



Equipment II

Dynamic Pumps



Course Objectives

1. Describe the purpose, theory of operation, and function of a pump.
2. List the main categories of pumps.
3. Describe the different impeller designs and their function.
4. Describe the operation and components for each type of dynamic pump.



Key Terms (Define the following)

pump - _____

dynamic pump - _____

axial pump - _____

centrifugal pump - _____

Net Positive Suction Head - _____

mixed flow pump - _____



Principles

General Pump Categories

Dynamic			Positive Displacement	
Axial Flow	Centrifugal	Mixed Flow	Reciprocating	Rotary
	<ul style="list-style-type: none">• Single-stage• Multi-stage• Vertically mounted		<ul style="list-style-type: none">• Single-acting piston• Two piston/Three piston• Multi-stage piston• Double-acting piston• Plunger• Motor-driven/ Air operated diaphragm	<ul style="list-style-type: none">• Progressive cavity• Two-screw• Internal gear• External gear• Lobe• Sliding vane

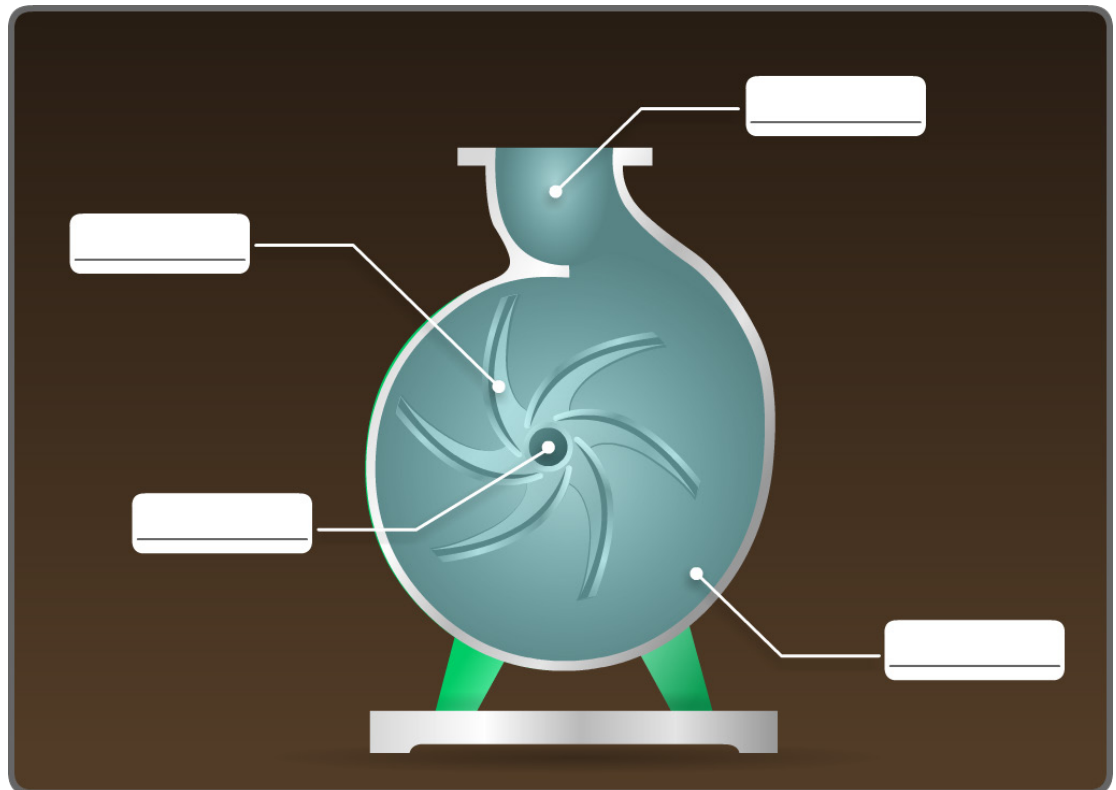


Questions

- List the two main categories of pumps.
1) _____ 2) _____
- List the three categories of dynamic pumps.
1) _____ 2) _____ 3) _____
- List the advantages and disadvantages of each impeller design:

	<i>Advantages</i>	<i>Disadvantages</i>
Open	_____ _____	_____ _____
Closed	_____ _____	_____ _____
Semi-open	_____ _____	_____ _____
Double-suction	_____ _____	<i>Not Applicable</i> _____

- Label the parts of this centrifugal pump.



5. What is the difference between a single stage and multi-stage centrifugal pump

6. What is one advantage of a vertical centrifugal pump?

7. What is one advantage of a mixed flow pump?

8. How is a mixed flow pump similar to an axial pump?

9. How is a mixed flow pump similar to a centrifugal pump?
