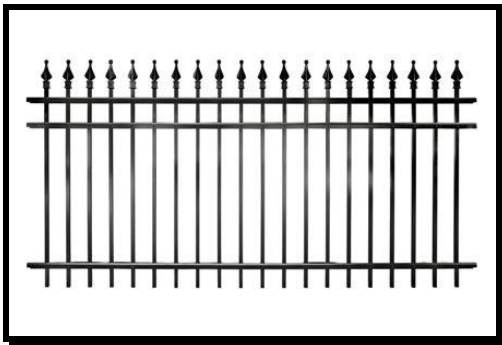
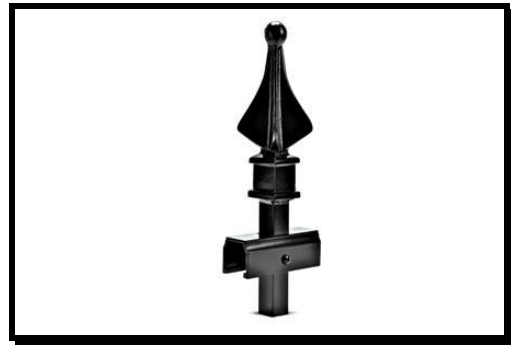




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ALUMINUM INSTALLATION GUIDE



****For a color version of this guide, go to our website at 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. *****

ALUMINUM 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 AND PANELS

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

3. GATES

- A. Installing Gates

4. SPECIAL SITUATIONS

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

5. 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 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
- Drill bits – 5/8” (5.5” J-Bolt for walk gates) , 3/4” (7” J-bolt for drive gates), 3/8” (Hinge Bolt Kit)
- 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
- Dremel or Rotary tool (for cut panels) with cutting wheel

* 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)

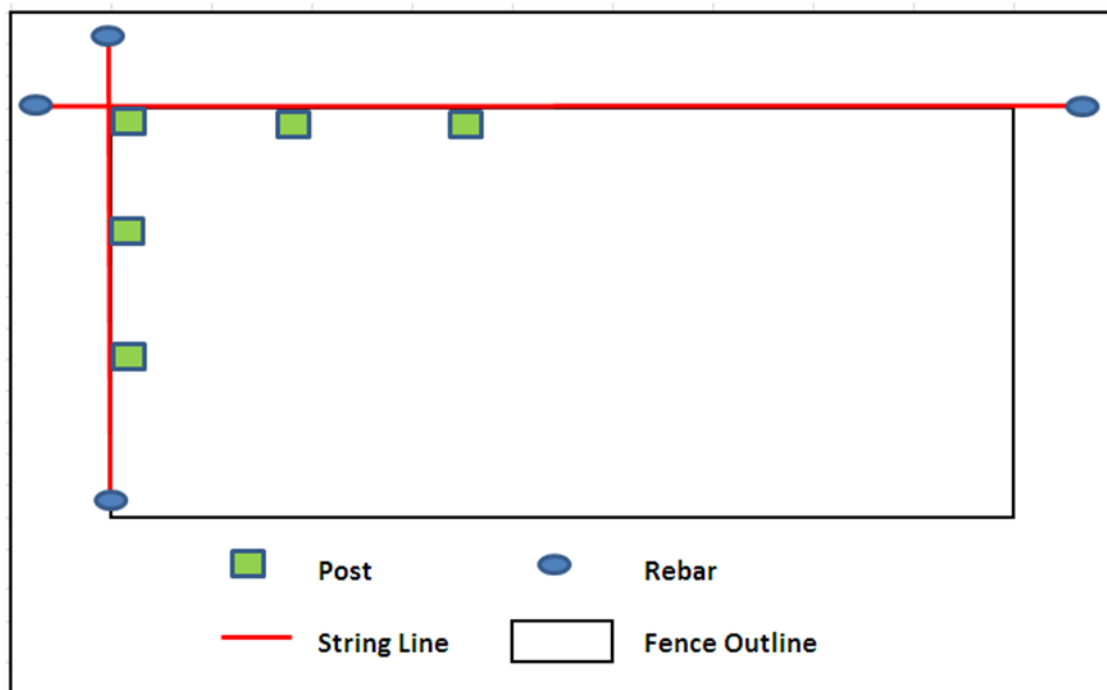
Majority of people affix the post caps with exterior construction adhesive (such as Liquid Nails) for a cleaner look over using the screws. Be sure it is rated for exterior use.

