

*DESIGN, MANUFACTURE, INSTALLATION, & MAINTENANCE*

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**BASIC HYDRAULICS**  
**TRAINING COURSE**

**PRE/POST TEST**

**NAME:** \_\_\_\_\_

**COMPANY:** \_\_\_\_\_

**ATTEMPT ALL QUESTIONS**

1. Define **PRESSURE** in terms of a hydraulic system?

\_\_\_\_\_

2 What develops the **PRESSURE** in a hydraulic system?

\_\_\_\_\_

3. State three units of **PRESSURE**. a) \_\_\_\_\_ b) \_\_\_\_\_

c) \_\_\_\_\_

4. What is "**ABSOLUTE PRESSURE**"?

\_\_\_\_\_

5. Is a hydraulic system a **Source of Power**?                      **YES / NO**

6. What is the function of **Atmospheric Pressure in a hydraulic system**?

\_\_\_\_\_

7. In context of a hydraulic system. Complete the following: - "**Increased Volume**" =

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8. What is meant by the term "**CAVITATION**"?

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9. State Four possible causes of **CAVITATION**?

a) \_\_\_\_\_ b) \_\_\_\_\_

c) \_\_\_\_\_ d) \_\_\_\_\_

10. State two effects **ENTRAINED AIR** has in a hydraulic system.

a) \_\_\_\_\_ b) \_\_\_\_\_

11. What Produces the **FLOW** in a hydraulic system?

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12. State Two Unit of **FLOW**? a) \_\_\_\_\_

b) \_\_\_\_\_

13. In relation to a given **FLOW RATE** what is the consequence of **HALVING** the pipe **DIAMETER** with respect to the **FLUID VELOCITY**?

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14. What is meant by the term "**LAMINAR FLOW**"?

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15. What is meant by the term "**TURBULENT FLOW**"?

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16. Complete the following: - “*The SQUARE ROOT of the PRESSURE DROP across an ORIFICE is directly proportional to* “

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17. What equipment would you use to test the condition of a **PUMP**, in a hydraulic system?

a) \_\_\_\_\_ b) \_\_\_\_\_

c) \_\_\_\_\_

18. What is used to **LIMIT** the **MAXIMUM PRESSURE** in a hydraulic system?

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19. What other type of **ENERGY** is produced in a hydraulic system?

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20. If a system has 2 or more **PARALLEL FLOW PATHS** with different **RESISTANCE'S** which flow path will the fluid take?

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21. Identify components A to O below:

A. \_\_\_\_\_ I \_\_\_\_\_

B. \_\_\_\_\_ J \_\_\_\_\_

C. \_\_\_\_\_ K \_\_\_\_\_

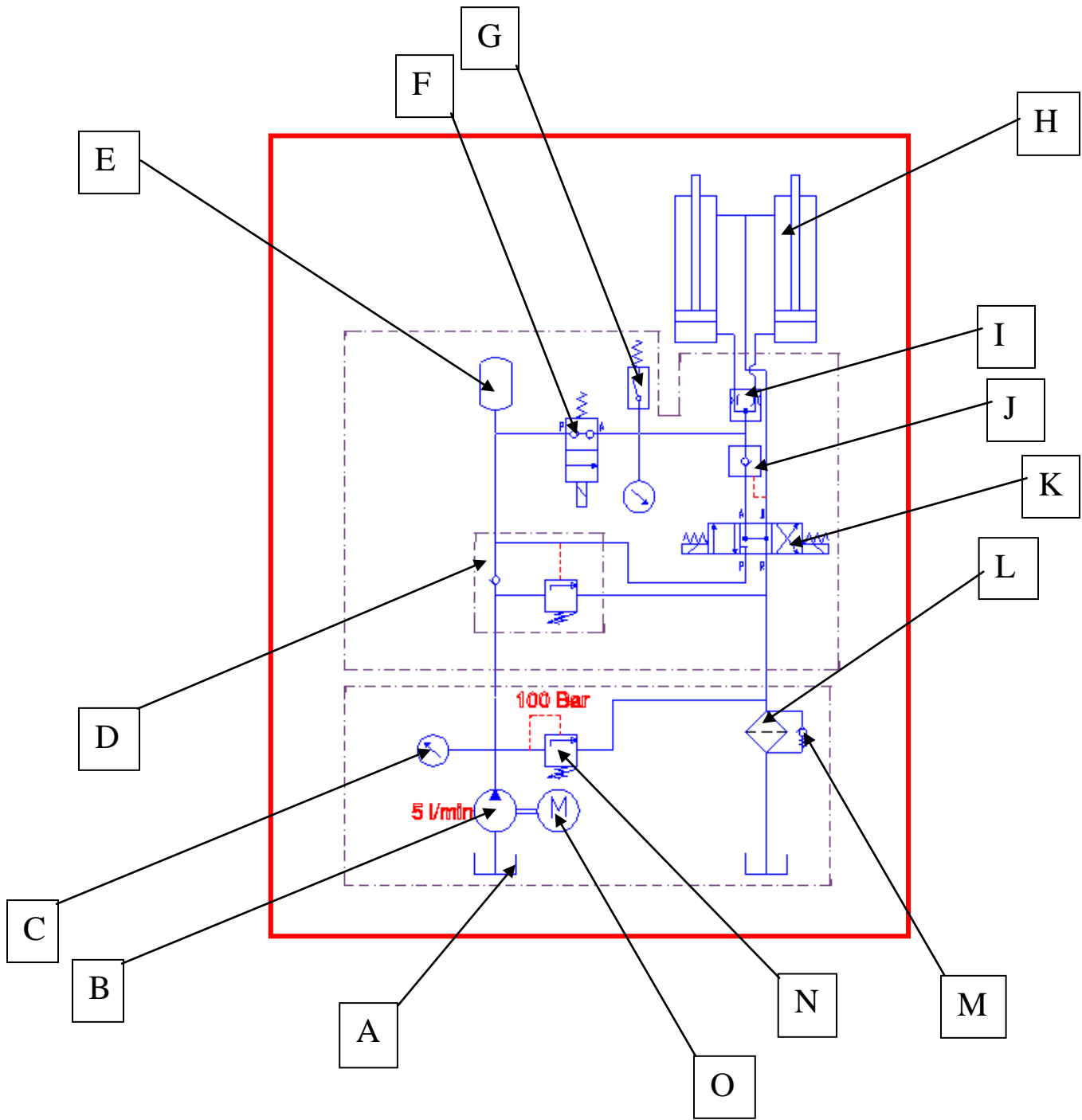
D \_\_\_\_\_ L \_\_\_\_\_

E \_\_\_\_\_ M \_\_\_\_\_

F \_\_\_\_\_ N \_\_\_\_\_

G \_\_\_\_\_ O \_\_\_\_\_

H \_\_\_\_\_



22. With reference to a hydraulic system what is meant by the term **OPEN CIRCUIT**?

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23. With reference to a hydraulic system what is meant by the term **CLOSED CIRCUIT**?

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24. What 4 functions does the **BOOST PUMP** perform in a **CLOSED CIRCUIT**?

- a) \_\_\_\_\_ b) \_\_\_\_\_  
c) \_\_\_\_\_ d) \_\_\_\_\_

25. Complete the following "85% of all failures in hydraulic systems are directly attributed to"

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26. Excluding solids name **TWO** other types of contamination?

- a) \_\_\_\_\_ b) \_\_\_\_\_

27. What is the effect on the oil if the operating temperature of a system exceeds **50°C**?

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28. State 4 ways in which contamination can be introduced into a hydraulic system?

- a) \_\_\_\_\_ b) \_\_\_\_\_  
c) \_\_\_\_\_ d) \_\_\_\_\_

29. In terms of filtration what is meant by the term "**BETA RATIO**"?

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30. Name FOUR locations within a hydraulic system where filters can be fitted?

a) \_\_\_\_\_ b) \_\_\_\_\_

c) \_\_\_\_\_ d) \_\_\_\_\_

31. What is one of the first things that you would check if a hydraulic system failed to operate?

\_\_\_\_\_

32. How can the condition of a **HYDRAULIC MOTOR** be easily checked?

\_\_\_\_\_

33. What Four things can be used to identify a fault on a hydraulic system without fitting any other equipment into the circuit?

a) \_\_\_\_\_ b) \_\_\_\_\_

c) \_\_\_\_\_ d) \_\_\_\_\_

34. Explain the term “**CONTINUOUS MONITORING**” in relation to a hydraulic system?

\_\_\_\_\_

\_\_\_\_\_

35. List the procedure that should be adopted when undertaking the “**LOGICAL FAULT DIAGNOSIS**” of a hydraulic system?

a) \_\_\_\_\_

b) \_\_\_\_\_

c) \_\_\_\_\_

d) \_\_\_\_\_

36. State Three **PRECAUTIONS** that should be taken prior to undertaking the **FLOW & PRESSURE TESTING** of a hydraulic system?

a) \_\_\_\_\_ b) \_\_\_\_\_

c) \_\_\_\_\_

37. If a pump were running very noisily, what would you suspect as the possible cause?

\_\_\_\_\_

38. How can a **GAS** other than **AIR** enter a hydraulic system?

\_\_\_\_\_

39. State Four Precautions that should be observed before starting to work on a hydraulic system.

a) \_\_\_\_\_ b) \_\_\_\_\_

c) \_\_\_\_\_ d) \_\_\_\_\_

40. State Four Precautions that should be observed before re-starting a hydraulic system after carrying out work on it?

a) \_\_\_\_\_ b) \_\_\_\_\_

c) \_\_\_\_\_ d) \_\_\_\_\_