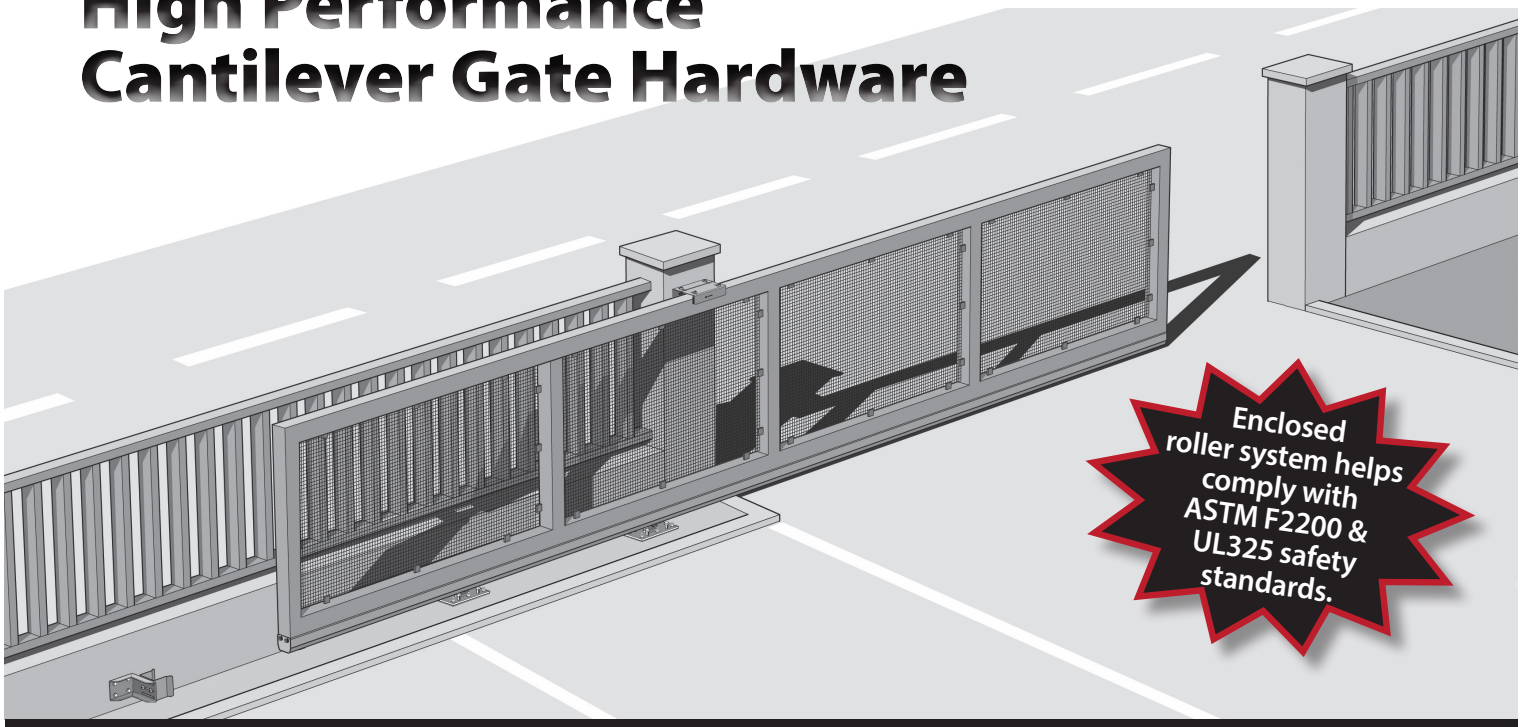
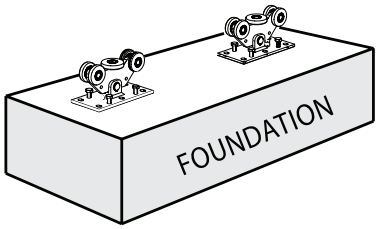
DURAGATES®
CANTILEVER GATES, EVOLVED

High Performance Cantilever Gate Hardware



Foundation Options: Pad, Post, or Pier

PAD MOUNT



Comunello recommends installing cantilever hardware on a concrete pad. This gives your gate a solid foundation that will help it to last for years. Using a single concrete pad helps in two ways:

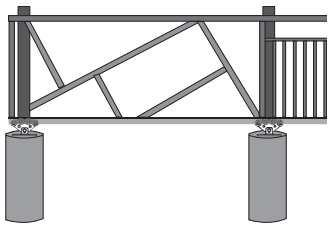
1. Puts both carriages on a single foundation where they will not misalign over time
2. Allows for shorter tail sections by providing the counter balance weight needed for a stable gate

The reason most gates get harder to open year after year is wheel misalignment. When the support wheels are mounted on posts, they begin to mis-align as the posts move. Whether it's because of sandy soil, freeze/thaw cycles, or just the weight of a cantilever gate hanging off them, gate posts move over time. And that movement creates friction that makes the gate harder to open.

