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## SINOCMP 4JH1 4JH1TC

# SINOCMP 4JH1 4JH1TC Engine Rebuild Kit Instruction Manual

For Isuzu 3.0L 2999cc D-MAX, ELF, NKR77, BIGHORN, HOLDEN Rodeo Engines

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## 1. INTRODUCTION

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This manual provides essential information for the SINOCMP 4JH1 4JH1TC Engine Rebuild Kit. This kit is designed to facilitate the comprehensive overhaul of compatible Isuzu 3.0L engines, restoring their performance and extending their operational life. It includes a complete set of components necessary for a thorough engine rebuild.

**Important:** Professional installation is highly recommended for this engine rebuild kit to ensure proper function and safety. Incorrect installation can lead to engine damage or operational hazards.



Figure 1: Overview of the SINOCMP 4JH1 4JH1TC Engine Rebuild Kit, showing all included parts such as pistons, liners, gaskets, and bearings.

## 2. KIT CONTENTS

The SINOCMP 4JH1 4JH1TC Engine Rebuild Kit includes the following components:

- 1 Set of Overhaul Gasket Kit
- 4 Chromed Liners
- 4 Pistons
- 4 Piston Pins
- 8 Snap Rings

- 4 Rod Bushings
- Set Rings For 4 Pistons (Piston Rings)
- 1 Set of Main Bearings STD (Standard Size)
- 1 Set of Rod Bearings STD (Standard Size)
- 1 Set of Thrust Bearings STD (Standard Size)



Figure 2: Detailed view of the liners, pistons, piston pins, snap rings, rod bushings, and various bearings included in the kit.



## 4. PRE-INSTALLATION CHECKS AND PREPARATION

Before commencing the engine rebuild, careful preparation and verification are crucial:

1. **Component Verification:** Unpack all kit contents and compare them against the provided list. Ensure all parts are present and undamaged.
2. **Piston Model and Size:** It is critical to confirm your vehicle's current piston model and size. Compare the dimensions of the new pistons with your old parts. Refer to the measurement images provided for guidance.
3. **Cleanliness:** Ensure all engine components, especially the block, crankshaft, and cylinder head, are thoroughly cleaned and free from debris, old gasket material, and oil residues.
4. **Inspection:** Inspect the engine block, cylinder head, and crankshaft for any cracks, warpage, or excessive wear that might compromise the rebuild.
5. **Tooling:** Gather all necessary specialized tools for engine disassembly and assembly, including torque wrenches, piston ring compressors, and bearing installation tools.



Figure 4: A close-up of the four pistons included in the kit, showing their design and finish.



Figure 5: Illustrative measurements of piston dimensions, including pin bore diameter (34.34mm/1.35in), piston skirt diameter (88.86mm/3.49in), piston crown height (44.85mm/1.76in), and overall piston height (95.19mm/3.74in) or similar (94.43mm/3.71in). These measurements are crucial for verifying compatibility.



*Figure 6: Measurement of a cylinder liner's length, showing a reading of 178.42mm. This dimension is important for proper fitment within the engine block.*



*Figure 7: Measurement of a cylinder liner's outer diameter, showing a reading of 102.26mm. This ensures the liner fits correctly into the engine block bore.*



Figure 8: Measurement of a cylinder liner's inner diameter, showing a reading of 95.39mm. This dimension is critical for piston clearance.

## 5. ENGINE REBUILD PROCESS (GENERAL GUIDANCE)

This section provides general guidance for the engine rebuild process. A detailed service manual specific to your engine model (Isuzu 4JH1/4JH1TC) should be consulted for precise procedures, torque specifications, and clearances.

