

# ***WORKSHOP MANUAL***

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# **ISUZU**

**PubNo. RV99\_02-01.E**

# ***WORKSHOP MANUAL***

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***1998/1999***

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**UBS**

***2000***

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**UBS**

***2002***

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**UBS**

**THIS MALUAL INCLUDES THE FOLLOWING SECTIONS:**

<b>SECTION No.</b>	<b>CONTRNTS</b>
<b>0A</b>	<b>General Information</b>
<b>0B</b>	<b>Maintenance and Lubrication</b>

**THIS MALUAL INCLUDES THE FOLLOWING SECTIONS:**

<b>SECTION No.</b>	<b>CONTRNTS</b>
<b>00</b>	<b>SERVICE INFORMATION</b>
<b>1A</b>	<b>HEATING AND VENTILATION</b>
<b>1B</b>	<b>AIR CONDITIONING</b>
<b>1D</b>	<b>COMPRESSOR OVERHAUL</b>

**THIS MALUAL INCLUDES THE FOLLOWING SECTIONS:**

<b>SECTION No.</b>	<b>CONTRNTS</b>
<b>00</b>	<b>SERVICE INFORMATION</b>
<b>2A</b>	<b>FRONT END ALIGNMENT</b>

**THIS MALUAL INCLUDES THE FOLLOWING SECTIONS:**

<b>SECTION No.</b>	<b>CONTRNTS</b>
<b>3C</b>	<b>FRONT SUSPENSION</b>
<b>3D</b>	<b>REAR SUSPENSION; COIL SPRING</b>
<b>3E</b>	<b>WHEELS AND TIRES</b>

**THIS MALUAL INCLUDES THE FOLLOWING SECTIONS:**

<b>SECTION No.</b>	<b>CONTRNTS</b>
<b>4A1</b>	<b>DIFFERENTIAL (FRONT)</b>
<b>4A2A</b>	<b>DIFFERENTIAL (Rear 220mm)</b>
<b>4A2B</b>	<b>DIFFERENTIAL (REAR 244mm)</b>
<b>4B1</b>	<b>DRIVELINE CONTROL SYSTEM (SHIFT ON THE FLY)</b>
<b>4B2</b>	<b>DRIVELINE CONTROL SYSTEM (TOD)</b>
<b>4C</b>	<b>DRIVE SHAFT SYSTEM</b>
<b>4D1</b>	<b>TRANSFER CASE (STANDARD TYPE)</b>
<b>4D2</b>	<b>TRANSFER CASE (TOD)</b>

**THIS MALUAL INCLUDES THE FOLLOWING SECTIONS:**

<b>SECTION No.</b>	<b>CONTRNTS</b>
<b>5A</b>	<b>BRAKE CONTROL SYSTEM</b>
<b>5B</b>	<b>ANTI-LOCK BRAKE SYSTEM</b>
<b>5C</b>	<b>POWER ASSISTED BRAKE SYSTEM</b>
<b>5D</b>	<b>PARKING BRAKES</b>



**THIS MALUAL INCLUDES THE FOLLOWING SECTIONS:**

**6VD1 / 6VE1**

<b>SECTION No.</b>	<b>CONTRNTS</b>
<b>6A</b>	<b>ENGINE MECHANICAL</b>
<b>6B</b>	<b>ENGINE COOLING</b>
<b>6C</b>	<b>ENGINE FUEL</b>
<b>6D1</b>	<b>ENGINE ELECTRICAL</b>
<b>6D2</b>	<b>IGNITION SYSTEM</b>
<b>6D3</b>	<b>STARTING AND CHARGING SYSTEM</b>
<b>6E</b>	<b>ENGINE DRIVEABILITY AND EMISSIONS</b>
<b>6F</b>	<b>ENGINE EXHAUST</b>
<b>6G</b>	<b>ENGINE LUBRICATION</b>
<b>6H</b>	<b>ENGINE SPEED CONTROL SYSTEM</b>
<b>6J</b>	<b>INDUCTION</b>

