Architectural Hinges





In the mid 1800s, Charles Hager had a successful business forging metal wheel rims and hinges for wagons headed west. As a smart businessman who valued quality and innovation, Charles soon became a pioneer in product development, designing a revolutionary hinge that became a prototype for more than 5,000 hinges to follow.

Today, the Hager name is synonymous with architectural hinges. In fact, we are the industry's premiere designer and manufacturer of architectural hinges, with a product line that offers one of the widest varieties of sizes, shapes, and finishes--all of which meet or exceed ANSI standards. With legendary quality, time-tested durability, and consistent superior performance, Hager is the one name, and one brand, you can count on to provide it all.

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SELECTING A HINGE

Determine Type of Hinge

- What is the door material (wood, stainless steel, fiberglass, or hollow metal)?
- What is the frame material (wood, stainless steel, channel iron, or hollow metal)?

Hinges are manufactured in accordance with ANSI/BHMA A156.1. Self-closing hinges and pivots are in accordance with ANSI/BHMA A156.17 using three hinges per opening on a 3'0" x 7'0" x 1-3/4" (914 mm x 2134 mm x 44 mm) door.

Round corners are available in 1/4" (6 mm) (standard) or 5/8" (16 mm) radius.

Full Mortise
Both leaves are mortised, one leaf in the door and one leaf in the frame (wood door or hollow metal door with wood frame or hollow metal frame).
Example: BB1279, 4-1/2" x 4-1/2" (114 mm x 114 mm), US26D

Half Mortise
One leaf is mortised in the door and the other is surface applied to the frame (hollow metal door with channel iron frame).
Example: BB1109, 4-1/2" (114 mm), US26D

Full Surface
Both leaves are applied to the surface, one to the door and the other to the frame (metal core door or hollow metal door with channel iron frame).
Example: BB2171, 5" (127 mm), USP

Half Surface
One leaf is mortised in the frame and the other is surface applied to the face of the door (wood door with wood frame or metal core door with hollow metal frame).
Example: BB1163, 5" (152 mm), US26D

Select the Proper Weight and Bearing Structure

Because of the variety of door sizes and weights, hinges are placed into three groups:

Heavy Weight - Ball Bearing
Example: BB1199, 5" x 5" (127 mm x 127 mm), US32D

Standard Weight - Ball Bearing
Example: BB1279, 4-1/2" x 4-1/2" (114 mm x 114 mm), US26D

Standard Weight - Plain Bearing
Example: 1279, 4" x 4" (102 mm x 102 mm), US10

There are two factors that determine the weight and structure of the hinge: weight of the door and frequency of use. It is advisable to include the approximate weight of additional hardware that will be installed on the door.

Determine the Size of Hinge

The first thing to find is the height of the hinge. Follow the examples below. These are only examples. Job situations will offer many more variables.

Only on the full mortise hinges are there two dimensions, such as a 4-1/2" x 4-1/2" (114 x 114 mm). The first dimension indicates the height and the second dimension indicates the width when the hinge is in the open position.

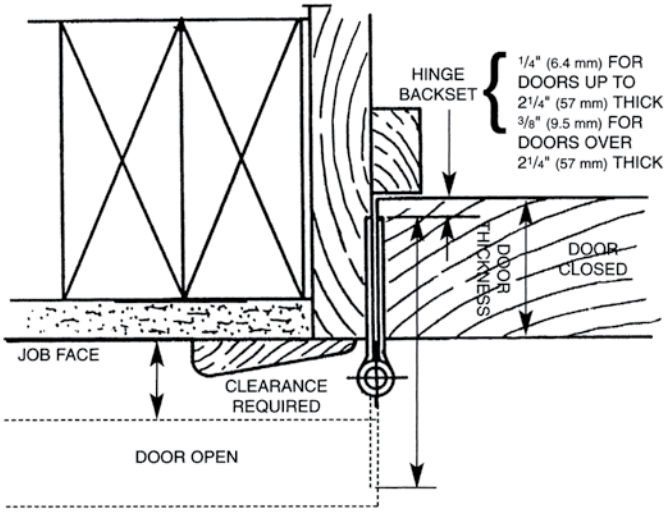
Thickness of Door	Width of Door	Height of Hinge
1-3/8" (35 mm) Door	To 32" (813 mm)	3-1/2" (89 mm)
1-3/8" (35 mm) Door	32" to 36" (813 to 914 mm)	4" (102 mm)
1-3/4" (45 mm) Door	To 36" (914 mm)	4-1/2" (114 mm)
1-3/4" (45 mm) Door	36" to 48" (914 to 1219 mm)	5" (127 mm)
1-3/4" (45 mm) Door	Over 48" (1212 mm)	6" (152 mm)
2", 2-1/4", 2-1/2" Door (51, 57 & 64 mm)	To 42" (1067 mm)	5" (127 mm) Heavy Weight
2", 2-1/4", 2-1/2" Door (51, 57 & 64 mm)	Over 42" (1067 mm)	6" (152 mm) Heavy Weight

Height of Hinge

There are three dimensions to know in order to determine the minimum width of the hinge: door thickness, backset, and clearance required.

1. When figuring the calculations for a wood door and wood frame, the door is flush with the casing or face of the frame. When figuring the calculations for a wood or metal door with a hollow metal frame, the door is inset approximately 1/8" (3.2 mm).
2. For doors up to 2-1/4" (57 mm) thick, the hinge is set back 1/4" (6.4 mm) from the back face of the door.
3. For doors over 2-1/4" (57 mm) thick, the hinge is set back 3/8" (9.5 mm) from the back face of the door.

Once these dimensions are known, the formula can then be applied. **Take the door thickness, subtract the backset, multiply by two, and add the clearance required.** If the hinge size is not standard, then go to the next larger hinge width. If the width of the hinge is greater than the height of the hinge [example: 4-1/2" x 6" (114 mm x 152 mm)] this is referred to as a wide throw hinge. This would apply only to full mortise hinges.



Door Thickness	Standard Backset	Max. Clearance Provided	Width of Hinge
1-3/8" (35 mm)	1/4" (6.4 mm)	1-1/4" (32 mm) 1-3/4" (45 mm)	3-1/2" (89 mm) 4" (102 mm)
1-3/4" (45 mm)	1/4" (6.4 mm)	1" (25 mm) 1-1/2" (38 mm) 2" (51 mm) 3" (76 mm)	4" (102 mm) 4-1/2" (114 mm) 5" (127 mm) 6" (152 mm)
2" (51 mm)	1/4" (6.4 mm)	1" (25 mm) 1-1/2" (38 mm) 2-1/2" (64 mm)	4-1/2" (114 mm) 5" (127 mm) 6" (152 mm)
2-1/4" (57 mm)	1/4" (6.4 mm)	1" (25 mm) 2" (51 mm)	5" (127 mm) 6" (152 mm)
2-1/2" (64 mm)	3/8" (9.5 mm)	3/4" (19 mm) 1-3/4" (45 mm)	5" (127 mm) 6" (152 mm)

Minimum Width of Hinge

Determine the Number of Hinges

The next determination is the number of hinges per door leaf. A general rule of thumb: one hinge for every 30" (762 mm) of door height or fraction thereof.

Door Height	Number of Hinges
Up to 60" (1524 mm)	2 Hinges
Over 60" (1524 mm) and not over 90" (2286 mm)	3 Hinges
Over 90" (2286 mm) and not over 120" (3048 mm)	4 Hinges

For doors with a width greater than 37" (940 mm) to 48" (122 mm), an extra hinge could be used for additional strength. The extra hinge helps support the additional weight and tension applied to the frame created by the wider door width.

Doors up to 60" (1524 mm) in height shall be provided with two hinges and an additional hinge for each additional 30" (762 mm). Where spring hinges are used, at least two shall be provided.

Hinge Type

Full Mortise Hinge Height	Frequency of Use	Max Door Weight	Maximum Door Width	Type
4-1/2" (114 mm)	Low	75	36" (914 mm)	1279
4-1/2" (114 mm)	Medium	150	36" (914 mm)	BB1279
4-1/2" (114 mm)	High	150	36" (914 mm)	BB1168
5" (127 mm)	Low	100	36" (914 mm)	1279
5" (127 mm)	Medium	175	36" (914 mm)	BB1279
5" (127 mm)	High	175	36" (914 mm)	BB1168
6" (152 mm)	Low	125	36" (914 mm)	1279
6" (152 mm)	Medium	230	36" (914 mm)	BB1279
6" (152 mm)	High	230	36" (914 mm)	BB1168

Minimum Cycle Requirements
Plain Bearing = 350,000
Standard Weight Ball Bearing = 1,500,000
Heavy Weight Ball Bearing = 2,500,000

Determine Type of Material

Steel
This has great strength, but it is a corrosive material. If the atmosphere that steel is used in is not stable, steel will begin to rust. The best application for steel is in a controlled environment, such as inside a building where the temperature and humidity are controlled.

Stainless Steel
This also has great strength. It is rust resistant and can be polished to a satin or bright finish. For highly corrosive areas, 316 grade or clear coat over 304L may be recommended. Hager Companies standard grade stainless steel is 304L.

Brass
This material is noncorrosive, rust resistant, and very decorative. However, it has less strength than the steel or stainless steel material. Brass is often used where appearance is of great concern as it may be polished and plated in various finishes.

Both steel and stainless steel hinges may be used on listed fire rated or labeled door openings. Brass material may not be used on fire rated or labeled openings because of the low melting point.

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Determine Type of Finish
All steel and brass material hinges can be plated to match the available finishes that are listed in the American National Standards Institute, standard ANSI/BHMA A156.18 Materials and Finishes.

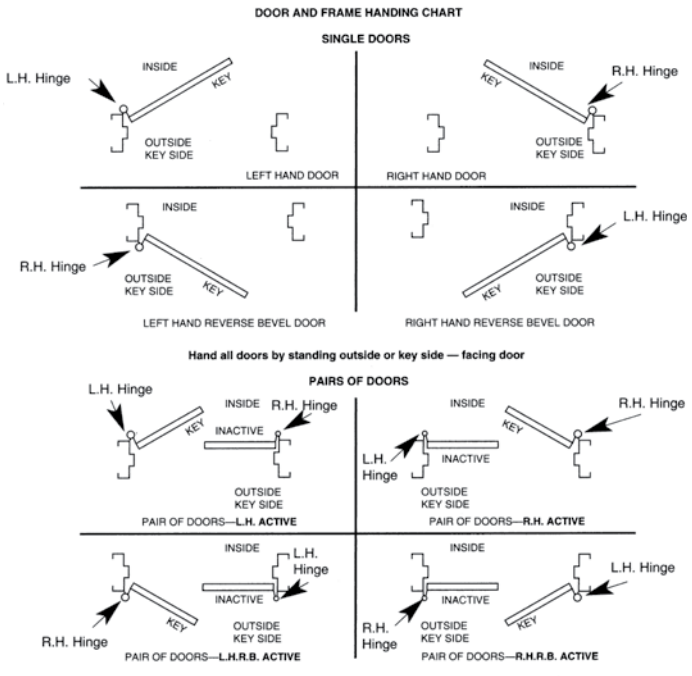
Special Rust-Resisting Finishes
When using steel base material hinges, special finishing processes can be provided that will afford additional protection to the product. A nickel undercoat may be applied prior to plating. Although this will give added protection and is considered rust-resistant, it is not to be considered rust-proof. If a true rust-resisting hinge is needed, consider using a non-ferrous metal such as brass or stainless steel.

Note: Hager Companies only warrants US10B finish over brass base material. If steel base is necessary, Hager Companies recommends US10A lacquer finish.

Antimicrobial Protection
Hager Companies uses a powder coat process to apply the AgION™ antimicrobial treated coating to guarantee durability and protection. Antimicrobial resistance on products is affected by moisture in the air. Silver ions interact with humidity and are released creating a cleaner surface. AgION™ is not recommended over stainless steel.

Determine Handing
On some applications it will be necessary to order hinges that are handed. Most manufacturers use the suffix RH (right hand) and LH (left hand). Another general rule of thumb, most manufacturers make the half surface, half mortise and full surface hinges for right hand use. Conversion from right hand to left hand is very simple; take the pin out of the knuckle, remove the bottom plug, turn the hinge over, replace the plug in the bottom and the pin in the top of the knuckle, and the handing is reversed.

- The hand of a hinge is determined from the outside of the door to which it is applied. This is usually the locked side.
- When standing outside, if the door opens away (into the area) to the right, it takes a right hand hinge (also referred to as RH). If it opens to the left, it takes a left hand hinge (also referred to as LH).
- When standing outside, if the door opens (out of the area) toward the right, it takes a left hand hinge (also referred to as right hand reverse bevel – RHRB). If it opens to the left, it takes a right hand hinge (also referred to as a left hand reverse bevel – LHRB).



ADDITIONAL CONSIDERATIONS
Determine Pin and Tip Style

- The standard in the industry is the Flat Button Tip for 5-knuckle hinges.
- The flush/concealed tip is standard on 3-knuckle. If button tip is required, specify Exposed Tip (ET).
- Hospital Tips (HT) are used primarily for security areas in hospitals and in prisons. This tip prevents hanging any objects on the tip of the hinge. Hager provides all hospital tipped hinges with an NRP set screw in the center of the knuckle, two cross pins, stainless steel hinge pin, and an oil port for lubrication purposes. If the hinge is ball bearing, the components used for the bearing are made of stainless steel.
- Decorative tips such as Acorn, Ball, Steeple, and Urn are used in highly decorative areas of offices and residences.
- Fast Riveted Pins (FRP) are spun on both ends, making the pin permanent.


Flat Button Tip (ET - 3 Knuckle)


Tri-Con Flush Pin


Hospital Tip (HT)


Acorn Tip


Ball Tip


Steeple Tip


Urn Tip


Fast Riveted Pin (FRP)

Fire Rated Application

Door Rating (Hr)	Maximum Door Size		Minimum Hinge Size		Type Hinge
	Width	Height	Height	Thickness	
For 1-3/4" (44.5 mm) or thicker doors					
3, 1-1/2, 1, 3/4, 1/2, 1/3	4 (1.22)	10 (3.05)	4-1/2 (114.3)	0.180 (4.57)	Steel, mortise or surface
3, 1-1/2, 1, 3/4, 1/2, 1/3	4 (1.22)	8 (2.44)	4-1/2 (114.3)	0.134 (3.40)	Steel, mortise or surface
1-1/2, 3/4, 1/2, 1/3	3-1/16 (0.96)	8 (2.44)	6 (152.4)	0.225 (5.72)	Steel, olive knuckle or paumelle
3, 1-1/2, 1, 3/4, 1/2, 1/3	4 (1.22)	10 (3.05)	4 (101.6)	0.225 (5.72)	Steel pivots (including top, bottom, and intermediate)
1-1/2, 1, 3/4, 1/2, 1/3	3 (0.91)	5 (1.52)	4 (101.6)	0.130 (3.30)	Steel, mortise or surface
1-1/2, 1, 3/4, 1/2, 1/3	2 (0.61)	3 (0.91)	3 (76.2)	0.092 (2.34)	Steel, mortise or surface
3, 1-1/2, 1, 3/4, 1/2, 1/3	3 (0.91)	7 (2.13)	4-1/2 (114.3)	0.134 (3.40)	Steel, mortise or surface (labeled, self-closing, spring type)
3, 1-1/2, 1, 3/4, 1/2, 1/3	3 (0.91)	7 (2.13)	4 (101.6)	0.105 (2.67)	Steel, mortise or surface (labeled, self-closing, spring type)
For 1-3/8" (34.9 mm) doors					
3, 1-1/2, 3/4, 1/2, 1/3	3 (0.91)	7 (2.13)	3-1/2 (89.9)	0.123 (3.12)	Steel, mortise or surface
3, 1-1/2, 1, 3/4, 1/2, 1/3	2-2/3 (0.81)	7 (2.13)	3-1/2 (89.9)	0.105 (2.67)	Steel, mortise or surface (labeled, self-closing, spring type)

Source: Table 6.4.3.1, NFPA 80-2007. Re-printed with permission.