1. **Disassembly:** Carefully disassemble the engine, documenting the location and orientation of all components.
2. **Component Installation:**
  - **Liners:** Install the new chromed liners into the engine block, ensuring proper seating.
  - **Pistons and Rings:** Install the piston rings onto the new pistons. Use a piston ring compressor to carefully insert the piston and connecting rod assemblies into the cylinder liners.
  - **Bearings:** Install the main, rod, and thrust bearings, ensuring they are correctly oriented and lubricated. Torque connecting rod and main bearing caps to manufacturer specifications.
  - **Gaskets and Seals:** Use the overhaul gasket kit to replace all necessary gaskets and seals during reassembly. Apply sealants as specified by the engine manufacturer.
3. **Torque Specifications:** Adhere strictly to the manufacturer's torque specifications for all fasteners. Incorrect torque can lead to component failure.
4. **Clearances:** Verify all critical clearances (e.g., piston-to-wall, bearing, crankshaft end play) are within manufacturer specifications using appropriate measuring tools.
5. **Final Assembly:** Reassemble the remaining engine components, including the cylinder head, timing components, and accessories.

- 6. **Initial Start-up and Break-in:** Follow the engine manufacturer's recommended procedures for initial start-up and engine break-in after a rebuild. This typically involves careful monitoring of oil pressure, temperature, and avoiding heavy loads for a specified period.

## 6. POST-REBUILD MAINTENANCE

Proper maintenance after an engine rebuild is crucial for longevity and performance:

- **Oil Changes:** Perform the first oil and filter change after the recommended break-in period (e.g., 500-1000 miles or 20-50 hours of operation), and then adhere to the manufacturer's regular service intervals.
- **Coolant System:** Ensure the cooling system is properly filled, bled of air, and maintained with the correct coolant mixture.
- **Fluid Levels:** Regularly check all fluid levels (engine oil, coolant, power steering fluid, etc.).
- **Inspection:** Periodically inspect for leaks, unusual noises, or performance changes. Address any issues promptly.
- **Air and Fuel Filters:** Replace air and fuel filters according to the manufacturer's schedule to ensure clean air and fuel delivery.

## 7. TROUBLESHOOTING COMMON ISSUES

If you encounter issues after an engine rebuild, consider the following common causes:

Symptom	Possible Cause	Action
Low Oil Pressure	Incorrect bearing clearances, faulty oil pump, blocked oil passages, incorrect oil viscosity.	Verify bearing clearances, check oil pump function, inspect oil passages, use recommended oil.
Engine Overheating	Air in cooling system, faulty thermostat, restricted coolant flow, incorrect timing.	Bleed cooling system, check thermostat, inspect radiator/hoses, verify timing.
Excessive Smoke	Incorrect piston ring installation, damaged valve seals (if replaced), incorrect fuel mixture.	Check piston ring orientation, inspect valve seals, diagnose fuel system.
Unusual Engine Noises	Improperly torqued fasteners, incorrect clearances, foreign object, component interference.	Re-check all torque specifications, verify clearances, investigate source of noise.

For persistent or severe issues, it is strongly advised to consult a qualified engine specialist.

## 8. PRODUCT SPECIFICATIONS

- **Brand:** SINOCMP
- **Engine Model:** 4JH1, 4JH1TC
- **Engine Displacement:** 3.0L (2999cc)
- **Manufacturer Part Number:** 4JH1 4JH1TC
- **Referenced Numbers:** 5-87815201-1, 5-87815202-0, 8-97305585-1, 8-97259941-0, 8-97305-586-1
- **Item Weight:** Approximately 22 pounds (10 kg)
- **Product Dimensions:** Approximately 5.91 x 3.94 x 5.91 inches (15 x 10 x 15 cm)
- **Application:** Isuzu D-MAX, ELF, NKR77, BIGHORN, HOLDEN Rodeo Pickup, Excavator Engines

## 9. WARRANTY AND SUPPORT

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SINOCMP products are carefully checked before shipping to ensure quality. While specific warranty details are not provided in this manual, SINOCMP aims to assist customers with their requirements.

For any inquiries regarding product compatibility, installation, or potential issues, please contact SINOCMP customer support. When contacting support, please provide your product details, vehicle information, and a clear description of your concern.

Please note that buyers may be responsible for possible additional costs such as import taxes and customs duties, depending on their location.

