

ENGINE

ENGINE MECHANICAL (4HK1, 6HK1)

TABLE OF CONTENTS

ISUZU DIESEL ENGINE (4HK1, 6HK1)	1A-3	Inspection	1A-81
Precautions on Service Work	1A-3	Reassembly	1A-87
Main Data and Specifications	1A-11	Installation	1A-93
Cylinder Head Cover	1A-14	Torque Specifications	1A-100
Components	1A-14	Special Tool	1A-100
Removal	1A-15	Piston, Connecting Rod	1A-102
Installation	1A-16	Components	1A-102
Torque Specifications	1A-18	Removal	1A-102
Inlet Cover	1A-20	Disassembly	1A-103
Components	1A-20	Reassembly	1A-109
Removal	1A-21	Installation	1A-111
Installation	1A-22	Torque Specifications	1A-113
Torque Specifications	1A-24	Special Tool	1A-113
Turbocharger and Exhaust Manifold	1A-25	Flywheel	1A-114
Components	1A-25	Components	1A-114
Removal	1A-26	Removal	1A-114
Inspection	1A-27	Inspection	1A-116
Installation	1A-28	Installation	1A-116
Torque Specifications	1A-32	Torque Specifications	1A-118
Timing Gear Train	1A-35	Special Tool	1A-118
Components	1A-35	Front Cover	1A-119
Removal	1A-36	Components	1A-119
Inspection	1A-38	Removal	1A-120
Installation	1A-40	Installation	1A-121
Torque Specifications	1A-51	Torque Specifications	1A-123
Special Tool	1A-52	Crankshaft Front Oil Seal	1A-125
Rocker Arm Shaft ASM	1A-53	Components	1A-125
Components	1A-53	Removal	1A-125
Removal	1A-53	Installation	1A-127
Disassembly	1A-54	Torque Specifications	1A-132
Reassembly	1A-56	Special Tool	1A-132
Installation	1A-57	Crankshaft Rear Oil Seal	1A-133
Torque Specifications	1A-58	Components	1A-133
Camshaft ASM	1A-59	Removal	1A-133
Components	1A-59	Installation	1A-134
Removal	1A-60	Special Tool	1A-137
Disassembly	1A-61	Crankshaft	1A-138
Reassembly	1A-63	Components	1A-138
Fixing torque	1A-65	Removal	1A-138
Special Tool	1A-65	Disassembly	1A-140
Installation	1A-66	Reassembly	1A-140
Torque Specifications	1A-68	Inspection	1A-140
Valve Stem Seal, Valve Spring	1A-69	Installation	1A-145
Components	1A-69	Torque Specifications	1A-149
Removal	1A-69	Special Tool	1A-149
Inspection	1A-70	Cylinder Block	1A-151
Installation	1A-71	Components	1A-151
Special Tool	1A-73	Removal	1A-151
Cylinder Head	1A-74	Inspection	1A-152
Components	1A-74	Installation	1A-153
Removal	1A-74	Lubrication System	1A-156
Disassembly	1A-78	Precautions on Service Work	1A-156

1A-2 ENGINE MECHANICAL (4HK1, 6HK1)

Function Check	1A-157
Special Tool	1A-158
Oil Port Cover ASM.....	1A-159
Components.....	1A-159
Removal	1A-159
Installation	1A-159
Oil Cooler	1A-161
Components.....	1A-161
Removal	1A-162
Disassembly.....	1A-163
Reassembly	1A-163
Installation	1A-164
Oil Pan	1A-167
Components.....	1A-167
Removal	1A-167
Installation	1A-167
Oil Pump	1A-170
Components.....	1A-170
Removal	1A-170
Disassembly.....	1A-171
Reassembly	1A-171
Inspection.....	1A-172
Installation	1A-173
Oil Pressure Switch.....	1A-177
Inspection.....	1A-177

ISUZU DIESEL ENGINE (4HK1, 6HK1)

Precautions on Service Work

Matters that require attention in terms of maintenance

To prevent damage to the engine and ensure reliability of its performance, pay attention to the following in maintaining the engine: When taking down the engine on the ground, do not make the bearing surface of the oil pan touch directly the ground. Use a wood frame, for example, to support the engine with the engine foot and the flywheel housing.

