

since 1977

INSTALLATION GUIDES



Many of the below procedures are illustrated with photos and pdf drawings found under the 'Product Specifications' section on the web site.

*Note: We would greatly appreciate a few Hi-Resolution jpegs of your completed installation. If possible, a close-up, as well as a fuller view of the residence or grounds. Without them and there would be none of the lovely photos showing our products in their natural settings. Emailed to: <u>sales@prowellwoodworks.com</u>

--We will never disclose names and addresses



INSTALLATION GUIDE FOR PEDESTRIAN GATES

Thank you for taking the time to read through the following pages. This is a joint effort of those in the shop who build the gate, and those in the field, you, who install the gate.

* In-swinging gates are set to the that edge of the post or jambs near the property. Outswinging gates to the edge toward the street.

Vocabulary:

Jambs: 1-1/2"T x 3-3/4" unless otherwise stipulated. These accompany those gates mounting to masonry/stucco/stone columns.

Gate Stops: $\frac{3}{4}$ "T x 1-1/2"W +_. These mount to the posts or jambs as one of the last steps. The latch side Stop acts to actually stop the gate and not the latch's horizontal drop bar. The hinge side Stop hides the light-line gap of the hinges. They should be screwed in place.

Gate Stile: The two long vertical frames of the gate itself.

Gate Rail: The horizontal gate frames

Grade: The ground

Spring-point: For gates with top rails that arch, that point on the upper left and upper right of the gate where the arch actually begins.

Hardware: Strike Plate: The plate that mounts to the post or jamb and that the latch's horizontal drop bar falls into the secure the latch. Rocky Mountain strike plates are



mortised flush into the side of the post or jamb. Coastal Bronze Thumblatch strike plates surface mount onto the face of the jamb or post.

Drop Bar: The horizontal bar that raises and lowers with the latch handle to engage or disengage with the strike plate.

All hinges are surface-mounted. **Do NOT mortise in the hinges**. This is not a front door—we need light and air-flow accessing all edges of the gate and one of the many ingredients to the gate's long lifeline. The vast majority of Prowell's gates are hung with bronze 4" ball-bearing butt hinges.

Install the provided hinges to your gate by aligning them with the pre-set hinge holes in the edge of the gate. The ball-bearing hinges do not have removable pins, which is one of several reasons for their superior performance, and because of this you must set the gate on blocks that will bring it to the desired height-- normally 2" off the grade. On the post or jamb, scribe a pencil-line along the top of the upper hinge, and another scribe in from the edge of the post or jamb that is equal to the depth of the hinge setting on the gate. Re-position the gate at 90-degrees in the open position—supporting the gate with blocks and shims-- providing access to mark, pre-drill, and set only the top hinge screw of the top hinge in place.

The top hinge, with only one screw, has been allowed to pivot its alignment to the bottom screw and prevent binding. For the bottom hinge, mark that distance depth on the post with the same dimension as the top. Mark and pre-bore the top screw hole of this bottom hinge and set this hinge screw in place. The gate is now self-supporting, and evenly hung without binding or misaligned hinge settings. Go ahead and set all the hinge screws for all the hinges. You may as well congratulate yourself: You've managed to install the finest hinge available, supporting your proud gate, and now we have a synchronized team. And a fair amount of pride.



The net gate width is 5/8" less than the rough opening. This allows 5/16" for the surfacemounted hinges, and 3/8"+_ for swing. If your gate has a flat strike plate, such as the Rocky Mountain latches, it is important to **recess or mortise this latch strike plate flush to the post** or jamb, otherwise you lose a portion of the swing clearance. If your gate has a Coastal Bronze Thumblatch, this strike plate surface mounts to the face of the post or edge of the jamb. Often, the gates will arrive slightly wide , requiring a little planning along this latch edge (*This occurs when we are provided a top and bottom width between posts or columns that are not equal, meaning the post or column is not plumb and we must build to the wider dimension*). The gates are pre-bored for their latches upon arrival, unless the latch was not ordered through Prowell Woodworks. Shipped gates will not arrive with the latches in place.

Pool Code Gates:

General Specs for nationwide codes and more information can be found on the web site under the Pool Gate link under the Site Map.

Pool Code gates must be 1) self-closing, 2) self latching, 3) out-swinging (away from the pool), and 4) a specified height for the latch, depending on local codes (usually between 48"- 60" from the grade). There are several self-closing mechanisms featured on the Product Specifications page of the web site. The Lockley T100 is probably the most functional and affordable.

Gate Stops:

It is the wood Gate Stops that actually stop the gate—and not the latch's horizontal drop bar. Every gate arrives with two gate stops. It's best to install the latch and strike plate first, and then the wood stops. This allows you to set the stop on the latch side to where there latch's drop bar is snug within the catch to avoid rattling. The hinge-side stop should be set perhaps 1/16" away from the edge of the gate to prevent binding. It is best



that the Stops are **mounted with screws**, countersunk into the wood. Finish nails will loosen after repeated gate closings.

Latches:

Prowell defaults to Rocky Mountain and Coastal Bronze latches, although gate patrons are free to source this themselves. With one proviso: We do not warranty any gate that is utilizing standard door lockets. The swing clearance is too narrow and the gates stand a good chance of swelling and becoming wedged against the post or jamb. Shoving and yanking on a wedged gate for several months a year is not joinery-friendly.

Most latches are configured so that in-swing gates see the horizontal latch bar on the inside, or residence side of the gate. Out-swing gates have this horizontal latch bar on the street side, upon approaching the gate. Rocky Mountain latches are identical on both sides of the gate but for the horizontal latch bar. The Coastal Bronze Thumblatch has a handle on only the approach side of the gate and the drop bar on the other side.

Gate Jambs:

Jambs accompany all gates that are mounted from masonry, brick, stucco, or stone columns and walls. These can be mounted with either masonry spread bolts or threaded rod embedded with epoxy. If possible, bore for these mounting bolts along the edge of the jambs that will be covered with the gate stops. The jambs are not pre-bored, to insure that the mounting bolts are not inadvertently aligned to mortar joints. The mounting bolt bores should be recessed so the nuts are flush or recessed from the surface. It is suggested for regions of warm humidity, such as the southeast states of Georgia, etc, that a weatherizing tape is applied to the back of the jambs (after the mounting holes are drilled). This tape is to prevent decay from developing between the jamb and wall where there is no light or air and where moisture can collect. Required primarily for less decay - resistant woods than our high grade western cedar.