Not all installations allow for the use of a concrete pad, and not all installers want to pour a concrete pad. You have two other options to install Duragates: Post Mount & Pier Mount

POST

PIER



ARCHITECTURAL IRON DESIGNS, INC.
2E Chimney Rock Rd., Bridgewater, NJ 08807
Ph: (908) 757-2323 | Fax: (908) 757-3439 | aisales@archirondesign.com
www.archirondesign.com/comunello | duragates.com

Concrete Pad

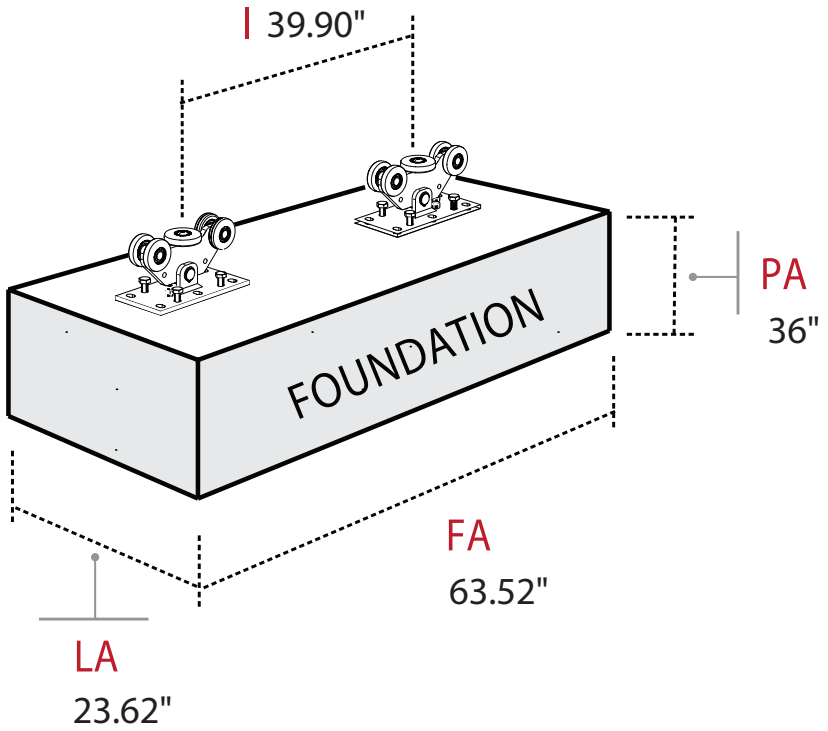
The concrete pad dimensions given in the configurator are based on the total gate length (LT) and weight (P) determined by the configuration. The concrete pad acts as the counterbalance weight for the gate, allowing for shorter tail sections than traditional hardware. Two important factors to consider about the Pad are:

1. The pad dims given are long enough to support the carriages and heavy enough to act as the counterbalance, but do not take the frost line into consideration.
2. The pad MUST be dug below the frost line to prevent heaving caused by the freeze thaw cycle.

The pad dimensions determine the volume of concrete necessary to provide a counterweight. If you alter the length, width, or depth of the pad, make sure you do not reduce the total volume:

The amount of concrete needed, in YARDS = (LA * P * FA) / 46,656

For example, for a foundation, 63" long x 24" wide x 36" deep, it would need 1.2 yards of concrete.
Yards = (63 * 24 * 36) / 46656 = 1.2 yards



