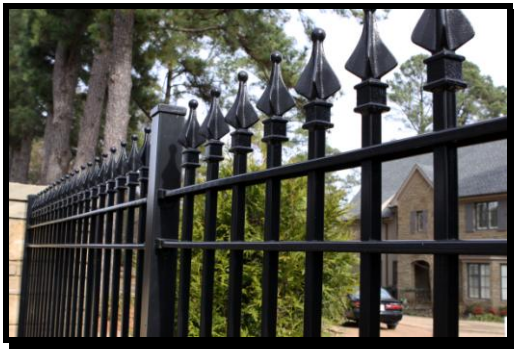




DISTINCT FROM FORGE TO FINISH.

# *INSTALLATION GUIDE*



**\*\*For a color version of this guide, go to our website at [www.ironfenceshop.com](http://www.ironfenceshop.com)\*\***



***\*\*PLEASE NOTE – All installations have a varying degree of ‘uniqueness’ to them. The following instructions are meant to be general guidelines to assist you in the installation of your fence and gates. If you have any questions that this guide does not answer, please contact us with your questions via phone or email. \*\****

## **INSTALLATION GUIDE TABLE OF CONTENTS**

### **1. PREPARATION**

- A. Marking the Fence Layout
- B. Obtaining a Building Permit
- C. Having Your Utilities Marked
- D. Suggested Tool List
- E. Materials Needed

### **2. POSTS**

- A. Running a String Line
- B. Determining Post Spacing for Panels and Gates
- C. Setting Posts

### **3. PANELS**

- A. Hanging Panels

### **4. GATES**

- A. Installing Gates

### **5. SPECIAL SITUATIONS**

- A. Cutting a fence panel to fit
- B. Dealing with yard grades
- C. Installing on top of concrete
- D. Installing panels at an angle
- E. Installing Add-on decorations

### **6. CARE AND MAINTENANCE OF YOUR FENCE AND GATES**

---

11 South River Street  
Kent OHIO 44240

---



## 1. PREPARATION

### A. Marking your Fence Layout

In preparation for installation and for the permit approval purposes, you will want to mark the outline of where the fence will be installed. This can be done with a string line, marking spray paint or flags. If you are installing over or on concrete, you can mark the outline with chalk. See 'INSTALLATION' for more details.

### B. Obtain a Building Permit

Call your local Building Department and see if a permit needs to be obtained. Obtaining a fence permit typically requires filling out a form, paying a small fee and having a local inspector take a look at where your fence is going to be installed.

### C. Have your Utilities Marked

Call to have your utilities marked. Many cities have a single service provider that will notify the various utilities to come out and mark their lines with flags or spray paint. This helps avoid accidentally hitting a line or drain when digging your post holes. You can also dial 811 (or go to [www.call811.com](http://www.call811.com) for more info).

### D. Suggested Tools

To install your wrought iron fence, you will typically need the following tools:

- String Line along with stakes (wood or steel rebar) to fix the string to
- Shovel and Post Hole Digger for post holes. You can also rent a motorized post hole digger/ auger for faster post hole digging.
- Tub, wheelbarrow or powered mixer for cement
- Measuring Tape
- Level
- Rubber Mallet and Regular Hammer
- Hacksaw or Sawzall for trimming panels (if necessary)
- Drill or power driver
- Cobalt or Steel Rated Drill bits – 5/8” (5.5” J-Bolt for walk gates) , 3/4” (7” J-bolt for drive gates), 3/8” (Hinge Bolt Kit)
- Socket head for drill or power driver – 3/8” (Fence panel screw), 1/4" (Gate gravity latch)
- Wrenches - 9/16” (Hinge bolt kit), 14mm (Hinge Bolt Kit), 15/16” (5.5 J-bolt), 1 1/8” (7 J-bolt)\*
- Square or Angle Finder

\* An adjustable crescent wrench can be used for the larger sizes



### E. Materials Needed

You will also need the following building material:

- Concrete Mix

Speak to your local home center for advice as they can make suggestions based on your location and time of year. Be sure to understand the difference between hardened and cured. Just because the concrete has hardened, it does not mean it has cured to its full strength. This normally takes 24-72 hours depending on type of concrete and temperature.

