

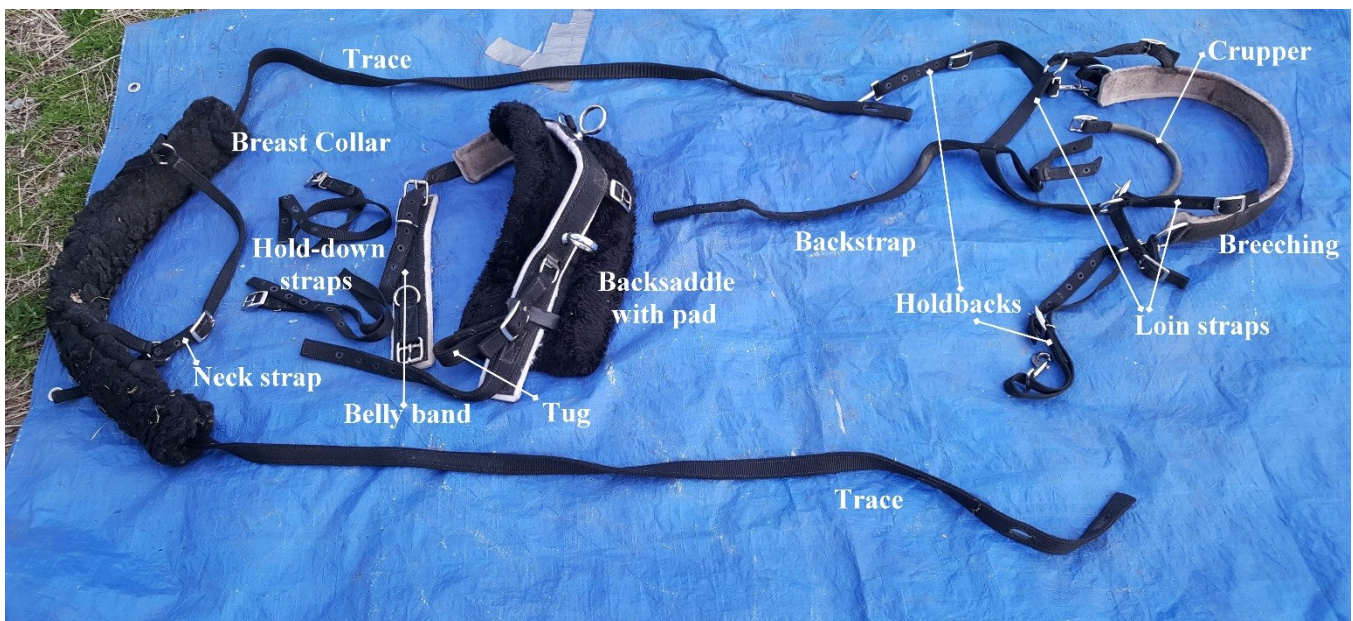
# Fitting the Harness for Ground Driving

## Desensitizing

Before you begin to harness your llama, consider whether he has ever worn anything strapped onto his body before. In “Fitting the Harness – Training Alternatives” there is a discussion of the use of a surcingle or a pack saddle to introduce your llama to the girth and various straps similarly found on a harness. If you are beginning with just fitting the harness, it is worthwhile to make the initial introduction low key and easy. After your llama is used to the various parts of the harness and it is well-fitted to him, then you will not need to disassemble it when taking it off and putting it on.

Llamas are generally easy to introduce to tack for their body. However, if your animal has never worn a pack or anything with a girth, he may resist or kick. It is wise to start with a heavy towel or a blanket placed over his back. Pull the cloth off over his tail and let it drop behind the hind legs. If he is a kicker, repeat this as often as needed to discourage the action. He will eventually tire of kicking that doesn't result in the end of the stimulation. After he has stopped kicking when you pull the blanket off, give him a reward and let him go. Repeat this lesson the next day. When you get little response to the blanket, then he is ready for the harness introduction.

Keep in mind that different brands of harness may have slightly different means of connecting, supporting and adjusting the parts, but most use buckles and snaps, and sometimes quick clips. If the descriptions below are not exactly like your harness, look for the similarities to make the needed adjustments. A deconstructed harness is shown in Figure 1.



**Figure 1. A harness divided into the parts for training. This harness has pads around the breastcollar and backsaddle; these are necessary for the comfort of the llama and come in a variety of colors.**

The next step is introducing the *backsaddle* and *belly band*, the unit that lends the most stability to the harness as a whole. Unbuckle the *backstrap* from the backsaddle and the *hold-down straps* from the belly band (don't lose these). It's not necessary to remove the *tugs*. As with a pack, you want to have the left side of the belly band unbuckled from the backsaddle. Place the backsaddle on the llama just behind the withers, with the belly band hanging down on the llama's right side. Slide it backwards into a position where the belly band will not interfere with the legs but is still forward of the mass of the abdomen. Most backsaddles have an internal metal strip that stiffens it in order to allow the weight to press on the muscles along the back and avoid direct pressure on the spine. You will want to check that it fits your animal properly; if not remove it and bend the metal until it properly distributes the pressure. The backsaddle must be used with a pad to prevent chafing and to cushion the stiff structure.

