**Bit And Bridle Pressure Points**

In order to work with a bit designer on a bit custom made for your horse, you need to understand thoroughly how a bit works. Both the bit and the bridle work by influencing one or more of nine pressure points:

**EXTERNAL PRESSURE POINTS**
1. poll,
2. nose,
3. chin groove and jaw,
4. lips,
5. cheeks,

**INTERNAL PRESSURE POINTS**
6. tongue,
7. palate,
8. bars,
9. molars.

These nine pressure points give you ample ways to communicate with your horse. The key is combining the pressure on the points with training to achieve the response you want.

**Poll pressure** is most commonly due to the purchase (the upper branch of the shank) of a curb moving forward when pressure is applied to the reins. Generally, the longer the purchase, the more poll pressure is felt. Poll pressure also occurs with gag and elevator bits.

**The nose** is a pressure point for hackamores, and we’ll discuss these in future articles.

Some curb bits place the curb strap in the **chin groove**, while others tighten higher on the horse’s **jaw**. Changing bits might increase your horse’s responsiveness, especially if the horse has become less sensitive to the placement of the curb strap on the bit you currently use.

Snaffles, and curbs to a lesser extent, act on the **lips** at the corners of the mouth. The lips are sensitive enough that any stretching is felt along their length. Different bits apply pressure up (toward the ears), back and down (toward the chin groove). Any pinching will cause pain and resistance, and past injuries might have left the horse with less-sensitive scar tissue. With curb bits, a short purchase coupled with a single place of attachment for headstall and curb strap puts the curb strap near the bit mouthpiece and might pinch the lips between the curb strap and bit. Evaluate any bit built like this for pinching.

Any bit that has a joint immediately at the corner of the mouth might pinch there, particularly as it wears and the joint becomes larger. It’s a good idea to check your horse’s lips for bruising, pinching or chafing if you notice any difference in his performance. If he’s thin skinned, a new bit might cause temporary discomfort until his skin acclimates.

**Cheek** pressure is useful in getting green horses to understand turning. Full-cheek snaffles, for example, press against the outside cheek and influence the horse to turn toward your active rein. Many other bits press into the cheeks. In most cases, this helps signal the horse to turn or bend. In some cases, the cheek pressure is confusing—the purchase can be pushed into the cheek by pressure outward on the rein on the same side.

Horses’ **tongues** vary tremendously in size and shape and in relation to the rest of their mouth. A horse with a thick tongue, particularly coupled with a small mouth and/or lower palate, will have little space available between his tongue and palate. He will be more comfortable with a relatively thinner mouthpiece. You’ll notice that he has trouble
closing his mouth around a thick mouthpiece. You can feel the height of his palate by carefully sliding your thumb or finger between his lips and bars. A thick tongue will also cause most bits to distribute more tongue pressure and less bar pressure. Horses with thinner or flatter tongues will accommodate thicker (usually more mild) mouthpieces.

Horses’ tongues vary in width, too. You can determine this by looking to see if the tongue pushes out over the bars of the mouth when his teeth are closed. If it does, bar pressure will be minimized in favor of tongue pressure. Tongue sensitivity varies from horse to horse. It is also influenced by previous injuries that might have resulted in scar tissue.

The port can allow tongue space. The wider and higher the port, the more tongue room. Darnall states that a 2 1/3" wide port will accommodate a horse’s tongue.

While many ports relieve the tongue, and many horses are more comfortable with this relief, it is possible that most horses can’t fit their tongues entirely up into even a high, wide port. More square or more gentle port-to-mouthpiece shapes will press on the tongue in different ways. The more tongue relief a port gives, the more pressure will be applied to the bars and lips instead.

The palate may be more vaulted or more flat. The Mylers list an average palate as 2" high, and Darnall says that there’s enough soft tissue (lips and tongue) to compress so that if a bit’s port is not at least 2" high it won’t put pressure on the palate. A wide-mouthed snaffle with a center joint, or a high-port curb, can come into contact with the palate. The thin skin over delicate bones makes this a sensitive area. The philosophy between the very high mouthpieces in spade and half-breed bits is that they hang vertically in the mouth of the highly schooled horse who holds his head vertically, thus achieving an equilibrium where the sensitive palate is not abused.

The bars (interdental spaces) average about 2 3/4” long, according to Darnall. Different horses have different bar configurations. Some are more V-shaped and others are more U-shaped. The skin covering the bars varies from horse to horse, and some horses are sensitive here (perhaps from thinner skin) and others are less so (perhaps from thicker skin, perhaps from old scar tissue). Myler suggests running your fingers over your horse’s bars to get a feel for their shape and sensitivity. You may want to do this with a number of horses to determine range. Check, also, for imbedded grass burrs that may cause pain.

The bars are conveniently situated to receive pressure. In some cases, the bit will come into contact directly with the bars, and in other cases the bit compresses the lips adjacent to the bar area instead of contacting the thin-skinned bars directly. Bit pressure can come down on the bars from above like from a solid-mouthed curb or squeezing in from the sides like a jointed-mouth snaffle. There is probably some pressure upward on the upper bars in some cases, but this is not our goal.

The front surfaces of the molars aren’t particularly sensitive, and the corners of the lips come between the bit and the teeth in most cases. Although rare, the bit can bump the teeth directly. If it does, you will feel your horse react. The most important thing to watch about the molars is the shape of their edges. If the front surfaces wear to a sharp point or hook, the nearby lips and cheeks can get uncomfortable when compressed against them. The outside edges of the upper molars (and the inside edges of the lower molars) become sharp, and sharp points can cause pain when the bit presses the cheek (or tongue) against them. Sharp edges should be floated (filed smooth) by an equine dentist or your own equine veterinarian.

Be sure to look and feel for tiny teeth on the bars immediately in front of the upper molars. These wolf teeth have shallow roots, may protrude at an angle, may not emerge but instead appear as a bump under the skin, can become loose, and can be sensitive to bit pressure. In most cases it’s best to have them pulled.

This horse has an average tongue and palate, which will accommodate a thicker mouthpiece.