2. POSTS AND PANELS

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.

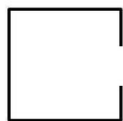
B. Determining Post Type

Your aluminum fence will have several types of posts based on your layout. Majority of the posts supplied will have a punched hole that the fence rail slides into for installation. There will be two at top and one at the bottom.

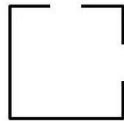


A Line Post

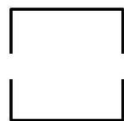
Be sure to go through the posts and separate them out before you begin setting them in ground. The diagram below is a view from the top of the post with the openings denoting where the rail punches are on each type:



End Post



Corner Post



Line Post



Thick Gate Post



Thick Blank Post

These are generally used in the following places:

- End Post – Where the fence terminates with a panel on one side of the post
- Corner Post – Where two panels come together at a 90 degree angle
- Line Post – Where there is a fence panel on each side of the post in a straight line
- Thick Gate Post – Where a gate is hung on one side and panels running off the other
- Thick Blank Post – Where a gate is on one side and nothing on the other side (latch or hinge side). These come in one length and will need trimmed to size if using anything other than a 6' tall panel.

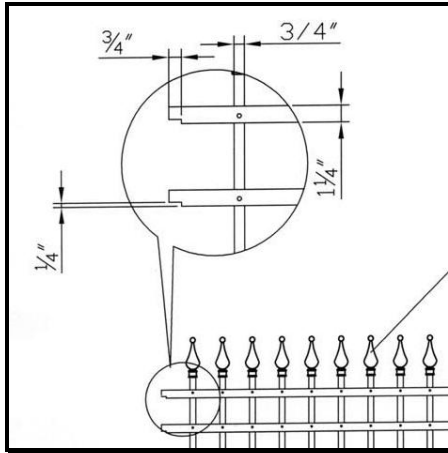
C. Determining Post Spacing for Panels and Gates

1. Fence Panels

Aluminum fence panels come in two widths based upon the grade selected:

- Residential Grade – 72.5”
- Commercial Grade – 95”

The widths include the rail surface that will fit inside the post during installation as illustrated below:



Commercial Grade Panel



View from top of line post showing rail installed

Once installed into the post, you will end up with the following between post measurements:

- Residential Grade – 71”
- Commercial Grade – 93.5”

To get your on-center measurement for post hole digging, add the width of one post to the panel:

- *Installed Residential Panel 71” + 2” Post = 73” on center*

2. **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"



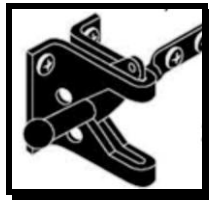
Tru Close Pool Hinge

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:

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

For Example:

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

Or

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

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 wider hinge spacing.



D. Setting Posts and Installing Panels

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 about 6" across ($2 \times 3 = 6$).
2. How deep your post is buried is based on the panel height and posts given. Bear in mind leaving some spacing for under the grass. Most people will leave 1-3" under the panel and that 1-3" will need to be deducted from the hole depth below. Standard set up is:

- 4' Tall Panel + 6' Post = 2' deep post hole
- 54" Pool Panel + 6'6" Post = 2' deep post hole
- 5' Tall Panel + 7' Post = 2' deep post hole
- 6' Tall Panel + 8'6" Post = 2.5' deep post hole

If you wanted a 2" gap under the fence panel, you would deduct 2" from the post depth above:

- 2' post hole – 2" gap under fence = 22" deep post hole
3. 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.

4. 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.
5. Start with your corner, end and gate posts first. They will be the lines you run all of your panels and line posts off of. Be sure they are level and plumb on the post before moving onto the next one.

