Engine Compression and Vacuum Diagnosis

Name(s) _____

Save this file first and then follow this link to find answers to these questions…
http://cf.linnbenton.edu/eit/auto/krolicp/upload/Compression_Vacuum.pdf

1) Why is it easier to use a vacuum gauge than a compression gauge?

2) A relative compression test using a lab scope can find a cylinder with low compression. Why is a relative compression not a good test to find if low compression is the cause for a non-starting engine?

3) How much cranking vacuum will indicate an engine has enough compression to run?

4) What creates manifold vacuum?

5) How can you tell if a vacuum line is attached to manifold vacuum instead of ported vacuum? (assume the engine does run)

6) Why is a larger vacuum gauge superior to a smaller vacuum gauge?

7) How is vacuum related to pressure? How can you convert " Hg to PSI?

8) What type of sensor is used to signal manifold vacuum/pressure to the PCM?

9) How will the position of the throttle (which is connected to the gas pedal) affect manifold vacuum?

10) Why is cranking vacuum much lower than the vacuum on a running engine?

11) What engine operating condition will cause manifold vacuum to go to it's highest level?

12) On a running engine, when will manifold vacuum to drop to it's lowest level?

13) On a running engine, low compression will show up on a vacuum gauge. How can you tell if the low compression is due to a defect in only one cylinder?

14) Why will a restricted exhaust cause manifold vacuum to be low?

15) What are some common causes for leaks in the air intake system?

16) How can you become confident at using the vacuum gauge as a diagnostic tool?

17) What is considered the maximum safe RPM for running an engine that is in neutral?

18) How can you safely observe manifold vacuum while the throttle is wide open?

19) What can cause an engine with perfect compression to have no cranking manifold vacuum?

20) How can you quickly tell if an engine with no cranking vacuum has compression?

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