For Spread Bolts, set the jamb against the wall or column and mark the hole placement on the masonry by using a punch or drill. Set the jamb aside and drill out a hole into the masonry using a masonry bit approximately 2-1/2" deep (take a pencil and test the depth of the hole to insure you have reached the desired depth before setting the bolts). While boring, it helps to have a can of water nearby, cooling your bit frequently to prevent it from overheating and growing dull. Reset the jamb in place and insert the masonry bolts. Back off the nut to flush with the end of the bolt and tap the bolt lightly into place. Do this with all the bolts of a given jamb and then, using a ratchet, tighten the nut until the jamb is snug and firm. Do not over-tighten. The opposite end of the bolt expands within the hole. The bolt heads are hidden by the accompanying gate stops. Check to insure the jambs are plumb. If not, use shims where needed. (Note: Because every application may call for a specific type of masonry bolt and installers have their own preferences, Prowell does not provide the masonry mounting bolts).

<u>Threaded Rod for Irregular Stone:</u> The use of threaded rod is advisable when mounting jambs to an irregular stone cladding. This prevents the jambs from rocking on a high stone. Set the jambs in place, plumb, mark the stone and then make two marks on the stone to indicate where to bore for the rod. Remove the jambs and bore into the columns by choosing, if possible, a stable mortar joint. Set the threaded rod into the columns using an epoxy adhesive. The rod can be left proud, or extended of the column by as much as several inches. The jambs are then marked to correspond to the rod before being bored. First recessing for the wider washer/nut, and then bored through for the rod diameter.

Once this is done, you can apply the weatherizing tape to the back and cut away the tape that covers the holes you just bored. Fit the jamb over the threaded rod and thread the washers and nuts in place, adjusting to plumb as they are tightened. Cut the rod off flush to the jamb.



--Those gates provided with jambs have the option of adjusting the jamb clearance by loosening the nuts on the threaded rod or masonry bolts and shimming between the jambs and masonry. Caulking or dry-packing the void.

It can often help to sculpt the back of the jamb or chisel the high stones to gain a better seat between the jamb and stone surface.

If you have not yet built your irregular stone columns, it is best to plan on mounting the jambs directly to the column block core. This requires providing Prowell with a rough opening width dimension from one column block core to the other. Then determining the depth from the block to the proudest stone face. Prowell will call this out in the drawings, with jamb thickness that is 1/2" beyond this dimension to insure the gate swings unimpeded by high stones.

In the meantime, so the construction of your pillars can continue while waiting for the gate, the installer must use mock jambs (*Jambs are 3-1/2" wide for standard thickness gates and 4" width for gates of 2-1/4" thickness*). The mock jambs are temporarily fixed to the pillar core to allow setting the stone. Once the stone is set, the temporary jambs can be removed and when the gate arrives, installing the permanent Prowell jambs for a solid seating to the block core.

<u>Electronic Released Gates:</u> The Magna Lock F62 is the only reliable mechanism for allowing an expanding and contracting wood gate to open electronically. They are

expensive. They are ugly. And they are cumbersome. If you prefer, or are asked to install an electronic strike system, such as the Rofu, you must consider that the swing clearance for these is a maximum ¹/₄" and such that the gate may likely swell in the winter to where it will not close at all. (*Prowell does not warranty any gate equipped with this type of*



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standard lockset, as the repeated pushing and pulling of a gate wedged to the jambs or posts is detrimental to the joinery.)

<u>Gate Posts</u>: Your post height is best extended 3-3/4" beyond the height of the gate at the hinge and lock spring-points (The beginning of the arch on arched gates). Standard slip-over post caps, if used, are set by pre-drilling 1/8" holes on four sides and setting the cap to the post using a tube of construction adhesive or adhesive caulking, working the cap into place before screwing it to the post. Check to insure the cap is set squarely and not tilted. Four pre-drilled holes--on each side of the cap, and set with exterior screws to insure the cap will not cup or warp in years to come. Prowell does not include post caps. These can be purchased directly however through Nantucket Post Caps, and linked under the Site Map.

POST SETTING

(*The 'Example Post Hole sketch' can be found linked under the Site Map*)

Fenceline posts are set on a bed of 3-inches of gravel to allow better drainage beyond the vulnerable bottom-cut. Filling the posthole with pea gravel to two-thirds its depth allows further improved drainage while eliminating the need for post stakes. (The pea gravel also stabilizes the post while allowing for final adjustments in pluming) The final 6-8 inch capping of concrete acts as a washer to create stability. Gate hinge posts, however, with the extra load of a hinged gate, should sit on a bed of gravel for drainage, but the entire posthole should be set with concrete. In the winter, when the post shrinks away from the concrete, moisture and rainfall will drain down the post and beyond the bottom of the post . Once again, a full diagram and description of this method is covered on the web site.



Post Caps

Posts are ideally cut 3-1/2 inches above the top rail of the fence panels. Post ends should be sealed with primer or an emulsion product.(This is particularly important when the fence panels and posts are painted a white or light color, as the tannins from the post-ends will bleed out onto the body of the posts) Undersides of post caps should also be sealed prior to installation. Silicone adhesive caulk, or construction adhesive, applied to post end, working the cap into place. A square against the post and the bottom edges of the cap insure the cap sets level. Pre-drill through the top and screw off with four weather-resistant screws. (using finish nails may result in the caps warping, or curling.)

The caps can be ordered directly off the site, under the Site Map.

Mounting Gate to Gate Columns—See Columns

Finishing: See 'Finish' chapter



INSTALAR PUERTAS EN ESPANOL

*****Favor de leer antes de instalar*****

Manera de instalar puertas, puertas para carros, y cercas prefabricadas.

(Aviso: Les agradecemos muchísimo los *jpegs* de alta resolución (fotografías en formato jpeg para computadora) de su instalación terminada. Siendo posible, acercamientos y también una vista completa de la residencia o de la zona.)

LAS PUERTAS PARA PEATONES

Las puertas que se abren para el interior, se colocan al borde lejano del poste o de las jambas. Las puertas que se abren hacia el exterior se colocan al borde cercano del poste.

