

PRO-TEK ELECTRIC BRAID INSTALLATION & TIPS

BEFORE YOU START

Careful planning of your fence design and advanced preparation is the key to proper installation and long term trouble free electric fence operation. The first step in the installation is laying out the site to be fenced. Below are a list of ground rules that may help you with you fence installation.

NUMBER OF STRANDS: Determining the right number of strands to use and the height of your fence requires some evaluation. The type of horses and the amount of property is first. If you ride as a casual pastime and have trail type, mature horses, 3 strands of tape will be sufficient for pasture areas.

RULE OF THUMB: Less than 1 acre per horse use 4 strands. More than 1 acre per horse, 3 strands. If you have breeding stock with foals, 4 strands is a must. Stallions, depending on their attitudes, may require 5 or 6 strands, 5'-6' tall. The average height of most installation is 54" to the top of the post and 50" to the top strand. Spacing between strands would be 13" with 3 strands of tape, leaving 24" from ground to the bottom strand. If you are using 5' long Safe-Tee-Sleeves over tee-posts, you may go the full 5' or cut the bottoms to the height you desire. However, you should never exceed 15" spacing between strands. Boarding facilities should always put up 4 strands at 5' high due to the prospect of new animals that may be unfamiliar with electric fence. It also adds aesthetic value and a very secure appearance that your customers will value. Pasture separations and in cell grazing applications, 2 strands may be used were no foals are present. Never use less than 4 strands for perimeter fencing or where property parallels a highway.

SOIL: Soil conditions is an issue that must be considered when installing electric fencing. Dry or sandy soil may require a fence charger with greater power. It may be necessary to install grounding around the fence to achieve maximum fence efficiency. You may ground one of the strands of fence, or the best solution is to run bare galvanized wire just below the surface of the ground, attached to each post, for optimum functionality.

EXPANSION: When choosing the fence charger, it is recommended to not only consider the area being fenced, but to look ahead at fence to be added later. That way the right charger may be purchased the first time around.

GATES: Location, type, and amount of traffic going through gates is an important consideration. Installing metal gates in high traffic areas and in corners makes handling animals easier. Electric gates are great for pasture separations or implement traffic.

LOCATION OF THE FENCE CHARGER: Locate the fence charger at or close to where 110 volt power is accessible. Placing the charger under cover is recommended as under the eave or inside

a building. If your power source is greater that 50' from the fence, it is advisable to run an underground 110 volt wire from the source to the fence and install a weather proof plug-in rather than run a long distance high voltage burial wire. A certified electrician should be used for the installation of 110 volt wiring. When fencers are located on a corner or gate post, a small, rectangular, plastic waste can is an easy way to protect the fencer from direct rain. Cut a section out of one side of the waste can to clear the mounting screws and slide it upside down over the fencer. Solar chargers do not require a cover and should be placed facing the equator.

GROUND ROD INSTALLATION: Installing a minimum of 3'-6' long ground rods, 10' apart will insure maximum efficiency in the operation of you electric fence system. Inadequate grounding is the most common failure in electric fence operation. Consider that the grounding system of an electric fence is similar to the antennae on a television set, the larger the antennae, the greater the reception. Ground rods serve to collect voltage as it passes from the fence, into the animals, through the earth and returns to the fence charger completing the circuit. The animal will only feel the amount of power that returns back to the fence charger; therefore it is critical that the ground field, like the antennae, is large enough to insure the collection of all available power. Within 20' of the location of the fencer, dig a 4"-6" deep trench 20' long. This should be in an area that is out of the way of animal or vehicle traffic. Drive a ground rod into the ground at each end of the trench and one in the middle. With the brass acorn ground clamps, attach the galvanized wire to the rods laying it in the bottom of the trench. Attach the end of the wire to the negative or ground post of the fence charger. Attach high voltage shielded wire to the positive post of the fence charger and then to the fence. Do not use unshielded wire to make connections from the fencer positive post to the fence. If there is any danger that horses may walk or run in the area of the ground rods, we suggest that a coffee can be buried over the top of the ground rod ends to reduce the possibility of injury.

