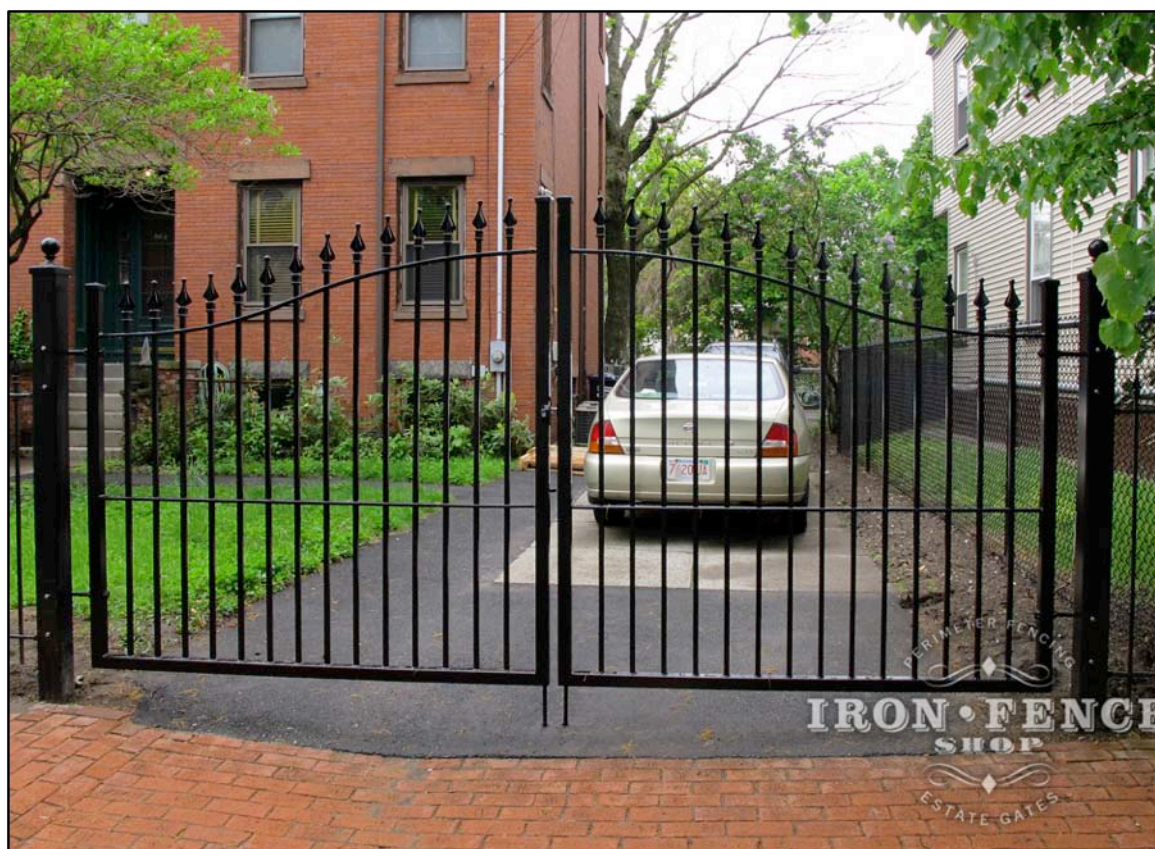




DISTINCT FROM FORCE TO FINISH.

DRIVEWAY AND WALK GATE

INSTALLATION GUIDE



Revised 01/16



PLEASE NOTE – All installations have a varying degree of ‘uniqueness’ to them. The following instructions are meant to be general guidelines for installing our Stronghold Iron® or Infinity Aluminum® driveway and walk 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. You can also view helpful installation techniques in our Video Library and Blog within the Knowledge Center of our website (www.ironfenceshop.com)

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Before You Start

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

Mark Your Layout

- In preparation for installation and for permit approval purposes (if required), you will want to mark the outline of where the gate 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.

Obtain a Fence Permit (if Required)

- Call your local Building/ Engineering Department and ask 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 based on your marked layout.

Have Your Utilities Marked

- Even if you are not required to obtain a fence 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 for more info on how the process works.

Gather the Required Tools

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

- String Line
- Shovel and Post Hole Digger (manual or powered) for Post Holes
- Tub, Wheelbarrow or Powered Mixer for Concrete
- Measuring Tape
- Level
- Rubber Mallet and Regular Hammer
- High Speed and Quality Drill or Power Driver
- Center Punch
- Socket and/or wrench set for installing supplied gate hardware
- Caulk Gun



Purchase Concrete and Miscellaneous Supplies

For a standard in-ground installation, the following building materials will need to be purchased from your local hardware store unless they are noted as optional. **NOTE** – If you are using our specialized flange posts, you will not need to purchase concrete or gravel.