Todas las bisagras se montan en la superficie. NO escoplee para montar las bisagras. La mayoría de las puertas de Prowell son colocadas con bisagras de tope de cojinete de bolas de 4"

Instale las bisagras incluidas para la puerta alineándolas con los agujeros preestablecidos en el borde de la puerta. Debido a que las bisagras de cojinetes de bolas no tienen pasadores desprendibles, se coloca la puerta sobre bloques para levantarla a la altura necesaria, normalmente 2" del nivel. En el poste o jamba, haga una línea con un lápiz a lo largo de la bisagra superior y otra línea hacia dentro del borde del poste o jamba que sea igual a la profundidad donde se colocará la bisagra en la puerta. Vuelva a colocar la puerta a 90-grados en posición abierta----apoyando la puerta con bloques y calzos--con acceso para marcar, pretaladrar, y solamente coloque el tornillo de la bisagra superior.

La bisagra superior, de solamente un tornillo, ha sido diseñada para permitir que gire para alinearse al tornillo inferior y evitar que se atore. Para la bisagra inferior, marque la



profundidad de la distancia en el poste de acuerdo con las mismas dimensiones de arriba (para puertas de 1" ¹/₂ de gruesas, esto sería 1" ¹/₂). Marque y haga los agujeros del tornillo superior y ponga el tornillo de esta bisagra. La puerta queda sostenida y cuelga uniformemente sin atorarse y sin mal alineadas colocaciones de la bisagra. Ahora ponga todos los tornillos de las bisagras.

La aproximada apertura es 5/8" más que la anchura neta de la puerta. Así se permite ¹/4" para las bisagras que se montan en la superficie y 3/8" para el paso libre. Es importante **encajar o escoplear la hembra de cerrojo pareja con el poste o jamba, si no se pierde un poco del paso libre de la puerta.** Frecuentemente las puertas están un poco anchas y será necesario acepillar un poco a lo largo del borde del cerrojo. (Esto sucede cuando el poste o columna no está a plomo y se debe modificar la dimensión más ancha.) Frecuentemente, las puertas llegan agujeradas para los cerrojos, si se pidieron los cerrojos a través Prowell. Las puertas enviadas por correo, no tienen los cerrojos colocados.

Puertas para piscinas conforme al Código

Las puertas para piscinas conforme al Código deben: 1) cerrase solas; 2) atrancarse solas; 3) abrir hacia el exterior (hacia en contra de la piscina); y 4) cierta altura para el cerrojo dependiendo en el Código local (normalmente entre 48-60" del nivel). Ponga la tensión de la bisagra con muelle usando la llave especial (Allen) incluida y de vuelta al sentido de las agujas del reloj, o sea al sentido contrario de la puerta, hasta que la puerta gire y cierre con la velocidad adecuada. Para que la puerta cierre sin golpear duro, no apriete demasiado la colocación.

Topes de las puertas



Cada puerta llega con dos topes. Uno de los topes tendrá dos pequeñas almohadillas de fieltro, esto indica el lado del cerrojo. La puerta debe estar cerrada, ajustando el seguro del cerrojo sin holgura al borde de la puerta de manera que las almohadillas toquen la puerta. Las almohadillas son para disminuir el ruido de la puerta cuando se cierra con fuerza. La bisagra de la cerradura debe ser colocada 1/16" de distancia del borde de la puerta para que no se atore.

LOS CERROJOS

Prowell a veces incluye los cerrojos para las puertas. La mayoría de cerrojos para las puertas que se abren hacia el interior están configuradas para que se vea la barra horizontal del cerrojo por dentro, o sea del lado de la residencia. Los cerrojos para las puertas que se abren hacia la calle o para el exterior, tienen la barra del cerrojo por el lado para la calle y se ve al acercarse a la puerta. (**Si está usando el popular "Euro" bronce cerrojo de palanca que se compra en European Hardware, la placa requiere que el "lado del tope del cerrojo del lado de la puerta: sea partido en dos piezas, o sea arriba y abajo de la placa del cerrojo para permitir el paso libre del grosor de la placa de ¹/₂").

Jambas de las puertas: Las jambas se pueden montar con tornillos para mampostería o con una varilla roscada embutida con epoxy. Siendo posible, agujere para montar estos tornillos a lo largo del borde de las jambas que serán tapados con los topes de la puerta. Para asegurar que los tornillos para montar las jambas no se aliñen por descuido a la junta de mortero, las jambas no están preperforadas. Las perforaciones de los tornillos deben estar rebajadas para que las tuercas queden parejas con la superficie. Se sugiere que se coloque cinta intemperiaza atrás de las jambas (después de que se hayan taladrado los agujeros). La cinta es para prevenir podrición entre las jambas y la pared donde no entra luz ni aire y donde se puede acumular humedad.



Ponga la jamba contra la pared o columna y marque la colocación del ajuero en la mampostería con un punzón o taladro. Haga la jamba a un lado y haga un ajuero en la mampostería con el taladro utilizando una broca para mampostería más o menos a una profundidad de 2" ¹/₂ (para asegurarse que la profundidad de los agujeros está correcta antes de colocar los tornillos, tome un lápiz y pruebe la profundidad del agujero). Mientras está haciendo los agujeros, tenga listo un bote de agua y con frecuencia enfrié la broca para prevenir que so sobrecaliente y se desafile. Vuelva a colocar las jambas en su lugar y ponga los tornillos de mampostería. Deje la tuerca pareja con la cabeza del tornillo y apreté el tornillo un poquito para que quede colocado en su lugar. Haga lo miso con todos los tornillos de las jambas y después, usando la llave de trinquete apreté las tuercas hasta que la jamba este firme y ajustado sin holgura. No apreté demasiado. Si esta usando tornillos de expansión, la cabeza contraria del tornillo se expande dentro del agujero. Las cabezas de los tornillos quedaran ocultas a través del cerrojo de la puerta. Revise para asegurar que las jambas están a plomo. Si no está a plomo, use una calza donde sea necesario. (Aviso: Debido a que cada instalación podría necesitar tornillos de mampostería específicos y algunos instaladores tiene sus preferencias, Prowell no proporciona los tornillos para montar en mampostería.)

