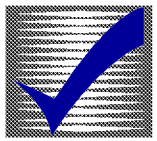
HOW-TO BOOKLET #3066

CHAIN LINK FENCES



TOOL & MATERIAL CHECKLIST

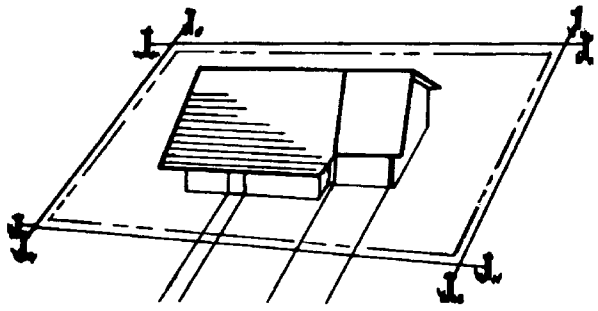
- ❑ Post-hole Digger
- ❑ 24" Level
- ❑ Cement Mix
- ❑ String
- ❑ Mallet
- ❑ Fence Puller
- ❑ Lineman's Pliers
- ❑ Stakes
- ❑ Shovel
- ❑ Gloves

Read This Entire How-To Booklet for Specific Tools and Materials Not Noted in the Basics Listed Above.

Chain link fences provide affordable security and containment in a variety of situations. They are strong, long lasting and require little maintenance. Used as a trellis with plants for a soft effect, or topped with barbed wire for the greatest security, a chain link fence is a fairly simple project.

The method to install any chain link fence is the same for the setting of the posts, whether they are wood or steel. If wood posts are used, make sure they are treated to resist decay. The emphasis for chain link fences over wood fences is the extra strength that each post must have. Chain link fences are stretched before installation, and they continue to contract and expand with changes in temperature.

Fig. 1



Check boundary lines before you lay out the fence location with wood stakes and string.

LOCATION AND CODES

1. Locate the boundary lines of your property. Check with your neighbors, real estate documents, and plot plans to help determine the exact location (**Fig. 1**).
2. Contact your local building inspector to learn if you need to obtain a permit. There may be local restrictions to the placement or height of fences, and requirements for posts, materials, or methods.

NOTE: Residential easements may place other binding restrictions on a proposed fence.

3. Draw a plan of your property, boundaries, structures, easements, and proposed fence. Draw the plan to scale, such as 1/8-inch = 1 lineal foot. Be sure to identify gates, posts, and heights in order to make an accurate estimate for materials (**Fig. 2**).

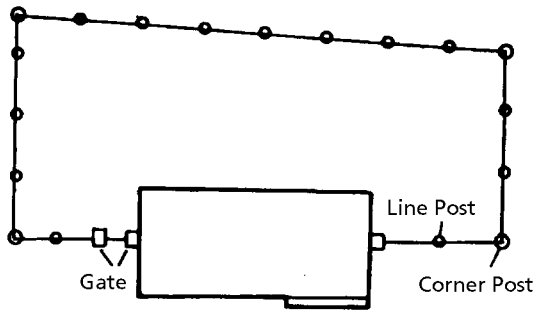
LAYOUT

1. Lay out the fence location with stakes and string. Place a stake at each corner of the property, at the required setback distances from the boundary lines. Stretch a continuous string between all the stakes.

NOTE: Tie bright surveyor ribbons every 4' on the string to make it readily visible. Do not leave unattended or standing overnight so that someone may trip over it!

2. Measure on the string the distances required between fence posts. If, for example, codes state that a post is required every 8', this is known as 8' on center, or 8' o.c. Use a felt tip pen to mark post locations on the string.
3. Place a stake at each point marked on the string. Continue the process until the entire fence is laid out with string, with stakes at every post, corner, and gate location (**Fig. 3**).

Fig. 2



To calculate materials, mark every post, gate, corner and top rail along entire fence line.

4. Inspect the layout to determine if the string line is straight and setback 3" or more from boundaries, that the posts are uniformly positioned, and that the overall shape and form is the way you planned it.
5. Make adjustments now, before purchasing the materials and setting the posts (**Fig. 4**). Then walk along the layout counting the number of posts, corners, and gates, and add up the total lengths so that you have a complete materials list.
6. Purchase the materials and place at the job site. Remember to purchase about 20% more materials than estimated to allow for mistakes, changes, and unforseen situations. Most retailers allow returns of unused materials; but ask first.