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

- This will be used when marking where to dig your post holes as you determine their location in the layout.

Steel Rebar or Wood Stakes

- These will be tapped in ground and your string line wrapped around them when marking your layout for installation.



Post Hole Placement and Digging

Determine the Post Spacing

- You need to determine how far apart your posts will be spaced prior to digging or setting your posts.
NOTE – If you are utilizing our specialized flange posts, be aware you will use only the ‘between posts’ measurement. See pages 10-12 for more info on installing gates with flange 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
 - The width of your supplied posts
- 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 Figure 1 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"
Self-Close Hinge*	Walk Gates	No	3/4"	1.5"

Figure 1 - Hinge Width Table

* NOTE – Covers all models of self-closing hinge



Figure 2 – 5.5" J-Bolt Hinge



7" J-Bolt Hinge



Self-Closing Hinge



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- 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

- Match up your latches and hinges and note the spacing measurements for each one in the tables. 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 leaves 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’ leaves)
 - 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 with marking 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 post hole that is wider at the top than the bottom can allow for heaving of the post in deep freeze conditions.
- 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

Setting Your Posts in Concrete (Standard 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 so it has a thick consistency. 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 about 1/2 way up. Make sure the post is touching your string line or center it in the post hole.
- Once you feel good about the post positioning, pour or shovel more concrete into the hole. Leave roughly to 2-3 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 all 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.



Figure 7 - Be Sure to Check Level as You Proceed

Setting Your Posts on a Surface (Flange Posts)

- If you are utilizing our specialized flange posts for installing the fence on top of a surface (such as a patio, pool deck or wall top) post installation will be slightly different than the standard posts. All of the spacing notes mentioned prior to this will be the same with the exception of laying your posts out with the **BETWEEN POSTS** measurement in mind and **NOT** the on-center measurement covered earlier.
- The ‘between posts’ measurement is the distance between the faces of two posts. It is as follows:

$$\text{Gate Width} + \text{Hinge Width} + \text{Latch Width} = \text{Gate Between Post Measurement}$$

- You will need to supply the hardware for attaching your flange posts to the surface. We do not supply that hardware. However, the options are all something you can find at your local home improvement store.
- To get the best recommendation from your local store, let them know what type of surface you are mounting the post to, how deep/ thick it is and how tall the fence is. They are likely going to recommend one of the following:
 - **Tapcon** – Good for wall tops or thinner surfaces
 - **Concrete Wedge Anchor** – Good for thicker concrete slabs (4in or thicker)
 - **Wood Lag** – Good for wood deck or patio surfaces
- While at the store, you will need to make sure you get a good masonry drill bit that is the recommended diameter for your hardware. While you can use these with a standard drill, we recommend purchasing or renting a drill with a hammer-drill action. The hammer action will make drilling go much faster and smoother.



Stronghold Iron® Flange Posts

- The iron flange posts come complete and ready to use with the plate welded to the bottom of the post.
- The 4 holes on the iron flange posts are a 1/2" diameter, but we recommend getting 3/8" sized hardware. This will allow for a little wiggle room and easier installation while still fitting properly.

Infinity Aluminum® Flange Post Inserts

- The aluminum fence system utilizes a flange post insert. You will need to trim your posts to your desired height before inserting the flange.
- Before cutting your post, be sure to account for the height of the post with the height of the fence panel and the gap underneath. If you had a 6ft tall gate, 8.5ft post and wanted a three-inch gap under the gate, you would cut the post down to 6'3" before inserting the flange.
- Before you insert the flange, tighten the adjusting bolt until the two halves are almost touching or until there is some resistance when you try to insert the flange into the post.
- With the flange inserted into the post tighten it down until the flange cannot be pulled out of the bottom of the post.
- The holes on the aluminum flange inserts are 3/8". We recommend using 5/16" or 1/4" sized hardware. This will allow for a little wiggle room and easier installation while still fitting properly.

Installing Flange Posts to the Surface

- While you can use a standard drill, we recommend purchasing or renting a drill with a hammer-drill action if you are drilling into concrete, brick or stone. The hammer action will make drilling go much faster and smoother.
- Set your posts around your layout at the proper spacing. For any ends near a wall, be sure to take into account the flange that sticks out on each side.
- As you set your posts, be sure to check they are standing level. You may need to shim under the flange to get the post level if your surface is not level. Metal washers make for good shims.
- With your posts laid out, use something to mark the holes on your surface that you will be drilling. It is best to proceed one post at a time.