CAUTION: Do NOT install ground rods within 50 ft. of a utility ground rod, buried telephone line, or buried water line. Shock Hazard may result. **REMEMBER TO CALL YOU LOCAL UTILITY COMPANIES BEFORE YOU START YOUR INSTALLATION.**

WARNING

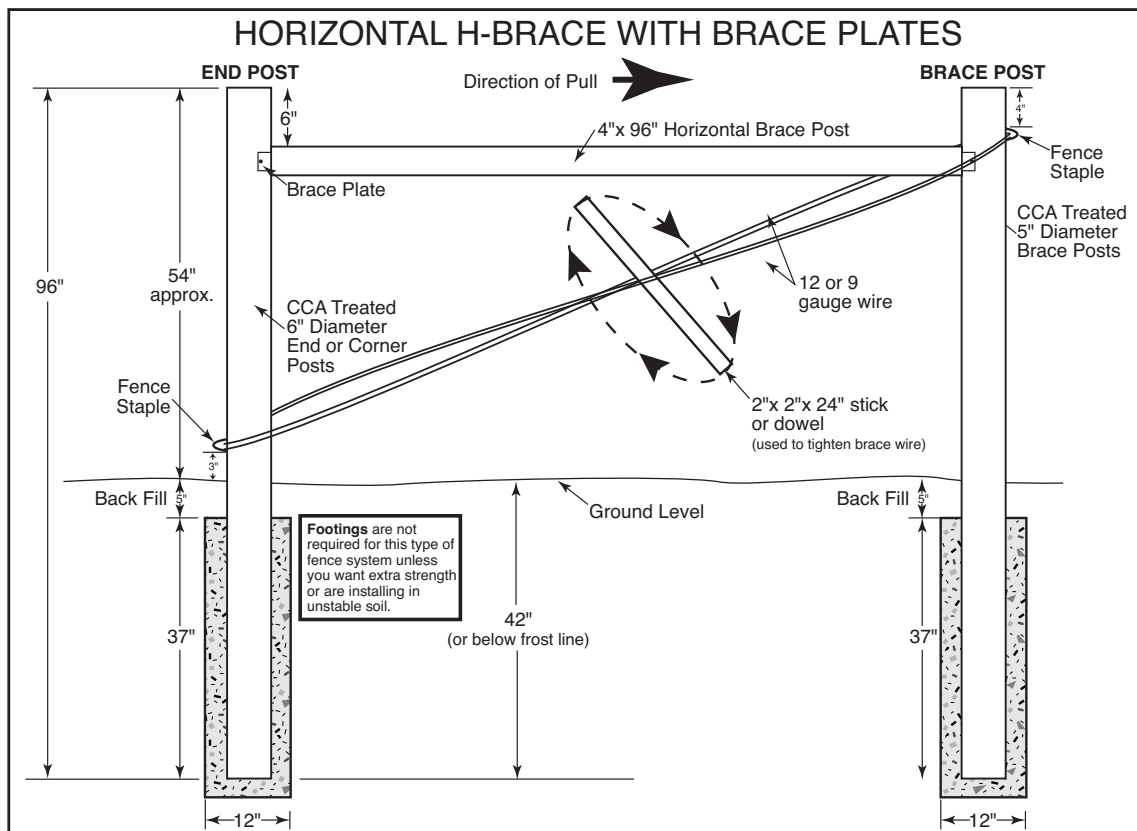
Braid and Rope when over-stretched, may break and recoil causing serious injury. Caution is advised when working with any tension fencing. Eye and hand protection should be worn when working with Braid and Rope fence systems.

Furthermore, as no fence product is totally safe, there remains a potential for injury to livestock. Therefore, the fencing referred to in this manual shall in no event be responsible for any injury to persons, livestock or personal property.

STEP 1 POST INSTALLATION & HORIZONTAL BRACING SYSTEM

- Determine your end and corner post locations. End Posts are placed where the fence line ends or starts (i.e. gate opening). Corner Posts are placed where the fence line changes direction. We recommended using 4X4 square of 5"+ (diameter) round treated posts.
 - Mark the rest of the post positions at your desired post spacing. Start from the brace post. Use spray paint on the ground to mark where the posts will be placed. Note: be sure to calculate the distances correctly or you may end up with odd spaced posts at one end.
 - Set all post in position to a height of approximately 54".
 - Start at one end. Measure and cut the horizontal brace post using 4" diameter post approximately 8' long (see fig. 1). It should be placed about 6" from the top of the installed post height. Fasten the horizontal brace post in position using one of these two methods. The first is the brace plate method the second is the brace pin method. Both methods are equally effective choose whichever method you desire. We have described how to use both methods on the following pages.
- TIP:** For a very attractive fence, use Pro-Tek 4X4 vinyl sleeves to go over posts.
- Auger or drive your end and corner posts in the ground a minimum of 42". This should leave an approximate post height of 54" (see fig. 1). If you choose augering you will need to use concrete to aid in the stability of the post (post driving is the stronger of the two methods, and is recommended for posts installed in unstable ground such as low lying and weak soil areas).
 - Measure out 8' from all end posts and corner posts for the position of the brace posts. Note: that you will need to do this to both sides of the corner posts (see fig. 1).

