



Modern Automotive Technology Chapter 5

The Auto Shop and Safety



*North Montco
Technical Career Center*



Chapter 5

The Auto Shop and Safety

- Describe the typical layout of an auto shop
- List the type of accidents that can happen in an auto shop
- Explain how to prevent accidents in the auto shop
- Describe the rules and regulations of the auto shop



Safety Rules

- Wear eye protection during any operation that could endanger your eyes
- Avoid anyone who does not take shop work seriously
- Keep your shop and work area clean & organized
- Dress in an appropriate manner
- Never carry sharp tools or parts in your pockets
- Wear full face protection when grinding, welding, or performing other hazardous operations
- Work like a professional
- Use the right tool for the job



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1. The **FRONT END RACK** is a specialized stall used to work on a vehicle's steering and suspension system.
2. **ASPHYXIATION** is caused by breathing toxic or poisonous substances.



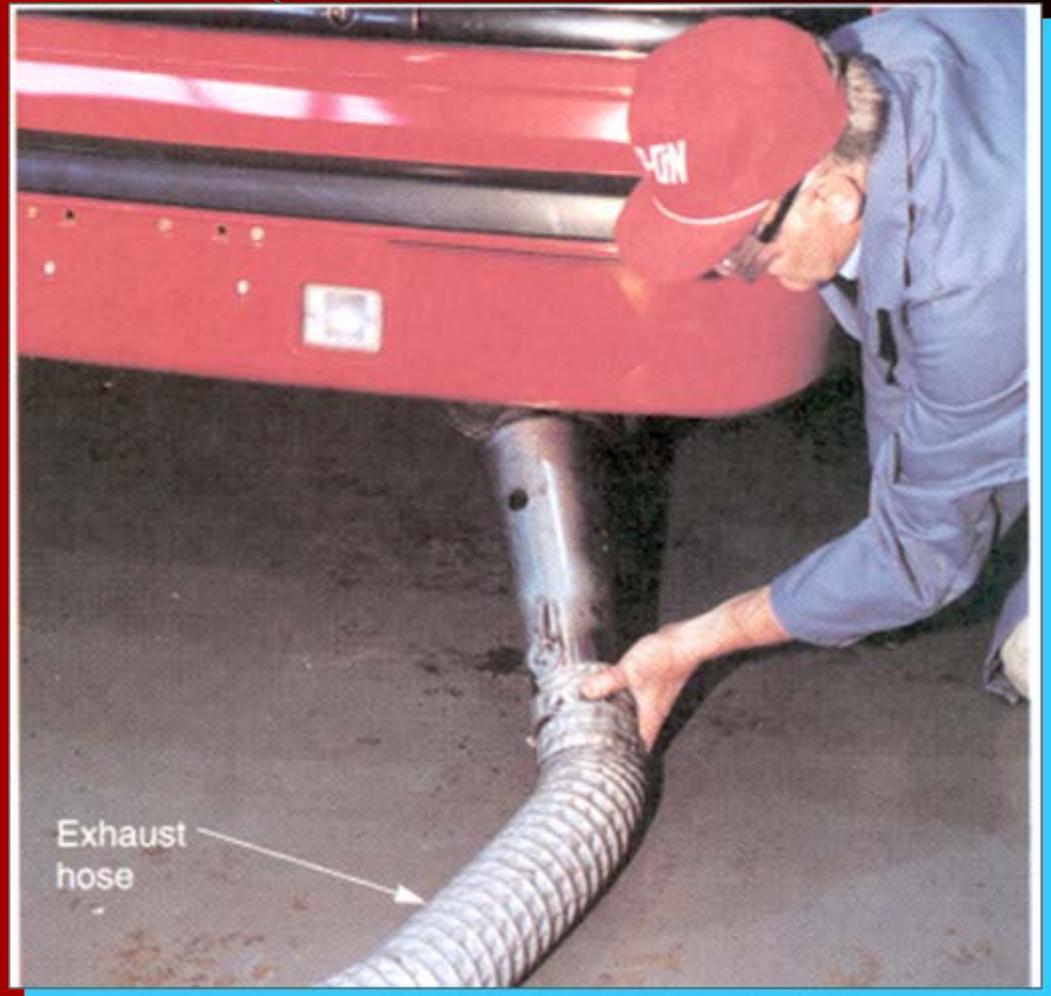
Alignment Rack



Specialized stall used when working on steering and suspension systems

Asphyxiation

Place an exhaust hose over the tailpipe of any car running in an enclosed shop





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3. **PHYSICAL INJURIES** can result from hundreds of different accidents.
4. Using an improperly grounded electric power tool can result in an **ELECTRICAL SHOCK!**



Electric Shock

- Result of electric current passing through parts of your body, causing injury or death
- Can occur when using improperly grounded electric power tools
- Never use an electric tool unless it has a third round prong on the plug socket
- Never use an electric tool on a wet shop floor



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5. The result of a hot wire touching ground (vehicle frame or body) will be an **ELECTRICAL FIRE!**
6. **CHEMICAL BURNS** can be caused by solvents, battery acid, and other shop substances.

