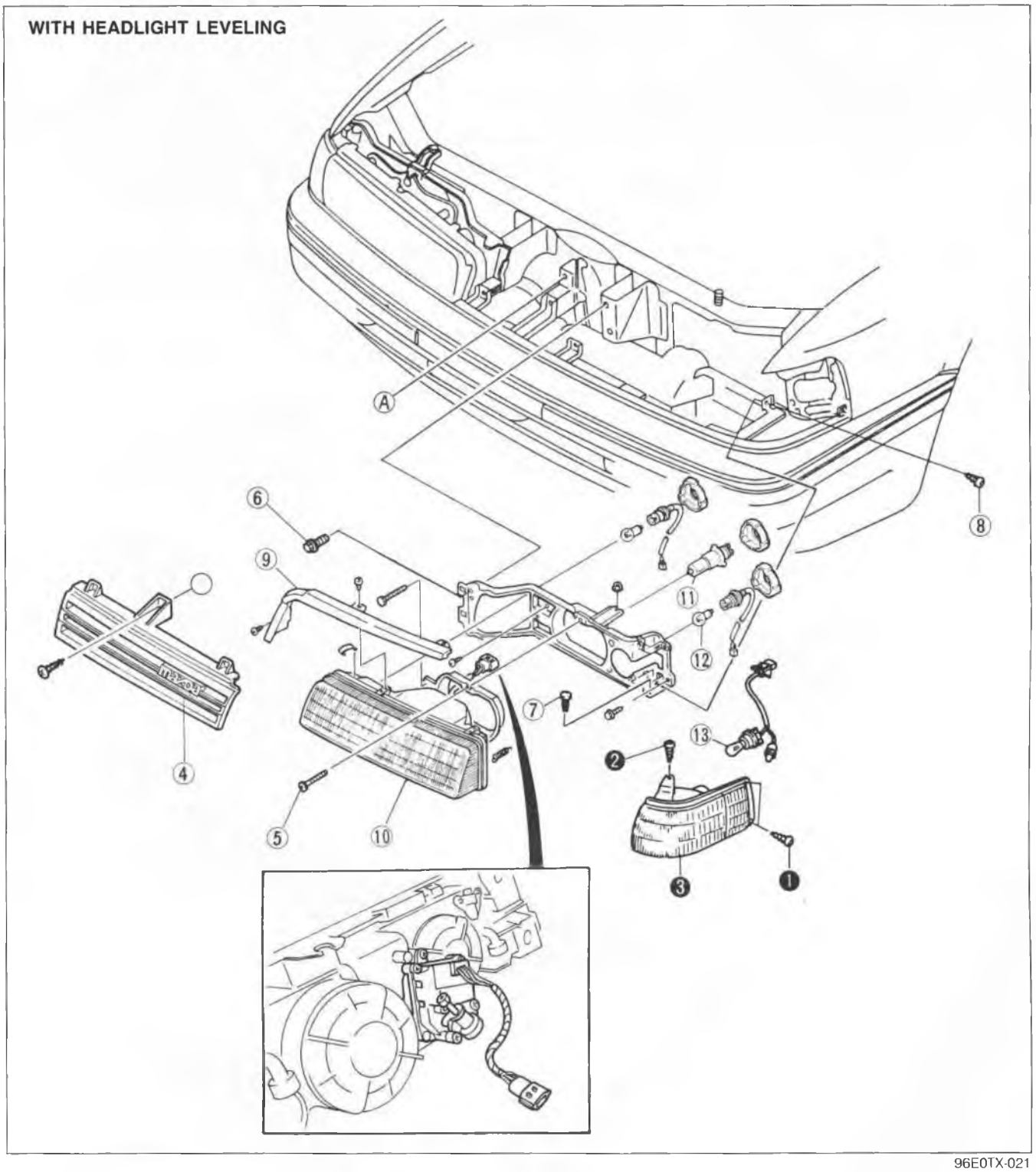
Terminals	Scale	Resistance
c—d	0	Approx. 0Ω
	1	Approx. 300Ω
	2	Approx. 560Ω
	3	Approx. 1.6 kΩ

3. If resistance is not as specified, replace the switch.

HEADLIGHT AND COMBINATION LIGHT

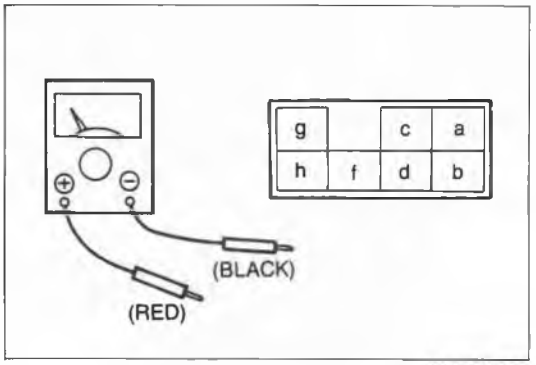
Removal / Installation

1. Remove in the order shown in the figure.
2. Install in the reverse order of removal.



96E0TX-021

1. Screw
2. Turn signal light assembly
3. Screw
4. Radiator grille
5. Bolts
6. Bolts
7. Fastener
8. Screw
9. Light garnish
10. Headlight assembly (Including headlight leveling actuator)
11. Headlight bulb 60 + 55/55W
12. Parking light bulb 5W
13. Turn signal light bulb 21W



96E0TX-022

RELAY

STOPLIGHT CHECK RELAY (WEST GERMANY, SWISS)

Inspection

1. Check continuity between terminals of the stoplight check relay.

Terminal +	Terminal −	Continuity	Terminal +	Terminal −	Continuity	Terminal +	Terminal −	Continuity
a	b	○	c	a	○	g	a	○
a	c	○	c	b	○	g	b	○
a	d	X	c	d	X	g	c	○
a	g	○	c	g	○	g	d	X
a	h	○	c	h	○	g	h	○
b	a	○	d	a	○	h	a	X
b	c	○	d	b	○	h	b	X
b	d	X	d	c	○	h	c	X
b	g	○	d	g	○	h	d	X
b	h	○	d	h	○	h	g	X

○: Continuity X: No continuity

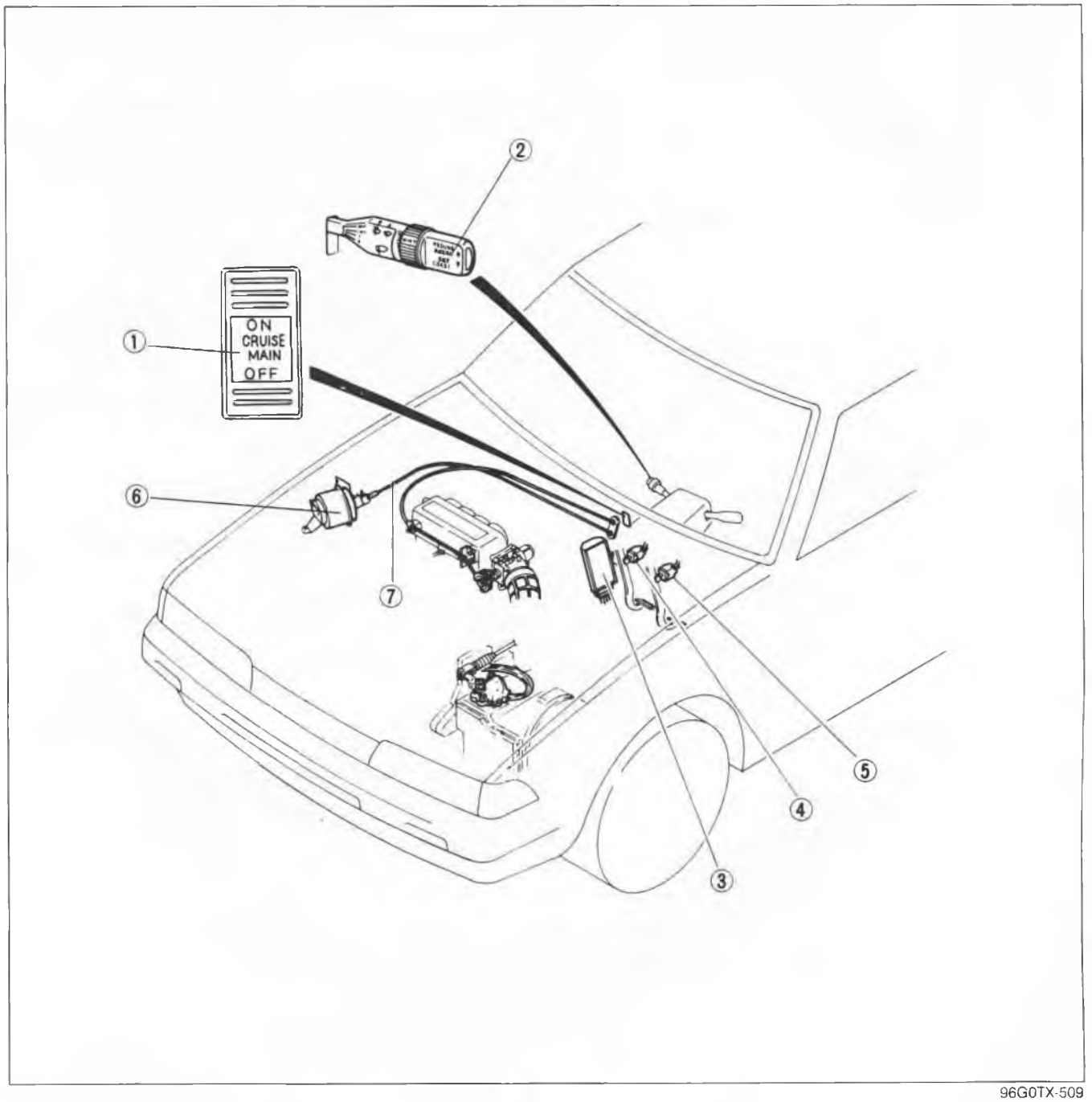
Note

- **Set the tester to x1,000Ω range.**

2. If continuity is not as specified, replace the stoplight check relay.

CRUISE CONTROL SYSTEM

STRUCTURAL VIEW



96G0TX-509

1. Cruise control main switch
   Inspection ..... page T–40
2. Cruise control switch
   Inspection ..... page T–40
3. Cruise control unit
   Removal ..... page T–38
   Installation ..... page T–38
   Inspection ..... page T–38
4. Brake switch (Cruise control)
   Removal ..... page T–40
   Installation ..... page T–40
   Adjustment ..... page T–40
   Inspection ..... page T–40
5. Clutch switch
   Removal ..... page T–39
   Installation ..... page T–39
   Adjustment ..... page T–39
   Inspection ..... page T–39
6. Actuator
   Inspection ..... page T–37
7. Actuator cable
   Removal ..... page T–39
   Installation ..... page T–39
   Adjustment ..... page T–39

INSPECTION OF CRUISE CONTROL SYSTEM USING SELF-DIAGNOSTIC FUNCTION

Inspection of the cruise control system may be done by using the self-diagnostic function integrated in the control unit and a test light.

96E0TX-024

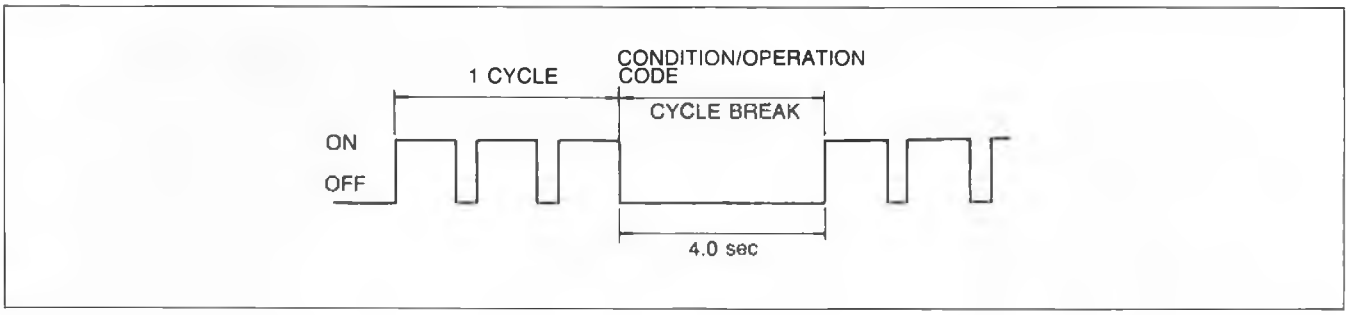
Condition/Operation Code

Principle of code cycle

Condition/operation codes are determined by flashing of a test light as shown below.

1. Code cycle break

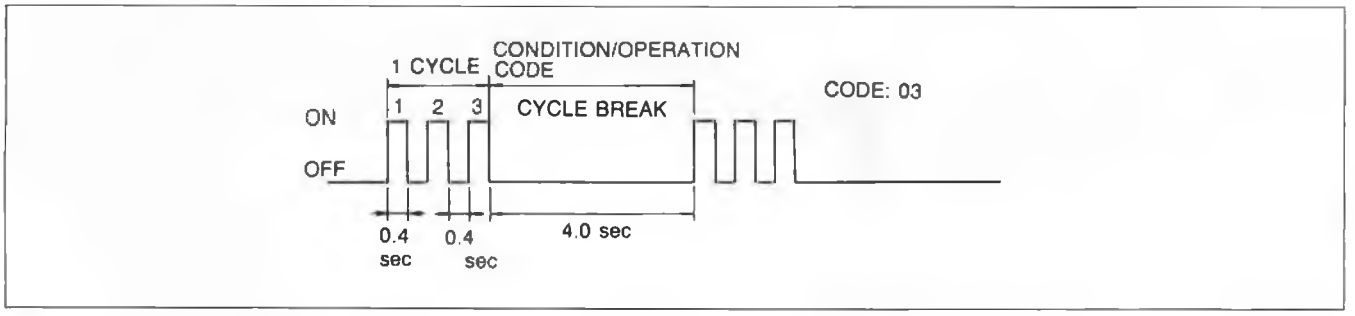
The time between condition/operation code cycles is 4.0 seconds (the time the light is off).



96E0TX-025

2. Second digit of condition/operation code (ones position)

The digit in the ones position of the condition/operation code represents the number of times the light is on 0.4 second during one cycle.

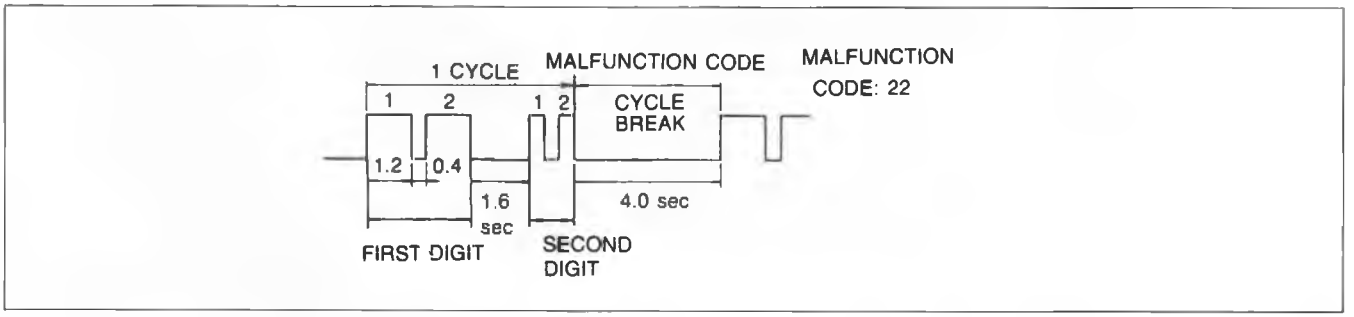


96E0TX-026

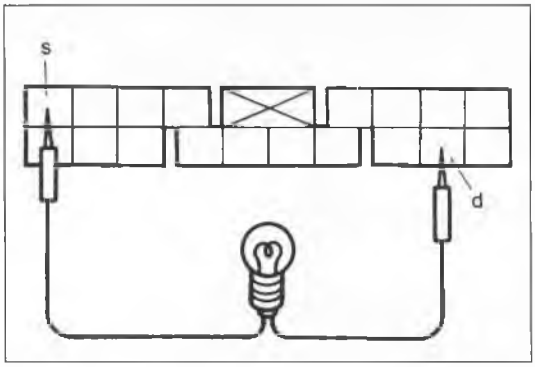
3. First digit of condition/operation code (tens position)

The digit in the tens position of the condition/operation code represents the number of times the light is on 1.2 seconds during one cycle.

The light remains off for 1.6 seconds between the long and short flashes.



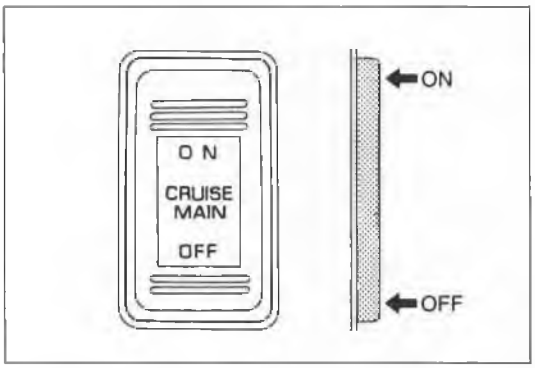
96E0TX-027



05U0TX-221

Preparation

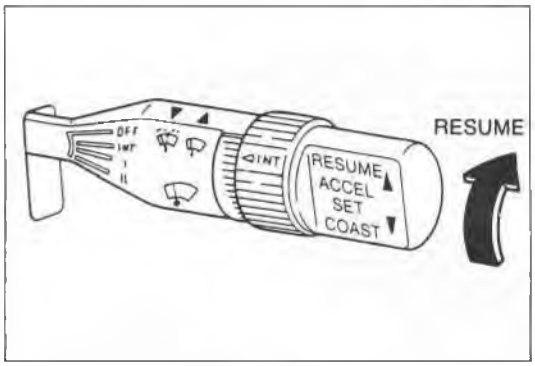
1. Disconnect the cruise control unit connector.
2. Connect a test light between terminals d and s of the cruise control unit connector as shown.
3. Reconnect the cruise control unit connector.



96E0TX-028

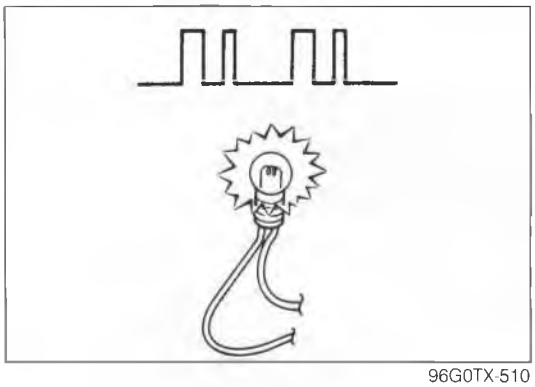
Inspection 1 (Self-diagnosis of malfunction)

1. Turn the ignition switch ON.
2. Press the CRUISE MAIN switch ON.



96E0TX-029

3. Turn the cruise control switch to RESUME and hold it more than 3 seconds.
4. Release the switch.
5. The test light will illuminate for 3 seconds; go out for 2 seconds; then flashes as described if there is a malfunction.
6. The self-diagnostic function is now activated.



96G0TX-510

7. Read out and record the condition/operation code number(s). (Refer to page T–31.)
8. Turn the main switch OFF to deactivate the self-diagnostic function. (The self-diagnostic function will also be canceled if the vehicle is driven at over 16 km/h (10 mph)).
9. Check the system as per the results of the self-diagnostic inspection.

Condition Code Numbers
Self-diagnosis of malfunction

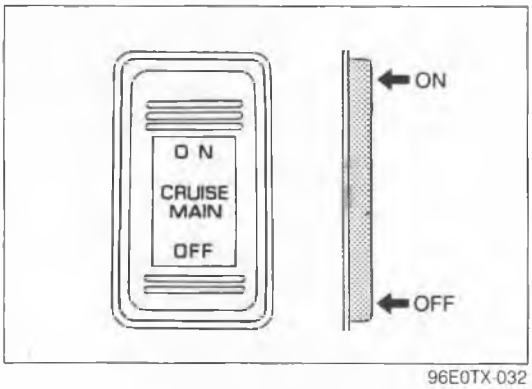
The test light will flash if a malfunction is present.

Pattern of output signal (Test light)	Code No.	Possible Cause	Action
	01	Defective harness (Actuator—Cruise control unit, Stoplight switch—Cruise control unit) Defective actuator Defective brake switch	Repair wiring harness Inspect actuator (Refer to page T–37)
	05	STOP 15A fuse blown	Replace fuse
	07	Both stoplight switch and brake switch (for vehicle and cruise) are ON simultaneously	Inspect stoplight switch and brake switch (Refer to page T–40)
	11	Defective cruise control switch	Inspect cruise control switch (Refer to page T–40)
	15	Defective cruise control unit	Go to troubleshooting (Refer to page T–33)

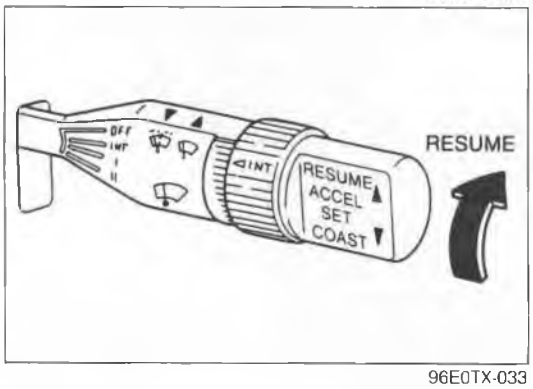
96G0TX-511

Note

- **If there is more than one malfunction, the code numbers will be indicated in numerical order.**



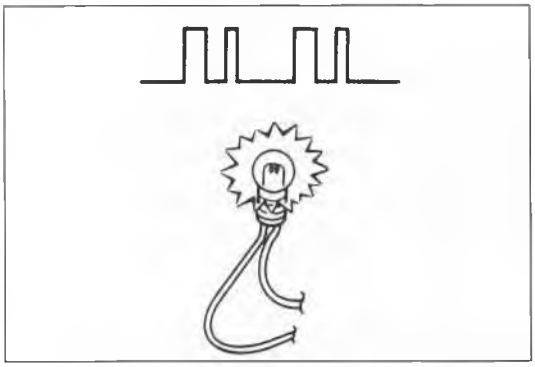
96E0TX-032



96E0TX-033

Inspection 2
(Quick inspection of cruise control operation)

1. Turn the ignition switch ON.
2. Verify that the CRUISE MAIN switch is OFF. (The CRUISE MAIN indicator lamp off.)
3. Turn the cruise control switch to RESUME and press the CRUISE MAIN switch simultaneously to activate the inspection of system operation



96G0TX-514

4. Operate each switch as described and verify the flashing of the test light. (Refer to page T–32.)
5. Press the CRUISE MAIN switch to deactivate inspection of system operation.

Note
- **The cruise control system will not operate until the self-diagnostic function is canceled.**

Operation Code Numbers
Inspection of cruise control system

The test light will flash if the system is operating correctly. If the light fails to flash, inspect the system.

