**Manufacturing Engineering**

**Hydraulic and Pneumatic Systems Worksheet**

Worksheet Answer Key

1. Describe the basic principle of Pascal’s law.

**Answer:** Liquid cannot be compressed. When pressure is appliedto liquid in a confined space, equal force is transmitted throughout the entire system.

1. Why is it important to keep hydraulic and pneumatic systems free of leaks?

**Answer:** The system may be under several thousand pounds ofpressure. Leaks can be dangerous and cause severe personal injury by puncturing skin and vital organs.

1. List three similarities between hydraulic and pneumatic systems.

**Answer:** both systems use a pressurized liquid medium, bothsystems have lines, valves, and actuators

1. Identify two advantages pneumatic systems have over hydraulic systems.

**Answer:** 1. Lower pressure (usually less than 300 psi), no chanceof fluid spills or product contamination; 2. Pressurized air can be stored for later use if power is not available from the compressor.

1. List an advantage of hydraulic systems over pneumatic systems.

**Answer:** Hydraulic systems are very stable under load and cancarry very high load capacities.

1. What step must be taken before disconnecting lines on either system for maintenance?

**Answer:** Relieve all system pressure before disconnecting lines.