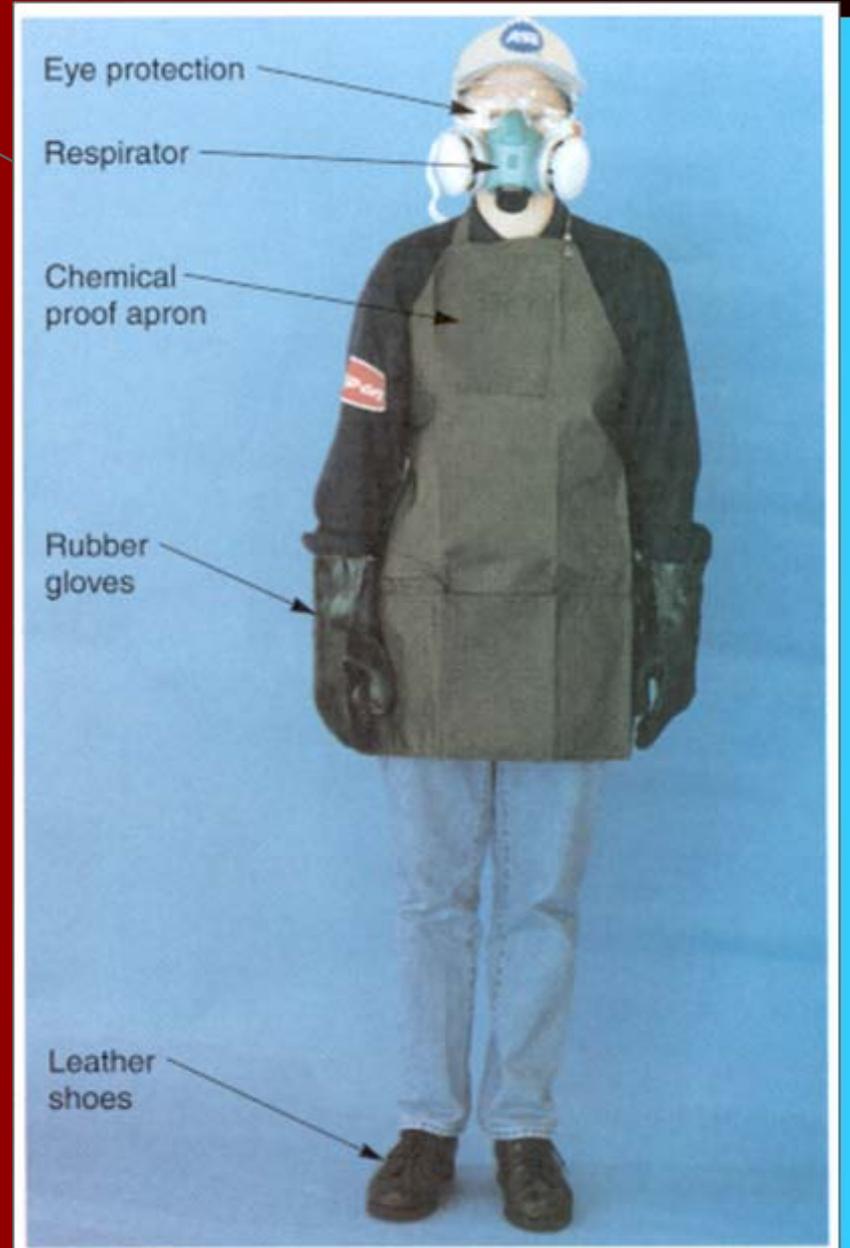


Electrical Fires

- Result when a current carrying wire touches ground
- Wire can heat up, melt the insulation, and burn
- Other wires can then do the same
- To prevent electrical fires, always disconnect the battery when instructed to do so in a service manual

Chemical Burns

Protective gear for preventing chemical burns





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7. A **SHOP STALL** is an area where a vehicle can be pulled into the shop for repairs.
8. **GASOLINE** has the potential for causing tremendous fires.



