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## *DRIVEWAY AND WALK GATE*

## *INSTALLATION GUIDE*



Revised 2/2015



***\*\*PLEASE NOTE - All installations have a varying degree of 'uniqueness' to them. The following instructions are meant to be general guidelines in a normal post-in-ground installation of either our Stronghold Iron or Infinity Aluminum gates. If you are installing your gate in a different manner or have any questions that this guide does not answer, please contact us via phone or email. \*\****

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## **Before You Start**

Before you get started with your installation, ensure you have done the following items first:

### **Obtain a Permit (if Required)**

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

### **Have Your Utilities Marked**

Even if you are not required to obtain a permit, call to have your utilities marked. It is important to know what's buried below before you begin digging post holes. Simply dial '811' and they will get you in contact with your local utility provider to come out and mark any buried lines at no charge. They will typically come out within 24-48 hours and will mark any buried utilities with flags or spray paint. You can visit [www.call811.com](http://www.call811.com) for more info on how the process works.

### **Gather the Required Tools**

To install your gate, you will typically need the following tools:

- Shovel and Post Hole Digger (manual or powered) for post holes
- Tub, wheelbarrow or powered mixer for cement
- Measuring Tape
- Level
- Rubber Mallet and Regular Hammer
- Drill or power driver
- Socket and/or wrench set for installing supplied gate hardware

### **Purchase Concrete and Miscellaneous Supplies**

The following building materials will need to be purchased from your local hardware store unless they are noted as optional:



### **Concrete Mix**

- Any standard concrete mix will work. You can utilize reinforced or fast setting concrete if you like, but it is not required.
- The number of concrete bags required will vary based on the size and length of post being buried. You can find concrete calculators online to help determine how many bags you will need. You will need to know the following to utilize the online calculators:
  - Size of your posts
  - Diameter of the hole (usually 3x the post size)
  - Depth of the hole
  - Number of posts

### **Large Size Gravel (optional)**

- 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/ sinking due to freezing ground or excessive water. It is also beneficial to use if you accidentally over dig the depth of a post hole.

### **High Visibility Spray Paint (optional)**

- This can come in handy when marking where to dig your post holes after you determine their location.



## Digging Your Post Holes

The following steps are to guide you through post placement, post hole digging and setting the posts in the ground in concrete. If you are not setting your posts in the ground in concrete, or you are hanging the gate from different posts/ pillars (such as wood or masonry posts/ pillars) than what we provide, please contact your Iron Fence Shop® salesperson for tips on how to proceed.

### Determine the Post Spacing

- We want to determine the ‘on-center’ post measurement for our gate. Digging your holes based off the post hole center is much easier than trying to dig the holes for the distance needed between the posts.
- Post spacing for gate openings will vary based on gate width and the hinge/ latch hardware being installed. So before we can calculate our ‘on-center’ post measurement for the gate, you will need to note the following items down:
  - The width of the gate
  - The width needed for the hinges
  - The width needed for the latch
- First, let’s determine which style of hinge was supplied in your order. If you are unsure which hinge you have, you can refer to your itemized invoice or refer to Figure 2. Once you know which hinge your gate is utilizing, note the single (one leaf) or double (two leaf) gate width measurement in the table below:

Hinge Name	Use	Adjustable	Single Gate Width	Double Gate Width
5.5" J-Bolt Hinge*	Walk Gates	Yes	3"	6"
7" J-Bolt Hinge*	Driveway Gates	Yes	3" to 4"	6" to 8"
Safetech Self-Close Hinge**	Walk Gates	No	3/4"	1.5"

**Figure 1 - Hinge Width Table**

\* NOTE – revised parts with additional adjustability available late 2015.