Underwriter's Laboratories does not specifically apply UL listings to hinges. Instead, their Builder's Product Directory refers to NFPA80 Standard for Fire Doors and Fire Windows 2007 Edition, Table 6.4.3.1 Builders Hardware Mortise, Surface, and Full Length Hinges, Pivots or Spring Hinges for Swinging Doors, listed above.

Notes:

1. All hinges or pivots, except spring hinges, shall be of the ball bearing type. Hinges or pivots employing other anti-friction bearing surfaces shall be permitted if they meet the requirements of ANSI A156.1, Standard for Butts and Hinges. Spring hinges shall be labeled and shall meet the requirements of ANSI A156.17, Standard for Self Closing Hinges and Pivots, Grade 1.

2. Hinges 4-1/2" (114 mm) high, 0.180" (4.57 mm) thick shall be permitted for use on wide and heavy doors or doors that are subjected to heavy use or unusual stress.

3. Some manufacturers can provide fire doors with hinges of lighter weight that are not of the ball bearing type where they are part of a listed assembly and meet the requirements of ANSI A156.1, Standard for Butts and Hinges, and have been tested to a minimum of 350,000 cycles.

4. Pivot sets made up of components that are smaller or of a lighter gauge than shown in this table shall be permitted to be used, provided they meet the requirements of ANSI A156.4, Door Controls (Closers) and are in accordance with the manufacturer's label service procedures.

Special Hinges

Spring



NFPA 80 has restricted the use of architectural grade spring hinges to fire rated doors of a maximum size of 3'0" x 7'0" (914 mm x 2134 mm). Hager spring hinges have been tested and labeled for up to a 4'0" x 8'0" (1219 mm x 2438 mm) door when a minimum of three springs are used. Spring hinges must be used with ball bearing hinges. Do not use plain bearing hinges with spring hinges.

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Special Hinges (Continued)

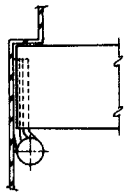
Air Transfer Hinge (ATH)



One other product that can be used for a power transfer hinge is an air or pneumatic transfer hinge. This is used to transfer as much as 120 pounds of air pressure through the hinge in order to operate an air modified lock or exit device. Pneumatic power may be used in explosion-proof areas or where electric power is not sufficient to perform the necessary job.

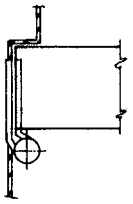
Raised Barrel

This option is used when the door is set back into the frame. The hinge knuckle is offset to allow it to clear the obstruction of the frame. There are three different types of applications:

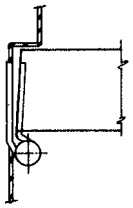


Jamb Surface Mount

On the **Jamb Surface Mount (JSM)** application, the door is mortised to accommodate both hinge leaves; it is sometimes referred to as double mortised. The Jamb Surface Mount may be applied to either a square or beveled edged door.



Raised Barrel Square



Raised Barrel Beveled

The **Raised Barrel for Square Edged (RBS) and the Raised Barrel for Beveled Edged (RBB)** door applications are mortised into the frame and door as a standard full mortise hinge. Standard offset is 3/8" (10 mm). Depending on the depth of the frame, all three of these applications may restrict the degree of opening.

Swing Clear



This is used when the passage area must be the full width of the opening. Swing clear hinges are designed to swing the door completely clear of the opening when the door is opened 95°.

Detention

Investment cast full mortise hinges (IHTHB953 Series) are the standard 4-1/2" x 4-1/2" (114 mm x 114 mm) size with a mortise depth of 0.187" (4.7 mm). These hinges can carry doors weighing up to 600 pounds.

Anchor



The anchor hinges are intended for use on heavy wood or hollow metal doors in high frequency applications such as hospitals, schools, and public use buildings. These hinges are especially designed for use on doors where additional hardware (door closers or holders) may cause excessive strain or abuse to the door, frame, and/or hinges.

Anchor plates may be attached to either the frame and/or door. Their screws are placed in shear to the screws from the normal hinge plate. With the screws in shear, this prevents the hinges from pulling loose on the door or the frame.

There are two variations of the reinforcing/anchor hinge: one has a single extension leaf which is mortised into the frame only; the second has two extension leaves. One leaf is mortised into the frame and the other leaf is mortised into the top edge of the door. It will be necessary to know if the doors are square edged or beveled edged.

Aluminum Entrance



A slip-in hinge, plain bearing or ball bearing, is used with aluminum doors and frames. These hinges are manufactured for low to average frequency and medium weight aluminum doors and frames.

1277 or BB1277 – Both leaves are drilled and tapped for insertion into a slot in the door and the frame.

1278 or BB1278 – One leaf has the standard template hole punch and countersinking and the other leaf is drilled and tapped for insertion into a slot in the door or frame.

Electric Hinges

The electric hinge provides an easy means to monitor the opening as well as transferring power from the frame into the door.

Electric hinge modifications can be either exposed on the surface of the hinge or concealed in the hinge. When concealed, the modifications are not visible and normally go undetected by personnel using the openings.

All of the Hager Companies electric hinges have been tested through UL in order that our products can be used on fire rated or labeled openings.

Electric Hinges (Continued)
Another important point to remember, an electrically modified hinge is for **low voltage power transfer only (48 volts or under)**. Higher voltages are not allowed because of the potential dangers. Also a consideration is the Amperage rating of the power transfer hinges. Hager hinges include amperage ratings of 3.5 AMPS/continuous duty and 16.0 AMPS/ intermittent duty (pulse).

Normally, modifications are made to full mortise hinges. For other applications, consult Hager Engineering for availability.

It is recommended that the **CENTER HINGE LOCATION** be used with all electrically modified hinges.

Hager Companies recommends the use of a mortar box or jamb box in order to protect the wire terminations on the inside of the frame. If this box is not used, the grout that may be poured into the frame will destroy the wiring and usually void the warranty on the product.

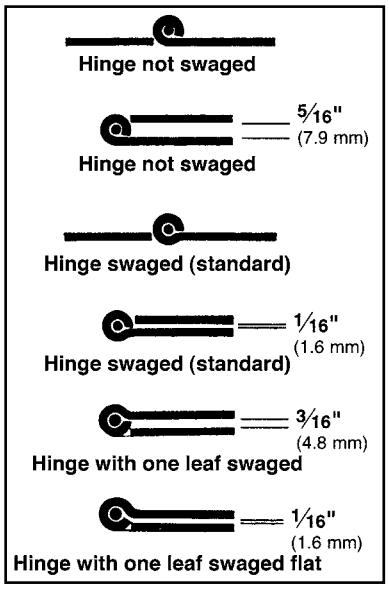


E2 E1S E2/E1S
Exposed Electric Hinge Modification



EMN ETW ETM
Concealed Electric Hinge Modification

Swaging
Swaging is a slight offset of the hinge leaf at the barrel. This offset permits the leaves to come closer together when the door is in the closed position. If the hinge were to be left in the natural state after the knuckle was rolled, the hinge would be referred to as a "flatback". A flatback hinge has a gap between the leaves of approximately 5/16" (7.9 mm). This would allow heat and air-conditioning to escape, not to mention the unsightly gap between the door and frame.



The swaging on standard weight and heavy weight full mortise hinges provides 1/16" (1.6 mm) clearance between the leaves when the leaves are in the closed position. Full mortise hinges used on beveled doors will affect lockside clearance, especially for wide throw applications.

Security Features
Three additional features that are commonly used are: Non-Removable Pin (NRP), Safety Stud (SH), and Reverse Security Stud (RSS). **These features are intended as deterrents only.**

Non-Removable Pin



The **Non-Removable Pin (NRP)** has a small set screw in the body of the barrel. This set screw is tightened down against the pin. The pin has a groove in the position where the set screw makes contact, allowing the set screw to seat. The set screw is positioned so it cannot be reached unless the door is opened. If pin removal is necessary, the set screw is merely removed and the pin tapped from the bottom in the usual manner.

Safety Stud



The **Safety Stud (SH)** 3/16" (4.8 mm) projection is a feature that places a stud on one leaf and a locking hole on the other leaf. When the door is closed, the stud is anchored into the opposite leaf. Even if the hinge pin is removed, the door is secure because the leaves are locked together.

Reverse Security Stud



The **Reverse Security Stud (RSS)** 7/16" (11.1 mm) projection is a feature that has a stud projecting from the back of both leaves into the reinforcing plate of both the frame and the door. It is intended to keep the hinge locked in place from abuse of battering or trying to shear the hinge and screws. This feature is primarily used in prisons and psychiatric areas.

ARCHITECTURAL HINGES

BEARING OPTIONS

When using steel based hinges, special options are available such as stainless steel pins, stainless steel bearings and stainless steel raceways.

Ball Bearing (BB) - Ball bearings are engineered to throw the knuckle weight against specially hardened steel raceways, which ride on the bearing surfaces. The one-piece cup protects the bearings from moisture and dust. The cup supports no weight so it is not subjected to functional friction, pressure or wear. Lateral wear is minimized because the pin is held against thrust by the hardened steel top and bottom raceways. The bearing units are securely press-fit to the leaf knuckle to prevent loss when the hinge is disassembled.

Oilite Bearings (OB) - The oilite bearing is made of porous metal that has been press-formed and impregnated with oil. The slight pressure and heat generated when the door is operated causes the oil to come to the surface of the bearing causing the surface to be slick and smooth.

Anti-Friction Nylon Bearings (AB) - These are made of resilient engineering plastics that provide a self-lubricant and very strong bearing surface. The nylon acts as a cushion for the door yet it allows the door to flow smoothly on the surface of the nylon with an extremely low wear factor.

ARCHITECTURAL FINISH SYMBOLS

Powder Coat Finishes

Hager	Description	Steel	Brass & Bronze	Stainless Steel	HEWI#
L1	Flat Black	693	693	N/A	N/A
L2	Dark Bronze	695	695	N/A	N/A
L3	Medium Bronze	694	694	N/A	N/A
LS	Luma Sheen® Aluminum Paint	689	689	N/A	N/A
13P	White	N/A	N/A	N/A	1
14P	Off White	N/A	N/A	N/A	5A
15P	Grey	N/A	N/A	N/A	5
33P	Yellow	N/A	N/A	N/A	14
34P	Red	N/A	N/A	N/A	33
35P	Green	N/A	N/A	N/A	6
36P	Blue	N/A	N/A	N/A	52
83P	Black	N/A	N/A	N/A	8
84P	Olive	N/A	N/A	N/A	62
85P	Brown	N/A	N/A	N/A	9
86P	Burgundy	N/A	N/A	N/A	30
87P	Dark Green	N/A	N/A	N/A	60
88P	Dark Blue	N/A	N/A	N/A	50

Note: Available only on architectural grade full mortise plain bearing hinges, full mortise ball bearing hinges, both standard and heavy weight, in both steel and brass material.

B.H.M.A. Symbol Base Material

Hager	Description	Steel	Brass & Bronze	300 Series Stainless Steel
2C	Plain Zinc Plate	603	N/A	N/A
H2H	Mechanical Galvanized; steel only	N/A	N/A	N/A
3	Bright Brass	632	605	N/A
3A	Bright Brass - Unlacquered	N/A	N/A	N/A
3SC*	Brass SecureCoat® Stainless Steel Lifetime Finish	N/A	N/A	N/A
4	Satin Brass	633	606	N/A
5	Satin Brass, Antique	638	609	N/A
9	Bright Bronze	637	611	N/A
9A	Bright Bronze, No Lacquer	N/A	N/A	N/A
10	Satin Bronze	639	612	N/A
10A	Antique Bronze, Lacquered	641	N/A	N/A
10B	Antique Bronze, Oiled	640	613	N/A
10D	Black Nickel, Oiled	N/A	N/A	N/A
14	Bright Nickel	645	618	N/A
14B	Black Nickel, Bright	N/A	N/A	N/A
15	Satin Nickel	646	619	N/A
15A	Antique Satin Nickel, Highlighted	647	620	N/A
17A	Black Nickel, Dull	648	621	N/A
26	Bright Chromium Plated	651	625	N/A
26D	Satin Chromium Plated	652	626	N/A
32	Stainless Steel Metal, Bright	N/A	N/A	629
32D	Stainless Steel Metal, Satin	N/A	N/A	630
P	Prime Coat	600	600	N/A
PS	Plain Steel	N/A	N/A	N/A

*US3SC only available on AB800, AB850, and CB1191.

CARE AND MAINTENANCE

- Hinges must be free swinging without any binding. The use of shims to align hinges, if required, is satisfactory.
- Hinges should be well greased and checked on a regular basis for lubrication. We recommend that hinges used in commercial, high-frequency applications or those in extreme environmental conditions be lubricated annually to ensure quiet operation and long life.
- Standard hinges are best lubricated by removing the pin, applying a generous coating of lithium grease, and reinserting the pin by driving it completely down to the shoulder of the pin head.
- Hospital Tip (HT) hinges that have fixed hinge pins have an oil port on the knuckle for the purpose of lubrication.
- Water displacing sprays such as WD-40 are not recommended for hinge lubrication.
- To remove dirt, simply wipe with a soft damp cloth. Abrasive cleaners or lacquer thinner should not be used to clean the surface of hinges. To do so will void any warranty for the product.

HINGE SELECTOR - FULL MORTISE AND HALF MORTISE HINGES

Hinge Description	Full Mortise	Half Mortise
	Hollow Metal or Wood Door	Hollow Metal or Wood Door
	Hollow Metal or Wood Frame	Channel Iron Frame
Tri-Con Std. Wt. PB, Steel	700	
Tri-Con Std. Wt. PB, Brass/Stainless Steel	800	
Tri-Con Std. Wt. AB, Steel	AB700	AB701
Tri-Con Std. Wt. AB, Brass/Stainless Steel	AB800	AB801
Tri-Con Hvy. Wt. AB, Steel	AB750	AB751
Tri-Con Hvy. Wt. AB, Brass/Stainless Steel	AB850	AB851
Spring Hinge Std. Wt., Steel	1250	
Std. Wt., PB, Steel	1279	1129
Std. Wt., PB, Brass/Stainless Steel	1191	
2BB, Std. Wt., Steel	BB1279	BB1129
2BB, Std. Wt., Brass/Stainless Steel	BB1191	BB1109
4BB, Hvy Wt., Steel	BB1168	BB1138
4BB, Hvy Wt., Brass/Stainless Steel	BB1199	BB2098
3K/5K Anchor Hinge Steel, One Prong	AB7505/BB1160	
3K/5K Anchor Hinge Brass/Stainless Steel One Prong	AB8505/BB1190	
3K/5K Anchor Hinge Steel, Two Prong, Square Edge Door	AB7506/BB1162	
3K/5K Anchor Hinge Brass/Stainless Steel, Two Prong/Square Edge Door	AB8506/BB1192	
3K/5K Anchor Hinge Steel/Two Prong, Beveled Edge Door	AB7508/BB1166	
3K/5K Anchor Hinge Brass/Stainless Steel, Two Prong/Beveled Edge Door	AB8508/BB1196	
3K/5K Anchor Hinge Steel/One Long/One Short Prong/Square Edge Door	AB7507/BB1165	
3K/5K Anchor Hinge Brass/Stainless Steel/One Long/One Short Prong/Square Edge Door	AB8507/BB1195	
3K/5K Anchor Hinge Steel/One Long/One Short Prong/Beveled Edge Door	AB7509/BB1167	
3K/5K Anchor Hinge Brass/Stainless Steel/One Long/One Short Prong/Beveled Edge Door	AB8509/BB1197	
Bronze Pivot Hinge - Top	495	
Bronze Pivot Hinge - Intermediate	496	
Bronze Pivot Hinge - Bottom	497	
3K/5K Swing Clear/Std. Wt., BB Steel/Beveled Edge Door	AB7001/BB1260	BB1264
3K/5K Swing Clear/Std. Wt., BB Steel/Beveled Edge Door	AB7002/BB1261	BB1265
3K/5K Swing Clear/Hvy. Wt., BB Steel/Square Edge Door	AB7501/BB1262	AB7511
3K/5K Swing Clear/Hvy. Wt., BB Steel/ Beveled Edge Door	AB7502/BB1263	AB7512
3K/5K Swing Clear/Hvy. Wt., BB Steel		
3K/5K Std. Wt., PB, Wide Throw/Steel	700/1279	
3K/5K Std. Wt., PB, Wide Throw/Brass/Stainless Steel	800/1191	
3K/5K Std. Wt., AB, Wide Throw/Steel	AB700/BB1279	
3K/5K Std. Wt., AB, Wide Throw/Brass/Stainless Steel	AB800/BB1191	
3K/5K Hvy. Wt., AB, Wide Throw/Steel	AB750/BB1168	
3K/5K Hvy. Wt., AB, Wide Throw/Brass/Stainless Steel	AB850/BB1199	

For Hospital Tip, use prefix "HT" on above number. Hospital Tip hinges are available on all architectural hinges with the exception of anchor hinges.
Note: When ordering round corner hinges, please specify a radius of either 1/4" (6.4 mm) or 5/8" (15.9 mm). If radius is not specified, 1/4" (6.4 mm) will be supplied.
Note: For special requirements - In the event a particular hinge is not found to meet your requirements, please contact our Customer Service Department and provide Hager with the specific requirements. The Hager Technical Service Staff will prepare drawings for the appropriate application.

