



Call 811 before you dig!



Installing a chain link fence.....

After determining the area to be enclosed, it is a good idea to make a layout measuring from the house or other predetermined reference points. This will be used to compile a components list and will be used again when the material arrives to site the fence as previously determined and may also be required for a building permit.



End and corner "terminal posts" can be marked and dug.¹



If done by machine all loose soil should be removed from the bottom of the hole. It's a good idea to 'drive' the post into the ground the last 6 or so inches. This will allow condensate drainage and it also holds the post in place while concrete is poured. Be sure that the post is plum.



Fill the hole with cement to about 6 inches below grade² and remove any on the post that will be visible after the hole is topped with soil. Neatness counts and it's easier to get it off now than wait till it's dry. Once the terminals are set, locate and mark where the line posts are to be installed. Setting their correct distance from the ground can be done in several ways. A single string line at grade all the way around the perimeter of the enclosure will facilitate getting line posts and any desired gate opening in a straight line. Depending on the grade, this line can also be used as to set the lines to their finished height³. A reference mark is made on the post to correspond with the string. If a gate is in the run somewhere, install the gate posts⁴ first. Measurements are taken from terminal to terminal for spacing. Line post spacing charts are available on the internet⁵.





Typically, chain link gates are fabricated to fit the opening. A four foot gate will go in a four foot opening (verify with your supplier). If a four foot mower is ever to be used, it's best to go to a five foot gate. If it can be done, bigger is usually better when it comes to gates. This is especially true in locations that are or can be accessed by cars or machinery. Whatever width you select, it pays to order them "filled" (fabric installed by the supplier).

Swing gate posts can be strained by gate activity and the bond of concrete to the finished surface of the pipe may get broken. It's a good idea to whack a spot that will be in the cement and make a good size dent so the pipe does not turn if it ever comes loose from the footing.



Again, depending on the grade and the length of the run, a string can be positioned at the necessary height and the line posts then set to it – the string (mason line) needs to be as taut as possible to prevent it from sagging. When the line posts have been situated, the fittings can be placed on the terminals.



Brace Band



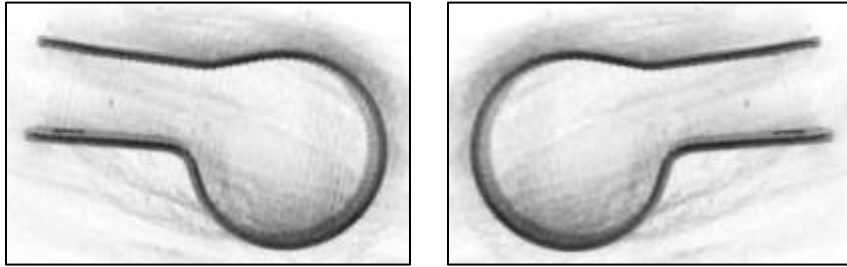
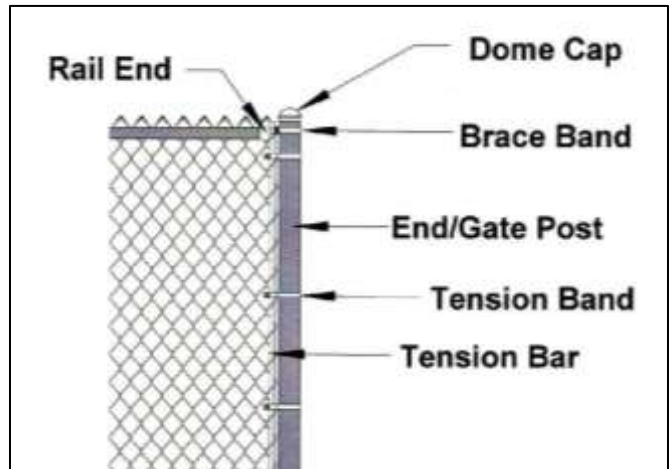
Tension Band

Brace bands are used with the rail end or if a tension wire at grade is installed, it can be used to hold a turnbuckle or an end of the wire. Tension bands are used to secure the tension bars.

Most reputable fence dealers will assist the homeowner in assembling a materials list. However, it is pretty straight forward and putting one together helps familiarize you with the trade terminology. To do this, visualize an END post (illustrated below). Working from the top of the post down, there will be one brace band at top, and one rail end. Then come tension bands – the generally accepted

formula is: the height of the fence minus one. A four foot tall fence will need three tension bands at the end of a stretch and one tension bar.

