

# Unit C: Agricultural Power Systems

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## Lesson 8: Using Pneumatic Systems

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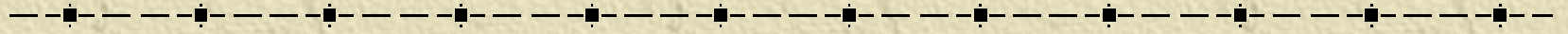


# Terms

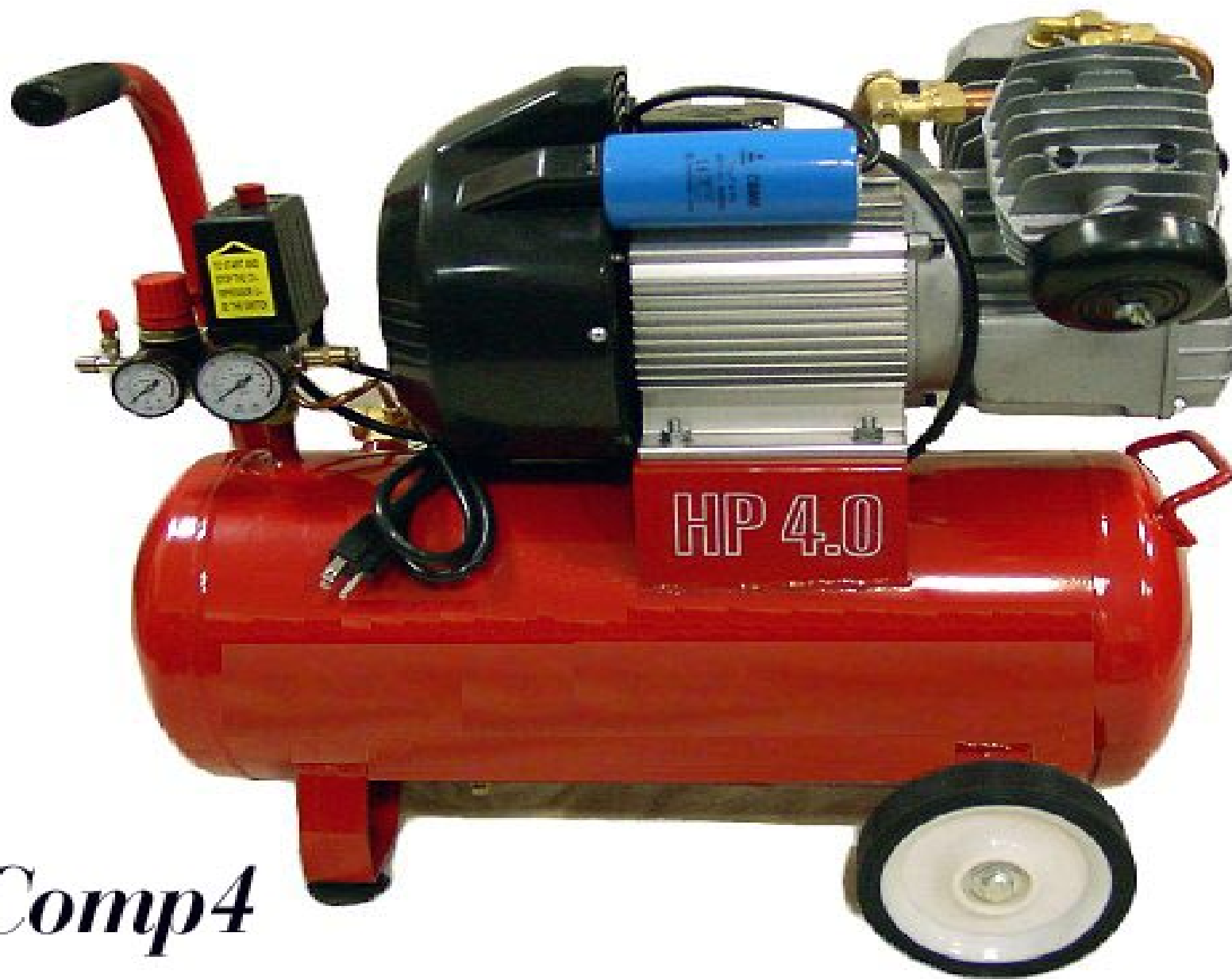
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- ✦ Air filter
- ✦ Air storage tank
- ✦ Compressor
- ✦ Flow meter
- ✦ Manifold
- ✦ Motor
- ✦ Needle valves
- ✦ Pressure limit switch
- ✦ Pressure regulator
- ✦ Pressure system gauge
- ✦ Safety filter
- ✦ Safety valve

# Pneumatics



- ✦ Any system that uses a gas to create motion
- ✦ Generally, pneumatics uses air as the power source



*Comp4*

# Parts of a pneumatic supply system

- |                     |                          |
|---------------------|--------------------------|
| 1) Motor            | 7) Pressure limit switch |
| 2) Compressor       | 8) Pressure regulator    |
| 3) Ail filter       | 9) Pressure system       |
| 4) Safety filter    | 10) Gauge                |
| 5) Safety valve     | 11) Manifold             |
| 6) Air storage tank | 12) Needle valves        |



# Parts of a pneumatic system

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- ✦ **Motor** – converts electricity from the wall outlet into rotary motion
- ✦ **Compressor** – takes in air from the atmosphere and pushes the air into a storage tank
- ✦ **Air filter** – removes the dirt from the air
- ✦ **Safety filter** – secondary device for removal of dirt



# Parts (continued)

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- ✦ **Safety valve** – allows extra air to escape
- ✦ **Air storage tank** – holds a supply of pressurized air
- ✦ **Pressure limit switch** – detects the presence of the air in the storage tank



# Parts (continued)

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- ✦ **Pressure regulator** – controls the pressure of air
- ✦ **Pressure system gauge** – shows the pressure of the air

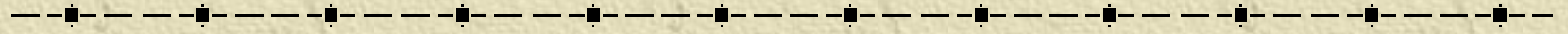
# Parts (continued)

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- ✦ **Manifold** – has two connections between their air supply system and the pneumatic circuit
- ✦ **Needle valves** – stop the supply of pressurized air to the circuit



# Flow meter



- ✦ Measures the amount of air flowing through a pneumatic circuit.
- ✦ Measured in standard cubic feet per hour (SCFH)



HPIX

# Pneumatic safety practices

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- ✦ Always wear safety glasses or goggles
- ✦ Keep all body parts and loose objects away from operating cylinders
- ✦ Always close the needle valve on the manifold before changing a pneumatic circuit



# Safety practices (continued)

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- ✦ Always read the directions completely before working on any pneumatic system
- ✦ Handle all electrical components and fittings carefully

# Review/Summary

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- ✦ What is pneumatics and what are the major parts of the supply system?
- ✦ What functions does the flow meter perform?
- ✦ What safety practices are used in pneumatics?