ARCHITECTURAL HINGES

HINGE SELECTOR - FULL SURFACE AND HALF SURFACE HINGES

Hinge Description	Full Surface	Half Surface
	Composite or Tubular Steel Door	Composite or Wood Door
	Channel Iron Frame	Hollow Metal or Wood Frame
Tri-Con Std. Wt. PB, Steel		
Tri-Con Std. Wt. PB, Brass/Stainless Steel		
Tri-Con Std. Wt. AB, Steel	AB702	AB703
Tri-Con Std. Wt. AB, Brass/Stainless Steel	AB802	AB803
Tri-Con Hvy. Wt. AB, Steel	AB752	AB753
Tri-Con Hvy. Wt. AB, Brass/Stainless Steel	AB852	AB853
Spring Hinge Std. Wt., Steel		
Std. Wt., PB, Steel		1173
Std. Wt., PB, Brass/Stainless Steel		
2BB, Std. Wt., Steel	BB2171	BB1173
2BB, Std. Wt., Brass/Stainless Steel	BB2110	BB2112
4BB, Hvy Wt., Steel	BB2168/BB2169	BB1163
4BB, Hvy Wt., Brass/Stainless Steel	BB2108/BB2109	BB2113
3K/5K Anchor Hinge Steel, One Prong		
3K/5K Anchor Hinge Brass/Stainless Steel One Prong		
3K/5K Anchor Hinge Steel, Two Prong, Square Edge Door		
3K/5K Anchor Hinge Brass/Stainless Steel, Two Prong/Square Edge Door		
3K/5K Anchor Hinge Steel/Two Prong, Beveled Edge Door		
3K/5K Anchor Hinge Brass/Stainless Steel, Two Prong/Beveled Edge Door		
3K/5K Anchor Hinge Steel/One Long/One Short Prong/Square Edge Door		
3K/5K Anchor Hinge Brass/Stainless Steel/One Long/One Short Prong/Square Edge Door		
3K/5K Anchor Hinge Steel/One Long/One Short Prong/Beveled Edge Door		
3K/5K Anchor Hinge Brass/Stainless Steel/One Long/One Short Prong/Beveled Edge Door		
Bronze Pivot Hinge - Top		
Bronze Pivot Hinge - Intermediate		
Bronze Pivot Hinge - Bottom		
3K/5K Swing Clear/Std. Wt., BB Steel/Beveled Edge Door		
3K/5K Swing Clear/Std. Wt., BB Steel/Beveled Edge Door		
3K/5K Swing Clear/Hvy. Wt., BB Steel/Square Edge Door		
3K/5K Swing Clear/Hvy. Wt., BB Steel/ Beveled Edge Door		
3K/5K Swing Clear/Hvy. Wt., BB Steel	AB7523/BB1266	AB7534/BB1270
3K/5K Std. Wt., PB, Wide Throw/Steel		
3K/5K Std. Wt., PB, Wide Throw/Brass/Stainless Steel		
3K/5K Std. Wt., AB, Wide Throw/Steel		
3K/5K Std. Wt., AB, Wide Throw/Brass/Stainless Steel		
3K/5K Hvy. Wt., AB, Wide Throw/Steel		
3K/5K Hvy. Wt., AB, Wide Throw/Brass/Stainless Steel		

For Hospital Tip, use prefix "HT" on above number. Hospital Tip hinges are available on all architectural hinges with the exception of anchor hinges.
Note: When ordering round corner hinges, please specify a radius of either 1/4" (6.4 mm) or 5/8" (15.9 mm). If radius is not specified, 1/4" (6.4 mm) will be supplied.
Note: For special requirements - In the event a particular hinge is not found to meet your requirements, please contact our Customer Service Department and provide Hager with the specific requirements. The Hager Technical Service Staff will prepare drawings for the appropriate application.

TWO KNUCKLE HINGES



920
Plain Bearing - Standard Weight
Steel with steel pin (ANSI A8133)

AB920
Concealed Anti-Friction Bearing - Standard Weight
Steel with steel pin (ANSI A8112)

AB923
Concealed Anti-Friction Bearing - Standard Weight
Brass with stainless steel pin (ANSI A2112) or stainless steel with stainless steel pin (ANSI A5112)

- Handed
- With door closer use ball bearing hinge
- For use on medium weight doors or doors requiring medium frequency service

Hinge Size		Gauge of Metal	Hole Count	Screw Size	
Inches	mm			Machine	Wood
4-1/2 x 4	114 x 102	0.134	8	1/2 x 12-24	1-1/4 x 12
4-1/2 x 4-1/2	114 x 114	0.134	8	1/2 x 12-24	1-1/4 x 12



AB930
Concealed Anti-Friction Bearing - Heavy Weight
Steel with steel pin (ANSI A8111)

AB933
Concealed Anti-Friction Bearing - Heavy Weight
Brass with stainless steel pin (ANSI A2111) or stainless steel with stainless steel pin (ANSI A5111)

- Handed
- For use on heavy weight doors or doors requiring high frequency service

Hinge Size		Gauge of Metal	Hole Count	Screw Size	
Inches	mm			Machine	Wood
4-1/2 x 4	114 x 102	0.180	8	1/2 x 12-24	1-1/4 x 12
4-1/2 x 4-1/2	114 x 114	0.180	8	1/2 x 12-24	1-1/4 x 12

THREE KNUCKLE HINGES



700
Plain Bearing - Standard Weight
Steel with steel pin (ANSI A8133)

800
Plain Bearing - Standard Weight
Brass with stainless steel pin (ANSI A2133) or stainless steel with stainless steel pin (ANSI A5133)

- Non-rising removable pin with flush pin and plug
- With door closer use ball bearing hinge
- For use on medium weight doors or doors requiring low frequency service



AB700
Concealed Anti-Friction Bearing - Standard Weight
Steel with steel pin (ANSI A8112)

AB800
Concealed Anti-Friction Bearing - Standard Weight
Brass with stainless steel pin (ANSI A2112) or stainless steel with stainless steel pin (ANSI A5112)

- Non-rising removable pin with flush pin and plug
- AB800 available with SecureCoat® Lifetime finish (US3SC)
- For use on medium weight doors or doors requiring medium frequency service

Hinge Size		Gauge of Metal	Hole Count	Screw Size	
Inches	mm			Machine	Wood
3-1/2 x 3-1/2	89 x 89	0.119	6	1/2 x 10-24	1 x 9
4 x 4	102 x 102	0.129	8	1/2 x 12-24	1-1/4 x 12
4-1/2 x 4	114 x 102	0.134	8	1/2 x 12-24	1-1/4 x 12
4-1/2 x 4-1/2	114 x 114	0.134	8	1/2 x 12-24	1-1/4 x 12
5 x 4	127 x 102	0.145	8	1/2 x 12-24	1-1/4 x 12
5 x 4-1/2	127 x 114	0.145	8	1/2 x 12-24	1-1/4 x 12
5 x 5	127 x 127	0.145	8	1/2 x 12-24	1-1/4 x 12

ARCHITECTURAL HINGES

THREE KNUCKLE HINGES (CONTINUED)



WTAB700

Concealed Anti-Friction Bearing - Standard Weight - Wide Throw
Steel with steel pin (ANSI A8112)

WTAB800

Concealed Anti-Friction Bearing - Standard Weight - Wide Throw
Brass with stainless steel pin (ANSI A2112) or stainless steel with stainless steel pin (ANSI A5112)

- Wide throw
- Non-rising removable pin with flush pin and plug
- For use on medium weight doors or doors requiring medium frequency service

Hinge Size		Gauge of Metal	Hole Count	Screw Size	
Inches	mm			Machine	Wood
4-1/2 x 5	114 x 127	0.134	8	1/2 x 12-24	1-1/4 x 12
4-1/2 x 6	114 x 152	0.134	8	1/2 x 12-24	1-1/4 x 12
4-1/2 x 7	114 x 178	0.134	8	1/2 x 12-24	1-1/4 x 12
4-1/2 x 8	114 x 203	0.134	8	1/2 x 12-24	1-1/4 x 12
5 x 6	127 x 152	0.145	8	1/2 x 12-24	1-1/4 x 12
5 x 7	127 x 178	0.145	8	1/2 x 12-24	1-1/4 x 12
5 x 8	127 x 203	0.145	8	1/2 x 12-24	1-1/4 x 12



AB750

Concealed Anti-Friction Bearing - Heavy Weight
Steel with steel pin (ANSI A8111)

AB850

Concealed Anti-Friction Bearing - Heavy Weight
Brass with stainless steel pin (ANSI A2111) or stainless steel with stainless steel pin (ANSI A5111)

- Non-rising removable pin with flush pin and plug
- AB850 available with SecureCoat® Lifetime finish (US3SC)
- For use on heavy weight doors or doors requiring high frequency service

Hinge Size		Gauge of Metal	Hole Count	Screw Size	
Inches	mm			Machine	Wood
4-1/2 x 4-1/2	114 x 114	0.180	8	1/2 x 12-24	1-1/4 x 12
5 x 4-1/2	127 x 114	0.190	8	1/2 x 12-24	1-1/4 x 12
5 x 5	127 x 127	0.190	8	1/2 x 12-24	1-1/4 x 12
6 x 4-1/2	152 x 114	0.203	10	1/2 x 1/4-20	1-1/2 x 14
6 x 5	152 x 127	0.203	10	1/2 x 1/4-20	1-1/2 x 14
6 x 6	152 x 152	0.203	10	1/2 x 1/4-20	1-1/2 x 14

THREE KNUCKLE HINGES (CONTINUED)



WTAB750

Concealed Anti-Friction Bearing - Heavy Weight - Wide Throw
Steel with steel pin (ANSI A8111)

WTAB850

Concealed Anti-Friction Bearing - Heavy Weight - Wide Throw
Brass with stainless steel pin (ANSI A2111) or stainless steel with stainless steel pin (ANSI A5111)

- Wide throw
- Non-rising removable pin with flush pin and plug
- For use on heavy weight doors or doors requiring high frequency service

Hinge Size		Gauge of Metal	Hole Count	Screw Size	
Inches	mm			Machine	Wood
4-1/2 x 5	114 x 127	0.180	8	1/2 x 12-24	1-1/4 x 12
4-1/2 x 6	114 x 152	0.180	8	1/2 x 12-24	1-1/4 x 12
4-1/2 x 7	114 x 178	0.180	8	1/2 x 12-24	1-1/4 x 12
4-1/2 x 8	114 x 203	0.180	8	1/2 x 12-24	1-1/4 x 12
5 x 6	127 x 152	0.190	8	1/2 x 12-24	1-1/4 x 12
5 x 7	127 x 178	0.190	8	1/2 x 12-24	1-1/4 x 12
5 x 8	127 x 203	0.190	8	1/2 x 12-24	1-1/4 x 12

FIVE KNUCKLE HINGES



1191

Plain Bearing - Standard Weight
Brass with stainless steel pin (ANSI A2133) or stainless steel with stainless steel pin (ANSI A5133)

1279

Plain Bearing - Standard Weight
Steel with steel pin (ANSI A8133)

- Non-rising removable pin with button tip and plug
- With door closer use ball bearing hinge
- 3-1/2" x 3-1/2" (89 mm x 89 mm) available with reverse hole pattern
- For use on medium weight doors or doors requiring low frequency service

Hinge Size		Gauge of Metal	Hole Count	Screw Size	
Inches	mm			Machine	Wood
2 x 2	51 x 51	0.083	4	-	3/4 x 8
2-1/2 x 2-1/2	64 x 64	0.089	6	-	3/4 x 8
3 x 3	76 x 76	0.097	6	-	1 x 9
3-1/2 x 3-1/2	89 x 89	0.119	6	1/2 x 10-24	1 x 9
4 x 4	102 x 102	0.129	8	1/2 x 12-24	1-1/4 x 12
4-1/2 x 4	114 x 102	0.134	8	1/2 x 12-24	1-1/4 x 12
4-1/2 x 4-1/2	114 x 114	0.134	8	1/2 x 12-24	1-1/4 x 12
5 x 4	127 x 102	0.145	8	1/2 x 12-24	1-1/4 x 12
5 x 4-1/2	127 x 114	0.145	8	1/2 x 12-24	1-1/4 x 12
5 x 5	127 x 127	0.145	8	1/2 x 12-24	1-1/4 x 12
6 x 4-1/2	152 x 114	0.160	10	1/2 x 1/4-20	1-1/2 x 14
6 x 5	152 x 127	0.160	10	1/2 x 1/4-20	1-1/2 x 14
6 x 6	152 x 152	0.160	10	1/2 x 1/4-20	1-1/2 x 14

ARCHITECTURAL HINGES

FIVE KNUCKLE HINGES (CONTINUED)



WT1191

Plain Bearing - Standard Weight - Wide Throw

Brass with stainless steel pin (ANSI A2133) or stainless steel with stainless steel pin (ANSI A5133)

WT1279

Plain Bearing - Standard Weight - Wide Throw

Steel with steel pin (ANSI A8133)

- Wide throw
- Non-rising removable pin with button tip and plug
- With door closer use ball bearing hinge
- For use on medium weight doors or doors requiring low frequency service

Hinge Size		Gauge of Metal	Hole Count	Screw Size	
Inches	mm			Machine	Wood
3-1/2 x 5	89 x 127	0.119	6	1/2 x 10-24	1 x 9
3-1/2 x 6	89 x 152	0.119	6	1/2 x 10-24	1 x 9
4 x 5	102 x 127	0.129	8	1/2 x 12-24	1-1/4 x 12
4 x 6	102 x 152	0.129	8	1/2 x 12-24	1-1/4 x 12
4 x 7	102 x 178	0.129	8	1/2 x 12-24	1-1/4 x 12
4-1/2 x 5	114 x 127	0.134	8	1/2 x 12-24	1-1/4 x 12
4-1/2 x 6	114 x 152	0.134	8	1/2 x 12-24	1-1/4 x 12
4-1/2 x 7	114 x 178	0.134	8	1/2 x 12-24	1-1/4 x 12
4-1/2 x 8	114 x 203	0.134	8	1/2 x 12-24	1-1/4 x 12
5 x 6	127 x 152	0.145	8	1/2 x 12-24	1-1/4 x 12
5 x 7	127 x 178	0.145	8	1/2 x 12-24	1-1/4 x 12
5 x 8	127 x 203	0.145	8	1/2 x 12-24	1-1/4 x 12