Many llamas will kick defensively when owners work around their belly area. You can use a wire bent into a hook (such as a stretched wire hanger) to snag the loose belly band and pull it to the left side. Until you know how your animal will react and have appropriately desensitized him, do not put yourself in danger of being kicked. Loosely buckle the belly band to the backsaddle and compare the two sides. Most of these units have a buckle on each side, and you should attempt to balance the number of holes to within two, as harnesses work best when symmetrically adjusted. Tighten so that the unit is snug but not tight.

At this point you can do a short ground driving lesson with the driving lines run through the *terrets* (see Figure 2). If your llama seems jumpy, use a second handler with a lead rope. At the end, remove the backsaddle and belly band by unbuckling the left buckle, folding the dangling right side over the backsaddle, and sliding the backsaddle a few inches backwards before lifting it off the llama. Make it a habit to then run your hands over the area where the belly band lay to ensure that there are no sores developing. It is also wise to do this before fastening the belly band to check for burrs or other vegetation that might cause irritation under the strap.



**Figure 2 (left).** Nike models how to wear the backsaddle-belly band unit for ground driving. The view is from slightly above to show the two terrets and the buckle for the backstrap at the center of the back saddle.

## Fitting the Back Portion of the Harness

Once your llama accepts the backsaddle and belly band, the next step is to introduce the back half of the harness. Unbuckle and remove the *crupper*. Reattach the backstrap. Lay the harness over the llama, with the backsaddle in the proper position. The *breaching* should fall behind the llama and lightly touch the back of the thighs well below the anus and vulva (on females) or testicles (on intact males). Consider that for braking the llama will lean into the breaching, and so it should fall against a muscular part of the thigh. Adjust the buckle that fastens the backstrap to the backsaddle for the tightness of the breaching. Adjust the buckles of the *loin* (or *hip*) *straps* for the vertical placement of the breaching.

Forward of the loin straps and continuing the line of the breaching are the *holdbacks*. Normally these would attach to the *shafts* of the cart; but for ground driving, instead connect them to the tugs. This allows the llama to become accustomed to the feel of straps along its side. If the holdbacks do not quite reach the tugs without overtightening the breaching, make a small loop of strong cord to extend between the two pieces. See Figure 3. Once you have the adjustments made, take a ground driving lesson.



**Figure 3. A harness set up with the breaching but not the crupper. The backstrap is buckled to the backsaddle. The hold-back straps are clipped to the tugs with a loop of parachute cord. On this harness the crupper attaches with two buckles to the Y-shaped strap, shown pulled off to the side next to the loin strap; see also Figure 1.**

The final piece of this part of the harness is the crupper. This is designed to prevent the backsaddle from sliding forward and the backstrap from slipping sideways. Llamas tend to dislike cruppers; however, it's best to train your animal to accept it. With the harness fitted in position, determine where on the backstrap it is appropriate to set the buckle. The crupper should fit so that it does not apply any pressure to the tail during normal driving but not so low that it interferes with the anal area; see Figure 4 for the proper crupper position. Remove the harness and buckle on the crupper. To put the harness on with the crupper attached, place the backsaddle somewhat back of its ideal position, lift the tail through the crupper (some llamas will need tail desensitization work prior to this step), then lift the backsaddle back into position and refasten the buckles. Never slide the backsaddle into position against the grain of the hair, as you want to minimize any irritation that can cause chafing.



**Figure 4. Proper position of the crupper. In order to achieve this, the back strap was shortened at the buckle from its position in Figure 3. The breeching sits lightly across the muscular part of the thighs, and there is enough adjustment available on the loin strap to raise or lower it by a couple of inches if needed.**

Now the harness is properly fitted for ground driving training, though you may want to make minor adjustments as it settles on your llama. Work with your animal about 20 minutes per drive, extending the time as both of you become more relaxed with the process, and you begin to develop strength to hold your arms in front of you for more extended periods of time. Be sure to call out commands just before giving cues with the driving lines or the whip. Notify your llama to expect a command by calling his name, then say the command, cue with the aids, and praise him after he has executed it. When you cue a command with the driving lines, use a light touch and release to a slightly relaxed rein after he turns or stops. The one command that you must insist be obeyed is stopping. Practice this especially on the back-to-the-barn leg of the training and always be effusive with your praise when he obeys.

