

Engine Fundamentals

Textbook: *Modern Automotive Technology*, James E. Duffy, The Goodheart-Willcox Company, Inc., Tinley Park, IL, 2000

Vocabulary (p. 155)


Bearing Inserts	Engine Bottom End	Piston
Bottom Dead Center (Bdc)	Engine Front End	Piston Rings
Camshaft	Engine Top End	Piston Stroke
Camshaft Drive	Engine Valve Train	Pistons
Combustion Chamber	Exhaust Manifold	Power Stroke
Combustion Chambers	Exhaust Port	Push Rods
Compression Rings	Exhaust Stroke	Rear Main Oil Seal
Compression Stroke	Exhaust Valve	Ring Hear
Connecting Rod	Expansion	Rocker Arms
Connecting Rod	Flywheel	Tappet
Bearings	Four-Stroke Cycle	Top Dead Center (Tdc)
Core Plugs	Front Cover	Valve Cover
Crank Damper	Fuel	Valve Guides
Crankshaft	Intake Manifold	Valve Lifter
Crankshaft Oil Seals	Intake Ports	Valve Seals
Cylinder Head	Intake Stroke	Valve Seats
Cylinders	Intake Valve	Valve Spring Assembly
Deck	Keepers	Water Jackets
Engine	Main Bearing Bores	Wrist Pin
Engine Block	Main Caps	
	Oil Rings	

Summary (p. 153)

1. The engine is the source of power for the vehicle. For this reason, it is also called a power plant.
2. When the piston at its highest point in the cylinder, it is at TDC (top dead center). When the piston slides to its lowest point in the cylinder, it is at BDC (bottom dead center).
3. The term engine bottom end generally refers to the block, crankshaft, connecting rods, pistons, and related components.
4. The crankshaft harnesses the tremendous force produced by the downward thrust of the pistons.
5. The engine main bearings are removable inserts that fit between the block main bore and crankshaft main journals.
6. Main bearing clearance is the space between the crankshaft main journal and the main bearing insert.

7. Crankshaft oil seals keep oil from leaking out the front and rear of the engine.
8. The connecting rod fastens the piston to the crankshaft. It transfers piston movement and combustion pressure to the crankshaft rod journals.
9. The engine piston transfers the pressure of combustion (expanding gas) to the connecting rod and crankshaft.
10. Piston clearance is the amount of space between the sides of the piston and the cylinder wall.
11. The compression rings prevent blow by (combustion pressure leaking into engine crankcase).
12. The main job of oil rings is to prevent engine oil from entering the combustion chamber.
13. The term engine top end generally refers to the cylinder head, valves, camshaft, and other related components.
14. The camshaft has lobes that open the valves.
15. A valve lifter usually rides on the cam lobe and transfers motion to the rest of the valve train.
16. Engine valves open and close the ports in the cylinders head.
17. The valve spring assembly is used to close the valve.
18. The engine front end operates the engine camshaft and , sometimes, the oil pump, distributor, engine sensors, and diesel injection pump.
19. A crank damper is a heavy wheel on the crankshaft snout. It is mounted in rubber and helps prevent crankshaft vibration and damage.

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