- Gravel

While this is optional, adding gravel to the bottom of your post hole will allow for drainage of moisture and less chance of post heaving and sinking due to freezing ground or excessive water. It can also give a firmer base if you over dig the hole. 2-3 inches of gravel per hole is the commonly used amount. You will want larger size gravel, not pea gravel.



- Rebar or Wood Stakes

You will need rebar or wood stakes to run your string line around. Rebar makes for a smaller footprint when setting them next to the fence.

- Exterior Construction Adhesive (Optional)

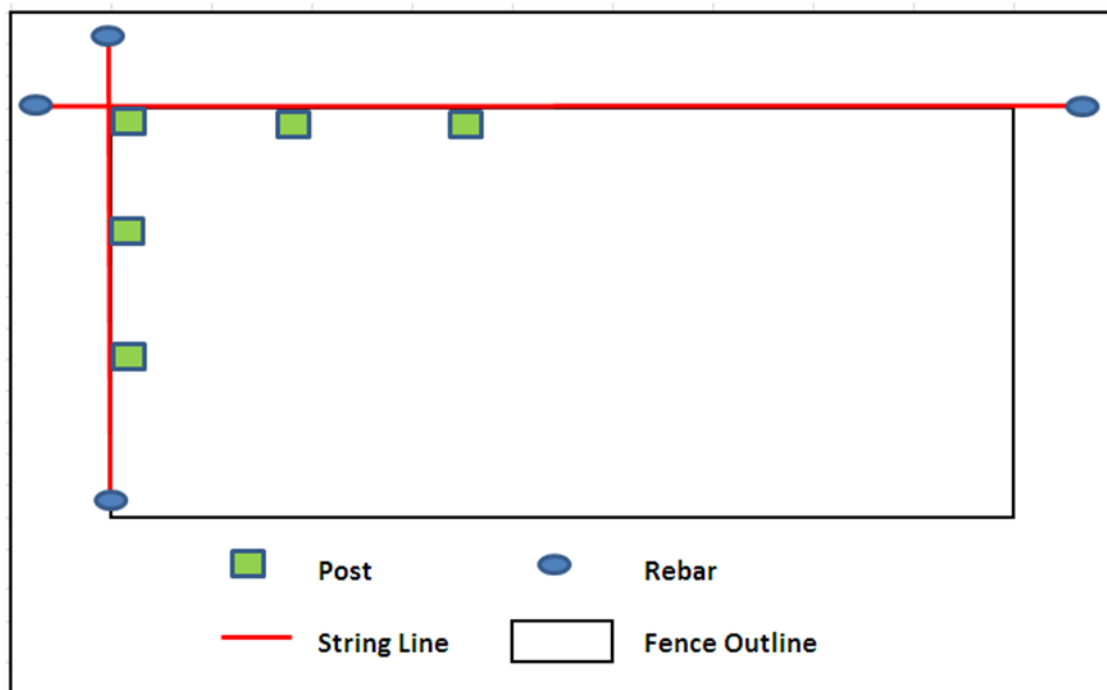
Majority of people affix the post caps with exterior construction adhesive (such as Liquid Nails) for a cleaner look over using the screws. Be sure it is rated for exterior use.

## 2. POSTS

### A. Running a String Line

The purpose of the string line is to make sure all of your posts remain in line. This is a crucial step in the installation process as it will ensure straight posts. The easiest method is to purchase a string-line that is easily visible along with some rebar posts that can be tapped in the ground.

1. Tap the rebar a few feet from a corner and end of a run. Wrap the string tightly around the rebar and ensure it is elevated off the ground. The rebar posts should be past the actual fence outline as to not interfere with the post placement. (See diagram below)



*\*Note that some installations may not have 90 degree corners due to property and project layout*

2. Run string line around the entire layout. Posts will be set inside the string line.



## **B. Determining Post Spacing for Panels and Gates**

For the purpose of spacing your posts:

### **A. Fence Panels**

All of our standard wrought iron panels are a true 96 inches (8 feet) wide. You will want to aim for 96 inches between posts for mounting panels. The brackets do not add any width.