CB1191

Concealed Bearing - Standard Weight

- Stainless steel with stainless steel pin (ANSI A5112)
- Non-rising removable pin with button tip and plug
- Only available with SecureCoat® Lifetime finish (US3SC)
- Specify machine screws

Hinge Size		Gauge of Metal	Hole Count	Screw Size	
Inches	mm			Machine	Wood
3-1/2 x 3-1/2	89 x 89	0.119	6	-	1 x 9
4 x 4	102 x 102	0.129	8	-	1-1/4 x 12
4-1/2 x 4	114 x 102	0.134	8	-	1-1/4 x 12
4-1/2 x 4-1/2	114 x 114	0.134	8	-	1-1/4 x 12
5 x 4	127 x 102	0.145	8	-	1-1/4 x 12
5 x 4-1/2	127 x 114	0.145	8	-	1-1/4 x 12
5 x 5	127 x 127	0.145	8	-	1-1/4 x 12
6 x 4-1/2	152 x 114	0.160	10	-	1-1/2 x 14
6 x 5	152 x 127	0.160	10	-	1-1/2 x 14
6 x 6	152 x 152	0.160	10	-	1-1/2 x 14

FIVE KNUCKLE HINGES (CONTINUED)



BB1191

Ball Bearing - Standard Weight

Brass with stainless steel pin (ANSI A2112) or stainless steel with stainless steel pin (ANSI A5112)

BB1279

Ball Bearing - Standard Weight

Steel with steel pin (ANSI A8112)

- Two ball bearings
- Non-rising removable pin with button tip and plug
- 5" x 5" (127 mm x 127 mm) and 4-1/2" x 4-1/2" (114 mm x 114 mm) BB1279 available with two different leaf sizes
- 3-1/2" x 3-1/2" (89 x 89 mm) BB1279 available with reversible hole pattern
- For use on medium weight doors or doors requiring medium frequency service

Hinge Size		Gauge of Metal	Hole Count	Screw Size	
Inches	mm			Machine	Wood
3-1/2 x 3-1/2	89 x 89	0.119	6	1/2 x 10-24	1 x 9
4 x 4	102 x 102	0.129	8	1/2 x 12-24	1-1/4 x 12
4-1/2 x 4	114 x 102	0.134	8	1/2 x 12-24	1-1/4 x 12
4-1/2 x 4-1/2	114 x 114	0.134	8	1/2 x 12-24	1-1/4 x 12
5 x 4	127 x 102	0.145	8	1/2 x 12-24	1-1/4 x 12
5 x 4-1/2	127 x 114	0.145	8	1/2 x 12-24	1-1/4 x 12
5 x 5	127 x 127	0.145	8	1/2 x 12-24	1-1/4 x 12
6 x 4-1/2	152 x 114	0.160	10	1/2 x 1/4-20	1-1/2 x 14
6 x 5	152 x 127	0.160	10	1/2 x 1/4-20	1-1/2 x 14
6 x 6	152 x 152	0.160	10	1/2 x 1/4-20	1-1/2 x 14



WTBB1191

Ball Bearing - Standard Weight - Wide Throw

Brass with stainless steel pin (ANSI A2112) or stainless steel with stainless steel pin (ANSI A5112)

WTBB1279

Ball Bearing - Standard Weight - Wide Throw

Steel with steel pin (ANSI A8112)

- Wide throw
- Two ball bearings
- Non-rising removable pin with button tip and plug
- For use on medium weight doors or doors requiring medium frequency service

Hinge Size		Gauge of Metal	Hole Count	Screw Size	
Inches	mm			Machine	Wood
3-1/2 x 5	89 x 127	0.119	6	1/2 x 10-24	1 x 9
3-1/2 x 6	89 x 152	0.119	6	1/2 x 10-24	1 x 9
4 x 5	102 x 127	0.129	8	1/2 x 12-24	1-1/4 x 12
4 x 6	102 x 152	0.129	8	1/2 x 12-24	1-1/4 x 12
4 x 7	102 x 178	0.129	8	1/2 x 12-24	1-1/4 x 12
4-1/2 x 5	114 x 127	0.134	8	1/2 x 12-24	1-1/4 x 12
4-1/2 x 6	114 x 152	0.134	8	1/2 x 12-24	1-1/4 x 12
4-1/2 x 7	114 x 178	0.134	8	1/2 x 12-24	1-1/4 x 12
4-1/2 x 8	114 x 203	0.134	8	1/2 x 12-24	1-1/4 x 12
5 x 6	127 x 152	0.145	8	1/2 x 12-24	1-1/4 x 12
5 x 7	127 x 178	0.145	8	1/2 x 12-24	1-1/4 x 12
5 x 8	127 x 203	0.145	8	1/2 x 12-24	1-1/4 x 12

ARCHITECTURAL HINGES

FIVE KNUCKLE HINGES (CONTINUED)

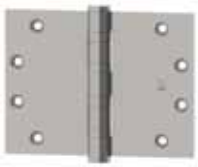


BB1168
Ball Bearing - Heavy Weight
Steel with steel pin (ANSI A8111)

BB1199
Ball Bearing - Heavy Weight
Brass with stainless steel pin (ANSI A2111) or stainless steel with stainless steel pin (ANSI A5111)

- Four ball bearings
- Non-rising removable pin with button tip and plug
- 5" x 5" (127 mm x 127 mm) and 4-1/2" x 4-1/2" (114 mm x 114 mm) BB1168 available with two different leaf sizes
- For use on heavy weight doors or doors requiring high frequency service

Hinge Size		Gauge of Metal	Hole Count	Screw Size	
Inches	mm			Machine	Wood
4-1/2 x 4	114 x 102	0.180	8	1/2 x 12-24	1-1/4 x 12
4-1/2 x 4-1/2	114 x 114	0.180	8	1/2 x 12-24	1-1/4 x 12
5 x 4	127 x 102	0.190	8	1/2 x 12-24	1-1/4 x 12
5 x 4-1/2	127 x 114	0.190	8	1/2 x 12-24	1-1/4 x 12
5 x 5	127 x 127	0.190	8	1/2 x 12-24	1-1/4 x 12
6 x 4-1/2	152 x 114	0.203	10	1/2 x 1/4-20	1-1/2 x 14
6 x 5	152 x 127	0.203	10	1/2 x 1/4-20	1-1/2 x 14
6 x 6	152 x 152	0.203	10	1/2 x 1/4-20	1-1/2 x 14
8 x 6	203 x 152	0.203	16	1/2 x 1/4-20	1-1/2 x 14
8 x 8	203 x 203	0.203	16	1/2 x 1/4-20	1-1/2 x 14



WTBB1168
Ball Bearing - Heavy Weight - Wide Throw
Steel with steel pin (ANSI A8111)

WTBB1199
Ball Bearing - Heavy Weight - Wide Throw
Brass with stainless steel pin (ANSI A2111) or stainless steel with stainless steel pin (ANSI A5111)

- Wide throw
- Four ball bearings
- Non-rising removable pin with button tip and plug
- For use on heavy weight doors or doors requiring high frequency service

Hinge Size		Gauge of Metal	Hole Count	Screw Size	
Inches	mm			Machine	Wood
4-1/2 x 5	114 x 127	0.180	8	1/2 x 12-24	1-1/4 x 12
4-1/2 x 6	114 x 152	0.180	8	1/2 x 12-24	1-1/4 x 12
4-1/2 x 7	114 x 178	0.180	8	1/2 x 12-24	1-1/4 x 12
4-1/2 x 8	114 x 203	0.180	8	1/2 x 12-24	1-1/4 x 12
5 x 6	127 x 152	0.190	8	1/2 x 12-24	1-1/4 x 12
5 x 7	127 x 178	0.190	8	1/2 x 12-24	1-1/4 x 12
5 x 8	127 x 203	0.190	8	1/2 x 12-24	1-1/4 x 12

EXPOSED ELECTRIC MODIFICATIONS

The following exposed electric modifications are available on our architectural grade ball bearing and anti-friction bearing hinges. To order a hinge with exposed electric modification, please add the modification code to the product number (for example, BB1279 E2).



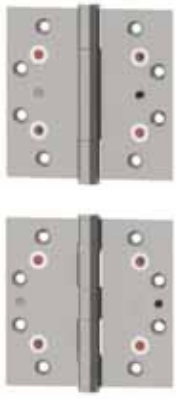
E2

Electric Contact

- Three or five knuckle
- Available on architectural grade ball bearing and anti-friction bearing
- Two contacts minimum required to transfer electrical current
- Design includes insulated copper contacts
- Furnished with non-removable pins

Hinge Size		Contacts
Inches	mm	
4 x 4	102 x 102	2 or 3
4-1/2 x 4-1/2	114 x 114	2, 3, or 4
5 x 5	127 x 127	2, 3, or 4

Contact Maximum Electrical Rating		
Volts	Amperes	
48 VDC	3.5 amps	CONTINUOUS
	16.0 amps	PULSE



E2/E1S

Electric Contact/Switch

- Three or five knuckle
- Available on architectural grade ball bearing and anti-friction bearing
- Single pole, double throw switch
- Design includes insulated copper contacts
- Furnished with non-removable pins

Hinge Size	
Inches	mm
4 x 4	102 x 102
4-1/2 x 4-1/2	114 x 114
5 x 5	127 x 127

Contact Maximum Electrical Rating		
Volts	Amperes	
48 VDC	3.5 amps	CONTINUOUS
	16.0 amps	PULSE
Switch Maximum Electrical Rating		
24 VDC @ .250 amps		



E1S

Electric Switch

- Three or five knuckle
- Available on architectural grade ball bearing and anti-friction bearing
- Single pole, double throw switch
- Furnished with non-removable pins

Hinge Size	
Inches	mm
4 x 4	102 x 102
4-1/2 x 4-1/2	114 x 114
5 x 5	127 x 127

Switch Maximum Electrical Rating
24 VDC @ .250 amps

ARCHITECTURAL HINGES

CONCEALED ELECTRIC MODIFICATIONS

The following concealed electric modifications are available on our architectural grade ball bearing and anti-friction bearing hinges. To order a hinge with concealed electric modification, please add the modification code to the product number (for example, BB1279 EMN).





EMN

Electric Monitor Only

- Three or five knuckle
- Available on architectural grade ball bearing and anti-friction bearing
- Available in steel, brass, or stainless steel
- 28 gauge wire
- Standard size available 4" (102 mm) through 8" (203 mm)
- Hinge pins are not field removable - NRP variation is not available
- Monitoring capability only
- Concealed subminiature snap action, SPDT switch
- Adjustment feature for a wide range of switch sensitivity
- Preset switching circuit
- For open loop secure, closed loop secure or single pole double throw (SPDT)

Switch Maximum Electrical Rating
30 VDC @ .500 amps





ETW

Electric Through-Wire Only

- Three or five knuckle
- Available on architectural grade ball bearing and anti-friction bearing
- Available in steel, brass, or stainless steel
- 28 gauge wire
- Standard size available 4" (102 mm) through 8" (203 mm)
- Hinge pins are not field removable - NRP variation is not available
- Low voltage electric current transfer capability only
- 4, 6, 8, 10, 12 continuous electrical conductors

Wire Maximum Electrical Rating		
Volts	Amperes	
48 VDC	3.5 amps	CONTINUOUS
	16.0 amps	PULSE





ETM

Electric Through-Wire with Monitoring

- Three or five knuckle
- Available on architectural grade ball bearing and anti-friction bearing
- Available in steel, brass, or stainless steel
- 28 gauge wire
- Standard size available 4" (102 mm) through 8" (203 mm)
- Hinge pins are not field removable - NRP variation is not available
- Both continuous electric conductors and monitoring capability
- Concealed monitor switch and 4, 6, 8, or 10 continuous electrical conductors
- Adjustment feature for a wide range of switch sensitivity
- For open loop secure, closed loop secure or single pole double throw (SPDT)

Contact Maximum Electrical Rating		
Volts	Amperes	
48 VDC	3.5 amps	CONTINUOUS
	16.0 amps	PULSE
Switch Maximum Electrical Rating		
30 VDC @ .500 amps		

CONCEALED AIR TRANSFER

The following hinges are available with a concealed air transfer (ATH) modification. They are available on architectural grade ball bearing and anti-friction bearing full mortise. Please note:

- ATH modification is for doors that require the transfer of compressed air.
- The hinges with ATH modification available use 5/32" (4 mm) plastic air tubing, have quick-connect fittings, and are capable of transferring 80-100 PSI through the air tubing.
- Steel or stainless steel hinges are acceptable for use on labeled or fire rated doors.
- Hinge pins are not field removable.
- NRP and safety stud are not available.



AB700
Standard Weight
Steel

AB800
Standard Weight
Stainless steel, brass



AB750
Heavy Weight
Steel

AB850
Heavy Weight
Stainless steel, brass

BB1191
Standard Weight
Stainless steel, brass

BB1279
Standard Weight
Steel

BB1168
Heavy Weight
Steel

BB1199
Heavy Weight
Stainless steel, brass

Hinge Size	
Inches	mm
4-1/2 x 4	112 x 102
4-1/2 x 4-1/2	114 x 114
5 x 4	127 x 102
5 x 4-1/2	127 x 114
5 x 5	127 x 127



430
Mortar Box

- Galvanized steel 0.040 (1 mm)
- Dimensions - 9" (2.29 mm) length with tabs, 7" (1.78 mm) inside, 1-3/4" x 1-3/4" (45 mm x 45 mm) inside dimension
- Removable back for servicing
- Serves as mortar shield
- Top and bottom knockouts for standard conduit fittings
- Fits hinge reinforcements for 4-1/2" (114 mm) or 5" (127 mm) architectural grade hinges

ARCHITECTURAL HINGES

SINGLE ACTING

The following single acting spring hinges are for automatic closing of door. They meet codes for hotels, motels, institutions, and commercial buildings. Please note:

- 1150 is not available in 3-1/2" x 3-1/2" (89 mm x 89 mm) and 4" x 4" (102 mm x 102 mm) sizes.
- 1250 is available with raised barrel for straight or beveled doors.
- 1250 approved for use on 4' 0" x 8' 0" (1219 mm x 2438 mm) doors.
- For maximum versatility, use all spring hinges or a combination of spring and ball bearing hinges. Do not use plain bearing hinges.
- Full spring tension may not be required on all hinges.
- Strong wind conditions, drafts, carpeting drag, twisted/ misaligned frames, or weatherstripping on doors may require additional spring hinges.