## 4JG2

<b>SECTION No.</b>	<b>CONTRNTS</b>
<b>00</b>	<b>SERVICE INFORMATION</b>
<b>6A</b>	<b>ENGINE MECHANICAL</b>
<b>6A2</b>	<b>4JG2-NA / 4JG2-TURBO ENGINE</b>
<b>6B</b>	<b>ENGINE COOLING</b>
<b>6C</b>	<b>FUEL SYSTEM</b>
<b>6D</b>	<b>ENGINE ELECTRICAL</b>
<b>6E</b>	-
<b>6F</b>	<b>EXHAUST</b>
<b>6G</b>	-

## 4JX1

<b>SECTION No.</b>	<b>CONTRNTS</b>
<b>6A</b>	<b>ENGINE MECHANICAL</b>
<b>6B</b>	<b>ENGINE COOLING</b>
<b>6C</b>	<b>ENGINE FUEL</b>
<b>6D</b>	<b>ENGINE ELECTRICAL</b>
<b>6E</b>	<b>ENGINE DRIVEABILITY AND EMISSIONS</b>
<b>6F</b>	<b>ENGINE EXHAUST</b>
<b>6G</b>	<b>ENGINE LUBRICATION</b>
<b>6H</b>	<b>ENGINE SPEED CONTROL</b>
<b>6J</b>	<b>INDUCTION</b>

**THIS MALUAL INCLUDES THE FOLLOWING SECTIONS:**

<b>SECTION No.</b>	<b>CONTRNTS</b>
<b>7A</b>	<b>AUTOMATIC TRANSMISSION (4L30-E)</b>
<b>7A1</b>	<b>TRANSMISSION CONTROL SYSTEM (4L30-E)</b>
<b>7B</b>	<b>MANUAL TRANSMISSION (AR-5)</b>
<b>7B</b>	<b>MANUAL TRANSMISSION (MUA)</b>
<b>7C</b>	<b>CLUTCH</b>

**THIS MALUAL INCLUDES THE FOLLOWING SECTIONS:**

<b>SECTION No.</b>	<b>CONTRNTS</b>
<b>8A</b>	<b>LIGHTING SYSTEM</b>
<b>8B</b>	<b>WIPER / WASHER SYSTEM</b>
<b>8C</b>	<b>ENTERTAINMENT</b>
<b>8D</b>	<b>WIRING SYSTEM</b>
<b>8E</b>	<b>METER AND GAUGE</b>
<b>8F</b>	<b>BODY STRUCTURE</b>
<b>8G</b>	<b>SEATS</b>
<b>8H</b>	<b>SECURITY AND LOCKS</b>
<b>8I</b>	<b>SUN ROOF/CONVERTIBLE TOP</b>
<b>8J</b>	<b>EXTERIOR / INTERIOR TRIM</b>

**THIS MALUAL INCLUDES THE FOLLOWING SECTIONS:**

<b>SECTION No.</b>	<b>CONTRNTS</b>
<b>9A</b>	<b>SEAT BELT SYSTEM</b>
<b>9J</b>	<b>SUPPLEMENTAL RESTRAINT SYSTEM (SRS)</b>
<b>9J1</b>	<b>RESTRAINT CONTROL SYSTEM</b>

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**THIS MALUAL INCLUDES THE FOLLOWING SECTIONS:**

<b>SECTION No.</b>	<b>CONTRNTS</b>
<b>10A</b>	<b>CRUISE CONTROL SYSTEM</b>

# SECTION 0A

## GENERAL INFORMATION

### CONTENTS

	PAGE
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#### Service Precaution