\*\* NOTE – Covers all models of Safetech self-closing hinge



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Figure 2 - 5.5" J-Bolt Hinge / 7" J-Bolt Hinge/ Safetech Self-Close Hinge

- Next, let's determine which style of latch was supplied in your order. If you are unsure which latch you have, you can refer to your itemized invoice or look in Figure 4 below. Once you know which latch your gate is utilizing, note the width measurement in the table below:

Latch Name	Key Lockable?	Target Width Between Mounting Points
Gravity Latch	No	1"
Safetech Cobra Latch*	Yes	3/4"
Safetech Pool Latch	Yes	3/4"
Locinox w/ Ext Kit	Yes	1/2"

Figure 3 - Latch Width Table

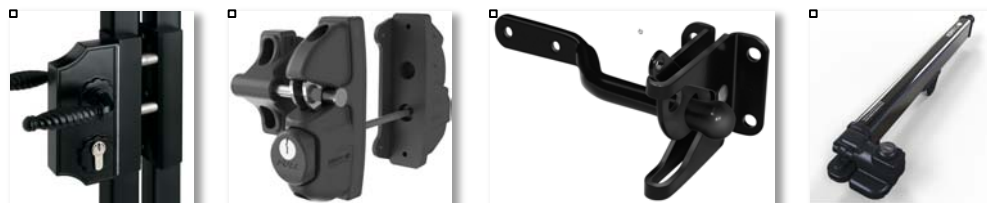


Figure 4 - Locinox / Safetech Cobra / Gravity Latch / Safetech Pool Latch



- Now that you have all of your width measurements (gate, hinges, latch), we are going to add all of those together plus the width of **ONE** post to get the ‘on-center’ post measurement:

***Gate Width + Hinge Width + Latch Width + 1 Post Width = Gate Post ‘On-Center’***

- Using that equation, let’s calculate the gate post ‘on-center’ measurement for the following situation:
  - 48” Wide Single Walk Gate (one leaf)
  - 3” for 5.5” J-Bolt Hinge
  - 1” for Gravity Latch
  - 2” Posts Being Used

***48” Gate + 3” Hinge + 1” Latch + 2” Post = 54” On-Center for Gate Posts***

- If you were installing a double walk gate or double driveway estate gate (two leafs make up the total width) then you would use the ‘double gate width’ column for the hinges in Figure 1 since you will have two sets of hinges instead of one. Let’s take that same equation and apply it to a double gate:
  - 10ft (120”) Arched Double Driveway Gate (two 5’ leafs)
  - 8” for 7” J-Bolt Hinges (4” each side of the gate)
  - 1” for Gravity Latch
  - 4” Posts Being Used

***120” Gate + 8” Hinges + 1” Latch + 4” Post = 11’1” (133”) On-Center for Gate Posts***

- If the hinges or latch you are utilizing can work at multiple widths (adjustable), you want to utilize the middle number of the adjustment range so that you have left/ right adjustment available to you.



## Digging the Post Holes

- Once you have determined the ‘on-center’ spacing for your posts, mark the location on the ground. This can easily be done with spray paint.
- You may want to run a string across your walk or driveway to ensure the gate is being installed straight across. Having a point to measure from (your garage or the street for instance) can help to make sure the gate is going to be perpendicular to the driveway or walk way.



**Figure 5 – Running a String Will Also Help Keep Your Post Hole Centered**

- Be sure to dig your post hole as straight down as possible. If you live in an area that freezes heavily in the winter, digging a posthole that is wider at the top than the bottom will allow the frost to push on the concrete footing and ‘heave’ your 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 4x4 post, the hole should be at least 12” across ( $4 \times 3 = 12$ ). A wider hole will not hurt anything, but it will require more concrete.
- The depth to dig your post hole 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 heavy winter and persistent freeze, you should set them 24” to 36” in ground. If you are installing a driveway gate, you want a minimum of 30-36” in ground.





