

# Choosing the Best Door Lock & Hinges

We recommend **Grade 1 (ANSI designation) deadbolt type locks** on:

- Exterior doors
- Doors between attached garages and living spaces
- Garage man doors (even if the garage is not attached to the house.)

## What kind of door locks do building codes require?

Although many people assume their local building codes require a minimum level of quality and security for the door locks installed on their homes, most building codes don't even require a lock on exterior doors, let alone a minimum level of quality.

Most contractors select the locks based on price.

## Door Locks From a Burglar's Perspective

Burglars prefer to break into a home through a door because it is quick and easy.

A good quality lock is a deterrent. When intruders are interviewed about the selection of a target, many say seeing quality deadbolt locks will cause them to move on to another house.

A burglar can enter the home through a door using several methods:

- The door can be left unlocked.
- Doors can be kicked in.
- Door locks can be picked.
- Door locks can be hammered until they fall off.
- Doors can be pried open.
- Door frames can be spread apart with a spreader bar.
- Door locks can be "drilled out" using a power drill.
- Locks can be pried off with pipe wrenches or pliers.

- Panes of glass in or beside doors can be broken so the intruder can reach in and unlock the lock.
- Sometimes thieves obtain a copy of the house key from an acquaintance.

Remember, the intruder will select the door that looks easiest to break into and that offers the least chance of being seen.

Doors going into the garage and going from an attached garage into the house many times offer an intruder the opportunity to hide from view while they are breaking in. Extra thought should go into the security at these locations.

**According to a study by the California Crime Technological Research Foundation, the most common techniques used by burglars to enter single-family homes are (from most often used to least often used):**

32.00% Through unlocked window or door

26.64% Forced entry by impacts

24.02% Prying or jimmying

6.79% Use of pass key or picking the lock

5.10% Entry attempted, but failed

5.45% Other or unknown<sub>1</sub>

**Learn more about how to protect your home from intruders.**

**Tips:**

**1.) Install locks with deadbolts.**

In residential construction there are basically two types of bolts used on exterior doors: latch bolts and deadbolts. Some locks combine the two bolts into one.

## **2.) Install locks with an ANSI Grade 1 classification.**

There is a grading system that measures the security and durability of door locks. The American National Standards Institute (ANSI) has standards, developed and maintained by The Builders Hardware Manufacturers Association Inc. (BHMA), that comparatively measure the security and durability performance of door locks.

*Not all Grade 1 locks are equal.* Different types of door locks are tested differently under ANSI standards. But the grade designation system is the same.

## **3.) Install locks with key control.**

Key control is simply controlling who has copies of keys to your home. Many door keys can be copied at a local hardware or retail store. However, many manufacturers now offer locks using keys that cannot be copied except by certain locksmiths or only by the manufacturer themselves.

There are burglaries where the unlawful entry can be traced back to a key that was either knowingly or unwittingly provided to the burglar.

### **Key control can help protect your from the following scenarios:**

- In-home help has been fired or quit, but they made their own copy of your house key.
- In-home help may have acquaintances who burglarize homes; they might try to acquire a key through them
- Mechanics may try to make copies of your house key while working on your car.

Key control may require extra effort, such as a letter to the lock manufacturer or a trip to the locksmith to get a key made. Also, there is an additional cost due to record keeping by the manufacturer or locksmith (between \$10 and \$50 per key). The additional cost and inconvenience should be weighed against the security benefits.

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## **Other Door Lock Features to Look For**

**Security Strike Plate** -- A strike plate comes with every door lock. Many times these strike plates are cosmetic and not intended to provide much security.

**The strike plate's attachment to the doorframe is usually the weakest point in the entire door/doorframe/lock system.**

High security strike plates are available. They sometimes come with a heavy gauge metal reinforcing plate that mounts under the cosmetic strike plate and come with 3" long screws that secure the strike to the wall framing, not just to the doorframe jamb.

The screw holes are staggered so the screws don't penetrate into the same grain of wood. The concept of screwing into different wood grains in the doorframe and wall framing is to make it more difficult to split the wood doorframe or wall framing when the door is impacted. **This feature should be considered at every exterior door and at those doors coming from attached garages.**

## **Long Screws**

**1" Minimum Throw on Deadbolt** -- The throw of the deadbolt is the length that the deadbolt extends out of the door edge. A minimum throw of 1" is recommended. Longer throws makes it more difficult to gain entry by spreading the doorframe.

**Saw-Resistant Bolts** -- Some deadbolts come with internal anti-saw pins. The pins spin freely inside the bolt. If someone tries to break in by sawing off the deadbolt, the pin will make this difficult because it spins back and forth with every movement of the saw blade.

**Captured Key Deadbolt** -- Burglars can gain entry through a locked door by breaking the glass in the door light or sidelight, reaching in, and simply unlocking the door. Many homeowners, in an effort to prevent this, install double cylinder deadbolt locks with keyholes on both sides of the door.

