PART NO. EDCD-EN-00

HITACHI

Reliable solutions

Engine Manual

6BG1

Tier 2

Service Manual consists of the following separate Part No.

Technical Manual (Operational Principle)	: Vol. No.TODCD-EN
Technical Manual (Troubleshooting)	: Vol. No.TTDCD-EN
Workshop Manual	: Vol. No.WDCD-EN
Engine Manual	: Vol. No.EDCD-EN

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Note: Maintenance intervals such as fuel or oil filter changes should be referred to INSTRUCTION BOOK.

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ABNORMAL ENGINE NOISE

1. Engine Knocking

Checkpoint		Trouble Cause		Remedy
Fuel	NG	Fuel unsuitable	NG	Replace the fuel
OK				
Fuel injection timing	NG	Fuel injection timing improperly adjusted	NG	Adjust the fuel injection timing
OK				
Injection nozzle	NG	Improper injection nozzle starting pressure and spray condition	NG	Adjust or replace the injection nozzle
OK				
Compression pressure	NG	Blown out head gasket Broken piston ring	NG	Replace the head gasket or the piston ring

2. Gas Leakage Noise

Exhaust pipes	NG	Loosely connected exhaust pipes Broken exhaust pipes	NG	Tighten the exhaust pipe connections Replace the exhaust pipes
OK				
Injection nozzles and/or glow plugs	NG	Loose injection nozzles and/or glow plugs	NG	Replace the washers Tighten the injection nozzles and/or the glow plugs

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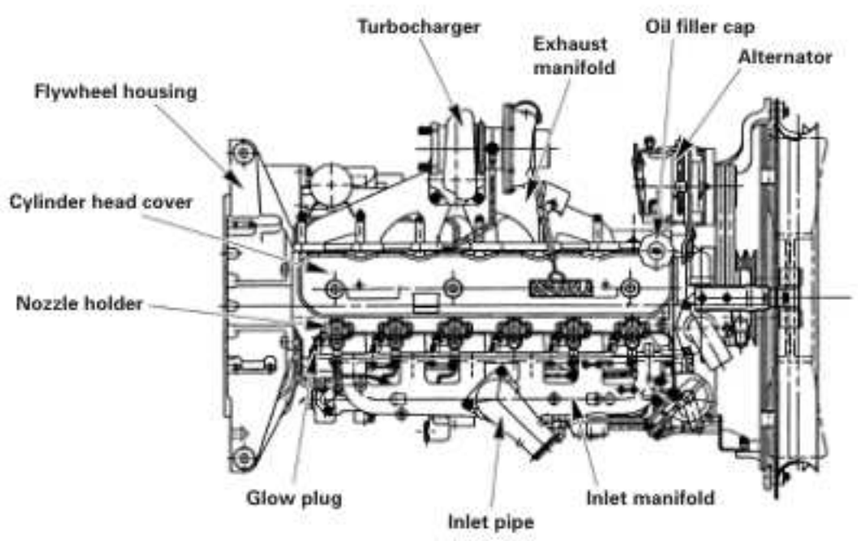
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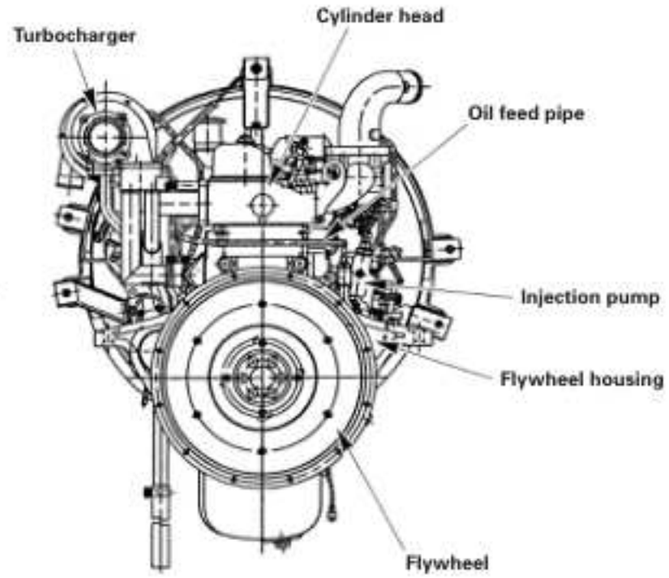
Major Category	Name of Part	Inspection Item	Nominal Dimension	Assembly Standard Value	Limit	Repair Procedure	Comments
Fuel system	Injection Nozzle	Technology Needle valve seat: 7.8MPa (80 kgf/cm²/138psi)				Repair or replace parts with leaks from seat area	
		Needle valve shaft seat: seconds Impress fuel pressure of 29.4MPa (300kgf/cm²/4267psi) (nozzle starting pressure and measure time required for pressure to drop from 24.5MPa (250kgf/cm²/3556psi) to 19.6MPa (200kgf/cm²/2845psi).		5.0 or more		Replace	Fuel used: diesel fuel; clay (Redwood); 37 – 40 seconds 120°C (248°F)
		Fuel spray and injection Impress fuel pressure of Adjust needls valve opening pressure to 19.1MPa (195kgf/cm²/2770psi)	① Visually inspect, no relatively large drops scattered. ② No drops scattered to one side. ③ No unevenness of spray from jets.			Replace faulty parts	
Electrical	Charge/ Discharge indication	Warning lamp indication				If warning indicator lights when engine is operating at normal speeds, check and repair electrical system.	
	Wiring	Check for looseness, cuts or damaged insulation to wiring.				Repair	
	Alternator 24V, 50A MITSUBISHI 1-81200-530-* (AA-6BG1TRA) 1-81200-603-* (CC-6BG1TRA-12/13)	Rotor: Shaft runout		0.06 or less (0.0024)	0.1 (0.0038)	Replace rotor	Rotate by hand and check for smooth rotation; no abnormal sound or resistance should be felt.
		Rotor: Bearing chatter				Replace bearings	
		Performance: Rated output current 27 V (5000 min⁻¹)		50A			

