

**MODEL D4B
SHOP MANUAL
(FOR INDUSTRIAL USE)**



FORWARD

We would like to express our sincere gratitude to the patrons who have given us unwavering encouragement. This manual covers shop manual and parts catalog in one volume for an easy reference of parts list, as well as contains the accurate and efficient service procedures for HYUNDAI D4B industrial engine.

This manual includes specifications, troubleshooting, removal, installation, disassembly and assembly in each group and presents component illustrations and descriptions for an easy reference.

Accordingly, thoroughly read this manual, rapidly purchase the required parts and service the engine in proper methods to extend its life and benefit.

Improper service methods and procedures may shorten the engine life resulting from its low performance. Hyundai genuine parts are designed and built to provide the best performance in your engine. If your claim is caused by using non-Hyundai genuine parts or servicing at places not recommended, your warranty is not available.

Hyundai Motor Co., Inc. makes efforts to enhance quality and build better parts and service data for you. We want to assist you in every way possible with this manual and your purchase of HYUNDAI engine is highly appreciated.

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NOTE: Contents and specifications are subject to change according to design changes without notice.

IMPORTANT SAFETY NOTICE

Appropriate service methods and proper repair procedures are essential for the safe, reliable operation of all engines as well as the personal safety during work. This manual provides general directions for the efficient service methods and procedures.

There are numerous variations in procedure, techniques, tools and parts for servicing engines, as well as in the skill of the individual technician.

This manual cannot possibly anticipate all such variations and provide advice or cautions as to each.

Accordingly, anyone who departs from the instructions provided in this manual must establish that he comprises neither his personal safety nor the vehicle integrity by his choice of methods, tools or parts.

NOTE, CAUTION, WARNING



NOTE : *Information needed in reference to a repair service.*



CAUTION: *Information about an activity that could cause damage to the vehicle.*



WARNING : *Information about an activity that could cause injury or damage to the driver, occupants or repairman.*

[SAFETY INFORMATION]

The following list contains some general warnings that you should follow when you work on an engine.

- Always wear safety glasses for eye protection.
- Be sure that the ignition switch is always in the OFF position, unless otherwise required by the procedure.
- Operate the engine only in a well-ventilated area to avoid the danger carbon monoxide poisoning.
- Keep yourself and your clothing away from moving parts when the engine is running, especially the drive belt.
- To prevent serious burns, avoid contact with hot metal parts such as the radiator, exhaust manifold, tail pipe, catalytic converter and muffler.
- Do not smoke while working on an engine.
- To avoid injury, always remove rings, watches, loose hanging jewelry and loose clothing before beginning to work on an engine.
- Keep hands and other objects clear of the radiator fan.
The fan can be operated with the ignition key in the OFF position. Therefore necessarily disconnect the radiator fan motor connector.

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CHAPTER 1 GENERAL INFORMATION