If a stabilizer wire is to be used at grade, a second brace band is added. So on a four foot tall chain link fence, an end post will have 1 rail end, 1 tension bar, 2 brace bands and 3 tension bands. Since top rail ends with a rail end cup at the terminal post – 2 per corner and 1 for each end and gate post – count the number of rail ends needed and multiply the totals described above. Add a post cap for each terminal and half that number of turnbuckles⁶ if you want to use a stay wire at grade. Load the terminal post starting at the bottom – a single brace band for an end/gate posts – two if it is a corner.



Then the tension bands. It is important to note the shape of the 'T' bands - the flatter side of the fitting will be on the side of the post where the chain link 'fabric' is going to be fastened, usually the 'outside' of the enclosure. At corners, the position of the flatter side must alternate at every band as they are placed on the post (depicted above). Finally the brace band for the rail end cup is set.



Another way to get the correct line post height is to cut them. Install the posts, tie a string from one terminal to the next, check the height, mark and cut with a band saw. Once again, the string (mason line) needs to be as taut as possible to prevent from sagging. **DO NOT CUT THE TERMINAL POST TOPS!** Terminal post need to be taller than line posts to hold brace bands and a cap.



Once the lines are cut, they are ready for loop caps. Notice the shape – as shown in the photo to the right, the left side of the cap will be on the 'fabric' side as seen below.



The top brace bands can now be fitted with rail end cups.



As can be seen above, the rail end cup mounted to the top brace band has the bolt hole toward the upper part of it while the rail cup on the lower brace band has the bolt hole toward the bottom. This design allows the top rail to be at the same height above grade for a uniform appearance.



Upper rail end cup



Lower rail end cup

When the rail ends are set to the approximate height, the top rail can be guided into place.



1-3/8 and 1-5/8 top rail offer swedged ends (SWG) which eliminate the need for sleeves. The tapered part of one rail will slip into the non swedged end of another.



To cut the top rail, a measurement can be taken or the rail simply placed along side the cup and a cut mark made. Either way, be sure that the cup is pushed in the direction of the terminal post firmly against the bolt so the end of the rail will sit tightly against the back side of the cup when they are together.



A stabilizer wire placed 1 to 3 inches above grade helps prevent animals from 'nosing' their way under the fabric. Once the top rail is in place, the stabilizer wire⁷ can be set up. Waiting till this point has reduced the chance of it being a 'tripping hazard'. The stationary end of the wire is connected first. Here again, NEATNESS COUNTS – it is attention to small details like this that give the professional touch. Slip the wire around the bolt in the brace band and leave enough of a tail that a smart looking twist can be made. In a small area, one turnbuckle per run is sufficient but two can be used if desired.



The other end of the wire is attached to a fully extended turnbuckle (open), all slack is removed and another nice looking twist is done. It may be necessary to use a tool to hold the turnbuckle as the knot is 'dressed'.



With the turnbuckle still 'open', the wire can be adjusted to height at the line posts and a tie used to hold it in place. Don't twist the tie all the way around the wire yet – this will allow the wire to slide through as the turnbuckle is tightened.



The turnbuckle is tightened until the wire is taut, then the ties on the line posts are wound securely.



The framework is done but may need to be 'tweaked' a bit. Have a look at the rail and observe the 'flow'. The arrow in the photo below is pointing to an area where a post or two may be just a little high.



The rail and loop cap can be lifted off and the the posts trimmed. This can also be done after the fabric has been loosely stretched but not yet tied. Conversely, a short post can be adjusted by placing a cut piece (up to 1/2 inch) of the line post under the loop cap. It will be held in place when the fabric is tied.



Once any necessary adjustments are made to the top rail, the 'fabric'⁸ is rolled out. **DO NOT STEP OR WALK ON IT!** Bends caused by feet (or any other mishandling) will be noticeable.



A tension bar is slipped in at one end of the roll and then positioned so the that the tension bands can be connected.



To remove fabric from the roll, index the picket where the cut will be made by turning it at a right angle and either cut it at both ends or open the knuckles and twist it free.



Another tension bar is placed several feet back from where the estimated end of the run will be. A stretch bar is hooked onto the tension bar – be careful not to grab the fabric itself as it will be distorted when the fence is pulled taut.