T: 908.757.2323 ✛ F: 908.757.3439 ✛ AISALES@ARCHIRONDESIGN.COM
ARCHIRONDESIGN.COM/COMUNELLO ✛ DURAGATES.COM

Alternate carriage mounting options

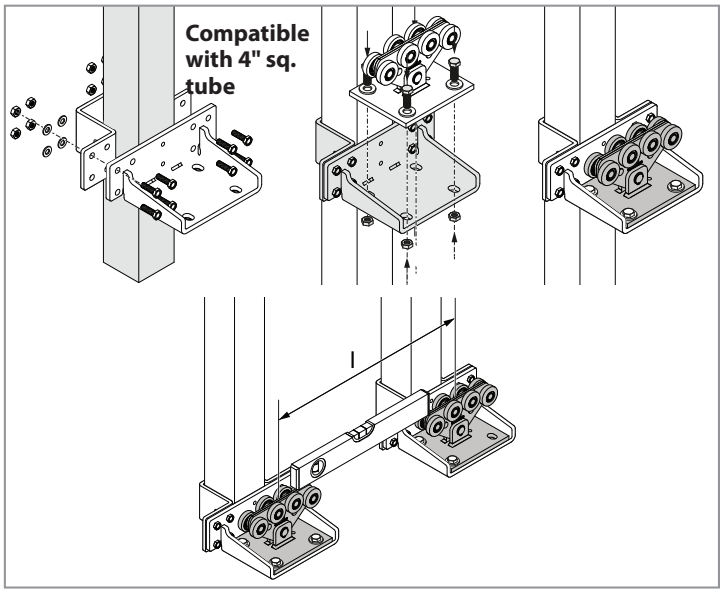
The carriages may be post mounted or pier mounted instead of pad mounted, and if done properly, it will not significantly impact the performance of the gate, although it will likely shorten the service life of the gate and hardware due to mis-alignment issues over time.

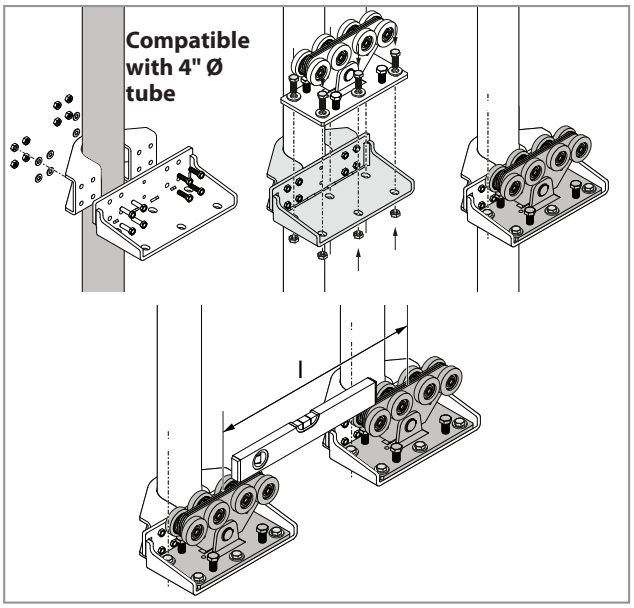
Post Mount Installation Suggestions

Post mount installations should only be done on gates using "Mini" or "Piccolo" hardware and have a weight over the opening less than 1200 lbs.

The recommend installation method is to mount the post brackets to fall-over posts installed on the opposite side of the gate from the fence line. Mount the post brackets as close to the ground as possible. The bottom of the bracket plate should be within 2" of the ground level. When possible it is best to let the bottom plate rest on the concrete pier holding the post.

The hole diameter and depth are determined by the configured pad size. You need half the amount of concrete poured into each post hole to carry the weight of the gate without failing.





In a typical post mount installation, you will set the posts into 16" to 26" diameter holes and mount the carriages to brackets bolted or welded to the posts. Post brackets are available for the Mini and Piccolo systems (steel and aluminum) and are designed to fit either 4" round or 4" square posts.


Post mount example from Ameristar

ALTERNATE CARRIAGE MOUNTING

Setback from the Opening

- The "front" Gate mounting post should be set back 13" from the edge of the opening to the center of the post.
- The "rear" gate mounting post should be set so the center to center distance between the front and rear posts is the interaxis (i) distance from the configuration.

Setback from the Fence line

1. For Post Brackets installed on fall-over post facing fence:
   (Post Brackets mounted on fall-over posts on the opposite side of the gate)

   The setback dimension is measured from the face of the post to the end post or column face

Gate Profile	Post Setback for UL325
2"	6-1/2"
2-1/2"	6-3/4"
3"	6-7/8"
4"	7-3/8"
6"	8-3/8"

2. For Post Brackets installed on fence line/end posts:
   (Post Brackets mounted between gate and fence)
   When the post brackets are mounted on end posts or line posts, then the setback is defined by the bracket width, and will be as follows:

Profile	Gap between gate & fence
2"	~ 2-1/2"
4"	~ 1-1/2"
6"	~ 1/2"

- Install the "front" carriage on the end post at the opening, which will leave the gate protruding about 12" into the opening; or set a second post about 13" back from the end post to allow the gate to open fully behind the fence line.
- Install an "extra" post at the position specified by the configuration to match the carriage spacing (l). It is ok to extend the carriage mounting position back (longer) to the next post if desired, but you must follow the guidelines for "Extending the tail length of the gate". It is NOT ACCEPTABLE to reduce the carriage spacing to match up with a line post.

