

Extinguishing Fires in Agricultural Mechanics

WHEN a fire starts, the first few seconds are critical. Thus, fire extinguishers must be easily accessible. Knowledge of how to use a fire extinguisher correctly may make the difference between stopping a fire and letting it get out of control.



Objectives:



1. Describe how to use a hand-held fire extinguisher.
2. Describe how to use a fire blanket.

Key Terms:



fire blanket
hand-held fire extinguisher

Using a Hand-Held Fire Extinguisher

Knowing how to use a fire extinguisher is a skill everyone in agricultural mechanics should master. The accidental fire that occurs should not cause anyone to become overly alarmed. Keeping control of a situation is important. If a small fire is discovered, a series of decisions must be made in just a few seconds. Making correct decisions can result in the fire being extinguished and the undesirable situation being eliminated. Making incorrect decisions can cause injury or loss of property.

To make correct decisions, you need to recognize the type of fire—Class A, B, C, or D. Class A fires involve ordinary combustibles, like wood, paper, cloth, trash, and plastics. Class B fires involve flammable liquids, like gasoline oil, grease, paint, and acetone. Burning fluids can be tricky to extinguish if they are moving in all directions. Containing a flammable-liquid fire is more difficult than containing a fire that does not move. Class C fires involve electrical equipment and need special attention to prevent electric shock. Class D fires involve combus-

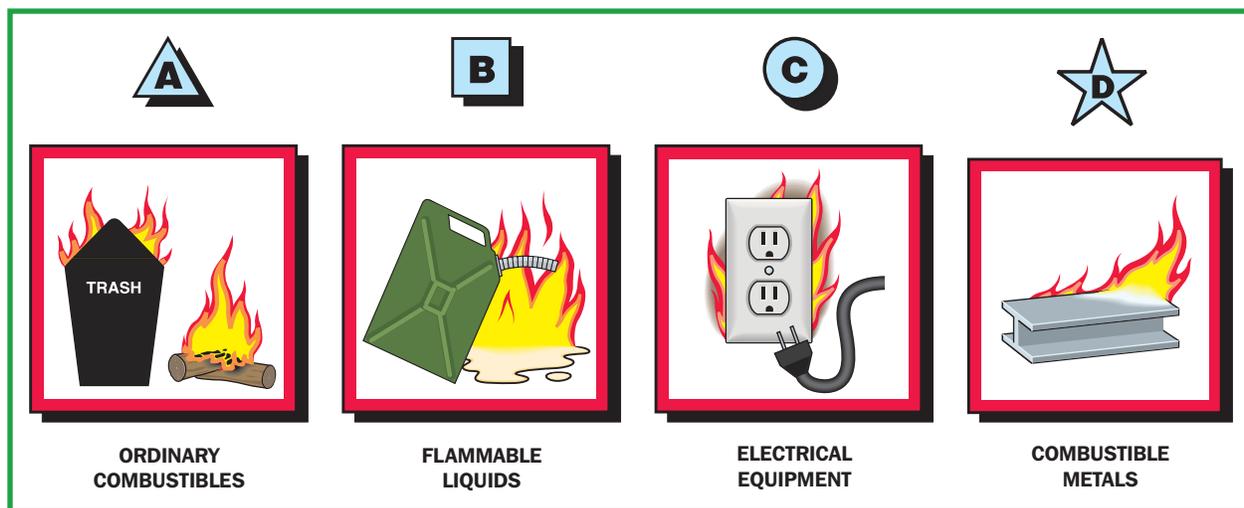


FIGURE 1. The four classes of fires.

tible metals and require very specific materials to extinguish because of the extremely high temperatures. Class D fires rarely occur in agricultural mechanics settings.

Once the type of fire is determined, the size of the fire should be considered. A large fire that cannot be contained to a small area may be very difficult to extinguish with a hand-held fire extinguisher. A **hand-held fire extinguisher** is a portable device designed to control a fire by releasing a flame retardant. Do not try to extinguish a fire with a hand-held fire extinguisher if the fire is spreading beyond the area where it started. No single solution works for all fires. If you decide the fire is controllable, your quick action to extinguish it is important. All these observations and decisions need to be completed in just a few seconds.

Before an attempt is made to extinguish a fire, all people in the area should be notified that a fire is in progress. People not needed to extinguish the fire should leave the area. Injuries during a fire can occur from burns, smoke, or fumes, so removing people from the immediate fire area is important.

If a fire is determined to be controllable, plan an escape route in the event the situation changes and the fire becomes too large to control. Do not try to extinguish a fire if your path to the escape is blocked. Never enter a position in which the escape route is not behind you.