**WARNING: THIS VEHICLE HAS A SUPPLEMENTAL RESTRAINT SYSTEM (SRS). REFER TO THE SRS COMPONENT AND WIRING LOCATION VIEW IN ORDER TO DETERMINE WHETHER YOU ARE PERFORMING SERVICE ON OR NEAR THE SRS COMPONENTS OR THE SRS WIRING. WHEN YOU ARE PERFORMING SERVICE ON OR NEAR THE SRS COMPONENTS OR THE SRS WIRING, REFER TO THE SRS SERVICE INFORMATION. FAILURE TO FOLLOW WARNINGS COULD RESULT IN POSSIBLE AIR BAG DEPLOYMENT, PERSONAL INJURY, OR OTHERWISE UNNEEDED SRS SYSTEM REPAIRS.**

**CAUTION: Always use the correct fastener in the proper location. When you replace a fastener, use ONLY the exact part number for that application. ISUZU will call out those fasteners that require a replacement after removal. ISUZU will also call out the fasteners that require thread lockers or thread sealant. UNLESS OTHERWISE SPECIFIED, do not use supplemental coatings (Paints, greases, or other corrosion inhibitors) on threaded fasteners or fasteners joint interfaces. Generally, such coatings adversely affect the fastener torque and the joint clamping force, and may damage the fastener. When you install fasteners, use the correct tightening sequence and specification. Following these instructions can help you avoid damage to parts and systems.**