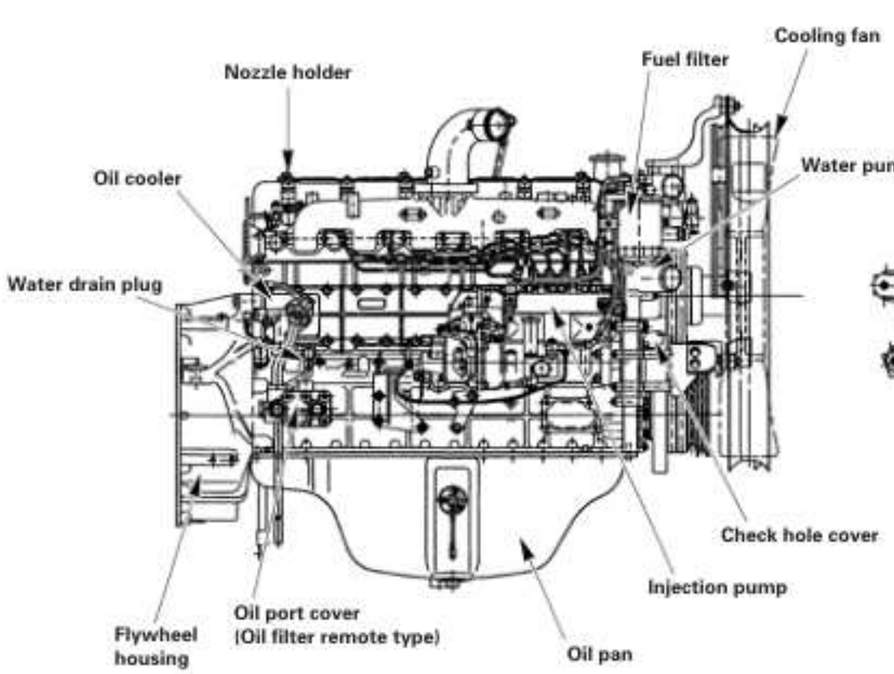
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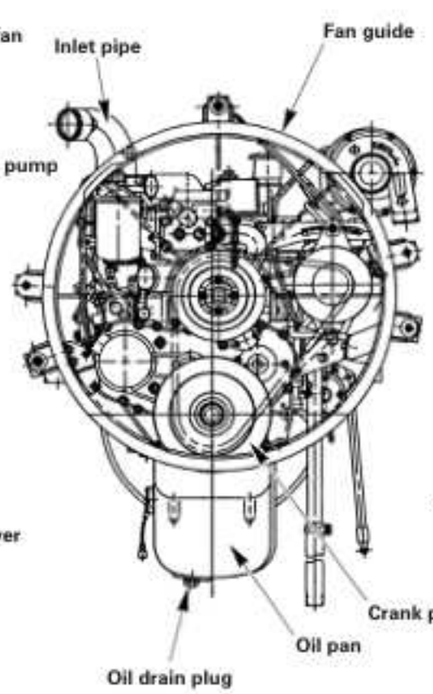
EXTERNAL VIEW

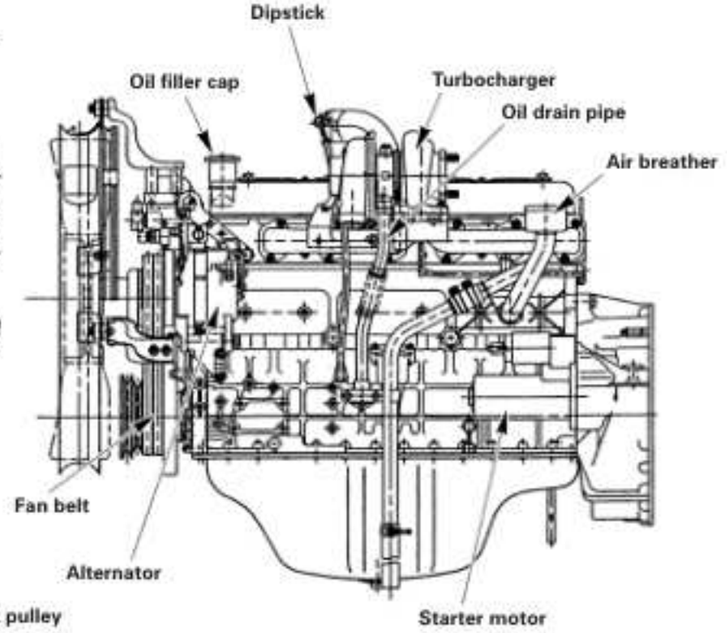
Note: Some components and shapes are different due to the difference of the models and the specifications.











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