Select the right extinguisher to control the fire. Not all hand-held extinguishers are recommended for all classes of fires. A general rule is to select the extinguisher that will put the fire out at the lowest cost with the least amount of mess and hazard to people, livestock, equipment, and facilities. Having a good knowledge of fires and fire extinguishers makes this decision easier.

There are basically two types of hand-held fire extinguishers—those that are held upright to use and those that must be turned upside down to use. The inverted type is old technology and not currently recommended.

A Class A soda-acid extinguisher is a type that must be inverted for operation. This type of extinguisher is rapidly being replaced with the pressurized-water extinguisher. The soda-acid extinguisher, when inverted, begins a chemical reaction that causes a pressure increase within the extinguisher. The increased pressure forces the water out of the extinguisher through the

discharge hose. The operator holds a finger at the end of the extinguisher hose to aim the spray of water at the base of the fire.

The upright-type extinguisher operates with a lever that controls the release of the retardant. The extinguisher is usually gripped with both hands to steady the aim. Some models, however, recommend using one hand to operate the trigger and the other hand to aim the spray of fire retardant. The trigger is typically disabled by a safety pin. The safety pin prevents the accidental discharge of the fire extinguisher. Before operating the extinguisher, the safety pin must be removed, typically by pulling on the ring attached to the pin.

With the extinguisher ready to use, start about 8 to 10 feet away from the fire. (If the fire is too hot for you to get that close, you may not be able to extinguish the fire with a hand-held extinguisher.) Aim the extinguisher at the base of the fire (bottom of the flames) and squeeze the trigger. Use a side-to-side sweeping motion to extinguish the fire. Most fire extinguishers contain enough material for only a few seconds, so you must operate quickly.

It is important to get as much fire extinguisher product on the base of the fire as possible. Any material that does not hit the fire is wasted. If the fire is extinguished, keep a watchful eye on the fire area to prevent any reignition from occurring. This is especially true with a Class A fire. Hot embers may smolder at the bottom of the fire and reignite.

