



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 1³/₄" (91x 213 x 4.4 cm) door.

Round corners are available in 1/4" (standard) or 5/8" 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, 4¹/₂" x 4¹/₂" (114 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, 4¹/₂" (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 x 127 mm), US32D

Standard Weight — Ball Bearing

Example — BB1279, 4¹/₂" x 4¹/₂" (114 x 114 mm), US26D

Standard Weight — Plain Bearing

Example — 1279, 4" x 4" (102 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.



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 1999 Edition, listed below.

Doors up to 60" (1.52 m) in height shall be provided with two hinges and an additional hinge for each additional 30" (0.76 m). Where spring hinges are used, at least two shall be provided.

Table 2-4.3.1 Builders Hardware Mortise, Surface, and Full Length Hinges, Pivots or Spring Hinges for Swinging Doors

Door Rating (hr)	Maximum Door Size		Minimum Hinge Size		Type Hinge
	Width ft. (m)	Height ft. (m)	Height in. (mm)	Thickness in. (mm)	
<i>For 1³/₄" (44.5 mm) or thicker doors</i>					
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)
<i>For 1³/₈" (44.5 mm) doors</i>					
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	3 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)

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.
2. Hinges 4¹/₂" (114mm) high, 0.180" (4.57mm) 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.



Architectural Hinges

General Information

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.

HEIGHT OF HINGE

THICKNESS OF DOOR	WIDTH OF DOOR	HEIGHT OF HINGE
1 3/8" (35 mm) Door	To 32" (81 cm)	3 1/2" (89 mm)
1 3/8" (35 mm) Door	32" to 36" (81 to 91 cm)	4" (102 mm)
1 3/4" (45 mm) Door	To 36" (91 cm)	4 1/2" (114 mm)
1 3/4" (45 mm) Door	36" to 48" (91 to 122 cm)	5" (127 mm)
1 3/4" (45 mm) Door	Over 48" (122 cm)	6" (152 mm)
2", 2 1/4" & 2 1/2" Door (51, 57 & 64 mm)	To 42" (107 cm)	5" Heavy Weight (127 mm)
2", 2 1/4" & 2 1/2" Door (51, 57 & 64 mm)	Over 42" (107 cm)	6" Heavy Weight (152 mm)

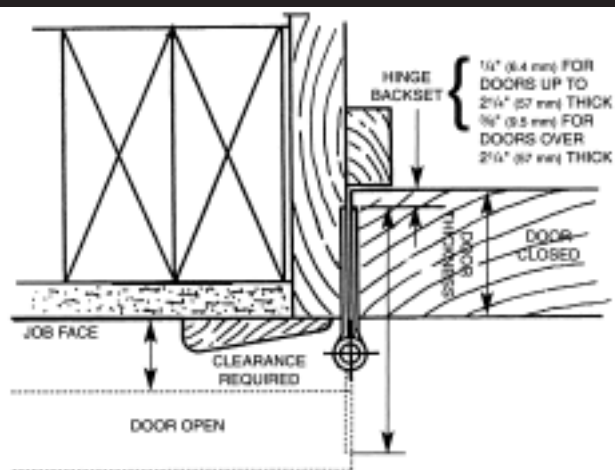
There are three dimensions to know in order to determine the minimum width of the hinge: door thickness, backset and clearance required.

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, minus the backset, times two, plus 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 x 152 mm)) this is referred to as a Wide Throw Hinge. This would apply only to full mortise hinges.

MINIMUM WIDTH OF HINGE



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)	3 1/2" (89 mm)
		1 3/4" (45 mm)	4" (102 mm)
1 3/4" (45 mm)	1/4" (6.4 mm)	1" (25 mm)	4" (102 mm)
		1 1/2" (38 mm)	4 1/2" (114 mm)
		2" (51 mm)	5" (127 mm)
		3" (76 mm)	6" (152 mm)
2" (51 mm)	1/4" (6.4 mm)	1" (25 mm)	4 1/2" (114 mm)
		1 1/2" (38 mm)	5" (127 mm)
		2 1/2" (64 mm)	6" (152 mm)
2 1/2" (64 mm)	3/8" (9.5 mm)	1" (25 mm)	5" (127 mm)
		2" (51 mm)	6" (152 mm)

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" (152 cm)	2 Hinges
Over 60" (152 cm) and not over 90" (229 cm)	3 Hinges
Over 90" (229 cm) and not over 120" (305 cm)	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.



HINGE TYPE				
FULL MORTISE HINGE LENGTH	FREQUENCY OF USE	MAXIMUM 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.

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.

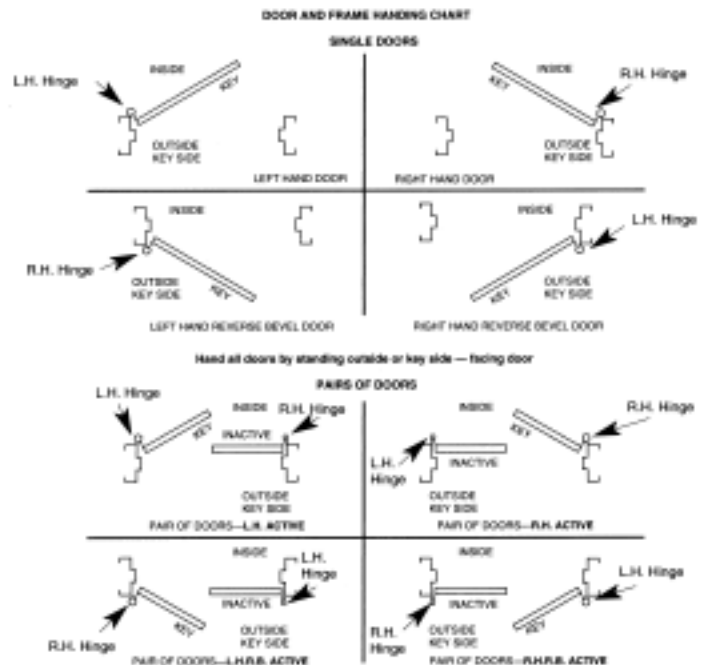
Antimicrobial Protection

Hager Companies' full line of US32D Stainless Steel Architectural Grade Hinges are available with AgION™ antimicrobial protection.

Hager Companies uses a powder coat process to apply the 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.

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 toward (out of the area) 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).



Architectural Hinges

General Information

DETERMINE PIN AND TIP STYLE

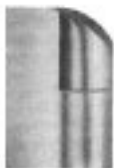
- The standard in the industry is the Flat Button Tip for 5-knuckle hinges.
- The flush/concealed tip is standard on 3-knuckle. If button tip is required, specify Exposed Tip (ET).
- Hospital tips (HT) are used primarily for security areas in hospitals and in prisons. This tip prevents hanging any objects 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 Type
(HT)



Acorn Tip



Ball Tip



Steeple Tip



Urn Tip



Fast Riveted Pin
(FRP)

ELECTRIC HINGES

The electrified 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.

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.

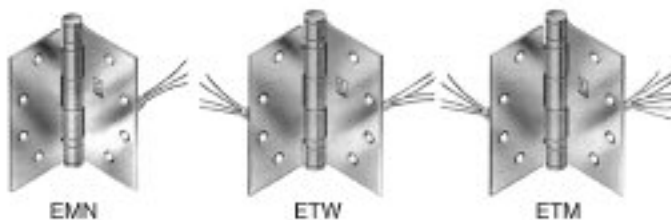
It is recommended that the **CENTER HINGE LOCATION** be used with all electrically modified hinges.