- Before digging your post hole, be sure to account for the height of the post that needs to remain above ground. To determine how much post you need above ground vs buried in ground, take the following into consideration:
  - The height of your gate at the side (not the arched center)
  - How much of a gap you want under each leaf (ideally 2-3")
  - Where you want your post caps in relation to the top of the gate. We recommend installing the gate so the top of the post (without a cap) is even with your gate frame.
- **EXAMPLE** - Let's say we have a 6' Arching to 7' tall driveway gate, 9' long posts and we want a 2" gap at the bottom of the gate. You would set your post so that 6'2" was sticking up above ground and your post hole was 2'10" deep (6'2" above ground + 2'10" buried = 9' post length).
- You can choose to have the posts stick up higher or inline with the gate frame. Simply adjust the example calculation above to match up with your desired look.
- Once you have determined the depth of your post holes, it's time to start digging. Be sure to check your post hole depth and width as you go. Keep loose dirt away from the top of your hole. You can utilize a flat object at the top of your post hole and a tape measurer to monitor the depth as you proceed.
- If you accidentally dig too deep, add gravel (not loose dirt) to the bottom of the hole. It can actually be beneficial to over dig your post hole by 2-3 inches and add gravel at the bottom, but it is not required. The gravel will allow for water to drain away and unlike loose dirt it will not compact over time. It also makes fine tuning your above ground post height much easier.



**Figure 6 - Adding Gravel to the Bottom of the Hole is Not Required, but Can Be Beneficial**



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## Setting Your Posts

- Once your post holes are dug, you can begin placing the posts in concrete. Start by mixing your concrete up. We recommend following the manufacturer's mixing guidelines and NOT using the 'dry bag' method of placing dry concrete mix in the ground and pouring water on top.
- You want to mix your concrete on the dry side. The concrete should roughly have the consistency of chunky peanut butter so that it will hold the post upright in the hole without additional support.
- Once mixed, scoop a couple shovels' worth into the post hole filling it between 1/4 to 1/2 way up. Take one of your posts and push it into the concrete at the center of the post hole. Make sure the post is touching your string line (if utilized) or center it in the post hole.



Figure 7 - Be Sure to Check Level as You Proceed

- Once you feel good about the post positioning, pour or shovel more concrete into the hole. Leave roughly to 2-4 inches from the top of the hole to the concrete. This will allow you to later cover the concrete footing with dirt and allow grass to grow around the post.
- Using your level, ensure the post is still plumb on both faces. The post should be able to stand on its own in the concrete if it was mixed to the correct consistency
- As you set the posts be sure to measure between them to double-check your spacing. Unlike before with the 'on-center' measurement for posts, we now want the ACTUAL gate spacing (with hardware included) between posts.
- If you find any posts have shifted or need adjustment for the space between posts, use a rubber mallet to tap them into place while the concrete is still wet.



- Allow the concrete to dry to the point you can no longer move the post in the hole. Once it has reached that point, you can shovel dirt over the concrete in the last 2-4”.
- It’s often a good idea to mound the dirt above the yard line to allow for the soil to settle without leaving a depression. Ideally, this will be done the day you set the posts so that if it rains or snows, water does not begin pooling and saturating the still curing concrete.



## Install Your Gate

- **IMPORTANT** – Gates can exert a lot of leverage force on concrete post footings. Make sure your concrete has fully dried and cured before hanging your gates. Consult the concrete manufacturer for drying/ curing time required before use.
- **NOTE** - The following steps cover installing a walk or driveway gate utilizing our gate hardware and installing the gate on our posts. If you are utilizing other gate hardware or mounting the gate to a surface other than our posts (such as a wood post or masonry pillar), please consult your Iron Fence Shop® salesperson for assistance on installation.

## Determine Your Gate Hardware

We offer several options in hinges and latches for our walk and driveway gates. Consult figures 8 and 9 below to determine which hinges and latches you are utilizing:

### Gate Hinges



Figure 8 - 5" J-Bolt Hinge / 7" J-Bolt Hinge / Safetech Self-Close Hinge

### Gate Latches

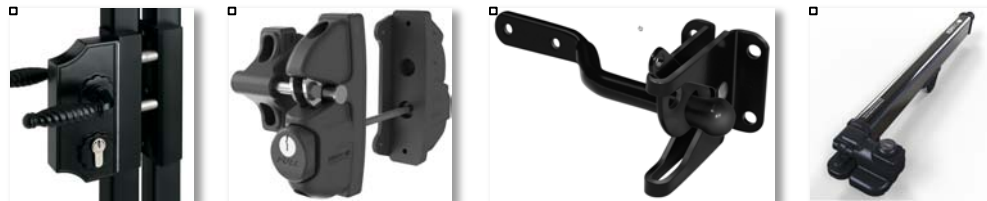


Figure 9 - Locinox / Safetech Cobra / Gravity Latch / Safetech Pool Latch



## Install the Gate Hinges

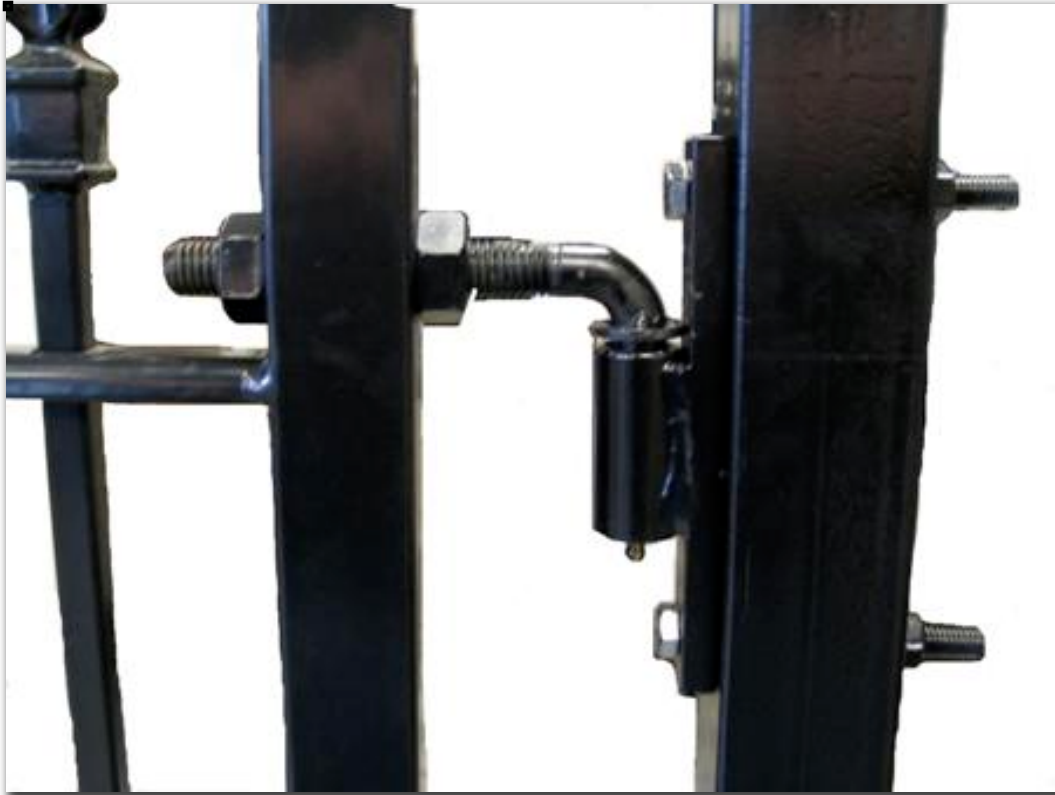
- There is no standard spacing for where the hinges need to be mounted vertically on the gate frame and post. You generally want to install them a third of the way down the gate frame top and bottom of the post so that they are not too far inward or outward.
- When determining hinge placement on the gate frame and post, be sure to account for the gap at the bottom of the gate. There is no standard bottom gap height, but you ideally want about 2-3" and to ensure the gate can freely swing all the way open and shut without contacting the ground.
- Make sure that your chosen hinge mounting location will not interfere or come in contact with any horizontal rails or decorative features of the gate.

## Safetech Self-Closing Hinges

- If you are utilizing Safetech self-closing hinges, consult the installation instructions included in their package.