## **Don't let Double Cylinder Deadbolts create a fire safety danger to your family.**

In the case of a fire when the family needs to get out of the house quickly, you don't want to be wasting time looking for the key to unlock the door. Most building codes do not allow this type of lock on doors that are used to exit the house for this very reason.

To solve this conflict between family safety and security, one manufacturer has developed a deadbolt lock with a feature called a captured key.

On the interior side of the door the deadbolt lock has a thumb turn that can be removed from the lock, leaving a keyhole. The idea is when no one is home, there is no need for the thumb-turn. The last person to leave removes the thumb-turn and creates a double cylinder deadbolt condition.

**Captured Key Thumb-turn** -- The thumb-turn cannot be removed without having a key to the lock. Therefore, small children cannot remove the thumb-turn from the lock. Also, the thumb-turn can actually be used as a house key. It is important that whenever anyone is in the home that the thumb-turn is left in the lock at all times.

**Hardened Cased Steel & Beveled Casings** -- On a typical deadbolt lock the outside housing of the lock is called the "casing" or "case." Many lock manufacturers make their casings out of hardened steel and many make the casing beveled. The hardened cased steel makes the casing more resilient against blows from a hammer. Beveling the casing makes it very difficult to get pliers or pipe wrenches to stay on the lock when trying to twist it loose.

**Anti-Drill Feature** -- Some intruders know how to drill out a lock. Some manufacturers combat this by installing hardened steel chips within the lock housing. When the drill bit hits these steel chips, it tears up the drill bit.

**Dropbolts and Rim Locks** -- If a dropbolt or rim lock is selected, make sure the lock is mounted on the door with through bolts.

**Dropbolt with Through Bolts and Without** -- If not, a forced entry can cause the lock to separate from the door. The typical dropbolt and rim lock should not be considered as secure as a deadbolt lock.

Help in assessing the need for better security can be found with your local police department. Many departments have a crime prevention unit that will examine your home. Based on their experience with crime, they can see things that the average homeowner does not. Also, an experienced locksmith can help you select the right products.

Source: 1Appendix X4 of ASTM F476-84 (Reapproved 1991) Standard Test Methods for Security of Swinging Door Assemblies; American Society for Testing and Materials

State Farm® believes the information contained in the Learning Center is reliable and accurate. We cannot, however, guarantee the performance of all items demonstrated or described in all situations. Always consult an experienced contractor or other expert to determine the best application of these ideas or products in your home.

# Door Hinges and Home Security

## Door Hinges on Exterior Swinging Doors

Although most people don't give a second thought to the security options available in door hinges, there are door hinges available that can provide better security.

In some parts of the country, it is common to see doors swing out. When the door swings outward, the hinge pins are typically exposed on the outside of the house.

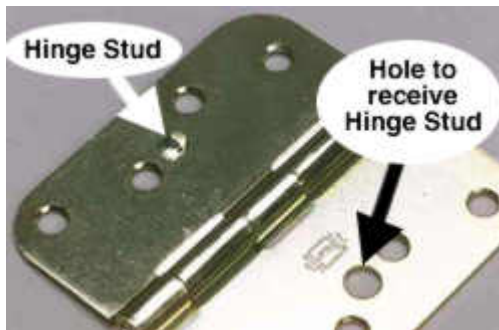
This could allow an intruder to tap the hinge pins up and out, and lift the door off its hinges, removing the door without unlocking it.

There are several door hinge designs available that make it more difficult to remove the hinge pins.



## Non-Removable Pins

On these hinges, the pins are held in place by a setscrew. If the door is in the open position, the setscrew is exposed and can be retracted, and the hinge pins removed. If the door is closed, the setscrew cannot be accessed.



## Safety Studs

These hinges come in full mortised type only, meaning the hinge sits in routed-out insets in the door and frame. Studs extend from one hinge leaf and a hole is punched in the corresponding position on the opposite leaf. When the door is closed, the stud sits in the hole. If the hinge pin is removed, the door still cannot be taken off its hinges because the

stud holds it in place.

## Fast-Riveted (Crimped) Pins

These hinges are designed so the hinge pin cannot be removed. The hinge pin is made longer than the hinge height, inserted into the hinge, and spun on the end to create a rivet-type end on the top and bottom of the pin.



**Using hinges that keep an intruder from taking the door off can be a benefit even if the hinge pins are on the inside face of the door.**

Combined with a deadbolt lock with a captured key feature, these features can help deter an intruder, who has broken in through a window, from unlocking the door or taking the door off its hinges.

It is important to use these security products on all exterior doors, including any from the garage to the outside, and on any doors from an attached garage to the house.

Security products can also be retrofitted onto existing hinges in older homes.

[Learn more about how to keep your home safe from intruders.](#)

An experienced locksmith or your local police crime prevention unit may also assist in revealing various safety options.