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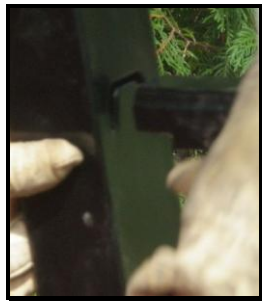
ESTATE GATES

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- Put a few scoops of concrete in the hole and then push the post in. Do not fill the hole just yet. Just enough (6-12 inches) for the post to stand in. Be sure you are setting the post so it is touching your string line.



- Attach your fence panel to the post. Do this by sliding the horizontal rails into the punches on the post as pictured below.



- As you move down the line adding panel after post, be sure to check you posts are remaining plumb and level.
- You can go back and begin to fill in your post holes with more concrete. Be sure to stop 3-4 inches below the hole's edge so you can fill it back with dirt and let grass grow.

HELPFUL TIP!

You can place a board under your panels to help maintain the installed height as you move along the line.





10. **IMPORTANT** – Before and after filling the holes, be sure to continually check the posts for level. As you add posts, the cement may still be wet enough to allow post movement several panels down. Use a rubber mallet to tap posts back into place if they move out of line.

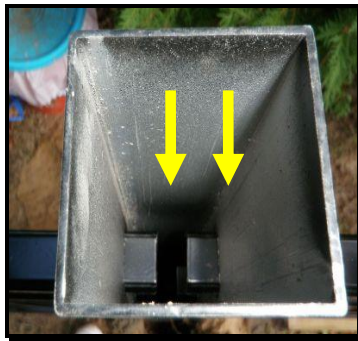


11. Once you have completed the installation of your fence panels go back and secure your panels to the post using the supplied self-tapping screws.



Self-Tapping Screw

12. Each panel requires one screw per rail side. So a standard panel will have six screws (3 rails with one on each side). Most people install the screws on the same side as the screws in the panels, but they can go on either side.



Run screws through post face into rail as pictured

13. 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.

