Power Equipment Technology

Power Equipment Technology is a one-credit course designed to prepare students for entry-level employment or advanced training in the power mechanics field. Topics include career opportunities, safety, tools, hydraulics, pneumatics, drivetrains, control systems, starters, and preventive maintenance.

Content standards for this course are not intended to serve as the entire curriculum. Teachers are encouraged to expand the curriculum beyond the limits of these content standards to accommodate specific community interests and utilize local resources. This course encourages critical thinking, use of the scientific method, integration of technology, development of student leadership skills, and application of knowledge and skills related to practical questions and problems. Safety concepts are integrated into instruction to the maximum extent possible.

Career and technical student organizations are integral, cocurricular components of each career and technical education course. These organizations serve as a means to enhance classroom instruction while helping students develop leadership abilities, expand workplace-readiness skills, and broaden opportunities for personal and professional growth.

Career Opportunities

Students will:

1. Identify career opportunities in power equipment technology.

Safety

2. Explain safety procedures for working with power equipment systems.

Tools

3. Differentiate among common tools used with hydraulic and pneumatic systems.
   Examples: mechanical tools, hose crimpers

4. Identify common test equipment used with hydraulic and pneumatic systems.
   Examples: gauges, flow meters

Hydraulics

5. Identify systems in power equipment that utilize hydraulics.

6. Distinguish between single-acting and double-acting hydraulic cylinders.

7. Describe components of a hydraulic system.
8. Explain how a hydraulic system works.
   - Diagnosing problems with a hydraulic system
   - Solving problems found in a hydraulic system

**Pneumatics**

9. Identify parts of a pneumatic system.

10. Explain how a pneumatic system works.
    - Diagnosing problems with a pneumatic system
    - Solving problems found in a pneumatic system

**Drivetrains**

11. Identify power equipment drivetrain components and the functions of each.

12. Diagnose power equipment clutch and transmission problems.

**Control Systems**

13. Identify controls used in hydraulic and pneumatic systems.
    Examples: electronic, digital, robotic, manual

14. Describe the use of compliance controls on power equipment.
    Examples: engine kill switch, inertia brake control

**Starters**

15. Demonstrate the procedure for manual starter overhaul.
    - Diagnosing manual starter problems

16. Demonstrate the procedure for repairing electric starters.
    - Diagnosing electric starter problems

**Preventive Maintenance**

17. Identify preventive maintenance procedures used in checking and servicing hydraulic and pneumatic systems.
    Examples: changing fluids, changing filters, checking fluid levels, checking hoses