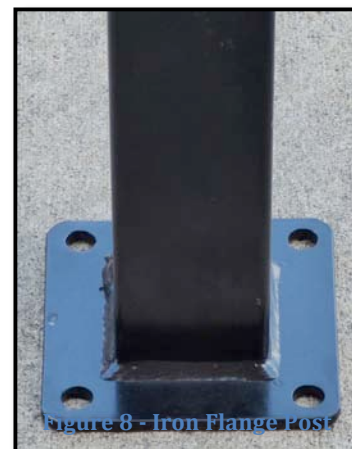


Figure 8 - Iron Flange Post



- Move the post out of the way and drill your surface to the proper depth per the hardware you are utilizing. Be sure to vacuum the dust out the hole before you install the hardware. You may want to set the post back in place as you drill each hole to ensure things are remaining lined up.
- With the holes drilled, set your post back in place and tighten it down with your hardware. Be sure to check for level on both the inner and outer face of the post after you tighten it down. Adjust as necessary.
- Move to your next post and start the process again. Be sure to check the distance between each post as you move through the layout to ensure nothing has shifted. Remember that when spacing flange posts you want the **BETWEEN POSTS** measurement and **NOT** the on-center measurement that is used when digging post holes.



Installing The Post Caps

- This step can be done before or after installing the gate. Part of your order in the install kit is a tube of exterior rated adhesive. You will need a caulk gun to apply the adhesive.

- Some of our cast post caps still have a small hole on them as shown in figure 9. We no longer utilize that method of installation for the post caps. That small hole will not be used. Screws were not provided in your order to secure the caps in that manner.

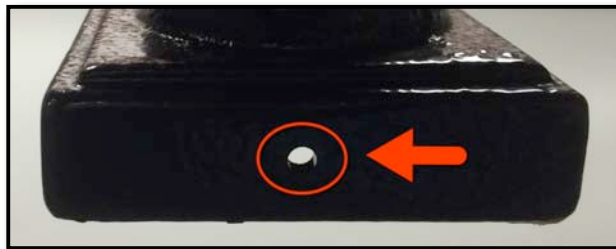


Figure 9- This Hole in the Casting is not Used for Installation

- With the caulk gun, apply a bead of the adhesive on the underside inner lip of the cap on all 4 sides as shown in figure 10. You want the adhesive oriented so that when you press the cap on the post, the adhesive will smear and make contact with the post.

- You want enough adhesive on the surface to make sure it will contact the post, but not so much it spills out when you install the cap. If your cast iron cap has the screw hole in the base, be sure to not put adhesive over or near the hole so that it does not come out of that hole when you press the cap on.
- If your cast iron caps do have the hole, be sure you orient all your caps on the posts so that the hole is facing in the same direction.



Figure. 10 - Apply Under the Cap

- We do our best to estimate how many tubes of adhesive will be needed for your project. If you find yourself needing more, any exterior rated adhesive that will bond with metal will work. These can be found easily at any hardware or home improvement store. Just make sure they are exterior rated.
- Curing time for the adhesive will vary depending on the temperature when it was applied. It could dry in a couple hours or may take a couple days. Be sure to wipe any excess adhesive off your post and cap before it dries.



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 11 and 12 below to determine which hinges and latches you are utilizing:

Gate Hinges



Figure 11 – 5.5" J-Bolt Hinge



7" J-Bolt Hinge



Self-Closing Hinge

Gate Latches



Figure 12 - 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 from the top and bottom of the gate frame 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.
- So long as the area around the gate is flat, most installations will match the bottom gate gap with the bottom gap of the fence panels. If you live in an area that receives heavier snowfall, be sure to account for snow pack and ice when planning the gap under your gate.
- 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 13)