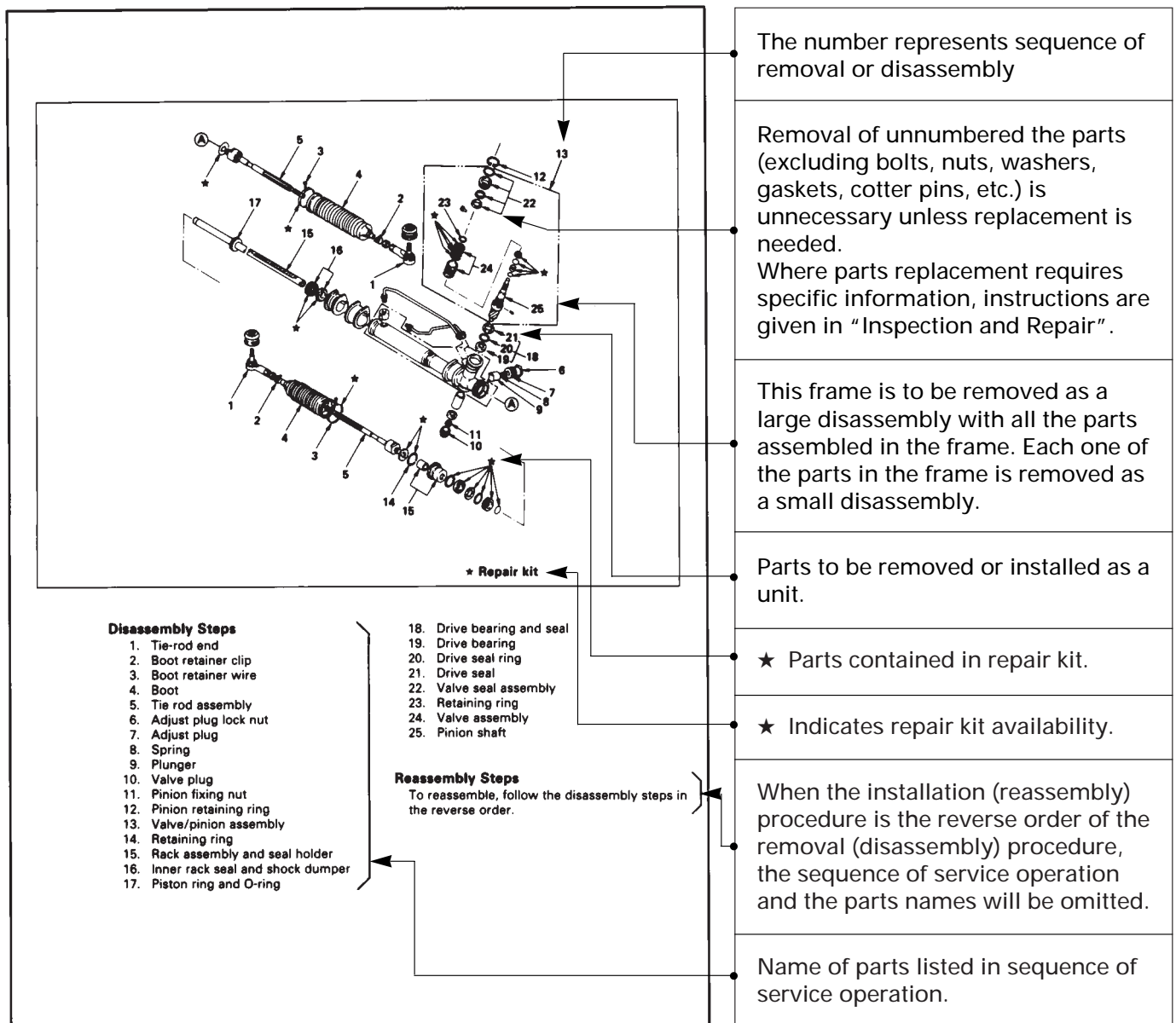
## GENERAL REPAIR INSTRUCTIONS

1. Park the vehicle on level ground and chock the front or rear wheels before lifting the vehicle.
2. Use covers on the vehicle body, seats, and floor to prevent damage and/or contaminations.
3. Disconnect the grounding cable from the battery before performing service operations. This will prevent cable damage or burning due to shortcircuiting.
4. Raise the vehicle with a jack set against the recommended lifting points (see "Lifting instructions" in this section).
5. Support the vehicle on chassis stands.
6. Handle brake fluid and antifreeze solution with great care.  
Spilling these liquids on painted surfaces will damage the paint.
7. The use of the proper tool(s) and special tool(s) where specified is essential to efficient, reliable, and safe service operations.
8. Always use genuine ISUZU replacement parts.
9. Discard used cotter pins, gasket, plastic clips, O-rings, oil seals, lock washers, and self-locking nuts at disassembly.  
Normal function of these parts cannot be guaranteed if they are reused.
10. Keep the disassembled parts neatly in groups. This will facilitate smooth and correct reassembly.
11. Keep fixing nuts and bolts separate.  
Fixing nuts and bolts vary in hardness and design according to installation positions.
12. Clean all parts before inspection or reassembly.
13. Clean the oil ports and other openings with compressed air to make certain that they are free of dirt and obstructions.
14. Lubricate the rotating and sliding faces of all moving parts with oil or grease before installation.
15. Use the recommended liquid gasket to prevent leakage.
16. Carefully observe all nut and bolt torque specifications.
17. When service operation is completed, make a final check to be sure service has been done properly and problem has been corrected.
18. When removing or replacing parts that require refrigerant to be discharged from the air conditioning system, be sure to use the following tools to recover and recycle the Refrigerant-134a (R-134a).  
**For 134a:**  
Use the R-134a Refrigerant Recovery/Recovery/Recycling/Recharging/System (ACR<sup>4</sup>) or its equivalent to prevent the discharge of refrigerant into the air.