INSTALLING FENCE POSTS

1. Start with the corner posts by removing the stake and dig a posthole where the stake was in the ground. Dig all of the corner postholes first.

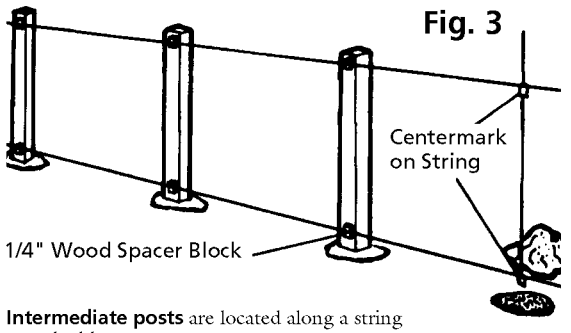
NOTE: Cover the holes with something solid so no one can step in one by accident; accidents are preventable!

The depth of the hole depends on the height of the fence. Typical chain link sizes are widths of 36", 42", and 48", and 5', 6', and 8' high. Use the one-third rule, which states that one-third of the fence post is set into the ground. So, a 6' fence post is buried 2', leaving 4' above ground.

Corner and gate posts may be set 1' deeper for added strength. Corner/gate posts are 2" taller than the line posts for the connections of the top rail. All holes should be at least 3 times as wide as the diameter of the post.

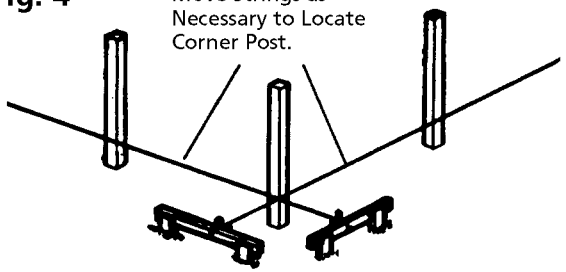
2. At the first hole, widen the base of the hole with a small shovel to increase the strength needed on corner posts. The footing can be made wider at the bottom for added stability (**Fig. 5**).
3. Set a rock or gravel on the bottom of the hole to keep the post base from sitting on dirt. This is especially important if you are using wood posts. It raises the base off the dirt and prevents water from saturating and decaying the post.
4. Set the post into the hole, and refill the hole halfway with the dirt removed. Pack the dirt firmly to support the post, then brace and plumb the post with two notched 1X4s. Repeat the process with all corner posts before adding the concrete in order to save time and energy.

Fig. 3



Intermediate posts are located along a string stretched between corner posts.

Fig. 4

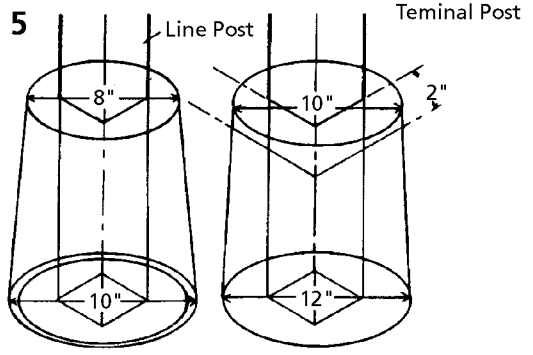


Adjust layout by moving strings as necessary to locate each post.

5. Pour mixed concrete over the dirt fill and around the post, tamping it to remove air pockets. Trowel and taper the concrete at the surface, around the post and upward so that water can run off and away from the post and hole. Concrete footings take 24 hours to initially cure and 3 or more days before any pressure should be placed on the posts.
6. When all corner and gate posts are set, re-tie the string between them, leaving the stakes in the ground at each post location (**Fig. 6**).
7. Remove each stake, dig the hole, and set and brace each post as you did with corner and gate posts. Use the string to keep each post in line with the other posts. Dig, set, and brace each post before pouring the concrete. In case a post is misaligned you can always correct it just before pouring the concrete.
8. Pour concrete in each posthole as you did on the corner and gate posts; and allow to cure at least 3 or more days.

NOTE: Use the dry pour method to save time and energy, by pouring dry pre-mixed concrete from an 80-lb. bag, and adding water later. The real trick is to completely saturate the dry mix by providing steady sprinkling of water for several hours, without displacing the dry concrete.

Fig. 5



Footing dimension guidelines are shown here for line and terminal posts.

