

# QUESTIONS - Engine Blocks

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First & Last Name:

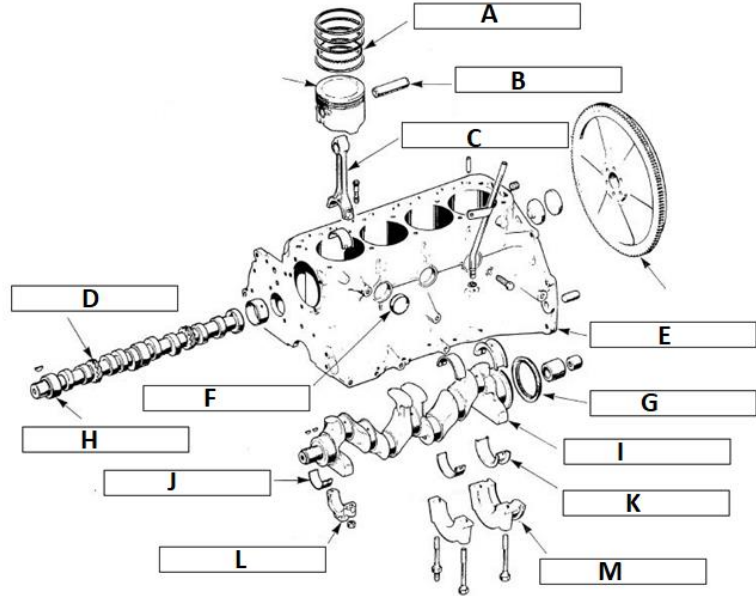
Using the information in [www.gwellwood.com/subjects/mechanics/engine-blocks/](http://www.gwellwood.com/subjects/mechanics/engine-blocks/), the internet and other sources to answer the questions below.

*There are NO Partial Marks - when it says "describe" – DESCRIBE  
This booklet must be complete before you work in the shop*

1. What are three purposes of the Engine Block?
  - a.
  - b.
  - c.
  
2. What is meant by the term "Long Block"?
  
  
  
  
  
3. What is meant by the term "Short Block"?
  
  
  
  
  
4. What is meant by the term "Crate Engine"?

5. Identify the engine parts:

- a.
- b.
- c.
- d.
- e.
- f.
- g.
- h.
- i.
- j.
- k.
- l.
- m.



6. The engine above is:

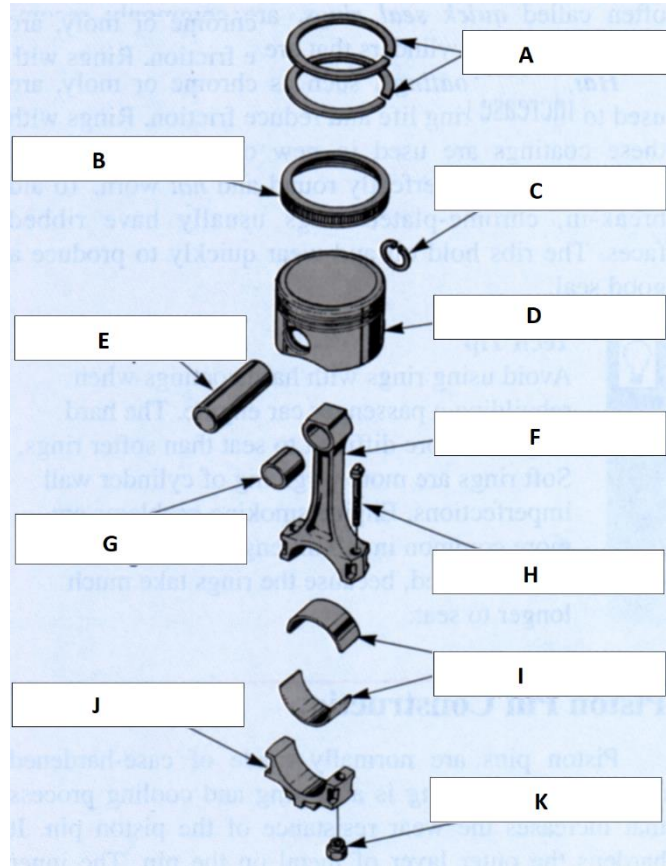
- a. An inline four cylinder engine
- b. A horizontally-opposed four-cylinder engine
- c. A slant-four engine
- d. A v-four engine