FIGURE 1



STEP 1 CONTINUED...BRACE PLATE METHOD

BRACE PLATE METHOD:

- First mark a center line approximately 8" from the top of the end and brace posts where the horizontal brace post will be located.
- Then nail or screw the brace plates to both the end and brace posts facing each other.
- Next install and fasten the horizontal brace post in place between the end and brace posts using nails or screws (see fig. 1).

INSTALLING BRACE WIRE FOR BRACE PLATE METHOD:

- In order for the system to be secure a brace wire must be installed. The brace wire is used to prevent the posts from leaning. To install the brace wire for the Brace Plate Method do the following, put a fence staple vertically at the bottom of the end or corner post approximately 3" from the ground opposite the horizontal brace post (see fig. 1).
- Put a second fence staple at the top of the brace post just above the horizontal brace post approximately 4" from the top of the post (see fig. 1).
- Tightly wrap a 9 to 12 gauge high tensile wire at least 40' long through the fence staples at least two complete times and fasten at the top of the brace post (see fig. 1A).
- Using a 2"x 2" stick or dowel roughly 16" to 24" in length, place it between the wires and turn in one direction until the wire is tight. If you choose a short stick, you may want to start closer to the top so your stick will reach the horizontal brace when the wire is tight to retain the tension.
- You will need to fasten the stick to the horizontal brace post using a piece of wire or a nail. Be sure you can remove it from the post for future tensioning if needed (see fig. 1).

FIGURE 1A

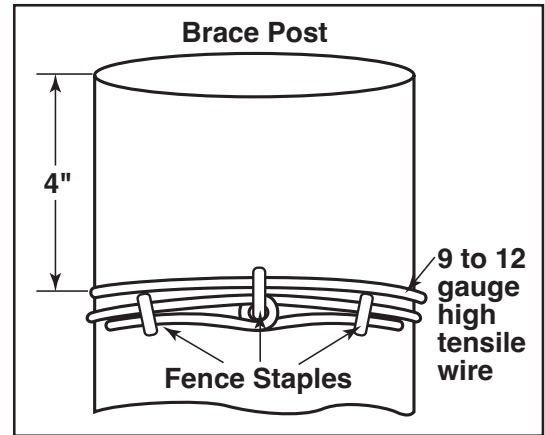
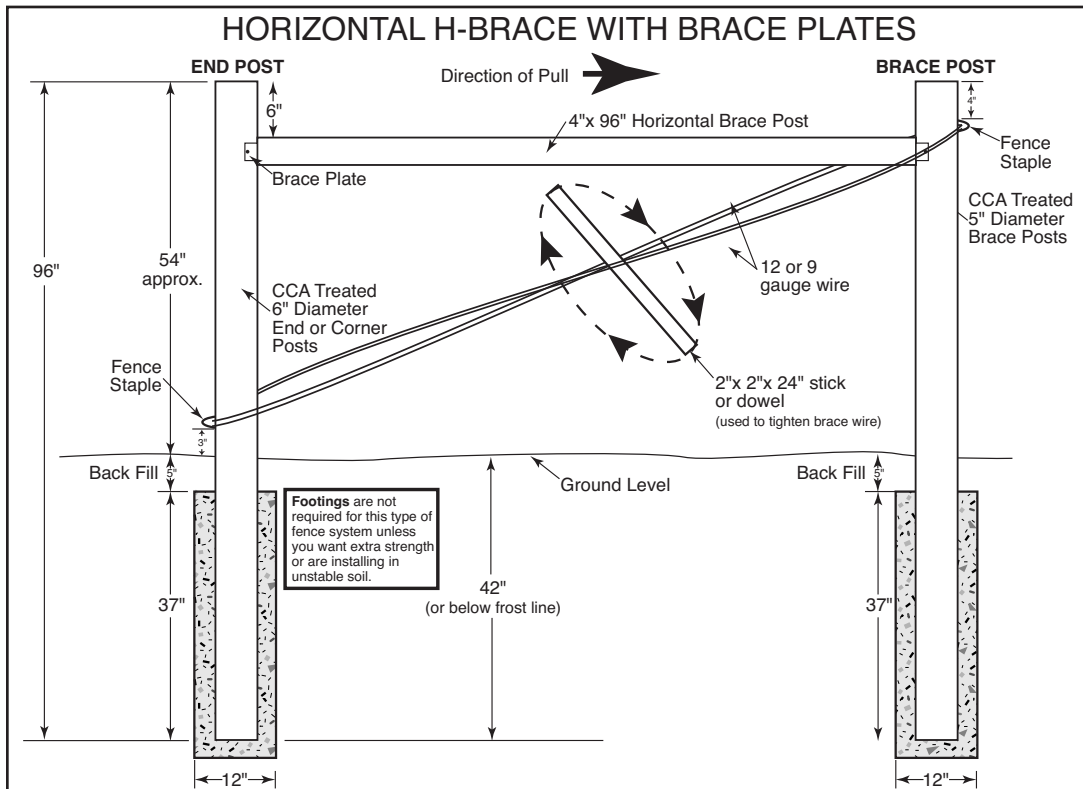