1150
Square Corner
Stainless steel with stainless steel components (ANSI K51071F)

1250
Square Corner
Steel with Steel components (ANSI K81071F)

1251
1/4" Radius
Steel with Steel components (ANSI K81071F)

1252
5/8" Radius
Steel with Steel components (ANSI K81071F)

1255
Square Corner Set
Steel with Steel components (ANSI K81071F)
Two each 1250 and one each AB700

1256
Square Corner Set
Steel with Steel components (ANSI K81071F)
Two each 1250 and one each BB1279

Hinge Size		Gauge of Metal	Hole Count	Screw Size	
Inches	mm			Machine	Wood
3-1/2 x 3-1/2	89 x 89	0.134	6	1/2 x 10-24	1 x 9
4 x 4	102 x 102	0.134	8	1/2 x 12-24	1-1/4 x 12
4-1/2 x 4	114 x 102	0.134	8	1/2 x 12-24	1-1/4 x 12
4-1/2 x 4-1/2	114 x 114	0.134	8	1/2 x 12-24	1-1/4 x 12

Series	Size	Recommended Max Door Weight (lbs)	Spring Hinge	Ball Bearing Hinge
For use on 1-3/8" (35 mm) door				
1250	3-1/2 x 3-1/2	40	1	2
1250	3-1/2 x 3-1/2	70	2	1
1250	3-1/2 x -1/2	90	3	-
For use on 1-3/4" (45 mm) door				
1250	4 x 4	60	1	2
1250	4 x 4	85	2	1
1250	4 x 4	110	3	-
1150	4-1/2 x 4, 4-1/2 x 4-1/2	70	1	2
1150	4-1/2 x 4, 4-1/2 x 4-1/2	115	2	1
1150	4-1/2 x 4, 4-1/2 x 4-1/2	150	3	-
1250	4-1/2 x 4, 4-1/2 x 4-1/2	70	1	2
1250	4-1/2 x 4, 4-1/2 x 4-1/2	115	2	1
1250	4-1/2 x 4, 4-1/2 x 4-1/2	150	3	-
1255	4-1/2 x 4-1/2	115	2	1
1256	4-1/2 x 4-1/2	115	2	1

REVERSE ACTION - SINGLE ACTING

The following reverse action, single acting spring hinges are for automatic opening of door. They meet codes for hotels, motels, institutions, and commercial buildings. Please note:

- For maximum versatility, use all spring hinges or a combination of spring and ball bearing hinges. Do not use plain bearing hinges.
- Full spring tension may not be required on all hinges.
- Strong wind conditions, drafts, carpeting drag, twisted/ misaligned frames, or weatherstripping on doors may require additional spring hinges.



1257
Square Corner
Steel (ANSI K81071)

1258
1/4" Radius
Steel (ANSI K81071)

1259
5/8" Radius
Steel (ANSI K81071)

Hinge Size		Gauge of Metal	Hole Count	Screw Size	
Inches	mm			Machine	Wood
3-1/2 x 3-1/2	89 x 89	0.134	6	1/2 x 10-24	1 x 9
4 x 4	102 x 102	0.134	8	1/2 x 12-24	1-1/4 x 12
4-1/2 x 4	114 x 102	0.134	8	1/2 x 12-24	1-1/4 x 12
4-1/2 x 4-1/2	114 x 114	0.134	8	1/2 x 12-24	1-1/4 x 12

Size	Recommended Max Door Weight (lbs)	Spring Hinge	Ball Bearing Hinge
For use on 1-3/8" (35 mm) door			
3-1/2 x 3-1/2	40	1	2
3-1/2 x 3-1/2	70	2	1
3-1/2 x 3-1/2	90	3	-
For use on 1-3/4" (45 mm) door			
4 x 4	60	1	2
4 x 4	85	2	1
4 x 4	110	3	-
4-1/2 x 4, 4-1/2 x 4-1/2	70	1	2
4-1/2 x 4, 4-1/2 x 4-1/2	115	2	1
4-1/2 x 4, 4-1/2 x 4-1/2	150	3	-

SWING CLEAR

The following swing clear spring hinge is for automatic closing of door. It provides the features of both a swing clear hinge and a spring hinge. It meets codes for hotels, motels, institutions, and commercial buildings. Please note:

- For maximum versatility, use all spring hinges or a combination of spring and ball bearing hinges. Do not use plain bearing hinges.
- Full spring tension may not be required on all hinges.
- Strong wind conditions, drafts, carpeting drag, twisted/ misaligned frames, or weatherstripping on doors may require additional spring hinges.



1267
Square Corner
Steel with steel components
(ANSI K81071F)

Hinge Size		Gauge of Metal	Hole Count	Screw Size	
Inches	mm			Machine	Wood
4-1/2 x 4-1/2	114 x 114	0.134	8	1/2 x 12-24	1-1/4 x 12

ARCHITECTURAL HINGES

FIVE KNUCKLE



EC1100 | EC1100NRP

Plain Bearing - Standard Weight
Steel with steel pin (ANSI A8133)

EC1101

Plain Bearing - Standard Weight
Stainless steel with stainless steel pin (ANSI A5133) or brass with stainless steel pin (ANSI A2133)

- Non-rising removable pin with button tip and plug
- With door closer use ball bearing hinge
- For use on medium weight doors or doors requiring low frequency service
- EC1100NRP is the same as EC1100 but with a non-removable pin
- EC1101 fasteners are AMS x 1/2 WS
- For use on medium weight doors or doors requiring medium frequency service

Hinge Size		Gauge of Metal	Hole Count	Screw Size	
Inches	mm			Machine	Wood
4-1/2 x 4	114 x 102	0.134	8	1/2 x 12-24	1-1/4 x 12
4-1/2 x 4-1/2	114 x 114	0.134	8	1/2 x 12-24	1-1/4 x 12



ECRC1100

Plain Bearing - Standard Weight

- Steel with steel pin (ANSI A8133)
- Non-rising removable pin with button tip and plug
- With door closer use ball bearing hinge
- Round corner with 1/4" (6 mm) radius standard
- For use on medium weight doors or doors requiring low frequency service

Hinge Size		Gauge of Metal	Hole Count	Screw Size	
Inches	mm			Machine	Wood
4 x 4	102 x 102	0.129	8	1/2 x 12-24	1-1/4 x 12



ECBB1100 | ECBB1100NRP

Ball Bearing - Standard Weight
Steel with steel pin (ANSI A8112)

ECBB1101 | ECBB1101NRP

Ball Bearing - Standard Weight
Brass with stainless steel pin (ANSI A2112) or stainless steel with stainless steel pin (ANSI A5112)

- Two ball bearings
- Non-rising removable pin with button tip and plug
- ECBB1100NRP and ECBB1101NRP are the same as ECBB1100 and ECBB1101, but with a non-removable pin
- ECBB1101 and ECBB1101NRP only available in 4-1/2" x 4-1/2" (114 mm x 114 mm)
- ECBB1101 and ECBB1101NRP fasteners are AMS x 1/2 WS
- For use on medium weight doors or doors requiring medium frequency service

Hinge Size		Gauge of Metal	Hole Count	Screw Size	
Inches	mm			Machine	Wood
4-1/2 x 4	114 x 102	0.134	8	1/2 x 12-24	1-1/4 x 12
4-1/2 x 4-1/2	114 x 114	0.134	8	1/2 x 12-24	1-1/4 x 12



ECRCBB1100

Ball Bearing - Standard Weight

- Steel with steel pin (ANSI A8112)
- Two ball bearings
- Non-rising removable pin with button tip and plug
- Round corner with 1/4" (6 mm) radius standard
- For use on medium weight doors or doors requiring medium frequency service

Hinge Size		Gauge of Metal	Hole Count	Screw Size	
Inches	mm			Machine	Wood
4 x 4	102 x 102	0.129	8	1/2 x 12-24	1-1/4 x 12

FIVE KNUCKLE (CONTINUED)



ECBB1102 | ECBB1102NRP

Ball Bearing - Heavy Weight
Steel with steel pin (ANSI A8111)

ECBB1103 | ECBB1103NRP

Ball Bearing - Heavy Weight
Brass with stainless steel pin (ANSI A2111) or stainless steel with stainless steel pin (ANSI A5111)

- Four ball bearings
- Non-rising removable pin with flush pin and plug
- ECBB1102NRP and ECBB1103NRP are the same as ECBB1102 and ECBB1103, but with a non-removable pin
- For use on heavy weight doors or doors requiring high frequency service

Hinge Size		Gauge of Metal	Hole Count	Screw Size	
Inches	mm			Machine	Wood
4-1/2 x 4-1/2	114 x 114	0.180	8	1/2 x 12-24	1-1/4 x 12
5 x 4-1/2	127 x 114	0.190	8	1/2 x 12-24	1-1/4 x 12

SPRING HINGE

The following ECCO single acting spring hinge is for automatic closing of door. It meets codes for hotels, motels, institutions, and commercial buildings. Please note:

- For use on 1-3/4" (45 mm) doors.
- For maximum versatility, use all spring hinges or a combination of spring and ball bearing hinges. Do not use plain bearing hinges.
- Full spring tension may not be required on all hinges.
- Strong wind conditions, drafts, carpeting drag, twisted/misaligned frames, or weatherstripping on doors may require additional spring hinges.



EC1105

Square Corner
Steel (ANSI K81071F)

Hinge Size		Gauge of Metal	Hole Count	Screw Size	
Inches	mm			Machine	Wood
4-1/2 x 4	114 x 102	0.134	8	1/2 x 12-24	1-1/4 x 12
4-1/2 x 4-1/2	114 x 114	0.134	8	1/2 x 12-24	1-1/4 x 12

Size	Recommended Max Door Weight (lbs)	Spring Hinge	Ball Bearing Hinge
4-1/2 x 4, 4-1/2 x 4-1/2	70	1	2
4-1/2 x 4, 4-1/2 x 4-1/2	115	2	1
4-1/2 x 4, 4-1/2 x 4-1/2	150	3	-

ARCHITECTURAL HINGES

THREE KNUCKLE HINGES



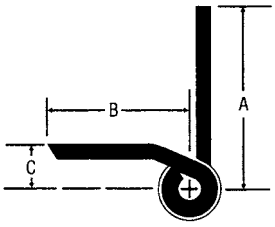
AB701
Concealed Anti-Friction Bearing - Standard Weight
Steel with steel pin (ANSI A8212)

AB801
Concealed Anti-Friction Bearing - Standard Weight
Brass with stainless steel pin (ANSI A2212) or stainless steel with stainless steel pin (ANSI A5212)

- Non-rising removable pin with flush pin and plug
- Reversible
- For use on medium weight hollow metal doors with channel iron frames requiring medium frequency service

Hinge Size		Gauge of Metal	Hole Count	Machine Screw Size	
Inches	mm			Door Leaf	Jamb Leaf
4-1/2	114	0.134	7	1/2 x 12-24 FH	1/2 x 12-24 OH
5	127	0.145	8	1/2 x 12-24 FH	1/2 x 12-24 OH

Hinge Size		Door Leaf Width "A"		Jamb Leaf Width "B"		Jamb Leaf Offset "C"	
Inches	mm	Inches	mm	Inches	mm	Inches	mm
4-1/2	114	2	51	1-1/2	38	3/8	10
5	127	2	51	1-1/2	38	3/8	10





AB751
Concealed Anti-Friction Bearing - Heavy Weight
Steel with steel pin (ANSI A8211)

AB851
Concealed Anti-Friction Bearing - Heavy Weight
Brass with stainless steel pin (ANSI A2211) or stainless steel with stainless steel pin (ANSI A5211)

- Non-rising removable pin with flush pin and plug
- Reversible
- For use on heavy weight hollow metal doors with channel iron frames requiring high frequency service

Hinge Size		Gauge of Metal	Hole Count	Machine Screw Size	
Inches	mm			Door Leaf	Jamb Leaf
4-1/2	114	0.180	7	1/2 x 12-24 FH	1/2 x 12-24 OH
5	127	0.190	8	1/2 x 12-24 FH	1/2 x 12-24 OH
6+	152	0.203* 0.190*	9	1/2 x 1/4-20 FH	1/2 x 1/4-20 OH

Hinge Size		Door Leaf Width "A"		Jamb Leaf Width "B"		Jamb Leaf Offset "C"	
Inches	mm	Inches	mm	Inches	mm	Inches	mm
4-1/2	114	2-1/16	53	1-1/2	38	7/16	11
5	127	2-1/16	53	1-1/2	38	7/16	11
6 x 1-3/4+	152	2-1/8	54	1-1/2	38	1/2	12.5

+ Door thickness must be specified.
* 0.203 for brass and steel. 0.190 for stainless steel.

FIVE KNUCKLE HINGES



1129
Plain Bearing - Standard Weight
- Steel with steel pin (ANSI A8233)
- Non-rising removable pin with button tip and plug
- Reversible
- Beveled surface leaf
- Not for use with door closer
- For use on medium weight hollow metal doors with channel iron frames requiring low frequency service

Hinge Size		Gauge of Metal	Hole Count	Machine Screw Size	
Inches	mm			Door Leaf	Jamb Leaf
4-1/2	114	0.134	7	1/2 x 12-24 FH	1/2 x 12-24 OH

Hinge Size		Door Leaf Width "A"		Jamb Leaf Width "B"		Jamb Leaf Offset "C"	
Inches	mm	Inches	mm	Inches	mm	Inches	mm
4-1/2	114	2	51	1-1/2	38	3/8	10



BB1109
Ball Bearing - Standard Weight
Brass with stainless steel pin (ANSI A2212) or stainless steel with stainless steel pin (ANSI A5212)

BB1129
Ball Bearing - Standard Weight
Steel with steel pin (ANSI A8212)

- Two ball bearings
- Non-rising removable pin with button tip and plug
- Reversible
- Beveled surface leaf
- For use on medium weight hollow metal doors with channel iron frames requiring medium frequency service

Hinge Size		Gauge of Metal	Hole Count	Machine Screw Size	
Inches	mm			Door Leaf	Jamb Leaf
4-1/2	114	0.134	7	1/2 x 12-24 FH	1/2 x 12-24 OH
5	127	0.145	8	1/2 x 12-24 FH	1/2 x 12-24 OH

Hinge Size		Door Leaf Width "A"		Jamb Leaf Width "B"		Jamb Leaf Offset "C"	
Inches	mm	Inches	mm	Inches	mm	Inches	mm
4-1/2	114	2	51	1-1/2	38	3/8	10
5	127	2	51	1-1/2	38	3/8	10



BB1138
Ball Bearing - Heavy Weight
Steel with steel pin (ANSI A8212)

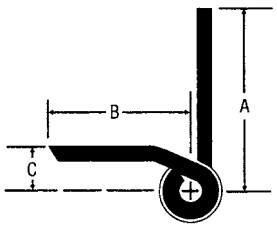
BB2098
Ball Bearing - Heavy Weight
Brass with stainless steel pin (ANSI A2211) or stainless steel with stainless steel pin (ANSI A5211)

- Four ball bearings
- Non-rising removable pin with button tip and plug
- Reversible
- Beveled surface leaf
- For use on heavy weight hollow metal doors with channel iron frames requiring high frequency service

Hinge Size		Gauge of Metal	Hole Count	Machine Screw Size	
Inches	mm			Door Leaf	Jamb Leaf
4-1/2	114	0.180	7	1/2 x 12-24 FH	1/2 x 12-24 OH
5	127	0.190	8	1/2 x 12-24 FH	1/2 x 12-24 OH
6+	152	0.203* 0.190*	9	1/2 x 1/4-20 FH	1/2 x 1/4-20 OH

Hinge Size		Door Leaf Width "A"		Jamb Leaf Width "B"		Jamb Leaf Offset "C"	
Inches	mm	Inches	mm	Inches	mm	Inches	mm
4-1/2	114	2-1/16	53	1-1/2	38	7/16	11
5	127	2-1/16	53	1-1/2	38	7/16	11
6 x 1-3/4+	152	2-1/8	54	1-1/2	38	1/2	12.5

+ Door thickness must be specified.
* 0.203 for brass and steel. 0.190 for stainless steel.