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



AIR TRANSFER HINGE

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.



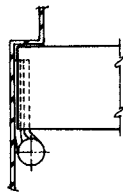
ATH
Air Transfer Hinge

SPECIAL HINGES

Raised Barrel

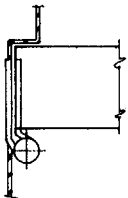
This option is used when the door is set back into the frame. The hinge knuckle is offset to allow it to clear the obstruction of the frame. There are three different types of applications:

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.

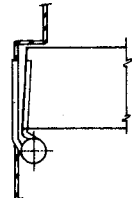


Jamb Surface Mount

The **Raised Barrel for Square Edged door (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 $\frac{3}{8}$ ". Depending on the depth of the frame, all three of these applications may restrict the degree of opening.



Raised Barrel Square



Raised Barrel Beveled

SPECIAL HINGES (cont.)

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°.



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" (91 x 213 cm). Hager spring hinges are fire rated up to a 4'0" x 8'0" (122 x 244 cm) when 4 springs are used. Spring hinges must be used with ball bearing hinges. Do not use plain bearing hinges with spring hinges.



Detention

Investment cast full mortise hinges (IHTHB953 Series) are the standard 4 $\frac{1}{2}$ " x 4 $\frac{1}{2}$ " (114 x 114 cm) 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.





Architectural Hinges

General Information

SPECIAL HINGES (cont.)

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.



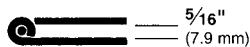
SWAGING

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 $\frac{5}{16}$ " (7.9 mm). This would allow heat and air-conditioning to escape, not to mention the unsightly gap between the door and frame.

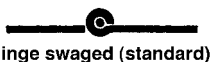
The swaging on standard weight and heavy weight full mortise hinges provides $\frac{1}{16}$ " (1.6 mm) clearance between the leaves when the leaves are in the closed position. Full mortise hinges used on beveled doors will affect lockside clearance, especially for wide throw applications.



Hinge not swaged



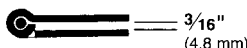
Hinge not swaged



Hinge swaged (standard)



Hinge swaged (standard)



Hinge with one leaf swaged



Hinge with one leaf swaged flat

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.

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.



The safety stud (SH) $\frac{3}{16}$ " (4.8mm) 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.



The reverse security stud (RSS) $\frac{7}{16}$ " (11.1mm) 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.





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

There is little care or maintenance that needs to be performed on hinges providing they are specified correctly for the proper application. **Hospital Tip hinges need to be greased every six to twelve months.** Other hinges require only occasional maintenance. Too often hinges are under specified and this causes problems for other hardware on the doors as well as for the hinges.

Care and maintenance of clear protective coatings or other organic finishing applications may require different methods of cleaning and care. As an example, all hardware finishes should not be cleaned with solvents, or abrasives; surfaces should periodically be cleaned with a mild, non-abrasive soap and dried lightly with a soft, clean cloth. The type of base material and finishing techniques must be considered when applying any cleaning or preservative method. Contact Hager Companies Customer Service Department for further information on the care of hardware finishes.



Architectural Hinges

Basic Hinge Selection

Hinge Selector

HINGE DESCRIPTION	Type of Door	Full Mortise Hollow Metal or Wood	Half Mortise Hollow Metal or Wood	Full Surface Composite or Tubular Steel	Half Surface Composite or Wood
	Type of Frame	Hollow Metal or Wood	Channel Iron	Channel Iron	Hollow Metal or Wood
Tri-Con Std. Wt. PB, Steel		700			
Tri-Con Std. Wt. PB, Brass/Stainless Steel		800			
Tri-Con Std. Wt. AB, Steel		AB700	AB701	AB702	AB703
Tri-Con Std. Wt. AB, Brass/Stainless Steel		AB800	AB801	AB802	AB803
Tri-Con Hvy. Wt. AB, Steel		AB750	AB751	AB752	AB753
Tri-Con Hvy. Wt. AB, Brass/Stainless Steel		AB850	AB851	AB852	AB853
Spring Hinge Std. Wt., Steel		1250			
Std. Wt., PB, Steel		1279	1129		1173
Std. Wt., PB, Brass/Stainless Steel		1191			
2BB, Std. Wt., Steel		BB1279	BB1129	BB2171	BB1173
2BB, Std. Wt., Brass/Stainless Steel		BB1191	BB1109	BB2110	BB2112
4BB, Hvy Wt., Steel		BB1168	BB1138	BB2168/BB2169	BB1163
4BB, Hvy Wt., Brass/Stainless Steel		BB1199	BB2098	BB2108/BB2109	BB2113
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				AB7523/BB1266	AB7534/BB1270
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 Type, use Prefix "HT" on above number. Hospital Type 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 special drawings for the appropriate application.



Two Knuckle



Plain Bearing - Standard Weight

For use on medium weight doors or doors requiring low frequency service

920 Steel with Steel pin
- ANSI A8133

- Handed
- With door closer use ball bearing hinge

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



Concealed Anti-Friction Bearing - Standard Weight

For use on medium weight doors or doors requiring medium frequency service

AB920 Steel with Steel pin
- ANSI A8112

AB923 Brass with Stainless Steel pin
- ANSI A2112
Stainless Steel with Stainless Steel pin
- ANSI A5112

- Handed

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



Concealed Anti-Friction Bearing - Heavy Weight

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

AB930 Steel with Steel pin
- ANSI A8111

AB933 Brass with Stainless Steel pin
- ANSI A2111
Stainless Steel with Stainless Steel pin
- ANSI A5111

- Handed

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



Plain Bearing - Standard Weight

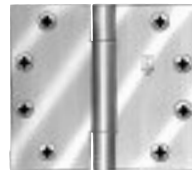
For use on medium weight doors or doors requiring low frequency service

700 Steel with Steel pin
- ANSI A8133

800 Brass with Stainless Steel pin
- ANSI A2133
Stainless Steel with Stainless Steel pin
- ANSI A5133

- Non-rising removable pin with flush pin and plug
- With door closer use ball bearing hinge

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



Concealed Anti-Friction Bearing - Standard Weight

For use on medium weight doors or doors requiring medium frequency service

AB700 Steel with Steel pin
- ANSI A8112

AB800 Brass with Stainless Steel pin
- ANSI A2112
Stainless Steel with Stainless Steel pin
- ANSI A5112

- Non-rising removable pin with flush pin and plug
- Available with SecureCoat® Lifetime finish (US3SC) – AB800 only

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

Full Mortise

Three Knuckle



Concealed Anti-Friction Bearing - Standard Weight - Wide Throw

For use on medium weight doors or doors requiring medium frequency service

AB700 Wide Throw

Steel with Steel pin
- ANSI A8112

AB800 Wide Throw

Brass with Stainless Steel pin
- ANSI A2112
Stainless Steel with Stainless Steel pin
- ANSI A5112

- Non-rising removable pin with flush pin and plug
- Available with SecureCoat® Lifetime finish (US3SC) – AB800 only