Some people prefer to set posts by the ‘center of post’ measurement instead of by panel width. To come up with that measurement take the width of your panel and add the width of ONE post. For example:

$$- \textit{Full 96" Panel} + \textit{3" Post} = \textit{99" on center}$$

### ***HELPFUL TIPS!***

Worried about post spacing? Use an 8’ long board to space the posts while setting them in concrete. Just remember to make sure they are spaced 8’ top and bottom along with being level.

- If you come up with a little less than 96 inches in-between posts, the horizontal bar ends can be trimmed using a hacksaw or sawzall before sliding the brackets on. Be sure to touch up your cuts with paint.
- If you come up more than 96 inches apart, the brackets will allow for roughly an additional  $\frac{3}{4}$ " inch of gap between posts, but your panels will be able to slide left to right. This can be cured by putting epoxy or exterior adhesive in the bracket before sliding the panel in.

**B. Walk and Driveway Gates**

Gate openings will vary based on gate width. The following shows the total widths that can be used for post spacing around gates. All hinges have some in/ out adjustability. Find the gate setup you have (single or double), the hinge you have and the latch you are using to determine the post spacing below:



**5.5"J-Bolt**

SINGLE GATE

Minimum: 2.5"  
 Maximum: 3.25"

DOUBLE GATE

Minimum: 5"  
 Maximum: 6.5"



**7"J-Bolt**

SINGLE GATE

Minimum: 3"  
 Maximum: 4.75"

DOUBLE GATE

Minimum: 6"  
 Maximum: 9.5"



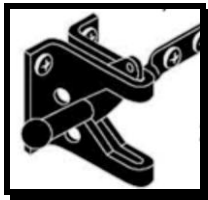
**Tru Close Pool Hinge**

SINGLE GATE

Minimum: 3/4"  
 Maximum: 3/4"

DOUBLE GATE

Minimum: 1"  
 Maximum: 1.5"



**Gravity Latch**

Minimum: 1"  
 Maximum: 1.75"



**Magna Latch**

Minimum: 3/4"  
 Maximum: 1"



**Z-LOKK**

Minimum: 1/2"  
 Maximum: 1"



**LOKK LATCH**

Minimum: 1/2"  
 Maximum: 1"



Using those measurements, calculate your gate post spacing by:

- a. Measuring the width of your gate (add both leafs together for double gates)
- b. Add hinge width
- c. Add latch width

So the equation for post spacing around gates is:

$$\text{- Gate Width} + \text{Hinge Width} + \text{Latch Width} = \text{Post Spacing}$$

For Example:

$$\text{- } 48\text{'' Gate} + 3\text{'' Hinge Width} + 1\text{'' Gravity Latch Width} = 52\text{'' between posts}$$

Or

$$\text{- } 120\text{'' Double Walk Gate} + 6\text{'' Hinge Width} + 1\text{'' Gravity Latch Width} = 127\text{'' between posts}$$

#### **HELPFUL TIP!**

- Aim for an in-between post measurement that is about the middle of the minimum and maximum settings. That way, you have adjustability left should the posts be off a little. Go closer to the minimum for a tighter opening and closer to the maximum if you want a wider hinge spacing.

### **C. Setting Posts**

1. Once you have run your string line and marked where your post holes will be, you can begin digging the post holes. Begin with an end or corner post. The rule of thumb is that a post hole should be roughly three times the diameter of the post you are setting. So if you were setting a 2x2 post, the hole should be at least 6'' across (2x3 = 6). Post depth varies by region. Rule of thumb is that in dry areas with no winter freeze, you should set the post 18'' to 24'' in ground. In areas with winter and persistent freeze, you should set them 24'' to 36'' in ground.
2. How much of the post sticks up above the ground will vary based on your preference. Be sure to take into account the following when determining how much of your post is above ground:
  - A. Take into account the height of your post cap in relation to the top of your fence panel (especially with ball caps)
  - B. Be sure to account for the 1-3 inches of spacing below your fence panel.

---

11 South River Street  
Kent OHIO 44240

---



3. Most customers find it easiest to determine the post height without a cap and setting the top of the post (with no cap) even with the top of your fence panel. So if you had a 4' fence panel that you wanted 2" off the ground, you would set your post so that 4'2" was above ground. Then when you put the post caps on, they would be above the line of the fence. This is purely a matter of customer preference and can be done any way so long as a sufficient amount of the post is set in the ground as outlined above.
4. When digging your post holes, you want the hole dug in relation to the string line so that the post will touch the string line.