Shop Stall



Work area where a car can be parked for repairs
Sometimes stalls are numbered and marked off
with safety lines painted on the floor

Gasoline Safety Rules

- Wipe up gasoline spills immediately
- Keep any source of heat away from fuel system parts
- Never use gasoline as a cleaning solvent
- Store gasoline and other flammables in approved, sealed containers
- When disconnecting a fuel line or hose, wrap a shop rag around the fitting
- Disconnect the battery before working on a fuel system



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9. **OILY RAGS** should be stored in an approved safety container to prevent fires.
10. When hydrogen gas surrounds the top of a battery being charged or discharged, the battery can **EXPLODE!**



Explosions

- Rapid, almost instant, combustion of a material that causes a powerful shock wave to travel through the shop
- There are several potential causes of explosion in the shop:
 - hydrogen gas emitted by batteries
 - fuel tanks or containers
 - sodium-filled engine valves
 - welding tanks and propane bottles

Harmful Substances



This technician is wearing a respirator for protection from toxic welding fumes



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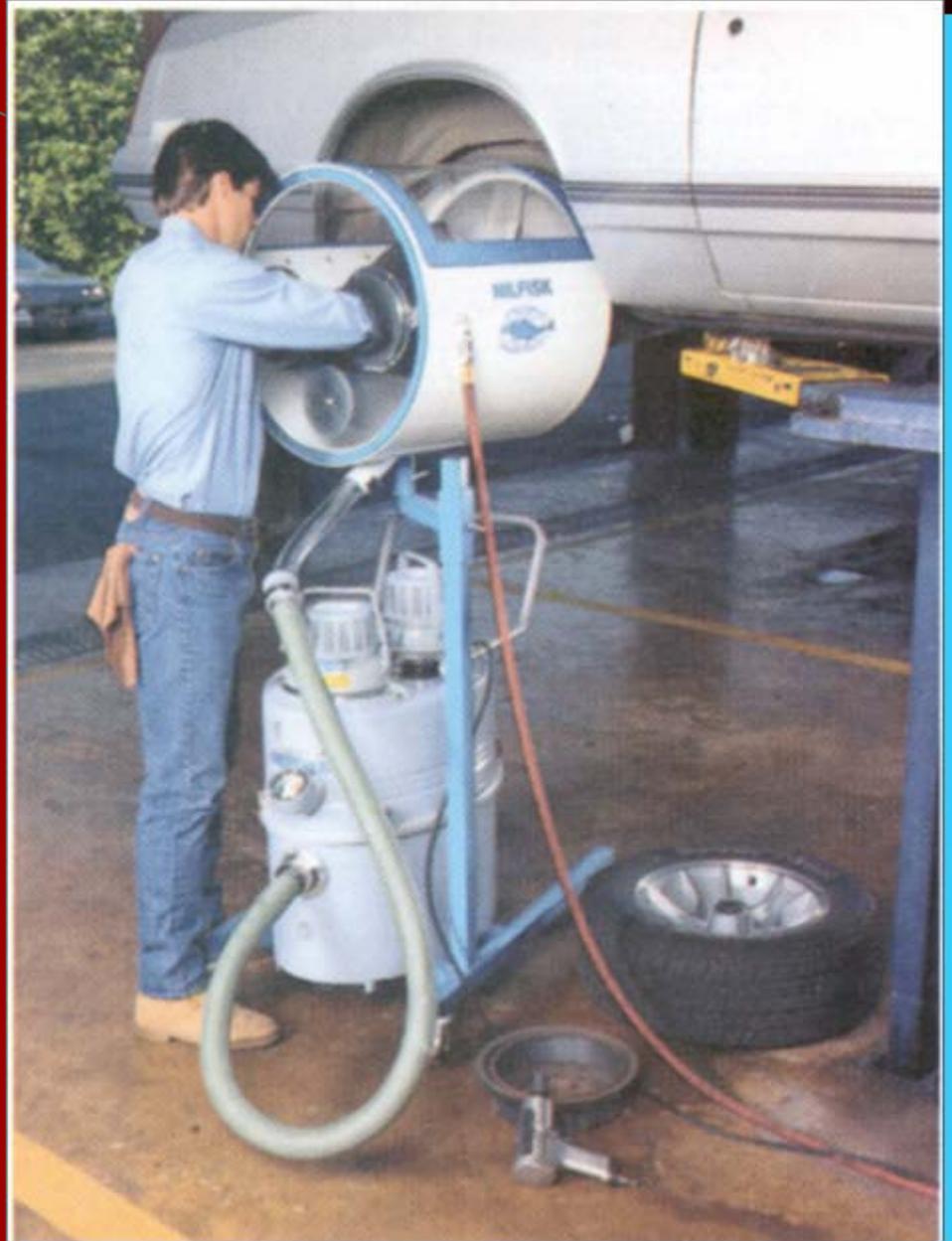
The Auto Shop and Safety

