FOREWORD

This shop manual contains the specifications, construction, operation, adjustment and service procedures of the Model D6A diesel engine for service mechanics engaged in servicing of the Hyundai diesel engines.

Please make the most of this shop manual to perform correct servicing and wasteless operations.

Note that some of the contents of this shop manual are subject to change owing to improvements, etc. that may be introduced after publication of the shop manual.

HYUNDAI MOTOR COMPANY
COMMERCIAL ENGINE DEP'T
Printed in Korea

HYUNDAI MOTOR COMPANY

COMPILATION OF THIS MANUAL

1. The contents of this shop manual are divided as shown below when edited.

Group No	Group Name	Contents
1	General	General description, outside view photograph and cross section view of engine, specifications, construction and operations
2	Service standards	Engine service standards, service standards table, tightening torque table, sealant and grease table
3	Special tools	Shapes and usages of special tools
4	Determining time to overhaul	Decision on time to overhaul, measurement of compression pressure, troubleshooting
5	Engine adjustment and break−in operation	Inspection and adjustment of valve clearance, inspection and adjustment of fuel injection start timing, engine speed adjustment
6	Removal and installation of auxiliaries	Removal and installation of auxiliaries such as injection pump, starter, alternator, injection pump drive
7	Engine proper	Disassembly, inspection and reassembly of engine proper, including cylinder head, valve mechanism, camshaft, piston, crankshaft, timing gear, flywheel, etc.
8	Inlet and exhaust	Disassembly, inspection and reassembly of air cleaner, turbocharger, etc.
9	Lubrication	Disassembly inspection and reassembly of lubrication system, including oil pump, oil filter, oil cooler, etc.
10	Cooling	Disassembly, inspection and reassembly of cooling system, including water pump, thermostat, etc.
11	Fuel	Disassembly, inspection and reassembly of fuel system, including injection pump, injection nozzle, fuel filter, etc.
12	Electrical	Inspection of starter, starter relay, alternator, etc.
13	Other equipment	Disassembly, inspection and reassembly of infection pump drive.

2. How to read disassembly and reassembly drawings

(a) The part names and numbers in the drawings correspond to those in the text. The parts are numbered in the order of disassembly.

(b) The inspection items to be performed during disassembly operations are shown in the disassembly drawings.

(c) All tightening torque specifications in the reassembly drawings may be considered "dry" unless "wet" is specified.

3. Definition of terms

(a) Nominal Value(Abbr. : NV)

Shows dimension of single part, mutual clearance between parts or standard performance. Values, however, are rounded off within limits necessary for inspection.

(b) Repair Limit(Abbr. : RL)

Shows that when specified value is reached, repair is necessary, Repair means adjustment, grinding, replacement of bushings, metals and the like, selection of oversize, selection of shim thickness, etc.

(c) Service Limit(Abbr. : SL)

Shows that when specified value is reached, replacement of the parts with new one is necessary.

(d) Basic Diameter(Abbr : BD)

Shows nominal diameter of part to be measured.

4. Unit

The SI unit(International System of Units) is used. Metric notation is jointly shown in parentheses.