FIGURE 1



STEP 1 CONTINUED...BRACE PIN METHOD

BRACE PIN METHOD:

- On the end post, drill a 3/8" hole, 2.5" deep and 44" up from the surface facing the first brace post (see fig. 2 & 2A). Drill a 3/8" hole all the way through the first brace post 44" up and inline with the end post. Drill a 3/8" hole 2.5" deep into both ends of the top horizontal brace post.
- Drive a 3/8" x 5" brace pin 2.5" into the end post. The horizontal brace post is now ready to be slipped onto the 5" brace pin in the end post.
- Then drive a 3/8" x 10" brace pin through the brace post in to the top horizontal leaving 1.5" exposed (see fig. 2A).

INSTALLING BRACE WIRE FOR BRACE PIN METHOD:

- In order for the system to be secure a brace wire must be installed. The brace wire is used to prevent the posts from leaning. To install the brace wire for the Brace Pin Method do the following, put a fence staple horizontally at the bottom of the end or corner post approximately 3" from the ground opposite the horizontal brace post (see fig. 2C).
- Tightly wrap a 9 to 12 gauge high tensile wire at least 40' long over the exposed brace pin at the top of the brace post and diagonally under the fence staple at least two complete times and fasten at the top of the brace post (see fig. 2B).
- Using a 2"x 2" stick or dowel roughly 16" to 24" in length place it between the wires and turn in one direction until the wire is tight. If you choose a short stick you may want to start closer to the top so your stick will reach the horizontal brace when the wire is tight to retain the tension.
- Fasten the stick to the horizontal brace post using a piece of wire or a nail. Be sure you can remove it from the post for future tensioning if needed (see fig. 2).

NOTE: FIGURES 2A - 2C SHOWN ON FOLLOWING PAGE.

