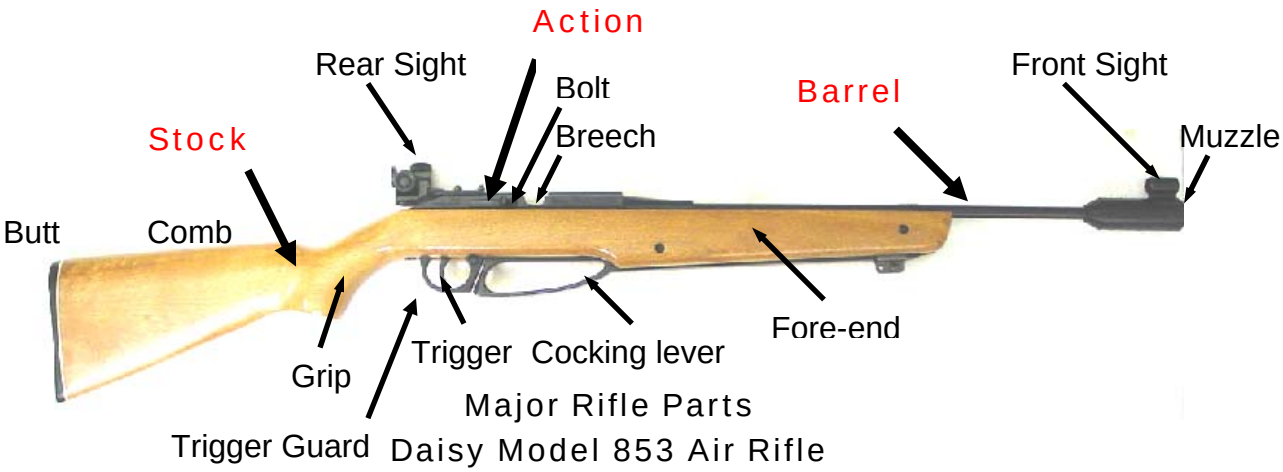
RIFLE NOMENCLATURE AND SAFE LOADING AND UNLOADING

All rifles consist of three major components: the **stock**, the **barrel** and the **action**.



The Stock

Besides being the most visually pleasing part of the gun, the stock has special design features that afford the shooter comfort, ease of handling and maximum shooting accuracy. Most stocks are made of wood, but many modern stocks are now made of synthetic materials or even aluminum on some high-end target rifles. The stock is divided further into four parts:

- The *butt* is the rear portion of the stock. It is generally contoured or slightly curved to fit comfortably against the shoulder.
- The *comb* is the top portion of the stock, upon which the shooter rests his or her cheek. For this reason, this part is often referred to as the *cheek piece*.
- The *grip*, sometimes called the pistol grip or small of the stock, is the area where the hand grasps the stock when squeezing the trigger.
- The *fore-end* is the part of the stock that extends underneath the barrel. This is the area where the non-trigger hand holds the rifle to support it. In some rifles, the fore-end is separate from the rest of the stock and often referred to as the forearm.

The Barrel

There is more to this simple-looking tube than meets the eye. The barrel has several different parts, and all have specific jobs that work together to cause the projectile to pass accurately to the target.

- The hollow inside of the barrel—the hole through which the pellet passes—is called the bore. The bore is measured in hundredths of an inch or in millimeters. This measurement is called the caliber of the rifle. The size of the bore for typical air guns is .177 inches or 4.5 millimeters.
- The opening through which the pellet leaves the barrel is called the muzzle. The rear of the barrel is called the breech.
- The chamber is located at the breech end of the barrel, and is the portion of the bore into which one pellet is placed for firing.
- For the entire length, the bore is lined with a series of spiral grooves. The flat raised ridges of metal between the grooves are called the lands. When a pellet passes through the barrel, the lands cut into the pellet and cause it to spin. This spinning makes the pellet more stable and accurate in its flight towards the target, much like a spinning football. Taken together, the lands and grooves inside the barrel are known as rifling, which is, of course, how the rifle got its name.

The Action

The action allows the shooter to load, shoot, and unload the rifle. Several different designs or types of actions have been developed to accomplish the action's purpose.

Loading is achieved by first opening the action. This step allows the shooter to place a pellet either directly into the chamber or onto a loading ramp or platform. With the pellet in place, the bolt or breechblock is then closed. In most rifles, opening the action cocks the firing pin, thus readying the rifle for firing.

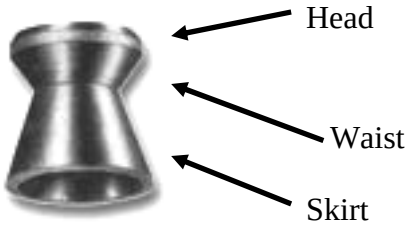
Firing takes place when the shooter squeezes the trigger. This step allows the firing pin to be driven forward, releasing the stored air or gas to propel the pellet down the barrel.

