


Fire Safety & Fire Extinguisher Use



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Learning Objectives

- Understand the combustion process and different fire classes
 - Recognize fire extinguisher types and operating procedures
 - Demonstrate basic firefighting concepts and techniques.
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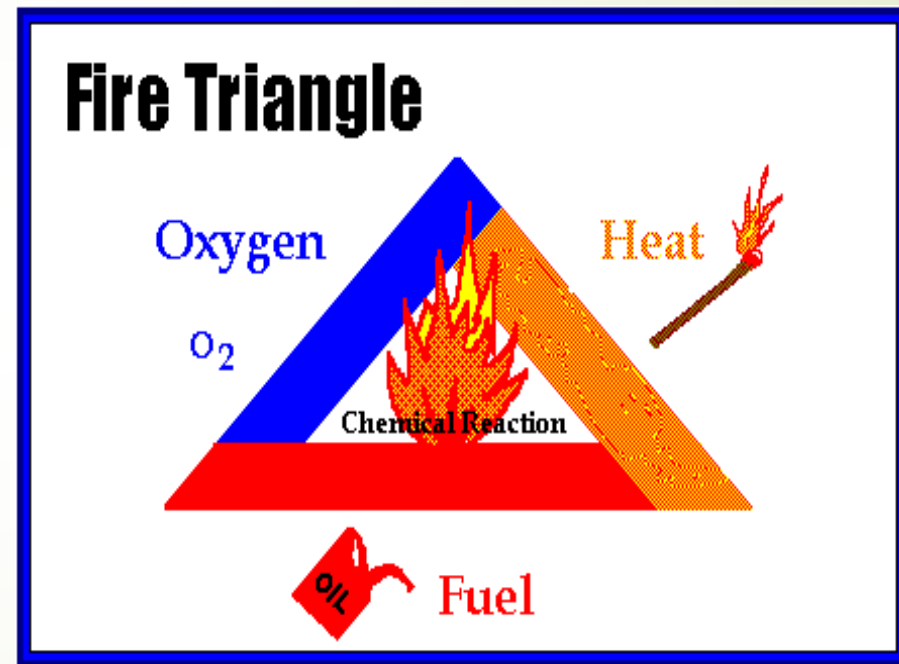


The Combustion Process

The Combustion Process

The three components needed to support combustion:

- O_2
- Heat
- Fuel.



The Combustion Process (cont.)

- Need all three components to maintain combustion
- Fire extinguishers remove one or more of the components.