7. The engine above is:

- a. An Overhead Cam engine
- b. An Overhead Valve engine

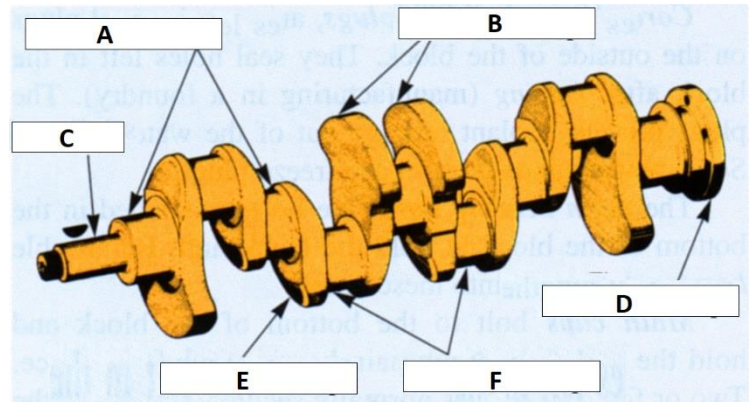
8. Identify the engine parts:

- a.
- b.
- c.
- d.
- e.
- f.
- g.
- h.
- i.
- j.
- k.



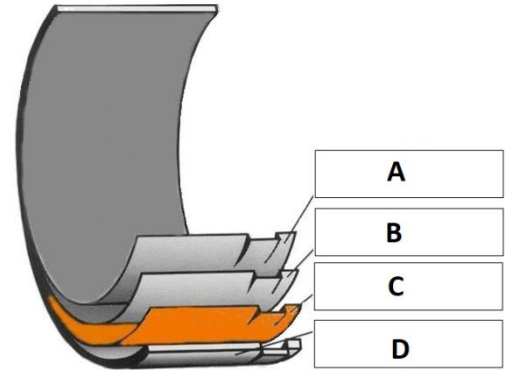
9. Identify the following parts of the crankshaft:

- a.
- b.
- c.
- d.
- e.
- f.



10. Identify the parts of the engine bearing:

- a.
- b.
- c.
- d.



11. ONE component is found in the engine block of OHV engines and not OHC engines. What is it?

12. There are nine handy tips when disassembling the engine block. Which five do YOU think are the most important?

- a.
- b.
- c.
- d.
- e.

13. Why is it VERY IMPORTANT to know where and which way the connecting rod caps go? ***(This is one of those areas where students damage their engines in the shop)***

14. How are engine blocks cleaned?

15. How are piston tops cleaned?



16. What is an easy way to clean piston ring grooves?

17. What are two things that contribute to cylinder taper?

a.

b.

18. When you pull the heads off an engine and look at the pistons, what is one obvious clue the engine has been previously rebuilt?

19. By looking at the pistons, how can you tell if the engine has been overheated?

20. By looking at the crankshaft, what is one indicator that the crankshaft is worn out?

21. How can worn seal-grooves in the crankshaft snout (or crank pulley) be repaired?

22. What do “Thrust Bearings” control? ***(If your answer is "control thrust" you need to give your head a shake and try again)***

23. When inspecting an oil pump, how do you know it is worn out?



24. How do you “Align Hone” an engine? ***(This is in the video that you haven't bothered to play yet)***

25. How do you “Deck” an engine? ***(Also in the video)***

26. How do you “Bore” an engine? ***(Also in the video)***

27. Describe the five steps to honing a cylinder

a.

b.

c.

d.

e.



28. When are undersized bearings used? Also, why are they called undersized when they are thicker?

29. How clean should an engine be before reassembly?

30. Why are threaded holes cleaned with a tap?



31. Bearing shells are installed **in the block** *dry* or *wet (oiled)*?

32. What kinds of lubricants can you use for assembly?

a.

b.

c.

33. What is Plastigage<sup>®</sup>, and how does it work?

34. When installing pistons, the connecting rod bolt threads can nick and damage the crankshaft – What do you put on the connecting rod bolt threads to prevent this from happening? ***(This is one of the areas where students damage their engines in the shop)***

35. Pistons have rings to help seal against the cylinder. They are kind of springy, to help press against the cylinder walls. What tool do you use to make the rings fit inside the cylinder when installing the pistons?



36. What can you do to ensure the oil pump will suck oil and not air when the engine is first started up? ***(oil pumps are designed to suck oil, NOT air)***

37. Describe the proper way to torque the head bolts

38. Why must cam timing marks be aligned when assembling the engine? ***(This is one of those areas where students damage their engines in the shop)***

39. What are three important tips when starting your engine for the first time?

40. When a fresh engine is first started, it should be run at 2000rpm for 20 minutes. Why?

41. Describe Mr. Wellwood's sure-fire method of breaking-in an engine: