1. Amerock Hinge Details

Definition: A hinge is any jointed device on which a door pivots

In 1968, a major breakthrough was made when Amerock pioneered a method to conceal springs in a plastic retainer which would cause a door to close automatically within 30-35 degrees of the closed position. That advance was the birth of today's self-closing hinge technology.

This diagram indicates the primary elements of a traditional self-closing hinge. It is very helpful to use these terms when discussing hinges: hole location, hole/slot configuration, overlay, and full or partial wrap are among the many variables to be considered in hinge selection. By referring to these terms, we can all go a long way in reducing possible mistakes and misunderstandings.
Hinge Configurations

There are three primary traditional hinge configurations: Inset, Overlay and Reverse Bevel. Each has a characteristic unique to itself and requires a specific door design and type of door construction to be used properly. A secondary type of hinge configuration that has regained a sizeable degree of popularity in recent years is the Inset Hinge or Flush Door Hinge. The following diagrams feature the three primary traditional hinge styles.

Some common, but incorrect, terms for these three hinge types can lead to costly misunderstandings and confusion.

For example:

A "Lip" or "3/8" Lip Door" might be misunderstood to mean the overlay is only 3/8", and delivery of standard overlay hinges can be sent by mistake, not a 3/8" inset hinge...

By no means are these all the terms sellers may use, but these are some of the more common relayed over the years. Although not everyone uses these standard terms, it does help build awareness that different terminology is used when referencing hinges. The goal is to ensure the correct hinges are ordered and delivered to the Amerock customer.
Overlay and Reveal

The term **Overlay** means how much the door actually overlays one side of the cabinet frame.

![Overlay Diagram](image)

The term **Reveal** means how much of the face-frame (the stile and rail) remain visible after a door is installed on the cabinet.

![Reveal Diagram](image)
What Size Should A Door Be Cut?

Twice the desired Overlay, added to the net cabinet opening, is the required door width dimension. For example:

You have a 24" cabinet, with 2" wide face frame material (the horizontal pieces of a cabinet face frame are called the rails, the vertical pieces of a cabinet face frame are called the stiles):

A. The door opening is........ 20"  \[24'' - 2'' - 2'' = 20''\]
B. The desired overlay is..... ½"  \[\text{customer defined}\]
C. The reveal is............. .1-1/2"  \[2'' - \frac{1}{2}'' = 1-1/2''\]
D. Required door width is.... 21"  \[\frac{1}{2}'' + \frac{1}{2}'' + 20'' = 21''\]

Door/Hinge Features

A. **3/8" Inset doors** are almost always made from ¾" thick material. Half of 3/4" is 3/8". Cabinetmaker's can easily trim away a 3/8" x 3/8" cut around the inside edge of the door while maintaining holding strength of the hinge screws. This cut allows the door to inset into the frame. Whether the 3/8" x3/8" cut is made by a table saw, router, shaper or molder does not matter; only that the cut be made accurately.

B. **Overlay doors** may be made any width in size just so long as it is greater than the door opening. Use of a surface mounted hinge permits the door to be located anywhere over the cabinet opening. Considered to be the most economical door to manufacture, standard overlay doors find more acceptance than either inset or reverse bevel door.

C. **Reverse Bevel doors** have a back-beveled edge around the door edge which is easily grasped with fingers to open a door. Such a design can lessen the need for decorative cabinet hardware, thereby reducing the cost to produce. When closed, this design also shields the exposed edge of the door from sight permitting cabinetmakers to use plywood, fiberboard or particle board more freely without concern for a "finished" edge on the door.
It should be noted, Reverse Bevel hinges were once commonly referred to as 30-degree Reverse Bevel, because the bevel was frequently at a 30 degree angle. However, the use of an exact 30 degree bevel is all but ignored today due to the increased use of doors with concealed hinges and the desire for softer door profiles.

D. Although NOT a self-closing hinge, a style gaining significant popularity in today's market is the Flush, or Full-Inset door. This style has the door fully recessed into the face frame, providing a smooth, flat cabinet front. While design may be a primary reason for this cabinet's shaker-style Flush doors, function may also have an important role. The focal point of a fully-inset door is the decorative knuckle, hinge tips and the finish offered. Simplicity rules most Flush door designs.

Flush door installation has routinely used a simple "butt" hinge with screws into the side of the face-frame stock and the edge of the door. Unless the door is solid material, the holding power of any screw in the side of plywood, fiberboard or particleboard is limited. Also, butt hinges do not offer any adjustability and may leave an unsightly door "gap", the distance between the door and the frame. Most cabinetmakers want the "gap" to be no more than 1/8" on all sides Amerock's Full Inset Door hinge program offers full door adjustability, minimum door "gap" distances, and hinge configurations to satisfy nearly every door/frame dimension.

High-end cabinets (in terms of relative price and quality of craftsmanship) featuring Flush doors were routinely forced to use hinges which are mortised (cut) into the frame stile and/or the door. This is an expensive and time-consuming process for any size cabinetmaker. In addition, with a mortised hinge, any hinge adjustability is lost.

Amerock is pleased to offer a Full Inset, Flush-door hinge program which overcomes all common shortcomings of both "butt" hinges and mortised hinges. The 3100-series hinge offers full 2-way adjustability; the strength of a wrap-around hinge; allows screws to be installed in the strongest portion of the door and frame; and fast installation.

Knife Hinges

Another common hinge, that is usually non-self-closing, the Knife hinge has been used by cabinetmakers for decades. Use of a Knife hinge permits the cabinetmaker to hide the hinge knuckle from view providing a nearly concealed hinge appearance.
Suitable for most styles of door design and size, a **Knife hinge** provides the cabinetmaker with an option of compromising when cost, hinge visibility, or the opening angle of the door is of concern. Use of a Knife hinge will provide essentially a concealed hinge appearance with nearly 180 degrees of door opening and at a price not much higher than that of a traditional wrap-around self-closing hinge. **Knife hinges** may be either self-closing, such as the Marathon, or non-self-closing in function. The Marathon hinge program is discussed in detail in later in this Chapter.

### 2. Traditional Self-Closing Hinges

This hinge category still represents a very large percentage of hinges produced world-wide today, although it may no longer dominate the hinge category. Consistency, reliability, durability, strength and appearance are all key characteristics of an Amerock traditional self-closing hinge.

Significant characteristics of an Amerock traditional self-closing hinge are:

A. The Amerock self-closing mechanism has proven superior to all other designs obtaining self-closing action. The twin compression coil springs provide quiet, smooth, and consistent self-closing power with an operating life guaranteed for the life of the cabinet!

   Current KCMA (Kitchen Cabinet Manufacturers Association) industry standards require hinges retain their self-closing action for at least 25,000 cycles. Amerock manufactures hinges to meet and exceed KCMA standards.

B. Adequate self-closing force cabinet doors to automatically close from within 30-35 degrees of the cabinet front with no "bounce back" or an inability to hold the door closed.

C. Cabinet doors held firmly against the cabinet face-frame without the need of a catch - thereby saving the cabinetmaker money and installation time.
D. Cabinet doors remain open and in place when more than 35 degrees from the cabinet front. Too much self-closing force will cause a door to keep closing, most likely when the homeowner wants to keep the cabinet door open - for example, when putting dishes away!

E. Hinge pins are plated and lubricated for long, smooth and quiet operation. Hinges without plating and lubrication have been proven to squeak, rust and fail to provide expected results.

Types of Self-Closing Hinges

There are five primary types of self-closing hinges. Each type of hinge has unique features and benefits and is used to accomplish a specific task in cabinet and door construction. They are:

1. Semi-Concealed
2. Wrap-Around Defined as Traditional Hinges
3. Demountable Defined as Mostly Concealed Hinges
4. Knife Defined as Concealed Hinges
5. Fully Concealed Defined as Mostly Concealed Hinges

Semi-Concealed

The term Semi-Concealed comes from the fact that only the frame wing portion of the hinge is visible after installation. The door wing mounts to the backside of the door, and is therefore out of sight. This was Amerock’s first style of self-closing hinge and is still popular in the US.

Amerock produces a wide variety frame wing designs and configurations, most being compatible with different Amerock cabinet hardware groupings, finishes, and designs. Semi-concealed hinges can be found as either 3/8" Inset, Overlay or Reverse Bevel function.

Thrift Hinges

a. The most widely sold semi-concealed, self-closing hinge is Amerock's 7100-series Thrift Hinge. Both the 7128 (3/8" inset) and the 7139 (overlay) hinge come from this same family of hinges.
Today, Amerock's most popular semi-concealed hinges are:

- 3/8" Inset Hinge  3428 and 7128-series
- Overlay Hinge    3429 and 7139-series
- Reverse Bevel    7157 and 7630-series

b. As an upgrade to the standard Thrift Hinge program, Amerock offers the 7600-series hinge, which is similar in function, but is manufactured of a heavier gauge steel.

c. When a neater, trimmer appearance is sought, the 7900-series hinge is an excellent choice. Unlike the 7100-series and the 7600-series hinges which feature a convex design on the frame wing of the hinge, the 7900-series of hinges utilizes a concave design, making the outward appearance of the hinge smaller on the cabinet frame.

If a more decorative, stylized frame wing is desired, the 7300-series hinge groupings may be satisfactory. Should adjustment be sought in a hinge, either the 7149 or the 7531 hinges offer slotted holes for screw adjustment.

Wrap-Around Hinges

d. As a single family of hinges, Amerock's Wrap-Around Hinge program is the most extensive available, anywhere!

Developed and designed for the high-volume production requirements of regional and national cabinet manufacturers, this family of hinges offers two important features production-oriented shops should consider: installation speed and adjustability.

e. Wrap-Around hinges are classified into two primary groups, Full Wrap and Partial Wrap. The term "wrap-around" comes from the ability of the frame wing to "wrap" itself around two or three edges of the frame's stile. This feature allows the hinge to be attached firmly to the cabinet without having exposed screws on the front surface. A wrap-around hinge offers many valuable benefits to a cabinetmaker...
The major features and benefits of wrap-around hinges are:

1. hinge strength
2. installation speed
3. door adjustability
4. door reversibility
5. reduction of hinge installation damage
6. clean, neat appearance
7. styles, finishes and decorative tips to coordinate with popular decorative cabinet hardware products

The difference between a Full and Partial Wrap-Around hinge is basic:

FULLWRAP-AROUND HINGES:

1. Full Wrap-Around hinges have an extra tail on the frame wing which wraps around the back side of the face frame. This locks the hinge to the frame on three surfaces, the tail providing extra strength and stability, especially for those hinges that utilize only a single screw for attachment of the frame wing to the cabinet frame. 

2. Only full-wrap hinges should be installed with the single screw-fastening feature.

3. Face frame material thickness must not be greater than ¾” for a full-wrap hinge to properly seat on the cabinet’s stile.

4. Full wrap-around hinge design allows a door to literally "hang" on the face frame prior to installation of the screws, permitting one person to install the door on the cabinet. Please note, the cabinet MUST be on its back with the door side of the cabinet facing upward for this feature to be a benefit.

PARTIAL WRAP-AROUND HINGES:

1. A Partial Wrap-Around hinge does not fully extend to inside edge, and does not "wrap around" the back side of the face frame. This allows the hinge to "float" on the stile.

2. Two installation screws must be used on the frame wing of a partial wrap-around hinge.

3. Partial wrap hinges are designed for use where the face frame material thickness is either greater than or less than ¾"
Specific features and benefits of wrap-around hinges are:

1. Wrap-around hinges are manufactured to our highest performance requirements. No other traditional hinge is stronger, or manufactured of any better grade material.

2. A feature highly regarded by cabinetmakers was the frame wing's wrap-around design, permitting significantly faster installation of cabinet doors on a cabinet. Most wrap-around hinges may be installed securely with a single screw on the frame wing. The grasping action of the wrap-around portion of the frame wing coupled with the strength of quality steel prevents the hinge from bending or twisting when only a single installation screw is used. This method meets all industry strength requirements for performance.

   Because only a single screw is required, instead of the usual two screws, installation speed is considerably increased. For cabinetmakers interested in productivity, wrap-around hinges significantly reduce the amount of time spent attaching hinges to doors and doors to cabinets.

3. Many wrap-around hinges offer slots in either one or both wings of the hinge. Slots provide side-to-side door adjustment (not available on most semi-concealed hinges) and/or vertical door adjustment (not available on any semi-concealed hinge). The primary purpose of slotted hinges is the time and labor savings for the installer when aligning and spacing doors on the job site. Adjustable slots also permit the cabinetmaker to be less precise in the placement of the door on the cabinet during actual production thereby saving time and money.

4. Reversibility of a door is sometimes the difference between a profitable and an unprofitable sale. If a door is hinged to open the wrong way, wrap-around hinges provide a fast, safe, economical, and hidden means of correcting the mistake.

   Wrap-around hinges are attached to the inside edge of the face frame, removing the screws and installing on the opposite inside frame edge is a minor problem, if at all. Surface mounted hinge screws would leave four holes in the exposed surface of the cabinet; difficult and costly to repair.

   Unless the door has a design featuring an obvious top and bottom, (for example, a Cathedral Arch-style door) frequently the entire door may be reversed (flipped upside-down) to achieve the proper hinged direction.
If a door’s design does present a problem, removal of the hinges and re-installment on the opposite site of the door and frame is required. However, this is still faster, easier, and can eliminate or sub sequentially reduce a visual problem than to change either doors or cabinets where semi-concealed hinges are used.

5. While it is almost impossible to prevent 100% of the errors and damage to a cabinet while being manufactured, the common problem of a screw-driver slipping off the head of a screw and scratching the surface of the cabinet is eliminated - no screws are attached to the exposed cabinet surface.