Varilla roscada: Se recomienda utilizar varilla roscada cuando se montan las jambas a una superficie irregular tal como una piedra. Esto es para que no oscile la jamba. Coloque las jambas en posición, a plomo, y marque para indicar donde se agujera para la varilla. Quite las jambas y agujere en las columnas, escogiendo si es posible, una unión de argamasa maciza. Coloque la varilla roscada en las columnas usando adhesivo epoxy. La varilla se puede dejar extendida de la columna a una distancia de varias pulgadas. Las jambas están correspondientes a la varilla, y los agujeros rebajados para la tuerca/empaque, y también agujeradas para el diámetro de la varilla. Deslice la jamba sobre la varilla roscada y enrosque las tuercas y empaques en su posición, ajustando a plomo al apretarlos. Corte la varilla pareja a la jamba.



--Las puertas con jambas tienen manera de ajustar el paso libre de la jamba a través de enflorar las tuercas en la varilla roscada o tornillos de mampostería y calzar entre las jambas y la mampostería. Rellenando con retaque o relleno seco el hueco.

Es útil escoplear la jamba atrás o cincelar las piedras altas para lograr un mejor ciento entre la jamba y la superficie de piedra.

Si aun no ha construido las columnas irregulares, es mejor montar las jambas directamente en el corazón del bloque de la columna. Es necesario dejar una apertura de las mismas dimensiones desde el corazón de un bloque de la columna hasta el otro. Después se determina la profundidad desde un bloque hasta la superficie de la piedra más alta. Prowell mostrará esto en los dibujos, con grosor de las jambas de ¹/₂" más que la dimensión requerida para asegurar que la puerta abra y cierre sin atorarse en las piedras altas.

Mientras tanto, para seguir con la construcción de los pilares mientras espera que Prowell le envié la puerta, el instalador debe usar jambas simuladas (las jambas son de 3"1/2 de anchas) Las jambas simuladas se colocan provisionalmente en el corazón del pilar para permitir colocación de la piedra. Cuando esté colocada la piedra, las jambas provisionales se pueden retirar y cuando reciba la puerta, instale las jambas permanentes de Prowell para un asiento macizo en el corazón del bloque.

Puertas con cerrojo electrónico: Nuestra selección para cerrojos electrónicos son los Magna Locks. Son caros y no se ven bien, pero sólo existe este acceso fiable electrónico para las puertas que se expandan y encojen debido a las estaciones. Si prefiere, o si le piden que instale un sistema electrónico tal como Rofu, debe usted tomar en cuenta que el paso libre de la puerta para éste sistema es un máximo de ¹/₄" y tomar en cuenta que la puerta podría expandir en el invierno y no poder cerrar.



Los candados Magna Locks se montan en la superficie y permite que las puertas se amplíen o encojan según las estaciones. Una placa se monta en la superficie de la jamba (del cual ha sido laminado en el taller al grosor adecuado). La parte de atrás de la jamba viene con ranuras para alambres cat-5 del cual estarán instalados en la jamba y el exceso amontonado debajo. Si es poste de madera el que usa para montar este cerrojo, la placa ya viene con el conducto roscado y el conducto se puede colocar expuesto en el poste hacia la caja de la conexión. La correspondiente placa-Z se monta en el larguero de la puerta.

Postes para puertas: Se debe extender la altura del poste 3"3/4 más aya de la altura de la puerta desde la bisagra y los puntos del candado de muelle. Para las tapas de los postes, primero se hacen agujeros con el taladro de 1/8" en los cuatro lados y se coloca la tapa al poste usando tubo de construcción adhesivo o retaque adhesivo, poniendo la tapa en su posición antes de clavarla al poste. Revise para asegurar que la tapa está colocada cuadrada y no ladeada. Para asegurar al pasar los años que no se ladean o abomben, se colocan las tapas con tornillos exteriores.



INSTALLATION GUIDE FOR PROWELL'S FENCELINES

All Panels arrive fully assembled.

There are two approaches for setting the posts for extended fence-lines:

A) To set the posts once the panels arrive in the sequence of a post, a panel, a post, etc as described below.

B) To set all your posts beforehand. For extended fencelines, it is normally configured so that the shop has multiple, identical panel widths to facilitate the cut list. If you set your posts to these repetitive dimensions *before* the panels arrive, but are not perfectly accurate, varying perhaps by 1/16", then the panels will not fit. And it is hard to stretch a panel to fit your opening 1/16" wider than the drawings. If you take approach B, you must use a stretcher to insure each and every post is dead-on to the called out dimensions.

Fencelines are provided with plan view drawing, sequencing the installation order by labeling the various panels to correspond to the drawing. Panels arrive marked on the edges with their labeled numbers.

For non-gate fencelines:

Permanently install the first fence post (surfaced 6x6 or 4x4) at either the left or right ends of the given fenceline (preferably that end, if any, fixed to a structure). Temporarily set the other post establishing the other end of the fenceline and stake it plumb. Secure a tight stringline between these two end-posts.

For fencelines with gate breaks:

Begin with setting the gate posts to their prescribed setting, using the gate width as a guide. Hinge-side posts are set in concrete, on a 3" bed of pea gravel for drainage. String



a line, as above, to establish the fenceline to the corner. Beginning with the first, permanently installed gate-post, measure over the length of the first modular panel.

Establish the hole for this post and set the panel & post in place for a dry fit, insuring the hole is set the right distance and to the stringline. Remove the post and, if necessary, trim the hole and fill it with approximately 3 inches of pea gravel. Return the post to the hole and set the panel to the approximate desired height on the first permanent post (The panels are secured using 1/4" x 4" lag screws). Three lags per post set through the predrilled holes located on that side of the panel not exposed to the street. An arrow beneath each identifying panel number helps to identify the front-facing side.

Hold the second post plumb while setting a level along the top rail of the panel, marking that level point by scribing a line on the post with an awl or nail (In the event the panels are later removed for access to painters, the scribed mark will make re-setting the panel a simple procedure, whereas a pencil mark will be lost.). Screw the panel to this second post and you have the first section in place. The second post is held plum by the rigidity of the panel . Align the post, moving the post along with its attached panel, to the stringline and insuring that it is plumb to the stringline. Fill the hole two-thirds full with pea gravel--never closer than 8-inches to the top--and the post and panel are now self-supporting. Continue this same procedure down the length of the fenceline to the last section at the far end.

Set a second stringline between end-posts at the desired fence height and fine-tune the settings of each panel (For those with slightly sloping grades, by working from left-to-right and setting the right-side frame board to the rising stringline will insure an evenly stepped pattern)

After checking that all posts are plum, the postholes can be topped with approximately 6-8 inches of concrete and allowed to cure overnight.



