

Chapter 45

Exhaust System Technology and Repair



Name _____

Date _____

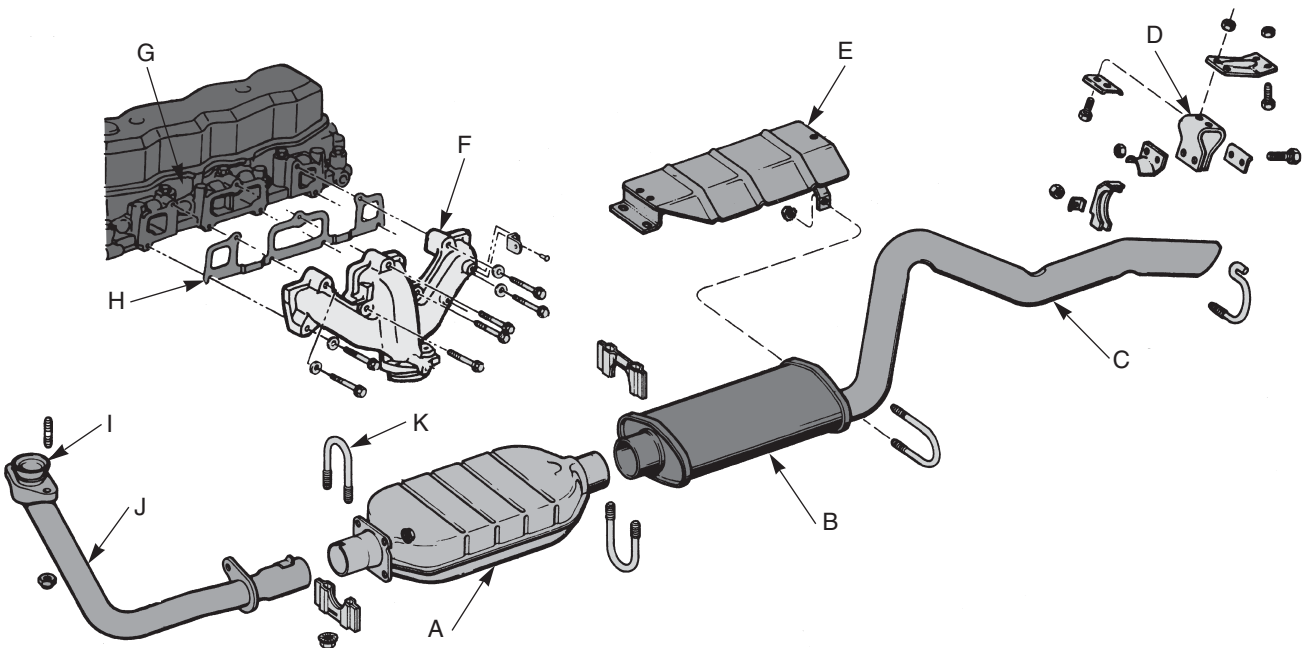
Instructor _____

Score _____

Objective: After studying this chapter, you will be able to describe the basic parts and construction of an exhaust system and test for common problems.

Exhaust System Operation

1. Identify the parts of the typical exhaust system illustrated below.



(A) _____

(G) _____

(B) _____

(H) _____

(C) _____

(I) _____

(D) _____

(J) _____

(E) _____

(K) _____

(F) _____

2. Name two functions performed by an exhaust system.

3. Describe the basic parts of a typical exhaust system.

Exhaust manifold:

Header pipe:

Catalytic converter:

Intermediate pipe:

Muffler:

Tailpipe:

Hangers:

Heat shields:

Exhaust system clamps:

4. What is *exhaust back pressure*?

5. *True or False?* Low back pressure indicates a restriction _____
in the system, usually a clogged catalytic converter.

6. *True or False?* A single exhaust system is used on *only* _____
the smallest four-cylinder engines.

Name _____

7. A dual exhaust system has two separate exhaust paths to reduce ____.

8. What purpose does a crossover pipe serve?

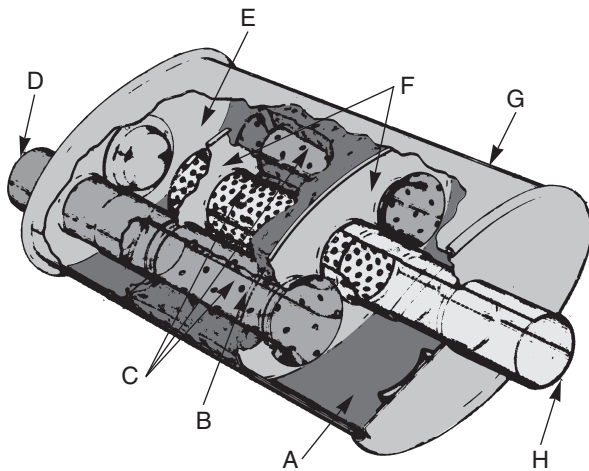
9. High-flow, high-performance exhaust manifolds are commonly called ____.

10. What seals the connection between the exhaust manifold outlet and header pipe to prevent leakage?

11. Name the exhaust pipes.

12. What is a *heat shield*?

13. Identify the parts of the muffler illustrated below.



- (A) _____
- (B) _____
- (C) _____
- (D) _____
- (E) _____
- (F) _____
- (G) _____
- (H) _____

14. A(n) _____ is an afterburner used to reduce the amount _____ of exhaust pollutants entering the atmosphere.

Exhaust System Service

15. Exhaust system service is usually needed when a _____ component in the system _____ and begins to _____.

16. Why is a leaking exhaust system dangerous?

17. Exhaust leaks will often show up as _____ or _____ carbon lines coming from openings.

Catalytic Converter Temperature Check

18. What is meant by a "dead cat"?

_____ 19. A good catalytic converter will have an approximately _____°F difference in temperature, front to rear.

- (A) 10
- (B) 25
- (C) 50
- (D) 100

20. What does it mean when the two catalytic converter temperature readings are almost the same?

Exhaust System Back Pressure Test

21. What does an exhaust system back pressure test measure?

Name _____

Exhaust System Repairs

22. It is especially important to use rust _____ on the
exhaust manifold flange nuts or bolts. _____
23. A(n) _____ socket is recommended for fastener removal _____
without rounding off the fastener heads.
24. Wear _____ to keep rust and dirt from entering your _____
eyes.
25. A pipe _____ should be used to enlarge pipe ends as _____
needed.
26. A pipe _____ can be used to straighten dented pipe _____
ends.
27. You should always maintain adequate _____ between _____
the exhaust system components and the vehicle's
body and chassis.
28. When replacing an exhaust manifold, use a(n) _____ _____
and check sealing surface flatness.
29. *True or False?* Stainless steel will not rust and will _____
provide much longer service life.
30. When doing service work on stainless steel exhaust _____
systems, use heavy-duty _____ designed for this type
of system to prevent dangerous exhaust gas leakage. _____