The safety is a mechanical device. When activated or placed in the "ON" position, it is designed to block the operation of the trigger or firing pin, thus preventing the rifle from firing. To fire, the safety is disengaged or placed in the "OFF" position. Remember, the safety is a mechanical device and, therefore, subject to malfunction. It must never be depended on as a substitute for following the safety rules.

Do safeties create a false sense of security for the user?

"I thought the safety was on," is a common excuse for those involved in shooting accidents. Nothing ever takes the place of **always** pointing the muzzle in a safe direction. At best, a safety is only extra insurance. Get the point—the shooter is the best safety.

Pellets



The projectile for most air guns target shooting is a pellet made from lead, or lead alloy, that weighs about 0.50 grams (about 8 grains or 0.018 ounces). The shape of the pellet best suited to target shooting is the Diabolo shape shown in the picture to the right. The pellets have a flat head, sometimes referred to as a wad-cutter shape, because it punches a nice round hole with clean edges, making the shot hole much easier to score. The skirt is the part that seals the pellet as it travels down the bore. Match pellets (for competition) are available in different head diameters (ranging from 4.48 mm to 4.51 mm), but practice pellets are usually 4.50 mm.

COCKING AND LOADING AIR RIFLES

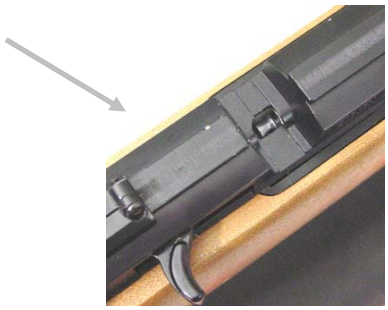
Daisy 853 Series Cocking and Loading

This series of air rifles (753, 853, and 953) is referred to as single-stroke pneumatic air rifles. This means that the pellet is propelled by air that is compressed with one stroke of the pumping handle. This air is held in a small chamber until the trigger is pulled. The speed of the pellet as it leaves the muzzle depends upon the amount of air compressed in the chamber. How the rifle is pumped may affect how much air is compressed. Failure to fully extend the pump handle or to pause for a full second may result in only a partial charge of air for the next shot.

Step 1. Open the bolt.

Step 2. With the rifle pointed in a safe direction, fully extend the pump handle, pause for one second, and then close the pump handle in one smooth motion.

Step 3. Place a .177 cal. (4.5 mm) pellet into the pellet channel with the solid end (head) toward the muzzle and the skirt end toward the rear.



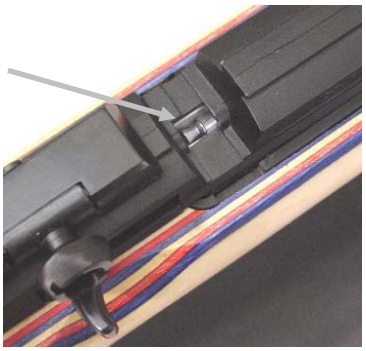
Step 4. Close the bolt by pushing the bolt handle forward, locking it into firing position.

Step 5. The rifle is now loaded, cocked, and ready to fire.

Daisy 888 Cocking and Loading

Step 1. Open the bolt.

Step 2. Place a .177 cal. (4.5 mm) pellet into the pellet channel with the solid end (head) toward the muzzle and the skirt end toward the rear.



Step 3. Close the bolt by pushing the bolt handle forward, locking it into firing position.

Step 4. The rifle is now loaded, cocked, and ready to fire.

Rifle Conditions for Daisy 853 Series Air Rifles

The Daisy 853 series single-stroke pneumatic air rifles, because of their design and operation method, can be in a variety of conditions or states of readiness to fire. One important thing to note is that in an uncharged (air not pressurized) rifle, the pump handle

will easily open about 5-8 cm before some force is required to open it further. This condition indicates to the user that the rifle has not been charged. A charged (air pressurized) rifle will force the pump handle to open much further as the stored air pressure works against the compression piston. This condition indicates to the user that the rifle has been pumped and is charged.

When not being handled on the range or in a training environment, the air rifle must be in a safe condition. (See condition 1, 2, or 3 below. Conditions 4 and 5 are not considered safe because the rifle is being handled or is ready to shoot.)

Air Rifle Conditions Code

Condition 1. Example of use: storage, transporting into and from range in the rifle case.

- Safety engaged.
- Bolt forward (not cocked).
- Chamber empty.
- Pump lever is closed.
- Safety rod is in the case, but not in the barrel.

Condition 2. Example of use: rifle in gun rack, or on the firing line when not being loaded or fired.

- Safety engaged.
- Bolt open and to the rear.
- Chamber empty.
- Pump lever is partially open (5-8 cm).
- Safety rod is in the barrel (visible in the feed track).