Gate Breaks

When a gate is to be positioned along the run of a continuous fenceline, the two gate posts can be positioned by the use of spreaders. Two 1 x 6's at top and bottom temporarily tacked to the face of the posts. Between the posts and screwed to the inside of the 1 x 6 spreaders are two blocks set to allow the rough opening width shown on the drawings.

POST SETTING

* Potholes and their proper setting is covered thoroughly on the web site, linked under the Site Map. Complete with diagrams, sketches, and text. It is an essential ingredient to a lasting fenceline.

Fenceline posts are set on a bed of 3-inches of gravel to allow better drainage beyond the vulnerable bottom-cut. Filling the posthole with pea gravel to two-thirds its depth allows further improved drainage while eliminating the need for post stakes. (The pea gravel essentially stabilizes the post while allowing for final adjustments in pluming) The final 6-8 inch capping of concrete acts as a washer to create stability. A slightly tapered cap will help to insure water runs away from the post. Gate posts, however, with the extra load of a hinged gate and the stress of flanking fencelines, should sit on a bed of gravel and the entire posthole filled with concrete.

POST CAPS

Posts are ideally cut 3-1/2 inches above the top rail of the fence panels. Post ends should be sealed with primer or an emulsion product.(This is particularly important when the fence panels and posts are painted a white or light color, as the tannins from the post-ends will bleed out onto the body of the posts) Undersides of post caps should also be sealed prior to installation. Silicone adhesive caulk, or construction adhesive, applied to post end, working the cap into place. A square against the post and the bottom edges of the



cap insure the cap sets level. Pre-drill through the top and screw off with four weatherresistant screws. (using finish nails may result in the caps warping, or curling.)

INSTALLATION GUIDE FOR PROWELL DRIVEWAY GATES



Drive gates of 12' overall width or less are 2-1/4" thickness and require no steel frame. For overall widths beyond 12', all gates require either embedded or exposed steel frames.

Five Applications

- 1) 12-ft or less overall width. All Wood. 2-1/4" thickness
- 2) 12-16-ft overall width. Surface mounts to exposed steel frame. Gate thickness: 2-1/4"
- 3) 12-16-ft overall width. Embedded steel frame. Gate thickness: 3"
- 4) Single-span Sliding Gates.
- 5) All of the above mounting to our Gate Columns.

#1) ---12-ft OR LESS. ALL WOOD

a) Mounting to Wood Posts.

The all-wood drive gates can mount to wood 6x6 posts in the same manner as the double pedestrian gates. Posts should be set at least 42" in grade and set on a 3" bed of drainage gravel to insure the moisture drains away from the end-grain. Concrete fill.

Jambs: For masonry columns, jambs are required. At 1-1/2" thickness x 4" width, these most often surface-mount to the smooth masonry column face with masonry spread bolts. We do not provide mounting bores, as it is best to leave this determination to the site. Bolts are recessed to accept the depth and diameter of the washer and bolt head. The bolt schedule is two bolts along one edge of the jamb that will be concealed by the Prowell gate stops, and one, centered, which is concealed by the closed gate.

For columns with irregular stone, it is best to mount the jambs directly to the block core

and set the stone to the jambs on either side. This is accomplished by using a temporary mock jamb, replaced with the Prowell jamb that arrives with the gate. A few dimensions



are required from the site for Prowell to spec the jamb depth: The distance from the block core to the outer-most point of the stone. This would be the stone thickness, essentially. Prowell will then provide jambs that are this thickness, plus $\frac{1}{2}$ ", to insure the gate swings without binding against the stone.

For all jambs mounting to non-breathing masonry surfaces, it is advisable to use a weatherproofing tape such as Vitchithane. This protects the cavity between the back of the wood jamb and the masonry from bacteria which breeds in cavities without light or air flow. This should be applied only after the boring holes are drilled. Otherwise, the chip-out from the drill creates a bump in the tape that prevents the jambs from seating itself evenly against the masonry.

In-swinging gates are set to the far edge of the post or jambs. Out-swinging gates to the near edge. All hinges are surface-mounted. Do NOT mortise in the hinges. The vast majority of Prowell gates are hung with 4" ball-bearing butt hinges.

Install the provided hinges to your gate by aligning them with the pre-set hinge holes in the edge of the gate. Because the ball-bearing hinges do not have removable pins, you must set the gate on blocks that will bring it to the desired height-- normally 2" off the grade. On the post, scribe a pencil-line along the top of the upper hinge, and another scribe in from the edge of the post or jamb that is equal to the depth of the hinge setting on the gate. Re-position the gate at 90-degrees in the open position—supporting the gate with blocks and shims-- providing access to mark, pre-drill, and set only the top hinge screw of the top hinge in place. The top hinge, with only one screw, has been allowed to pivot its alignment to the bottom screw and prevent binding. Mark the same depth in on the post for the bottom hinge. Mark and pre-bore the top screw hole of this bottom hinge and set this hinge screw in place. The gate is now self-supporting, and evenly hung without binding or misaligned hinge settings. Go ahead and set all the hinge screws for all the hinges.



The net gate width is 1-1/4" less than the rough opening between posts. This allows 1/4" for the surface-mounted hinges on either gate, and 3/4" for center clearance. It is important for non-automated gates to **recess or mortise the latch strike plates flush to their post** or jamb, otherwise you lose a portion of the swing clearance. Often, the gates will arrive slightly wide, requiring a little planing along this latch edge (*This occurs when your post or column is not plumb and we must build to the wider dimension*). The gates are often pre-bored for their latches upon arrival, depending on whether the latch was ordered through Prowell. Shipped gates will not arrive with the latches in place.

#2) ---12-16-ft. SURFACE MOUNTS TO EXPOSED STEEL FRAME.

Although this allows for either a double or single swing gate, we will always default to a *pair* of wood gates that are mounted to the steel frames, whether it is a single-span steel frame or a double-swing steel frame.

At 2-1/4" thickness, the pair of gates surface mount onto a 2" x 2" steel frame that is provided and installed by the automation contractor. The shop drawings will call out the dimensions of the steel frame to correspond to the stiles and rails of the gate and in accordance with the site contractor's specifications for hinge clearance. Because these are almost always automated, the steel frame and motors and access controls will be in place and operating when the gates arrive.