ARCHITECTURAL HINGES

THREE KNUCKLE HINGES



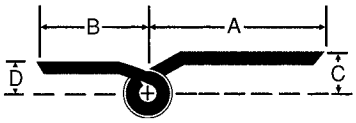
AB702
Concealed Anti-Friction Bearing - Standard Weight
Steel with steel pin (ANSI A8312)

AB802
Concealed Anti-Friction Bearing - Standard Weight
Brass with stainless steel pin (ANSI A2312) or stainless steel with stainless steel pin (ANSI A5312)

- Thru-bolts and grommets for wood door applications
- Non-rising removable pin with flush pin and plug
- Reversible
- Beveled surface leaves
- For use on medium weight tubular steel doors with channel iron frames requiring medium frequency service

Hinge Size		Gauge of Metal	Hole Count	Machine Screw Size	
Inches	mm			Door Leaf	Jamb Leaf
4-1/2	114	0.134	6	2 x 1/4-20 OH	1/2 x 12-24 OH
5	127	0.145	8	2 x 1/4-20 OH	1/2 x 12-24 OH

Hinge Size		Door Leaf Width "A"		Jamb Leaf Width "B"		Jamb Leaf Offset "C"		Jamb Leaf Offset "D"	
Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
4-1/2	114	2-9/16	65	1-1/2	38	1/2	12.5	3/8	10
5	127	2-7/8	73	1-1/2	38	1/2	12.5	3/8	10





AB752
Concealed Anti-Friction Bearing - Heavy Weight
Steel with steel pin (ANSI A8311)

AB852
Concealed Anti-Friction Bearing - Heavy Weight
Brass with stainless steel pin (ANSI A2311) or stainless steel with stainless steel pin (ANSI A5311)

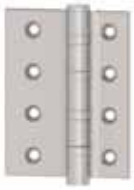
- Thru-bolts and grommets for wood door applications
- Non-rising removable pin with flush pin and plug
- Reversible
- Beveled surface leaves
- For use on heavy weight hollow metal doors with channel iron frames requiring high frequency service

Hinge Size		Gauge of Metal	Hole Count	Machine Screw Size	
Inches	mm			Door Leaf	Jamb Leaf
4-1/2	114	0.180	6	2 x 1/4-20 OH	1/2 x 12-24 OH
5	127	0.190	8	2 x 1/4-20 OH	1/2 x 12-24 OH
6+	152	0.203* 0.190*	9	2 x 1/4-20 OH	1/2 x 12-20 OH

Hinge Size		Door Leaf Width "A"		Jamb Leaf Width "B"		Jamb Leaf Offset "C"		Jamb Leaf Offset "D"	
Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
4-1/2	114	2-9/16	65	1-1/2	38	9/16	14	7/16	11
5	127	2-7/8	73	1-1/2	38	9/16	14	7/16	11
6+	152	3-1/4	83	1-1/2	38	5/8	15	1/2	12.5

+ Door thickness must be specified.
* 0.203 for brass and steel. 0.190 for stainless steel.

FIVE KNUCKLE HINGES



BB2108
Ball Bearing - Heavy Weight
Brass with stainless steel pin (ANSI A2361) or stainless steel with stainless steel pin (ANSI A5361)

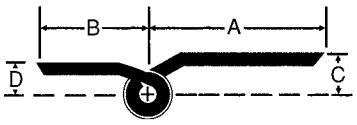
BB2168
Ball Bearing - Heavy Weight
Steel with steel pin (ANSI A8361)

- Four ball bearings
- Thru-bolts and grommets for wood door applications
- Non-rising removable pin with button tip and plug
- Reversible
- Beveled surface leaves
- For use on tubular steel doors with channel iron frames requiring high frequency service

Hinge Size		Gauge of Metal	Hole Count	Machine Screw Size	
Inches	mm			Door Leaf	Jamb Leaf
4-1/2	114	0.180	8	2 x 1/4-20 OH	1/2 x 1/4-20 OH
5	127	0.190	8	2 x 1/4-20 OH	1/2 x 1/4-20 OH
6+	152	0.203* 0.190*	8	2 x 1/4-20 OH	1/2 x 1/4-20 OH

Hinge Size		Door Leaf Width "A"		Jamb Leaf Width "B"		Jamb Leaf Offset "C"		Jamb Leaf Offset "D"	
Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
4-1/2	114	2	51	1-1/2	38	9/16	14	7/16	11
5	127	2-5/16	59	1-1/2	38	9/16	14	7/16	11
6+	152	2-3/8	60	1-1/2	38	5/8	15	1/2	12.5

+ Door thickness must be specified.
* 0.203 for brass and steel. 0.190 for stainless steel.





BB2109
Ball Bearing - Heavy Weight
Brass with stainless steel pin (ANSI A2311) or stainless steel with stainless steel pin (ANSI A5311)

BB2169
Ball Bearing - Heavy Weight
Steel with steel pin (ANSI A8311)

- Four ball bearings
- Thru-bolts and grommets for wood door applications
- Non-rising removable pin with button tip and plug
- Reversible
- Beveled surface leaves
- For use on heavy hollow metal or wood composite doors with channel iron frames requiring high frequency service

Hinge Size		Gauge of Metal	Hole Count	Machine Screw Size	
Inches	mm			Door Leaf	Jamb Leaf
4-1/2	114	0.180	6	2 x 1/4-20 OH	1/2 x 12-24 OH
5	127	0.190	8	2 x 1/4-20 OH	1/2 x 12-24 OH
6+	152	0.203* 0.190*	9	2 x 1/4-20 OH	1/2 x 12-24 OH

Hinge Size		Door Leaf Width "A"		Jamb Leaf Width "B"		Jamb Leaf Offset "C"		Jamb Leaf Offset "D"	
Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
4-1/2	114	2-9/16	65	1-1/2	38	9/16	14	7/16	11
5	127	2-7/8	73	1-1/2	38	9/16	14	7/16	11
6+	152	3-1/4	83	1-1/2	38	5/8	15	1/2	12.5

+ Door thickness must be specified.
* 0.203 for brass and steel. 0.190 for stainless steel.

ARCHITECTURAL HINGES

FIVE KNUCKLE HINGES (CONTINUED)



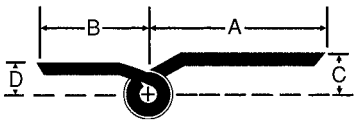
BB2110
Ball Bearing - Standard Weight
Brass with stainless steel pin (ANSI A2312) or stainless steel with stainless steel pin (ANSI A5312)

BB2171
Ball Bearing - Standard Weight
Steel with steel pin (ANSI A8312)

- Two ball bearings
- Thru-bolts and grommets for wood door applications
- Non-rising removable pin with button tip and plug
- Reversible
- Beveled surface leaves
- For use on medium weight hollow metal or wood composite doors with channel iron frames requiring medium frequency service

Hinge Size		Gauge of Metal	Hole Count	Machine Screw Size	
Inches	mm			Door Leaf	Jamb Leaf
4-1/2	114	0.134	6	2 x 1/4-20 OH	1/2 x 12-24 OH
5	127	0.145	8	2 x 1/4-20 OH	1/2 x 12-24 OH

Hinge Size		Door Leaf Width "A"		Jamb Leaf Width "B"		Jamb Leaf Offset "C"		Jamb Leaf Offset "D"	
Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
4-1/2	114	2-9/16	65	1-1/2	38	1/2	12.5	3/8	10
5	127	2-7/8	73	1-1/2	38	1/2	12.5	3/8	10



WELDING HINGES



1850
Plain Bearing - Heavy Weight
- Steel with steel pin
- Flat surface with no swage
- No holes
- Square corners
- Fast riveted pin
- Manufactured with no holes and can easily be welded onto gates, dumpsters, and industrial applications such as bins or warehouse doors

Hinge Size		Gauge of Metal	Pin Diameter	Recommended Max Door Weight (lbs)
Inches	mm			
4 x 4	102 x 102	0.179	0.312	150
4-1/2 x 4-1/2	114 x 114	0.179	0.322	150
5 x 5	127 x 127	0.179	0.322	175
6 x 6	152 x 152	0.203	0.500	230

Hinge Size		Door Thickness	Max Door Width
Inches	mm		
4 x 4	102 x 102	1-3/8" (35 mm) to 1-3/4" (45 mm)	36" (91 cm)
4-1/2 x 4-1/2	114 x 114	1-3/4" (45 mm) to 2" (51 mm)	36" (91 cm)
5 x 5	127 x 127	1-3/4" (45 mm) to 2-1/2" (64 mm)	42" (107 cm)
6 x 6	152 x 152	1-3/4" (45 mm) to 2-1/2" (64 mm)	48" (122 cm)

SPRING HINGES



1303
Double Acting
- Steel (ANSI K81041)
- Adjustable

Product	Hinge Size		3 Hinges Max Door Weight	3 Hinges Max Door Width
	Inches	mm		
1303-3	3	76	35 lbs	2'-8"
1303-4	4	102	75 lbs	3'
1303-5	5	127	90 lbs	3'
1303-6	6	152	100 lbs	3'

Product	Min Door Thickness	Min Door Height	Wood Screw
1303-3	3/4" - 1"	5'-0"	6 x (#6 x 3/4" FPH WS)
1303-4	7/8" - 1-1/4"	6'-8"	8 x (#6 x 3/4" FPH WS)
1303-5	1-1/8" - 1-1/2"	6'-8"	10 x (#8 x 1-1/4" FPH WS)
1303-6	1-1/4" - 1-3/4"	7'-0"	10 x (#10 x 1-1/4" FPH WS)

THREE KNUCKLE HINGES



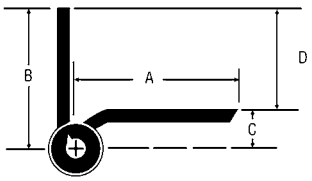
AB703
Concealed Anti-Friction Bearing - Standard Weight
Steel with steel pin (ANSI A8412)

AB803
Concealed Anti-Friction Bearing - Standard Weight
Brass with stainless steel pin (ANSI A2412) or stainless steel with stainless steel pin (ANSI A5412)

- Thru-bolts and grommets for wood door applications
- Non-rising removable pin with flush pin and plug
- Reversible
- Beveled surface leaf
- For use on medium weight hollow metal or wood composite doors with hollow metal frames requiring medium frequency service

Hinge Size		Gauge of Metal	Hole Count	Machine Screw Size	
Inches	mm			Door Leaf	Jamb Leaf
4-1/2	114	0.134	7	2 x 1/4-20 OH	1/2 x 12-24 FH
5	127	0.145	8	2 x 1/4-20 OH	1/2 x 12-24 FH

Hinge Size		Door Leaf Width "A"		Jamb Leaf Width "B"		Jamb Leaf Offset "C"		Application "D"	
Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
4-1/2	114	2-9/16	65	2	51	1/2	12.5	1-1/2	38
5	127	2-7/8	73	2	51	1/2	12.5	1-1/2	38





AB753
Concealed Anti-Friction Bearing - Heavy Weight
Steel with steel pin (ANSI A8411)

AB853
Concealed Anti-Friction Bearing - Heavy Weight
Brass with stainless steel pin (ANSI A2411) or stainless steel with stainless steel pin (ANSI A5411)

- Thru-bolts and grommets for wood door applications
- Non-rising removable pin with flush pin and plug
- Reversible
- Beveled surface leaf
- For use on heavy weight hollow metal or wood composite doors with hollow metal frames requiring high frequency service

Hinge Size		Gauge of Metal	Hole Count	Machine Screw Size	
Inches	mm			Door Leaf	Jamb Leaf
4-1/2	114	0.180	7	2 x 1/4-20 OH	1/2 x 12-24 FH
5	127	0.190	8	2 x 1/4-20 OH	1/2 x 12-24 FH
6+	152	0.203* 0.190*	10	2 x 1/4-20 OH	1/2 x 1/4-20 FH

Hinge Size		Door Leaf Width "A"		Jamb Leaf Width "B"		Jamb Leaf Offset "C"		Application "D"	
Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
4-1/2	114	2-9/16	65	2-1/16	52	9/16	14	1-1/2	38
5	127	2-7/8	73	2-1/16	52	9/16	14	1-1/2	38
6+	152	3-1/4	83	2-1/8 or 2-1/2	54 or 64	5/8	16	1-1/2 or 1-7/8	38 or 48

+ Door thickness must be specified.
* 0.203 for brass and steel. 0.190 for stainless steel.

ARCHITECTURAL HINGES

FIVE KNUCKLE HINGES



BB1163
Ball Bearing - Heavy Weight
Steel with steel pin (ANSI A8411)

BB2113
Ball Bearing - Heavy Weight
Brass with stainless steel pin (ANSI A2411) or stainless steel with stainless steel pin (ANSI A5411)

- Four ball bearings
- Thru-bolts and grommets for wood door applications
- Non-rising removable pin with button tip and plug
- Reversible
- Beveled surface leaf
- For use on heavy weight hollow metal or wood composite doors with hollow metal frames requiring high frequency service

Hinge Size		Gauge of Metal	Hole Count	Machine Screw Size	
Inches	mm			Door Leaf	Jamb Leaf
4-1/2	114	0.180	7	2 x 1/4-20 OH	1/2 x 12-24 FH
5	127	0.190	8	2 x 1/4-20 OH	1/2 x 12-24 FH
6+	152	0.203* 0.190*	10	2 x 1/4-20 OH	1/2 x 1/4-20 FH

Hinge Size		Door Leaf Width "A"		Jamb Leaf Width "B"		Door Leaf Offset "C"		Application "D"	
Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
4-1/2	114	2-9/16	65	2-1/16	38	9/16	14	7/16	11
5	127	2-7/8	73	2-1/16	38	9/16	14	7/16	11
6+	152	3-1/4	83	2-1/8 or 2-1/2	54 or 64	5/8	16	1-1/2 or 1-7/8	38 or 48

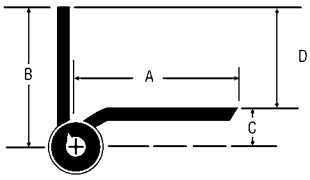
+ Door thickness must be specified.
* 0.203 for brass and steel. 0.190 for stainless steel.

1173
Plain Bearing - Standard Weight
- Steel with steel pin (ANSI A8433)
- Thru-bolts and grommets for wood door applications
- Non-rising removable pin with button tip and plug
- Reversible
- Beveled surface leaf
- For use on regular weight hollow metal or wood composite doors with hollow metal frames requiring low frequency service

Hinge Size		Gauge of Metal	Hole Count	Machine Screw Size	
Inches	mm			Door Leaf	Jamb Leaf
3-1/2*	89	0.119	6	1-3/4 x 10-24 OH	1/2 x 10-24 FH
4*	102	0.129	7	2 x 1/4-20 OH	1/2 x 12-24 FH
4-1/2	114	0.134	7	2 x 1/4-20 OH	1/2 x 12-24 FH

Hinge Size		Door Leaf Width "A"		Jamb Leaf Width "B"		Jamb Leaf Offset "C"		Application "D"	
Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
3-1/2*	89	1-5/8	41	1-9/16	31	7/16	11.5	1-1/16	27
4*	102	2-5/16	59	1-13/16	46	1/2	13	1-5/16	33
4-1/2	114	2-9/16	65	2	51	1/2	12.5	1-1/2	38

* For 1-3/8" door



FIVE KNUCKLE HINGES (CONTINUED)



BB1173
Ball Bearing - Standard Weight
Steel with steel pin (ANSI A8412)

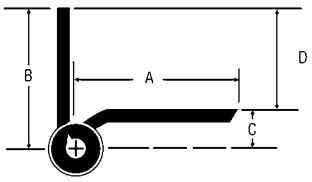
BB2112
Ball Bearing - Standard Weight
Brass with stainless steel pin (ANSI A2412) or stainless steel with stainless steel pin (ANSI A5412)

- Two ball bearings
- Thru-bolts and grommets for wood door applications
- Non-rising removable pin with button tip and plug
- Reversible
- Beveled surface leaf
- For use on regular weight hollow metal or wood composite doors with hollow metal frames requiring medium frequency service

Hinge Size		Gauge of Metal	Hole Count	Machine Screw Size	
Inches	mm			Door Leaf	Jamb Leaf
4*	102	0.129	7	2 x 1/4-20 OH	1/2 x 12-24 FH
4-1/2	114	0.134	7	2 x 1/4-20 OH	1/2 x 12-24 FH
5	127	0.145	8	2 x 1/4-20 OH	1/2 x 12-20 FH

Hinge Size		Door Leaf Width "A"		Jamb Leaf Width "B"		Door Leaf Offset "C"		Application "D"	
Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
4*	102	2-5/16	59	1-13/16	46	1/2	13	1-5/16	33
4-1/2	114	2-9/16	65	2	51	1/2	12.5	1-1/2	38
5	127	2-7/8	73	2	51	1/2	12.5	1-1/2	38

* For 1-3/8" door



SPRING HINGES



1253
Single Acting

- Steel (ANSI K81081F)
- Thru-bolts and grommets for wood door applications
- For maximum versatility use all spring hinges or a combination of spring and ball bearing hinges (do not use plain bearing hinges)
- Full spring tension may not be required on all hinges
- Strong wind conditions, drafts, carpeting drag, twisted/misaligned frames, or weatherstripping on doors may require additional spring hinges
- For automatic closing of door
- Meets codes for hotels, motels, institutions, and commercial buildings

Hinge Size		Gauge of Metal	Hole Count	Machine Screw Size	
Inches	mm			Door Leaf	Jamb Leaf
4-1/2	114	0.134	7	2 x 1/4-20 with grommet nuts	1/2 x 12-24

Hinge Size		Door Leaf Width "A"		Jamb Leaf Width "B"		Door Leaf Offset "C"		Application "D"	
Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
4-1/2	114	2-9/16	65	2	52	1/2	14	1-1/2	38

Hinge Size		Recommended Max Door Weight		Spring Hinge	Ball Bearing Hinge	Spring Hinge Location
Inches	mm	lbs	kg			
4-1/2	114	70	32	1	2	Center
4-1/2	114	115	52	2	1	Top or Bottom
4-1/2	114	150	68	3	-	All

ARCHITECTURAL HINGES

FIVE KNUCKLE

The following hinges are for use on aluminum doors with aluminum frames. They are applied by inserting the hinge leaves through a slot in the door or frame. These hinges:

- Have a non-rising removable pin with button tip and plug.
- Are handed.
- Use ball bearings with door closer.