FIGURE 2

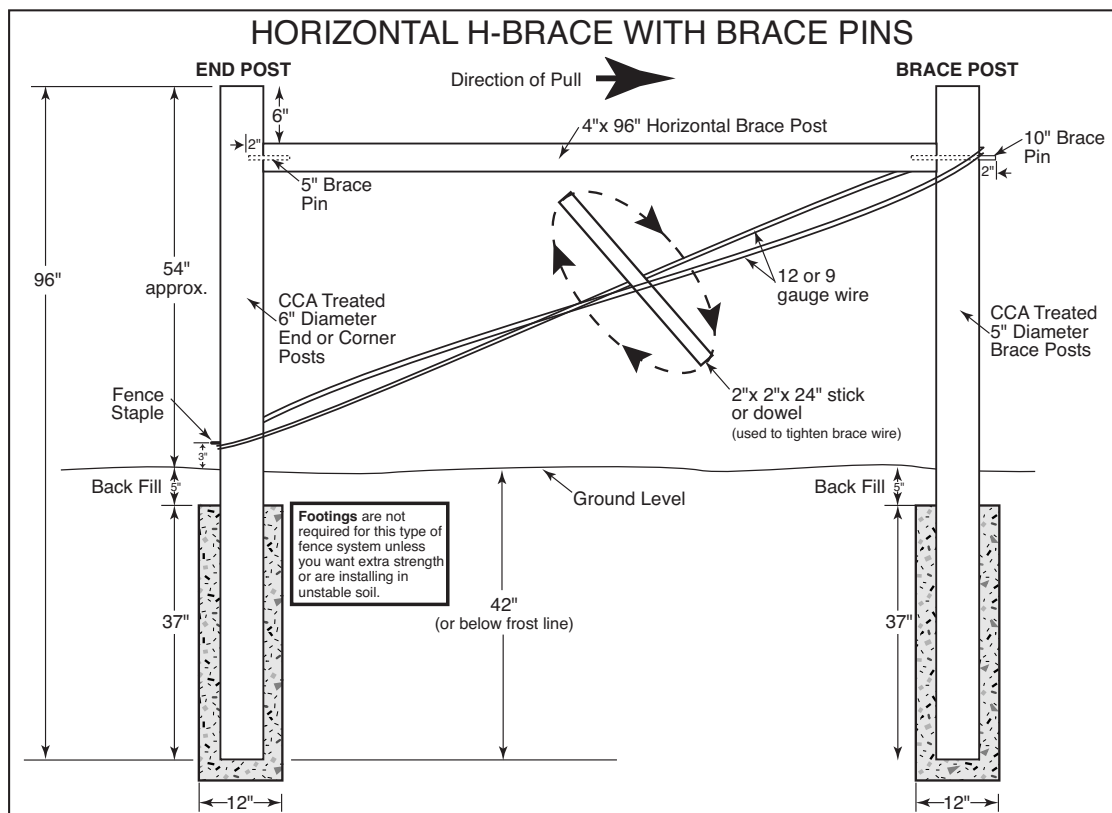


FIGURE 2A

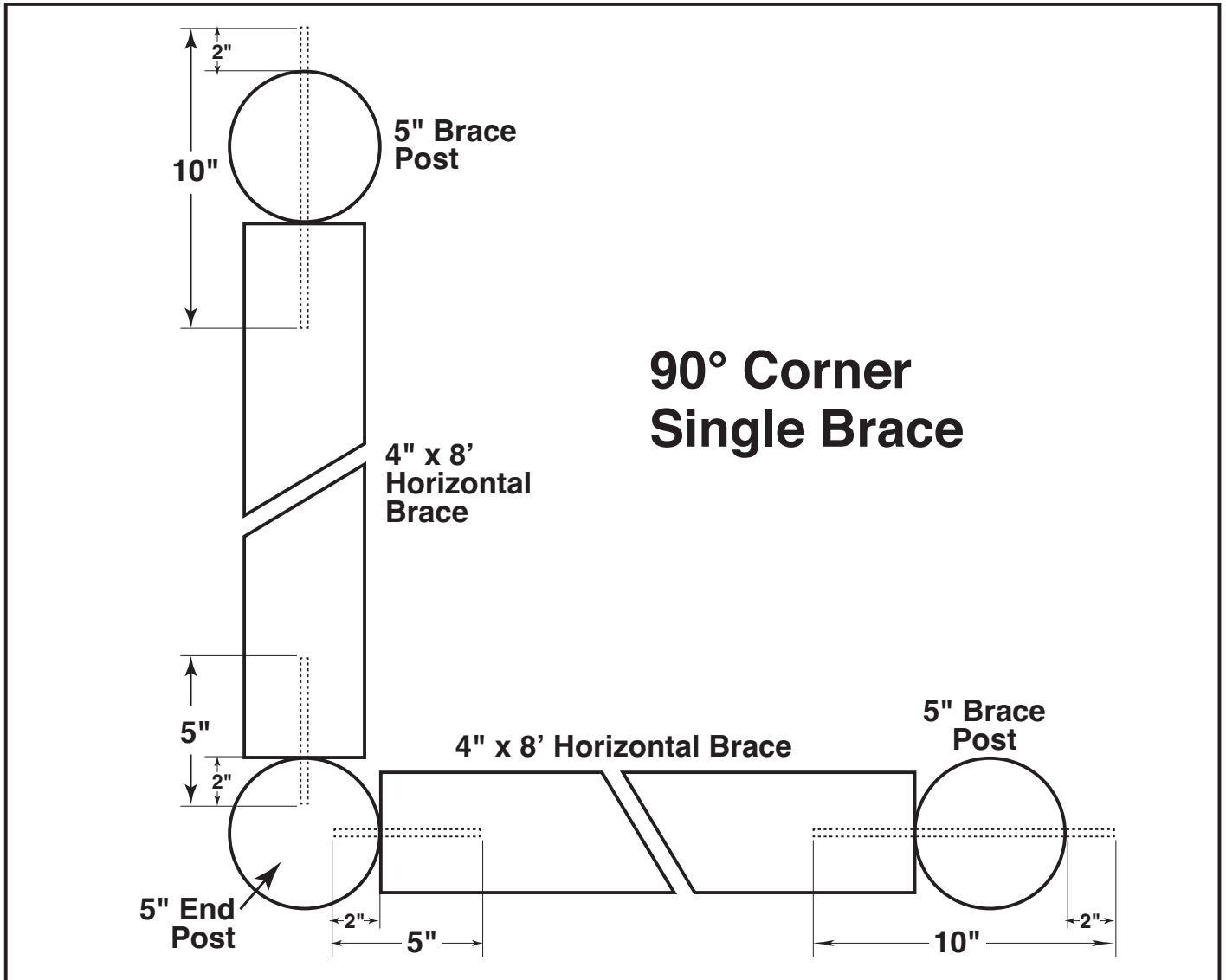