6. Having no exposed screws provides a neater appearance and the total exposed surface of a wrap-around hinge is less than that of a surface-mounted, semi-concealed hinge, presenting a cleaner look.

Combine the clean appearance of a wrap-around hinge with decorative hinge pins, and an alternative to a full inset door hinge is produced. Amerock produces wrap-around hinges with decorative hinge pins in ½" overlay (7550), ¼" overlay (7566) and a 3/8" inset (7565) with two styles of tips, a simple design with a ring (-T1) and a plain bullet tip (-T2).

Door adjustability is a concern for most cabinetmakers and installers. The lack of adjustability for a hinge means more time and money is needed during cabinet assembly.

1. Amerock features two excellent means of securely locating and fastening a door to a hinge, while providing outstanding adjustability.

a. First, embossed serrated pads on the inside surface of both door wings and frame wings help secure the hinge to the door or frame material and prevent slippage as the wood expands and contracts over time and use.

b. Second, and more obvious, is a third screw hole (not a slot) in the door wing. A third screw hole will act as a "locking screw" position after the door has the final adjustment on the job site.

Under certain conditions, an additional feature may apply. Several Amerock hinges feature a stamped punch point instead of embossed pads on the door wing providing a positive point of secure contact. The punch point will literally bury itself into the wood’s surface thereby preventing door slippage. However, the punched point will not provide acceptable holding power on a plastic laminated door. The hard surface of plastic will not allow the point to penetrate and establish a firm holding position.
With the use of wrap-around hinges, identification of the specific overlay dimension is required.

Because the overlay dimension of the hinge establishes the location of the door on the cabinet and the resulting reveal, the cabinetmaker must specify what overlay is wanted.

Whether a full or partial wrap-around hinge is desired, Amerock offers a variety of configurations including.

**Demountable Hinges**

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In the early 1970's, Amerock introduced an advancement in cabinet hinging that went far beyond the function of an ordinary hinge. Amerock's legendary Demountable hinge now provided cabinetmakers and Installers genuine 3-way adjustment or improved 2-way adjustment of an installed cabinet door.

The function of a Demountable hinge is basic: the hinge **CLAMPS** itself to either the door or frame member or both. This patented clamping action totally eliminated wood screws from the hinge installation process, and provided full adjustability with an integrated single screw. Installation, alignment, and adjustment of cabinet doors was now even faster and easier than ever.

The 2 or 3-way adjustments offered by Demountable hinges are:

1. Side-to-Side
2. Up and Down
3. In and Out - Double Demountable hinges only

The key Features and Benefits of Demountable hinges are:

1. 2 or 3-way adjustability
2. Ease of installation
3. Total labor savings
4. Door interchangeability
5. Reduction of inventory
A. ADJUSTABILITY
The ability to adjust for warped doors or twisted (racked) cabinets on the wall was, and still is, a major consideration and improvement. Some hinge products offer side-to-side and vertical adjustment, but Demountables now allow front-to-back adjustment.

Prior to the introduction of Amerock's Demountable, to compensate for such warpage, the frame wing had to be removed and shimmed to allow for any needed door adjustment.

B. INSTALLATION
The special router cuts are made with production quality machines. High-speed routers make each door cut accurately as quickly as the operator can locate the door on the machine table. An entire kitchen job of 40-50 doors can routinely be prepared in as little as 12 minutes. The frame router will locate and cut each hinge with a single pass thru the stile. Again, only a few brief minutes for the entire operation is routine for the average kitchen job.
SINGLE DEMOUNTABLES

A. Single Demountable hinges feature a clamping plate for the door wing of the hinge while the frame wing continues to be attached to the cabinet with screws. Single Demountable hinges are not 3-way adjustable, but do feature full 2-way adjustment.

B. Single Demountable hinges come in two configurations:
   1. wrap-around frame wing
   2. surface-mount, semi-concealed frame wing plate

C. Single Demountable wrap-around hinges feature either full wrap or partial wrap styles with a choice of either a single screw hole or two slotted holes in the frame wing.

DOUBLE DEMOUNTABLES

A. Double Demountable hinges feature clamping plates which clamp the hinge to both the door and the frame stile. Double Demountable hinges feature full 3-way adjustability.

B. Many of the same features offered for the Single Demountable hinge apply to the Double Demountable hinge. However, the ability to adjust and correct a warped door or a twisted cabinet problem is unique to the Double Demountable hinge.

Marathon Knife Hinges

Among one of the more innovative additions to the Amerock self-closing hinge program was the revolutionary Marathon self-closing knife hinge. Developed to overcome inherent problems believed to exist with the conventional spring and roller self-closing knife hinge, Amerock’s Marathon hinge became the first hinge sold that used non-metallic parts for a one-piece door wing.