Condition 3. Example of use: on the firing line when not being loaded or fired.

- Safety engaged.
- Bolt open and to the rear.
- Chamber empty.
- Pump lever is partially open (5-8 cm).

Condition 4. Example of use: on the firing line checking natural point of aim or dry

firing.

- Safety disengaged.
- Bolt forward and locked.
- Chamber empty.
- Pump lever is closed.

Condition 5. Example of use: on the firing line checking natural point of aim or shooting.

- Safety disengaged.
- Bolt forward and locked.
- Pellet in chamber.
- Pump lever is closed.

Crosman Challenger 2000 Cocking and Loading

The Crosman Challenger 2000 uses 12 gram CO_2 capsules to provide the energy to propel the pellet. These small containers of CO_2 are good for about 50-60 shots.

12 gram CO_2 capsule

Step 1. Open the bolt.

Step 2. Place a .177 cal. (4.5 mm) pellet into the pellet channel with the solid end (head) toward the muzzle and the skirt end toward the rear.

Step 3. Close the bolt by pushing the cocking handle forward, locking it into firing position.

Step 4. The rifle is now loaded, cocked, and ready to fire.

Avanti XS40 Valiant Cocking and Loading

The XS40 Valiant is not equipped with a safety. Keep your fingers out of the trigger guard during the cocking and loading procedure.

Before shooting, ensure the air cylinder (reservoir) is filled by checking the air pressure meter. According to the users manual, it is safe to test-fire this rifle without a pellet loaded. They do warn strongly against cocking and firing with an empty or removed air cylinder. If it needs filling, refill with SCUBA air or high-pressure hand pump.

Step 1. Holding the gun with the left hand and pointed in a safe direction, grasp the bolt handle firmly, rotate it counterclockwise and pull toward the rear of the gun. The bolt will remain open when it reaches the full rearward position.

Step 2. Insert a .177 cal. (4.5 mm) pellet into the pellet channel with the solid end (head) toward the muzzle and the skirt end toward the rear.

Step 3. Push the bolt handle forward and lock into firing position by rotating clockwise.

Step 4. The rifle is now loaded, cocked, and ready to fire.

Feinwerkbau P70 Series Precision Air Rifle Cocking and Loading

This rifle is in the precision air rifle class. All previously shown air rifles were sporter class air rifles. The Feinwerkbau air rifles are not equipped with a safety. Keep your fingers out of the trigger guard during the cocking and loading procedure.

Step 1. Push the charging lever forward toward the muzzle until it stops (about 4 cm or 1.5 inches). This step opens the breechblock, cocks the gun, and pressurizes the system from the cylinder attached to the gun.

Step 2. Place the pellet directly into the exposed breech of the barrel.

Step 3. Close the breechblock.

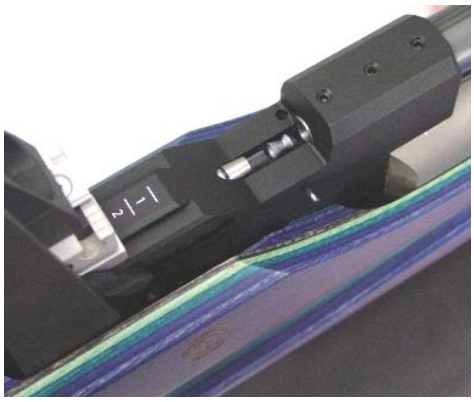
Step 4. The rifle is now loaded, cocked, and ready to fire.

Walther Precision Air Rifle Cocking and Loading

This rifle is in the precision air rifle class. The Walther air rifles are not equipped with a safety. Keep your fingers out of the trigger guard during the cocking and loading procedure.

Step 1. Lift the charging handle upward and to the rear until it stops. This step opens the sliding bolt, cocks the gun, and pressurizes the system from the cylinder attached to the gun

Step 2. Place the pellet directly into the loading channel.



Step 3. Close the bolt by pressing the cocking lever forward and down until it locks.

Step 4. The rifle is now loaded, cocked and ready to fire.

The Walther has a dry-firing switch. The shooter can change from live-fire (F) to dry-fire (T from the German word *Trocken* meaning dry) by pressing the rocker switch.

Pellet Discharge Container (PDC)

To make a Pellet Discharge Container (PDC), use a metal can or other small container filled with shredded paper, rags, or other soft material. Cover the open end of the container with a lid or cardboard and duct tape. Tape a handle about 1 meter long to the side of the container. The long handle allows the range officer to hold the PDC in front of the muzzle of the air rifle while standing in a safe position beside the shooter.
If a shooter has a loaded rifle after the range time has expired, or if a shooter has a question as to whether his or her rifle is properly loaded, they can discharge the rifle into the PDC.