FIGURE 2B

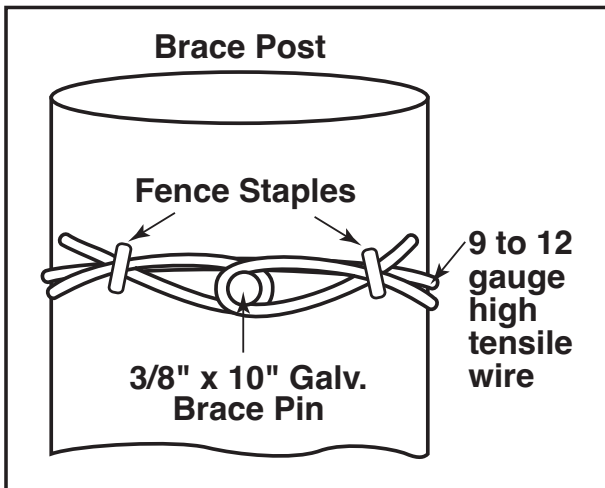
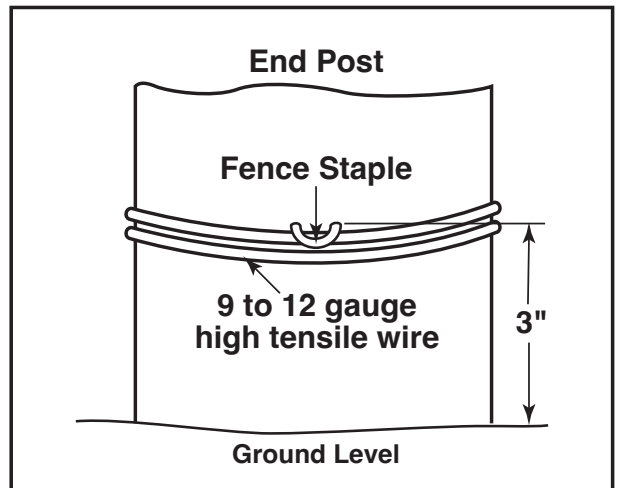


