



## **Course Objectives**

- 1. Describe the purpose, theory of operation, and function of a compressor.
- 2. Relative to a gas, describe the relationships between pressure, volume, and temperature.
- 3. Distinguish between dynamic and positive displacement compressors.
- 4. Describe the operation, components, and typical applications for each type of dynamic compressor.
- 5. Describe the operation, components, and typical applications for each type of positive displacement compressor.
- 6. Identify typical auxiliary equipment associated with compressors.
- 7. Describe common performance issues related to compressors and their causes and indicators.

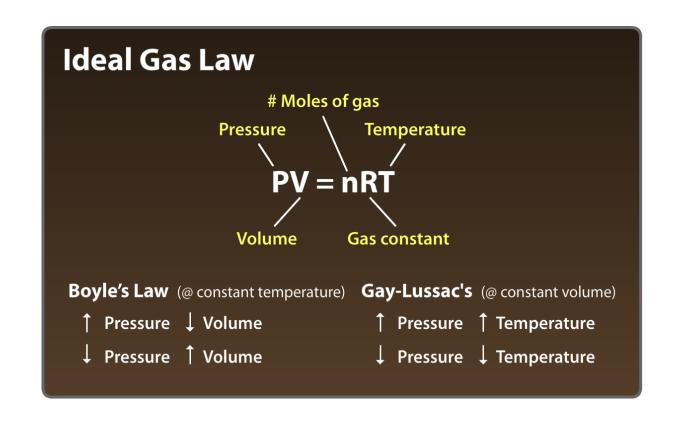


## **Key Terms** (Define the following)

compres	sor			
blower -				
surge				
J -				
surge				



General Compressor Categories						
Dynamic		Positive Displacement				
Axial Flow	Centrifugal	Reciprocating	Rotary			
	• Single-stage	Single-acting piston	• Screw			
	• Multi-stage	• Double-acting piston	• Sliding vane			
		• Diaphragm	• Lobe			





1.	A compressor the pressure of a gas, such as air, and in turn its volume.
2.	List the functions of a compressor in chemical manufacturing.
3.	According to the Ideal Gas Law:  a. If the volume of a gas is compressed in half and the temperature remains the same, its pressure will
	b. If the absolute pressure of a gas is doubled and the temperature remains the same, it will take up the volume.
	c. If the absolute temperature of a gas is doubled and its volume remains the same, its pressure will
	d. If the pressure is doubled and the volume remains the same, the absolute temperature of a gas will
4.	Why must gas compressors be able to handle extreme pressure?
5.	List the two main categories of compressors.
6.	1) 2) List the two main categories of dynamic compressors. 1) 2)
7.	List three applications for an axial-flow compressor.  1) 2) 3)
8.	In a centrifugal compressor, what happens to the output pressure if the speed o the impeller increases?

9.	List three applications of a centrifugal compressor.  1)			
	2)			
10.	List the two main categories of positive displacement compressors.  1) 2)			
11.	List the types of rotary compressors.			
12.	What is the purpose of a filter in the intake line of a compressor?			
13.	List the methods of cooling an air compression system.			
14.	What is the difference between an inner cooler and an outer cooler in a multi-stage compression system?			
15.	List the symptoms of surging.			
16.	Give an example of a non-compressible fluid and explain what happens if it is drawn into a compressor?			