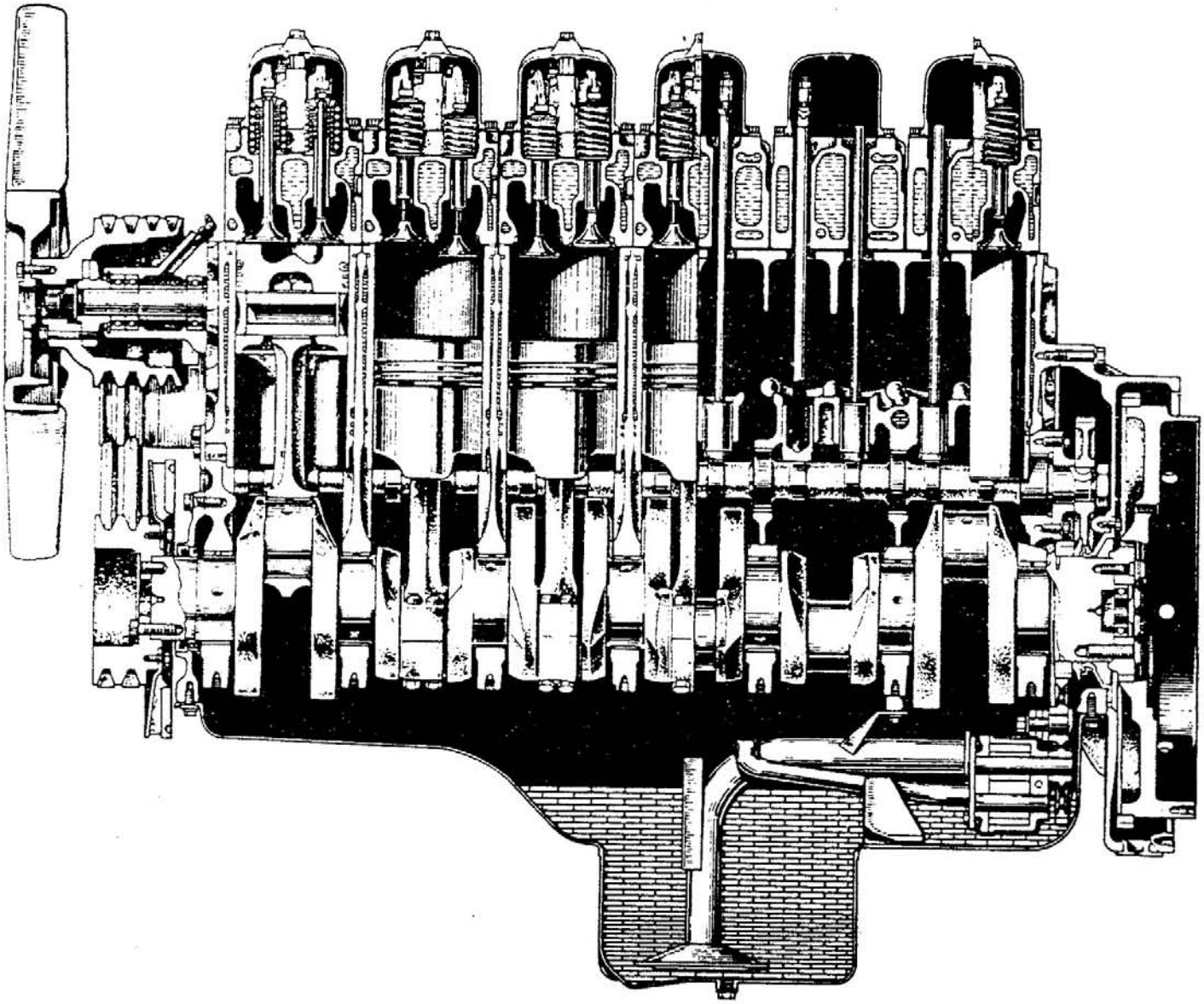
5. Table of Conversion Rate for Foot−pound Units into SI Units

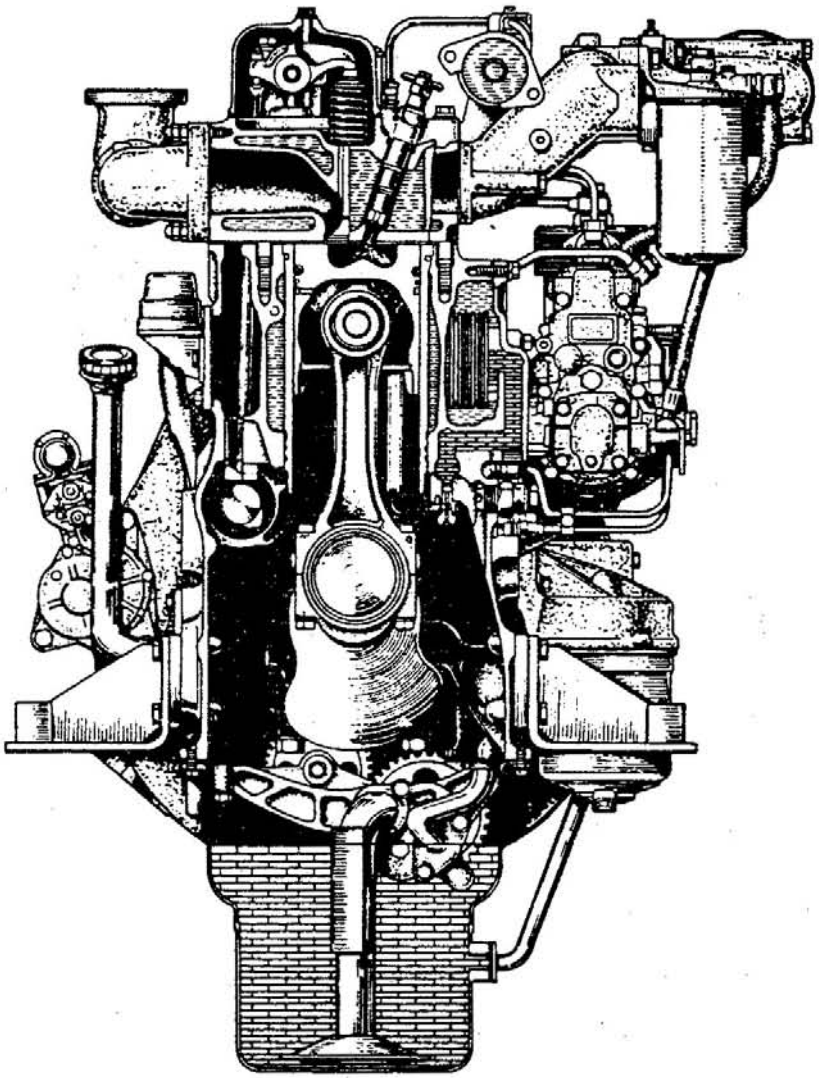
Unit	Sign of SI unit	Sign of foot−pound unit	Conversion rate
Mass quantity of matter	kg g	lb oz	1kg=2.2046 1b 1g=0.035274 oz
Dimension	m mm	ft. in.	1m=3.2808 ft. 1mm=0.03937 in.
Capacity	lit. cc	gal. oz	1 lit.=0.2642 gal.(U.S.) 0.220 gal.(Imp.) 1 cc=0.033814 oz(U.S.) 0.035195 oz(Imp,)
Force	N(Newton)	lbf	1 N=0.2248 lbf
Pressure	kpa(Kilopascal)	$lbf/in.^2$	1 kpa=0.145 $lbf/in.^2$ 1 kpa=0.2953 in. Hg
Stress	N/cm^2	$lbf/in.^2$	1 N/cm^2=1.45 $lbf/in.^2$
Moment of force	N/m	ft.lbf	1 N/m=0.7375 ft.lbf
Output	kw(kilowatt)	HP	1 kw=1.34 HP
Temperature	℃	℉	t℃=(1.8t℃+32)℉