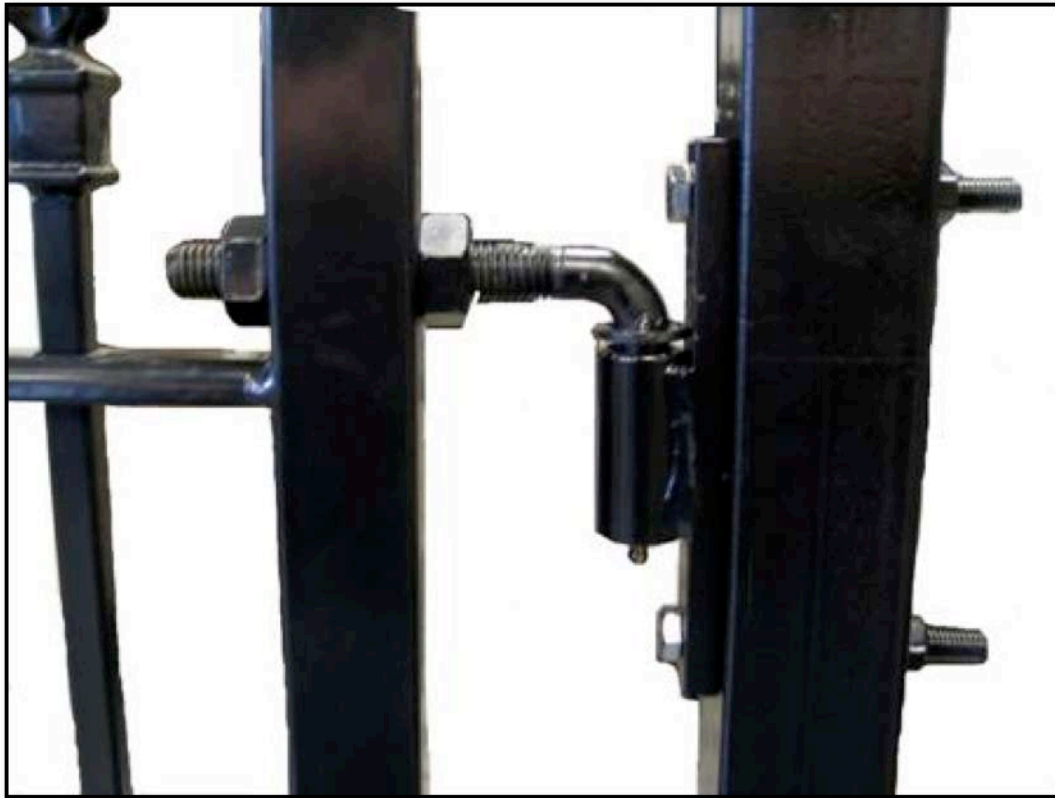


Figure 13 – An Installed J-Bolt Hinge. The Gate Frame is on the Left and the Post on the Right

- 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 the j-bolt hinges and in every length to accommodate post sizes from 2” up to 6”).



- When installing the j-bolt hardware, put a small smear of grease on the underside of the bolt and washer that will make contact with the post. The grease will lubricate the contact points on the hardware and post so that the post finish is not 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 separately. You would then lift the gate up and insert the male portion of the j-bolt hinge back into the female portion. Just be careful not to lose the ball bearing that is down in the grease of the mounting point.



Figure 14 - 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 latch will install as shown in Figure 20. The arm will go on your gate frame while the clasp or catch goes on your post.
- Line it up to intercept the clasp and affix to the gate frame using the smaller self-tapping screws provided. The arm will be close to the edge on the Traditional grade 1.5" gate frames, but they will fit. If you are concerned about fitment, you can pre-drill a smaller pilot hole to locate the self-tapping screw when attach the arm.

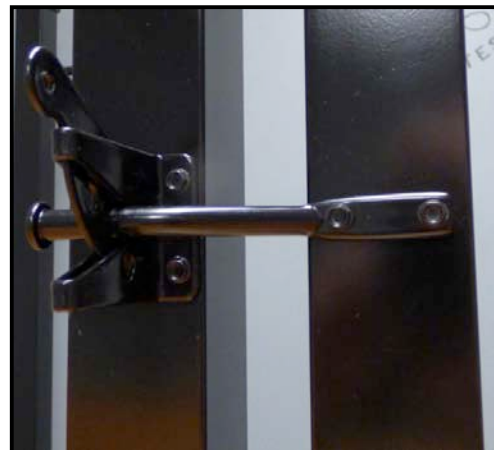


Figure 15 - Latch on Post (left) Arm on Gate (right)



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 leaves 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.
- After installation, go back and touch up any scuffs or scratches that occurred in shipping or installation using the supplied touch-up paint. If you only need to make minor touch-ups and are concerned about over spray from the can, you can simply spray some of the paint into the cap of the can (or similar plastic container) and use a small brush or Q-tip for more precise touch-ups.
- Take a rag or brush and make sure to remove any metal filings from the self-tapping screws off your fence and gate surfaces. If left on the surface, they will leave marks on top of your finish that you will have to wipe away.
- If you purchased an iron gate, watch the first couple weeks for any missed scuffs or scratches to bare metal and touch them up. It's not uncommon for some small rust spots to show on items such as the post caps since they can get roughed up during shipping and installation. Simply touch the spots up once and you should have no further issues. 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.