***HELPFUL TIP!***

When digging the hole, you can dig it a little deeper and add 2-3 inches of gravel to the bottom, to allow for drainage of water. It will also allow you to control the depth if you over dig the hole some. Be sure your holes are all the same depth so that the posts look uniform in height appearance. Adding gravel is better than putting dirt back in if you over dig the hole.

5. Mix the cement. Follow the product guidelines. Be sure to mix it on the dry side. You want something that is roughly the consistency of chunky peanut butter that will hold the post in place.
6. Put a few scoops of concrete in the hole and then push the post in. This will allow you to move the post around and position it before fully burying it. Be sure you are setting the post so it is touching your string line.



7. Once you feel good about the post positioning, pour or shovel in the remaining cement. Be sure to use a board or flat item to pack your concrete in the hole and avoid air gaps. Shovel the concrete in the hole to 3-4 inches below grade. This will allow you to later cover the concrete footing with dirt and allow grass to grow around the post.



*DISTINCT FROM FORGE TO FINISH.*

- Using your level, ensure the post is still plumb. The post should be able to stand on its own in the concrete if it was mixed to the correct consistency.



- Re-measure often to ensure the spacing between posts is still 96 inches (or the width of your cut panel). Use a rubber mallet to tap posts into line if they shift while the cement is still wet.
- When the concrete has hardened enough that the post will not shift, put dirt back in over the concrete. This will make sure rain or snow does not get in the hole and pool. Over fill the hole slightly so that it will be even when it settles.



- Wait until the concrete is fully cured before hanging the fence panels. Look at your concrete bag for instructions on curing time.



DISTINCT FROM FORGE TO FINISH.

### 3. PANELS

#### A. Hanging Panels

1. Before hanging your panels, be sure you have followed your concrete's curing instructions.
2. Be sure to leave a gap of space under the panel so that if you need to trim grass you can do so without taking the powder coat finish off the pickets. Standard spacing is 1-3 inches off the ground.
3. Slide your brackets onto the horizontal rails as shown below. The tab with the screw hole should be pointing down so that it is under the rail for a cleaner look and be centered on the post.



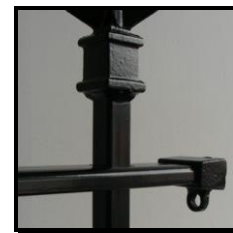
*Standard Bracket*



*Angle Bracket*



*Self-Tapping Screw*



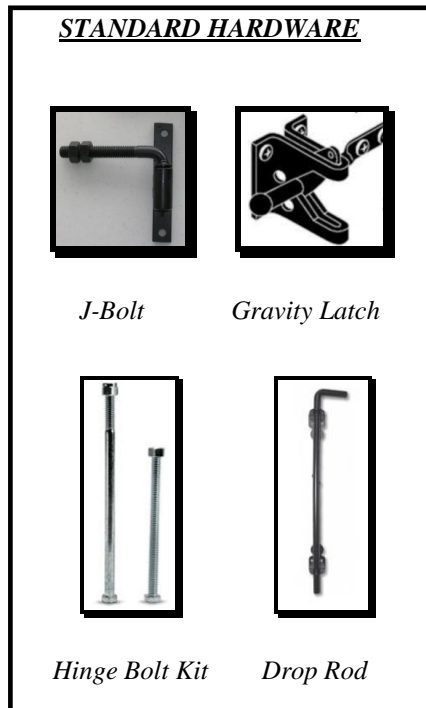
*Bracket Installed*

4. The supplied screws are self tapping. Slowly begin running the drill until it gets a cut into the metal then speed up the drill to drive the screw in. Be careful to not over tighten the screw and strip out the hole. A center punch can help give an indentation for the screw to bite into also.
5. You can also weld the brackets to the posts for added security if you choose to do so. If you do weld the panels on, be sure to clean all welds properly and use a paint that contains both a primer and paint for painting the welds.