Note
- **Shift the selector lever to D or R range before making the inspection. (ATX)**

Procedure	Pattern of output signal (Test light)	Code No.	Action to inspect
Push SET/COAST switch		21	Inspect cruise control switch (Refer to page T–40)
Push RESUME/ACCEL switch		22	Inspect cruise control switch (Refer to page T–40)
Depress brake pedal		31	Inspect stoplight switches (Refer to page T–40)
Turn ignition switch ON and shift selector lever to P or N range (ATX) Depress clutch pedal (MTX)		35	Inspect inhibitor switch (Refer to Section K) or clutch switch (Refer to Section F)
Drive vehicle above 40 km/h (25 mph)		37	Inspect speed sensor or wiring harness

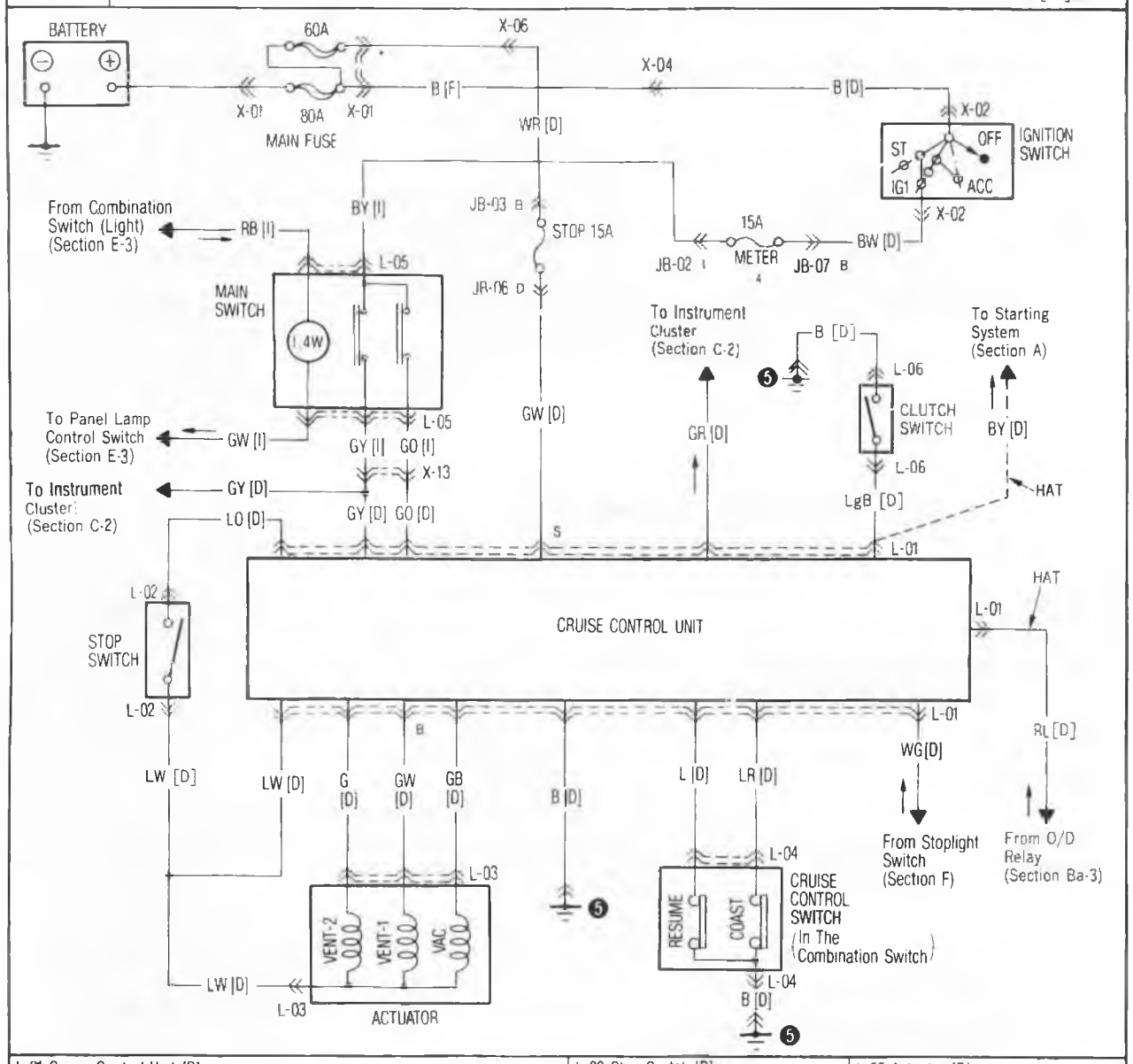
96G0TX-512

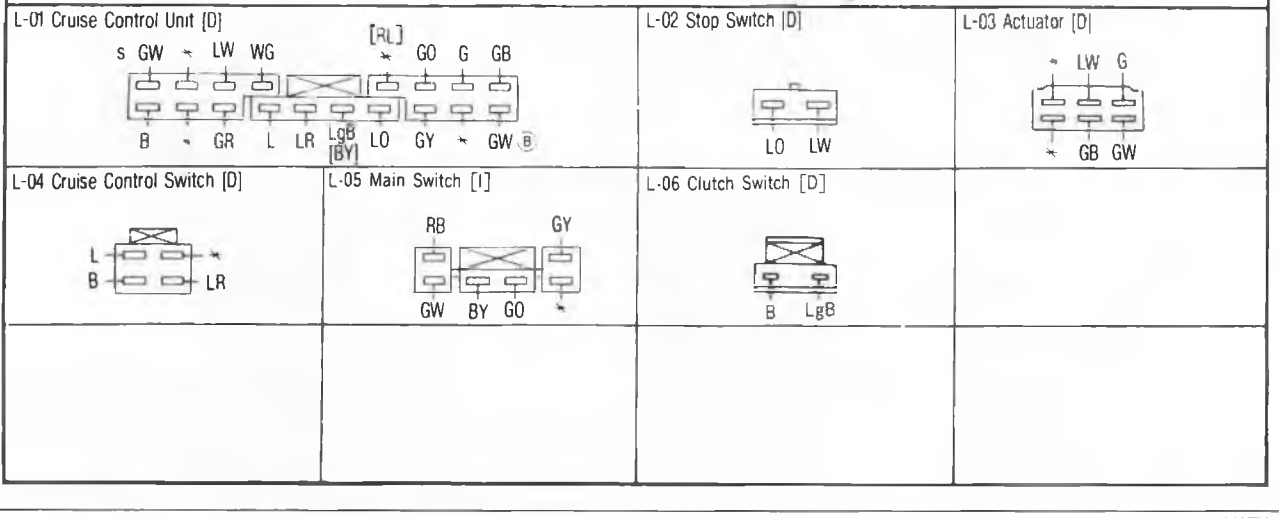
TROUBLESHOOTING

F6, F8 & FE ENGINE (Carburetor)

L Europe(Except West Germany)
■ CRUISE CONTROL SYSTEM

Note [ ] HAT



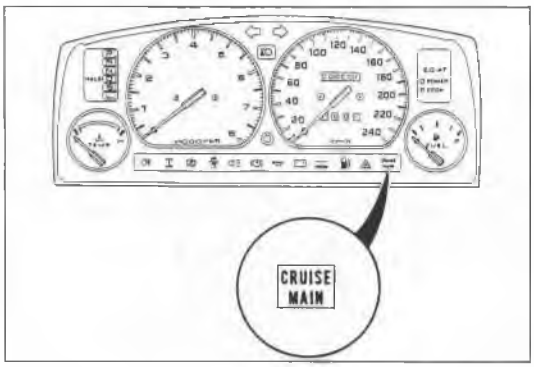


Symptom: Vehicle speed cannot be set. (Cruise control unit will not hold vehicle speed.)

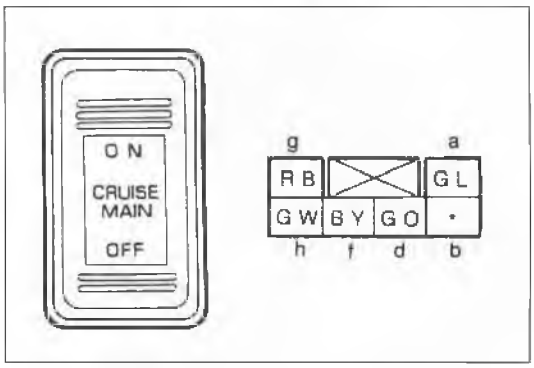
Note

- **Before troubleshooting of the system, verify the following items:**
  1. **Is system being correctly used by customer?**
  2. **Is fuse OK?**
     Check the fuse. If the fuse is burned, replace it. Check the wiring harness for a short circuit.

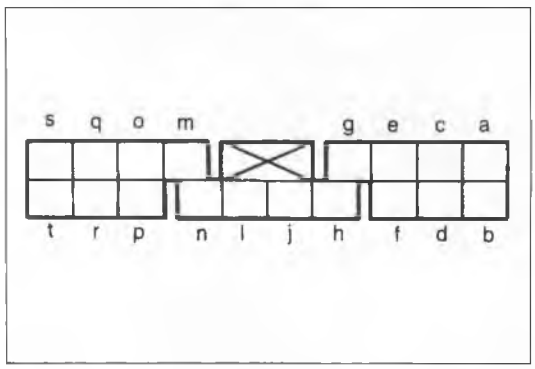
96E0TX-036



06U0TX-126



96E0TX-037



96E0TX-038

Step 1

1. Turn the ignition switch ON.
2. Turn the cruise control main switch ON.
3. Check that the CRUISE MAIN switch indicator lamp comes ON.
4. If the lamp does not come ON, go to Step 2.
5. If the lamp comes ON, go to Step 3.

Step 2

1. Check continuity between terminals of the cruise control main switch.

Position	Terminals					
	a	b	d	f	g	h
Neutral			○—○		○—○	
OFF					○— —○	
ON	○—	—○	—○		○— —○	

○——○: Indicates continuity

2. If not as specified, replace the switch.
3. If the switch is OK, repair the wiring harness.
   (METER 10A fuse — Cruise control main switch — Ground)

Step 3

1. Measure the voltage at the following terminals of the cruise control unit connector.
2. If all terminal voltages are OK, replace the cruise control unit.

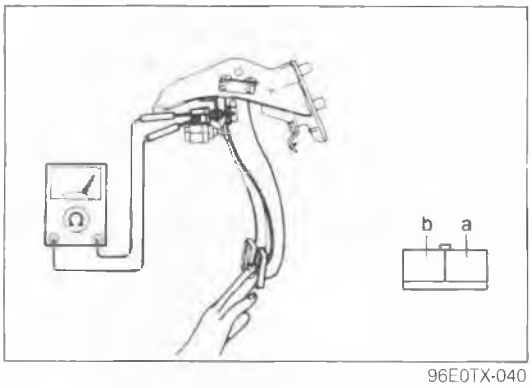
Terminal	Wire color	Connected to	Test condition	Specification	Action
a	(GB)	Actuator	Main switch OFF	0V	Go to Step 8
			Main switch ON	9V	
b	(GW)	Actuator	Main switch OFF	0V	
			Main switch ON	9V	
c	(G)	Actuator	Main switch OFF	0V	
			Main switch ON	9V	
e	(GO)	Main switch	Main switch OFF	12V	Repair wire (GO)
			Main switch ON	0V	(Main switch—Cruise control unit)
f	(GY)	Main switch	Main switch OFF	0V	Repair wire (GY)
			Main switch ON	12V	(Main switch—Cruise control unit)

(cont'd)

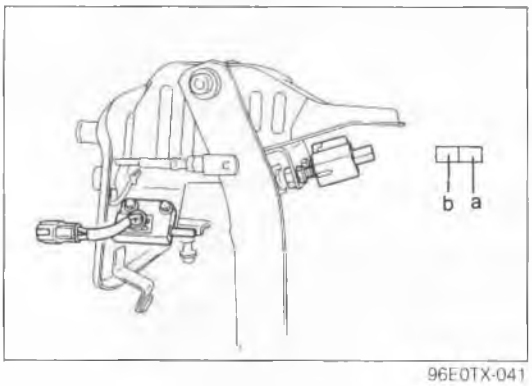
Terminal	Wire color	Connected to	Test condition	Specification	Action
g	(LR)	EC-AT control unit	Ignition switch ON	12V	Check EC-AT control unit (Refer to Section K)
h	(LO)	Brake switch	Brake pedal depressed	0V	Go to Step 4
			Brake pedal released	9V	
j	(LgB)*1	Clutch switch	Clutch pedal depressed	0V	Go to Step 5
			Clutch pedal released	12V	
	(BY)*2	Inhibitor switch	"N" or "P" range	0V	Inspect Inhibitor switch (Refer to Section K)
			Other range	12V	
l	(LR)	Cruise control switch (SET switch and COAST switch)	Main switch ON	12V	Go to Step 6
			While pushing SET switch after main switch ON	0V	
m	(WG)	Stoplight switch	Brake pedal depressed	12V	Go to Step 7
			Brake pedal released	0V	
n	(L)	Cruise control switch (RESUME switch and ACCEL switch)	Main switch ON	12V	Go to Step 6
			While pushing RESUME switch after main switch ON	0V	
o	(LW)	Actuator	Main switch OFF	0V	Go to Step 8
			Main switch ON	9V	
p	(GR)	Speed sensor	While rotating rear tires	cycles 0—5V	Go to Step 9
s	(GW)	Battery	Constant	12V	Repair wire (GW)

*1: MTX *2: ATX

96E0TX-039



96E0TX-040



96E0TX-041

Step 4 — Inspection of brake switch

1. Disconnect the brake switch connector.
2. Check continuity between terminals of the switch.

Pedal position	Terminal	
	a	b
Pedal released	○	○
Pedal depressed		

○—○: Indicates continuity

3. If not as specified, replace the brake switch.
4. If the switch is OK, repair the wiring harness. (Fuse — Brake switch — Control unit)

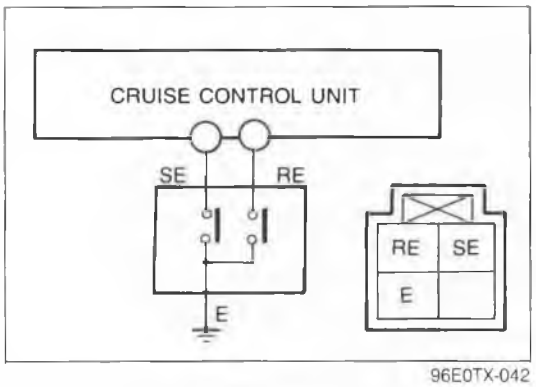
Step 5 — Inspection of clutch switch

1. Disconnect the clutch switch connector.
2. Check continuity between terminals of the switch.

Pedal position	Terminal	
	a	b
Pedal released		
Pedal depressed	○	○

○—○: Indicates continuity

3. If not as specified, replace the clutch switch.
4. If the switch is OK, repair the wiring harness. (Fuse — Clutch switch — Control unit)



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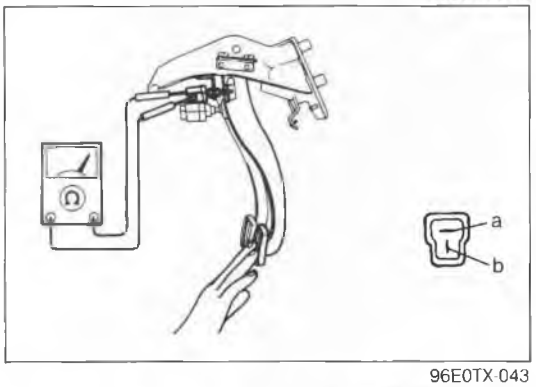

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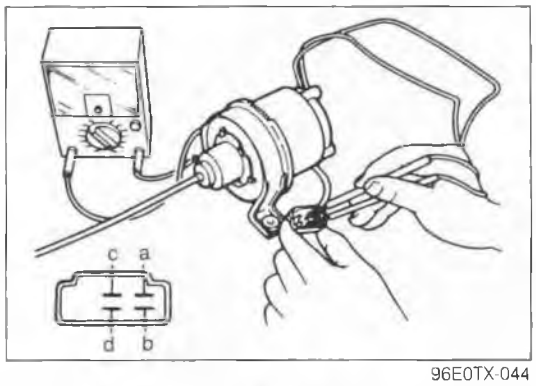

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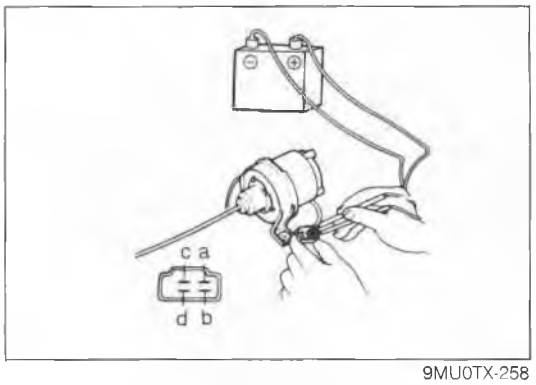


9MU0TX-258

Step 6 — Inspection of cruise control switch

1. Remove the knee protector and disconnect the combination switch connector.
2. Check continuity between terminals of the combination switch connector.

Switch	Terminal		
	SE	RE	E
SET/COAST	○		○
RESUME/ACCEL		○	○

○—○: Indicates continuity

3. If not as specified, replace the cruise control switch.
4. If the switch is OK, repair the wiring harness. (Cruise control switch — Control unit)

Step 7 — Inspection of stoplight switch

1. Disconnect the stoplight switch.
2. Check continuity between terminals of the switch.

Pedal position	Terminal	
	a	b
Pedal released		
Pedal depressed	○	○

○—○: Indicates continuity

3. If not as specified, replace the stoplight switch.
4. If the switch is OK, repair the wiring harness. (Cruise control unit — Stoplight switch)

Step 8 — Inspection of actuator

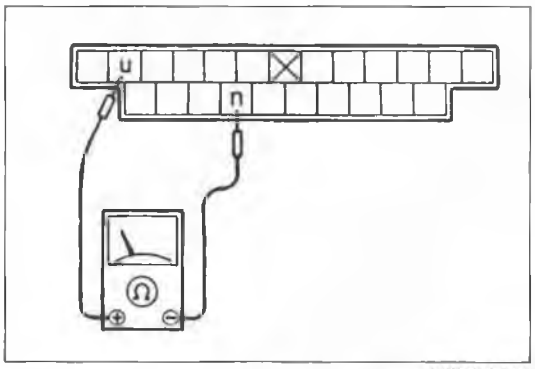
1. Measure the actuator solenoid resistance.

Check terminals	Resistance
c — a	Approx. 25 to 35Ω
c — b	
c — d	

2. If not as specified, replace the actuator.
3. If continuity is OK, go to Step 8—4.
4. Run the engine at idle speed.
5. Apply battery voltage to the following terminals, and check actuator operation.

Order	Terminal condition				Operation of control cable
	a	b	c	d	
1	Ground	Ground	Power	Ground	Pull
2	Ground	—	Power	Ground	Hold
3	Ground	—	Power	—	Extend
4	—	—	—	—	Release

6. If not as specified, replace the actuator.



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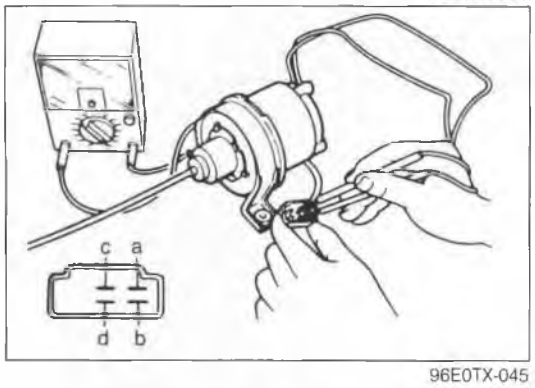
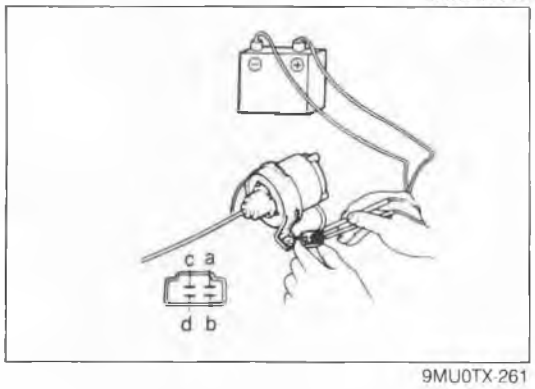


96E0TX-045



9MU0TX-261

Step 9 — Inspection of speed sensor

1. Remove the combination meter.
2. Check continuity between terminals 1U (GR) and 1N (B) while rotating the speedometer cable.
3. If there are not four pulses per shaft rotation, replace the speed sensor.
4. If there are four pulses per rotation, check and repair the wiring harness. (Combination meter — Control unit)
5. If the wiring is OK, replace the cruise control unit.

ACTUATOR

Inspection

1. Measure the actuator solenoid resistance.

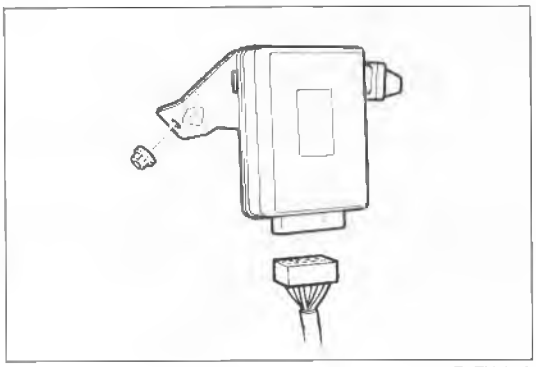
Check terminals	Resistance
c — a	Approx. 25 to 55Ω
c — b	
c — d	

2. If not as specified, replace the actuator.

3. Apply battery voltage to the following terminals, and check the actuator operation.

Order	Terminal condition				Operation of control cable
	a	b	c	d	
1	Ground	Ground	Power	Ground	Pull
2	Ground	—	Power	Ground	Hold
3	Ground	—	Power	—	Extend
4	—	—	—	—	Release

4. If not as specified, replace the actuator.



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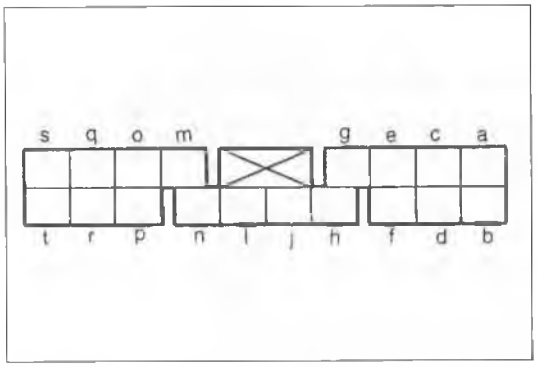


96E0TX-047

CRUISE CONTROL UNIT

Removal

1. Remove the passanger side kick panel.
2. Remove the nut and remove the control unit.

Installation

Install in the reverse order of remonal.

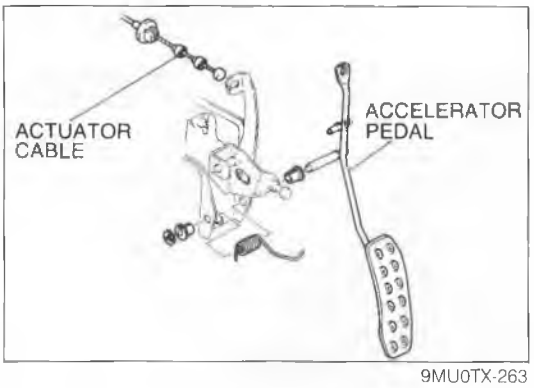
Inspection

1. Check the terminal voltages of the control unit.
2. If the terminal voltages are correct, replace the control unit.

Terminal	Wire color	Connected to	Test condition	Specification	Action
a	(GB)	Actuator	Main switch OFF	0V	Check actuator (Refer to page T–37)
			Main switch ON	9V	
b	(GW)	Actuator	Main switch OFF	0V	
			Main switch ON	9V	
c	(G)	Actuator	Main switch OFF	0V	
			Main switch ON	9V	
e	(GO)	Main switch	Main switch OFF	12V	Check main switch (Refer to page T–40)
			Main switch ON	0V	
f	(GY)	Main switch	Main switch OFF	0V	
			Main switch ON	12V	
g	(LR)	EC-AT control unit	Ignition switch ON	12V	Check EC-AT control unit (Refer to Section K)
h	(LO)	Brake switch	Brake pedal depressed	0V	Check brake switch (Refer to page T–40)
			Brake pedal released	9V	
i	(LgB)*1	Clutch switch	Clutch pedal depressed	0V	Check clutch switch (Refer to page T–39)
			Clutch pedal released	12V	
	(BY)*2	Inhibitor switch	"N" or "P" range	0V	Inspect inhibitor switch (Refer to Section K)
			Other range	12V	
l	(LR)	Cruise control switch (Set switch and Coast switch)	Main switch ON	12V	Check cruise control switch (Refer to page T–40)
			While pushing set switch Main switch ON	0V	
m	(WG)	Stoplight switch	Brake pedal depressed	12V	Check stoplight switch
			Brake pedal released	0V	
n	(L)	Cruise control switch (Resume switch and Accel switch)	Main switch ON	12V	Check cruise control switch (Refer to page T–40)
			While pushing resume switch Main switch ON	0V	
o	(LW)	Actuator	Main switch OFF	0V	Check actuator (Refer to page T–37)
			Main switch ON	9V	
p	(GR)	Speed sensor	While rotating rear tires	Cycles 0—5V	Check speed sensor (Refer to page T–40)
s	(GW)	Battery	Constant	12V	Repair wire

*1: MTX
*2: ATX

96G0TX-513



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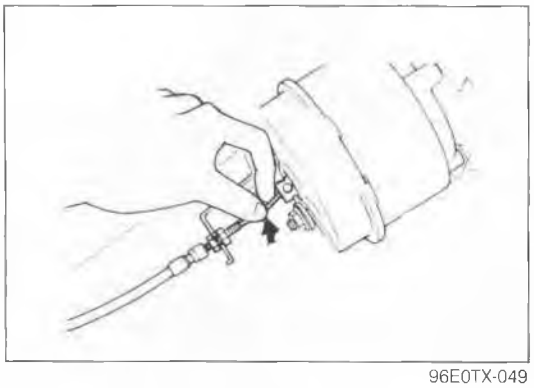
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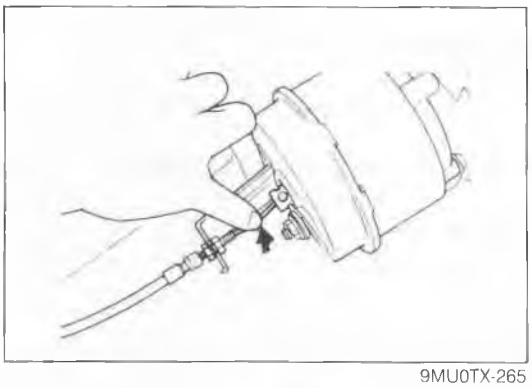
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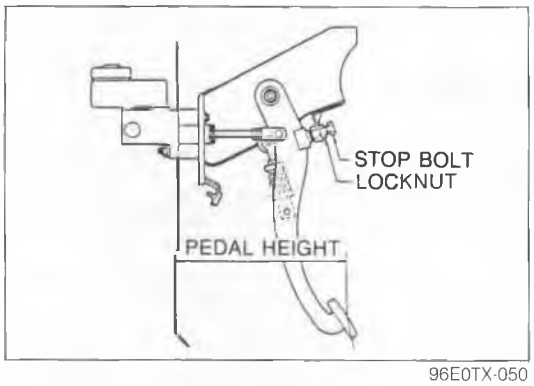

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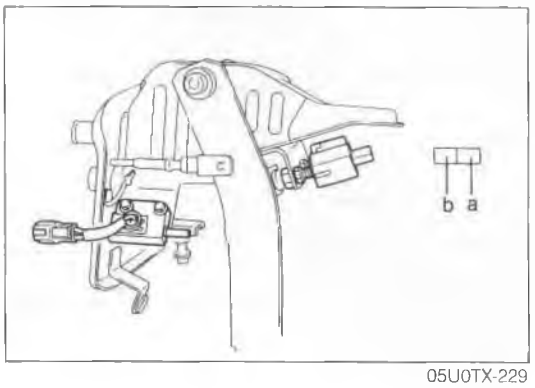


05U0TX-229

ACTUATOR CABLE

Removal

1. Disconnect the actuator cable from the accelerator pedal.
2. Remove the clamp at the inside of the firewall.
3. Disconnect the actuator cable from the actuator.
4. Remove the clamps and remove the actuator cable.