The gates are set on blocks to the bottom clearance called out on the drawings. They are held to the steel frame lightly with padded clamps. Mark and drill two countersunk holes along each top rail approximately 6" in from the vertical stiles. The same along the

bottom rail. Using a gold drill bit, drill in through the pre-bored holes in the wood and through the steel frame. Set this first mounting bolt to insure the gate does not slip and



lose its alignment with subsequent holes. The mounting bolts will be ¹/₄" stainless threaded bolts with a flat countersunk head. Washers and lock-nuts are set on the other side. Continue until all bolts are installed on both gates.

Check the center clearance to insure it is an even spacing. It should be 3/4"-1". If not, you must plane it with either a block plane or power hand plane.

Application #2 can be supported by steel posts or masonry columns. Columns must be constructed with steel post cores. Hinge systems should be welded to the steel core.

#3---12-16-ft. EMBEDDED STEEL FRAME. GATE THICKNESS 3"

Double swing gates with each gate embedded with a steel frame within the wood stiles and rails. This is essentially four gates. Two faces, fully joined, are laminated together to accommodate the pocketed steel frame. Because the weight is of some significance, it is useful to have either a hand hoist or cherry picker to maneuver the gates during installation.

The embedded gates require 6x6 steel mounting posts. Do not support these with masonry columns that are constructed with only a concrete footing and re-bar. Masonry or stone columns must be constructed with steel post cores. The preferred method for the wider gates is to construct a gray-beam from one column to another. Hinge systems should be welded to the steel post cores. The hinge preference is that of the installer. Prowell will accommodate the hinge edges of the gates with any assortment of steel plates

either mortised flush or proud. These exposed plates are welded to the embedded steel for maximum strength. This allows the installer to weld his hinge system to the gates.



This clearance between the gates and the supports is determined by the installer and relayed to us and called out on the drawings. Prowell will also create an additional vertical embedded steel stile positioned to accept any motor arm mounting plates. An exposed plate is positioned at the specs called out by the installer and shown on the drawings.

#4---SINGLE-SPAN SLIDING GATES

At 2-1/4" thickness, two gate leaves are surface-mounted to a single-span steel frame constructed and installed by the site contractor. Upon approach it appears to be a double-swing gate. The procedure for mounting to the steel frame is the same as described with application #2 above.

The gate runs along a V-track embedded into the drive surface by means of roller wheels mounted to the steel frame. There must be sufficient clearance in the direction of slide to accommodate the entire width span of the gate opening. When the grade slopes away, the V-Groove track is supported at a level height throughout.

The gates are often constructed with wider stiles on the far left and far right to allow the gate to extend beyond the columns or posts approximately 3". When closed, the width of the stiles is consistent with the center stiles of 5-1/4".

Prowell provides drawings of the steel frame dimensions to align to the gate frame. Clearance dimensions provided by the contractor are typically the bottom clearance off the grade required for the roller-wheels, and the distance the gates extend behind the columns or posts.

Vertical alignment is best secured with a secondary track running parallel to the gate movement. The arm of a double roller is welded to the exposed steel gate frame and



extends to ride along this secondary track at approximately 24" off grade, insuring vertical alignment. Another, less effective method is to mount double-rollers to the back face of the column or post and sandwich the gate itself. The rollers ride on either face if the gates. This method tends to mark or blemish the finish of the gates over time.

#5 MOUNTING TO PROWELL'S GATE COLUMNS

The gate columns are designed to compliment the aesthetic of the gate design, and as a visual improvement to exposing plain steel or wood posts. The columns are lighting optional.

With either wood or steel posts (depending on your span), the columns arrive as 4-sided assemblies with one removable side set temporarily with recessed screws. This side is removed and the 3-sided assembly slips around the posts. The dimension of the post is accommodated by furring blocks within the columns that allows for a snug fit.

The fixture arrives in place and the wiring is stubbed out the bottom of the column to be junctioned to the source near the base of the column. Low-voltage, with a transformer pre-installed. The cap is removable and allows access to the fixture.

Because the lighted grid is often backed with Plexiglas, this must be slipped out if the columns are going to be finished on site.

Hinging systems for the columns are determined by the contractor and all clearance dimensions are subsequently called out in the drawings.

For spans of 12-ft or less, 4" ball-bearing butt hinges are suggested, mounted to the far corner of the column in the same fashion as described above for wood posts.



For longer spans, the hinge system should be welded off a steel posts inside of the columns. Prowell will mortise the column for any steel arm or hinge extending from the steel post. This will be the face of the column that is removable and will slip over or around the hinge arm and then secured to the other column faces. The exact positioning height of the hinge support arms must be known. The shop drawings will call out these dimensions, to be corroborated by the site installer.

Further discussion, with images, is available under Product Specifications, found under the Site Map.



INSTALLATION GUIDE FOR ARBORS

Prowell's Arbors are predominantly sold as extensions to existing wood posts, columns, and walls.

To Wood Posts: Two and four-post assemblies arrive with 1.2" dia. threaded rod embedded into the end-grain bottoms of the arbor trusses (for arching arbors) or the arbor's vertical extension posts. There will be mounting caps that have been pre-bored and countersunk unless these have been specifically omitted in lieu of a flush fit. The mounting caps should be used as a template for boring a $\frac{1}{2}$ " dia. hole into the tops of the site posts. The caps then fit over the threaded rod in the arbor to seat themselves to the end-grain bottoms of the arbor and using the pre-bored and countersunk holes, the caps are screwed into the bottom of the arbor trusses or vertical extensions. The threaded rod will extend below, or beyond the caps. Using an epoxy applied to the threaded rod, the arbor assembly is then seated onto the site posts, using the threaded rod to guide itself into the $\frac{1}{2}$ " dia holes in the site posts.

Without Mounting Caps: Those assemblies that prefer no mounting caps for a flush joint, the end-grain bottoms of the arbor trusses or vertical extensions will be eased with a 1/8" roundover. The same should be done to the tops of the site posts. There will be a ¹/4" template fitted over the threaded rod embedded into the arbor trusses or vertical extensions. This template should be used in boring a center hole into the tops of the site posts. Following the same procedure for seating the assembly as described above.

To Masonry or Stone Columns and Walls: These arbors arrive without mounting caps. They are designed to mount onto the tops of columns or walls using threaded rods. The bottom of the arbor posts are pre-bored and set with threaded rod, with an accompanying template to help you align the bore into the

column or wall. The arbor and threaded rod is set into the corresponding hole in the



masonry or stone with epoxy. The arbor is eased down to seat itself onto the wall or column.