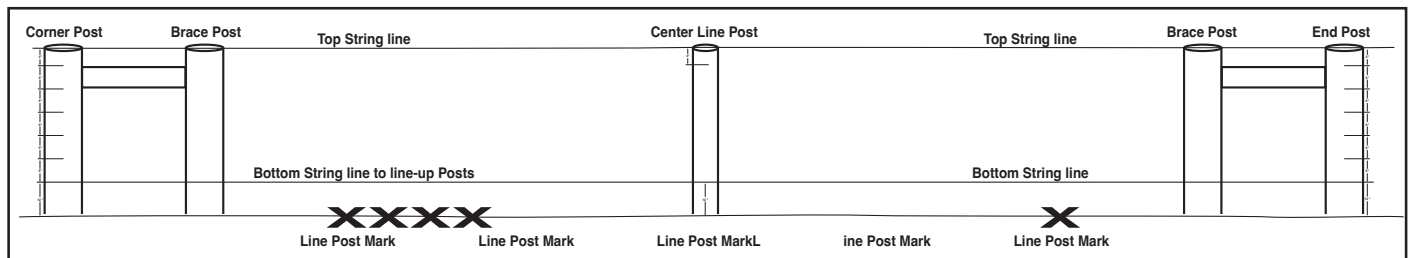
FIGURE 2C



STEP 2 INSTALL LINE POSTS

- Line posts can be wood, steel “T” posts, pipe, plastic, or our attractive Pro-Tek sleeves that fit over T-posts.
- Stretch highly visible, strong, string between corner posts and on the inside of the end and brace posts at approximately 12” high to install posts in a straight line (see fig. 3).
- Choose your post spacing and mark the locations on the ground along the guide string. Recommended spacing is 8’-15’ apart (in heavy snow regions, space no more than 12’ apart).
- Drive the posts in with a post driver at the spacing of your choice. **TIP:** It is important that the tops of the posts are all at the same height. The easiest way to accomplish this is to run a second string line from the top of the corner or end posts. It may be difficult to get the string tight enough to be level between the posts. However, if the first post you install is in the middle of the fence line, it will be easier to judge (see fig. 3).
- Install the remaining posts by following these guidelines each time.

FIGURE 3

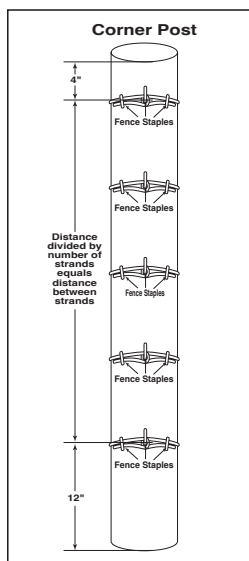


STEP 3 BRAID FENCE INSULATORS & CORNERS INSTALLATION

IMPORTANT

Before you can install your insulators, you must determine the number of strands of fence you will require. See page 2 for a guide on horse types to aid you in this decision.

FIGURE 4



- Layout your corner and end posts as follows. The center of the top strand is usually placed 4” from the top of the post. The bottom strand is usually placed 12” from the ground.
- Measure the distance between these two marks and divide by the number of strands. This will give you your spacing between your strands (see fig. 4).
- Mark these measurements all the way around on all corners and end posts ONLY (see fig. 4).
- First cut rope at 3’ lengths for each corner and end post equal to the number of strands in your fence.
- Using the same number of corner/end strainer insulators, slide the 3’ length of rope through the strainer insulators.
- Attach to the corner or end post at your predetermined strand spacing.
- **TIP:** To ensure that all strainers are at equal distances from the corner and end posts, cut a piece of wood to a length of 6” and place it between the post and the strainer as shown (see fig. 4 & 4A).

STEP 3 CONTINUED...

- Measure and mark off **ONLY** the position for the top strand insulators on all line posts. Then install **ONLY** the insulators for the top strand on all line posts. Install the top strand completely before moving to the second strand. Start with one strand at an end or gate post.
- Insert the fence strand into the strainer. Set the roll of fence up so it can be unrolled easily without stopping.
- With fence roll set up on either a spinning jenny or just a dowel, through the center of the roll, pull the fence strand and thread it through the insulators and strainer at the corners until you reach the other end or gate post strainer.
- Fasten one end of the strand in to the strainer with the U-type connector (see fig. 4B). **NOTE:** To tension the strands, the use of a come-a-long is required.
- Fasten the come-a-long with a chain or strong cable to the brace post of the "H" bracing system as close to the strand that you are working on as you can.
- After you feed the strand through the end strainer, pull as much slack out of the fence line as you can. Place a U-type connector on the fence line as you did at the other end, but **DO NOT** tighten.
- Attach the free end of the fence strand to the other end of the come-a-long using a loop in the strand and U-type connector.

Work the come-a-long until the fence line is straight and taut between all the posts. When the desired tension is reached tighten the U-type connector. **NOTE:** Before disconnecting the come-a-long complete the next step.

When the top strand is completely installed and tensioned, stand back about a 50' to 100' from your fence to get a good view of all the fence line. Check to see it has a smooth easy transition from post to post. (It is much easier to make any adjustments to one fence strand then multiple strands.)

If everything is good, cut the fence strand about 6" from the U-type connector and tape the end with electrical tape to prevent fraying. Once you are happy with the look of the fence line, continue with the installation of the insulators on the line posts using the top strand as a guide for the other strands.