Installation

Install in the reverse order of removal.

Adjustment

Remove the clamp and adjust the nut so that actuator cable free play is as shown when the cable is pressed lightly.

Cable play: 1—3mm (0.04—0.12 in)

CLUTCH SWITCH

Removal

Remove the locknut and remove the switch.

Installation

Install in the reverse order of removal.

Adjustment

Adjust the switch to set the specified pedal height.

Pedal height: 171—181mm (6.73—7.13 in)
(With carpet)
Pedal freeplay: 0.6—3.0mm (0.02—0.12 in)

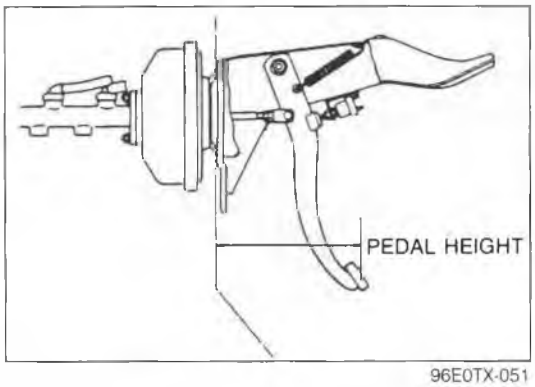
Inspection

1. Disconnect the clutch switch connector.
2. Check continuity between terminals of the switch.

Pedal position	Terminal	
	a	b
Pedal released		
Pedal depressed	○——	——○

○——○: Indicates continuity

3. If not as specified, replace the clutch switch.



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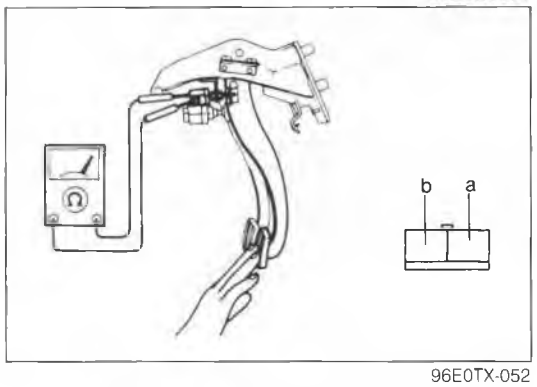

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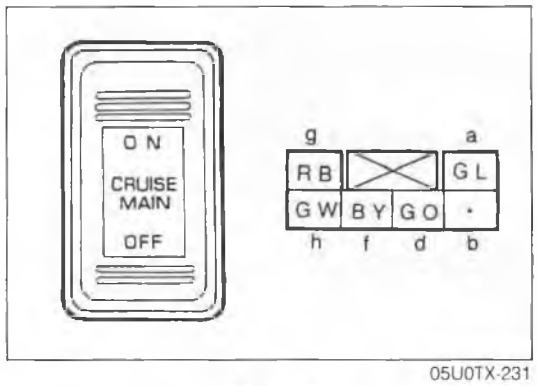

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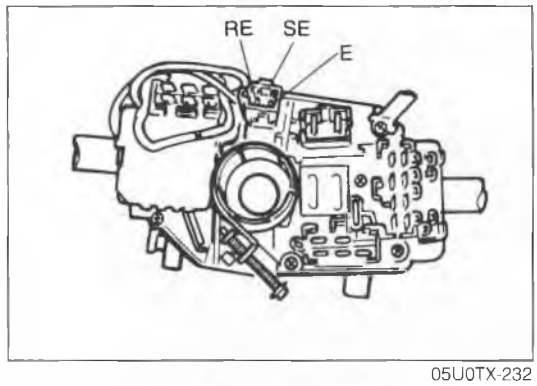

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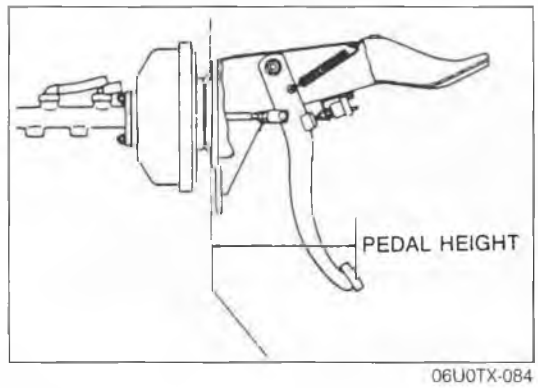


06U0TX-084

BRAKE SWITCH

Removal

Remove the locknut and remove the switch.

Installation

Install in the reverse order of removal.

Adjustment

Adjust the switch to set the specified pedal height.

Pedal height: 171—181mm (6.73—7.13 in)
(With carpet)
Pedal freeplay: 4—7mm (0.16—0.28 in)

Inspection

1. Disconnect the brake switch connector.
2. Check continuity between terminals of the switch.

Pedal position	Terminal	
	a	b
Pedal released	○——	——○
Pedal depressed		

○——○: Indicates continuity

3. If not as specified, replace the brake switch.
4. If the switch is OK, repair the wiring harness (Fuse — Brake switch — Control unit).

CRUISE CONTROL MAIN SWITCH

Inspection

1. Check continuity between terminals of the cruise control main switch.

Position	Terminal					
	a	b	d	f	g	h
Neutral			○——	——○	○——	——○
Off					○——	——○
On	○——	——○	○——	——○	○——	——○

○——○: Indicates continuity

2. If not as specified, replace the cruise control main switch.

CRUISE CONTROL SWITCH

Inspection

1. Remove the knee protector and disconnect the combination switch connector.
2. Check continuity between terminals of the combination switch connector.

Switch	Terminal		
	SE	RE	E
SET/COAST	○——		——○
RESUME/ACCEL		○——	——○

○——○: Indicates continuity

3. If not as specified, replace the cruise control switch.

SPEED SENSOR

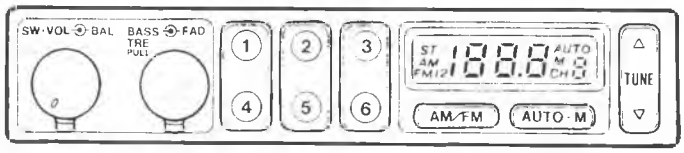
Inspection

1. Remove the instrument cluster.
2. Check continuity between terminals 1L and 2A while rotating the speedometer cable.
3. If there are not four pulses per shaft rotation, replace the speed sensor.

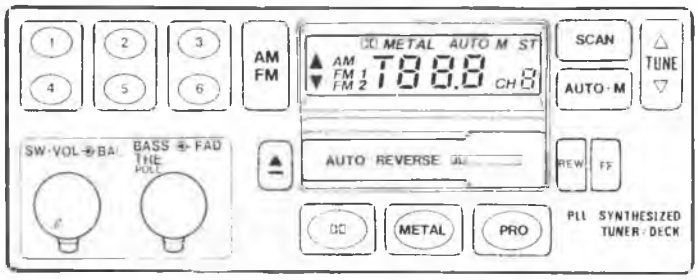
AUDIO SYSTEM

OUTLINE OF AUDIO

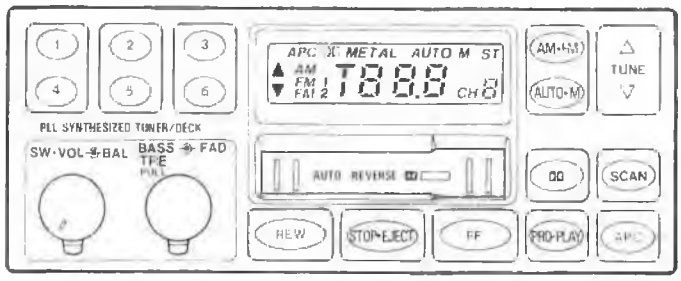
TYPE 1 (FM/AM RADIO)



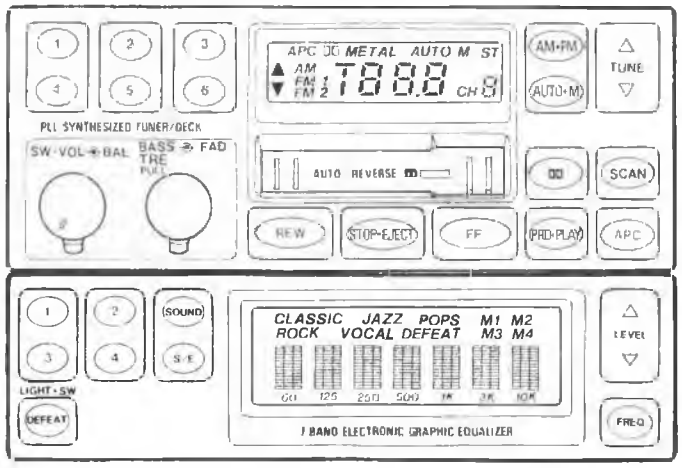
TYPE 2 (FM/AM RADIO, CASSETTE PLAYER)



TYPE 3 (FM/AM RADIO, CASSETTE PLAYER)

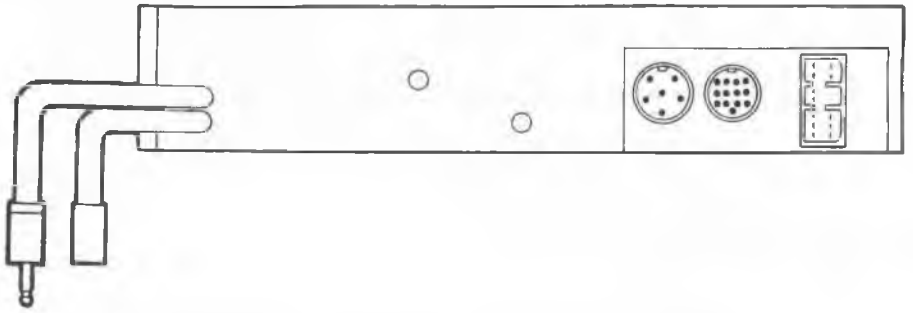


TYPE 4 (FM/AM RADIO, CASSETTE PLAYER + GRAPHIC EQUALIZER)

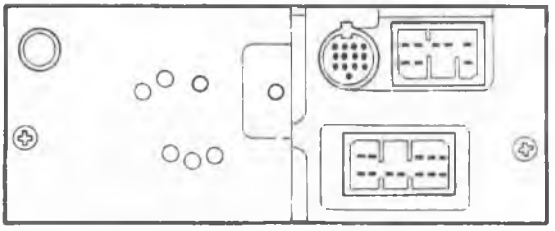


Rear View

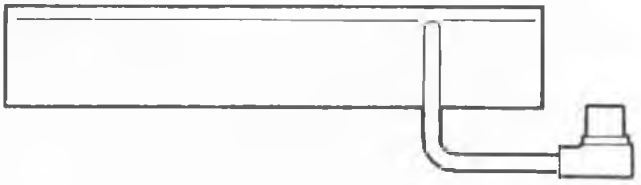
(RADIO)



(RADIO, CASSETTE PLAYER)



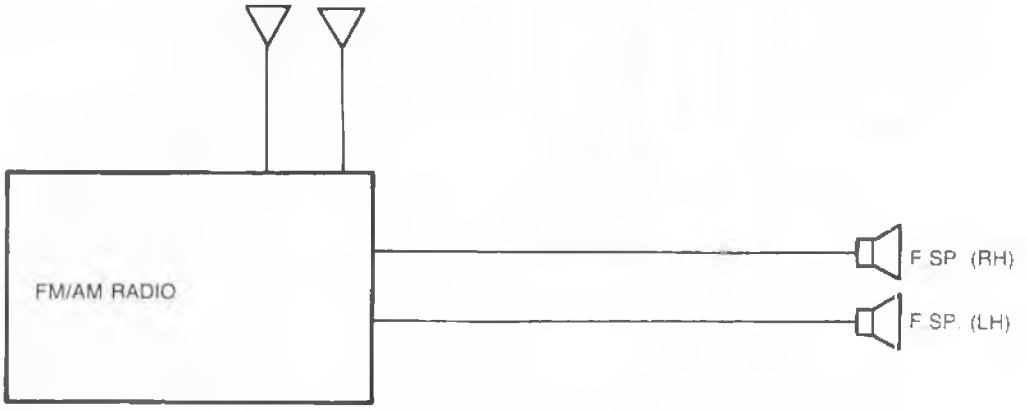
(GRAPHIC EQUALIZER)



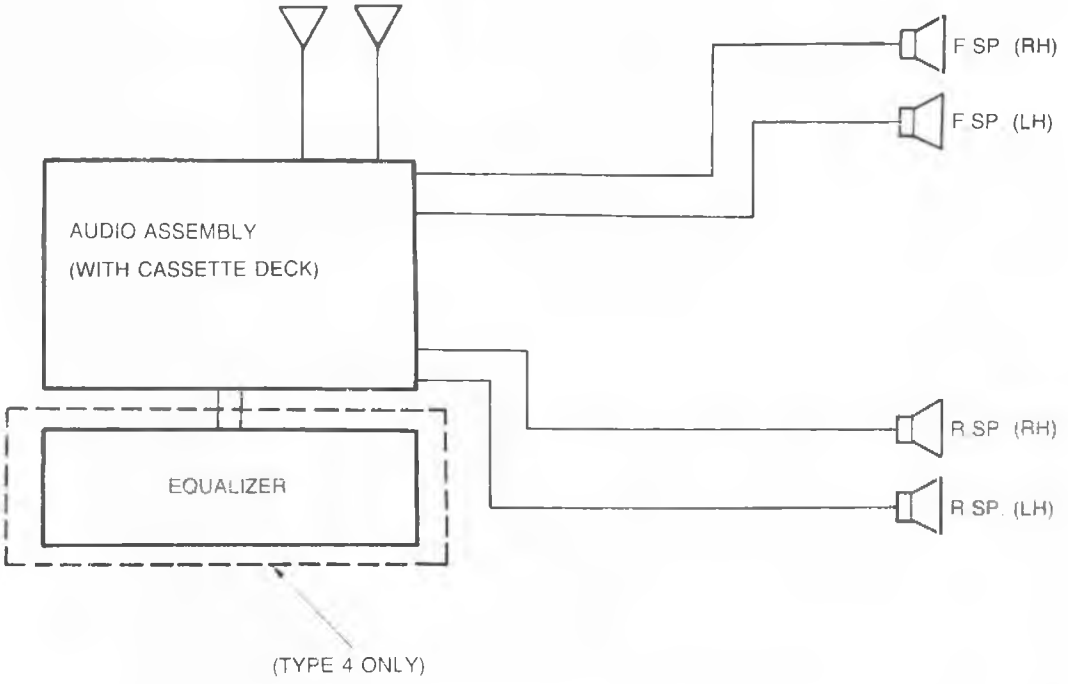
96G0TX 024

SYSTEM

TYPE 1

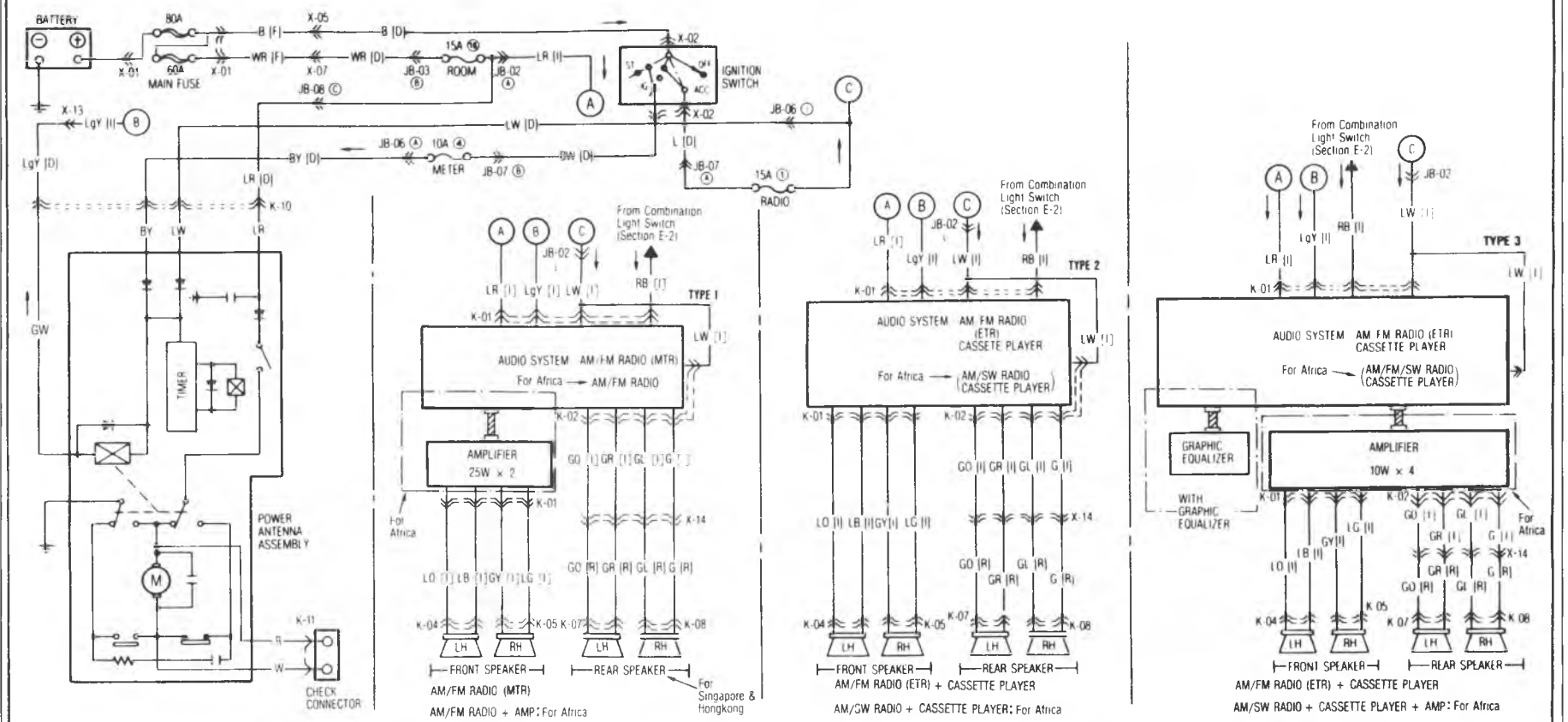


TYPE 2,3,4

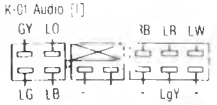


F6, F8 & FE ENGINE (Carburetor)

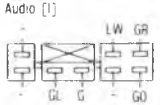
K ■ POWER ANTENNA ■ AUDIO SYSTEM (Exept United Kingdom) **K**



K-01 Audio (1)



K-02 Audio (1)



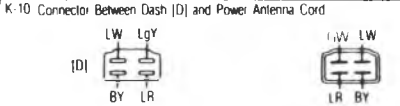
K-04 Front Speaker (LH) (1)

K-05 Front Speaker (RH) (1)

K-07 Rear Speaker (LH) (R)

K-08 Rear Speaker (RH) (R)

K-10 Connector Between Dash (D) and Power Antenna Cord



K-11 Check Connector

NO SOUND

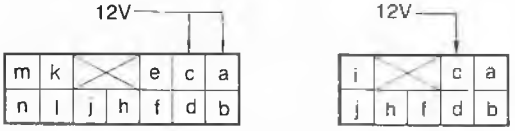
Is audio fuse 20A or room fuse 7.5A burned? — **NG** → Replace fuse

OK

Verify that connectors between radio and amplifier (or equalizer) are connected tightly — **NO** → Connect tightly

YES

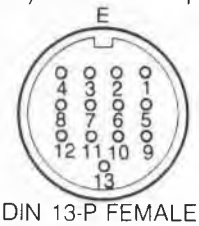
Verify 12V at terminals of harness side



NO → Repair harness (Fuse — Audio)

YES

Disconnect DIN cord between radio and equalizer. Connect a jumper wire between input and output terminals of connector (radio side). Does radio operate?