Types Of Fires

Class A: Leaves Ash

A



- Paper
- Cloth
- Trash
- Wood

Class B: Combustible Liquids

B



- Grease
- Gasoline
- Oil
- Other solvents

Class C: Electrical



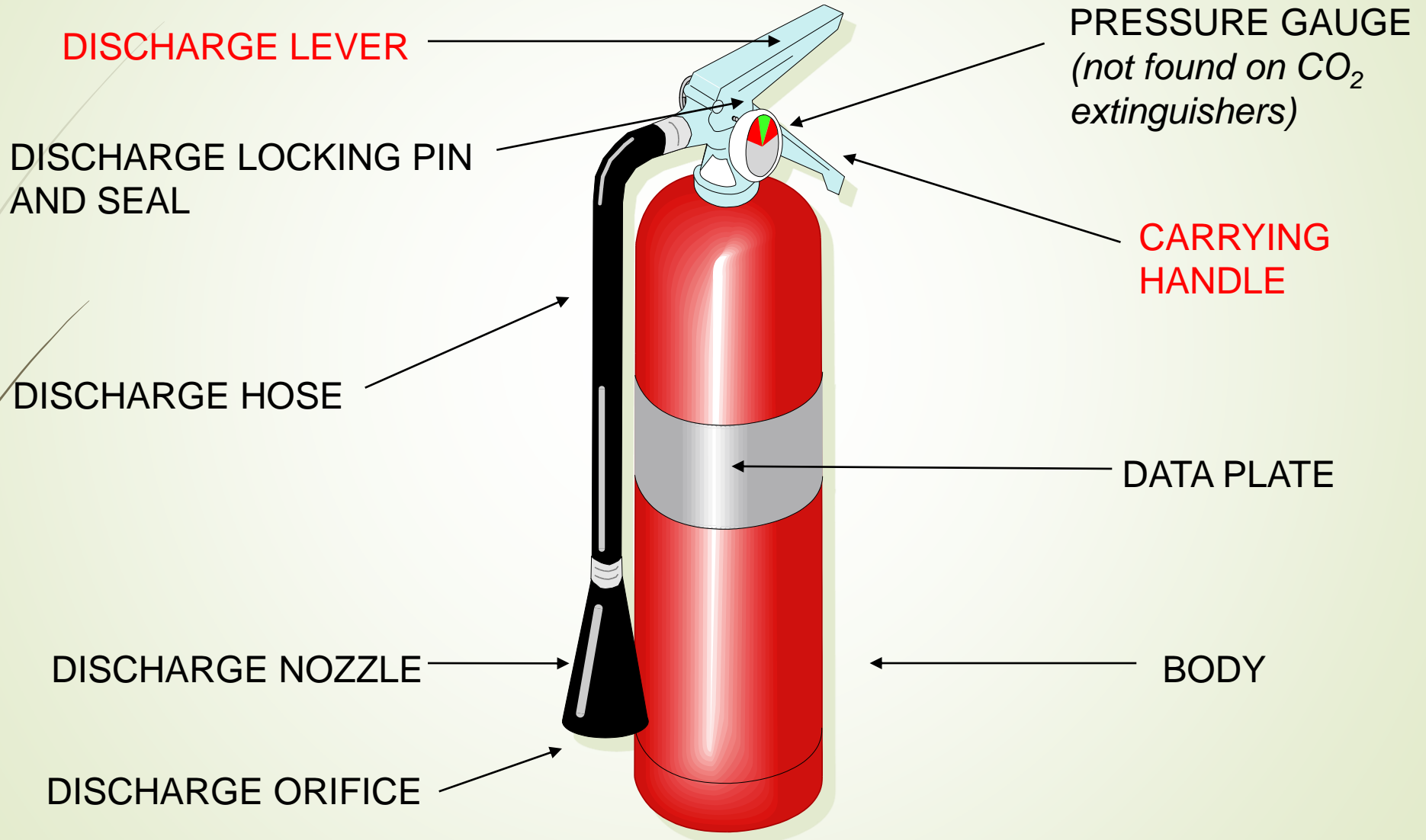
Energized electrical equipment:

- Computers
- Fax machines
- Copiers
- Cell Phones



Fundamentals of Extinguishers

Fire Extinguisher Anatomy



Fire Extinguisher Types



A Trash Wood Paper



B Liquids Grease



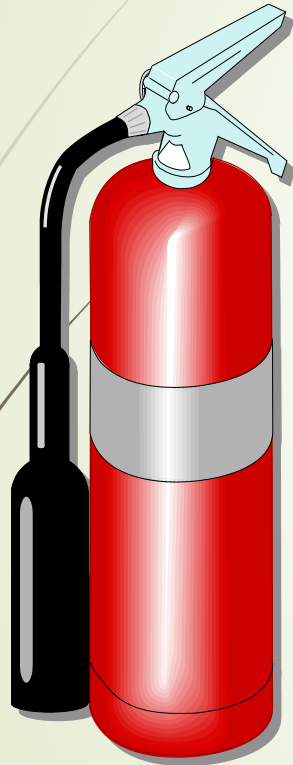
C Electrical Equipment



PRESSURIZED WATER

- Class "A" fires only
- Travel distance of **75** feet or less
- Has pressure gauge to allow visual capacity check
- 30-40 ft. maximum effective range
- Can be started and stopped as necessary
- Extinguishes by **cooling** burning material below the ignition point.

Fire Extinguisher Types (cont.)



