

How to Lock Out Crime: Home Security — Patio Doors

In Home Security 101, you were asked to do a visual assessment of your yard and home. This fact sheet, **Home Security — Patio Doors**, suggests ways to improve the security of one of the favorite targets of burglars.

Sliding patio doors are a feature of many homes and apartments. They provide natural lighting, allow freedom of movement and afford a view of the surroundings unmatched by ordinary doors. Unfortunately, they are also a favorite target of burglars.

The sashes of sliding patio doors are made of wood, aluminum or vinyl and are set in a wood or metal frame. All exterior sliding glass doors must be double glazed. The most common configuration consists of a stationary outer panel and a sliding inner one, although doors with up to four sliding panels are available.

How Burglars Get In

Most sliding patio doors are equipped with a single locking mechanism located midway on the outside edge of the sliding panel. The spurred bolt of the lock engages the lip of the strike plate or “keeper” mounted on the frame. Because of space limitations, these locks are often flimsy and ineffective. They can be pried open with a tool, cut with a hacksaw or simply unhooked by jiggling the panel.

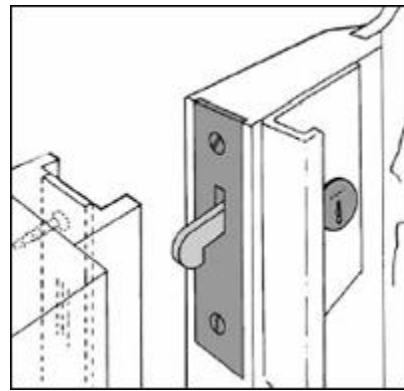


Figure 1 Typical patio door lock.

The lock can sometimes be defeated when a corner of the panel is lifted, causing it to rotate within its frame around the pivot created by the engaged lock. This concentrates the weight of the door and the force of the prying action on the small contact area between bolt and strike.

In many instances, the strike breaks or tears free of the jamb, allowing the door to be opened.

But the lock is just one of the patio door’s weaknesses:

- Some doors can be lifted out of their tracks from the outside, even when closed.
- The stationary panel is often held in place by retaining brackets fastened to the jamb with screws that are exposed to the outside; an intruder only has to remove the screws to open the door.



Figure 2 Rotating motion of the panel caused by prying action, can break the lock.

- Many aluminum and vinyl doors can be forced apart at the interlock (where the closed doors overlap) without the glass breaking, allowing a burglar to reach in and unlock the doors.

Burglars can also break the glass on a patio door, but this is not common. Most entries are achieved by breaking the lock or otherwise forcing the door.

Auxiliary Security Devices

To compensate for the lack of effective locks on most patio doors, manufacturers have produced a wide range of add-on security devices. Basically, there are three kinds:

- jimmy plates;
- safety bars; and
- auxiliary locks.

These devices should be used in combination with one another and with the door's existing lock to prevent horizontal, vertical and rotating motion of the door.

Jimmy plates are designed to be installed in the upper door channel. They prevent the door from being lifted out of its track by eliminating the vertical play in the door.

Homemade jimmy plates can be equally effective. First, make sure the door is properly adjusted for height. Then, with the door fully open, glue or screw a strip of wood or metal into the full length of the recess in the upper track. Choose a strip that will take up the vertical slack between door and frame and still allow the door to slide freely in its channel.

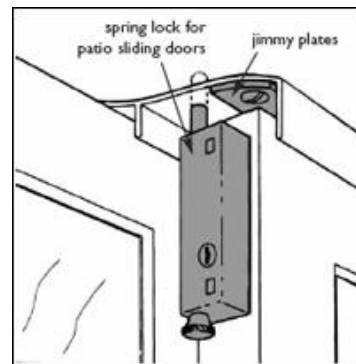


Figure 3 Jimmy plates and a spring lock will prevent a sliding patio door from being lifted out of its frame.

Another method is to install several large, pan-head screws into the upper track. Use wood or sheet-metal screws with wide heads spaced 250 mm (10 in.) apart. Screw them in just far enough that the top of the door grazes the screw heads without jamming. The fixed window panel can be similarly protected by a wooden dowel or metal rod slid into the space above the door.

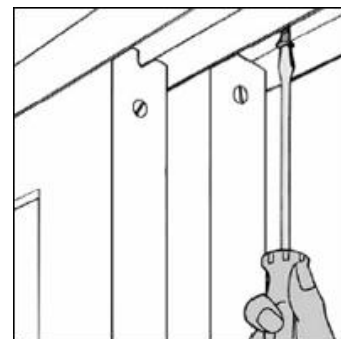


Figure 4 Install screws in upper channel to prevent sliding panel from being lifted out of its track.