## 4. GATES (Walk or Driveway)

### A. Installing Gates

- Determine which gate hardware pieces you have from the items below:

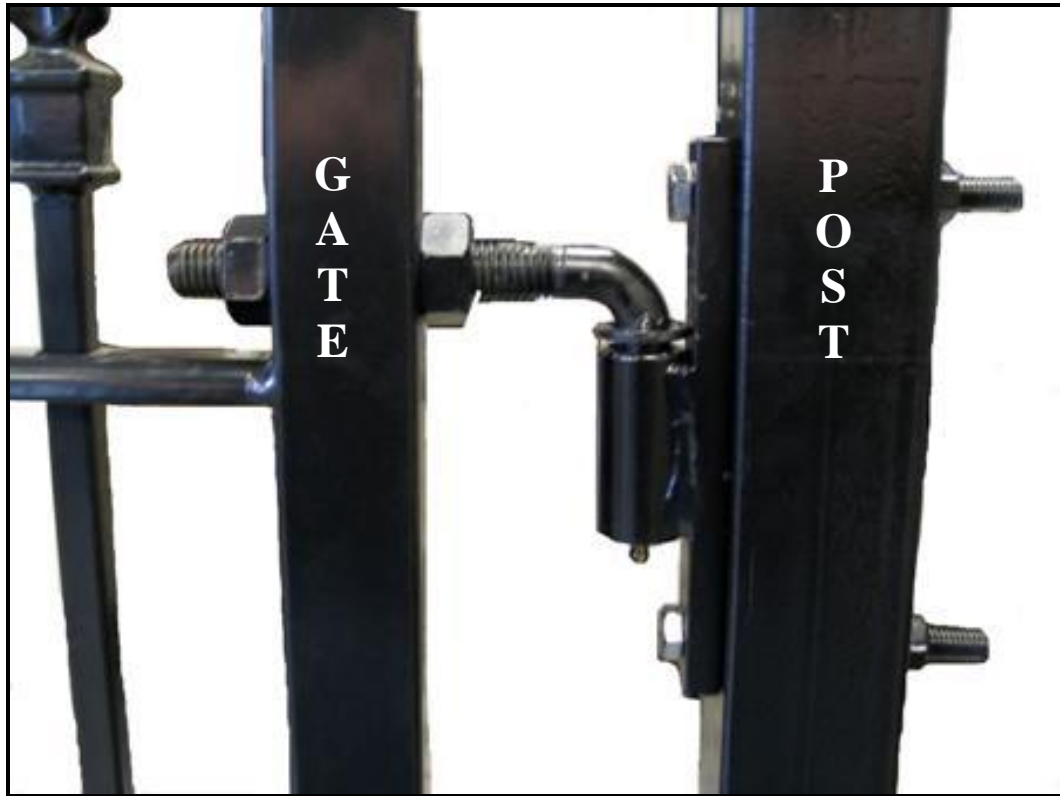


- The following steps are for the standard hardware being installed on our steel posts. If you have purchased optional hardware, reference the install sheets included in their packaging. If you are mounting to a surface other than a steel post, please consult your IronFenceShop representative for suggestions on installation.

PERIMETER FENCING  
**IRON • FENCE**  
SHOP  
ESTATE GATES

DISTINCT FROM FORGE TO FINISH.

3. Typical installation of the J-bolt hinges is to have the flat plate part mounted to the post and the J-portion through the gate as pictured below.



4. There is no standard spacing for where the hinges need to be mounted vertically on the gate frame and post. Some general rules of thumb:
  - \* Walk Gates – 4” to 10” from top and bottom of the gate frame
  - \* Driveway Gates - 12” to 18” from top and bottom of the gate frame
5. Before you drill your posts or gate, be sure to account for the gap at the bottom of the gate. There is no standard gap size, but most folks will mount the gate to line up with the tips of the fence panels around 2-3 inches off the ground.
6. Use a quality cobalt or steel rated bit to drill your holes. We recommend you start the hole with smaller bit and then step up to the full size bit.

---

11 South River Street  
Kent OHIO 44240

---



7. Be sure to measure and line up your holes on each side of the post. Both the gate frame and post will be drilled on two sides. The threaded portion of the j-bolt will go through the gate frame and the hinge hardware kit bolts will go through the post.