- **MSDS = MATERIAL SAFETY DATA SHEETS**
- In our classroom, the MSDS book is located in the back of our classroom, near the door, in a **YELLOW** holder.
- Safety Glasses **MUST** always be worn in the shop
- Never throw anything in the shop or classroom
- Clean up any oil or water spills immediately

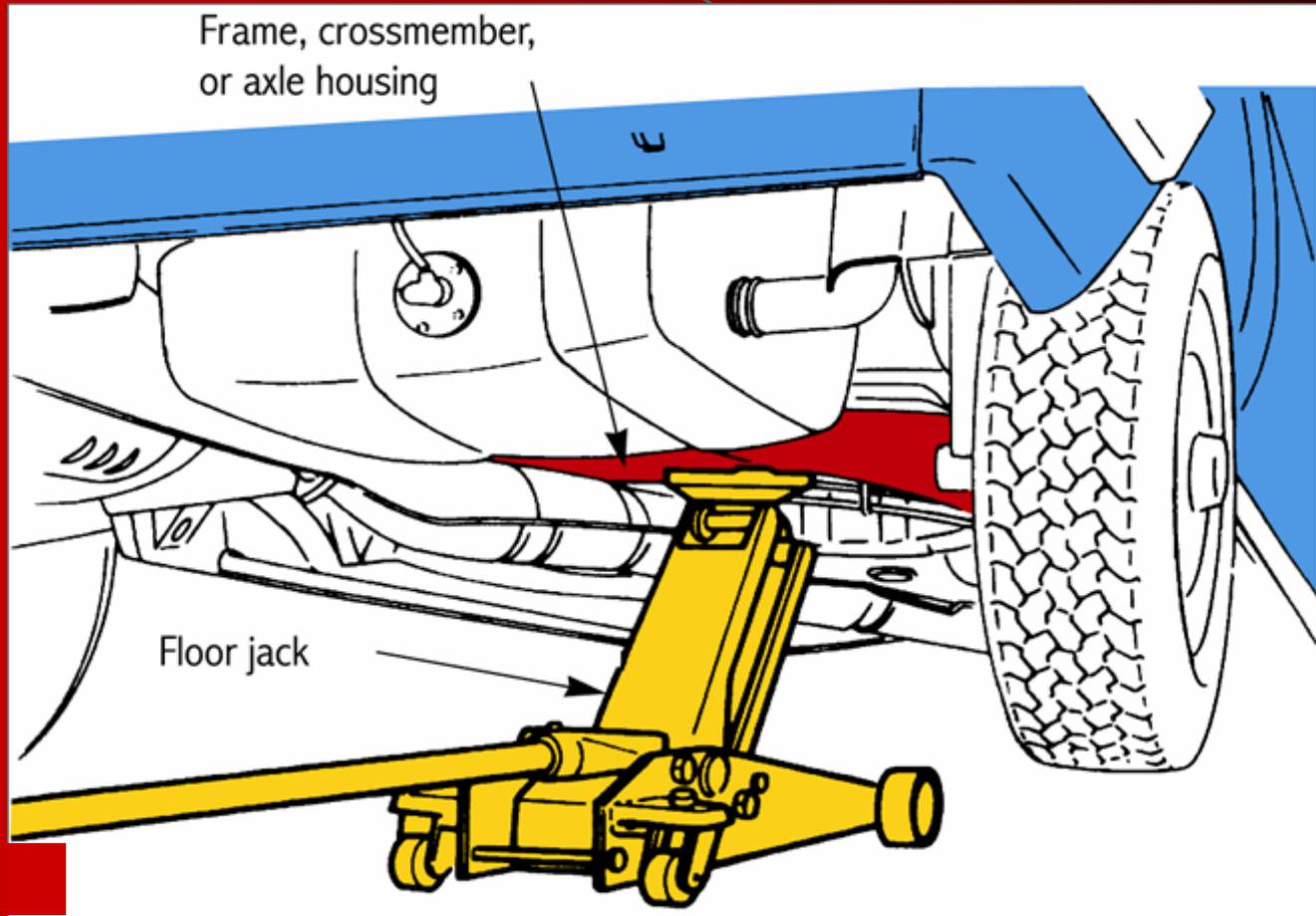


Safety Rules

Use a vacuum system
to remove asbestos
dust
from parts



Safety Rules



Jack up a vehicle slowly and safely

Safety Rules



Never work on a vehicle not supported by
jack stands



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