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1. OVERALL

1) ENGINE

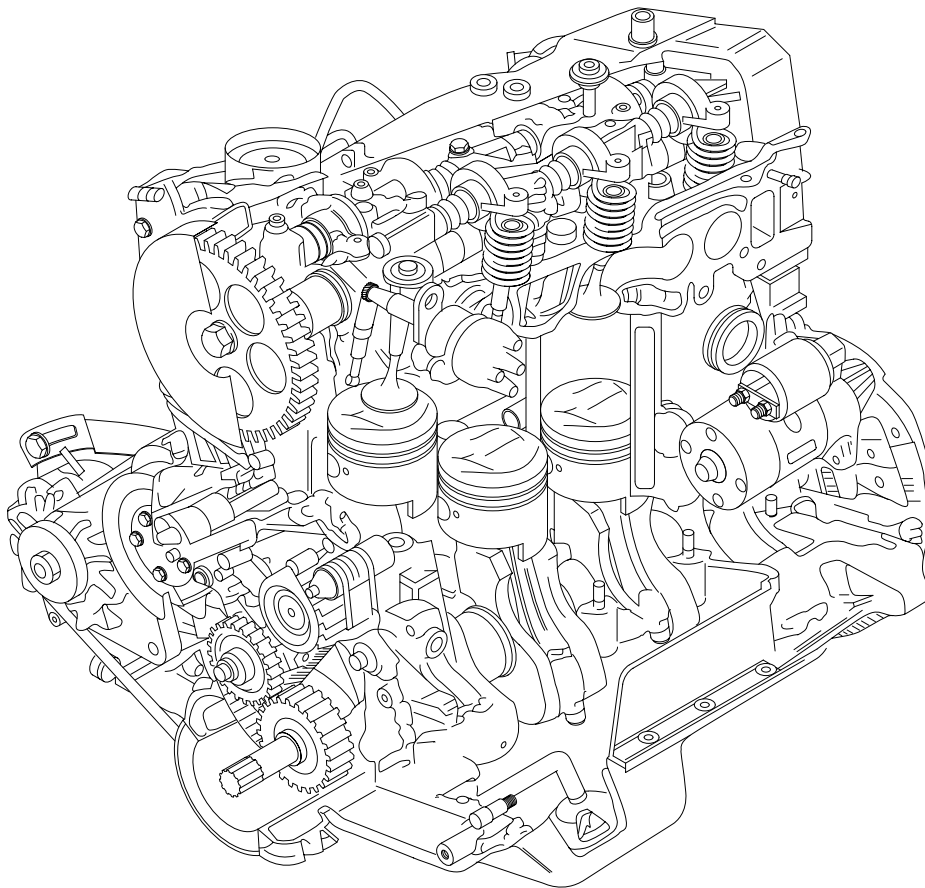
Cylinder head is made of aluminum alloy and combustion chamber is a swirl type.

Valve is a SOHC type and the camshaft is operated by the Cog type timing belt.

Cylinder block is made of special cast iron and dry cylinder liner is press-fitted in the cylinder. Water jacket is a Siamese type and piston is made of aluminum alloy and connected with connecting rod by full floating piston pin.

Oil ring no.1 of the piston ring is made of steel, no.2 of special cast iron, piston ring no.1 of barrel face, no.2 of taper face and oil ring of bevel cutter and coil expander is attached.