A come along is cranked to stretch the material. Before the tension bands and bar are connected, walk the fence line and 'dress' it. Grab it in a few places down the run and shake it to remove any crimps or gathers that may not be readily visible. Pay close attention to the knuckles at the top and bottom since they often get intertwined. The line may need to be tightened again after the diamonds interlock correctly. The excess fabric is removed, a tension bar is slipped into place and the fittings are made up.



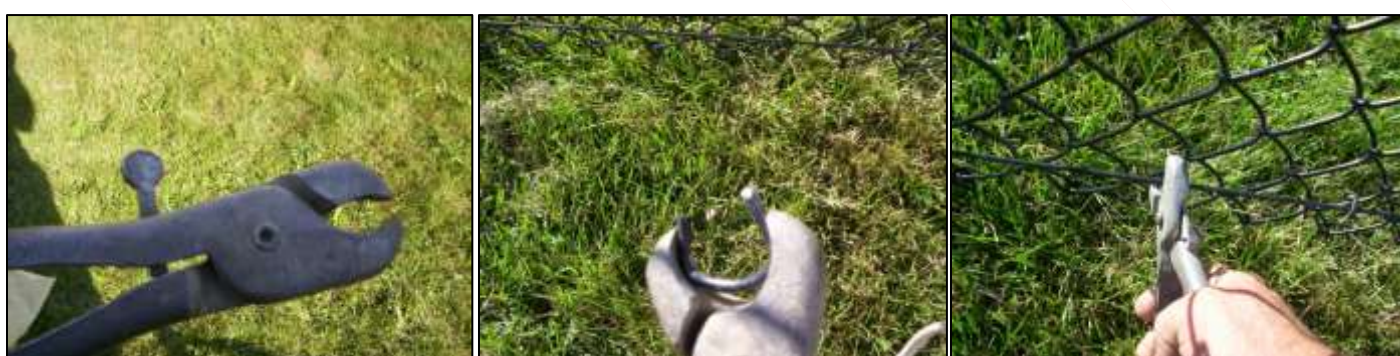
Repeat the process until the perimeter has been completed. Any high spots caused by mounds or heaves in the ground can be addressed by trenching the fabric in at the bottom. The chain link fabric can now be tied. Since 9 gauge vinyl coated chain link is easily bent, many people like the top knuckle to be flush with the rail. When the top of the diamond is too high, it can be deformed if hit by a ball or struck by a similar object. Follow the photo sequence below. Long ties are much easier to use but may need to be trimmed slightly to allow them to pass through the opening without kinking them.



Take the time it costs to count off the knuckles and space the ties uniformly. *It will be noticeable!!!* Be consistent with the way you are tying up. It is often best to start in an area that will not be seen as often until a proficiency is developed.



Line posts are tied – top, middle and bottom with roughly the same spacing as the tension bands



Hog ring pliers are an inexpensive tool that will eliminate a enormous amount of frustration when securing the fabric to the stabilizer wire. Hog rings are usually placed with the same spacing as the ties on the top rail though uneven positioning is much less noticeable.



The gate is installed⁹, an oarlock latch is positioned, the terminal post tops are cut and capped to finish the project.

Footnotes

1. Terminal posts are usually the next size up from the line posts.
2. Studies by the American Fence Association show filling the hole to grade where the ground first freezes actually increases the possibility of heavage.
3. At grade changes, wrap the string around a stake placed at that location. This will maintain proper ground clearance of the line.
4. Gate posts for drive gates can be two sizes bigger than the line posts. Be sure to adjust the fittings list accordingly.
5. Chain link line posts spacing should not exceed 10 feet. Residential installations with 1-3/8 top rail spacing should be closer to 8 feet.
6. One turnbuckle is used per terminal post.
7. 9 gauge vinyl smooth wire will kink when it is bent too far. Use care when laying it out as it is almost impossible to completely remove kinks.
8. Shown here is 2x9x48. The first number is the size of the diamond, the second is the gauge of the wire and the third, the height. 2x9 is the most common fabric used. For a pool enclosure, 1-1/4 inch diamonds are required. 1-1/4x11x48 is often installed to contain expenses.
9. Pool enclosures require an outward opening, self closing and lockable gate with the latch or gate release mechanism placed at 54 inches from the bottom of the gate.

Disclaimer of liability

profencesupply makes no specific recommendations as to proper installation. The techniques described herein are those used by our technicians and may not be appropriate for all locations and ground conditions. profencesupply assumes no liability for improper installation, misuse or misapplication of any fence product purchased from us. It is the sole responsibility of the installer to check local installation requirements, secure necessary permits and obtain clearance to dig by calling 811 first.