## J-Bolt Hinges (5.5" and 7")

- Installation of the j-bolt hinges is the same whether you are using the 5.5" for a walk gate or the larger 7" version for a driveway gate.
- The flat plate part mounts against the post and the threaded J-portion with the two adjusting nuts will be mounted through a hole you drill in the gate frame (see Figure 10)



**Figure 10 – An Installed J-Bolt Hinge. The Gate Frame is on the Left and the Post on the Right**

- Determine the mounting location of your J-bolt hinge in relation to both the post and gate frame. Mark your post and gate frame for drilling. Be sure to measure and line up your drilling points as both the gate frame and post will be drilled on two sides of the post and the holes need to be level.
- Use the supplied drill bit (or a quality cobalt tip) to drill your holes in the post first. Clean any burrs in the hole and apply a small amount of touch-up paint to the hole.
- Mount the flat portion of the j-bolt against the post using the supplied hinge hardware kit bolts. These will be the silver bolts of varying length in the clear bag. (**NOTE** – You will not use all of the bolts in the bag. There are enough bolts for a set [two] of j-bolt hinges and in every length to accommodate post sizes from 2” up to 6”).



- When installing the bolt and washer from the hinge hardware kit, a small smear of grease on the bottom of the bolt head and the washer for the nut will make sure that the contact points on the hinge and post do not have their finish marred or stripped when the hardware is tightened down.
- With the j-bolt hinge mounted on the post, lift your gate up to ensure your marked location on the gate frame still lines up with the bottom gap and top of gate as you planned. If everything looks good, drill the gate frame. Clean up any burrs and put a shot of touch-up paint in the hole.
- Take the outer (at the end of the threads) adjusting nut off the threaded portion of the j-bolt. Feed the thread through the hole you just drilled in the gate frame and then re-thread the nut on the outside to secure the threaded portion to the gate frame. Use the two adjusting nuts to move the gate frame left/ right if adjustments are necessary.
- **NOTE** – If you are installing a larger gate, the threaded portion of the j-bolt and the backing plate will separate so that you can install them separate and then lift the gate up dropping the arm back in the plate portion. Just be careful not to lose the ball bearing that is down in the grease of the swivel point.



**Figure 11 - The J-Bolts Will Separate at the Swivel Point**



## Install the Gate Latch

There is no specific place you need to mount the latch on your gate. Most latches are normally mounted in the 40-42" height range.

### Safetech Cobra Latches

- See the installation instructions included with the latch

### Safetech Pool Latch

- See the installation instructions included with the latch

### Locinox Latch

- See the installation instructions included with the latch

### Gravity Latch

- The clasp portion will go on the post (in a double gate setup it will go on the adjoining gate half in the center) with the larger padlock hole facing the bottom. Use the smaller supplied self-tapping screws to mount the clasp portion to the post.
- The arm portion will go on the gate frame. Line it up to intercept the clasp and affix to the gate frame using the smaller self-tapping screws provided.

### Drop Rod (Double Gates Only)

- If you have a double gate to be manually opened, you will need to install a drop rod on one or both leafs to keep it the gate stationary in the center. Do not rely on a latch alone to hold a double gate shut.
- Mount the drop rod brackets on the inside (property side) of the gate frame using the supplied hardware. Install the brackets so that the curved part of the drop rod can rest on the top bracket with the rod in full contact with the ground.
- If you are mounting over grass drive a small piece of pipe one size larger than the drop rod into the ground as a more solid stop for the rod.





- 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. You can also epoxy a small piece of pipe in the hole that the rod will fit into to prevent the concrete chipping around the hole from use.

### Automated Gate Operators

- If you are installing a driveway gate and elected to purchase a GTO automated gate operator, please refer to the installation instructions included in the box.

### Project Completion and Maintenance on Gates

- Be sure to fill out your warranty sheet and email or mail it in to us.
- When you are finished installing your gates, be sure to go back and touch up any scuffs or scratches that occurred during shipping or installation using the supplied touch-up paint.
- If you purchased an iron gate, watch the first couple weeks for any missed scuffs or scratches to bare metal and touch them up. If you find surface rust has formed, there is no need to be concerned. The thickness of the steel and iron would require many years of being left unattended to structurally weaken the piece. Simply use a wire brush to take the rust off, clean the area of dust/ dirt and then use paint with rust-inhibitor to touch the area up.
- If you purchased an aluminum gate, touch-up is still something that should be done to exposed metal, but the aluminum will not rust or degrade in the same fashion as exposed steel and iron.
- Grease or oil the hinges as needed. Key lockable latches may require a shot of graphite every couple of years to ensure continued smooth operation.