***NOTE: You will not use all of the supplied bolts and nuts in the hinge hardware kit. It includes bolts for all post sizes***

8. The j-bolt hinges will separate into two pieces: the threaded portion and the flat plate that it rests in.

***NOTE: Be careful when separating the j-bolt to not lose the ball bearing down in the grease.***

9. Mount the flat plate of the J-Bolt hinge assembly to the post. Feed the hinge hardware kit bolts through the flat plate of the j-bolt hinge and the post. Tighten the supplied nuts in the hinge hardware kit to securely mount the hinge.
10. Leave the inner adjusting nut on the J-bolt and screw the outer one off. Feed the threaded portion of the j-bolt through the gate. Screw the outer adjusting nut back on as pictured on the previous page. Finger tighten them for now.
11. Lift the gate up and put the male J-Bolt into the female portion with the flat plate that is mounted to the post.
12. Using the two adjusting nuts on the J-bolt, align your gate to where it is level and spaced evenly. Once it is, tighten the two adjusting nuts against the gate frame. The additional J-bolt threads past the adjusting nut can be trimmed off but be sure to leave some threads for adjustment.
13. Next, mount your gravity latch to the gate and post. Typically, the clasp portion will go on the post (in a double gate setup it will go on the adjoining gate half in the center). It should be mounted with the larger padlock hole facing the bottom. As with the hinges, there is no specific mounting height. Mount it at a height that feels natural. Use the smaller supplied self tapping screws to mount the arm and clasp of the gravity latch.

After you mount the latch, mount the arm to the gate. Make sure that it lines up with the height of your clasp.



PERIMETER FENCING  
**IRON • FENCE  
SHOP**  
ESTATE GATES

*DISTINCT FROM FORGE TO FINISH.*

14. If you have a double gate to be manually opened, you will want to install a drop rod to keep one half stationary so the other leaf can latch to it. Mount the brackets on the inside of one of the gate halves. There is no set height they need to be at. Set the brackets so that the curve part of the handle can rest on the top bracket with enough of the rod left to be put firmly in the ground. Some mounting items to consider:
- a. The drop rod can be stuck in the ground if it is over grass. You can also buy a small piece of pipe one size larger than the drop rod and drive it into the ground as a more solid stop for the rod.
  - b. If the drop rod is being installed over concrete, you will need to drill out a small hole in the concrete with a masonry bit to give the drop rod a place to catch. Depth of the hole depends on the size of the gate.
15. If you are utilizing an automatic opener, see the manufacturer instructions enclosed in the opener's box.





DISTINCT FROM FORGE TO FINISH.

## 5. SPECIAL SITUATIONS

### A. Cutting a Fence Panel

1. It is rare that a project ends up with all full 8' panels. However, trimming panels is an easy process using a hacksaw, sawzall, or chop saw.



2. Determine the panel width you need. Measure along the horizontal rails and mark where the cut needs to be made. If your measurement lands on a picket, you may need to trim from both sides of the panel to line everything up.
3. An optimal cut will be one that you can make up against a picket. This preserves the 3 and 7/8 spacing between the pickets and give a cleaner look to the installation. When cutting, have someone hold the panel or secure it so that the tool does not shake the panel roughly and cause weld fatigue.
4. Be sure to use the supplied touch-up paint to cover any cuts before mounting them. Leaving exposed steel will allow for rust to set in.



*DISTINCT FROM FORGE TO FINISH.*

## **B. Dealing with Yard Grades**

1. There is usually some grade to yards that may need to be compensated for. There are two methods to address this. The easiest is to back fill the area by the fence so that the panels can be mounted level across. This works for slight dips and grades where the drainage is not an issue. If the grade is steeper or backfilling would create drainage issues, you will need to 'step' the panels.
2. 'Stepping' panels is adjusting the panel height on the posts to compensate for grade. So one panel may be higher or lower from the prior one to maintain uniform height off the ground. Below are some examples of stepped fence panels:





DISTINCT FROM FORGE TO FINISH.



3. Some items to consider if you need to step panels:
  - a. Post heights may need to be adjusted to compensate for higher or lower panels.
  - b. Some additional gap under the panel may not require stepping unless you are trying to keep animals in or out that could squeeze under the larger gap.