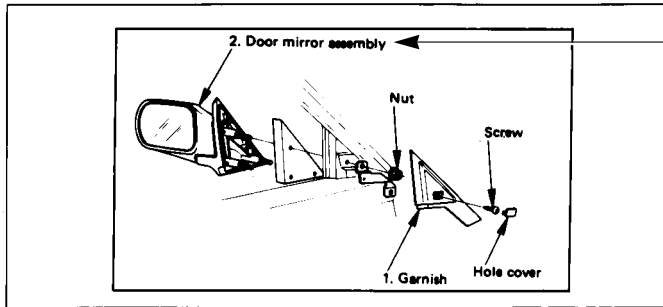
## HOW TO USE THIS MANUAL

1. Find the applicable section by referring to the table of contents on the introduction page of each manual.
2. In "Service Information", an opening section of each manual, the troubleshooting, maintenance servicing, service data and/or information on special tools required for the service operations described in the next subsequent sections are arranged and compiled so concisely that you can see at a first glance.
3. Each section except the Service Information section is basically arranged in the following order of headings:
  - General description
  - On-vehicle service
  - Unit repair
4. The service operations are in two groups: one is the "On-vehicle service" where operations can be directly performed on the vehicle, and the other is the "Unit repair" where the operations are done on the work bench after removing the unit from the vehicle.
5. Each service operation section begins with a disassembled view of unit or equipment, which is useful to find relative components, service procedure, availability and contents of repair kits, etc.



# 0A-4 GENERAL INFORMATION

For illustrations where there are few items to be performed:



The sequence of removal (disassembly) and the parts names will be given.

- After the illustration, the details of each operation are shown in the order the operations are carried out in the illustration. Refer to the explanations when checking important

information such as the notes in each operation, and places where special tools are to be used and their usage, and the specified service data.

5-8840-0602-0  
(J-38304-9)

**REASSEMBLY**

**25. Pinion Shaft**  
Pinion seal installer: 5-8840-0602-0 (J-38304-9)  
Slide oil seal onto shaft.

12 point socket

Torque should be between 0.6-1.6 N·m (0.5-1.4 lb-in)  
(0.5-1.6 kg-cm / 0.3-1.4 lb-in)

NOTE: Due to tolerances, some sockets will require wrapping shim stock around the stub shaft serrations to make a tight enough fit.

**6. Adjust Plug Lock Nut**  
Adjust plug lock nut wrench: 5-8840-0232-0 (J-35309)

- Tighten the adjust plug to 5 N·m (0.5 kg·m / 43 lb·in), loosen the plug and once again tighten plug to 5 N·m (0.5 kg·m / 43 lb·in).
- Back off plug 26° then tighten the lock nut.
- Check the pinion shaft preload.

Pinion Shaft Preload	N·m (kg·cm / lb·in)
0.6 - 1.6	(6 - 16 / 5.3 - 14.1)

The symbol mark attached to the title indicates the action to be taken in the operations of each title.  
Example for this case;  
1st step - Reassemble pinion shaft

The numbers given to the installation (assembly) procedure are the same as those given in the removal (disassembly) procedure in the illustration. Therefore, start with the larger number during reassembly.

The titles of operations done in the illustration are given in bold letters. They are described in the order of the procedure of the operations.

Special tools are identified with tool name and/or tool number. The drawing illustrates how the tool is used.

Service data and specifications are listed in table.


Important note.


The action symbol indicates the step of service to be followed. Refer to the following paragraph for the meaning of each symbol.

7. In this manual, the following action symbols are used to indicate the type of service operations to be performed.


 ... Remove or disconnect


 ... Install or connect


 ... Disassemble

 ... Reassemble

 ... Align the marks


 ... Correct direction


 ... Inspect


 ... Take measurement


 ... Adjust


 ... Clean


 ... Pay close attention - Important

 ... Tighten to specified torque

 ... Use special tool(s)

 ... Lubricate with oil

 ... Lubricate with grease

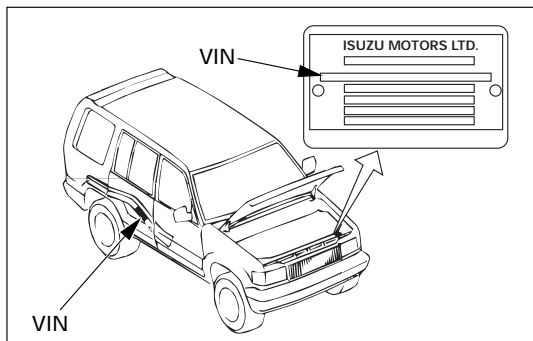
 ... Use liquid gasket

8. The service standard is indicated in terms of "Standard" and "Limit".  
The "Standard" means the assembly standard and standard range within which the parts are

considered serviceable.  
"Limit" indicates the limit value (Correction or replacement is necessary when measurement is beyond this limit.)