1277
Plain Bearing - Standard Weight
Both Leaves Tapped
Steel with steel pin
[ANSI A8143, 5/16" (8 mm) Swage]

1278
Plain Bearing - Standard Weight
One Leaf Tapped
Steel with steel pin
[ANSI A8153, 3/16" (5 mm) Swage]

1577
Plain Bearing - Standard Weight
Both Leaves Tapped
Brass with stainless steel pin
[ANSI A2143, 5/16" (8 mm) Swage] or
stainless steel with stainless steel pin
[ANSI A5143, 5/16" (8 mm) Swage]

1578
Plain Bearing - Standard Weight
One Leaf Tapped
Brass with stainless steel pin
[ANSI A2153, 3/16" (5 mm) Swage] or
stainless steel with stainless steel pin
[ANSI A5143, 3/16" (5 mm) Swage]

Hinge Size		Gauge of Metal	Hole Count	Screw Size	
Inches	mm			Machine	Wood
4-1/2 x 4	114 x 102	0.134	8	1/2 x 12-24	1-1/4 x 12
4-1/2 x 4-1/2	114 x 114	0.134	8	1/2 x 12-24	1-1/4 x 12



BB1277
Ball Bearing - Standard Weight
Both Leaves Tapped
Steel with steel pin
[ANSI A8142, 5/16" (8 mm) Swage]

BB1278
Ball Bearing - Standard Weight
One Leaf Tapped
Steel with steel pin
[ANSI A8152, 3/16" (5 mm) Swage]

BB1577
Ball Bearing - Standard Weight
Both Leaves Tapped
Brass with stainless steel pin
[ANSI A2142, 5/16" (8 mm) Swage] or
stainless steel with stainless steel pin
[ANSI A5142, 5/16" (8 mm) Swage]

BB1578
Ball Bearing - Standard Weight
One Leaf Tapped
Brass with stainless steel pin
[ANSI A2152, 3/16" (5 mm) Swage] or
stainless steel with stainless steel pin
[ANSI A5142, 3/16" (5 mm) Swage]

Hinge Size		Gauge of Metal	Hole Count	Screw Size	
Inches	mm			Machine	Wood
4-1/2 x 4	114 x 102	0.134	8	1/2 x 12-24	1-1/4 x 12
4-1/2 x 4-1/2	114 x 114	0.134	8	1/2 x 12-24	1-1/4 x 12

THREE KNUCKLE HINGES



AB7001 | AB7002

Full Mortise - Concealed Anti-Friction Bearing - Standard Weight

- Steel with steel pin (ANSI A8122)
- Non-rising removable pin with flush pin and plug
- Reversible
- When opened 90º, door projects 3/32" (2 mm) past stop of jamb
- For use in hospitals or other institutional type buildings
- AB7001 is for square edge doors and AB7002 is for beveled edge doors

Hinge Size		Gauge of Metal	Hole Count	Screw Size	
Inches	mm			Machine	Wood
4-1/2	114	0.139	8	1/2 x 12-24 FH	1-1/4 x 12 FH
5	127	0.139	8	1/2 x 12-24 FH	1-1/4 x 12 FH



AB7501 | AB7502

Full Mortise - Concealed Anti-Friction Bearing - Heavy Weight

- Steel with steel pin (ANSI A8121)
- Non-rising removable pin with flush pin and plug
- Reversible
- When opened 90º, door projects 11/64" (4 mm) past stop of jamb
- For use in hospitals or other institutional type buildings
- AB7501 is for square edge doors and AB7502 is for beveled edge doors

Hinge Size		Gauge of Metal	Hole Count	Screw Size	
Inches	mm			Machine	Wood
4-1/2	114	0.187	8	1/2 x 12-24 FH	1-1/4 x 12 FH
5	127	0.187	8	1/2 x 12-24 FH	1-1/4 x 12 FH



AB7511 | AB7512

Half Mortise - Concealed Anti-Friction Bearing - Heavy Weight

- Steel with steel pin (ANSI A8221)
- Non-rising removable pin with flush pin and plug
- Reversible
- When opened 90º, door projects 11/64" (4 mm) past stop of jamb
- For use in hospitals or other institutional type buildings
- AB7511 is for square edge doors and AB7512 is for beveled edge doors

Hinge Size		Gauge of Metal	Hole Count	Screw Size	
Inches	mm			Machine	Wood
5	127	0.187	8	1/2 x 12-24 FH 1-1/4 x 12 FH	1/2 x 1/4-20 FH 1-1/2 x 14 FH



AB7523

Full Surface - Concealed Anti-Friction Bearing - Heavy Weight

- Steel with steel pin (ANSI A8321)
- Non-rising removable pin with flush pin and plug
- Reversible
- Beveled surface leaves
- When opened 90º, door projects 11/64" (4 mm) past stop of jamb
- For use in hospitals or other institutional type buildings

Hinge Size		Gauge of Metal	Hole Count	Screw Size	
Inches	mm			Machine	Wood
5	127	0.187	9	2 x 1/4-20 FH	1/2 x 12-24 FH



AB7534

Half Surface - Concealed Anti-Friction Bearing - Heavy Weight

- Steel with steel pin (ANSI A8421)
- Non-rising removable pin with flush pin and plug
- Reversible
- Beveled surface leaf
- When opened 90º, door projects 11/64" (4 mm) past stop of jamb
- For use in hospitals or other institutional type buildings

Hinge Size		Gauge of Metal	Hole Count	Screw Size	
Inches	mm			Machine	Wood
5	127	0.187	9	2 x 1/4-20 FH	1/2 x 12-24 FH

ARCHITECTURAL HINGES

FIVE KNUCKLE HINGES



1260

Full Mortise - Plain Bearing - Standard Weight

- Steel with steel pin (ANSI A8123)
- Non-rising removable pin with button tip and plug
- Reversible
- When opened 90º, door projects 9/64" (4 mm) past stop of jamb for 3-1/2" hinge and 3/16" (5 mm) past stop of jamb for 4" hinge
- For residential and commercial use
- For square edge doors

Hinge Size		Gauge of Metal	Hole Count	Screw Size	
Inches	mm			Machine	Wood
3-1/2	89	0.119	6	1/2 x 10-24 FH	1 x 9 FH
4	102	0.129	8	1/2 x 12-24 FH	1-1/4 x 12 FH



BB1260 | BB1261

Full Mortise - Ball Bearing - Standard Weight

- Steel with steel pin (ANSI A8122)
- Two ball bearings
- Non-rising removable pin with button tip and plug
- Reversible
- When opened 90º, door projects 3/32" (2 mm) past stop of jamb
- For use in hospitals or other institutional type buildings
- BB1260 is for square edge doors and BB1261 is for beveled edge doors

Hinge Size		Gauge of Metal	Hole Count	Screw Size	
Inches	mm			Machine	Wood
4-1/2	114	0.134	8	1/2 x 12-24 FH	1-1/4 x 12 FH
5	127	0.145	8	1/2 x 12-24 FH	1-1/4 x 12 FH



BB1262 | BB1263

Full Mortise - Ball Bearing - Heavy Weight

- Steel with steel pin (ANSI A8121)
- Four ball bearings
- Non-rising removable pin with button tip and plug
- Reversible
- When opened 90º, door projects 11/64" (4 mm) past stop of jamb
- For use in hospitals or other institutional type buildings
- BB1262 is for square edge doors and BB1263 is for beveled edge doors

Hinge Size		Gauge of Metal	Hole Count	Screw Size	
Inches	mm			Machine	Wood
4-1/2	114	0.180	8	1/2 x 12-24 FH	1-1/4 x 12 FH
5	127	0.190	8	1/2 x 12-24 FH	1-1/4 x 12 FH



BB1360 | BB1361

Full Mortise - Ball Bearing - Standard Weight

- Stainless steel with stainless steel pin (ANSI A5122)
- Two ball bearings
- Non-rising removable pin with button tip and plug
- Reversible
- When opened 90º, door projects 3/32" (2 mm) past stop of jamb
- For use in hospitals or other institutional type buildings
- BB1360 is for square edge doors and BB1361 is for beveled edge doors

Hinge Size		Gauge of Metal	Hole Count	Screw Size	
Inches	mm			Machine	Wood
4-1/2	114	0.134	8	1/2 x 12-24 FH	1-1/4 x 12 FH
5	127	0.145	8	1/2 x 12-24 FH	1-1/4 x 12 FH

FIVE KNUCKLE HINGES (CONTINUED)



BB1362 | BB1363

Full Mortise - Ball Bearing - Heavy Weight

- Stainless steel with stainless steel pin (ANSI A5121)
- Four ball bearings
- Non-rising removable pin with button tip and plug
- Reversible
- When opened 90º, door projects 11/64" (4 mm) past stop of jamb
- For use in hospitals or other institutional type buildings
- BB1362 is for square edge doors and BB1363 is for beveled edge doors

Hinge Size		Gauge of Metal	Hole Count	Screw Size	
Inches	mm			Machine	Wood
4-1/2	114	0.180	8	1/2 x 12-24 FH	1-1/4 x 12 FH
5	127	0.190	8	1/2 x 12-24 FH	1-1/4 x 12 FH



BB1264 | BB1265

Half Mortise - Ball Bearing - Heavy Weight

- Steel with steel pin (ANSI A8221)
- Four ball bearings
- Non-rising removable pin with button tip and plug
- Reversible
- When opened 90º, door projects 11/64" (4 mm) past stop of jamb
- For use in hospitals or other institutional type buildings
- BB1264 is for square edge doors and BB1265 is for beveled edge doors

Hinge Size		Gauge of Metal	Hole Count	Door Leaf Screw Size	
Inches	mm			Machine	Wood
5	127	0.187	8	1/2 x 12-24 FH	1-1/4 x 12 FH
				Jamb Leaf Screw Size	
				Machine	Wood
				1/2 x 1/4-20 FH	1-1/4 x 12 FH



BB1266

Full Surface - Ball Bearing - Heavy Weight

- Steel with stainless steel pin (ANSI A8321)
- Four ball bearings
- Non-rising removable pin with button tip and plug
- Reversible
- Beveled surface leaves
- When opened 90º, door projects 11/64" (4 mm) past stop of jamb
- For use in hospitals or other institutional type buildings

Hinge Size		Gauge of Metal	Hole Count	Screw Size	
Inches	mm			Machine	Wood
5	127	0.187	9	2 x 1/4-20 FH	1/2 x 1/4-20 FH



BB1270

Half Surface - Ball Bearing - Heavy Weight

- Steel with stainless steel pin (ANSI A8421)
- Four ball bearings
- Non-rising removable pin with button tip and plug
- Reversible
- Beveled surface leaf
- When opened 90º, door projects 11/64" (4 mm) past stop of jamb
- For use in hospitals or other institutional type buildings

Hinge Size		Gauge of Metal	Hole Count	Machine Screw Size	
Inches	mm			Door Leaf	Jamb Leaf
5	127	0.187	9	2 x 1/4-20 FH	1/2 x 12-24 FH

ARCHITECTURAL HINGES

THREE KNUCKLE HINGES



AB7505
Concealed Anti-Friction Bearing - Heavy Weight
Steel with steel pin (ANSI A8511)

AB8505
Concealed Anti-Friction Bearing - Heavy Weight
Brass with stainless steel pin (ANSI A2511) or stainless steel with stainless steel pin (ANSI A5511)

- Non-removable pin standard with flush pin and plug
- Handed
- One anchor leaf (frame)
- Must be used with one pair of heavy weight, full mortise hinges (AB750 or AB850) - sold separately
- For use on heavy weight doors receiving high frequency use

Hinge Size		Gauge of Metal	Hole Count	Screw Size	
Inches	mm			Machine	Wood
5 x 4-1/2	127 x 114	0.190	12	1/2 x 12-24	1-1/4 x 12



AB7506 | AB7508
Concealed Anti-Friction Bearing - Heavy Weight
Steel with steel pin (ANSI A8511)

AB8506 | AB8508
Concealed Anti-Friction Bearing - Heavy Weight
Brass with stainless steel pin (ANSI A2511) or stainless steel with stainless steel pin (ANSI A5511)

- Non-removable pin standard with flush pin and plug
- Handed
- Two anchor leaves
- Must be used with one pair of heavy weight, full mortise hinges (AB750 or AB850) - sold separately
- For use on heavy weight doors receiving high frequency use
- AB7506 is for square edge doors and AB7508 is for beveled edge doors
- AB8506 is for square edge doors and AB8508 is for beveled edge doors

Hinge Size		Gauge of Metal	Hole Count	Screw Size	
Inches	mm			Machine	Wood
5 x 4-1/2	127 x 114	0.190	18	1/2 x 12-24	1-1/4 x 12



AB7507 | AB7509
Concealed Anti-Friction Bearing - Heavy Weight
Steel with steel pin (ANSI A8511)

AB8507 | AB8509
Concealed Anti-Friction Bearing - Heavy Weight
Brass with stainless steel pin (ANSI A2511) or stainless steel with stainless steel pin (ANSI A5511)

- Non-removable pin standard with flush pin and plug
- Handed
- Two anchor leaves
- Must be used with one pair of heavy weight, full mortise hinges (AB750 or AB850) - sold separately
- For use on heavy weight doors receiving high frequency use and when concealed door closer is used
- AB7507 is for square edge doors and AB7509 is for beveled edge doors
- AB8507 is for square edge doors and AB8509 is for beveled edge doors

Hinge Size		Gauge of Metal	Hole Count	Screw Size	
Inches	mm			Machine	Wood
5 x 4-1/2	127 x 114	0.190	15	1/2 x 12-24	1-1/4 x 12

FIVE KNUCKLE HINGES



BB1160
Ball Bearing - Heavy Weight
Steel with steel pin (ANSI A8511)

BB1190
Ball Bearing - Heavy Weight
Brass with stainless steel pin (ANSI A2511) or stainless steel with stainless steel pin (ANSI A5511)

- Four ball bearings
- Non-removable pin standard with button tip and plug
- Handed
- One anchor leaf (frame)
- Must be used with one pair of heavy weight, full mortise hinges (BB1168 or BB1199) - sold separately
- For use on heavy weight doors receiving high frequency use