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

Three Knuckle



Concealed Anti-Friction Bearing - Heavy Weight - Wide Throw

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

AB750 Wide Throw

Steel with Steel pin
- ANSI A8111

AB850 Wide Throw

Brass with Stainless Steel pin
- ANSI A2111
Stainless Steel with Stainless Steel pin
- ANSI A5111

- Non-rising removable pin with flush pin and plug

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



Concealed Anti-Friction Bearing - Heavy Weight

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

AB750 Steel with Steel pin
- ANSI A8111

AB850 Brass with Stainless Steel pin
- ANSI A2111
Stainless Steel with Stainless Steel pin
- ANSI A5111

- Non-rising removable pin with flush pin and plug
- Available with SecureCoat® Lifetime finish (US3SC) – AB850 only

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



Five Knuckle



Plain Bearing - Standard Weight

For use on medium weight doors or doors requiring low frequency service

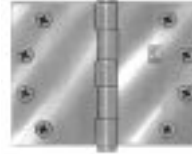
1191 Brass with Stainless Steel pin
- ANSI A2133
Stainless Steel with Stainless Steel pin
- ANSI A5133

1279 Steel with Steel pin
- ANSI A8133

- Non-rising removable pin with button tip and plug
- With door closer use ball bearing hinge

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

Five Knuckle



Plain Bearing - Standard Weight - Wide Throw

For use on medium weight doors or doors requiring low frequency service

1191 Wide Throw
Brass with Stainless Steel pin
- ANSI A2133
Stainless Steel with Stainless Steel pin
- ANSI A5133

1279 Wide Throw
Steel with Steel pin
- ANSI A8133

- Non-rising removable pin with button tip and plug
- With door closer use ball bearing hinge

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



Concealed Bearing - Standard Weight

For use on medium weight doors or doors requiring medium frequency service

CB1191 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



Architectural Hinges

Full Mortise

Five Knuckle



Ball Bearing - Standard Weight

For use on medium weight doors or doors requiring medium frequency service

***BB1191** Brass with Stainless Steel pin
- ANSI A2112
Stainless Steel with Stainless Steel pin
- ANSI A5112*

BB1279 Steel with Steel pin
- ANSI A8112

- Two ball bearings
- Non-rising removable pin with button tip and plug



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

Five Knuckle



Ball Bearing - Heavy Weight

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

BB1168 Steel with Steel pin
- ANSI A8111

BB1199 Brass with Stainless Steel pin
- ANSI A2111
Stainless Steel with Stainless Steel pin
- ANSI A5111

- Four ball bearings
- Non-rising removable pin with button tip and plug

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 114	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



Ball Bearing - Standard Weight - Wide Throw

For use on medium weight doors or doors requiring medium frequency service

BB1191 Wide Throw
Brass with Stainless Steel pin
- ANSI A2112
Stainless Steel with Stainless Steel pin
- ANSI A5112

BB1279 Wide Throw
Steel with Steel pin
- ANSI A8112

- Two ball bearings
- Non-rising removable pin with button tip and plug

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



Ball Bearing - Heavy Weight - Wide Throw

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

BB1168 Wide Throw
Steel with Steel pin
- ANSI A8111

BB1199 Wide Throw
Brass with Stainless Steel pin
- ANSI A2111
Stainless Steel with Stainless Steel pin
- ANSI A5111

- Four ball bearings
- Non-rising removable pin with button tip and plug

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

Architectural Hinges



Full Mortise - Exposed Electric

Three Knuckle



Electric Contact - E2

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	48 VDC	
Amperes	3.5 Amps	CONTINUOUS
	16.0 Amps	PULSE

Five Knuckle



Electric Contact - E2

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	48 VDC	
Amperes	3.5 Amps	CONTINUOUS
	16.0 Amps	PULSE



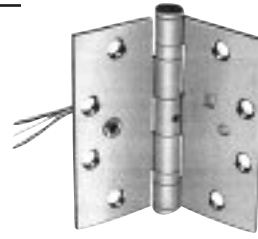
Electric Switch - E1S

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	



Electric Switch - E1S

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	



Electric Contact/Switch - E2/E1S

Available on architectural grade ball bearing and anti-friction bearing

- A combination of two contacts and one switch
- 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	48 VDC	
Amperes	3.5 Amps	CONTINUOUS
	16.0 Amps	PULSE

Switch Maximum Electrical Rating	
24 VDC @ .250 Amps	



Electric Contact/Switch - E2/E1S

Available on architectural grade ball bearing and anti-friction bearing

- A combination of two contacts and one switch
- 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	48 VDC	
Amperes	3.5 Amps	CONTINUOUS
	16.0 Amps	PULSE

Switch Maximum Electrical Rating	
24 VDC @ .250 Amps	



Architectural Hinges

Full Mortise - Concealed Electric

Three Knuckle

Concealed Electric

Available on architectural grade ball bearing and anti-friction bearing

- Available in Steel, Brass and Stainless Steel
- 28 gauge wire
- Standard sizes available 4" through 8"
- Hinge pins are not field removable. NRP variation is not available.



Electric Monitor Only - EMN

- 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

Five Knuckle

Concealed Electric

Available on architectural grade ball bearing and anti-friction bearing

- Available in Steel Brass, and Stainless Steel
- 28 gauge wire
- Standard sizes available 4" through 8"
- Hinge pins are not field removable. NRP variation is not available.



Electric Monitor Only - EMN

- 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



Electric Through-Wire Only - ETW

- Low voltage electric current transfer capability only
- 4, 6, 8, 10 or 12 continuous electric conductors

Wire Maximum Electrical Rating

Volts	48 VDC	
Amperes	3.5 Amps	CONTINUOUS
	16.0 Amps	PULSE



Electric Through-Wire Only - ETW

- Low voltage electric current transfer capability only
- 4, 6, 8, 10 or 12 continuous electric conductors

Wire Maximum Electrical Rating

Volts	48 VDC	
Amperes	3.5 Amps	CONTINUOUS
	16.0 Amps	PULSE



Electric Through-Wire with Monitoring - ETM

- 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)

Wire Maximum Electrical Rating

Volts	48 VDC	
Amperes	3.5 Amps	CONTINUOUS
	16.0 Amps	PULSE

Switch Maximum Electrical Rating

30 VDC @ .500 Amps



Electric Through-Wire with Monitoring - ETM

- 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)

Wire Maximum Electrical Rating

Volts	48 VDC	
Amperes	3.5 Amps	CONTINUOUS
	16.0 Amps	PULSE

Switch Maximum Electrical Rating

30 VDC @ .500 Amps

Architectural Hinges



Full Mortise - Air Transfer

Three Knuckle



Concealed Air Transfer (ATH) - Standard Weight

Available on architectural grade ball bearing and anti-friction bearing full mortise

AB700 Steel

AB800 Stainless Steel, Brass



Concealed Air Transfer (ATH) - Heavy Weight

Available on architectural grade ball bearing and anti-friction bearing full mortise

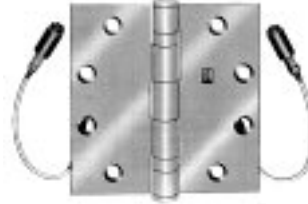
AB750 Steel

AB850 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

- ATH for doors which require the transfer of compressed air
- This hinge uses 5/32" (4 mm) plastic air tubing, has quick-connect fittings, and is 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