<u>Ceiling Panels</u>: Certain 4-post arbors are offered in a variety of designs and styles. Commonly, they consist of panels that are joined and assembled in the shop and shipped free of the corresponding arbor assembly. The panels simply mount to the cross-beams as shown on the drawings with 3" stainless screws.

Valance Panels: These panels were designed to fit between the gate and arbor posts, mounted with screws. (Two pre-bored holes are set along the vertical stiles of the panel). The Valance Panels, and the gate, determines the exact width of the post settings. Fourpost square settings will often require the installer to use a plywood template to insure the posts are set square and not as a parallelogram.

Flat Grid Arbors: These are commonly delivered with the overhead grid as a half-lap joined assembly, as well as joined to the cross-beams. The entire assembly is raised into place and set atop the four set arbor posts. For square settings, the bottoms of the arbor beams will be notched with a 1/2" dado, slipping over the post for a 'seat.'

Gabled Arbors w/ Insert Panels: These assemblies arrive with the two gable rafters pre-cut with their "birdseye" cut that corresponds to the site cross-beam. Each side of the gable usually has two inserted panels for a louvered effect. Four panels in all. These are also delivered in place. This entire assembly is set to the top of the cut posts as a pre-assembled unit.



INSTALLATION GUIDE FOR PROWELL GATE AND GARDEN COLUMNS

Drive Gates Columns

Gate Columns onto 6x6 Steel Posts

Columns arrive with one face temporarily set. This is the solid face of the columns that faces the hinge edge of the gates. The columns are slipped over the site posts. Drive Gates mounting to steel frames will require the 6x6 steel posts be configured with steel T-Bar straps that are welded to the steel posts. These small flatiron extensions are normally about 2-1/2" wide by 1/8-1/4" thick, and approximately 3-1/2" long. Two per post. The location of these are called out in the drawings provided by us as per the site contractor's specifications. With this dimension, Prowell-or the site contractor-- make a small mortise or cut-out in the solid face of the Columns that allow them to slip over the steel posts and fit to the T-bar extensions. This column face is then screwed to the 3-side column already in place, and plugged with the provided wood plugs. The T-Bar extensions should be long enough to extend proud of the Column allowing for the weld joint of whatever hinge system is preferred. This also insures that the entire bearing load of the wood gate and steel frame are drawn from the steel post and not the Wood The hinge edges of the gates are provided with exposed steel plates where the Columns. other arm of the hinge system is welded.

Pedestrian Gates Columns

For those Garden Gates flanked by the Prowell's Gate Columns, the procedure varies. The Columns arrive as three-sided assemblies to be slipped around your wood posts. Two faces of the Columns are detailed and exposed to face the street and residence. The other two sides are solid, parallel to the gate opening (This is the same procedure for the drive gates so far). Your posted Prowell drawing will call out the exact dimensional requirement themselves. In most cases, there is the net width of the gate, plus the



standard 5/8" clearance (1/4" for surface-mounted hinges and 3/8" for swing clearance). In addition to this, the Column dimension is accommodated by setting the post, as a surfaced 6x6, another 2-1/16". For surfaced 4x4 posts, the post is set another 3-5/16". So a 42" net gate width using surfaced 6x6 posts will have the posts with a rough opening dimension between them at 46-7/8".

Prowell provides the 4" ball-bearing butt hinge, surface-mounted to the solid face of the Column in the exact same manner outlined above, as if the column were a standard wood post.

Lighted Columns: When the gate Columns are lighted, the fixture arrive in place and the wiring is stubbed out at the bottom of the Column, where it can be junctioned to the source as a low-voltage fixture.

Prowell's GARDEN COLUMNS

The Landscape Lighting Column was designed primarily as an architectural lighting source within the landscape. These require 4x4 or 6x6 wood or steel posts set into the grade and extending to the height called out in the provided drawings. The Column arrives as a compete four-sided assembly, slipping over the top of the set post. The wiring is fed out under the bottom of the Column and junctioned to a low-voltage power source.

The Column is secured to the post using the pre-bored screw holes and wood screws. The Column Cap slips over the Column Access to the fixture or Plexiglas sheets that back the upper grid pattern is allowed by removing the Cap. Further discussion, with images, is available under Product Specifications, found under the Site Map.



INSTALLATION GUIDE FOR PROWELL PORCH SWINGS

The swings ship fully assembled. Installed in place are four I-bolts. Shipped in the hardware package is:

- --Coated 3/16" chain or natural fiber rope.
- --six Clevis Connectors.
- --Two Springs
- --An optional ceiling swivel mount.
- --Brass crimps for rope options.

CHAIN SUPPORTS

The chain arrives as a Y. The two shorter lengths connect to the I-bolts mounted to the side of the swing by means of the Clevis Connectors. At the point where the long chain length meets the Y, another connection is already in place using the Clevis Connectors. This is a specification that should not be altered or changed, as it dramatically affects the motion of the swinging action and the general safety of the swing.

The single length of chain ultimately mounts to the overhead structure. It is important to insure there is proper framing and sufficient strength in the overhead framing to support the weight of the swing.

An optional Swivel Mount is designed to mount to the framing and provide an easier swing action.

The long springs attach to either the Swivel Mount, or when using I-bolts or I-lags directly into the framing, the springs attach to that using Clevis Connectors.



ROPE SUPPORTS

The swings hung with rope instead of chain have two lengths coming off their I-bolts in the swings and carrying the length to the ceiling mounts. There is no Y, as with the chain.

Instead of using Clevis Connectors, the rope is secured to the I-bolts by the use of brass Crimps. These are essentially the same crimps used for horse leads. The rope arrives already secured to the I-bolts on the sides of the swing, primarily because the crimps used cannot be tightened by hand. They require a bench vise.

And yet because the adjustable requirements from site to site, the connection of the rope to the ceiling mount does require the crimp be closed on site. A pair of large channel locks can work as an on-site solution, although a vise is best. Obviously the crimps need to absolutely closed to fully secure the rope's connection from slipping.

**For more information, drawings, and photos, see Product Specifications on the web site.



CARE & MAINTENANCE

Sealing or finishing your product is a personal and aesthetic choice, and will not prolong it's life. Because we use the highest grade of clear, dry vertical-grain cedar, applying a finish to your Prowell products is not necessary and will not prolong it's structural or visual integrity. Prowell products, unfinished, will outlast us of all regardless of a finish, or not. The cedar will gray out naturally within a season.