TOP RAIL

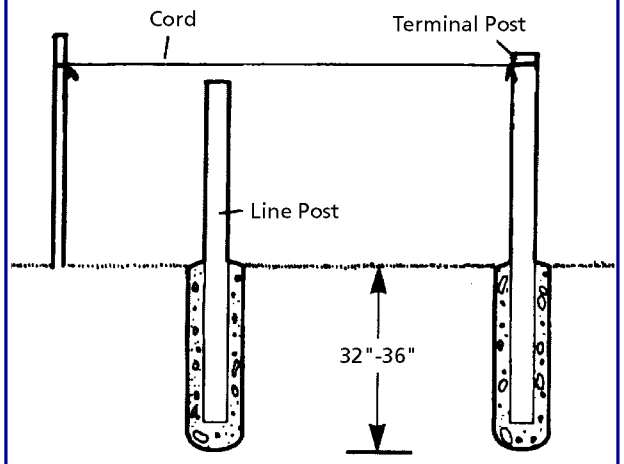
The top rail is used to add stability and strength to the fence. The rail is a continuous piece of metal between corner/gate posts that runs on top of the line posts. It is important to be familiar with all the chain link fence components before beginning (**Fig. 7**).

1. Install eye caps on all line posts. You need to be able to site through all of the caps so that the rail can slip through them.
2. Attach the center band and tension band to all corner/gate posts.

NOTE: The tension bands go on first, about 12" apart, the center bands about 2-1/2" below the top of the end posts.

3. Slip the rail through the eye caps to the other corner/gate posts. Connect rail lengths with sleeve connectors as you slide the rails through the caps.

Fig. 6



Deep footings are necessary to prevent frost heave.

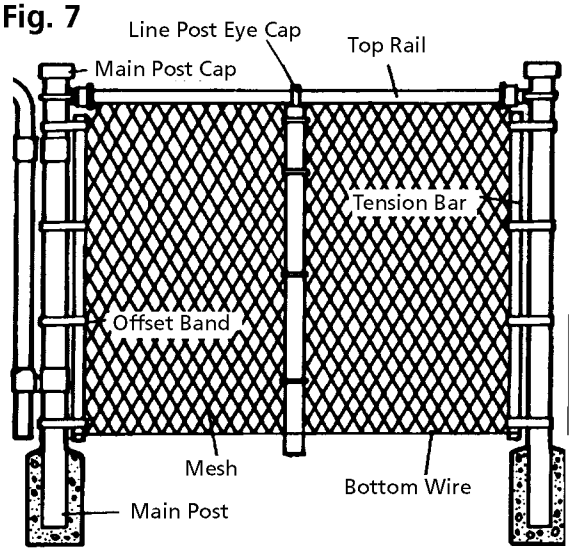
4. Attach the rail ends to the top rail. Tighten all bolts hand-tight. Keep all bolts and the straight side of the tension bands to the outside of the fence (**Fig. 8**).

FENCING

The fence fabric is attached to the outside of the fence posts, after the concrete is set for all posts.

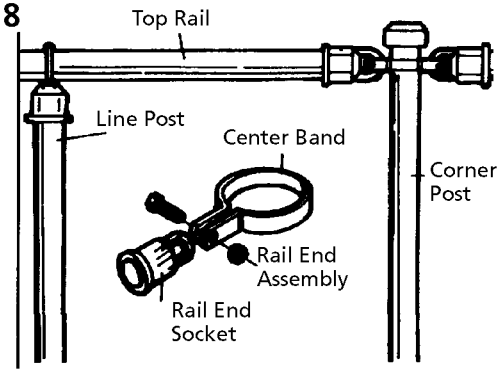
1. Insert tension bar at the first corner post, referred to later as the start point. The bar is inserted through the weave, and then the bar, fence, and post are connected by tension bands, with nuts facing inward and only hand-tight.
2. Roll the fabric on the outside of the fence line from the start point to the next corner/gate post.

Fig. 7



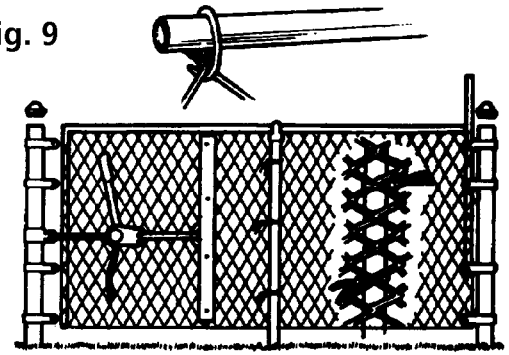
Chain link fence components are labelled here to aid your installation.