Five Knuckle

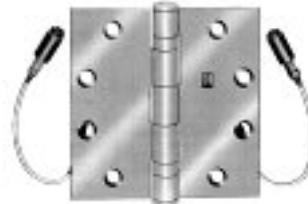


Concealed Air Transfer (ATH) - Standard Weight

Available on architectural grade ball bearing and anti-friction bearing full mortise

BB1191 Stainless Steel, Brass

BB1279 Steel



Concealed Air Transfer (ATH) - Heavy Weight

Available on architectural grade ball bearing and anti-friction bearing full mortise

BB1168 Steel

BB1199 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

- ATH for doors which require the transfer of compressed air
- This hinge uses 5/32" (4 mm) plastic air tubing, has quick-connect fittings and is 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



Mortar Box

For use with Hager Electric or Air Transfer Hinges

430 Galvanized Steel 0.040 (1 mm)

- Dimension: 9" (2.29 mm) length with tabs
7" (1.78 mm) inside
1 3/4" x 1 3/4" (45 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

Full Mortise - Spring



Single Acting

For automatic closing of door. Meets codes for hotels, motels, institutions and commercial buildings



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 Spring Hinge Set

Steel with Steel components
- ANSI K81071F
Two each 1250 and one each AB700

1256 Square Corner Spring Hinge Set

Steel with Steel components
- ANSI K81071F
Two each 1250 and one each BB1279

- 1250 approved for use on 4' 0" x 8' 0" (122 x 244 cm) 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

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
1251	3 1/2 x 3 1/2	70	2	1
1252	3 1/2 x 3 1/2	90	3	---
For Use on 1 3/4" (45 mm) Door				
1250	4 x 4	60	1	2
1251	4 x 4	85	2	1
1252	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

For automatic opening of door. Meets codes for hotels, motels, institutions and commercial buildings

1257 Square Corner

Steel
- ANSI K81071

1258 1/4" Radius

Steel
- ANSI K81071

1259 5/8" Radius

Steel
- ANSI K81071

- 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

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				
1257	3 1/2 x 3 1/2	40	1	2
1258	3 1/2 x 3 1/2	70	2	1
1259	3 1/2 x 3 1/2	90	3	---
For Use on 1 3/4" (45 mm) Door				
1257	4 x 4	60	1	2
1258	4 x 4	85	2	1
1259	4 x 4	110	3	---
1257	4 1/2 x 4 & 4 1/2 x 4 1/2	70	1	2
1258	4 1/2 x 4 & 4 1/2 x 4 1/2	115	2	1
1259	4 1/2 x 4 & 4 1/2 x 4 1/2	150	3	---



Spring - ECCO

Single Acting

For automatic closing of door. Meets codes for hotels, motels, institutions and commercial buildings

EC1105 Steel
- ANSI K81071F



- For use on 1 3/4" 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

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	---



Five Knuckle



Plain Bearing - Standard Weight

For use on medium weight doors or doors requiring low frequency service

EC1100 Steel with Steel pin
- ANSI A8133

EC1100 NRP Steel with Steel pin
- ANSI A8133

EC1101 Stainless Steel with Stainless Steel pin
- ANSI A5133

- Non-rising removable pin with button tip and plug
- With door closer use ball bearing hinge

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



Plain Bearing - Standard Weight

For use on medium weight doors or doors requiring low frequency service

ECRC1100 Steel with Steel pin
- ANSI A8133

- Non-rising removable pin with button tip and plug
- Round corner with 1/4" radius standard
- With door closer use ball bearing hinge

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



Ball Bearing - Standard Weight

For use on medium weight doors or doors requiring medium frequency service

ECBB1100 Steel with Steel pin
- ANSI A8133

ECBB1100 NRP Steel with Steel pin
- ANSI A8133

ECBB1101 Brass with Stainless Steel pin
- ANSI A5112
Stainless Steel with Stainless Steel pin
- ANSI A2112

ECBB1101 NRP Brass with Stainless Steel pin
- ANSI A5112
Stainless Steel with Stainless Steel pin
- ANSI A2112

- Two ball bearings
- Non-rising removable pin with button tip and plug

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

Five Knuckle



Ball Bearing - Standard Weight

For use on medium weight doors or doors requiring medium frequency service

ECRCBB1100 Steel with Steel pin
- ANSI A8112

- Two ball bearings
- Non-rising removable pin with button tip and plug
- Round corner with 1/4" radius standard

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



Ball Bearing - Heavy Weight

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

ECBB1102 Steel with Steel pin
- ANSI A8111

ECBB1102 NRP Steel with Steel pin
- ANSI A8111

ECBB1103 Brass with Stainless Steel pin
- ANSI A5111
Stainless Steel with Stainless Steel pin
- ANSI A2111

ECBB1103 NRP Brass with Stainless Steel pin
- ANSI A5111
Stainless Steel with Stainless Steel pin
- ANSI A2111

- Four ball bearings
- Non-rising removable pin with button tip and plug

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



Architectural Hinges

Half Mortise

Three Knuckle



Concealed Anti-Friction Bearing - Standard Weight

For use on medium weight hollow metal doors with channel iron frames requiring medium frequency service

AB701 Steel with Steel pin
- ANSI A8212

AB801 Brass with Stainless Steel pin
- ANSI A2212
Stainless Steel with Stainless Steel pin
- ANSI A5212

- Non-rising removable pin with flush pin and plug
- Reversible

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

Five Knuckle



Plain Bearing - Standard Weight

For use on medium weight hollow metal doors with channel iron frames requiring low frequency service

1129 Steel with Steel pin
- ANSI A8233

- Non-rising removable pin with button tip and plug
- Beveled surface leaf
- Not for use with door closer
- Reversible

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

Ball Bearing - Standard Weight

For use on medium weight hollow metal doors with channel iron frames requiring medium frequency service

BB1109 Brass with Stainless Steel pin
- ANSI A2212
Stainless Steel with Stainless Steel pin
- ANSI A5212

BB1129 Steel with Steel pin
- ANSI A8212

- Two ball bearings
- Non-rising removable pin with button tip and plug
- Beveled surface leaf
- Reversible



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

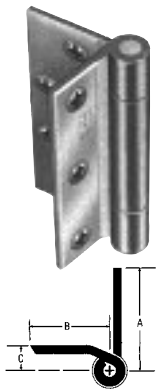
Concealed Anti-Friction Bearing - Heavy Weight

For use on heavy weight hollow metal doors with channel iron frames requiring high frequency service

AB751 Steel with Steel pin
- ANSI A8211

AB851 Brass with Stainless Steel pin
- ANSI A2211
Stainless Steel with Stainless Steel pin
- ANSI A5211

- Non-rising removable pin with flush pin and plug
- Reversible



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 Brass & Steel, 0.190 SS	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



Five Knuckle



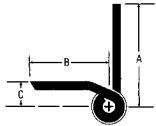
Ball Bearing - Heavy Weight

For use on heavy weight hollow metal doors with channel iron frames requiring high frequency service

BB1138 Steel with Steel pin
- ANSI A8211

BB2098 Brass with Stainless Steel pin
- ANSI A2211
Stainless Steel with Stainless Steel pin
- ANSI A5211

- Four ball bearings
- Non-rising removable pin with button tip and plug
- Beveled surface leaf
- Reversible



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 Brass & Steel; 0.190 SS	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.