Safety bars. Properly fitted jimmy plates will prevent vertical and rotating motion of the door. But to keep the door from sliding horizontally, a good brace or “charlie bar” is necessary.

Commercially made charlie bars are usually mounted on the door jamb opposite the sliding panel.

Some attach to the stile or glass of the stationary panel to resist the relative motion between the two panels. Most come with a retaining bracket to hold them out of the way when not in use. They are made of hollow aluminum or steel tubing. Some models can be adjusted in length to fit a variety of doors.



Figure 5 Safety bar.

Most safety bars are inexpensive and easy to install. However, you should avoid bars made of thin aluminum and those that use a friction device to secure the telescoping sections.

If possible, choose a bar of solid metal or heavy metal tubing. One-piece (fixed-length) bars are strongest, but heavy-duty adjustable bars that use a screw fastener to secure the collapsing portions may also be acceptable.

Mount the bar at the bottom of the sliding panel, near the sill, but in view of anyone outside. In this position, it will prevent both horizontal and rotating motion of the door while advertising the fact that you have taken special security precautions. A bar mounted at the level of the pull (handle) will also be effective if used in conjunction with jimmy plates or a bolt lock to resist the lifting and rotating motion of the panel.

A simple safety bar can be made by cutting a length of wood (an old hockey stick or broom handle is ideal) to fit snugly into the bottom channel of the sliding panel.

Safety bars cannot be used on some vinyl doors whose stiles lack rigidity.

Auxiliary locks. There is a variety of locks available for use on sliding doors to supplement existing locks. They must also “*be operable from the inside without requiring keys, special devices or specialized knowledge of the door-opening mechanism*” if they are to meet building code requirements.

Most of them use a slide or deadbolt of hardened steel and are easily operated with a lever or thumb-turn. They are designed to be mounted on the inside edge of the door on the frame or track.

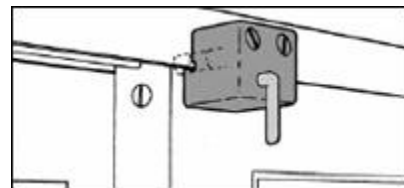


Figure 6 Auxiliary lock for sliding doors.

Locks that bolt the sliding panel to the door frame (rather than to another panel) will prevent both horizontal and vertical movement. Choose a sturdy lock of solid metal construction that uses a deadbolt with at least a 25 mm (1 in.) throw. When installing these locks, be careful not to damage the glass or the thermal seal of the door.

Double-cylinder locks that must be operated with a key from the inside are not permitted for fire safety reasons.

Some locks cannot be used on doors with a vinyl sash because the sash is too flexible. If you install a lock on a vinyl door, be sure that all fasteners are securely fixed in the metal or wood framing of the sash or other structural component. To be effective, the bolt must also pass into a solid wood or metal part of either the door or frame.

Some doors (wood frame and aluminum doors especially) can be pinned in the same way as double-hung windows. With the door closed, drill small holes through the top and bottom inside corners of the sliding panel part way into the outer, stationary panel on a slight downward slant. Be careful not to drill completely through the outer sash. Insert a strong nail or bolt in the holes to prevent the doors from being opened. Additional holes can be drilled that will allow the door to be locked while partially open, for ventilation.

It is important that if you utilize the above mentioned security devices, that any small children know how to operate them and that they are within their reach in the event they need to escape in case of a fire or other emergency.

Other Precautions

Get into the habit of paying special attention to the security of your patio doors.

- Close and lock patio doors when you leave your home, and even if you are going to be out of the room for an extended period.
- Keep the area around patio doors clear of bushes and structures that could conceal someone trying to break in. Keep the doorway well-lighted at night.
- If the primary lock (the one that comes with the door) is weak or inoperative, replace it with the best of the narrow-stile, hook-bolt locks. Consult a locksmith for the type best suited to your doors.
- Replace any fasteners exposed to the outside with one-way screws or round-headed bolts.
- Install a suitable alarm that will sound if the door is tampered with or the glass is broken (see Home Security — Alarms).
- For homes in areas prone to crime or in remote locations, consider replacing the glass portion of the door with a more break-resistant material, such as acrylic or polycarbonate plastic. Tempered, laminated or wired glass may also be suitable. Although expensive, these materials can provide a degree of security that is well worth their cost.