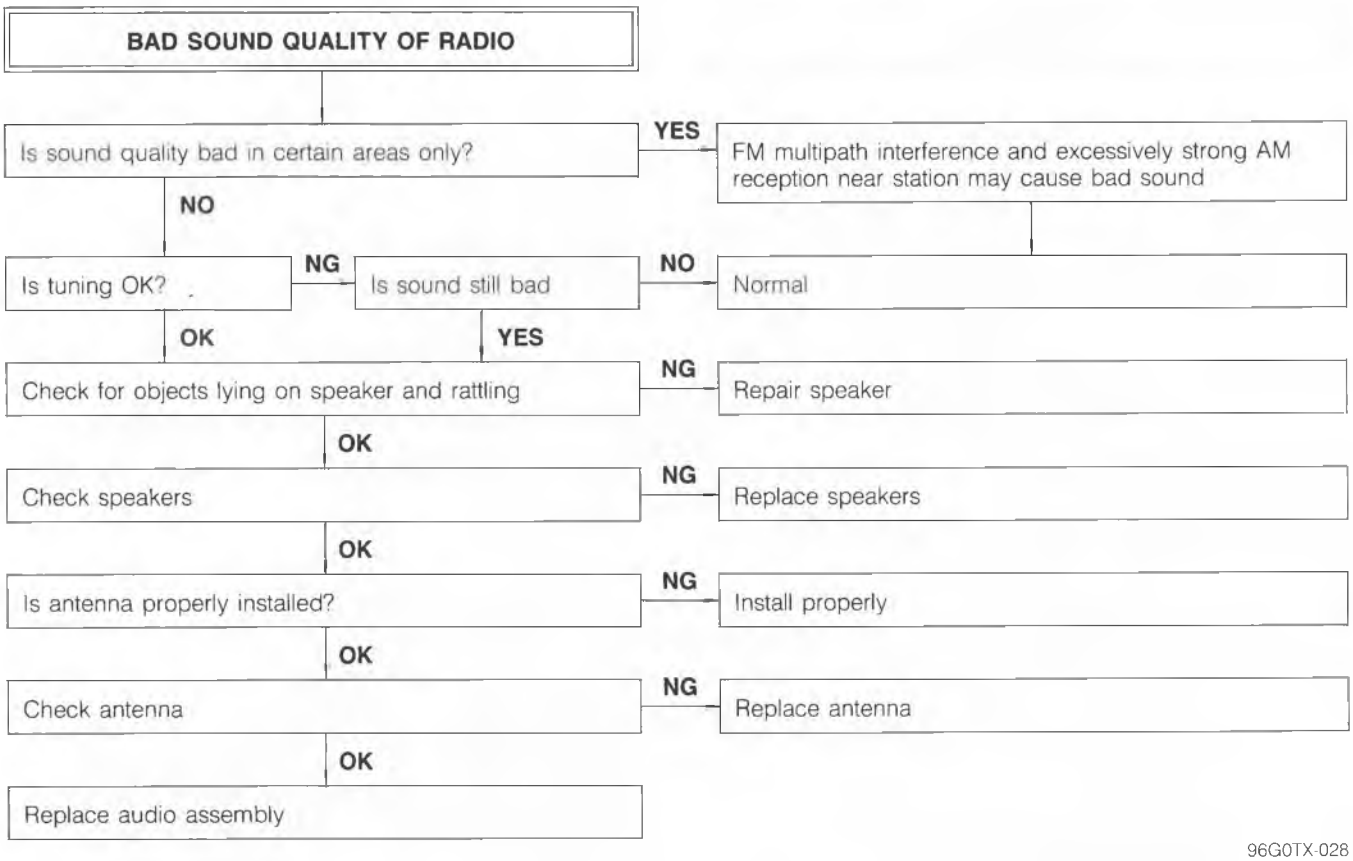
DIN 13-P FEMALE

JUMPER [1. OUTPUT LH+ 2. INPUT LH+
JUMPER [3. OUTPUT RH+ 4. INPUT RH+
5. SIGNAL GROUND
6. ILLUMI
7. +ACC
8. +B
9. SYSTEM ON (ETR)
10. SYSTEM OFF (DECK)
11. SYSTEM OFF (AUX)
12. THROUGH (B/T CUT)
13. THROUGH (MUTE)
E CHASSIS GROUND

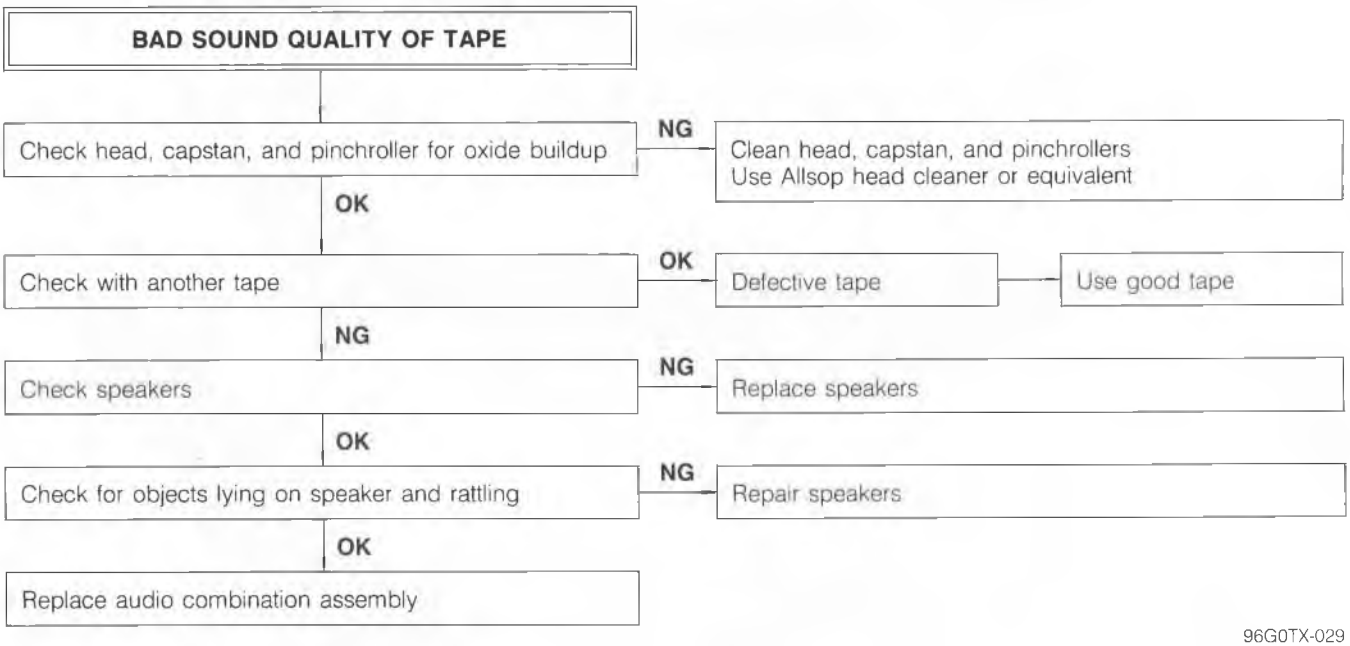
YES → Replace equalizer

NO → Replace radio

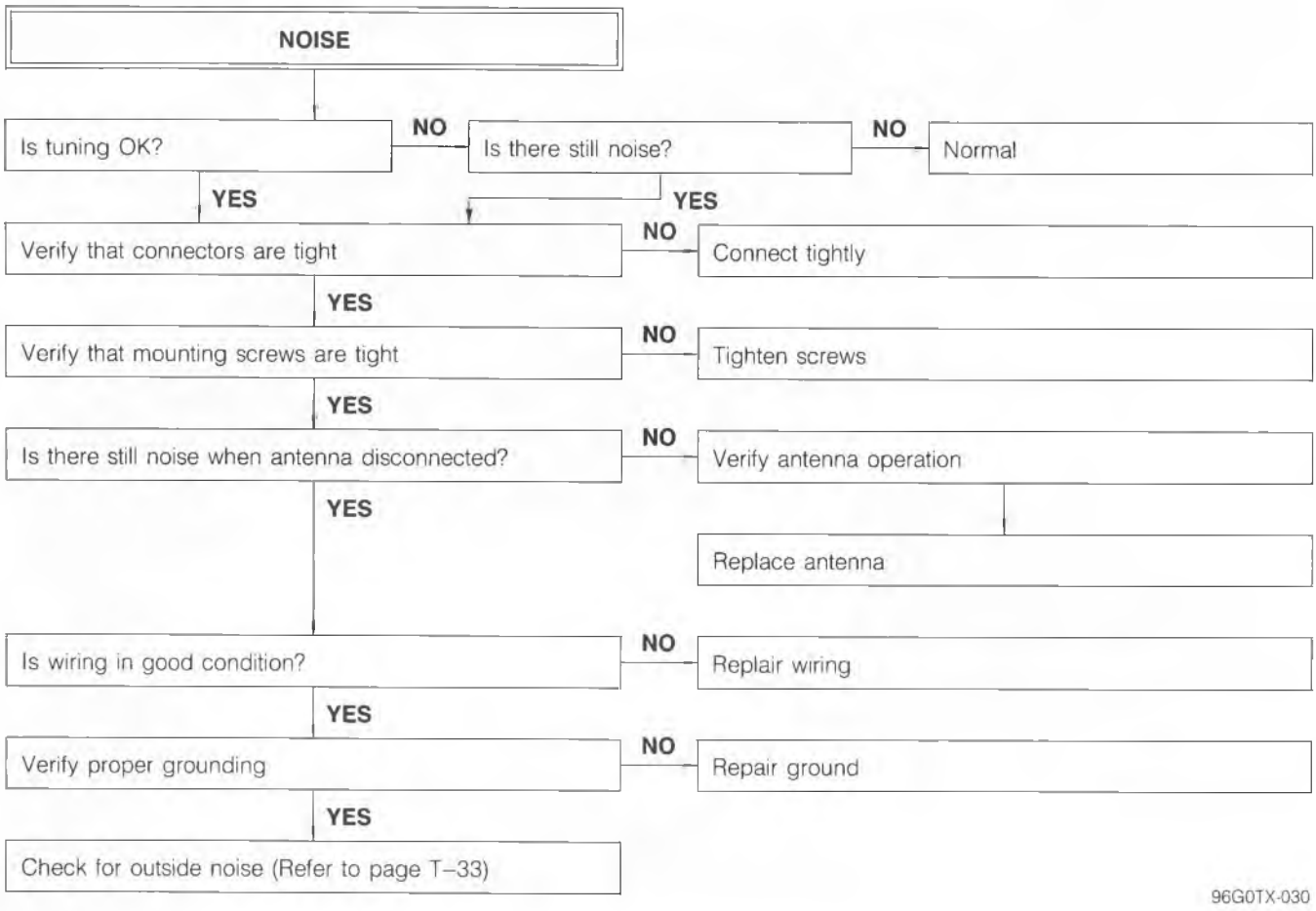
96G0TX-027



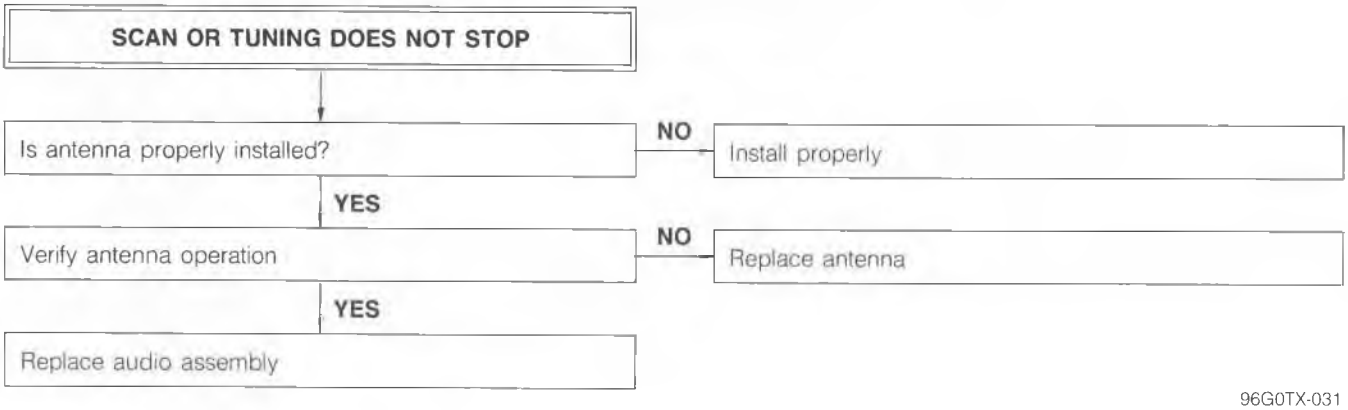
96G0TX-028



96G0TX-029



96G0TX-030



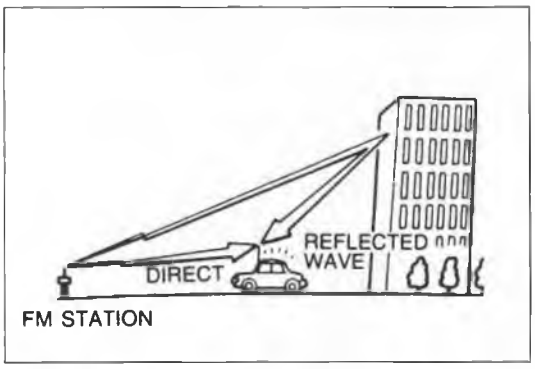
96G0TX-031

CAUSES OF NOISE

When the radio receives a signal from a station, there may be some noise interference. The cause could be
1. Defective audio system
2. The vehicle itself inducts noise. (called outside noise.)
3. Noise from other cars or neon signs, for example. (ambience noise.)

Since ambience noise is a temporary occurence, this section does not deal with it. For noise problems, first, the cause of the noise must be determined through troubleshooting guide. Once it has been determined, refer to the suppression chart to find the proper procedure for eliminating the noise.

93U15X-070

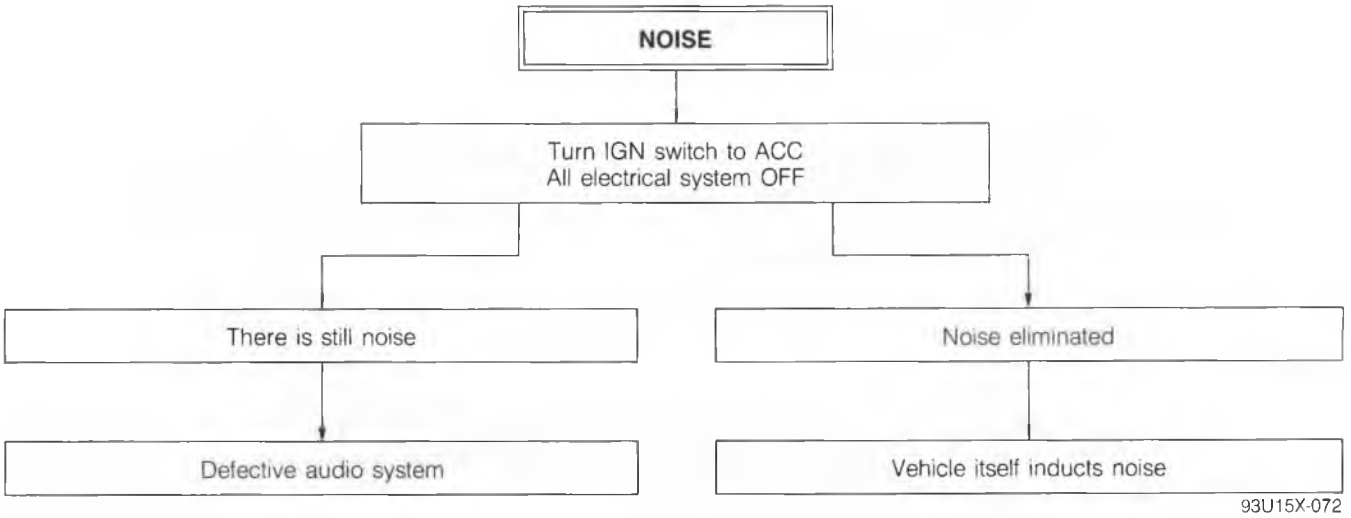


93U15X-071

FM multipath

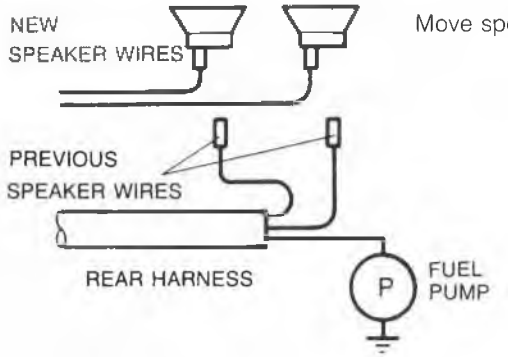
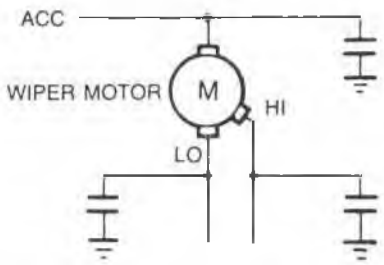
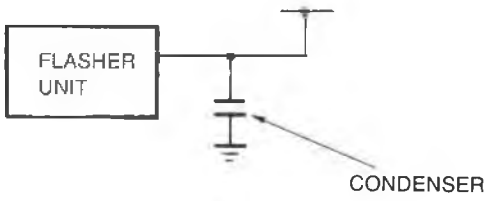
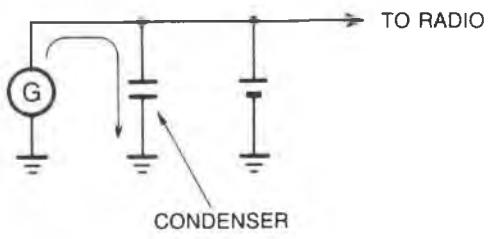
FM waves can cause a problem called multipath receiving. This happens when the radio picks up a direct wave and reflected wave at the same time. This results in a "Dead Spot" or distorted sound.

Troubleshooting



93U15X-072

Noise Suppression Chart

Cause	Remedy
Fuel pump noise	 Move speaker wiring away from fuel pump wire.
Motor noise (Wiper, washer, power window, for example.)	1. Check grounding. 2. Install condensers to motor circuit. 
Turn signal noise	Connect condenser (0.5 μF) to power line of filter unit.  **Note** • **Condenser should be placed near flasher unit.**
Alternator noise	Connect condenser (0.5 μF) near alternator. 

97U0TX-151

Sound is partial

Table 1

Speaker	Fader	Balance	Tone		Speaker operates	Judgement
			Bass	Treble		
Left front	Front	Left	MIN	MAX	Yes	Left front speaker OK
					No	Left front speaker circuit faulty (Go to Table 2)
Right front	Front	Right	MIN	MAX	Yes	Right front speaker OK
					No	Right front speaker circuit faulty (Go to Table 2)
Left rear	Rear	Left	MIN	MAX	Yes	Left rear speaker OK
					No	Left rear speaker circuit faulty (Go to Table 2)
Right rear	Rear	Right	MIN	MAX	Yes	Right rear speaker OK
					No	Right rear speaker circuit faulty (Go to Table 2)

Table 2

No operation	Action
Left front speaker	Inspect the speaker
Right front speaker	
Left rear speaker	
Right rear speaker	
Both front speakers	
Both rear speakers	
All speakers	Replace the audio component assembly

96G0TX-032

TECHNICAL DATA

96GTDX-501

B1. ENGINE (SOHC)
12-valve

Item \ Engine				F2	FE	F8
Type				Gasoline, 4-cycle		
Cylinder arrangement and number				In-line, 4-cylinders		
Type of combustion chamber				Pentroof		
Valve system				OHC, belt-driven		
Bore x Stroke			mm (in)	86.0 x 94.0 (3.39 x 3.70)	86.0 x 86.0 (3.39 x 3.39)	86.0 x 77.0 (3.39 x 3.03)
Total piston displacement			cc (cu in)	2,184 (133.2)	1,998 (121.9)	1,789 (109.1)
Compression ratio				8.6 : 1	9.5 : 1	
Compression pressure kPa (kg/cm^2, psi)-rpm	Standard			1,120 (11.4, 162)-270	1,422 (14.5, 206)-280	1,442 (14.7, 209)-290
	Minimum			780 (8.0, 114)-270	996 (10.2, 144)-280	996 (10.2, 144)-290
	Maximum difference between cylinders			196 (2.0, 28)		
Valve timing	IN	Open	BTDC	10°	14°	
		Close	ABDC	49°	56°	
	EX	Open	BBDC	55°	69°	
		Close	ATDC	12°	13°	
Valve clearance		IN	mm (in)	0, Maintenance free		
		EX	mm (in)	0, Maintenance free		
Cylinder head						
Height			mm (in)	91.95—92.05 (3.620—3.624)		
Distortion		Maximum	mm (in)	0.15 (0.006)		
Grinding limit		Maximum	mm (in)	0.20 (0.008)		
Valve and valve guide						
Valve head diameter		IN	mm (in)	32.4—32.6 (1.276—1.283)		
		EX	mm (in)	33.9—34.1 (1.335—1.343)		
Valve head thickness (margin)		IN	mm (in)	0.8—1.2 (0.031—0.047)		
		EX	mm (in)	1.3—1.7 (0.051—0.067)		
Valve face angle		IN		45°		
		EX		45°		
Valve length mm (in)	IN	Standard		115.81 (4.5594)		
		Minimum		115.31 (4.5398)		
	EX	Standard		116.21 (4.5752)		
		Minimum		115.71 (4.5555)		
Valve stem diameter		IN	mm (in)	6.970—6.985 (0.2744—0.2750)		
		EX	mm (in)	6.965—6.980 (0.2742—0.2748)		
Guide inner diameter		IN	mm (in)	7.01—7.03 (0.2760—0.2768)		
		EX	mm (in)	7.01—7.03 (0.2760—0.2768)		
Valve stem to guide clearance		IN	mm (in)	0.025—0.060 (0.0010—0.0024)		
		EX	mm (in)	0.030—0.065 (0.0012—0.0026)		
		Maximum	mm (in)	0.20 (0.0079)		
Guide projection (Height "A")			mm (in)	19.8—20.3 (0.780—0.799)		
Valve seat						
Seat angle		IN		45°		
		EX		45°		
Seat contact width		IN	mm (in)	1.2—1.6 (0.047—0.063)		
		EX	mm (in)	1.2—1.6 (0.047—0.063)		
Seat sinking (Measure valve protruding length) mm (in)	IN	Standard		50.2 (1.976)		
		Maximum		51.0 (2.008)		
	EX	Standard		50.2 (1.976)		
		Maximum		51.0 (2.008)		

Item \ Engine			F2	FE	F8
Valve spring					
Free length mm (in)	IN	Standard	49.5 (1.949)		
		Minimum	48.5 (1.909)		
	EX	Standard	50.4 (1.984)		
		Minimum	49.4 (1.945)		
Out-of-square mm (in)		Maximum	1.7 (0.067)		
Setting load/height N (kg, lb)/mm (in)		IN	203—230 (20.7—23.4, 45.5—51.5)/41 (1.614)		
		EX	240—272 (24.5—27.7, 53.9—60.9)/41 (1.614)		
Camshaft					
Cam lobe height mm (in)	IN	Standard	41.290—41.390 (1.6256—1.6295)		
		Minimum	41.140 (1.6197)		
	EX	Standard	41.797—41.897 (1.6455—1.6495)		
		Minimum	41.647 (1.6396)		
Journal diameter mm (in)	Front and Rear (No.1,5)		31.940—31.965 (1.2575—1.2585)		
	Center (No.2,3,4)		31.910—31.935 (1.2563—1.2573)		
	Out-of-round	Maximum	0.05 (0.002)		
Camshaft bearing oil clearance mm (in)	Front and Rear (No.1,5)		0.035—0.085 (0.0014—0.0033)		
	Center (No.2,3,4)		0.065—0.115 (0.0026—0.0045)		
		Maximum	0.15 (0.0059)		
Camshaft runout mm (in)		Maximum	0.03 (0.0012)		
Camshaft end play mm (in)		Standard	0.08—0.16 (0.003—0.006)		
		Maximum	0.20 (0.008)		
Rocker arm and rocker arm shaft					
Rocker arm inner diameter mm (in)			19.000—19.033 (0.748—0.749)		
Rocker arm shaft diameter mm (in)			18.959—18.980 (0.746—0.747)		
Rocker arm to shaft clearance mm (in)		Standard	0.020—0.074 (0.0008—0.0029)		
		Maximum	0.10 (0.004)		
Cylinder block					
Height mm (in)			301.5 (11.87)	289.0 (11.38)	268.5 (10.57)
Distortion mm (in)		Maximum	0.15 (0.006)		
Grinding limit mm (in)			0.20 (0.008)		
Cylinder bore diameter mm (in)	Standard		86.000—86.019 (3.3858—3.3866)		
	0.25 (0.010) oversize		86.250—86.269 (3.3957—3.3964)		
	0.50 (0.020) oversize		86.500—86.519 (3.4055—3.4062)		
Cylinder bore taper and out-of-round mm (in)		Maximum	0.019 (0.0007)		
Piston					
Piston diameter measured at 90° to pin bore axis and 18.0mm (0.709 in) below oil ring groove mm (in)	Standard		85.944—85.964 (3.3836—3.3844)		
	0.25 (0.010) oversize		86.194—86.214 (3.3935—3.3942)		
	0.50 (0.020) oversize		86.444—86.464 (3.4033—3.4041)		
Piston to cylinder clearance mm (in)		Standard	0.036—0.075 (0.0014—0.0030)		
		Maximum	0.15 (0.0059)		
Piston ring					
Thickness mm (in)		Top	1.47—1.49 (0.0579—0.0587)		
		Second	1.47—1.49 (0.0579—0.0587)		
End gap measured in cylinder mm (in)		Top	0.20—0.35 (0.008—0.0138)		
		Second	0.15—0.30 (0.006—0.012)		
		Oil (rail)	0.20—0.70 (0.008—0.0276)		
		Maximum	1.0 (0.039)		
Ring groove width in piston mm (in)		Top	1.52—1.54 (0.0598—0.0606)		
		Second	1.52—1.54 (0.0598—0.0606)		
		Oil	4.02—4.04 (0.1583—0.1591)		
Clearance of piston ring to ring groove mm (in)		Top	0.03—0.07 (0.0012—0.0028)		
		Second	0.03—0.07 (0.0012—0.0028)		
		Maximum	0.15 (0.006)		