3. GATES (Walk or Driveway)

A. Installing Gates

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

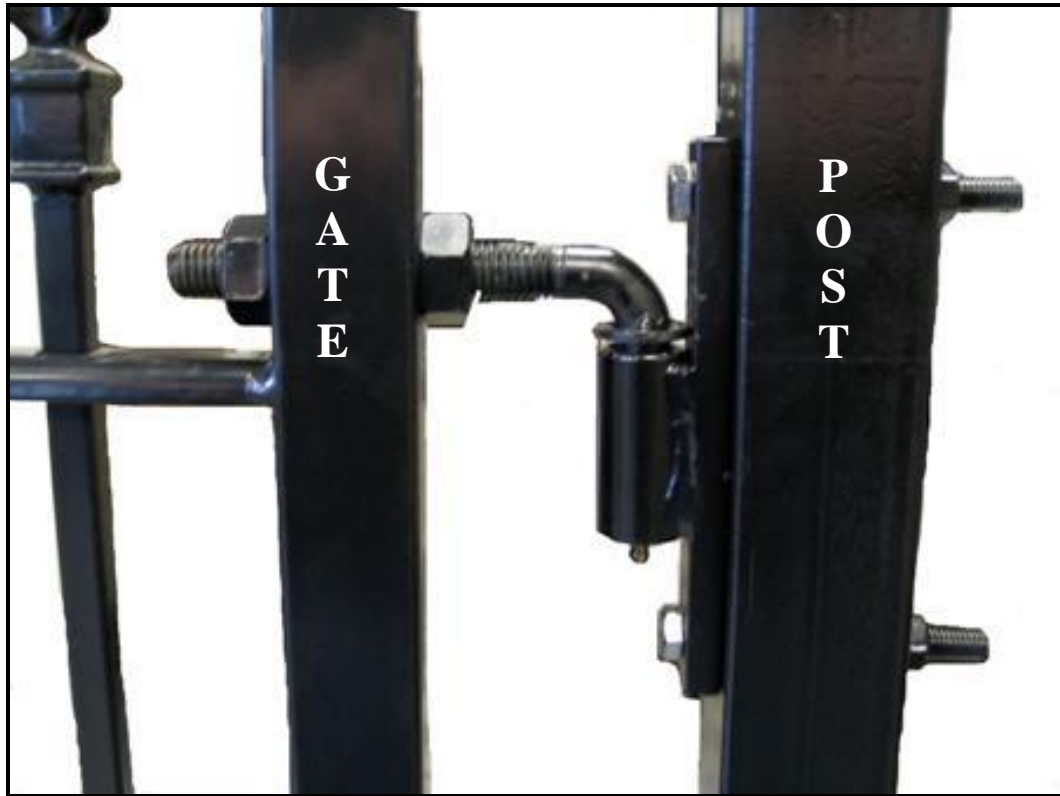


2. The following steps are for the standard hardware being installed on our aluminum posts. If you have purchased optional hardware, reference the install sheets included in their packaging. If you are mounting to a surface other than an aluminum post, please consult your IronFenceShop representative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

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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 bit to drill your holes. We recommend you start the hole with smaller bit and then step up to the full size bit.



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.



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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 or attach a drop rod to each leaf. 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.

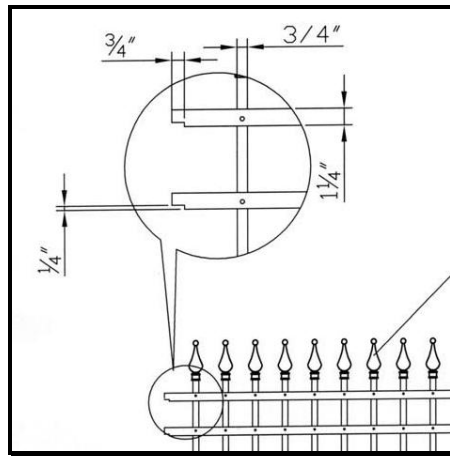




5. SPECIAL SITUATIONS

A. Cutting a Fence Panel

1. It is rare that a project ends up with all full size panels. Property lines, gate placement or aesthetics may require you to shorten the width of a panel. 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 spacing between the pickets and gives 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.
4. Next, you will need to trim the rail so it has the same indent for sliding into the post. This can be done with a Dremel/ rotary tool with a cutting wheel. Below is the rail profile on a panel (the measurements are the same for both grades). You should trim $\frac{1}{4}$ " up and $\frac{3}{4}$ " across. You may need to buff or sand cuts with a Dremel or rotary tool.



5. Be sure to use the supplied touch-up paint to cover any cuts before mounting them.

B. Dealing with Yard Grades

1. There is usually some grade to yards that may need to be compensated for. The panels will ‘rack’ for a yard grade. To ‘rack’ your panel you will need to hold one end stationary while pushing up or pulling down on the opposite end. This will let the pickets move in the rail punch and give you a panel to follow grade. Installation is the same as a standard panel. You may need to lengthen the opening in your post to accommodate the panel rail depending on the severity of the angle.



Racking a Panel

2. If the grade is too severe for a racked panel to fully compensate for, you may need to backfill the area slightly using something like dirt, decorative stones, landscaping, etc.

C. Installing on Top of Concrete or Wood

1. If you were supplied a deck plate for your application, simply place your post over the insert and tighten the nut on the bottom to expand and hold the flange on.
2. Pre-drill your holes in the concrete and wood to line up with your flange plate. Place the plate over the holes and use the proper hardware to secure the post down.

D. Installing Panels at an Angle or Against a Wall

1. If you were supplied special angle or wall brackets for your installation, simply slide them over the rail of your fence panel with the screw tab facing down. Use the proper hardware to secure the bracket to your post or wall.
2. If you need a tighter angle, you can grind or cut out a portion of one side of the bracket to allow the rail more movement. Just be sure to put an additional self-tapping screw through the top of the bracket into the rail to secure it firmly.



Angle Bracket



Wall Bracket

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



Guardian



Cape Cod



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 to the aluminum. These should be addressed as soon as possible with the supplied touch-up paint to keep the damage from spreading due to water and ice intrusion.
- B. Inspect your fence yearly for any damage to the finish. If damage is discovered, there is no need to be concerned. The aluminum will not degrade. 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.