A Trash Wood Paper



B Liquids Grease



C Electrical Equipment



CARBON DIOXIDE (CO₂)

- Class "B" or "C" fires
- Travel distance of 50 feet or less
- 8-30 seconds discharge time
- Has **NO** pressure gauge--capacity verified by weight
- 3-8 ft. maximum effective range
- Extinguishes by **smothering** burning materials.

Fire Extinguisher Types (cont.)

MULTIPURPOSE DRY CHEMICAL



A Trash Wood Paper



B Liquids Grease









C Electrical Equipment



- Class "A", "B", or "C" fires
- These fire extinguishers are deployed on the basis of the appropriate pattern for existing Class A or Class B hazards
- 8-25 seconds discharge time
- Has pressure gauge to allow visual capacity check
- 5-20 ft. maximum effective range
- Extinguishes by **smothering** burning materials.

Fire Extinguisher Summary

<i>EXTINGUISHER TYPE</i>	<i>WORKS BY</i>	<i>EFFECTIVE AGAINST</i>
PRESSURIZED WATER	COOLING	
CARBON DIOXIDE	SMOTHERING	 
MULTIPURPOSE DRY CHEMICAL	SMOTHERING	  



Basic Firefighting

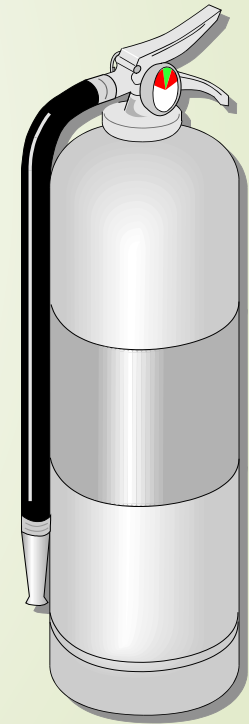
Firefighting Criteria

- Know emergency procedures
- Know evacuation routes
- Know locations of extinguishers in your area and how to use them
- Always sound the alarm (regardless of fire size)
- Avoid smoky conditions
- Ensure area gets evacuated
- Then...



Only attempt to fight a fire when:

- The alarm has been sounded
- The scene is safe! (meaning you can escape without exposure to the fire and you will not be harmed by the environment)
- The fire is small and **contained** (incipient stage)
- Available extinguishers are rated for size and type of fire
- **If in doubt, evacuate!**



How do you know if a fire is too big to fight?

- ▶ Extinguisher designation will tell you how much extinguisher you have
- ▶ Example: 4A50BC
 - ▶ For Class A, 1 = 1.25 gallons of water equivalent
 - ▶ For Class BC, 1 = 1 square foot.



OPERATING YOUR EXTINGUISHER



PULL THE PIN



AIM AT THE BASE
OF THE FIRE



SQUEEZE THE LEVER



SWEEP FROM SIDE
TO SIDE

IN ADDITION

- TEST EXTINGUISHER PRIOR TO APPROACHING FIRE.
- KEEP LOW & APPROACH WITH WIND AT YOUR BACK.
- BACK AWAY, WATCHING FOR REKINDLE.

Fighting the Fire





Summary & Quiz

Summary

- Combustion Process (*Fire Triangle*)
- Class A, B & C fires
- Types of portable fire extinguishers:



- Operating procedures
- Capabilities and limitations
- Basic firefighting concepts.



Quiz Question 1

Fire extinguishers marked with an “A” are used on:

- A) Oil fires
- B) Electrical fires
- C) Paper material fires
- D) None of the above



Quiz Question 2

Fire extinguishers marked with a “B” can be used on:

- A) Paper, trash
- B) Oil or Grease
- C) Electrical
- D) B & C above



Quiz Question 3

Fire extinguishers marked “ABC” should be used on:

- A) Wood, Paper
- B) Electrical
- C) Liquids and grease
- D) All of the above

Questions or Comments

SAFETY

**YOU ARE THE
KEY TO SAFETY**