Item \ Engine	F2	FE	F8
Piston pin			
Diameter mm (in)	21.974—21.980 (0.8651—0.8654)		
Interference in connecting rod mm (in)	0.013—0.037 (0.0005—0.0015)		
Piston to piston pin clearance mm (in)	0.008—0.024 (0.0003—0.0009)		
Installation pressure N (kg, lb)	4,900—14,700 (500—1,500, 1,100—3,300)		
Connecting rod and connecting rod bearing			
Length (Center to center) mm (in)	158.45—158.55 (6.238—6.242)	151.95—152.05 (5.982—5.986)	135.95—136.05 (5.352—5.356)
Bending mm (in)	0.24 (0.0094) max.		
Small end bore mm (in)	21.943—21.961 (0.8640—0.8646)		
Big end bore mm (in)	54.002—54.017 (2.1261—2.1266)		
Big end width mm (in)	26.838—26.890 (1.0566—1.0587)		
Connecting rod side clearance mm (in) — Standard	0.110—0.262 (0.004—0.010)		
Connecting rod side clearance mm (in) — Maximum	0.30 (0.012)		
Crankshaft			
Crankshaft runout mm (in) — Maximum	0.03 (0.0012)		
Main journal diameter mm (in) — Standard size	59.937—59.955 (2.3597—2.3604)		
Main journal diameter mm (in) — 0.25 (0.010) undersize — Standard	59.693—59.711 (2.3501—2.3508)		
Main journal diameter mm (in) — 0.25 (0.010) undersize — No.3	59.687—59.705 (2.3499—2.3506)		
Main journal diameter mm (in) — 0.50 (0.020) undersize — No.1,2,4,5	59.443—59.461 (2.3403—2.3410)		
Main journal diameter mm (in) — 0.50 (0.020) undersize — No.3	59.437—59.455 (2.3400—2.3407)		
Main journal diameter mm (in) — 0.75 (0.030) undersize — No.1,2,4,5	59.193—59.211 (2.3304—2.3311)		
Main journal diameter mm (in) — 0.75 (0.030) undersize — No.3	59.187—59.205 (2.3302—2.3309)		
Main journal taper and out-of-round mm (in) — Maximum	0.05 (0.0020)		
Crankpin diameter mm (in) — Standard	50.940—50.955 (2.0055—2.0061)		
Crankpin diameter mm (in) — 0.25 (0.010) undersize	50.690—50.705 (1.9957—1.9963)		
Crankpin diameter mm (in) — 0.50 (0.020) undersize	50.440—50.455 (1.9858—1.9864)		
Crankpin diameter mm (in) — 0.75 (0.030) undersize	50.190—50.205 (1.9760—1.9766)		
Crankpin taper and out-of-round mm (in) — Maximum	0.05 (0.0020)		
Main bearing			
Main journal bearing oil clearance mm (in) — No.1,2,4,5 — Standard	0.025—0.043 (0.0010—0.0017)		
Main journal bearing oil clearance mm (in) — No.1,2,4,5 — Maximum	0.08 (0.0031)		
Main journal bearing oil clearance mm (in) — No.3 — Standard	0.031—0.049 (0.0012—0.0019)		
Main journal bearing oil clearance mm (in) — No.3 — Maximum	0.08 (0.0031)		
Available undersize bearing mm (in)	0.25 (0.010), 0.50 (0.020), 0.75 (0.030)		
Crankpin bearing			
Crankpin bearing oil clearance mm (in) — Standard	0.027—0.067 (0.0011—0.0026)		
Crankpin bearing oil clearance mm (in) — Maximum	0.10 (0.0039)		
Available undersize bearing mm (in)	0.25 (0.010), 0.50 (0.020), 0.75 (0.030)		
Thrust bearing (center main bearing)			
Crankshaft end play mm (in) — Standard	0.08—0.18 (0.0031—0.0071)		
Crankshaft end play mm (in) — Maximum	0.30 (0.0118)		
Bearing width mm (in) — Standard	27.94—27.99 (1.100—1.102)		
Bearing width mm (in) — 0.25 (0.010) oversize	28.04—28.09 (1.104—1.106)		
Bearing width mm (in) — 0.50 (0.020) oversize	28.12—28.17 (1.107—1.109)		
Bearing width mm (in) — 0.75 (0.030) oversize	28.20—28.25 (1.110—1.112)		
Timing belt			
Belt deflection mm (in)/98 N (10 kg, 22 lb)	8.0—9.0 (0.31—0.35)	5.5—6.5 (0.22—0.26)	4.0—5.0 (0.16—0.20)

8-valve

Item \ Engine				FE
Type				Gasoline, 4-cycle
Cylinder arrangement and number				In-line, 4-cylinders
Type of combustion chamber				Multispherical
Valve system				OHC, belt-driven
Bore x Stroke			mm (in)	86.0 x 86.0 (3.39 x 3.39)
Total piston displacement			cc (cu in)	1,998 (121.9)
Compression ratio				8.6 : 1
Compression pressure kPa (kg/cm^2, psi)-rpm	Standard			1,275 (13.0, 185)-270
	Minimum			893 (9.1, 129)-270
	Maximum difference between cylinders			196 (2.0, 28)
Valve timing	IN	Open	BTDC	16°
		Close	ABDC	54°
	EX	Open	BBDC	54°
		Close	ATDC	16°
Valve clearance		IN	mm (in)	0.30 (0.012)
		EX		0.30 (0.012)
Cylinder head				
Height			mm (in)	91.95—92.05 (3.620—3.624)
Distortion		Maximum	mm (in)	0.15 (0.006)
Grinding limit		Maximum	mm (in)	0.20 (0.008)
Valve and valve guide				
Valve head diameter		IN	mm (in)	43.9—44.1 (1.728—1.736)
		EX		35.9—36.1 (1.413—1.421)
Valve head thickness (margin)		IN	mm (in)	0.8—1.2 (0.031—0.047)
		EX		1.3—1.7 (0.051—0.067)
Valve face angle		IN		45°
		EX		45°
Valve length mm (in)	IN	Standard		111.89 (4.4051)
		Minimum		111.39 (4.3854)
	EX	Standard		111.69 (4.3972)
		Minimum		111.19 (4.3776)
Valve stem diameter		IN	mm (in)	8.030—8.045 (0.3161—0.3167)
		EX		8.025—8.040 (0.3159—0.3165)
Guide inner diameter		IN	mm (in)	8.07—8.09 (0.3177—0.3185)
		EX		8.07—8.09 (0.3177—0.3185)
Valve stem to guide clearance		IN	mm (in)	0.025—0.060 (0.0010—0.0024)
		EX		0.030—0.065 (0.0012—0.0026)
		Maximum		0.20 (0.0079)
Guide projection (Height "A")			mm (in)	19.1—19.6 (0.752—0.772)
Valve seat				
Seat angle		IN		45°
		EX		45°
Seat contact width		IN	mm (in)	1.2—1.6 (0.047—0.063)
		EX		1.2—1.6 (0.047—0.063)
Seat sinking (Measure valve protruding length) mm (in)	IN	Standard		46.5 (1.831)
		Maximum		48.0 (1.890)
	EX	Standard		46.5 (1.831)
		Maximum		48.0 (1.890)

Item \ Engine			FE
Valve spring			
Free length mm (in)	Outer	Standard	52.0 (2.047)
		Minimum	51.0 (2.008)
	Inner	Standard	44.0 (1.732)
		Minimum	43.0 (1.693)
Out-of-square mm (in)		Maximum	1.8 (0.071)
Setting load/height N (kg, lb)/mm (in)		Outer	128 (13.1, 29)/36.5 (1.44)
		Inner	189 (19.2, 42)/41 (1.61)
Camshaft			
Cam lobe height mm (in)	IN	Standard	38.107—38.207 (1.5003—1.5042)
		Minimum	37.957 (1.4944)
	EX	Standard	38.110—38.210 (1.5004—1.5043)
		Minimum	37.960 (1.4945)
Journal diameter mm (in)	Front and Rear (No.1,5)		31.940—32.035 (1.2575—1.2612)
	Center (No.2,3,4)		31.910—32.065 (1.2563—1.2624)
	Out-of-round	Maximum	0.05 (0.002)
Camshaft bearing oil clearance mm (in)	Front and Rear (No.1,5)		0.035—0.085 (0.0014—0.0033)
	Center (No.2,3,4)		0.065—0.115 (0.0026—0.0045)
		Maximum	0.15 (0.0059)
Camshaft runout mm (in)		Maximum	0.03 (0.0012)
Camshaft end play mm (in)		Standard	0.08—0.16 (0.003—0.006)
		Maximum	0.20 (0.008)
Rocker arm and rocker arm shaft			
Rocker arm inner diameter mm (in)			16.000—16.027 (0.6299—0.6310)
Rocker arm shaft diameter mm (in)			15.966—15.984 (0.6286—0.6293)
Rocker arm to shaft clearance mm (in)		Standard	0.016—0.061 (0.0006—0.0024)
		Maximum	0.10 (0.004)
Cylinder block			
Height mm (in)			289.0 (11.38)
Distortion mm (in)		Maximum	0.15 (0.006)
Grinding limit mm (in)			0.20 (0.008)
Cylinder bore diameter mm (in)	Standard		86.000—86.019 (3.3858—3.3866)
	0.25 (0.010) oversize		86.250—86.269 (3.3957—3.3964)
	0.50 (0.020) oversize		86.500—86.519 (3.4055—3.4062)
	0.75 (0.030) oversize		—
	1.00 (0.039) oversize		—
Cylinder bore taper and out-of-round mm (in)		Maximum	0.019 (0.0007)
Piston			
Piston diameter measured at 90° to pin bore axis and 18.0mm (0.709 in) below oil ring groove mm (in)	Standard		85.944—85.964 (3.3836—3.3844)
	0.25 (0.010) oversize		86.194—86.214 (3.3935—3.3942)
	0.50 (0.020) oversize		86.444—86.464 (3.4033—3.4041)
	0.75 (0.030) oversize		—
	1.00 (0.039) oversize		—
Piston and cylinder clearance mm (in)		Standard	0.036—0.075 (0.0014—0.0030)
		Maximum	0.15 (0.0059)
Piston ring			
Thickness mm (in)		Top	1.47—1.49 (0.0579—0.0587)
		Second	1.47—1.49 (0.0579—0.0587)
End gap measured in cylinder mm (in)		Top	0.20—0.35 (0.008—0.0138)
		Second	0.15—0.30 (0.006—0.012)
		Oil (rail)	0.20—0.70 (0.008—0.0276)
		Maximum	1.0 (0.039)
Ring groove width in piston mm (in)		Top	1.52—1.54 (0.0598—0.0606)
		Second	1.52—1.54 (0.0598—0.0606)
		Oil	4.02—4.04 (0.1583—0.1591)

Item \ Engine			FE
Clearance of piston ring to ring groove mm (in)		Top	0.03—0.07 (0.0012—0.0028)
		Second	0.03—0.07 (0.0012—0.0028)
		Maximum	0.15 (0.006)
Piston pin			
Diameter mm (in)			21.974—21.980 (0.8651—0.8654)
Interference in connecting rod mm (in)			0.013—0.037 (0.0005—0.0015)
Piston to piston pin clearance mm (in)			0.008—0.024 (0.0003—0.0009)
Installation pressure N (kg, lb)			4,900—14,700 (500—1,500, 1,100—3,300)
Connecting rod and connecting rod bearing			
Length (Center to center) mm (in)			151.95—152.05 (5.982—5.986)
Twisting and bending mm (in)			0.06 (0.0024) max.
Small end bore mm (in)			21.943—21.961 (0.8640—0.8646)
Big end bore mm (in)			54.002—54.017 (2.1261—2.1266)
Big end width mm (in)			26.838—26.890 (1.0566—1.0587)
Connecting rod side clearance mm (in)		Standard	0.110—0.262 (0.004—0.010)
		Maximum	0.30 (0.012)
Crankshaft			
Crankshaft runout mm (in)		Maximum	0.03 (0.0012)
Main journal diameter mm (in)	Standard size		59.937—59.955 (2.3597—2.3604)
	0.25 (0.010) undersize	Standard	59.693—59.711 (2.3051—2.3508)
		No.3	59.687—59.705 (2.3499—2.3506)
	0.50 (0.020) undersize	No.1,2,4,5	59.443—59.461 (2.3403—2.3410)
		No.3	59.437—59.455 (2.3400—2.3407)
	0.75 (0.030) undersize	No.1,2,4,5	59.193—59.211 (2.3304—2.3311)
		No.3	59.187—59.205 (2.3302—2.3309)
Main journal taper and out-of-round mm (in)		Maximum	0.05 (0.0020)
Crankpin diameter mm (in)	Standard		50.940—50.955 (2.0055—2.0061)
	0.25 (0.010) undersize		50.690—50.705 (1.9957—1.9963)
	0.50 (0.020) undersize		50.440—50.455 (1.9858—1.9864)
	0.75 (0.030) undersize		50.190—50.205 (1.9760—1.9766)
Crankpin taper and out-of-round mm (in)		Maximum	0.05 (0.0020)
Main bearing			
Main journal bearing oil clearance mm (in)	No.1,2,4,5	Standard	0.025—0.043 (0.0010—0.0017)
		Maximum	0.08 (0.0031)
	No.3	Standard	0.031—0.049 (0.0012—0.0019)
		Maximum	0.08 (0.0031)
Available undersize bearing mm (in)			0.25 (0.010), 0.50 (0.020), 0.75 (0.030)
Crankpin bearing			
Crankpin bearing oil clearance mm (in)		Standard	0.027—0.067(0.0011—0.0026)
		Maximum	0.10 (0.0039)
Available undersize bearing mm (in)			0.25 (0.010), 0.50 (0.020), 0.75 (0.030)
Thrust bearing (center main bearing)			
Crankshaft end play mm (in)		Standard	0.08—0.18 (0.0031—0.0071)
		Maximum	0.30 (0.0118)
Bearing width mm (in)	Standard		27.94—27.99 (1.100—1.102)
	0.25 (0.010) oversize		28.04—28.09 (1.104—1.106)
	0.05 (0.020) oversize		28.12—28.17 (1.107—1.109)
	0.75 (0.030) oversize		28.20—28.25 (1.110—1.112)
Timing belt			
Belt deflection mm (in)/98 N (10 kg, 22 lb)			5.5—6.5 (0.22—0.26)

B2. ENGINE (DOHC)

Item \ Engine				FE DOHC	
				Leaded fuel	Unleaded fuel
Type				Gasoline, 4-cycle	
Cylinder arrangement and number				In-line, 4-cylinders	
Type of combustion chamber				Pentroof	
Valve system				OHC, belt-driven	
Bore x Stroke mm (in)				86.0 x 86.0 (3.39 x 3.39)	
Total piston displacement cc (cu in)				1,998 (121.9)	
Compression ratio				10.0	9.2
Compression pressure kPa (kg/cm², psi)-rpm	Standard			1,422 (14.5, 206)-290	1,373 (14.0, 199)-310
	Minimum			996 (10.2, 144)-290	961 (9.8, 139)-310
	Maximum difference between cylinders			196 (2.0, 28)	
Valve timing	IN	Open	BTDC	10°	10°
		Close	ABDC	60°	55°
	EX	Open	BBDC	60°	55°
		Close	ATDC	10°	10°
Valve clearance mm (in)		IN		0; Maintenance free	
		EX		0; Maintenance free	
Cylinder head					
Height mm (in)				133.95—134.05 (5.274—5.278)	
Distortion mm (in)		Maximum		0.15 (0.006)	
Grinding mm (in)		Maximum		0.20 (0.008)	
HLA to cylinder head clearance mm (in)		Standard		0.025—0.066 (0.0010—0.0026)	
		Maximum		0.18 (0.0071)	
Valve and valve guide					
Valve head diameter mm (in)		IN		33.6—33.8 (1.323—1.331)	
		EX		28.8—29.0 (1.134—1.142)	
Valve head thickness (margin) mm (in)		IN		1.0—1.7 (0.039—0.067)	
		EX		1.1—1.7 (0.043—0.067)	
Valve face angle		IN		45°	
		EX		45°	
Valve length mm (in)	IN	Standard		103.18 (4.0622)	
		Minimum		102.68 (4.0425)	
	EX	Standard		103.94 (4.0921)	
		Minimum		103.44 (4.0724)	
Valve stem diameter mm (in)		IN		5.970—5.985 (0.2350—0.2356)	
		EX		5.965—5.980 (0.2348—0.2354)	
Guide inner diameter mm (in)		IN		6.01—6.03 (0.2366—0.2374)	
		EX		6.01—6.03 (0.2366—0.2374)	
Valve stem to guide clearance mm (in)		IN		0.025—0.060 (0.0010—0.0024)	
		EX		0.030—0.065 (0.0012—0.0026)	
		Maximum		0.20 (0.0079)	
Guide projection (Height "A") mm (in)				11.4—11.9 (0.449—0.469)	
Valve seat					
Seat angle		IN		45°	
		EX		45°	
Seat contact width mm (in)		IN		1.2—1.6 (0.047—0.063)	
		EX		1.2—1.6 (0.047—0.063)	
Seat sinking (Measure valve protruding length) mm (in)	IN	Standard		36.8 (1.449)	
		Maximum		37.8 (1.488)	
	EX	Standard		36.8 (1.449)	
		Maximum		37.8 (1.488)	

Item			Engine	FE DOHC	
				Leaded fuel	Unleaded fuel
Valve spring					
Free length mm (in)	Outer		Standard	39.1 (1.539)	
			Minimum	38.7 (1.524)	
	Inner		Standard	38.0 (1.496)	
			Minimum	37.7 (1.484)	
Out-of-square mm (in)			Maximum	Outer.....1.4 (0.055), Inner.....1.3 (0.051)	
Setting load/height N (kg, lb)/mm (in)			Outer	78 (8.0, 17.6)/31.5 (1.240)	
			Inner	123 (12.5, 27.5)/33.0 (1.299)	
Camshaft					
Cam lobe height mm (in)	IN		Standard	45.005—45.105 (1.772—1.776)	45.002—45.102 (1.772—1.776)
			Minimum	44.855 (1.7659)	44.852 (1.7658)
	EX		Standard	45.005— 45.105 (1.772—1.776)	45.002—45.102 (1.772—1.776)
			Minimum	44.855 (1.7659)	44.852 (1.7658)
Journal diameter mm (in)				29.940—29.965 (1.1787—1.1797)	
	Out-of-round		Maximum	0.05 (0.002)	
Camshaft bearing oil clearance mm (in)				0.035—0.085 (0.0014—0.0033)	
			Maximum	0.15 (0.0059)	
Camshaft runout mm (in)			Maximum	0.03 (0.0012)	
Camshaft end play mm (in)			Standard	0.08—0.10 (0.003—0.004)	
			Maximum	0.20 (0.008)	
Cylinder block					
Height mm (in)				289.0 (11.38)	
Distortion mm (in)			Maximum	0.15 (0.006)	
Grinding limit mm (in)				0.20 (0.008)	
Cylinder bore diameter mm (in)	Standard			86.000—86.019 (3.3858—3.3866)	
	0.25 (0.010) oversize			86.250—86.269 (3.3957—3.3964)	
	0.50 (0.020) oversize			86.500—86.519 (3.4055—3.4062)	
Cylinder bore taper and out-of-round mm (in)			Maximum	0.019 (0.0007)	
Piston					
Piston diameter measured at 90° to pin bore axis and 18.0mm (0.709 in) below oil ring groove mm (in)	Standard			85.944—85.964 (3.3836—3.3844)	
	0.25 (0.010) oversize			86.194—86.214 (3.3935—3.3942)	
	0.50 (0.020) oversize			86.444—86.464 (3.4033—3.4041)	
Piston to cylinder clearance mm (in)			Standard	0.036—0.075 (0.0014—0.0030)	
			Maximum	0.15 (0.0059)	
Piston ring					
Thickness mm (in)			Top	1.47—1.49 (0.0579—0.0587)	
			Second	1.47—1.49 (0.0579—0.0587)	
End gap measured in cylinder mm (in)			Top	0.20—0.35 (0.008—0.0138)	
			Second	0.15—0.30 (0.006—0.012)	
			Oil (rail)	0.20—0.70 (0.008—0.0276)	
			Maximum	1.0 (0.039)	
Ring groove width in piston mm (in)			Top	1.52—1.54 (0.0598—0.0606)	
			Second	1.52—1.54 (0.0598—0.0606)	
			Oil	4.02—4.04 (0.1583—0.1591)	
Clearance of piston ring to ring groove mm (in)			Top	0.03—0.07 (0.0012—0.0028)	
			Second	0.03—0.07 (0.0012—0.0028)	
			Maximum	0.15 (0.006)	
Piston pin					
Diameter mm (in)				21.987—21.993 (0.8656—0.8659)	
Connecting rod to piston pin clearance mm (in)				0.010—0.027 (0.0004—0.0011)	
Piston to piston pin clearance mm (in)				−0.005—0.011 (−0.0002—0.0004)	

Item \ Engine			FE DOHC	
			Leaded fuel	Unleaded fuel
Connecting rod and connecting rod bearing				
Length (Center and center) mm (in)			149.95—150.05 (5.904—5.907)	
Twisting mm (in)			0.57 (0.0224) max	
Bending mm (in)			0.24 (0.0094) max	
Small end bore mm (in)			22.003—22.014 (0.8663—0.8667)	
Big end bore mm (in)			54.002—54.017 (2.1261—2.1266)	
Big end width mm (in)			26.838—26.890 (1.0566—1.0587)	
Connecting rod side clearance mm (in)		Standard	0.110—0.262 (0.004—0.010)	
		Maximum	0.30 (0.012)	
Crankshaft				
Crankshaft runout mm (in)		Maximum	0.03 (0.0012)	
Main journal diameter mm (in)	Standard size		59.937—59.955 (2.3597—2.3604)	
	0.25 (0.010) undersize	Standard	59.693—59.711 (2.3501—2.3508)	
		No.3	59.687—59.705 (2.3499—2.3506)	
	0.50 (0.020) undersize	No.1,2,4,5	59.443—59.461 (2.3403—2.3410)	
		No.3	59.437—59.455 (2.3400—2.3407)	
	0.75 (0.030) undersize	No.1,2,4,5	59.193—59.211 (2.3304—2.3311)	
		No.3	59.187—59.205 (2.3302—2.3309)	
Main journal taper and out-of-round mm (in)		Maximum	0.05 (0.0020)	
Crankpin diameter mm (in)	Standard		50.940—50.955 (2.0055—2.0061)	
	0.25 (0.010) undersize		50.690—50.705 (1.9957—1.9963)	
	0.50 (0.020) undersize		50.440—50.455 (1.9858—1.9864)	
	0.75 (0.030) undersize		50.190—50.205 (1.9760—1.9766)	
Crankpin taper and out-of-round mm (in)		Maximum	0.05 (0.0020)	
Main bearing				
Main journal bearing oil clearance mm (in)	No.1,2,4,5	Standard	0.025—0.043 (0.0010—0.0017)	
		Maximum	0.08 (0.0031)	
	No.3	Standard	0.031—0.049 (0.0012—0.0019)	
		Maximum	0.08 (0.0031)	
Available undersize bearing mm (in)			0.25 (0.010), 0.50 (0.020), 0.75 (0.030)	
Crankpin bearing				
Crankpin bearing oil clearance mm (in)		Standard	0.027—0.067 (0.0011—0.0026)	
		Maximum	0.10 (0.0039)	
Available undersize bearing mm (in)			0.25 (0.010), 0.50 (0.020), 0.75 (0.030)	
Thrust bearing (center main bearing)				
Crankshaft end play mm (in)		Standard	0.08—0.18 (0.0031—0.0071)	
		Maximum	0.30 (0.0118)	
Bearing width mm (in)	Standard		27.94—27.99 (1.100—1.102)	
	0.25 (0.010) oversize		28.04—28.09 (1.104—1.106)	
	0.50 (0.020) oversize		28.12—28.17 (1.107—1.109)	
	0.75 (0.030) oversize		28.20—28.25 (1.110—1.112)	
Timing belt				
Belt deflection mm (in)/98 N (10 kg, 22 lb)			7.5—8.5 (0.30—0.33)	

B3. ENGINE (DIESEL)

Item \ Engine				RF
Type				Diesel, 4-cycle
Cylinder arrangement and number				In-line, 4-cylinders
Type of combustion chamber				Swirl chamber
Valve system				OHC, belt-driven
Bore x Stroke			mm (in)	86.0 x 86.0 (3.39 x 3.39)
Total piston displacement			cc (cu in)	1,998 (121.9)
Compression ratio				22.7 : 1
Compression pressure kPa (kg/cm^2, psi)-rpm	Standard			2,943 (30, 427)-200
	Minimum			2,649 (27, 384)-200
	Maximum difference between cylinders			294 (3.0, 43)
Valve timing	IN	Open	BTDC	13°
		Close	ABDC	39°
	EX	Open	BBDC	60°
		Close	ATDC	8°
Valve clearance		IN	mm (in)	Cold: 0.25 (0.010), Warm: 0.30 (0.012)
		EX		Cold: 0.35 (0.014), Warm: 0.40 (0.016)
Cylinder head				
Distortion		Direction X-X	mm (in)	0.05 (0.0020)
		Direction Y-Y		0.02 (0.0008)
Length of cylinder head bolt below head		Standard	mm (in)	113.2—113.8 (4.457—4.480)
		Maximum		114.5 (4.508)
Combustion chamber insert				
Recession			mm (in)	0.020 (0.0008)
Projection			mm (in)	0.005 (0.0002)
Valve and valve guide				
Valve head diameter		IN	mm (in)	40.9—41.1 (1.610—1.618)
		EX		35.9—36.1 (1.413—1.421)
Valve head thickness (margin)		IN	mm (in)	0.80 (0.031)
		EX		0.80 (0.031)
Valve face angle		IN		45°
		EX		45°
Valve length		IN	mm (in)	106.9 (4.209)
		EX		106.8 (4.205)
Valve stem diameter		IN	mm (in)	7.970—7.985 (0.3138—0.3144)
		EX		7.965—7.980 (0.3136—0.3142)
Guide inner diameter		IN	mm (in)	8.025—8.045 (0.3159—0.3167)
		EX		8.025—8.045 (0.3159—0.3167)
Valve stem to guide clearance		IN	mm (in)	0.040—0.075 (0.0016—0.0030)
		EX		0.045—0.080 (0.0018—0.0031)
		Maximum		0.1 (0.004)
Guide projection (Height "A")			mm (in)	8.3—8.8 (0.327—0.346)
Valve seat				
Seat angle		IN		45°
		EX		45°
Seat contact width		IN	mm (in)	1.7—2.3 (0.067—0.091)
		EX		1.7—2.3 (0.067—0.091)
Seat sinking (Measure valve recession) mm (in)	IN	Standard		0.75—1.05 (0.030—0.041)
		Maximum		2.55 (0.100)
	EX	Standard		0.75—1.05 (0.030—0.041)
		Maximum		2.55 (0.100)
Valve spring				
Free length		Standard	mm (in)	45.11 (1.776)
		Minimum		44.8 (1.764)
Out-of-square			mm (in)	1.6 (0.063)/2° max.
Setting load/height			N (kg, lb)/mm (in)	275 (28.0, 62)/39.0 (1.535)