Because there is only a small clearance between the oil pan and the oil pump strainer, it can damage the oil pan and the oil strainer.

- When the air duct or air cleaner is removed, cover the air intake opening to prevent foreign matter from getting into the cylinder. If it gets into it, it can considerably damage the cylinder and others while the engine is operating.
- When maintaining the engine, never fail to remove the battery ground cable. If not, it may damage the wire harness or electrical parts. If you need electricity on for the purpose of inspection, for instance, watch out for short circuits and others.
- Apply engine oil to the sliding contact surfaces of the engine before reassembling it. This ensures adequate lubrication when the engine is first started.
- When valve train parts, pistons, piston rings, connecting rods, connecting rod bearings or crankshaft journal bearings are removed, put them in order and keep them.
- When installing them, put them back to the same location as they were removed.
- Gaskets, oil seals, O-rings, etc. must be replaced with new ones when the engine is reassembled.
- As for parts where a liquid gasket is used, remove an old liquid gasket completely and clean it up thoroughly so that no oil, water or dust may be clung to them. Then, apply the designated liquid gasket to each place anew before assembly.
- Surfaces covered with liquid gasket must be assembled within 7 minutes of gasket application. If more than 7 minutes have elapsed, remove the existing liquid gasket and apply new liquid gasket.
- When assembling or installing parts, fasten them with the specified tightening torque so that they may be installed properly.

Matters that require attention in specifically dealing with this engine.

Holes or clearances in the fuel system, which serve as a passage of fuel, including the inside of the injector, are made with extreme precision. For this reason, they are highly sensitive to foreign matter and if it gets in, it can lead to an accident on the road, for instance; thus, make sure that foreign matter will be prevented from getting in.

When servicing the fuel system, every precaution must be taken to prevent the entry of foreign material into the system.

- Before beginning the service procedure, wash the fuel line and the surrounding area.
- Perform the service procedures with clean hands. Do not wear work gloves.
- Immediately after removing the fuel hose and/or fuel pipe, carefully tape vinyl bags over the exposed ends of the hose or pipe.
- If parts are to be replaced (fuel hose, fuel pipe, etc.) do not open the new part packaging until installation.