If your prefer a finish—and most folks do-- there are the following recommendations for products and application techniques. A full discussion, with links, is available by following the "Recommended Finishes" link on the Home Page.

WoodRX Non-Toxic Exterior Finish.

* Environmentally safe water-based formula.



Easy application. Easy clean-up. Longer lasting. Flat Finish. Easy application and quick drying allows for two coats within two hours. Because of the quick drying, it also all but eliminates the collection of dust particles gathering between coats.

We recommend the "Ultra" formula only. Can be sprayed or brushed. Brushing: Maintain a wet edge to your brush to avoid overlapping brush strokes against the grain.



Spraying: Normally this provides a better and more consistent result. Not to mention quicker. You eliminate the overlapping brush strokes.

Temperate climates: 10-12 years Cold-freeze climates: 6+ years \$44/gallon + shipping WoodRx is currently not distributed and must be purchased directly from the Inseco facility. www.woodrx.com Address: 5601 Banner Dr Fort Myers, FL 33912

Nationwide: (800) 883-5150 Local Phone: (239) 939-1072

E-Mail: sales@woodrx.com

Sikkens Cetrol #1 and Cetrol #23 Plus

For decades, the industry standard in exterior finishes. A durable long lasting oil-based finish with a slight sheen.



Sikkens cetrol is a 1-3-part oil-based finish representing the highest level among the various oil finishes for.

Cetrol #1 for your primary application and coloring. **Cetrol #23 Plus** for your protective topcoat with a soft sheen.

Apply one coat of #1, followed by either one coat of #23 Plus, or . . . two coats of #23 Plus with a light 120-grit sanding between coats for the optimal result.

(**It may be noted that Sikkens also has a line of one-coat finish called Sikkens Cetrol SRD. This is not recommended simply because it is a thick consistency that does not absorb as well and tends to result in a built-up finish. It is also far more difficult to apply



because of it molasses-like thickness and may result in unsightly runs. If not maintained on schedule, it will crack similar to a Spar varnish type finish.)

Basic applications techniques are discussed below.

In some parts of the country, Sikkens is hard to find. To Locate the nearest dealer: http://www.nam.sikkens.com/find-a-dealer.cfm To order online: <u>http://loghomeshoppe.com/Sikkens_Stain.asp</u> For more information: <u>http://www.loghelp.com/finishes/finishes3a.html</u>

Cabot Stains



For those preferring a wider range of colors, we recommend Cabot Stains.

Cabot provides a number of products. A short review, and their expected timelines between normal maintenance. It should be noted that none of the below products is designed for anything more than a single coat. Second coats do not absorb, and result in splotchy finishes of variable absorption due to the wood variable density in the wood fiber.

--For the Cabot web site and to located a dealer near your: http://www.cabotstain.com/colors-and-finishes/families/Choosing-Opacity.html

CABOT STAINS Maintenance Timeline:

*= 1-2 years, **3-6= years, ***= 5-10 years



* Clear Seal.....A natural graying with time. To prevent moisture absorption, Cabot's Clear-Seal Solution (completely invisible) should be reapplied when water no longer beads on the surface of the wood.

* **Natural Oil.....** A penetrating oil that enriches the wood tone while providing a water repellant seal. Cabots Clear Solutions is recommended.

**** Semi-Transparent and Semi-Solid Stains**..........The wood grain remains visible. It is a finish often preferred because the pigments provide a more organic compliment to the surrounding landscape. Requires a single coat. No primer.

*****Solid-Body Stains**.....Close to a flat paint finish. No grain visible. The advantage over paint is that the stain penetrates the wood and breaths, from season to season, as the wood shrinks and swells. Requires an oil-based primer.

PAINTED FINISH

The most durable of all the above finishes, and yet a finish that demands a maintenance schedule that if neglected, will result in peeling and cracking. This in turn requires scraping and sanding prior to new coats. Scraping and sanding the designs of many of the products can be a tedious affair.

Paint requires one primer coat and two top coats.

Paint does not penetrate the cedar as stains and oils do. As a result it does not stretch with the same elasticity as stains from season to season. In certain climates, it will crack and peel from the wood's dimensional changes.

FINISH APPLICATION



Although sealing, staining, or painting your gate does not prolong the life of the cedar, it is often a preferred approach. In most climates, the calculated spacing between the gate and lock-side post is enough, at 3/8", to allow for normal expansion and contraction.

When applying your finish, start with one side, brushing the bottom rail with the grain and then the vertical stiles with the grain to avoid the brush strokes overlapping. This is for all horizontal rails, not allowing the brush stroke to dry before brushing the vertical stile. Do not apply stain to the edges of the pickets or upper pattern on this side or the stain will run down the opposite side and leave run marks penetrating the bare wood before you are able to finish the opposite side. For those with solid lower panels, do not stain the edges of your open slots until the back side is addressed. Once you turn to the other side, you can then apply stain to the picket faces and edges, knowing the run-off will not absorb against the already stained surface. Check, when finished, the direction of your brush stroke to smooth out any overlaps. Do not, with semi-transparent stains, natural oils, or clear seals, apply a second coat once this first coat is dry. The gate has been sealed, and further applications will not absorb evenly, resulting in a splotchy buildup.

Spray finishes:

Spraying obviously quickens the process, and particularly when there are numerous pickets and their edges. With Cabot Stains, homeowners can opt for something as simple as a common rented, garden pump sprayer. WoodRX and Sikkens should opt for a high pressure sprayer.

Cabot Stains does recommend that if you spray, it be back-brushed by hand. This works the stain deeper into the grain. The same holds for the Sikkens. Back brushing is not necessary with WoodRX.



**One last word. If your Prowell product is left in the weather unfinished, absorbing dew, fog, humidity, and rainfall, do NOT apply a finish until it has fully dried (2 days of sunny weather). To do otherwise will be to seal in the moisture it has taken on from rain, fog, even humidity, and leave it no means of escape. This will result in probably warping and cupping and a damaged product.

If you receive your product in the winter and want to apply a finish, but do not want to expose it to the weather and have it gray out, it is best to apply the finish inside a garage prior to installation. The temperature should be 58 degrees or above.

You may also contact us for pre-finished orders. Currently we offer only the WoodRx as a pre-finish option.