Item \ Engine			RF
Tappet			
Tappet outer diameter mm (in)			34.95—34.97 (1.3760—1.3768)
Tappet hole diameter mm (in)			34.99—35.01 (1.3776—1.3783)
Tappet to tappet hole clearance mm (in)		Standard	0.02—0.06 (0.0008—0.0024)
		Maximum	0.10 (0.004)
Camshaft and camshaft caps			
Cam lobe height mm (in)	IN	Standard	44.306 (1.7443)
		Minimum	43.90 (1.728)
	EX	Standard	45.300 (1.7835)
		Minimum	44.90 (1.768)
Journal diameter mm (in)		Standard	31.959—31.975 (1.2582—1.2589)
		Out-of-round	0.05 (0.0020) max.
Camshaft bearing oil clearance mm (in)		Standard	0.025—0.066 (0.0010—0.0026)
		Maximum	0.10 (0.004)
Camshaft run-out (deflection) mm (in)			0.10 (0.004) max.
Camshaft end play mm (in)		Standard	0.02—0.15 (0.0008—0.0059)
		Maximum	0.20 (0.008)
Cylinder block			
Distortion mm (in)		Direction X-X	0.05 (0.0020)
		Direction Y-Y	0.02 (0.0008)
Cylinder bore diameter mm (in)	Standard size		86.000—86.022 (3.3858—3.3867)
	0.25 (0.010) oversize		86.250—86.272 (3.3957—3.3965)
	0.50 (0.020) oversize		86.500—86.522 (3.4055—3.4064)
Cylinder bore taper and out-of-round mm (in)			0.022 (0.0009) max.
Piston			
Piston diameter (Measured at 90° to pin bore axis and 19mm(0.75 in) above the bottom of piston) mm (in)	Standard size		85.957—85.983 (3.3841—3.3852)
	0.25 (0.010) oversize		86.207—86.233 (3.3940—3.3950)
	0.50 (0.020) oversize		86.457—86.483 (3.4038—3.4048)
Piston and cylinder clearance mm (in)		Standard	0.032—0.050 (0.0013—0.0020)
		Maximum	0.15 (0.0059)
Piston ring			
Thickness mm (in)		Top	1.97—1.99 (0.0776—0.0783)
		Second	1.97—1.99 (0.0776—0.0783)
End gap (measured in the cylinder) mm (in)		Top	0.20—0.40 (0.008—0.016)
		Second	0.20—0.40 (0.008—0.016)
		Oil (rail)	0.20—0.40 (0.008—0.016)
		Maximum	1.0 (0.039)
Ring groove width in piston mm (in)		Top	2.04—2.06 (0.0803—0.0811)
		Second	2.03—2.05 (0.0799—0.0807)
		Oil	4.02—4.04 (0.1583—0.1591)
Clearance of piston ring to ring groove mm (in)		Top	0.05—0.09 (0.0020—0.0035)
		Second	0.04—0.08 (0.0016—0.0031)
		Maximum	0.2 (0.008)
Piston pin			
Piston pin hole diameter (in piston)			24.997—25.007 (0.9841—0.9845)
Diameter mm (in)			24.994—25.000 (0.9840—0.9843)
Clearance in connecting rod bushing mm (in)			0.05 (0.002) max.
Connecting rod and connecting rod bearing			
Length (Center to center) mm (in)			151.95—152.05 (5.9823—5.9862)
Maximum twisting and bending mm (in)			0.080 (0.0031) per 50 (1.969)
Small end bushing inner diameter mm (in)			25.014—25.030 (0.9848—0.9854)
Big end bore mm (in)			54.002—54.017 (2.1261—2.1266)
Big end width mm (in)			25.900—26.100 (1.0197—1.0276)
Connecting rod side clearance mm (in)		Standard	0.11—0.262 (0.0043—0.0103)
		Maximum	0.30 (0.012)

Item \ Engine			RF
Crankshaft			
Crankshaft runout mm (in)			0.05 (0.002) max.
Main journal diameter mm (in)	Standard size	Standard	59.937—59.955 (2.3597—2.3604)
		Minimum	59.89 (2.358)
	0.25 (0.010) undersize	Standard	59.687—59.705 (2.3499—2.3506)
		Minimum	59.64 (2.348)
	0.50 (0.020) undersize	Standard	59.437—59.455 (2.3400—2.3407)
		Minimum	59.39 (2.338)
	0.75 (0.030) undersize	Standard	59.187—59.205 (2.3302—2.3309)
		Minimum	59.14 (2.328)
Main journal taper and out-of-round mm (in)			0.05 (0.002) max.
Crankpin diameter mm (in)	Standard size	Standard	50.940—50.955 (2.0055—2.0061)
		Minimum	50.89 (2.004)
	0.25 (0.010) undersize	Standard	50.690—50.705 (1.9957—1.9963)
		Minimum	50.64 (1.994)
	0.50 (0.020) undersize	Standard	50.440—50.455 (1.9858—1.9864)
		Minimum	50.39 (1.984)
	0.75 (0.030) undersize	Standard	50.190—50.205 (1.9760—1.9766)
		Minimum	50.14 (1.974)
Crankpin taper and out-of-round mm (in)			0.05 (0.002) max.
Main bearing			
Main journal bearing oil clearance mm (in)		Standard	0.031—0.050 (0.0012—0.0020)
		Maximum	0.08 (0.0031)
Available undersize bearing mm (in)			0.25 (0.010), 0.50 (0.020), 0.75 (0.030)
Crankpin bearing			
Crankpin bearing oil clearance mm (in)		Standard	0.027—0.055 (0.0011—0.0022)
		Maximum	0.08 (0.0031)
Available undersize bearing mm (in)			0.25 (0.010), 0.50 (0.020), 0.75 (0.030)
Thrust bearing (center main bearing)			
Crankshaft end play mm (in)		Standard	0.04—0.282 (0.0016—0.0111)
		Maximum	0.30 (0.012)
Bearing width mm (in)	Standard size		2.00—2.05 (0.0787—0.0807)
	Oversize		2.175—2.225 (0.0856—0.0876)
Timing belt			
Deflection mm (in)/N (kg, lb)			9.0—11.5 (0.35—0.45)/98 (10, 22)
Drive belt deflection			
Alternator mm (in)		New	8—10 (0.31—0.39)
		Used	9—11 (0.35—0.43)
A/C compressor mm (in)		New	8.5—9.5 (0.33—0.37)
		Used	9.5—10.5 (0.37—0.41)
Vacuum pump mm (in)		New	7.5—8.5 (0.30—0.33)
		Used	8.5—9.5 (0.33—0.37)
P/S pump with vacuum pump mm (in)		New	6.5—7.5 (0.26—0.30)
		Used	7.0—8.0 (0.28—0.31)
Pressure wave supercharger mm (in)		New	4.0—5.0 (0.16—0.20)
		Used	4.5—5.5 (0.18—0.22)

D1. LUBRICATION SYSTEM (GASOLINE)

Item \ Engine			F2	FE DOHC	F8, FE SOHC
Lubrication method			Force-fed		
Oil pump					
Type			Trochoid gear		Crescent gear
Regulated pressure	kPa (kg/cm², psi)		392 (4.0, 57)	490 (5.0, 71)	392 (4.0, 57)
Oil pressure	kPa (kg/cm², psi)	1,000 rpm	147—245 (1.5—2.5, 21—36)		
		3,000 rpm	294—392 (3.0—4.0, 43—57)	343—441 (3.5—4.5, 50—64)	294—392 (3.0—4.0, 43—57)
Inner rotor tooth tip to outer rotor clearance	mm (in)	Standard	0.044—0.084 (0.0017—0.0033)		—
		Maximum	0.18 (0.0071)		
Outer rotor to body clearance	mm (in)	Standard	0.09—0.176 (0.0035—0.0069)		
		Maximum	0.20 (0.008)		
Side clearance	mm (in)	Standard	0.03—0.09 (0.0012—0.0035)		
		Maximum	0.10 (0.004)		
Inner gear tooth tip to crescent clearance	mm (in)	Standard	—		0.267—0.38 (0.011—0.015)
		Maximum			0.40 (0.016)
Outer gear tooth tip to crescent clearance	mm (in)	Standard			0.20—0.32 (0.008—0.0126)
		Maximum			0.35 (0.0138)
Outer gear to body clearance	mm (in)	Standard			0.09—0.184 (0.0035—0.0072)
		Maximum			0.20 (0.008)
Side clearance	mm (in)	Standard			0.03—0.063 (0.0012—0.0025)
		Maximum			0.10 (0.004)
Oil filter					
Type			Full flow, paper element		
Relief pressure differential	kPa (kg/cm², psi)		98 (1.0, 14)		
Oil cooler					
Type			Water cooled		
Oil pressure switch					
Activation pressure	kPa (kg/cm², psi)		29 (0.3, 4.3)		
Engine oil					
Capacity	liters (US qt, Imp qt)	Total (dry engine)	4.6 (4.9, 4.0)	4.3 (4.5, 3.8)	
		Oil pan	3.9 (4.1, 3.4)	3.6 (3.8, 3.2)	
		Oil filter	0.22 (0.23, 0.19)		
Grade (API service)			SD, SE, or SF		
Viscosity number	30°C (86°F) or over		SAE 40		
	0°C—40°C (32°F—104°F)		SAE 30		
	−10°C—20°C (14°F—68°F)		SAE 20W-20		
	−10°C—50°C (14°F—122°F) or over		SAE 20W-40 or 20W-50		
	−25°C—30°C (−13°F—86°F)		SAE 10W-30		
	−25°C—50°C (−13°F—122°F) or over		SAE 10W-40 or 10W-50		
	0°C—30°C (32°F—−22°F) or below		SAE 5W-30		
	−20°C (—4°F) or below		SAE 5W-20		

D2. LUBRICATION SYSTEM (DIESEL)

Item \ Engine			RF
Lubrication method			Force-fed type
Oil pump			
Type			Trochoid gear
Gear width		mm (in)	7 (0.28)
Regulated pressure		kPa (kg/cm^2, psi)	510—618 (5.2—6.3, 74—90)
Oil pressure	kPa (kg/cm^2,psi)	1,000 rpm	147—245 (1.5—2.5, 21—36)
		3,000 rpm	343—441 (3.5—4.5, 50—64)
Inner rotor tooth tip to outer rotor clearance	mm (in)	Standard	0.2 (0.008) or less
		Maximum	0.24 (0.009)
Outer rotor to pump body clearance	mm (in)	Standard	0.09—0.184 (0.0035—0.0072)
		Maximum	0.22 (0.009)
Side clearance	mm (in)	Standard	0.03—0.09 (0.0012—0.0035)
		Maximum	0.14 (0.006)
Oil filter			
Type			Combined, paper element
Relief pressure differential		kPa (kg/cm^2, psi)	78—118 (0.8—1.2, 11—17)
Oil cooler			
Type			Water cooled, 4 layer
Oil filter body			
Regulated pressure		kPa (kg/cm^2, psi)	402—481 (4.1—4.9, 58—70)
Oil cooler relief pressure differential		kPa (kg/cm^2, psi)	177—216 (1.8—2.2, 26—31)
Oil pressure switch			
Activation pressure		kPa (kg/cm^2, psi)	20—39 (0.2—0.4, 2.8—5.7)
Engine oil			
Capacity	liters (US qt, Imp qt)	Total (dry engine)	6.1 (6.4, 5.4)
		Oil pan	5.0 (5.3, 4.4)
		Oil filter	0.5 (0.53, 0.44)
Grade		API service	CC, CD
Viscosity number	40°C or over (104°F) or over		SAE 40
	0°C—40°C (32°F—100°F)		SAE 30
	−10°C—35°C (15°F—90°F)		SAE 15W-40
	−10°C—25°C (15°F—77°F)		SAE 20W-20
	−25°C—30°C (−18°F—86°F)		SAE 10W-30
	−20°C or below (4°F or below)		SAE 5W-30

E. COOLING SYSTEM (GASOLINE)

Item \ Engine			FE DOHC	F2	FE SOHC, F8
Cooling method			Water-cooled, forced circulation		
Water pump					
Type			Centrifugal, timing belt driven		
Impeller diameter	mm (in)		70 (2.76)		
Number of impeller blades			6		
Speed ratio			1 : 1.00	1 : 1.05	
Water seal type			Unified mechanical seal		
Thermostat					
Type			Wax, two-stage		Wax
Start to open	°C (°F)		Sub : 83.5—86.5 (182—188) Main: 86.5—89.5 (188—193)		80.5—83.5 (177—182)
Full open	°C (°F)		100 (212)		
Lift	mm (in)		Sub : 1.5 (0.06 min.) Main: 8.0 (0.31 min.)		8.5 (0.33 min.)
Radiator					
Type			Corrugated fin		
Cap opening valve pressure	kPa (kg/cm^2, psi)		74—103 (0.75—1.05, 11—15)		
Cooling system pressure	kPa (kg/cm^2, psi)		103 (1.05, 15)		
Cooling fan					
Type			Electric		
Capacity	W	MTX	80		
		ATX	120		
Current	A	MTX	5.6—7.6		
		ATX	8.0—11.0		
Number of blades			4		
Outer diameter	mm (in)	MTX	320 (12.6)		
		ATX	340 (13.4)		
Switching temperature OFF → ON	°C (°F)	No.1	97 (207)		
		No.2	108 (226)		
Coolant					
Capacity	liters (US qt, Imp qt)	With heater	7.5 (7.9, 6.6)		
		Without heater	7.0 (7.4, 6.2)		
Antifreeze solution	Protection		Mixture percentage (volume) %		Specific gravity of mixture at 20°C (68°F)
			Water	Solution	
	Above −16°C (3°F)		65	35	1.054
	Above −26°C (−15°F)		55	45	1.066
	Above −40°C (−40°F)		45	55	1.078

Item \ Engine	RF		
Cooling method	Water-cooled, forced circulation		
Water pump			
Type	Centrifugal, timing belt driven		
Water seal type	Unified mechanical seal		
Thermostat			
Type	Wax, two stage		
Start to open °C (°F)	Main valve: 86.5—89.5 (188—193)	Sub valve: 78.5—81.5 (173—179)	
Full open lift mm (in)/°C (°F)	Main valve: 8.0 (0.31) min /100 (212)	Sub valve: 1.5 (0.06) min. /100 (212)	
Radiator			
Type	Corrugated fin		
Cap opening valve pressure kPa (kg/cm², psi)	74—103 (0.75—1.05, 11—15)		
Cooling circuit checking pressure kPa (kg/cm², psi)	103 (1.05, 15)		
Cooling fan			
Type	Electric		
Number of blade	4		
Outer diameter mm (in)	340 (13.4)		
Switching temperature OFF → ON °C (°F)	91 (196)		
Voltage V	12		
Capacity W-A	120-8.0—11.0		
Coolant			
Capacity liters (US qt, Imp qt) — With heater	9.5 (10.0, 8.4)		
Capacity liters (US qt, Imp qt) — Without heater	9.0 (9.5, 7.9)		
Antifreeze solution — Protection	Mixture percentage (volume) % — Water	Mixture percentage (volume) % — Solution	Specific gravity of mixture at 20°C (68°F)
Above −16°C (3°F)	65	35	1.054
Above −26°C (−15°F)	55	45	1.066
Above −40°C (−40°F)	45	55	1.078

F1. FUEL AND EMISSION CONTROL SYSTEM (CARBURETOR)

Item			Engine/Market	F8	FE 8-Valve	FE-12 Valve
				Europe	General	Europe & General
Idle speed		rpm	MTX	800 $^{+50}_{0}$		
			ATX	—	900 $^{+50}_{0}$ (in N range)	
CO concentration		%		2.0 ± 0.5 (Without secondary air injection)		
Carburetor						
Type				Down draft, two barrel		
Throat diameter	mm (in)	Primary		30 (1.18)		
		Secondary		34 (1.34)		
Venturi diameter	mm (in)	Primary		23.5 (0.93)		
		Secondary		29.0 (1.14)		
Main nozzle	mm (in)	Primary		2.6 (0.10)		
		Secondary		2.8 (0.11)		
Main jet	mm (in)	Primary	MTX	1.14 (0.045)		
			ATX	—	1.12 (0.044)	
		Secondary		1.50 (0.059)	1.55 (0.061)	
Main air bleed	mm (in)	Primary	MTX	0.55 (0.022)	0.50 (0.020)	
			ATX	—	0.55 (0.022)	
		Secondary		0.50 (0.020)		
Slow jet	mm (in)	Primary		0.46 (0.018)		
		Secondary	MTX	1.10 (0.043)		
			ATX			
Slow air bleed	mm (in)	Primary	No.1	0.80 (0.031)		
			No.2	1.90 (0.075)		
		Secondary	No.1	0.80 (0.031)		
			No.2	0.50 (0.020)		
Power jet		mm (in)	MTX	0.50 (0.020)		
			ATX			
Fast idle adjustment Clearance between primary throttle valve and bore		mm (in)	MTX	0.48—0.64 (0.019—0.025)		
			ATX	—	0.56—0.72 (0.022—0.028)	
Float level adjustment		mm (in)	Max. fuel flow "L" Clearance between float and air horn without gasket	44 (17.3)		
			Fuel stop "H" Clearance between float and air horn without gasket float lowered by own weight	12.5 (0.49)		
Choke breaker diaphragm		mmHg (inHg)	Start	100—160 (3.9—6.3)		
			Stop	220—280 (8.7—11.0)		
Choke opener		mmHg (inHg)	Start	35—65 (1.4—2.6)	—	30—70 (1.2—2.8)
			Stop	130—190 (5.1—7.5)	—	130—190 (5.1—7.5)
Accelerator linkage						
Free play of cable at carburetor		mm (in)		1—3 (0.039—0.118)		
Fuel tank						
Capacity		liters (US gal, Imp gal)		60 (15.9, 13.2)		
Fuel pump						
Type				Mechanical pump		
Delivery pressure		kPa (kg/cm^2, psi)		20—26 (0.20—0.27, 2.8—3.8)		20—29 (0.20—0.30, 2.8—4.3)
Feeding capacity		cc/min (cu in/min)		More than 860 (52.5) at idle		
Fuel filter						
Type				Paper element with magnet		
Air cleaner						
Fresh-Hot switching				Diaphragm		
Element type				Oil permeated paper		
Fuel specification				Leaded regular	Leaded super, Unleaded super	

F2. FUEL AND EMISSION CONTROL SYSTEMS (FUEL INJECTION FE SOHC)

Item			Specifications
Fuel tank capacity	liters (US gal, Imp gal)		60 (15.9, 13.2)
Fuel pump	Type		In-tank, electric motor
	Fuel pressure kPa (kg/cm², psi)		441—588 (4.5—6.0, 64—85)
	Feeding capacity cc (cu in)/10 sec		220 (13.4) min.
Air cleaner	Element type		Oil permeated
Accelerator cable	Deflection mm (in)		1—3 (0.04—0.12)
Idle speed	rpm		800 $^{+50}_{0}$ (Neutral)
Dashpot	Adjustment speed rpm		1,900—2,100
EGR control valve	Starts to open mmHg (inHg)		40—60 (1.6—2.4)
Air control valve	Starts to open mmHg (inHg)		180—280 (7.1—11)
Water thermovalve	Opened °C (°F)		Higher than 46—54 (115—129)
Water thermoswitch	Opened	At radiator °C (°F)	Lower than 15—19 (59—66)
Vacuum switch valve	Starts to open mmHg (inHg)		66—106 (2.6—4.2)
Water thermosensor	Resistance	−20°C (−4°F) kΩ	14.5—17.8
		20°C (68°F) kΩ	2.2—2.7
		80°C (176°F) kΩ	0.28—0.35
Throttle sensor	Resistance at fully closed	B ↔ C kΩ	4—6
		A ↔ B Ω	Approx. 500
	Resistance at fully opened	A ↔ B kΩ	Approx. 4.5
	Setting	Closed at mm (in)	0.4 (0.0157)
		Open at mm (in)	0.55 (0.022)
Airflow meter	Resistance of full closed	E_2 ↔ Vs Ω	More than 20
		E_2 ↔ Vc Ω	100—300
		E_2 ↔ V_B Ω	200—400
		E_1 ↔ Fc Ω	∞
	Resistance at full open	E_1 ↔ Fc Ω	0
Intake air thermosensor	Resistance	−20°C (−4°F) kΩ	13.6—18.4
		20°C (68°F) kΩ	2.21—2.69
		60°C (140°F) kΩ	0.493—0.667
Pressure regulator	Regulating pressure	At idling kPa (kg/cm², psi)	235—275 (2.4—2.8, 34—40)
Injector	Injection amount cc (cu in)/15 sec.		38—53 (2.3—3.2)
	Resistance Ω		12—16
Circuit opening relay	Resistance	STA ↔ E_1 Ω	15—30
		B ↔ Fc Ω	80—150
Fuel			Unleaded gasoline

F3. FUEL AND EMISSION CONTROL SYSTEM (FE DOHC)

Item \ Type			Unleaded fuel	Leaded fuel
Idle speed		rpm	With test connector grounded 750 ± 50	
Throttle body				
Type			Horizotal draft (2-barrel)	
Throat diameter	mm (in)	No.1	46 (1.8)	
		No.2	40 (1.6)	
Fuel pump				
Type			Impeller (in tank)	
Output pressure		kPa (kg/cm^2, psi)	441—588 (4.5—6.0, 64—85)	
Feeding capacity		cc (cu in)/10 seconds	220 (13.4) min.	
Fuel filter				
Type	Low-pressure side		Nylon element	
	High-pressure side		Paper element	
Pressure regulator				
Type			Diaphragm	
Regulating pressure		kPa (kg/cm^2, psi)	235—275 (2.4—2.8, 34—40)	
Injector				
Type			High-ohmic	
Type of drive			Voltage	
Resistance		Ω	12—16	
Injection amount		cc (cu in)/15 seconds	66—91 (4.03—5.55)	
Idle speed control valve				
Solenoid resistance		Ω	6.3—9.9	
Fuel tank				
Capacity		liters (US gal, Imp gal)	60 (15.9, 13.2)	
Air cleaner				
Element type			Dry	
Fuel				
Specification			Unleaded (95 RON or more)	Leaded (95 RON or more)

F4. FUEL AND EMISSION CONTROL SYSTEM (DIESEL)

Item \ Engine			RF
Idle speed		rpm	720 $^{+30}_{-20}$
Fuel injection pump	Type		VE Type
	Plunger diameter	mm (in)	8.0 (0.31)
	Cam height	mm (in)	2.2 (0.08)
	Governor		Half all speed governor
	Injection timing		TDC 0°
	Cam lift at injection timing	mm (in)	1 (0.04)
Injection nozzle	Type		Throttle
	Number of nozzle and diameter	mm (in)	1.0 (0.04) x 1
	Injection pressure	kPa (kg/cm^2, psi)	13,240 (135, 1,920)
Free play of cable at injection pump		mm (in)	1.0—3.0 (0.04—0.12)
Fuel tank capacity		liters (Us gal, Imp gal)	60 (15.9, 13.2)
Fuel filter type			Cartridge, paper element
Air cleaner element type			Cartridge, paper element
Idle up speed (A/C ON)		rpm	700—750
Cold start device	Engine speed	rpm	1,100 at below 0°C (32°F)
	Advance degree	0°C (32°F)	6°
		60°C (140°F)	0°

F5. FUEL AND EMISSION CONTROL SYSTEM (FUEL INJECTION F2)