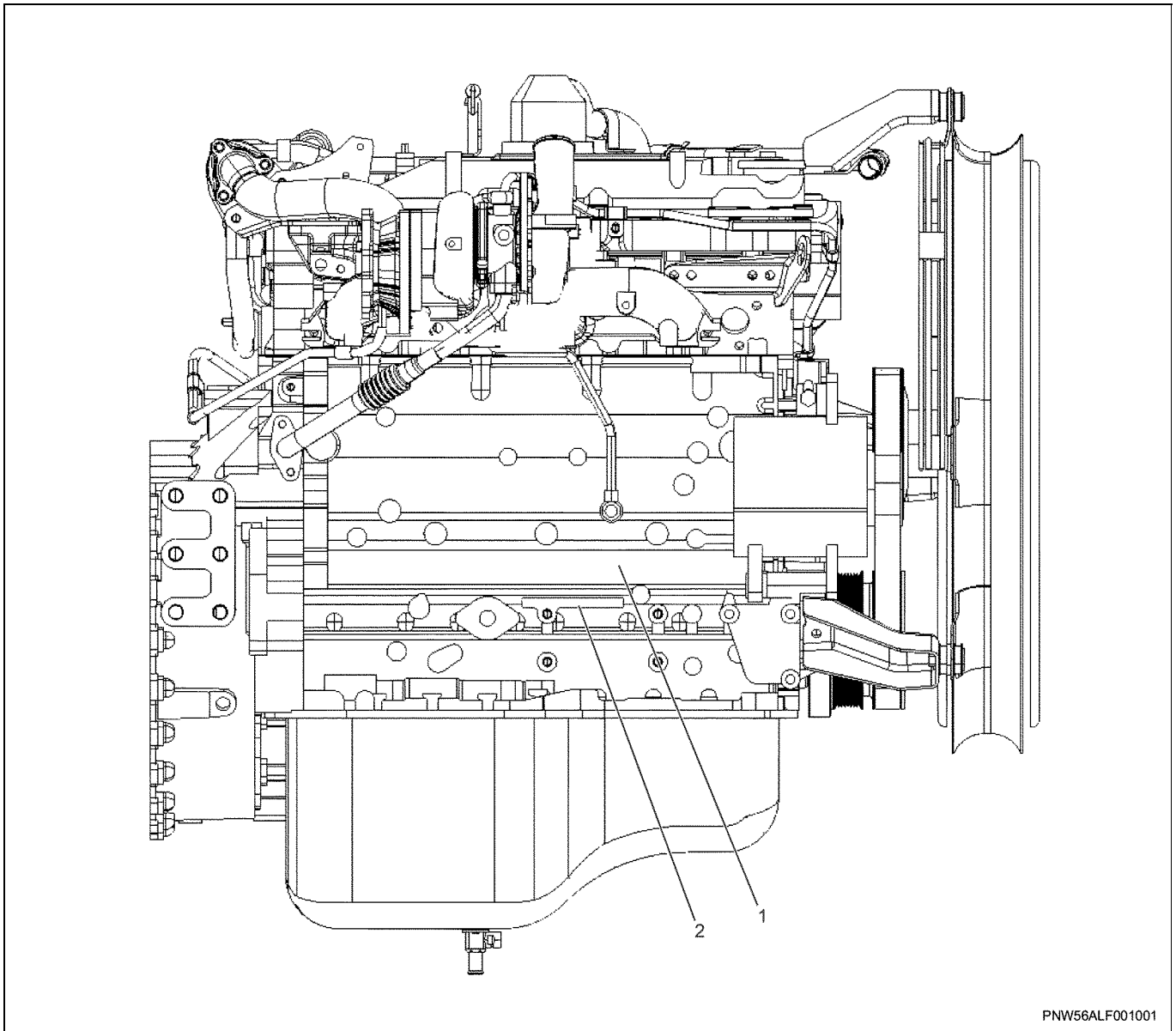
Work procedure

- The fuel opening must be quickly sealed when removing the fuel pipe, injection pipe, fuel injector, fuel supply pump, and common rail.
- The eyebolts and gasket must be stored in a clean parts box with a lid to prevent adhesion of foreign matter.
- Fuel leakage could cause fires. Therefore, after finishing the work, wipe off the fuel that has leaked out and make sure there is no fuel leakage after starting the engine.

1A-4 ENGINE MECHANICAL (4HK1, 6HK1)