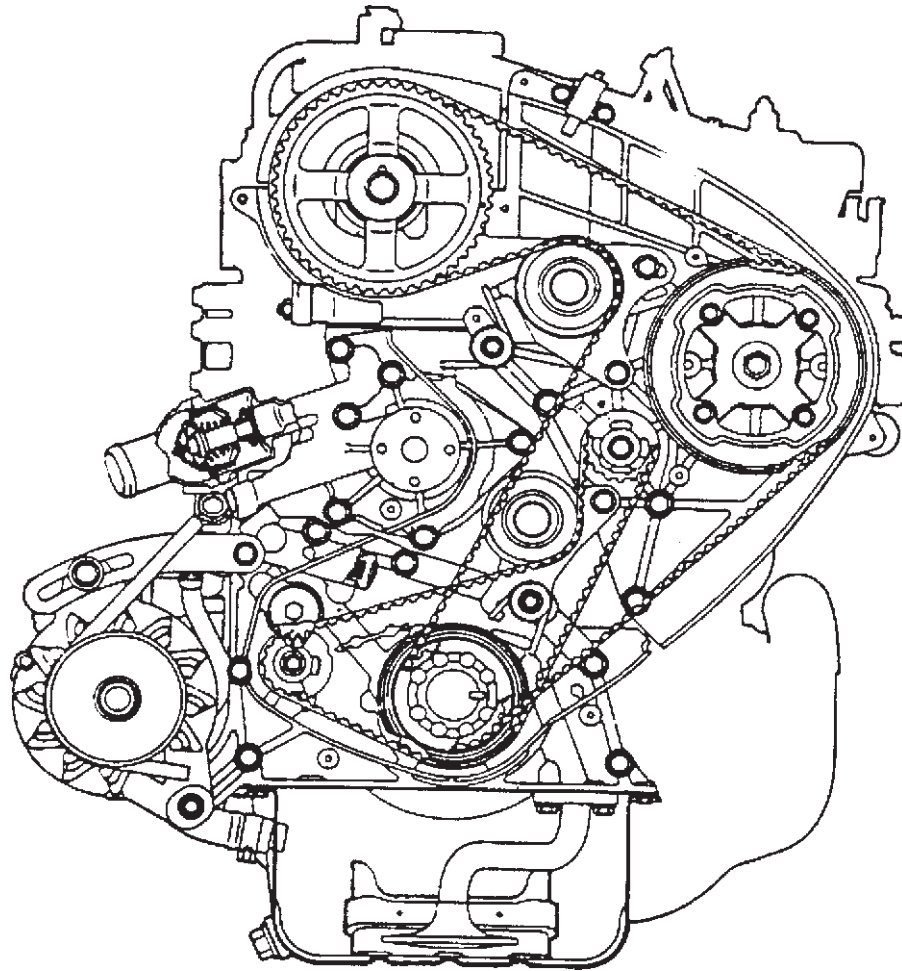
ENGINE ASSEMBLY



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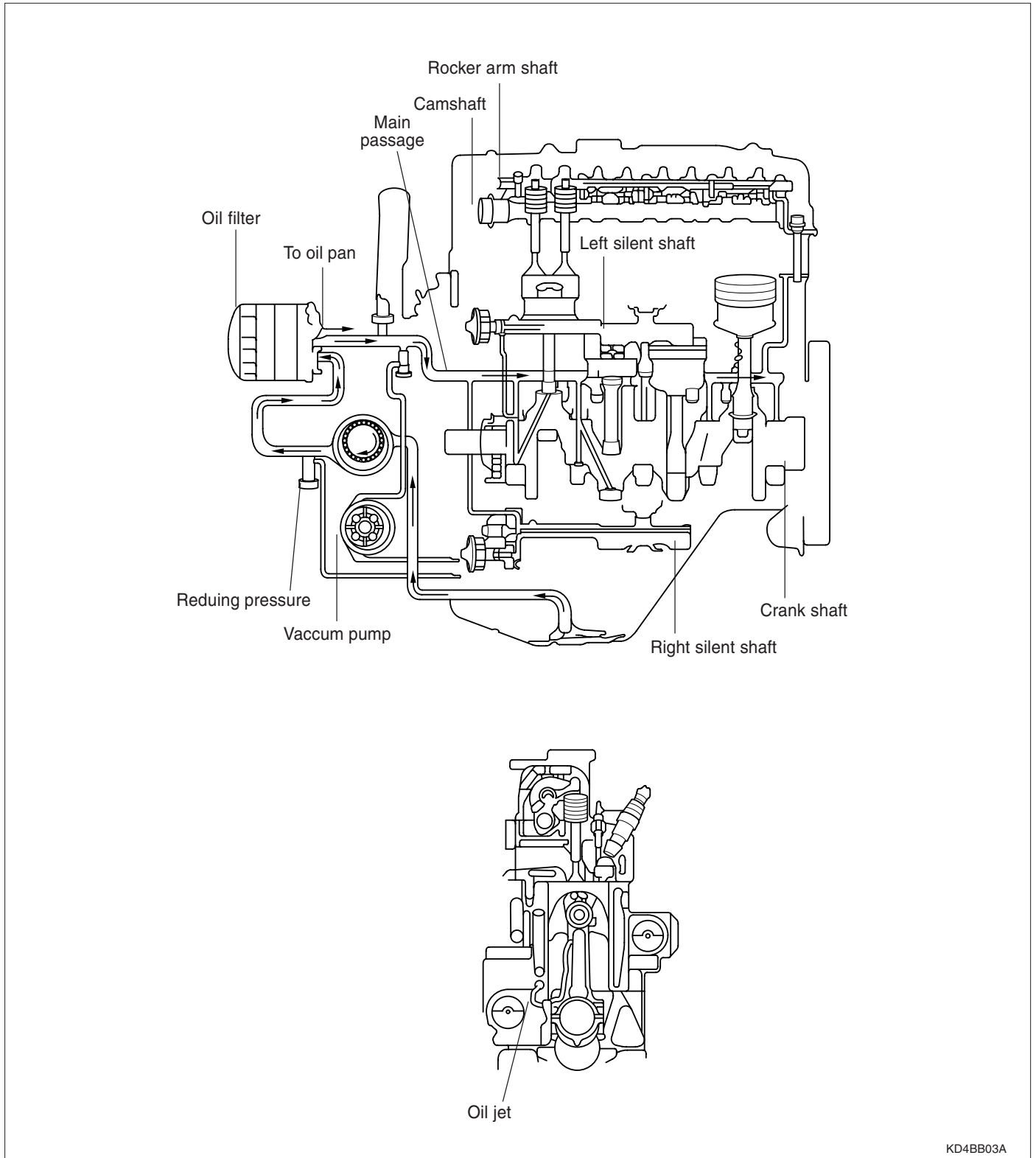
Crankshaft is made of forged steel and supported with main bearing. Pulley attached with torsional damper is installed in the front of crankshaft and flywheel in the rear of it. Silent shaft is installed to both ends of the cylinder block, operated with cog belt and rotated at a double speed of crankshaft.

