fit for a king


You could just about answer “pick” any of these questions for all the good it will do you. That is, compared to missing targets because your shotgun doesn’t fit you! Yet, other than the occasional question about Length-of-Pull (LOP), we in the internet 3-Gun community don’t concern ourselves with one of the most important aspects of shotgunning-at-speed ...

Gun Fit!

UNIQUE AS YOUR TATTOO

I will offer no absolutes as gun fit is uniquely personal, but let’s work our way through the list of terminology on page 56 and see what each means to you.

The needs of the sporting clay and trap shooter are different than that of the 3-gunner. Most off-the-shelf shotguns have a Length of Pull (LOP) around 14 1/2” to 14 3/4,” and that may be fine for the 6-foot tall clay enthusiast, but we are talkin’ 3-gun here! We require a shotgun that is quick to shoulder, maneuverable and provides a hang-up-free dismount. And in all those cases, shorter is better! I, at all of 6’3,” prefer my steel slappin’, clay bustin’ power tool’s LOP closer to 13 3/4.” A good “rule of thumb” here is short as possible, leaving about an inch to an inch and a half between your thumb and nose.
PROPER FIT WILL HELP YOU GET THE MOST PERFORMANCE FROM YOUR SHOTGUN
**The Perfect Pitch**

Pitch is rarely discussed but is important. In simple terms proper pitch will have both the Heel (top) and Toe (bottom) of the butt (recoil pad) fully planted into your shoulder pocket. Look over the photos and recognize the angle of the recoil pad.

*Here is a theoretical example.*

We want to set up our shotgun to be fired against a brick wall. We want the least amount of muzzle movement under recoil while shooting. To do that we would set the pitch to zero so the recoil pad would make full contact with the wall (pad @ 90° = perpendicular to the rib = zero pitch).

This results in the barrel pointing downrange and parallel to the ground. Now if you put that zero pitch recoil pad against the curve of your shoulder, the gun will be pointing way high! If you lower the barrel back to parallel with the ground you would only have the toe of the recoil pad touching your shoulder. Firing a quick pair in this configuration would not only have you in pain but also have the muzzle heading for the sky!

Why? Because the recoil impulse will close the gap between the heel of the recoil pad and your shoulder as it pivot on the toe of the recoil pad. Or the toe will slip down your shoulder, pivoting the muzzle upward between your hands. The reverse happens when more heel is in contact with the shoulder. Is the light coming on? Too little pitch and the muzzle moves goes high, too much pitch and the muzzle moves down. You want a flat shooting shotgun? Check your pitch!

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**CAST**

The distance the centerline of the stock is offset to one side or another of the centerline of the barrel.

**CHEEK WELD**

The continued contact between your cheek and the comb.

**DROP**

The distance from the top of the barrel, or rib, to the top edge of the stock at the comb and the heel. If the stock is fitted with a raised comb, measurements will be included for distances from the top of the barrel, or rib, to the top of the comb at the front and rear.

**HEEL**

Top of the gun butt [recoil pad]

**LENGTH OF PULL**

The distance between the trigger and the center of the gun butt.

**TOE**

Bottom of the gun butt [recoil pad]

**PITCH**

The angle of the butt in relation to the top of the barrel.
More Than Just A Drop

We 3-gunners make changes to stock drop in order to have our eye in line with our sights (single bead, real sights, what have you) to give us the point of impact we desire. As you probably know, or have heard, your eye (in absence of a rear sight) is your rear sight. Reducing the amount of drop raises the Comb of the stock and your eye along with it, while increasing stock drop lowers it. Consider drop as your elevation adjustment mechanism. We have discussed the effects of pitch, but how does drop alter pitch? Many 3-gun suitable shotguns come with shims and or other drop adjustment provisions. These adjustments create a pivot point at the receiver/stock junction. As you pivot the stock the angle of the butt (pitch) changes. An increase in drop lowers the stock and increases the pitch, as does the position of the recoil pad in relation to your shoulder up and down.