Three Knuckle



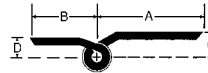
Concealed Anti-Friction Bearing - Standard Weight

For use on medium weight tubular steel doors with channel iron frames requiring medium frequency service

AB702 Steel with Steel pin
- ANSI A8312

AB802 Brass with Stainless Steel pin
- ANSI A2312
Stainless Steel with Stainless Steel pin
- ANSI A5312

- Thru-bolts and grommets for wood door applications
- Beveled surface leaves
- Non-rising removable pin with flush pin and plug
- Reversible



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"		Door 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

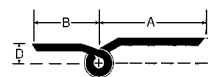
Concealed Anti-Friction Bearing - Heavy Weight

For use on heavy weight hollow metal doors with channel iron frames requiring high frequency service

AB752 Steel with Steel pin
- ANSI A8311

AB852 Brass with Stainless Steel pin
- ANSI A2311
Stainless Steel with Stainless Steel pin
- ANSI A5311

- Thru-bolts and grommets for wood door applications
- Beveled surface leaves
- Non-rising removable pin with flush pin and plug
- Reversible



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 Brass & Steel; 0.190 SS	9	2 x 1/4-20 OH	1/2 x 12-24 OH

Hinge Size		Door Leaf Width "A"		Jamb Leaf Width "B"		Door 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



Architectural Hinges

Full Surface

Five Knuckle



Ball Bearing - Standard Weight

For use on medium weight hollow metal or wood composite doors with channel iron frames requiring medium frequency service

BB2110 Brass with Stainless Steel pin
- ANSI A2312
Stainless Steel with Stainless Steel pin
- ANSI A5312

BB2171 Steel with Steel pin
- ANSI A8312



- Two ball bearings
- Non-rising removable pin with button tip and plug
- Beveled surface leaves
- Thru-bolts and grommets for wood door applications
- Reversible

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"		Door Leaf Offset "C"		Jamb Leaf Offset "D"	
Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
4 1/2	114	29/16	65	1 1/2	38	1/2	12.5	3/8	10
5	127	27/8	73	1 1/2	38	1/2	12.5	3/8	10

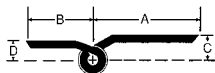


Ball Bearing - Heavy Weight

For use on heavy hollow metal or wood composite doors with channel iron frames requiring high frequency service

BB2109 Brass with Stainless Steel pin
- ANSI A2311
Stainless Steel with Stainless Steel pin
- ANSI A5311

BB2169 Steel with Steel pin
- ANSI A8311



- Four ball bearings
- Non-rising removable pin with button tip and plug
- Beveled surface leaves
- Thru-bolts and grommets for wood door applications
- Reversible

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 Brass & Steel; 0.190 SS	9	2 x 1/4-20 OH	1/2 x 12-24 OH

Hinge Size		Door Leaf Width "A"		Jamb Leaf Width "B"		Door Leaf Offset "C"		Jamb Leaf Offset "D"	
Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
4 1/2	114	29/16	65	1 1/2	38	9/16	14	7/16	11
5	127	27/8	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

Five Knuckle

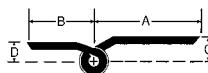


Ball Bearing - Heavy Weight

For use on tubular steel doors with channel iron frames requiring high frequency service

BB2108 Brass with Stainless Steel pin
- ANSI A2361
Stainless Steel with Stainless Steel pin
- ANSI A5361

BB2168 Steel with Steel pin
- ANSI A8361



- Four ball bearings
- Non-rising removable pin with button tip and plug
- Beveled surface leaves
- Thru-bolts and grommets for wood door applications
- Reversible

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 Brass & Steel; 0.190 SS	8	2 x 1/4-20 OH	1/2 x 1/4-20 OH

Hinge Size		Door Leaf Width "A"		Jamb Leaf Width "B"		Door 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



Welding



Plain Bearing - Heavy Weight

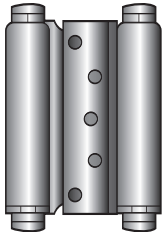
Manufactured with no holes and can easily be welded onto gates, Dumpsters, and industrial applications such as bins or warehouse doors

1850 Steel with Steel pin
- ANSI K81081F

- Flat surface with no swage
- No holes
- Square corners
- Fast riveted pin

Hinge Size		Gauge of Metal	Pin Diameter
Inches	mm		
4 x 4	102 x 102	0.179	0.312
4 1/2 x 4 1/2	114 x 114	0.179	0.322
5 x 5	127 x 127	0.179	0.322
6 x 6	152 x 152	0.203	0.500

Spring



Double Acting

1303 Steel
Adjustable

Hinge Size		Hinges Per Door	Max. Door Weight	Door Thickness	Door Width
Inches	mm				
3	76	3	50 lbs.	1" door	2' 0" (61 cm)
3	76	3	50 lbs.	7/8" max. door	2' 1" (63.5 cm)
3	76	3	50 lbs.	3/4" min. door	2' 2" (66 cm)
4	102	3	75 lbs.	1 1/4" door	2' 0" (61 cm)
4	102	3	75 lbs.	1 1/8" max. door	2' 1" (63.5 cm)
4	102	3	75 lbs.	7/8" min. door	2' 2" (66 cm)
5	127	3	100 lbs.	1 1/2" door	2' 2" (66 cm)
5	127	3	100 lbs.	1 3/8" max. door	2' 3" (68.6 cm)
5	127	3	100 lbs.	1 1/8" min. door	2' 4" (71.1 cm)
6	152	3	125 lbs.	2" door	2' 4" (71.1 cm)
6	152	3	125 lbs.	1 3/4" max. door	2' 5" (73.7 cm)
6	152	3	125 lbs.	1 1/4" min. door	2' 6" (76.2 cm)

Three Knuckle

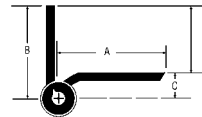


Concealed Anti-Friction Bearing - Standard Weight

For use on medium weight hollow metal or wood composite doors with hollow metal frames requiring medium frequency service

AB703 Steel with Steel pin
- ANSI A8412

AB803 Brass with Stainless Steel pin
- ANSI A2412
Stainless Steel with Stainless Steel pin
- ANSI A5412



- Non-rising removable pin with flush pin and plug
- Beveled surface leaf
- Thru-bolts and grommets for wood door applications
- Reversible

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

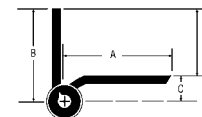
Hinge Size		Door Leaf Width "A"		Jamb Leaf Width "B"		Door Leaf Offset "C"		Application "D"	
Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
4 1/2	114	2 9/16	65	2	51	1/2	12.5	1 1/2	38
5	127	2 7/8	73	2	51	1/2	12.5	1 1/2	38

Concealed Anti-Friction Bearing - Heavy Weight

For use on heavy weight hollow metal or wood composite doors with hollow metal frames requiring high frequency service

AB753 Steel with Steel pin
- ANSI A8411

AB853 Brass with Stainless Steel pin
- ANSI A2411
Stainless Steel with Stainless Steel pin
- ANSI A5411



