

Compound Bow: - The basics

The compound bow was invented in the 1960s as a more mechanically efficient piece of archery equipment. The design uses a levering system of pulleys and cables, making it faster and decidedly more accurate than other types of bow.

The Riser

This is the main body of the bow and is similar to the riser of a recurve bow in so much that the riser is the part of the bow that does not move during the shot and also provides the mounting points for accessories such as sights, stabilizers and a quiver.

You'll normally find modern compound risers made out of aluminium although high-end and low-end bows can use different materials to lower weight or cost respectively.

The riser is where the limbs attach and it's also where you hold the bow. The riser has to provide the stability for all the other components of the bow to flex against.

Riser (Highlighted in Red)

Everything Else on the next page



Other Parts of the bow



1, 2 – Axles

The axle is the hinge or load bearing point for the cams. The distance between the top and bottom axle of a compound bow is called the 'Axle-To-Axle' distance and is usually outlined in bow specifications.

3, 4 – Cams

The cams are probably the most identifiable parts that differentiates a compound bow from any other bow. These are located at the ends of the limbs and look like little egg shaped wheels.

Cams systems can have different types such as single, dual (which the example bow has) or hybrid. Their purpose is to transfer and store energy away from the bow string. This is called let-off, and this feature of a compound that means when the string is fully drawn you get a more powerful shot than the actual draw weight you are holding back. For example, on an 70 lbs bow with 70% let off, the archer needs only hold back about 21 lbs of draw weight and the bow will provide 70 lbs of force to the arrow upon release.

Cams (Highlighted Red)



5, 6 – Limbs

At the top and bottom of the bow are the limbs. As with a recurve bow, the limbs are the parts which flex, store the energy and provide power for the shot.

Limbs can be either single piece or split (2 piece). Split limbs offer durability, strength over single piece limbs however can introduce issues such as riser torque if they are inexactly matched.

Normally limbs these are constructed out of a composite laminated material which can consist of wood, fiberglass and carbon. Solid glass limbs are also available.

Limbs (Highlighted Red)



7, 8 – Limb Bolts

Limbs are usually attached to the riser by means of sliding into a limb pocket and being secured by a bolt.

9 – Sight

This bow is fitted with a sight which is an adjustable aperture with aiming pins through which an archer can aim.

10 – Quiver



Quiver (Highlighted Red)

Bows used for hunting or in the UK for field archery may be fitted with a bow mounted quiver. Not all compounds are fitted with these by the manufacturer so don't always expect to see one. Most risers will come with attachment points for a quiver even if one isn't supplied.

11 – Cable Slide

The cable slide is a movable retaining slide that keeps the cables out of the way of the arrow whilst a shot is taken.

12 – Cable Guard

The cable guard is the pole attached to the riser that the cable slide attaches to and slides along.

13 – Arrow Rest

The rest that holds the arrow in place. There are a few different types of rest. They can 'drop away' after shooting and there's one called a 'whisker biscuit' that holds the arrow in place with whiskers.

14 – Arrow Shelf

The shelf is located just above the grip and on a traditional bow can be used to rest the arrow on during a shot (much like an arrow rest). Most compound shooters use a rest.

15 – Grip

This is where you hold the bow. Grips are normally ergonomically fashioned on modern bows and may be slightly cushioned or coated with tactile materials to assist in keeping the bow firmly in your hand when shooting or carrying it.

Much like other accessories on a bow manufacturer normally allow you to switch the grip insert for something aftermarket that suits you.

Grip (Highlighted Red)

16 – Stabiliser

Stabilisers are optional and act to give the stabilising balance when the bow is fully drawn. Compound bow stabilisers are usually shorter than Olympic style recurve long rods and generally would only have one short side rod which would come towards the archer at a steep angle. They can help to resist twist or torque in the riser when a shot is fired and add weight below the grip of the bow.

The additional weight of a stabiliser also helps to alter the centre of balance of the bow at full draw, settling it quickly during the aiming process.

17 – Sling

You don't grip a bow, and if you hold and fire a bow correctly (without a sling) it will fall forwards and out of your hands. A sling is either a finger sling or one which wraps around the back of your hand and stops this happening.



18 – Cables

These cables run from cam to cam and are part of the workings of the compound bow. They do not touch the arrow.

19 – Speed Nock

Little weights added to the bow string called 'speed nocks' that help to decrease the oscillations in a string as it is pulled by the cam during arrow release. This makes the string return to the groove in the cam more quickly. Less energy is lost in string oscillation and friction and this increases the speed rating of the bow.

20 – Bowstring

The string that you pull and that shoots the arrow forward.

21 – Vibration Arrester

The vibration arrester stops the bow string from vibrating once fired. Imagine a bow like a harp with one string, if you released the string it would 'twang'. The vibration arrester is made of rubber and stops that vibration making the shot quieter.

22 – D-Loop

The arrow nock will rest on the face of the D. The bend of the D will be hooked onto a mechanical release aid. There are different types of release, thumb, wrist, trigger and even back. A release aid allows for a clean release of the string without any sticky fingers to affect the path of the string.

23 – Peep Sight

This peep sight is a 'tube' sight as it has a little tube attached that, when at full draw will allow the archer to sight down it. Bow sights are similar to sights on rifles, there are 2 things you need to align. The main sight on the bow has pins and you sight those pins to the target through the peep.