Changes in Drop will change:

a) The Pitch

"Q) Where the recoil pad is located on your shoulder

<table>
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<tr>
<th>50MM DROP</th>
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<tbody>
<tr>
<td>55MM DROP</td>
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<tr>
<td>60MM DROP</td>
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<tr>
<td>65MM DROP</td>
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MADE IN AMERICA

EVERY SHOT COUNTS®

FederalPremium.com
No Comb-Over Here

The comb on many 3-gun shotguns is a fixed section on the stock where we are supposed to maintain cheek weld. We know that any change made to stock drop will also shift the height of the comb. Additionally, any modification to the LOP will alter the effective comb height. Looking at the photos you can pick out several images where the comb slopes downward from receiver to butt. Where you place your cheek, and in turn your eye, changes the sight picture. A change to LOP, longer or shorter, puts your cheek in a different spot and again changes your sight picture. Many shooters, out of need, shorten their stocks without paying attention to the attendant change in eye placement.

A couple of the current popular 3-gun shotguns have a feature borrowed from the clays game, height adjustable combs. Nearly all Benellis and the new Remington Versa Max have interchangeable comb inserts. If your favorite power tool is not so equipped, not to worry, there are work-arounds. We discussed the comb as part of drop, and equated it to an elevation adjustment for the rear sight.

As a stand alone piece, interchangeable comb inserts work to alter elevation point of aim/point of impact (PONPOI) independently from drop. Another feature is that they can be assembled in combination with drop, to create a parallel comb. Again checking the photos you will see a raised Comb where the top surface is "parallel" with the barrel’s rib. The advantage to this is, no matter where you make your cheek weld along the Comb, your eye is in the same relative position to the sights! This can be handy when shooting from difficult firing positions when getting a consistent cheek weld is all but impossible. Add to that, a parallel comb tends to "slide along," rather than "into" your cheek under recoil (provided your pitch is set correctly).

Again, if your pellet-spreader didn't come with this feature a little snooping around in the Brownells catalog or by clicking the link here you should get you want you need.

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<tr>
<th>Deviation plate (plastic)</th>
<th>Stock locking plate (steel)</th>
<th>Drop shim (plastic)</th>
<th>Drop value at heel (mm)</th>
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<td>DX</td>
<td>Z DX</td>
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<td>SX</td>
<td>Z SX</td>
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MATCHING INSTRUCTIONS:
The drop change kits are identified by letter. To ensure a correct drop always match locking plates and shims that have the same letters (e.g. C - COX- OX or C - CSX- SX).

OX= Right Hand SX = Left Hand
Cast Of Characters

Cast-on, cast-off. Nope, not a new fishing device, but rather an often over-looked but important aspect of shotgun fitting that can really improve accuracy and speed.

Please refer to the photo showing cast. The image shows the centerline of the barrel running though the stock. Any offset in the stock from that centerline is called cast. In a right-handed world cast-off has the stock biased away the shooters cheek (as seen in the photo). Cast-on would have the stock pushing the right hander's cheek away from the center line and off of a good sight picture.

There are no absolutes in cast settings, but generally some cast-off is needed by right-eyed shooters in order to get their cheek and eye squarely behind the sights. That is why you'll find many factory shotguns set just so. While a thinly faced rightly might want a little east-on to get that good sight picture, a round faced fellow would want more cast-off to receive the same benefits. Some of the popular 3-gun pellet slingers come with adjustments for cast. However you can effectively change cast without moving the stock on shotguns not so equipped.

By simply adding or removing material from the "cheek-side" of the comb you can achieve similar results. As we discussed earlier drop lets you set elevation. Now consider cast as your windage adjustment mechanism.

The Power Tool Down and Dirty

If you have only one choke, make it Light Modified.

A 3 dram, 1-1/8 ounce load of 7.5's will get you through most any match!

21" to 26" barrels are preferred but a 28" will do.

A magazine tube should be long enough to hold 9+1 minimum, and don't fret about it sticking past the muzzle!

A Fitting Tribute

As I have described, each of these terms has an associated adjustment capability. Each adjustment effects the way the gun reacts under recoil or alters how you see your sights, where the sights are in relation to your eye and in large measure where your shotgun's payload impacts.

It is important to adjust each of these elements in a "try and see" approach in order to receive the most benefit.

My "fitting" begins with LOP, and then I shoot slugs for zero and pattern with shot. Using that info I know approximately where my cheek needs to be to have my POA and POI match. I will then change stock settings of drop and cast (short of permanent alterations) and then test for recoil control and comfort. If changes in pitch are needed to improve fast follow up shots I will balance those with drop and comb height. Then I'll head back to the range to re-check zeros and then return to my shop for fine tuning (including permanent alterations). I love shooting my shotguns and in every instance I find a good fitting shotgun not only adds to my pleasure, but points to my game.

See you on the range!