- Non-rising removable pin with flush pin and plug
- Beveled surface leaf
- Thru-bolts and grommets for wood door applications
- Reversible

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 Brass & Steel; 0.190 SS	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	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



Architectural Hinges

Half Surface

Five Knuckle

Plain Bearing - Standard Weight

For use on regular weight hollow metal or wood composite doors with hollow metal frames requiring low frequency service

1173 Steel with Steel pin
- ANSI A8433

- Non-rising removable pin with button tip and plug
- Beveled surface leaf
- Thru-bolts and grommets for wood door applications
- Reversible



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"		Door 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

Ball Bearing - Standard Weight

For use on regular weight hollow metal or wood composite doors with hollow metal frames requiring medium frequency service

BB1173 Steel with Steel pin
- ANSI A8412

BB2112 Brass with Stainless Steel pin
- ANSI A2412
Stainless Steel with Stainless Steel pin
- ANSI A5412

- Two ball bearings
- Non-rising removable pin with button tip and plug
- Beveled surface leaf
- Thru-bolts and grommets for wood door applications
- Reversible



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

Five Knuckle

Ball Bearing - Heavy Weight

For use on heavy weight hollow metal or wood composite doors with hollow metal frames requiring high frequency service

BB1163 Steel with Steel pin
- ANSI A8411

BB2113 Brass with Stainless Steel pin
- ANSI A2411
Stainless Steel with Stainless Steel pin
- ANSI A5411

- Four ball bearings
- Non-rising removable pin with button tip and plug
- Beveled surface leaf
- Thru-bolts and grommets for wood door applications
- Reversible



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 Brass & Steel; 0.190 SS	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

Spring

Single Acting

For automatic closing of door. Meets codes for hotels, motels, institutions and commercial buildings

1253 Steel
- ANSI K81081F

- 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
- Thru-bolts and grommets for wood door applications



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 1/16	52	9/16	14	1 1/2	38

Hinge Size	Recommended Max Door Weight (Lbs.)	Spring Hinge	Ball Bearing Hinge	Spring Hinge Location
4 1/2 (114 mm)	70 (32 kg)	1	2	Center
4 1/2 (114 mm)	115 (52 kg)	2	1	Top or Bottom
4 1/2 (114 mm)	150 (68 kg)	3	—	All



Five Knuckle



One Leaf Tapped

Plain Bearing - Standard Weight

For use on aluminum doors with aluminum frames. Application is by inserting the hinge leaves through a slot in the door or frame

1277 Both Leaves Tapped

Steel with Steel pin
- ANSI A8143, 5/16" Swage

1278 One Leaf Tapped

Steel with Steel pin
- ANSI A8153, 3/16" Swage

1577 Both Leaves Tapped

Brass with Stainless Steel pin
- ANSI A2143, 5/16" Swage
Stainless Steel with Stainless Steel pin
- ANSI A5143, 5/16" Swage

1578 One Leaf Tapped

Brass with Stainless Steel pin
- ANSI A2153, 3/16" Swage
Stainless Steel with Stainless Steel pin
- ANSI A5143, 3/16" Swage

- Non-rising removable pin with button tip and plug
- Handed
- Use ball bearings with door closer

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



Both Leaves Tapped

Ball Bearing - Standard Weight

For use on aluminum doors with aluminum frames. Application is by inserting the hinge leaves through a slot in the door or frame

BB1277 Both Leaves Tapped

Steel with Steel pin
- ANSI A8142, 5/16" Swage

BB1278 One Leaf Tapped

Steel with Steel pin
- ANSI A8152, 3/16" Swage

BB1577 Both Leaves Tapped

Brass with Stainless Steel pin
- ANSI A2142, 5/16" Swage
Stainless Steel with Stainless Steel pin
- ANSI A5142, 3/16" Swage

BB1578 One Leaf Tapped

Brass with Stainless Steel pin
- ANSI A2152, 3/16" Swage
Stainless Steel with Stainless Steel pin
- ANSI A5142, 3/16" Swage

- Two ball bearings
- Non-rising removable pin with button tip and plug

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



Full Mortise - Concealed Anti-Friction Bearing - Standard Weight

For use in hospitals or other institutional type buildings

AB7001 For Square Edge Doors

Steel with Steel pin
- ANSI A8122

AB7002 For Beveled Edge Doors

Steel with Steel pin
- ANSI A8122

- Non-rising removable pin with flush pin and plug
- Reversible

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

Note: When opened 90° door projects 3/32" (2 mm) past stop of jamb



Full Mortise - Concealed Anti-Friction Bearing - Heavy Weight

For use in hospitals or other institutional type buildings

AB7501 For Square Edge Doors

Steel with Steel pin
- ANSI A8121

AB7502 For Beveled Edge Doors

Steel with Steel pin
- ANSI A8121

- Non-rising removable pin with flush pin and plug
- Reversible

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

Note: When opened 90° door projects 11/64" (4 mm) past stop of jamb



Half Mortise - Concealed Anti-Friction Bearing - Heavy Weight

For use in hospitals or other institutional type buildings

AB7511 For Square Edge Doors

Steel with Steel pin
- ANSI A8221

AB7512 For Beveled Edge Doors

Steel with Steel pin
- ANSI A8221

- Non-rising removable pin with flush pin and plug
- Reversible

Hinge Size		Gauge of Metal	Hole Count	Machine/Wood Screw Size	
Inches	mm			Door Leaf	Jamb Leaf
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

Note: When opened 90° door projects 11/64" (4 mm) past stop of jamb



Architectural Hinges

Swing Clear

Three Knuckle



Full Surface - Concealed Anti-Friction Bearing - Heavy Weight

For use in hospitals or other institutional type buildings

AB7523 Steel with Steel pin
- ANSI A8321

- Non-rising removable pin with flush pin and plug
- Beveled surface leaves
- Reversible

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

Note: When opened 90° door projects 11/64" (4 mm) past stop of jamb



Half Surface - Concealed Anti-Friction Bearing - Heavy Weight

For use in hospitals or other institutional type buildings

AB7534 Steel with Steel pin
- ANSI A8421

- Non-rising removable pin with flush pin and plug
- Beveled surface leaf
- Reversible

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

Note: When opened 90° door projects 11/64" (4 mm) past stop of jamb

Five Knuckle



Full Mortise - Plain Bearing - Standard Weight

For residential and commercial use

1260 For Square Edge Doors
Steel with Steel pin
- ANSI A8123

- Non-rising removable pin with button tip and plug
- Reversible

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

Note: When opened 90° 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



Full Mortise - Ball Bearing - Standard Weight

For use in hospitals or other institutional type buildings

BB1260 For Square Edge Doors
Steel with Steel pin
- ANSI A8122

BB1261 For Beveled Edge Doors
Steel with Steel pin
- ANSI A8122

- Two ball bearings
- Non-rising removable pin with button tip and plug
- Reversible

Hinge Size		Gauge of Metal	Hole Count	Screw Size	
Inches	mm			Machine	Wood
4 1/2	114	0.140	8	1/2 x 12-24 FH	1 1/4 x 12 FH
5	127	0.140	8	1/2 x 12-24 FH	1 1/4 x 12 FH