Fig. 8



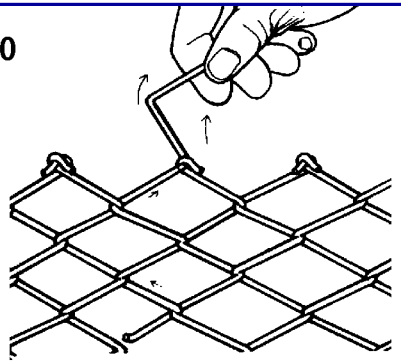
The top rail fitting detail is shown with its parts identified.

Fig. 9



The fence puller expands the mesh so the tie wires can be attached.

Fig. 10



"Cork Screw" separation of chain link fabric.

3. Pull the fabric tight by hand, and insert a tension bar about 10" short of the corner post. Now attach a fence puller to the tension bar and stretch the fabric until it reaches the corner post (**Fig. 9**).
4. Cut the mesh beyond the tension bar by cutting or unbending the loop at the top and bottom of the mesh. The vertical link simply cork-screws out of the weave, separating the fabric (**Fig. 10**).
5. With tension bar inserted, hand tighten to the tension bands. Remove the fence puller.

NOTE: Apply slight pressure to the stretcher lever before unlocking the ratchet stop.

6. Repeat the process at each corner/gate post and to change directions of runs. Do not wrap the mesh around corners.
7. Check the tension of the weave by squeezing the mesh. If more than 1/2" of slack is obtained, you need to restretch the mesh.
8. Tie the mesh to the top rail and line posts with tie wire, and tighten all nuts and bolts.

GATES

Standard gates are 36", 42", and 48" wide, and double gates 10' and 12' wide (**Fig. 11**). Set the gate posts as far apart as your gate is wide.

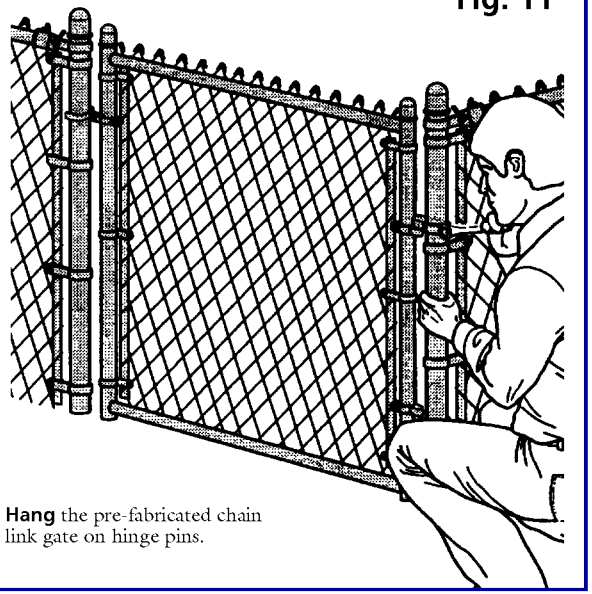
1. Attach the bottom post hinge about 4" above the bottom of the gate, and 6" above the ground. This should leave about 2" of ground clearance.

NOTE: The pin on the bottom hinge faces up, and the top hinge faces down.

2. Set the gate on the bottom hinge pin, and mark the location of the top hinge. Now install the top post hinge onto the gate.
3. Tighten all bolts and check clearance.

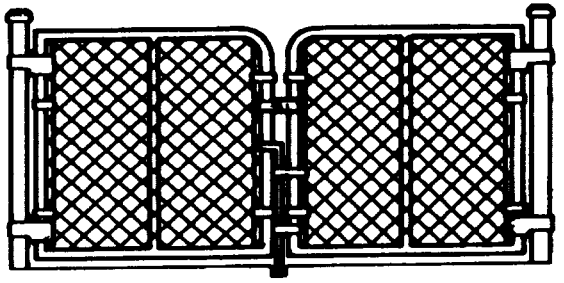
NOTE: Double-drive gates require gate latches to make the gates connect at the center (**Fig. 12**).

Fig. 11



Hang the pre-fabricated chain link gate on hinge pins.

Fig. 12



A double-drive gate has much more hardware and is a much more complex assembly than the standard gate.