Item \ Engine			F2 EGI
Idle speed		rpm	With test connector grounded 750 ± 25 (ATX: P range)
Throttle body			
Type			Horizontal draft (2-barrel)
Throat diameter	mm (in)	No.1	MTX: 40 (1.6), ATX: 46 (1.8)
		No.2	MTX: 46 (1.8), ATX: 40 (1.6)
Airflow meter			
Resistor	Ω	E_2—Vs	Fully closed: 20—400 Fully open: 20—1,000
		E_2—Vc	100—400
		E_2—V_B	200—400
		E_2—THA	−20°C (−4°F) 13,600—18,400 20°C (68°F) 2,210— 2,690 60°C (140°F) 493— 667
Fuel pump			
Type			Impeller (in tank)
Output pressure		kPa (kg/cm^2, psi)	441—588 (4.5—6.0, 64—85)
Feeding capacity		cc (cu in)/10 seconds	220 (13.4) min.
Fuel filter			
Type	Low-pressure side		Nylon element
	High-pressure side		Paper element
Pressure regulator			
Type			Diaphragm
Regulating pressure		kPa (kg/cm^2, psi)	235—275 (2.4—2.8, 34—40)
Injector			
Type			High-ohmic
Type of drive			Voltage
Resistance		Ω	12—16
Injection amount		cc (cu in)/15 seconds	44—61 (2.68—3.72)
Idle speed control valve			
Solenoid resistance		Ω	6.3—9.9
Fuel tank			
Capacity		liters (US gal, Imp gal)	60 (15.9, 13.2)
Air cleaner			
Element type			Oil permeated
Fuel			
Specification			Unleaded regular

G. ENGINE ELECTRICAL SYSTEM
Gasoline Engine

Item \ Engine			F8	FE (8-Valve)	FE (12-Valve)	FE (DOHC)	F2 (Non-Turbo)
Battery	Voltage V		12, Negative ground				
	Type and capacity (20-hour rate)		34B19L(S) (33 Ah): Australia 50D20L (50 Ah), 55D23L (60 Ah): Others				
Alternator	Type		A.C.				
	Output V-A		12-70				
	Regulator type		Transistorized (built-in IC regulator)				
	Regulated voltage V		14.1—14.7				
	Brush length mm (in)	Standard	16.5 (0.650)				21.5 (0.846)
		Minimum	8.0 (0.315)				
	Drive belt tension mm (in)/98 N (10 kg, 22 lb)		New: 6—8 (0.24—0.32), Used: 7—9 (0.28—0.35)				
Starter	Type		Coaxial reduction: FE carburetor & F2 Non-reduction : Others				
	Output V-kW		12-0.95		12-1.4	12-0.95	12-1.4
	Brush length mm (in)	Standard	17.0 (0.669)	Unleaded fuel 17.0 (0.669) Others 17.5 (0.689)	17.0 (0.669)		17.5 (0.689)
		Minimum	11.5 (0.453)	Unleaded fuel 11.5 (0.453) Others 10.0 (0.394)	11.5 (0.453)		10.0 (0.394)
Ignition timing			6 ± 1° BTDC (Vacuum hose disconnected)			12 ± 1° BTDC (Test connector grounded)	6 ± 1° BTDC (Vacuum hose disconnected)
Distributor	Type		Fully transistorized (HEI)			Electronic spark advance	Fully transistorized (HEI)
	Centrifugal spark advance (crank angle/engine speed) degree/rpm		F8 −2—2/1,100 4—8/1,800 14—18/5,500 FE (8-Valve)—Carburetor −2—2/1,460 8.6—14/2,540 22—26/5,540 FE (12-Valve)—Carburetor −1.2—2/1,200 8—14/2,400 10—15 2/4,000 16—20/5,000 FE—Fuel injection (except FE DOHC) −1.2—2/1,000 8.5—14/2,600 10—15/4,600 16—20/5,800 F2 −2.0—2.0/1,200 1.2—16/2,400 12—16/3,500 16—20/4,500				

Item \ Engine		F8	FE (8-Valve)	FE (12-Valve)	FE (DOHC)	F2 (Non-Turbo)
Distributor	Vacuum spark advance (Crank angle/Vacuum) degree/mmHg (inHg)	F8 –2—2/100 (3.9) 11—15/450 (17.7) FE (8-Valve)—Carburetor (MTX) –2—2/100 (3.9) 16—20/250 (9.8) (ATX) –2—2/100 (3.9) 10—14/200 (7.9) FE (12-Valve)—Carburetor –2—2/120 (4.7) 11—15/300 (11.8) FE—Fuel injection (except FE DOHC) [A chamber] –2.6—2/125 (4.9) 18—22/300 (11.8) [B chamber] –4—0/125 (4.9) –3.6—–10/200 (7.9) F2 [A chamber] –2—2/110 (4.3) 18—22/275 (10.8) [B chamber] –2—2/110 (4.3) –2.8—–8/200 (7.9)				
Spark plug	Type	NGK: BKR5E BKR6E BKR7E Nippon Denso: K16PR-U K20PR-U K22PR-U	NGK: BPR5E*3 BPR6E*3 BPR7E*4 Nippon Denso: W16EXR-U*3 W20EXR-U*3 W22EXR-U*4	NGK: BKR5E, BKR6E BKR7E Nippon Denso: K16PR-U K20PR-U K22PR-U	NGK: BKR5E-11*1 BKR6E-11*1 BKR7E-11*1 BKR5E*2 BKR6E*2 Nippon Denso: K16PR-U*1 K20PR-U*1 K22PR-U*1 K16PR-U11*2 K20PR-U11*2 K22PR-U11*2	NGK: ZFR5F-11 ZFR6F-11 ZFR7F-11 Nippon Denso: KJ16CR11 KJ20CR11 KJ22CR11
	Plug gap mm (in)	0.7—0.8 (0.028—0.031)	0.75—0.85 (0.030—0.033)	0.7—0.8 (0.028—0.031)	1.0—1.1 (0.039—0.043)*1 0.7—0.8 (0.028—0.031)*2	1.0—1.1 (0.039—0.043)
Firing order		1—3—4—2				

*1 Unleaded fuel model
*2 Leaded fuel model
*3 EGI and carburetor model
*4 EGI model

Diesel Engine

Item \ Engine			RF
Battery	Voltage V		12, Negative ground
	Type and capacity (20-hour rate)		80D26L (65), 50D20L, 50D20R (50)—Europe
Alternator	Type		A.C.
	Output V-A		12-75
	Regulator type		Transistorized (built-in IC regulator)
	Regulated voltage V		14.1—14.7
	Brush length mm (in)	Standard	21.5 (0.846)
		Minimum	8.0 (0.315)
	Drive belt tension mm (in)/98 N (10 kg, 22 lb)		New: 8—10 (0.31—0.39), Used: 9—11 (0.35—0.43)
Starter	Type		Reduction
	Output V-kW		12-2.0, 12-2.2 (Cold area)
	Brush length mm (in)	Standard	2.0 kW: 15.0 (0.591), 2.2 kW: 18.0 (0.709)
		Minimum	2.0 kW: 10.0 (0.394), 2.2 kW: 7.0 (0.276)
Firing order			1—3—4—2

H. CLUTCH

Item \ Engine			F2	F8	FE	FE DOHC	RF
Clutch control							
Type			Hydraulic				
Master cylinder inner diameter		mm (in)	15.87 (0.625)				
Release cylinder inner diameter		mm (in)	19.05 (0.750)				
Clutch fluid type			DOT-3, FMVSS 116, or SAE J1703				
Clutch pedal							
Type			Suspended				
Pedal ratio		LHD	6.00				
		RHD	5.96				
Full stroke		mm (in)	135 (5.31)				
Height		mm (in)	216.5—221.5 (8.524—8.720)				
Free play		mm (in)	5—13 (0.20—0.51)				
Distance to floor when clutch fully disengaged		LHD	68 (2.7) or more				
		RHD	85 (3.3) or more				
Flywheel							
Deflection		mm (in)	0.2 (0.008) max.				
Clutch disc							
Type			Single dry plate				
Set load		Australia	4,316 (440, 968)	—			
		General	—		4,316 (440, 968)	—	4,022 (410, 902)
		Europe	4,611 (470, 1,034)	4,022 (410, 902)	4,316 (440, 968)		4,022 (410, 902)
		UK	—	3,846 (392, 862)	4,316 (440, 968)		3,846 (392, 862)
Runout		mm (in)	1.0 (0.039) max.				
Wear limit		mm (in)	0.3 (0.012) from rivet head				
Outer diameter		mm (in)	225 (8.858)	215 (8.465)	225 (8.858)		
Inner diameter		mm (in)	150 (5.906)				
Facing thickness mm (in)	Flywheel side		3.5 (0.14)				
	Pressure plate side	Australia	4.1 (0.16)	—			
		General	—		4.1 (0.16)	—	4.1 (0.16)
		Europe	3.8 (0.15)				
		UK	—	4.1 (0.16)			
Clutch cover							
Type			Diaphragm spring				
Runout		mm (in)	0.05 (0.0020) max.				

J1. MANUAL TRANSAXLE

Item \ Engine		F8	FE 8-Valve FI	FE 8-Valve Carb.	FE 12-Valve	FE DOHC	F2	RF
Transmission								
Shift lever position		Floor shift						
Gear ratio	First	3.307						3.666
	Second	1.833						
	Third	1.233			1.310		1.233	
	Fourth	0.970		0.914	1.030		0.914	
	Fifth	0.795		0.717	0.837		0.717	0.755
	Reverse	3.166						3.454
Oil capacity	liters (US qt, Imp qt)	3.35 (3.5, 2.9)						
Fluid type		ATF: DEXRON-II Above 0°F: API GL-4 or GL-5 SAE80W-90 or SAE90						
Clearance								
Clearance of lever and reverse idle gear	mm (in)	0.1—0.32 (0.004—0.013)						
Clearance of shift fork and clutch hub sleeve	mm (in)	0.2—0.4 (0.008—0.016)						
Clearance of synchronizer ring and gear	Standard	1.5 (0.059)						
mm (in)	Wear limit	0.8 (0.031)						
Gear thrust clearance mm (in)	First	0.05—0.28 (0.002—0.011)						
	Second	0.18—0.46 (0.007—0.018)						
	Third	0.05—0.20 (0.002—0.008)						
	Fourth	0.17—0.37 (0.007—0.015)						
Bearing preload of primary shaft gear	Nm (cm-kg, in-lb)	Primary shaft 0.1—0.25 (1.0—2.5, 0.86—2.18) Secondary shaft 0.2—0.4 (2.0—4.0, 1.7—3.4)						
Bearing preload adjust shim	mm (in)	0.25 (0.010), 0.30 (0.012), 0.35 (0.014), 0.40 (0.016), 0.45 (0.018), 0.50 (0.020), 0.55 (0.022), 0.60 (0.024), 0.65 (0.026), 0.70 (0.028), 0.75 (0.030), 0.80 (0.031)						
Differential								
Final gear	Type	Helical gear						
	Reduction ratio	4.105		3.850		4.105		4.388
Side bearing preload	Nm (cm-kg, in-lb)	1.4—2.0 (14—20, 12—17)						
Bearing preload adjust shim	mm (in)	0.10 (0.004), 0.15 (0.006), 0.20 (0.008), 0.25 (0.010), 0.30 (0.012), 0.35 (0.014), 0.40 (0.016), 0.45 (0.018), 0.50 (0.020), 0.55 (0.022), 0.60 (0.024), 0.65 (0.026), 0.70 (0.028), 0.75 (0.030), 0.80 (0.031), 0.85 (0.033), 0.90 (0.035), 0.95 (0.037), 1.00 (0.039), 1.05 (0.041), 1.10 (0.043), 1.15 (0.045), 1.20 (0.047)						
Backlash of side gear and pinion gear	mm (in)	0—0.1 (0—0.004)						

K1. AUTOMATIC TRANSAXLE (ELECTRONICALLY CONTROLLED AND 4-SPEED)

Item \ Transaxle/Engine			G4A-EL (EC-AT) F2	G4A-HL (4-Speed) FE
Gear ratio	1st		2.800	
	2nd		1.540	
	3rd		1.000	
	4th (OD)		0.700	
	Reverse		2.333	
Oil capacity		liters (US qt, Imp qt)	6.8 (7.2, 6.0)	
Fluid type			ATF Dexron-II or M-III	
Fluid level with the engine idling in P			Between F and L marks on gauge	
Stall speed				
After brake-in	D, S, L	rpm	2,120—2,420	2,430—2,530
	R	rpm	2,080—2,380	2,390—2,490
Time lag				
N → D		sec	0.5—1.0	0.4—1.2
N → R		sec	0.5—1.0	0.4—1.5
Line pressure				
D, S, L	Idle	kPa (kg/cm², psi)	353—432 (3.6—4.4, 51—63)	350—490 (3.6—5.0, 51—71)
	Stall	kPa (kg/cm², psi)	873—1,040 (8.9—10.6, 127—151)	980—1,230 (10.0—12.5, 142—178)
R	Idle	kPa (kg/cm², psi)	598—942 (6.1—9.6, 87—137)	600—830 (6.1—8.5, 87—121)
	Stall	kPa (kg/cm², psi)	1,668—2,011 (17.0—20.5, 242—292)	1,470—1,960 (15.0—20.0, 213—284)
Throttle pressure				
D	Idle	kPa (kg/cm², psi)	39—88 (0.4—0.9, 6—13)	83—113 (0.85—1.15, 12—16)
	Stall	kPa (kg/cm², psi)	471—589 (4.8—6.0, 68—85)	540—610 (5.5—6.2, 78—88)
Governor pressure				
D	30 km/h (19 mph)	kPa (kg/cm², psi)	—	79—114 (0.81—1.16, 12—16)
	55 km/h (34 mph)	kPa (kg/cm², psi)	—	146—190 (1.49—1.94, 21—28)
	85 km/h (53 mph)	kPa (kg/cm², psi)	—	276—339 (2.81—3.46, 40—49)

Shift points (F2 engine) (G4A-EL)

Range/Mode		Throttle condition (Throttle sensor voltage)	Shift	Drum speed rpm	Vehicle speed km/h (mph)
Power	D	Fully open (4.3 volt)	D1 → D2	4,900—5,550	54—61 (33—38)
			D2 → D3	5,250—5,750	105—115 (65—72)
			Lockup ON (D3)	4,900—5,150	148—156 (93—98)
			D3 → OD	5,450—5,800	165—175 (102—109)
			Lockup ON (OD)	3,400—3,600	147—157 (92—98)
		Half throttle (1.6—2.2 volt)	D1 → D2	3,350—4,200	37—46 (23—29)
			D2 → D3	3,500—4,400	70—88 (44—55)
			Lockup ON (D3)	2,300—2,850	69—87 (43—54)
			D3 → OD	3,500—4,400	106—133 (66—83)
			Lockup ON (OD)	2,450—3,100	106—135 (66—84)
		Fully closed (0.5 volt)	OD → D3	600—750	27—33 (17—21)
			D3 → D1	400—600	12—18 (8—11)
		Kickdown	OD → D3	3,500—3,750	153—163 (95—101)
			D3 → D2	3,100—3,350	94—102 (40—63)
			D2 → D1	2,100—2,400	42—48 (26—30)
Economy		Fully open (4.3 volt)	D1 → D2	4,900—5,450	54—60 (33—37)
			D2 → D3	5,100—5,500	102—110 (63—68)
			Lockup ON (D3)	4,900—5,150	148—156 (93—98)
			D3 → OD	5,450—5,800	165—175 (102—109)
			Lockup ON (OD)	3,400—3,600	147—157 (92—98)
		Half throttle (1.6—2.2 volt)	D1 → D2	2,650—3,350	29—37 (18—23)
			D2 → D3	2,750—3,600	55—72 (34—45)
			Lockup ON (D3)	1,800—2,750	54—83 (34—52)
			D3 → OD	2,800—3,650	85—111 (53—69)
			Lockup ON (OD)	2,000—2,600	86—113 (54—71)
		Fully closed (0.5 volt)	OD → D3	600—750	27—33 (17—21)
			D3 → D1	350—550	11—17 (7—11)
		Kickdown	OD → D3	3,500—3,750	153—163 (95—101)
			D3 → D2	2,950—3,250	90—98 (56—61)
			D2 → D1	2,100—2,400	42—48 (26—30)
S		Fully open (4.3 volt)	S1 → S2	5,000—5,550	55—61 (34—38)
			S2 → S3	5,250—5,650	105—113 (65—70)
			Lockup ON (S3)	4,900—5,150	148—156 (93—98)
		Half throttle (1.6—2.2 volt)	S1 → S2	3,350—4,200	37—46 (23—29)
			S2 → S3	3,500—4,450	70—89 (44—56)
			Lockup ON (S3)	3,100—3,500	94—106 (59—66)
		Fully closed (0.5 volt)	S4 → S3	3,800—3,950	165—171 (103—107)
			S3 → S1	400—600	12—18 (8—11)
		Kickdown	S4 → S3	3,750—4,000	163—173 (102—108)
			S3 → S2	3,100—3,350	94—102 (59—64)
			S2 → S1	2,100—2,400	42—48 (26—30)
L		Fully open (4.3 volt)	L1 → L2	5,000—5,550	55—61 (34—38)
		Half throttle (1.6—2.2 volt)	L1 → L2	3,350—4,200	37—46 (23—29)
		Fully closed (0.5 volt)	L2 → L1	600—900	12—18 (8—11)
		Kickdown	L2 → L1	2,100—2,400	42—48 (26—30)
HOLD	D	Any condition	D2 → D3	750—1,250	15—25 (9—16)
			Lockup ON (D3)	3,150—3,450*1 4,800—5,100*2	95—105 (59—66)*1 145—155 (91—97)*2
			OD → D3	3,800—3,950	165—171 (103—107)
			D3 → D2	250—450	7—13 (4—8)
	S		Lockup ON (S3)	3,150—3,450*1 4,800—5,100*2	95—105 (59—66)*1 145—155 (91—97)*2
			S4 → S3	3,750—4,000	165—171 (103—107)
			S3 → S2	3,600—3,800	109—115 (68—72)
	L		L2 → L1	2,150—2,450	43—49 (27—31)

*1: Less than 7/8 throttle opening. *2: More than 7/8 throttle opening

Shift point (G4A-HL)

Range	Throttle condition	Shifting	Vehicle speed km/h (mph)
			FE engine
D	Fully opened	1st → 2nd	50—65 (31—40)
		2nd → 3rd	100—115 (62—71)
		3rd lock-up	106—121 (66—75)
	Half throttle (1/2)	1st → 2nd	17—32 (11—20)
		2nd → 3rd	42—57 (26—35)
		3rd → OD	79—94 (49—58)
		Lock-up	74—89 (46—55)
	Kick-down	OD → 3rd	More than 88 (55)
		OD → 2nd	34—103 (21—64)
		OD → 1st	27—49 (17—30)
		3rd → 2nd	34—103 (21—64)
		3rd → 1st	11—49 (7—30)
		2nd → 1st	4—49 (2—30)
1	Fully opened	1st → 2nd	56—71 (35—44)
	Half throttle	1st → 2nd	56—71 (35—44)
	Kick-down	2nd → 1st	46—61 (29—38)

Item \ Transaxle/Engine			G4A-EL (EC-AT)	G4A-HL (4-speed)
			F2	FE
Torque converter				
Stall torque ratio			1.700—1.900 : 1	1.900—2.100 : 1
Bushing diameter	mm (in)	Standard	53.030 (2.088)	
		Maximum	53.076 (2.090)	
Oil pump				
Clearance				
Cam ring to oil pump cover	mm (in)	Standard	0.005—0.020 (0.0002—0.0008)	
		Maximum	0.080 (0.003)	
Rotor to oil pump cover	mm (in)	Standard	0.005—0.020 (0.0002—0.0008)	
		Maximum	0.030 (0.0012)	
Vane to oil pump cover	mm (in)	Standard	0.015—0.050 (0.0006—0.0020)	
		Maximum	0.080 (0.003)	
Seal pin to oil pump cover	mm (in)	Standard	0.005—0.020 (0.0002—0.0008)	
		Maximum	0.060 (0.002)	
Vane to rotor groove	mm (in)	Standard	0.010—0.045 (0.0004—0.0018)	
		Maximum	0.065 (0.0026)	
Sleeve outer diameter	mm (in)	Standard	28.00 (1.102)	
Rotor bushing in inner diameter	mm (in)	Standard	28.00 (1.102)	
		Maximum	28.05 (1.104)	
Seal pin outer diameter	mm (in)	Standard	5.00 (0.197)	
		Minimum	4.90 (0.193)	
Guide ring outer diameter	mm (in)	Standard	57.85 (2.278)	
		Minimum	57.70 (2.272)	
Valve outer diameter	mm (in)	Standard	12.00 (0.472)	
		Minimum	11.86 (0.467)	
Forward clutch				
Number of drive/driven plate			3/3	
Drive plate thickness	mm (in)	Standard	1.6 (0.063)	
		Minimum	1.4 (0.055)	
Forward clutch clearance		mm (in)	1.0—1.2 (0.040—0.047)	
Retaining plate sizes		mm (in)	5.9 (0.232), 6.1 (0.240), 6.3 (0.248), 6.5 (0.256), 6.7 (0.264), 8.9 (0.350)	

Item \ Transaxle/Engine			G4A-EL (EC-AT)	G4A-HL (4-speed)
			F2	FE
Coasting clutch				
Number of drive/driven plates			2/2	
Drive plate thickness	mm (in)	Standard	1.6 (0.063)	
		Minimum	1.4 (0.055)	
Coasting clutch clearance		mm (in)	1.0—1.2 (0.040—0.047)	
Retaining plate sizes		mm (in)	4.6 (0.181), 4.8 (0.189), 5.0 (0.197), 5.2 (0.205), 5.4 (0.213), 5.6 (0.220)	
Return spring free length		mm (in)	29.8 (1.173)	
Reverse clutch				
Number of drive/driven plates			2/2	
Driven plate thickness	mm (in)	Standard	1.6 (0.063)	
		Minimum	1.4 (0.055)	
Reverse clutch clearance		mm (in)	2.1—2.4 (0.083—0.094)	
Retaining plate sizes		mm (in)	6.6 (0.260), 6.8 (0.268), 7.0 (0.276), 7.2 (0.283), 7.4 (0.291), 7.6 (0.299)	
3-4 clutch				
Number of drive/driven plates			5/5	4/4
Drive plate thickness	mm (in)	Standard	1.6 (0.063)	
		Minimum	1.4 (0.055)	
3-4 clutch clearance		mm (in)	1.3—1.5 (0.051—0.059)	
Retaining plate sizes		mm (in)	3.8 (0.150), 4.0 (0.157), 4.2 (0.165), 4.4 (0.173), 4.6 (0.181), 4.8 (0.189)	4.8 (0.189), 5.0 (0.197), 5.2 (0.205), 5.4 (0.213), 5.6 (0.220)
Return spring free length		mm (in)	33.2 (1.307)	
Low and reverse brake				
Number of drive/driven plates			4/4	
Drive plate thickness	mm (in)	Standard	1.6 (0.063)	
		Minimum	1.4 (0.055)	
Low and reverse brake clearance		mm (in)	2.1—2.4 (0.083—0.094)	
Retaining plate sizes		mm (in)	6.8 (0.268), 7.0 (0.276), 7.2 (0.283), 7.4 (0.291), 7.6 (0.299), 7.8 (0.307)	
Return spring free length		mm (in)	20.5 (0.807)	
Sun gear drum bushing	mm (in)	Maximum	33.425 (1.316)	
Small sun gear bushing	mm (in)	Maximum	24.021 (0.946)	
Carrier hub				
Clearance between pinion washer and planet carrier	mm (in)	Maximum	0.2—0.7 (0.008—0.028)	
Servo				
Free length of return spring	mm (in)	Standard	43.25 (1.703)	42.0 (1.654)
2-3 accumulator valve				
2-3 accumulator valve spring	mm (in)	Standard	83.3 mm (3.280)	76.0 (2.992)

Control valve springs (G4A-EL)