AIDI
T: 908.757.2323 ✛ F: 908.757.3439 ✛ AISALES@ARCHIRONDESIGN.COM
ARCHIRONDESIGN.COM/COMUNELLO ✛ DURAGATES.COM

Hole Diameter Calculation

Since Duragates are shorter, we use the concrete as part of the gate's counterweight. You need to use the amount of concrete as shown in a minimum length configuration to hold the gate in the ground. Calculate the size of the post holes needed to carry half the weight of the foundation using the formula:

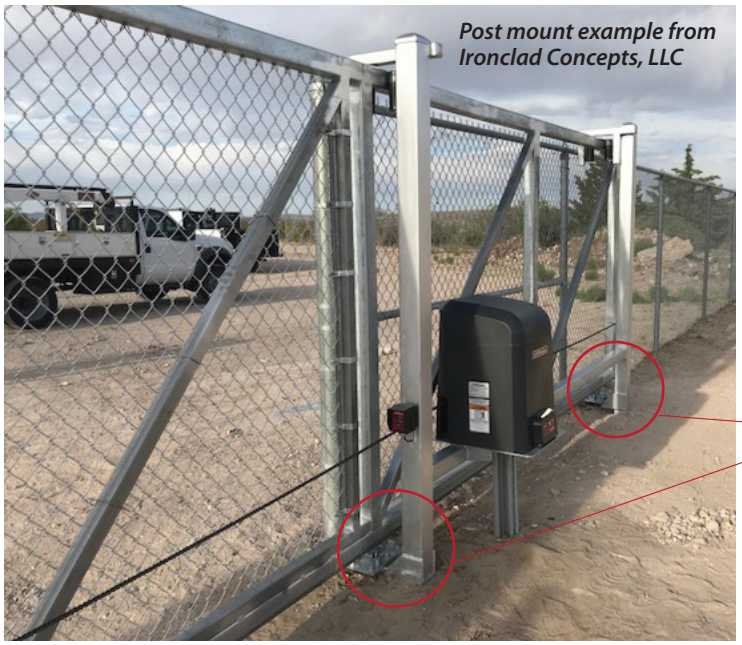
Volume(hole) = $\pi r^2 h$

Or use an online calculator like this one:

https://www.calculatorsoup.com/calculators/construction/concrete-calculator.php

Continuing the example above, for a foundation 63" long x 24" wide x 36" deep, you would need two holes 26" diameter and 51" deep.

- Dig the holes and set the posts in concrete equal to the volume specified by the configuration. gate.
- Dig the hole to a depth below the frost line.
- Connect the two carriage support posts mechanically in two positions, if possible. This keeps the two carriages from moving independently in the direction of the gate and reduces misalignment over time.



Post mount example from Ironclad Concepts, LLC

Here's an example of carriages mounted on post brackets instead of a pad:

Pier Mount Installation

In a pier mount installation, pour two separate concrete foundations, typically 16" to 26" diameter holes dug to a min of 48", or below the frost line if it is deeper. The carriage is mounted directly on the concrete pier, and the rest of the installation is the same as installing on a single concrete foundation. The minimum diameter of the pier is determined by the carriage length because the anchor bolts need 4" of concrete from the mounting holes to the edge of the concrete so it doesn't break out:

Carriage Size	Standard	Integrator
Mini "M" Carriages	16" min. dia.	24" min. dia.
Large "P" Carriages	20" min. dia.	24" min dia.

Setback from the Opening

- Place the "front" pier just behind the end post at the opening so the carriage can be installed on the pier with the base plate 6 to 8 inches from the edge of the opening.
- Place the "back" pier at the position specified by the configuration to match the carriage spacing (I), so the center of the two piers is the same as the configuration Interaxis (I).

Setback from the Opening

- The setback from the fence line is usually determined by the need to automate the gate and have the final installation meet UL325 Safety code. UL325 specifies a gap of 2-1/4" or less between the end post or column on the fence and the moving gate. The pier will usually need to be placed where the center of the pier is 6 to 8 inches from the fence line to meet this spec.

Pier Diameter Calculation

Since DuraGates are shorter than other types of cantilever gates, we use the concrete as part of the gate's counterweight. You need to use the amount of concrete as shown in a minimum length configuration to hold the gate in the ground. Calculate the size of the post holes needed to carry half the weight of the foundation using the formula:

$$\textbf{Volume(hole)} = \pi r^2 h$$

Or use an online calculator like this one:

https://www.calculatorsoup.com/calculators/construction/concrete-calculator.php

Continuing the example above, for a foundation 63" long x 24" wide x 36" deep, you would need two holes 26" diameter and 51" deep.

- Dig the holes and set the posts in concrete equal to the volume specified by the configuration gate.
- Dig the hole to a depth below the frost line.