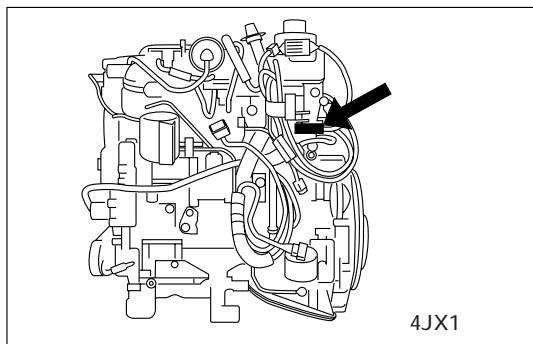
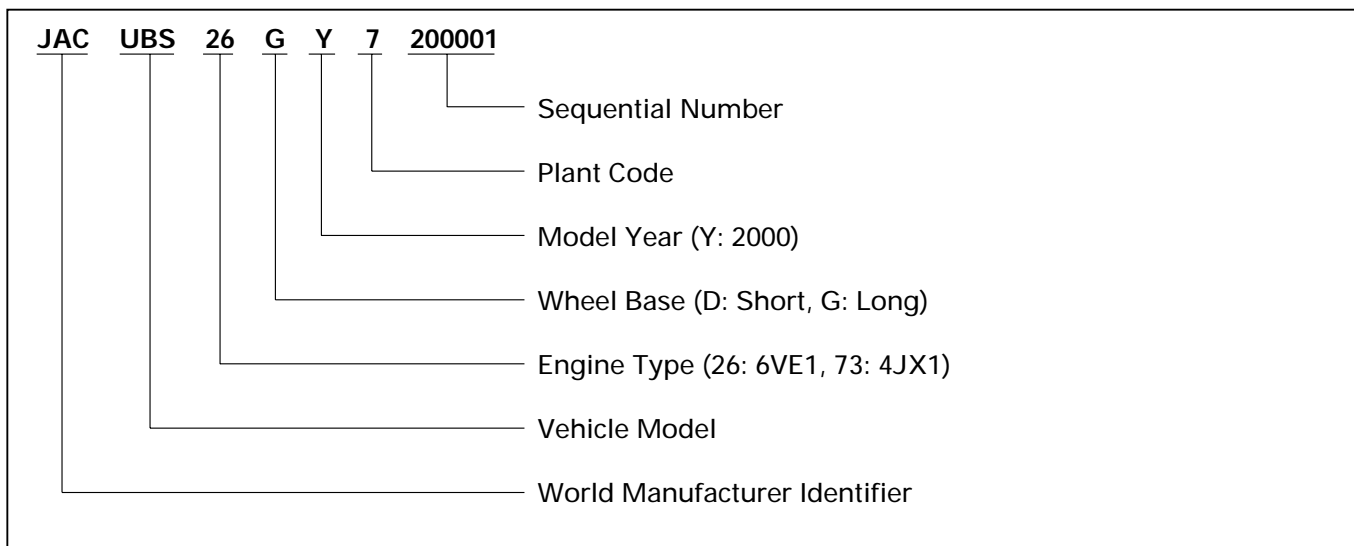
0A-6 GENERAL INFORMATION

# IDENTIFICATION



## VEHICLE IDENTIFICATION NUMBER (VIN)

This is the legal identification of the vehicle. It appears on the manufacturer's Plate attached to the left of the engine compartment front end. VIN number is also stamped on the rear right side of the frame.



## ENGINE SERIAL NUMBER

The engine serial number is stamped on the left rear lower area of the cylinder block above the starter.