Hinge Size		Gauge of Metal	Hole Count	Screw Size	
Inches	mm			Machine	Wood
5 x 4-1/2	127 x 114	0.190	12	1/2 x 12-24	1-1/4 x 12



BB1162 | BB1166
Ball Bearing - Heavy Weight
Steel with steel pin (ANSI A8511)

BB1192 | BB1196
Ball Bearing - Heavy Weight
Brass with stainless steel pin (ANSI A2511) or stainless steel with stainless steel pin (ANSI A5511)

- Four ball bearings
- Non-removable pin standard with button tip and plug
- Handed
- Two anchor leaves
- Must be used with one pair of heavy weight, full mortise hinges (BB1168 or BB1199) - sold separately
- For use on heavy weight doors receiving high frequency use
- BB1162 is for square edge doors and BB1166 is for beveled edge doors
- BB1192 is for square edge doors and BB1196 is for beveled edge doors

Hinge Size		Gauge of Metal	Hole Count	Screw Size	
Inches	mm			Machine	Wood
5 x 4-1/2	127 x 114	0.190	18	1/2 x 12-24	1-1/4 x 12



BB1165 | BB1167
Ball Bearing - Heavy Weight
Steel with steel pin (ANSI A8511)

BB1195 | BB1197
Ball Bearing - Heavy Weight
Brass with stainless steel pin (ANSI A2511) or stainless steel with stainless steel pin (ANSI A5511)

- Four ball bearings
- Non-removable pin standard with button tip and plug
- Handed
- Two anchor leaves
- Must be used with one pair of heavy weight, full mortise hinges (BB1168 or BB1199) - sold separately
- For use on heavy weight doors receiving high frequency use and when concealed door closer is used
- BB1165 is for square edge doors and BB1167 is for beveled edge doors
- BB1195 is for square edge doors and BB1197 is for beveled edge doors

Hinge Size		Gauge of Metal	Hole Count	Screw Size	
Inches	mm			Machine	Wood
5 x 4-1/2	127 x 114	0.190	15	1/2 x 12-24	1-1/4 x 12

ARCHITECTURAL HINGES

REINFORCING



251
Full Surface
For 3-1/2" (89 mm) wide hinge
Handed

252
Full Surface
For 4" (102 mm) wide hinge
Non-handed

253
Full Surface
For 4-1/2" (114 mm) wide hinge
Non-handed

254
Full Surface
For 5" (127 mm) wide hinge
Handed

Product	Butt Hinge Width		Projection*		Door Thickness	
	Inches	mm	Inches	mm	Inches	mm
251	3-1/2	89	5/8	16	1-3/8	35
252	4	102	1/2	12.5	1-3/4	45
253	4-1/2	114	3/4	19	1-3/4	45
254	5	127	1	25	1-3/4	45

*Projection from centerline of pivot to face of door.

Gauge of Metal	Screw Size	
	Machine	Wood
0.187	3/4 x 1/4-20	1-1/4 x 14

BALL AND THRUST BEARING - HEAVY WEIGHT



495
Top
Forged bronze (ANSI C07162)



496
Intermediate
Forged bronze (ANSI C07321)

497
Bottom
Forged bronze (ANSI C07131)



- 3/4" (19 mm) offset
- Two knuckle
- For doors up to and including 3'0" x 8'0" (912 mm x 2438 mm) weighing maximum of 350 pounds, apply all three pivots 495, 496, 497
- For doors over 3'6" (1067 mm) up to 4'0" (1219 mm) in width, add one additional intermediate pivot, 496
- For each additional 12" (305 mm) in door height over 8'0" (2438 mm) add one intermediate pivot, 496

Product	Hole Count	Screw Size	
		Machine	Wood
495	8	5/8 x 1/4-20	1-1/2 x 14
496	10	5/8 x 1/4-20	1-1/2 x 14
497	8	5/8 x 1/4-20	1-1/2 x 14

SINGLE ACTING - STANDARD WEIGHT



Top



Bottom

500
Rack and Pinion

- ANSI A2793
- Pivot opens door to 105º maximum
- Non-handed
- Concealed
- Adjustable alignment

Designed for:
- 1-3/4" (45 mm) thick door
- Maximum weight not over 80 pounds
- Not to exceed 3' (914 mm) wide and 7' (2134 mm) high
- Frame not to have door stop at head and pivot jamb
- Consult engineering for doors other than 1-3/4" (44 mm)

Screw Size	
Machine	Wood
Upon request	1-1/4 x 12 FH*

*Plastic cinch anchors

SINGLE ACTING - EXTRA HEAVY WEIGHT



Top



Bottom

551
Extra Heavy Duty Rack and Pinion

- ANSI A2792
- Pivot opens door to 105º maximum
- Non-handed
- Concealed
- Adjustable alignment

Designed for:
- 1-3/4" (45 mm) thick door
- Maximum weight not over 180 pounds
- Not to exceed 3' (914 mm) wide and 7' (2134 mm) high
- Frame not to have door stop at head and pivot jamb
- Consult engineering for doors other than 1-3/4" (44 mm)

Screw Size	
Machine	Wood
Upon request	1-1/4 x 12 FH*

*Plastic cinch anchors

SINGLE ACTING - HEAVY WEIGHT



Top



Bottom

550
Heavy Duty Rack and Pinion

- ANSI A2792
- Pivot opens door to 105º maximum
- Non-handed
- Concealed
- Adjustable alignment

Designed for:
- 1-3/4" (45 mm) thick door
- Maximum weight not over 150 pounds
- Not to exceed 3' (914 mm) wide and 7' (2134 mm) high
- Frame not to have door stop at head and pivot jamb
- Consult engineering for doors other than 1-3/4" (44 mm)

Screw Size	
Machine	Wood
Upon request	1-1/4 x 12 FH*

*Plastic cinch anchors

HEAVY WEIGHT





615
For Frameless Openings
ANSI A8782

- For use on doors up to 150 lbs and 1-3/8" - 1-3/4" (35 mm - 44 mm) thick
- Pivot opens door to 180º maximum
- Screw slots for horizontal or vertical adjustment

Wood Screw Size
12 x 1-1/4

ARCHITECTURAL HINGES

CAMTROL DOUBLE ACTING - HOSPITAL SET - RESCUE HARDWARE

The following pivots are for use on:

- Wood or metal doors up to 135 lbs
- Doors not over 3'6" x 7' (1067 mm x 2134 mm)
- Wood or metal frames

Mortise Application in Wood Floors


Head


Floor


Release

510
Head and Floor Pivots
ANSI A5702
For use with square edge doors on hinge side

600
Head and Floor Pivots with Door Release (Set)
ANSI A5702

Mortise Application in Masonry Floors


Head


Floor


Release

511
Head and Floor Pivots
ANSI A5702
For use with square edge doors on hinge side

611
Head and Floor Pivots with Door Release (Set)
ANSI A5702

Surface Application in Masonry Floors


Head


Floor


Release

512
Head and Floor Pivots
ANSI A5702
For use with square edge doors on hinge side

612
Head and Floor Pivots with Door Release (Set)
ANSI A5702

Door Release



610
Door Release
ANSI A1882

Item No	Anchor Housing	
	Inches	mm
510 & 600	3-7/8 x 1-7/8 x 7/8	98 x 48 x 22
511 & 611	3-7/8 x 1-1/4 x 7/8	98 x 32 x 22
512 & 612	3-7/8 x 1-1/4 x 7/8	98 x 32 x 22

Door Mount Brackets Screw Size		Head Cam Box Screw Size		Floor Cam Box Screw Size	
Machine	Wood	Machine	Wood	Machine	Wood
1/2 x 12-24 FH	1-1/4 x 12 FH	1-1/4 x 12-24 FH	1-1/2 x 12-24 FH	-	1-1/2 x 12 FH

610					
Mortise Depth		Face Plate		Screw Size	
Inches	mm	Inches	mm	Machine	Wood
1-13/16	46	1-1/2 x 4-1/2 x 3/16	38 x 114 x 5	1/2 x 12-24 FH	1-1/4 x 12 FH

*Plastic cinch anchors

DOUBLE LIPPED STRIKE



Center Hung

451
Center Hung Doors
Brass
ANSI A1882



1/8" (3.2 mm) Inset Hung

452
Center Hung Doors
Brass
ANSI A1882

453
1/8" (3.2 mm) Inset Hung Doors
Brass
ANSI A1882

454
1/8" (3.2 mm) Inset Hung Doors
Brass
ANSI A1882

- To be used with Hager 600, 611, and 612 pivots and door release - this allows doors to be opened in both directions without damage to frame
- Standard latchbolt cutout is 1-1/4" x 11/16" (32 mm x 17 mm)
- Standard strike plates are optimized for cylindrical locks/latches mounted on 1-3/4" thick doors
- Mortise lock applications require special latch cutout location (consult specific manufactures for variations of cutout dimensions)
- For use with Camtrol double acting pivot

Product	Face Plate		Gauge of Metal	Hole Count	Screw Size
	Inches	mm			
451	5-3/4 x 2-3/4	146 x 70	0.093	6	1/2 x 8-32 FH
452	6-3/4 x 2-3/4	171 x 70	0.093	6	1/2 x 8-32 FH
453	5-3/4 x 2-3/4	146 x 70	0.093	6	1/2 x 8-32 FH
454	6-3/4 x 2-3/4	171 x 70	0.093	6	1/2 x 8-32 FH

COMBINATION RESCUE DOOR STOP AND TWO WAY STRIKE PLATE



Center Hung

455
Center Hung Doors
Brass
ANSI A1882



1/8" (3.2 mm) Inset Hung

456
Center Hung Doors
Brass
ANSI A1882

457
1/8" (3.2 mm) Inset Hung Doors
Brass
ANSI A1882

458
1/8" (3.2 mm) Inset Hung Doors
Brass
ANSI A1882

- Handed
- To be used with Hager 510, 511, and 512 pivots
- Door release allows doors to be opened in both directions without damage to frame
- Standard latchbolt cutout is 1-1/4" x 11/16" (32 mm x 17 mm).
- Standard strike plates are optimized for cylindrical locks/latches mounted on 1-3/4" thick doors
- Mortise lock applications require special latch cutout location (consult specific manufactures for variations of cutout dimensions)

Product	Face Plate		Gauge of Metal	Hole Count	Screw Size
	Inches	mm			
455	5-3/4 x 2-3/4	146 x 70	0.093	6	1/2 x 8-32 FH
456	6-3/4 x 2-3/4	171 x 70	0.093	6	1/2 x 8-32 FH
457	5-3/4 x 2-3/4	146 x 70	0.093	6	1/2 x 8-32 FH
458	6-3/4 x 2-3/4	171 x 70	0.093	6	1/2 x 8-32 FH

ARCHITECTURAL HINGES

THREE KNUCKLE HINGES



IHTHB953
Full Mortise - Concealed Bearings - Heavy Weight

- Stainless steel with stainless steel pin (ANSI A5111)
- Two concealed maintenance free bearings
- Investment cast
- Security torx screws
- Hospital tip and reverse security stud are standard
- Additional options include electric monitor (EMN), electric through wire (ETW), and electric through wire and monitor (ETM)
- For use on heavy weight doors ranging from 250-600 lbs

Hinge Size		Pin Diameter		Gauge of Metal	Hole Count	Machine Screw Size
Inches	mm	Inches	mm			
4-1/2 x 4-1/2	114 x 114	0.370	9	0.187	8	1/2 x 1/4-20 Torx



IHTAB750
Institutional Prison Hinge
Steel with stainless steel pin (ANSI A8111)

IHTAB850
Institutional Prison Hinge
Stainless steel with stainless steel pin (ANSI A5111)

- Concealed maintenance free bearings
- Welded hospital tips and plug
- Welded knuckles
- Additional options include security torx screws, electric monitor (EMN), electric through wire (ETW), electric through wire and monitor (ETM), reverse safety stud (RSS), and safety stud (SS)
- For use on heavy weight doors ranging from 200-300 lbs

Hinge Size		Pin Diameter		Gauge of Metal	Hole Count	Machine Screw Size
Inches	mm	Inches	mm			
4-1/2 x 4-1/2	114 x 114	0.322	8	0.187	8	1/2 x 12-24 FPHM
5 x 4-1/2	127 x 114	0.322	8	0.190	8	1/2 x 12-24 FPHM
5 x 5	127 x 127	0.322	8	0.190	8	1/2 x 12-24 FPHM



990
Full Surface Heavy Weight Prison Utility Hinge

- Steel with steel pin (ANSI A8383)
- Plain bearing
- Welded pin
- Prime painted
- Torx button head bolt
- Two hinges support the weight of 150 lbs
- For use on small doors, access doors, and observation shutters

Hinge Size		Pin Diameter		Gauge of Metal	Hole Count	Machine Screw Size
Inches	mm	Inches	mm			
3 x 4	78 x 102	0.437	11	0.203	4	1 x #16-3/8 Torx



992
Full Surface Heavy Weight Prison Pass Through Hinge with Stop

- Steel with steel pin (ANSI A8383)
- Plain bearing
- Welded pin
- Prime painted
- Torx button head bolt
- Two hinges support the weight of 150 lbs
- For use on small doors, access doors, and observation shutters

Hinge Size		Pin Diameter		Gauge of Metal	Hole Count	Machine Screw Size
Inches	mm	Inches	mm			
3 x 4	78 x 102	0.437	11	0.203	4	1 x #16-3/8 Torx



100
Set Screw Set

- 1/8" x 10-32 set screws (quantity 300)
- 3/16" x 10-32 set screws (quantity 300)
- 3/32" hex key
- Hand tap "T" wrench
- 10-32 tap
- #21 drill bit
- This set converts removable pin hinges to non-removable pin (set screw in barrel) hinges as required



263
Sleeve Bolt

- Aluminum
- 9/16" (14 mm) head sex nut with 1/4" - 20 internal thread
- Knurled shoulder prevents bolt from turning
- Drill a 3/8" (9.5 mm) hole and insert the sex bolt
- Available in US2C finish only (compatible with US26D, US28, or US32D)
- For use in securing push bars, exposed door closers and other fixtures to doors 1-3/4" (45 mm) thick or greater



265
Molly Jack Nut (8S JN)

- Aluminum
- For use with the Hager reinforcing pivot hinges (250 Series)
- Easily installed by drilling a 7/16" (11.1 mm) pilot hole and following the instructions provided with each product
- For use in properly anchoring various products to hollow metal frames 3/16" - 3/8" (4.8 mm - 9.5 mm) thick



305
Hinge Reinforcement Plate

- Steel
- For metal frames
- Four (4) holes

Hinge Size		Width		Total Length	
Inches	mm	Inches	mm	Inches	mm
4-1/2	114	1.5	38	10	254
Offset		Gauge of Metal		Tapped for Screw	
0.074		0.154		12-24	



417
Back Plate

- Steel
- For wood doors
- For full or half surface hinges

Length		Width		Gauge of Metal
Inches	mm	Inches	mm	
4-1/2	114	1-13/16	46	0.074
5	127	2-1/8	54	0.089
Number of Holes		Machine Screw Size		
3		1/2 x 12-24		
4		1/2 x 12-24		

ARCHITECTURAL HINGES

DECORATOR TIP KITS



1712
Ball Standard Weight

1713
Ball Heavy Weight



1716
Acorn Standard Weight

1717
Acorn Heavy Weight



1722
Steeple Standard Weight

1723
Steeple Heavy Weight



1728
Urn Standard Weight

1729
Urn Heavy Weight

- Standard weight hinge size - 3-1/2" (89 mm), 4" (102 mm), 4-1/2" (114 mm), 5" (127 mm), 6" (152 mm)
- Heavy weight hinge size - 4-1/2" (114 mm), 5" (127 mm)
- Solid brass with stainless steel pin
- Conversion tips and pins for architectural grade hinges