Spring name	Outer dia. mm (in)	Free length mm (in)	Wire dia. mm (in)	Spring color
1-2 accumulator small spring	14.4 (0.567)	86.0 (3.368)	1.8 (0.071)	—
1-2 accumulator large spring	20.0 (0.787)	97.1 (3.823)	2.3 (0.079)	Gray
Bypass, servo control spring	4.9 (0.193)	27.6 (1.087)	0.55 (0.022)	Yellow
2-3 timing spring	8.3 (0.327)	26.5 (1.043)	0.8 (0.031)	—
N-R accumulator rear spring	11.1 (0.437)	62.0 (2.441)	1.2 (0.047)	Light green
N-D accumulator front spring	9.8 (0.386)	68.0 (2.677)	1.1 (0.043)	Orange
Coasting bypass spring	5.8 (0.228)	37.7 (1.484)	0.6 (0.024)	Dark blue
3-2 timing spring	8.2 (0.323)	28.6 (0.126)	0.8 (0.031)	Red
3-2 capacity spring	5.4 (0.213)	30.6 (1.205)	0.5 (0.020)	White
Throttle relief ball spring	6.6 (0.260)	21.6 (0.850)	0.8 (0.031)	—
Pressure modifier spring	8.3 (0.327)	26.5 (1.043)	0.8 (0.031)	—
Low reducing spring	8.7 (0.343)	38.3 (1.508)	0.9 (0.035)	Black
1-2 shift spring	8.7 (0.343)	41.3 (1.626)	1.0 (0.039)	Yellow
2-3, 3-4 shift spring	7.4 (0.291)	36.6 (1.441)	0.8 (0.031)	Gray
Throttle backup spring	9.65 (0.380)	26.9 (1.059)	0.55 (0.022)	Red
Throttle modulator spring	6.3 (0.248)	47.9 (1.886)	0.8 (0.031)	—
Throttle assist spring	5.15 (0.203)	32.3 (1.272)	0.55 (0.022)	Dark green
Throttle spring	5.4 (0.213)	47.2 (1.858)	0.8 (0.031)	Pink
Converter relief ball spring	6.9 (0.272)	24.1 (0.949)	0.9 (0.035)	Maroon
Orifice check valve spring	5.0 (0.197)	12.5 (0.492)	0.23 (0.009)	—
Pressure regulator spring	11.5 (0.453)	26.5 (1.043)	1.0 (0.039)	Maroon
Lock-up control spring	5.0 (0.197)	35.2 (1.386)	0.6 (0.024)	Purple

Control valve springs (G4A-HL)

Spring name	Outer dia. mm (in)	Free length mm (in)	Wire dia. mm (in)	Spring color
1-2 accumulator large spring	13.0 (0.512)	73.2 (2.881)	1.8 (0.071)	Pink
Bypass spring	5.0 (0.197)	25.1 (0.988)	0.7 (0.028)	Yellow
Servo control spring	4.9 (0.193)	27.1 (1.067)	0.5 (0.020)	Light blue
2-3 timing spring	8.3 (0.327)	26.5 (1.043)	0.8 (0.031)	—
N-R accumulator rear spring	11.1 (0.437)	68.2 (2.685)	1.0 (0.039)	Blue
N-D accumulator front spring	9.8 (0.386)	60.9 (2.398)	1.1 (0.043)	Yellow
Low reducing spring	8.7 (0.343)	38.3 (1.508)	0.9 (0.035)	Black
OD release spring	6.0 (0.236)	32.6 (1.283)	0.6 (0.024)	Orange
Coasting bypass spring	5.8 (0.228)	31.3 (1.232)	0.6 (0.024)	Yellow
3-2 timing spring	8.2 (0.323)	28.55 (1.124)	0.8 (0.031)	Maroon
3-2 capacity spring	5.55 (0.219)	30.5 (1.201)	0.55 (0.022)	Light green
Throttle relief ball spring	6.6 (0.260)	20.3 (0.799)	0.8 (0.031)	Light green
1-2 shift control spring	5.5 (0.217)	46.0 (1.811)	0.5 (0.020)	Light green
1-2 shift spring	5.0 (0.197)	24.9 (0.980)	0.5 (0.020)	Gray
2-3 shift spring	6.1 (0.240)	39.7 (1.563)	0.65 (0.026)	Pink
3-4 shift spring	6.4 (0.252)	37.0 (1.457)	0.6 (0.024)	—
Throttle backup spring	6.4 (0.252)	33.5 (1.319)	0.6 (0.024)	Pink
Throttle modulator front spring	5.0 (0.197)	27.8 (1.094)	0.6 (0.024)	Red
Throttle modulator rear spring	7.15 (0.281)	30.8 (1.213)	0.85 (0.033)	Red
1 range control spring	6.15 (0.242)	39.2 (1.543)	0.65 (0.026)	White
2 range control spring	3.95 (0.156)	32.1 (1.264)	0.45 (0.018)	—
Kick-down spring	5.4 (0.213)	38.1 (1.500)	0.8 (0.031)	—
Throttle assist spring	5.15 (0.203)	32.3 (1.272)	0.55 (0.022)	Dark green
Throttle spring	5.4 (0.213)	48.3 (1.902)	0.8 (0.031)	—
Converter relief ball spring	6.9 (0.272)	24.1 (0.949)	0.9 (0.035)	Maroon
Orifice check valve spring	5.0 (0.197)	12.5 (0.492)	0.23 (0.009)	—
Pressure regulator spring	9.5 (0.374)	30.7 (1.209)	0.7 (0.028)	—
Lock-up control spring	7.3 (0.287)	46.2 (1.819)	0.8 (0.031)	Blue
Lock-up support spring	7.0 (0.276)	52.3 (2.059)	1.0 (0.039)	Yellow
OD lock-up spring	7.1 (0.280)	66.5 (2.618)	0.8 (0.031)	Red

Item \ Transaxle/Engine			G4A-EL (EC-AT)	G4A-HL (4-speed)
			F2	FE
Gear assembly				
Total end play		mm (in)	0.25—0.50 (0.010—0.020)	
End play adjust race		mm (in)	1.2 (0.047), 1.4 (0.055), 1.6 (0.063), 1.8 (0.071), 2.0 (0.079), 2.2 (0.087)	
Idle gear bearing preload		N·m (cm-kg, in-lb)	0.03—0.9 (0.3—9.0, 0.26—7.8)	
Preload adjust shims		mm (in)	0.10 (0.004), 0.12 (0.005), 0.14 (0.006), 0.16 (0.0063), 0.18 (0.007), 0.20 (0.008), 0.50 (0.020)	
Output gear bearing preload		N·m (cm-kg, in-lb)	0.03—0.9 (0.3—9.0, 0.26—7.8)	
Preload adjust shims		mm (in)	0.10 (0.004), 0.12 (0.005), 0.14 (0.006), 0.16 (0.0063), 0.18 (0.007), 0.20 (0.008), 0.50 (0.020)	
Drive and differential				
Final gear	Type		Helical gear	
	Reduction ratio		3.700 : 1	
Side bearing preload		N·m (cm-kg, in-lb)	2.9—3.9 (30—40, 26—35)	
Preload adjust shims		mm (in)	0.10 (0.004), 0.12 (0.005), 0.14 (0.006), 0.16 (0.0063), 0.18 (0.007), 0.20 (0.008), 0.50 (0.020), 0.70 (0.028), 1.00 (0.039)	
Backlash of side gear and pinion		mm (in)	Standard: 0.025—0.1 (0.001—0.004)	
			Maximum: 0.5 (0.020)	

M. FRONT AND REAR AXLES

Item \ Type			MTX		ATX
			F8, RF	FE, F2	All
Driveshaft					
Joint type		Inside	Ball joint		Tripod joint
		Outside	Ball joint		Ball joint
Shaft length		mm (in)	Right: 571.0 (22.48)	570.0 (22.44)	570.2 (22.45)
			Left: 623.5 (24.55)	622.5 (24.51)	622.7 (24.52)
Shaft diameter		mm (in)	23 (0.91)	24 (0.94)	24 (0.94)
Front axle					
Front wheel bearing end play		mm (in)	0.1 (0.0039) max.		
Rear axle					
Rear wheel bearing end play		mm (in)	0.035 (0.0014) max.		

N. STEERING SYSTEM

Item \ Type			Manual steering	Power steering
Steering wheel	Outer diameter	mm (in)	380 (15.0)	
	Turns lock to lock		4.32	2.93
Steering shaft and joints	Shaft type		Collapsible	
	Joint type		Cross joints (2)	
	Tilt stroke	mm (in)	40 (1.6)	
Front steering gear	Type		Rack and pinion	
	Gear ratio		∞ (infinite)	
Power steering fluid	Capacity liter (US qt, Imp qt)	Gasoline engine	—	0.9 (0.95, 0.79)
		Diesel engine	—	0.8 (0.85, 0.70)
	Type		—	M-Ⅲ

1P. BRAKING SYSTEM

Item			Specifications
Brake pedal	Height (with carpet) mm (in)		171—181 (6.73—7.13)
	Free play mm (in)		4—7 (0.16—0.28)
	Reserve travel mm (in) (Clearance when pedal is depressed at 589 N [60 kg, 132 lb])		95 (3.74) min.
	Lever ratio		4.2
	Max. stroke mm (in)		LHD: 136.5 (5.37) RHD: 135 (5.31)
Master cylinder	Type		Tandem
	Bore mm (in)		22.22 (0.875)
	Fluid type		DOT-3 or SAE J1703
Front disc brake	Type		Disc (ventilated)
	Thickness of pad mm (in)	Standard	10.0 (0.39)
		Minimum	2.0 (0.08)
	Area of pad mm^2 (in^2)		4,800 (7.44)
	Outer diameter of disc plate mm (in)		264 (10.39)
	Thickness of disc plate mm (in)	Standard	24.0 (0.94)
		Minimum	22.0 (0.87)
	Disc plate runout mm (in)	Maximum	0.1 (0.004)
	Wheel cylinder bore mm (in)		53.97 (2.125)
Rear disc brake	Type		Disc (solid)
	Thickness of pad mm (in)	Standard	8.0 (0.31)
		Minimum	1.0 (0.04)
	Area of pad mm^2 (in^2)		2,900 (4.5)
	Outer diameter of disc plate mm (in)		259 (10.2)
	Thickness of disc plate mm (in)	Standard	10.0 (0.39)
		Minimum	8.0 (0.31)
	Disc plate runout mm (in)	Maximum	0.1 (0.004)
	Wheel cylinder bore mm (in)		30.2 (1.19)
Parking brake	Type		Center lever
	Lever notches (Pulled at 98N [10 kg, 22 lb])		5—7
Power brake unit	Diameter mm (in)		238 (9.37)
	Clearance between master cylinder piston and push rod mm (in)		0 (0)
	Fluid pressure per treading force kPa (kg/cm^2, psi)/N (kg, lb)		1,177 (12,171)/196 (20, 44) min. when no vacuum is applied 7,063 (72, 1,024)/196 (20, 44) min. when 500 mmHg (19.7 in Hg) vacuum is applied
DPV	Rear brake control split point kPa (kg/cm^2, psi)		2,453 (25, 356)

DPV: Dual Proportioning Valve

Q. WHEEL AND TIRE

Item			Standard tire and wheel		Temporary spare tire and wheel (If equipped)
			Europe, UK, Switz.	Australia, General LHD and RHD	
Wheels	Size		14 x 5 1/2JJ, 15 x 6JJ	14 x 5 1/2JJ	15 x 4T
	Offset mm (in)		42 (1.65)		53 (2.09)
	Diameter of pitch circle mm (in)		114.3 (4.5)		
	Material		Steel or aluminum alloy		Steel
Tires	Size		185/70HR14 185/70R14 87H 185/70R14 88H 195/60R15 86H	185/70HR14 185/70R14 87H	T125/70D15
	Air pressure kPa (kg/cm^2, psi)	Front	216 (2.2, 32)... up to 5 passengers 216 (2.2, 32)... full load	196 (2.0, 28)... up to 5 passengers 206 (2.1, 30)... full load	412 (4.2, 60)
		Rear	196 (2.0, 28)...up to 5 passengers 235 (2.4, 34)...full load		412 (4.2, 60)
Wheels and Tires	Runout mm (in)	Horizontal	Steel wheel: 2.5 (0.098), Alminum alloy wheel: 2.0 (0.079) max.		
		Vertical	2.0 (0.079) max.		
	Unbalance g (oz)	14 inch wheel	10 (0.35) max.		
		15 inch wheel	9 (0.32) max.		

R. SUSPENSION
Front suspension

Item			Specification				
Type			Strut				
Front wheel alignment (Unladed*1)	Toe-in (Total toe-in)	mm (in)	0 ± 3 (0 ± 0.12)				
		degree	0° ± 18'				
	Camber angle		0°17' ± 45'				
	Caster angle		1°13' ± 45'				
	King pin angle		12°47'				
Maximum front steering angle	Inner		36°00' ± 2°				
	Outer		31°00' ± 2°				
Stabilizer	Type		Torsion bar				
	Diameter mm (in)		Australia: 20.0 (0.79) Except Australia: 24.2 (0.95)				
Shock absorbers			Oil type				
Coil springs*2	Identification mark color		Blue	Gray	Pink	Light Green	Green
	Wire diameter mm (in)		13.7 (0.54)	13.6 (0.54)	13.4 (0.53)	13.2 (0.52)	13.1 (0.52)
	Coil inner diameter mm (in)		147.5 (5.81)				
	Free length mm (in)		358.0 (14.09)	350.5 (13.80)	347.5 (13.68)	340.0 (13.39)	331.5 (13.05)
	Coil number		3.68	3.57	3.44	3.23	3.13

*1 Fuel tank full; radiator coolant and engine oil at specified level, and spare tire, jack, and tools in designated position.
*2 Refer to page R–3 for coil spring applications.

Rear suspension

Item			Specification		
Type			Strut		
Rear wheel alignment (Unladed*1)	Toe-in (Total toe-in)	mm (in)	0 ± 3 (0 ± 0.12)		
		degree	0° ± 18'		
	Camber angle		−0°30' ± 45'		
Stabilizer	Type		Torsion bar		
	Diameter	mm (in)	16 (0.63)		
Shock absorbers			Oil type		
Coil springs*2	Identification mark color		Orange	Pink	Yellow
	Wire diameter	mm (in)	13.9 (0.55)		
	Coil inner diameter	mm (in)	115.4 (4.54)—159.4 (6.28)		
	Free length	mm (in)	339.5 (13.37)	356.0 (14.00)	372.0 (14.65)
	Coil number		6.69	6.74	6.77

*1 Fuel tank full; radiator coolant and engine oil at specified level, and spare tire, jack, and tools in designated position.
*2 Refer to page R–4 for coil spring applications.

T. BODY ELECTRICAL SYSTEM

Item \ Market		Specification (W)					
		Europe	Swiss, Sweden	UK	Australia	R.H. General	L.H. General
Front exterior lights	Halogen headlight	60 + 55/55					
	Turn signal light	21			23		
	Position light	5					
	Side turn signal light	5					
Rear exterior lights	Back-up light	21					
	License plate light	5					
	Stop/Tail light	21/5					
	Turn signal light	21					
	Rear fog light	21			—		
	High mounted stop light	—			18.4	—	
Indicator and warning lights	Brake	1.4 (Analog), 1.12 (Digital)					
	Oil pressure	1.4 (Analog), 1.12 (Digital)					
	Fuel	1.4 (Analog), 1.12 (Digital)					
	Washer level	1.4 (Analog), 1.12 (Digital)					
	Rear	1.4 (Analog), 1.12 (Digital)					
	Door	1.4 (Analog), 1.12 (Digital)					
	Alternator	1.4 (Analog), 1.12 (Digital)					
	Cruise main	1.4 (Analog), 1.12 (Digital)					—
	High beam	1.4 (Analog), 1.12 (Digital)					
	Turn signal	1.4 (Analog), 1.12 (Digital)					
	Hazard	1.4 (Analog), 1.12 (Digital)			—		
	Timing belt	1.4			—		
	Sedimenter	1.4			—		
	Coolant	1.4			—		
	Glow	1.4			—		
	O/D OFF	0.84					—
	A/T mode	—			0.84	—	
	A/T position	—			0.84	—	
Interior lights	Glove compartment light	3.4					
	Interior light	10					
	Luggage compartment light	5					
	Map light	8					
	Courtesy light	3.8					

Item	Market	Specification (W)					
		Europe	Swiss, Sweden	UK	Australia	R.H. General	L.H. General
Illumination lights	Meter	3.4 and 1.4					
	Hazard switch	0.7			—		
	Cigar lighter	3.4					
	AAS switch	0.7			—	0.7	
	Rear defroster switch	0.7					
	EC-AT switch	—			0.7	—	
	A/T selector	3.4					—
	Ign key cylinder	3.4					
	Panel light control	0.7					
	Headlight cleaner switch	0.7				—	
	Rear wiper and washer switch	0.7					
	Rear fog light switch	0.84			—		
	Air cond. switch	0.84					
	Heater	1.4					
	Seat warmer	0.56		—			

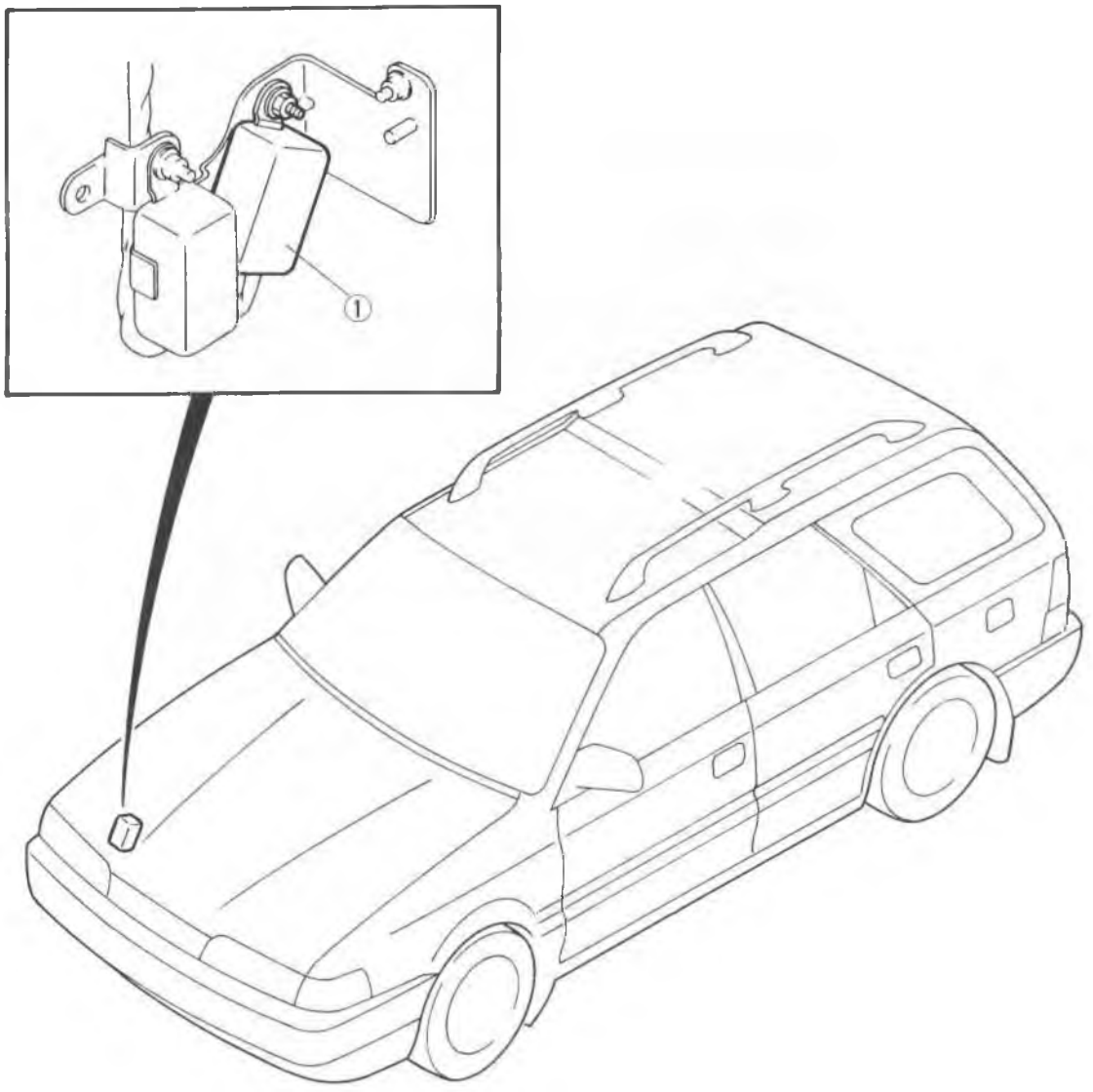
STANDARD BOLT AND NUT TIGHTENING TORQUE

Diameter mm (in)	Pitch mm (in)	4T			6T			8T		
		N·m	m-kg	ft-lb	N·m	m-kg	ft-lb	N·m	m-kg	ft-lb
6 (0.236)	1 (0.039)	4.2—6.2	0.43—0.63	3.1—4.6	6.9—9.8	0.7—1.0	5.0—7.2	7.8—11.8	0.8—1.2	5.8—8.8
8 (0.315)	1.25 (0.049)	9.8—14.7	1.0—1.5	7.2—10.8	16—23	1.6—2.3	12—17	18—26	1.8—2.7	13—20
10 (0.394)	1.25 (0.049)	20—28	2.0—2.9	14—21	31—46	3.2—4.1	23—34	36—54	3.7—5.5	27—40
12 (0.472)	1.5 (0.059)	34—50	3.5—5.1	25—37	55—80	5.6—8.2	41—59	63—93	6.4—9.5	46—69
14 (0.551)	1.5 (0.059)	—	—	—	75—103	7.7—10.5	56—76	102—137	10—14	75—101
16 (0.630)	1.5 (0.059)	—	—	—	116—157	12—16	85—116	156—211	16—22	115—156
18 (0.709)	1.5 (0.059)	—	—	—	167—225	17—23	123—166	221—299	23—31	163—221
20 (0.787)	1.5 (0.059)	—	—	—	231—314	24—32	171—231	308—417	31—43	227—307
22 (0.866)	1.5 (0.059)	—	—	—	314—423	32—43	231—312	417—564	43—58	307—416
24 (0.945)	1.5 (0.059)	—	—	—	475—546	41—56	298—403	536—726	55—74	396—536

HEATER AND AIR CONDITIONER SYSTEMS

96A0UX-001

INDEX



96A0UX-002

1. A/C relay
   Inspection..... page U–4

OUTLINE

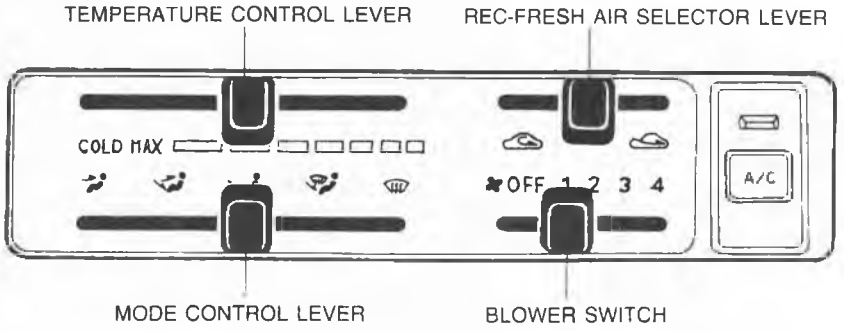
OUTLINE OF CONSTRUCTION

1. The A/C relay is changed.
2. The ECONO switch in the control panel is discontinued. (LHD)

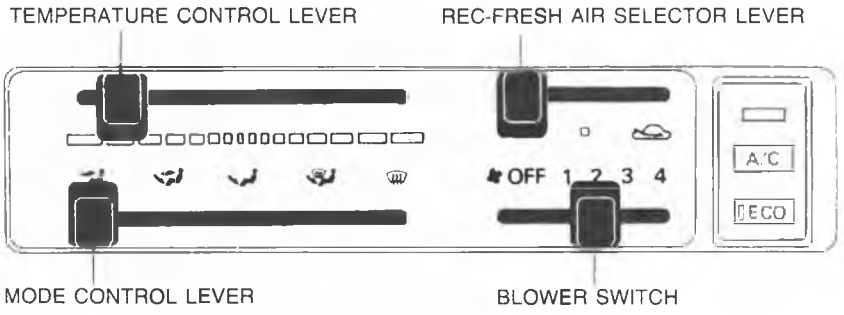
96G0UX-001

CONTROL PANEL

LHD



EXCEPT LHD



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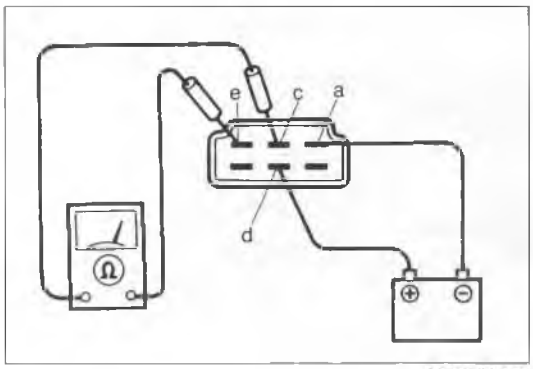
SUPPLEMENTAL SERVICE INFORMATION

The following points shown in this section are changed in comparison with Mazda 626 Station Wagon Workshop Manual Supplement (1182-10-88B).

A/C relay
- Inspection

96G0UX-501



96A0UX-006

REFRIGERANT SYSTEM

A/C RELAY
Inspection

1. Apply 12V to the following terminals, and check continuity of the A/C relay with an ohmmeter.

Order	Terminal condition		Continuity terminal c—e
	a	d	
1	—	—	No
2	Ground	12V	Yes

2. If the continuity is not as specified, replace the A/C relay.