### **C. Installing on Top of Concrete**

1. Flange Posts
  - a. If you purchased posts with a welded plate on the bottom for mounting on top of concrete, you will need to provide the mounting hardware. You will want to purchase hardware specifically made for concrete mounting. Some examples of this hardware are Red Head Concrete Wedge Anchors (1/2" diameter) and Thunderstud Concrete Wedge (1/2" diameter) anchors. Those are name brands, but any 'concrete wedge' or 'concrete wedge anchor' style hardware in a 5/8" diameter should work. Your local hardware store should be able to assist.
  - b. Be sure to follow the manufacturer's installation instructions. Most will require you to mark where the holes will need to be drilled, drill to the proper depth with a masonry bit, pound the fastener in the concrete and then bolt the post flange down.

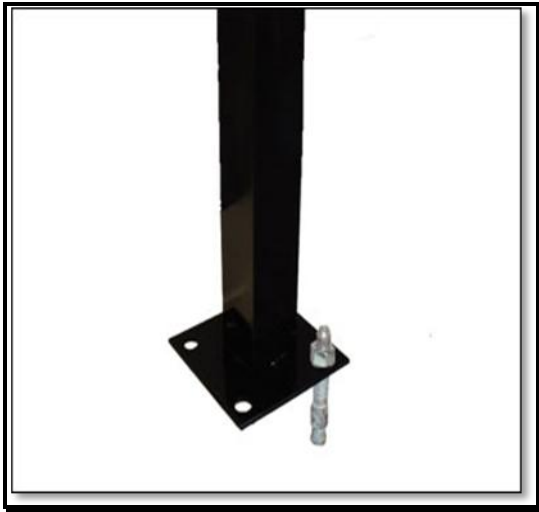
---

11 South River Street  
Kent OHIO 44240

---

## 2. Core Drilling

- a. The stronger method (highly recommended for gate posts) is to ‘core drill’ the concrete. This involves a specialty tool that can be rented locally to drill out a section of the concrete surface without going through the bottom of it.
- b. The post is then set in the drilled hole with a fast setting epoxy (such as Por-Rok)



*Flange Post*



*Core Drilled Post*

### D. Installing Panels at an Angle

1. If you were supplied special angle brackets for your installation, they will install in the same manner as our standard brackets.
2. Slide the angle brackets over the horizontal rails. Mount the bracket and panel to the post. The wider back portion will allow for you to turn the panel in the bracket and still hold it tight.
3. If you were not supplied angle brackets or need an angle tighter than what the bracket provides, you can modify the brackets. Grind out one side of the bracket so that the fence panel rail can be angled beyond the bracket. Then drill a hole in the top of the standard bracket to put a self-tapping screw in. This will hold the fence panel to the post and bracket while allowing you to angle the panel.

**E. Installing Add-on Decorations**

1. If you purchased one of the add-on decorations shown below for your panels or gates, you will need to install them separately.



*Butterfly*



*Rings*



*Cape Cod*



*Guardian*



*Oak*

2. All the add-on decorations affix to your panel or gate using a 1/2"x#8 self-tapping screw. Situate the decoration so that the opening on the back fits over the picket. There is no right or wrong placement for the decorations. Install them at a location you find aesthetically pleasing.
3. Hold the decoration in place while driving the self tapping screw in. Temporarily affixing the decoration with wire or tape will help hold it in place if you are installing them alone. Be sure to not over tighten the screw and strip out the thread.



## **6. CARE AND MAINTENANCE OF YOUR FENCE AND GATES**

Your fence and gates should require little to no maintenance for many years. The following is a list of items you should keep watch for to keep your fence in beautiful shape for years to come:

- A. The main maintenance item that needs to be watched for is scratches and damages that penetrate the powder coat and galvanized finish. These should be addressed as soon as possible with the supplied touch-up paint to keep rust from setting in.
- B. Inspect your fence yearly for any damage that may have caused rust to set in. If rust has formed, there is no need to be concerned. The thickness of the steel would require many years of being left unattended to structurally weaken the material. Simply use a wire brush to take the rust off, clean the area of dust/ dirt and then use the supplied touch-up paint to touch the area up.

### ***HELPFUL TIP!***

*After using your touch-up paint, hold the can upside down and spray until it runs clear. This will keep the nozzle from drying with paint and clogging.*

- C. If you have gates, grease the hinges by using a common automotive grease gun on the zerks. This can be done annually or when the hinges begin to squeak signaling they are dry. Any general grade lubricant grease will suffice.