Note: When opened 90° door projects 3/32" (2 mm) past stop of jamb



Full Mortise - Ball Bearing - Heavy Weight

For use in hospitals or other institutional type buildings

BB1262 For Square Edge Doors
Steel with Steel pin
- ANSI A8121

BB1263 For Beveled Edge Doors
Steel with Steel pin
- ANSI A8121

- Four ball bearings
- Non-rising removable pin with button tip and plug
- Reversible

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

Note: When opened 90° door projects 11/64" (4 mm) past stop of jamb



Five Knuckle



Full Mortise - Ball Bearing - Standard Weight

For use in hospitals or other institutional type buildings

BB1360 For Square Edge Doors

Stainless Steel with Stainless Steel pin
- ANSI A5122

BB1361 For Beveled Edge Doors

Stainless Steel with Stainless Steel pin
- ANSI A5122

- Two ball bearings
- Non-rising removable pin with button tip and plug
- Reversible

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

Note: When opened 90° door projects 3/32" (2 mm) past stop of jamb

Five Knuckle



Half Mortise - Ball Bearing - Heavy Weight

For use in hospitals or other institutional type buildings

BB1264 For Square Edge Doors

Steel with Steel pin
- ANSI A8221

BB1265 For Beveled Edge Doors

Steel with Steel pin
- ANSI A8221

- Four ball bearings
- Non-rising removable pin with button tip and plug
- Reversible

Hinge Size		Gauge of Metal	Hole Count	Door Leaf Screw Size		Jamb Leaf Screw Size	
Inches	mm			Machine	Wood	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 1/4 x 12 FH

Note: When opened 90° door projects 11/64" (4 mm) past stop of jamb



Full Mortise - Ball Bearing - Heavy Weight

For use in hospitals or other institutional type buildings

BB1362 For Square Edge Doors

Stainless Steel with Stainless Steel pin
- ANSI A5121

BB1363 For Beveled Edge Doors

Stainless Steel with Stainless Steel pin
- ANSI A5121

- Four ball bearings
- Non-rising removable pin with button tip and plug
- Reversible

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

Note: When opened 90° door projects 11/64" (4 mm) past stop of jamb



Full Surface - Ball Bearing - Heavy Weight

For use in hospitals or other institutional type buildings

BB1266 Steel with Stainless Steel pin - ANSI A8321

- Four ball bearings
- Non-rising removable pin with button tip and plug
- Beveled surface leaves
- Reversible

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 1/4-20 FH

Note: When opened 90° door projects 11/64" (4 mm) past stop of jamb



Half Surface - Ball Bearing - Heavy Weight

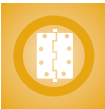
For use in hospitals or other institutional type buildings

BB1270 Steel with Stainless Steel pin - ANSI A8421

- Four ball bearings
- Non-rising removable pin with button tip and plug
- Beveled surface leaf
- Reversible

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

Note: When opened 90° door projects 11/64" (4 mm) past stop of jamb



Architectural Hinges

Anchors

Three Knuckle



Concealed Anti-Friction Bearing - Heavy Weight

For use on heavy weight doors receiving high frequency use

- AB7505** Steel with Steel pin
- ANSI A8511
- AB8505** Brass with Stainless Steel pin
- ANSI A2511
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

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



Concealed Anti-Friction Bearing - Heavy Weight

For use on heavy weight doors receiving high frequency use

- AB7506 For Square Edge Doors**
Steel with Steel pin
- ANSI A8511
- AB7508 For Beveled Edge Doors**
Steel with Steel pin
- ANSI A8511
- AB8506 For Square Edge Doors**
Brass with Stainless Steel pin
- ANSI A2511
Stainless Steel with Stainless Steel pin
- ANSI A5511
- AB8508 For Beveled Edge Doors**
Brass with Stainless Steel pin
- ANSI A2511
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

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

Three Knuckle



Concealed Anti-Friction Bearing - Heavy Weight

For use on heavy weight doors receiving high frequency use and when concealed door closer is used

- AB7507 For Square Edge Doors**
Steel with Steel pin
- ANSI A8511
- AB7509 For Beveled Edge Doors**
Steel with Steel pin
- ANSI A8511
- AB8507 For Square Edge Doors**
Brass with Stainless Steel pin
- ANSI A2511
Stainless Steel with Stainless Steel pin
- ANSI A5511
- AB8509 For Beveled Edge Doors**
Brass with Stainless Steel pin
- ANSI A2511
Stainless Steel with Stainless Steel pin
- ANSI A5511

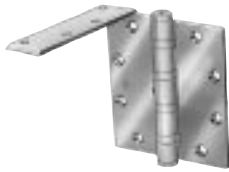
- Non-removable pin standard with flush pin and plug
- Handed
- Two anchor leaves

Must be used with one pair of heavy weight, full mortise hinges, AB750 or AB850 - sold separately

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



Ball Bearing - Heavy Weight

For use on heavy weight doors receiving high frequency use

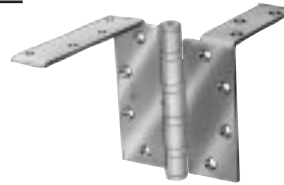
- BB1160** Steel with Steel pin
- ANSI A8511
- BB1190** Brass with Stainless Steel pin
- ANSI A2511
Stainless Steel with Stainless Steel pin
- ANSI A5511

- 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

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

Five Knuckle



Ball Bearing - Heavy Weight

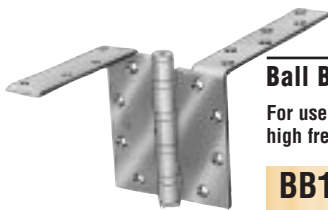
For use on heavy weight doors receiving high frequency use and when concealed door closer is used

- BB1165** For Square Edge Doors
Steel with Steel pin
- ANSI A8511
- BB1167** For Beveled Edge Doors
Steel with Steel pin
- ANSI A8511
- BB1195** For Square Edge Doors
Brass with Stainless Steel pin
- ANSI A2511
Stainless Steel with Stainless Steel pin
- ANSI A5511
- BB1197** For Beveled Edge Doors
Brass with Stainless Steel pin
- ANSI A2511
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

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



Ball Bearing - Heavy Weight

For use on heavy weight doors receiving high frequency use

- BB1162** For Square Edge Doors
Steel with Steel pin
- ANSI A8511
- BB1166** For Beveled Edge Doors
Steel with Steel pin
- ANSI A8511
- BB1192** For Square Edge Doors
Brass with Stainless Steel pin
- ANSI A2511
Stainless Steel with Stainless Steel pin
- ANSI A5511
- BB1196** For Beveled Edge Doors
Brass with Stainless Steel pin
- ANSI A2511
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

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



Architectural Hinges

Pivots



Reinforcing

251 Full Surface
For 3½" (89 mm) Wide Hinge

252 Full Surface
For 4" (102 mm) Wide Hinge

253 Full Surface
For 4½" (114 mm) Wide Hinge

254 Full Surface
For 5" (127 mm) Wide Hinge

- Handed

Item no.	Butt hinge width		Projection †		Door thickness	
	Inches	mm	Inches	mm	Inches	mm
251	3½	89	5/8	16	1⅝	35
252	4	102	1/2	12.5	1¾	45
253	4½	114	3/4	19	1¾	45
254	5	127	1	25	1¾	45