Repeat these guidelines until all the fence lines are completed.

CAUTION

If you have to make any adjustments to the fence line, reduce the tension first.

FIGURE 4A

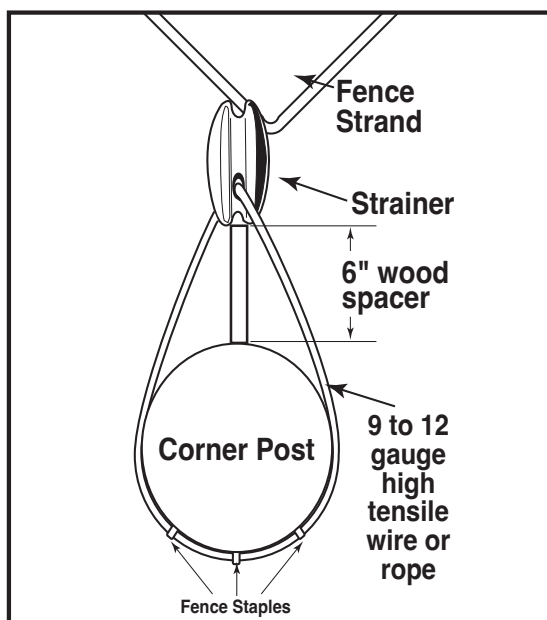
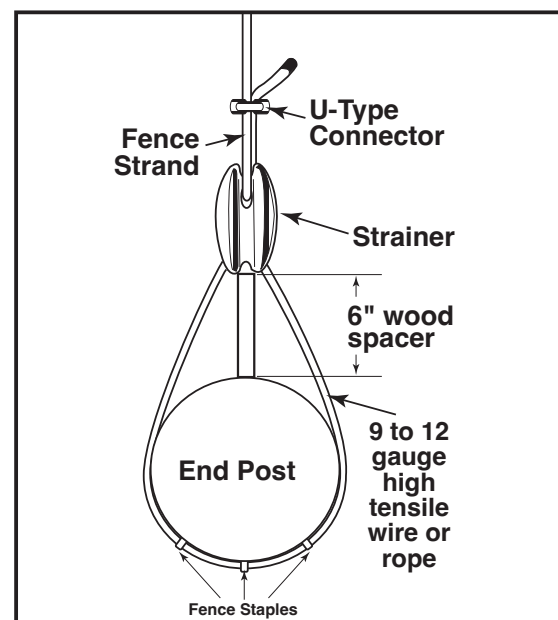
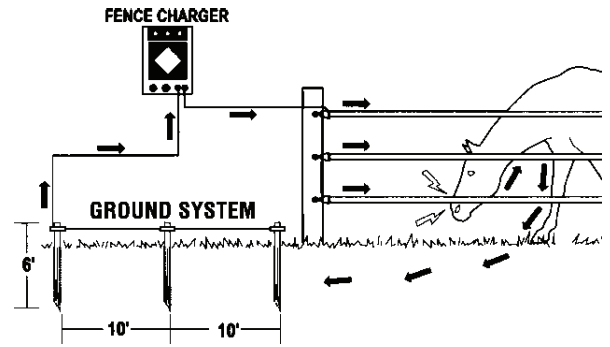


FIGURE 4B



STEP 4 INSTALL FENCE CHARGER & GROUND SYSTEM

- **NOTE:** Use a low-impedance fence charger ONLY
- Locate fence charger close to beginning of fence and install under cover (install solar fence chargers outside facing south).
- Install three 5'-8' long ground rods spaced 10' apart (where animals cannot step on them).
- Using a ground rod clamp, attach insulated cable to the ground terminal on the fence charger.
- Attach insulated cable to the fence (hot) terminal on fence charger and run insulated cable to a cut-off switch on closest post.



STEP 6 POWER UP!

- Make sure all insulators are closed and ground rods are connected properly.
- Turn on fence charger and check voltage with a fence tester **NOTE:** Check voltage regularly.
- Walk the fence to look for arcing, broken insulators, vegetation touching fence, etc.

VERY IMPORTANT

Never put horses behind a Pro-Tek that is not electrified.

In very dry areas, you may need a hot/ground fence where the second strand (from the top) is attached to the ground rods.

In areas with lots of vegetation, you may need to disconnect the bottom strand at times to keep grass from arcing. This allows livestock to graze grass away from the fence.

If applying herbicide, DO NOT spray on electrical fence.