Timing belt train



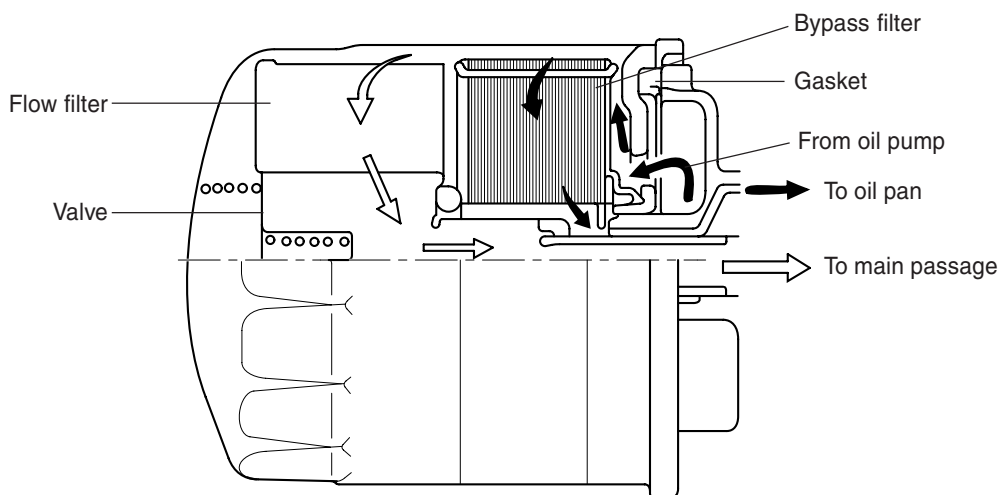
2) LUBRICATION SYSTEM

It is a forced lubrication system and the forced oil by the oil pump is sent to the engine compartment through the oil cooler and oil filter as shown in the illustration and directly operated by the crank shaft. Maximum oil pressure is controlled by the reducing valve.



Oil filter is a combined type and full flow filter and bypass filter are built in it. The bypass filter in the full flow filter uses a thick multi-fiber media to filter dirt (soot).

If oil enters the oil filter, filtered oil from the full flow filter passes through the main passage and the filtered oil from the bypass filter returns to the oil pan.



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