At this point, if you haven't already done so, start training your llama off the farm. The lure of the herd is difficult to overcome, and your llama needs to concentrate on the training and also be exposed to new places and situations. It is wise when starting off the farm, and especially near a road, to have an assistant holding a lead rope as a safety measure. A recommended safety item is a lightweight orange vest so that you are visible to cars, as modeled in Figure 5.



**Figure 5. Ground driving Nike in 2009 in the parking lot at the University of Tennessee's Veterinary College. This lot (now built over) had easy access to a greenway suitable for driving llamas. The breastcollar is attached by tying the traces over the backsaddle, as Nike was about to be connected to the cart for the first time. Note the author's orange vest for visibility. Three years after this photo was taken, Nike had to be retired from driving and packing due to COPD, an obstructive lung condition.**

Remember that when ground driving you also want to train your llama to move faster than a walk. This means that occasionally you must jog or run. When you train for faster gaits, be sure your llama will reliably stop on command first. Gait training--like stopping, starting, and turning—should begin on-lead and verbal commands taught before moving it to ground driving.

Training on a road is where what you need to practice may conflict with traffic law. Llama carts are vehicles and are required to drive on the right side of the road with traffic (be sure to have a DOT reflective triangle mounted on the back of your cart). However, when ground driving you are technically a pedestrian, and you should walk facing traffic. The problem with this is that the llama will learn to walk on the left side of the road, which will become an issue after the cart is introduced (my first driving llama would have done better on British roads). So, train on a very lightly traveled road ground driving with traffic in the right lane. If a car approaches from behind, stop your llama then move him off the road with the lead rope. Keeping an approximately 2-ft length of light rope dangling from the driving halter is helpful in such situations.

## Fitting the Breastcollar and Training to Pull

The final portion of the harness consists of the *breastcollar*, *traces*, and *neck strap*, plus often a *neck link strap* to hook the neck strap to the backsaddle. The breastcollar needs to be fitted so that it hangs at mid-level on the front of the llama, above the legs so that it does not interfere with movement yet not so high that it presses against the neck. Adjust its height using the buckle(s) on the neck strap. If the neck strap does not have a quick clip, then you will put it on the llama over its head. Some animals may need additional desensitization to accept this.

Now you have the traces to deal with. These will tighten the breastcollar against the llama when pulling the cart. In order to simulate this, you can attach a small log or length of landscape timber to the traces as a horizontal drag (see Figure 6). This has an added benefit of making noise as a beginning to desensitizing for following cart noise. Because this is a new situation and there is risk of the llama tangling in the traces, always use a helper holding a lead rope for safety.



**Figure 6. An example of a drag attached to the traces with ropes. A test drive of this rig showed that the timber should be attached closer to the llama and the ropes on each side should be equal lengths. An assistant's help is needed for safety and to prevent the llama from becoming tangled in the drag rig.**

## Tack-box Items

Your hold-down straps should be stored in your driving tack box until needed for the cart. As noted previously, you will want a supply of strong cord, an orange vest, and a short lead that can hang during ground driving. You will find yourself adding straps, clips, tools, extra nuts and bolts, tire-repair items, touch-up paint, and more as you progress with your training and driving, so it's important to have a decent-sized bin to store it all in.

Most driving lines come as two separate pieces. It is desirable to attach the ends to prevent accidental loss of one rein and consequently, control. Knotting tends to shorten the driving lines too much; I prefer to use a piece of connecting hardware called a Conway buckle with holes bored through the nylon lines using a soldering iron (see Figure 7). How to use this and other options can be seen at this website

<https://twohorsetack.wordpress.com/tag/conway-buckles/> .



**Figure 7. Left: perforated ends of driving lines and a Conway buckle, exploded view. Right: driving lines connected with a Conway buckle.**

## Summary and Advice

Ground driving with the harness is the final step before attaching the cart. You should introduce your harness in sections. This should not require many sessions before the llama is wearing the complete harness (excluding the breastcollar and traces). Your goal is to ensure that your llama accepts all parts of the harness and that he reliably responds to combined verbal and cued (driving lines or whip) commands. Once he is at this point, you can add the breastcollar and traces for work with a drag to introduce the concept and noise of pulling an item.

As you progress, remember to always keep the safety of yourself and your llama at the top of your mind. Wear an orange vest when working in public places, especially near cars. Each time something new is introduced—whether it be a harness part, the drag, or a new location—ask a helper to hold a lead rope when you first start out until you are sure that the llama has accepted it. Limit the time per training session so that the animal does not become bored or tired. And always end your sessions on a high note with a win for the llama—including praise and a treat—even if you have to ask the llama for a simple maneuver to make it happen.