1-1 GENERAL DESCRIPTION

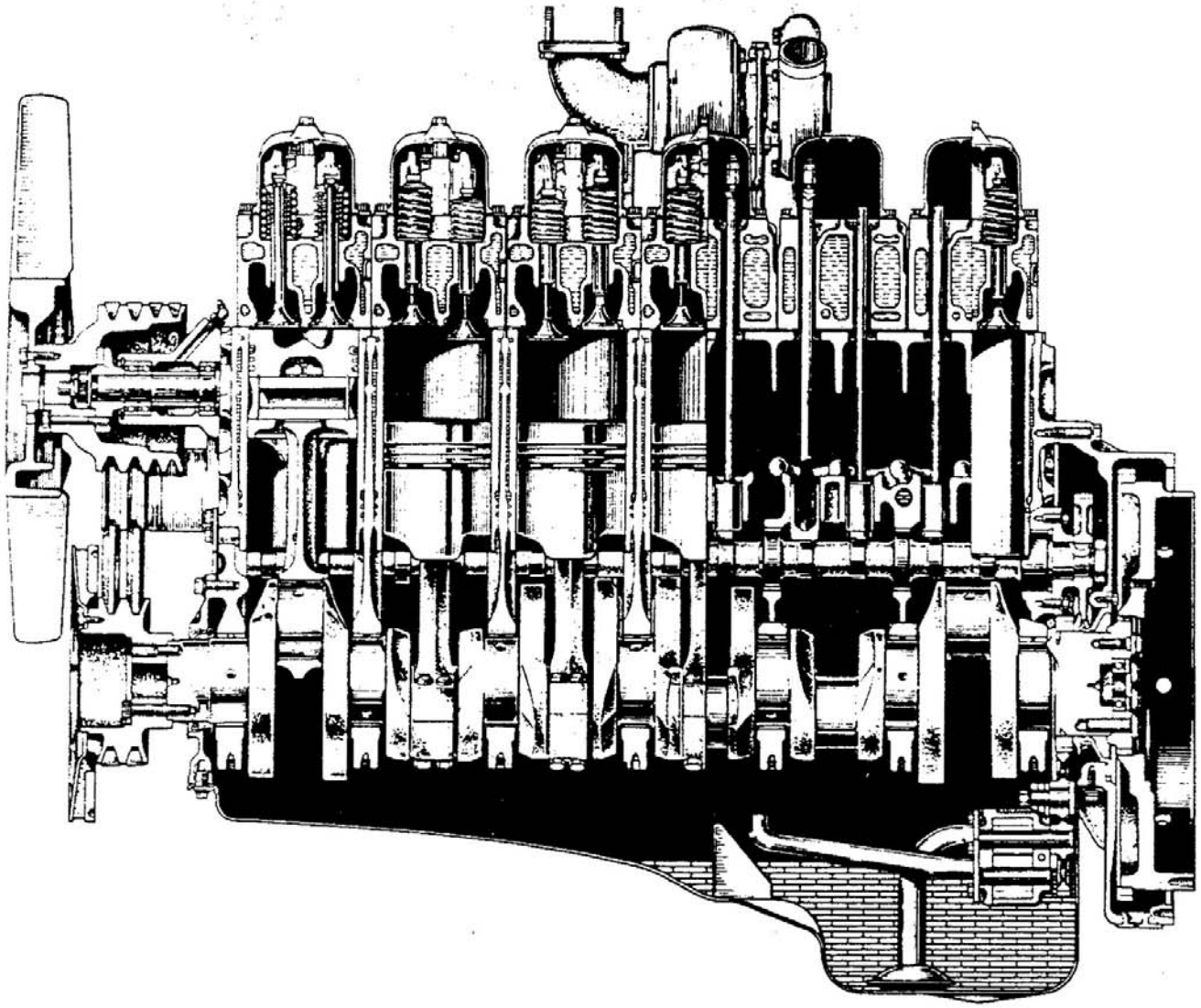
1-1-1 Engine Section Views

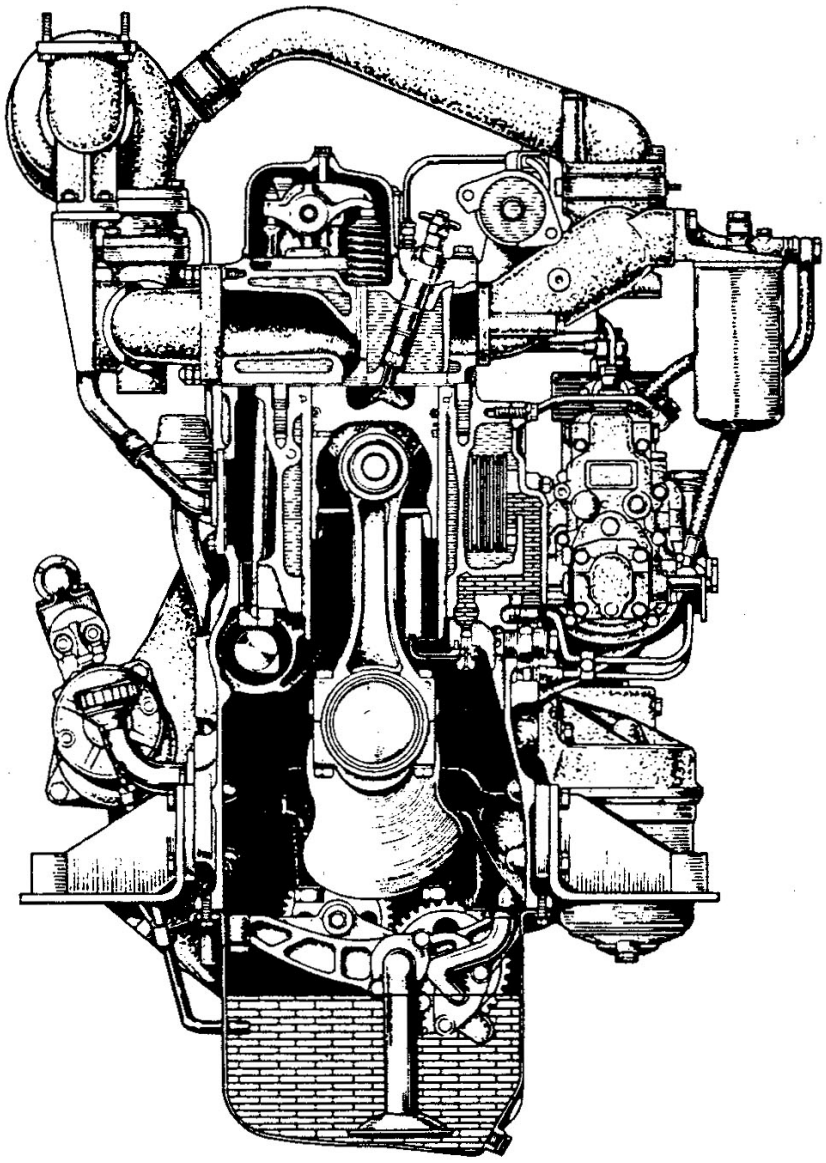
(1) D6AU





(2) D6AZ





1-1-3 Engine Number, Nameplate

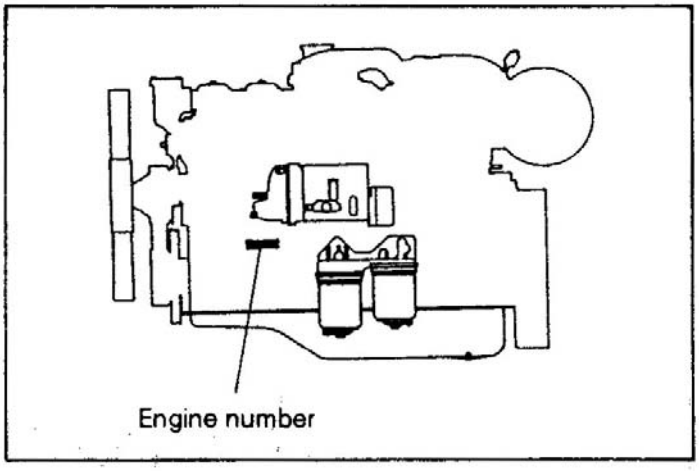
(1) Engine Number

The engine number is stamped on the left side of the crankcase, near the front portion, as shown.

Ex : Model Production year Engine No.

↓	↓	↓
D6AU	W	123456

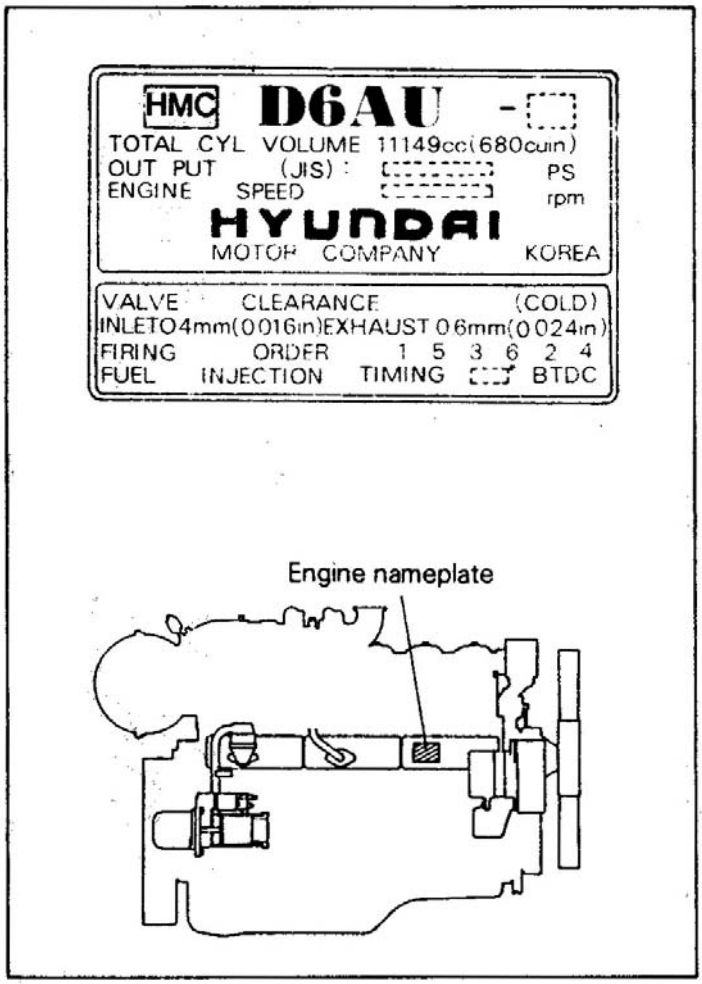
The engine number is important in knowing the history of the engine.



(2) Name plate

The nameplate is bonded to the side cover on the right side of the engine and shows the following.

- Engine Model
- Total Displacement
- Output
- Valve Clearance
- Firing Order
- Fuel Injection Timing



1-2 SPECIFICATIONS

1-2-1 Principal Specifications

Item		Specification		
Engine model		D6AU	D6AZ	D6AC
Type		Water cooled,	Water cooled,	←
		4-cycle diesel	4-cycle diesel	←
Number of cylinders-arrangement		6-in-line	6-in-line	←
Valve mechanism		Overhead Value	Overhead Value	←
Combustion chamber		Direct injection type.	Direct injection type.	←
Cylinder bore × stroke	mm	130 × 140	130 × 140	←
Total displacement	cc	11149	11149	←
Compression ratio		17	16	16.5
Firing order		1-5-3-6-2-4	1-5-3-6-2-4	←
Engine dimensions				
Overall length		1612	1607	1289.6
Overall width	mm	924	907	847.5
Overall height	mm	1248	1392	1018
Weight	kg	930	970	970