How to read the model

4HK1



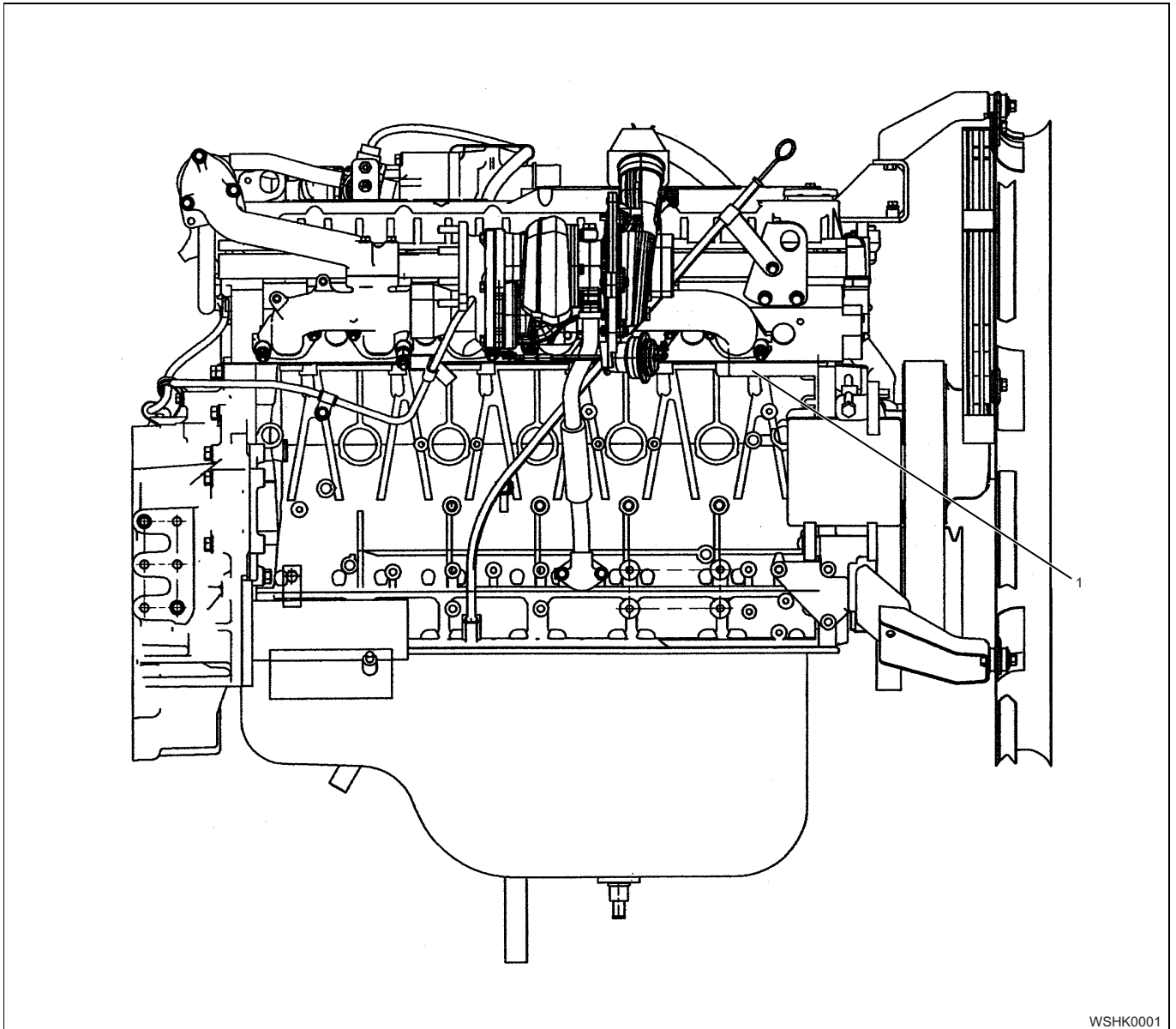
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Name

1. Cast The Engine Model

2. Stamp An Engine Number

6HK1



WSHK0001

Name

1. Stamp An Engine Number

Explanations on functions and operation**Electronic engine control**

With the control unit, the range from injection to air intake/exhaust, including fuel injection quantity, injection timing, intake air restriction, EGR, and idling rpm, is controlled.

Cylinder block

The cylinder block is cast-iron with the center distance of each bore being equal and is of the highly rigid, symmetrical structure with the crankshaft center being the center. The bearing cap is of the ladder frame structure and tightened up under the plastic range rotation angle method.

Cylinder liner

The cylinder liner is selected to match an internal diameter of a bore of the cylinder block and built, which is imprinted on the left side of the cylinder.

Piston

The piston is aluminum-alloy and an autothermatic piston with a strut cast, while the combustion chamber is a round reentrant type.

Cylinder head

The cylinder head is cast-iron and there are 4 valves per cylinder. The angular tightening method of the cylinder head bolt further increases reliability and durability.

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