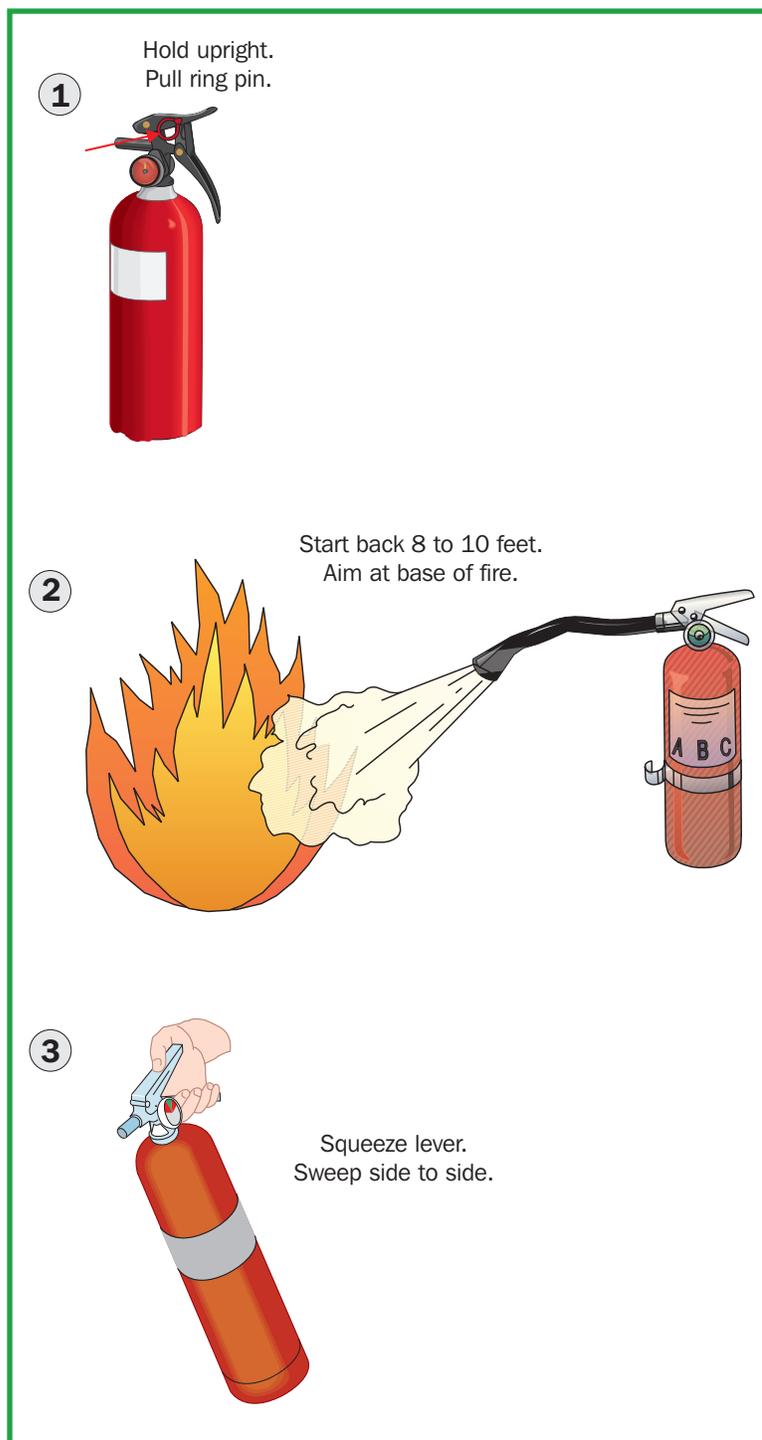


FIGURE 2. Correct use of a fire extinguisher.

A good way to remember how to use a fire extinguisher is to think of the letters that spell *PASS*:

P = Pull the pin.

A = Aim the extinguisher at the base of the fire.

S = Squeeze the trigger while holding the extinguisher upright.

S = Sweep from side-to-side to cover the fire area with extinguisher material.

A fire extinguisher usually has a gauge that indicates the charge status of the extinguisher. Check the charge status every month, and replace or recharge any extinguisher that is not fully charged. Any time an extinguisher is used, it should be recharged, even if only a portion of its contents has been discharged. A used extinguisher may have a trigger valve that leaks, causing the extinguisher to be useless when a fire occurs.

Most hand-held fire extinguishers are not designed to aim at people or livestock. Carbon dioxide (CO₂) extinguishers can injure people because the CO₂ exits at an extremely low temperature. The dry chemical is a very fine powder that should not be ingested into the lungs.

If a fire cannot be controlled, contact the local fire department. Even if a fire has been controlled, it is good practice to have the local fire department check the area so the fire does not recur. In most areas, a call to 911 will alert the local fire department. Be prepared to provide the address of the fire site and directions to it.

Using a Fire Blanket

A **fire blanket** is a fireproof, heat-resistant blanket, often made of glass fibers, used to extinguish a clothing fire or other small fire. The blanket will smother the fire by removing the oxygen from the immediate fire area.

If a person's clothing catches fire, get the victim to lie down and roll up in a fire blanket. Do not let the person remain upright, as the smoke and fumes will rise, exiting the blanket near the victim's face. Breathing the smoke or fumes can cause injury.

A fire blanket is quick to apply, light, and easy to maintain. It is generally cheaper than a fire extinguisher and can be applied to a very specific area. If retrieved, a fire blanket is generally reusable. A wool blanket can be used as a substitute if a fire blanket is not available.

A fire blanket has disadvantages, however. It requires the user to get very close to the fire. The user's hands are at risk of becoming burned. When a fire blanket is used to extinguish a fire other than on a person, the user may get only one chance to smother the fire. Often a fire blanket cannot be retrieved after an attempt to extinguish the fire.

Summary:



Everyone in agricultural mechanics should know how to use a hand-held fire extinguisher. Knowing the different classes of fires—A, B, C, and D—will help assure that correct fire-fighting decisions are made. Once the proper extinguisher has been chosen, remembering PASS (Pull, Aim, Squeeze, Sweep) will help bring the proper steps to mind.

Fire blankets are effective in smothering certain fires. Because users must be very close to the fires, there is often risk of burning the hands.

Checking Your Knowledge:



1. Why is it important to know what class of fire extinguisher to use on a fire?
2. What are the two basic types of hand-held fire extinguishers?
3. Describe the steps required to extinguish a fire using a hand-held upright fire extinguisher.

Expanding Your Knowledge:



Invite a representative of the local fire department to address your class about fighting fires in an agricultural mechanics setting. Request that, if possible, the talk include a demonstration of the use of fire extinguishers and fire blankets.

Web Links:



How to Use a Fire Extinguisher

http://ehs.sc.edu/modules/Fire/08_howto.htm

Everything You Wanted to Know About Fire Safety (But Were Afraid to Ask)

<http://www.ou.edu/oupd/fireprim.htm#CLASS>