† Projection from centerline of pivot to face of door

Gauge of Metal	Screw Size	
	Machine	Wood
0.187	¾ x 1/4-20	1¼ x 14



495 - Top



496 - Intermediate



497 - Bottom

Ball and Thrust Bearing - Heavy Weight

For use on heavy weight doors of wood or metal exterior or interior receiving high frequency use

495 Top
Forged Bronze
- ANSI C07162

496 Intermediate
Forged Bronze
- ANSI C07321

497 Bottom
Forged Bronze
- ANSI C07131

- ¾" (19 mm) offset
- Two knuckle
- Handed

Recommendations for use:

- For doors up to and including 3'0" x 8'0" (91 x 244 cm) weighing maximum of 350 pounds, apply all three pivots #495, #496, #497
- For doors over 3'6" (107 cm) up to 4'0" (122 cm) in width, add one additional intermediate pivot #496
- For each additional 12" (305 mm) in door height over 8'0" (244 cm) add one intermediate pivot #496

Type and Item no.	Hole Count	Screw Size	
		Machine	Wood
495 - Top	8	5/8 x 1/4-20	1½ x 14
496 - Intermediate	10	5/8 x 1/4-20	1½ x 14
497 - Bottom	8	5/8 x 1/4-20	1½ x 14



Head Pivot



Floor Pivot

Single Acting

Rack and Pinion

500 ANSI A2792

- Pivot opens door to 105° maximum
- Non-handed
- Concealed
- Adjustable alignment

Designed for:

- 1¾" (45 mm) thick door
- Maximum weight not over 80 pounds
- Not to exceed 3' (91 cm) wide and 7' (213 cm) high
- Frame not to have door stop at head & pivot jamb
- Consult engineering for doors other than 1¾"

Screw Size	
Machine	Wood
Upon Request	1¼ x 12 FH†

† Plastic cinch anchors



Head Pivot



Floor Pivot

Single Acting - Heavy Weight

Heavy duty rack and pinion

550 ANSI A2793

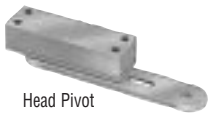
- Pivot opens door to 105° maximum
- Non-handed
- Concealed
- Adjustable alignment

Designed for:

- 1¾" (45 mm) thick door
- Maximum weight not over 150 pounds
- Not to exceed 3' (91 cm) wide and 7' (213 cm) high
- Frame not to have door stop at head & pivot jamb
- Consult engineering for doors other than 1¾"

Screw Size	
Machine	Wood
Upon Request	1¼ x 12 FH†

† Plastic cinch anchors



Head Pivot

Camtrol Double Acting - Hospital Set - Rescue Hardware

Mortise application in wood floor

510 *Includes head and floor pivots only
- ANSI A5702

600 Includes head and floor pivots with door release (set)
- ANSI A5702

610 Door Release
- ANSI A1882

For use on:

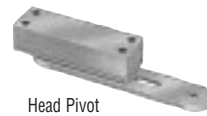
- Up to 135 lb wood or metal doors
- Not over 3'6" (107 cm) x 7' (213 cm)
- Wood or metal frames

Item No.	Anchor Housing	
	Inches	mm
510 & 600	37/8 x 17/8 x 7/8	98 x 48 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

Item No. 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

* For use with square edge doors on hinge side



Head Pivot

Camtrol Double Acting - Hospital Set - Rescue Hardware

Surface application in masonry floor

512 *Includes head and floor pivots only
- ANSI A5702

612 Includes head and floor pivots with door release (set)
- ANSI A5702

610 Door Release
- ANSI A1882

For use on:

- Up to 135 lb wood or metal doors
- Not over 3'6" (107 cm) x 7' (213 cm)
- Wood or metal frames

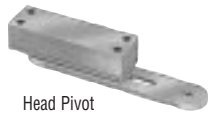
Item No.	Anchor Housing	
	Inches	mm
512 & 612	37/8 x 1 1/4 x 7/8	98 x 32 x 22

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†

Item No. 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

* For use with square edge doors on hinge side



Head Pivot

Camtrol Double Acting - Hospital Set - Rescue Hardware

Mortise application in masonry floor

511 *Includes head and floor pivots only
- ANSI A5702

611 Includes head and floor pivots with door release (set)
- ANSI A5702

610 Door Release
- ANSI A1882

For use on:

- Up to 135 lb wood or metal doors
- Not over 3'6" (107 cm) wide and 7' (213 cm) high
- Wood or metal frames

Item No.	Anchor Housing	
	Inches	mm
511 & 611	37/8 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†

Item No. 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

* For use with square edge doors on hinge side



Heavy Weight Pivot

For frameless openings

615 ANSI A8782

For use on:

- Doors up to 150 lbs. and 1 3/8" - 1 3/4" thick
- Pivot opens door to 180° maximum
- Screw slots for horizontal or vertical adjustment

Screw Size
Wood
12 x 1 1/4



Architectural Hinges

Pivots



Center Hung



1/8" Inset Hung

Double Lipped Strike

For use with Camtrol Double Acting Pivot

451 Center Hung Doors

Brass
- ANSI A1882

452 Center Hung Doors

Brass
- ANSI A1882

453 1/8" Inset Hung Doors

Brass
- ANSI A1882

454 1/8" Inset Hung Doors

Brass
- ANSI A1882

- To be used with Hager's 600, 611, and 612 pivots and door release. This allows doors to be opened in both directions without damage to frame.
- Standard latchbolt cut out is 1 1/4" x 1 1/16" (32 x 17 mm) which meets ANSI Standard for both heavy duty cylindrical and mortise latchbolts. **Be sure to check each specific manufacturer for variations of this dimension.**

Item No.	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



Center Hung



1/8" Inset Hung

Combination Rescue Door Stop and Two Way Strike Plate

Hager counterweight door stop is used in conjunction with our double lipped strike

455 Center Hung Doors

Brass
- ANSI A1882

456 Center Hung Doors

Brass
- ANSI A1882

457 1/8" Inset Hung Doors

Brass
- ANSI A1882

458 1/8" Inset Hung Doors

Brass
- ANSI A1882

- Handed
- To be used with Hager's 510, 511, and 512 pivots. Door release allows doors to be opened in both directions without damage to frame.
- Standard latchbolt cut out is 1 1/4" x 1 1/16" (32 x 17 mm) which meets ANSI Standard for both heavy duty cylindrical and mortise latchbolts. **Be sure to check each specific manufacturer for variations of this dimension.**

Item No.	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



Three Knuckle



Full Mortise - Concealed Bearings - Heavy Weight

For use on heavy weight doors ranging from 250-600 lbs.

IHTHB953 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:
 - (EMN) = Electric Monitor
 - (ETW) = Electric Through Wire
 - (ETM) = Electric Through Wire & Monitor

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



Institutional Prison Hinge

For use on heavy weight doors ranging from 200-300 lbs.

IHTAB750 Steel with Stainless Steel pin - ANSI A8111

IHTAB850 Stainless Steel with Stainless Steel pin - ANSI A5111

- Concealed maintenance free bearings
- Welded hospital tips and plug
- Welded knuckles
- Additional options:
 - Security Torx Screws
 - (EMN) = Electric Monitor
 - (ETW) = Electric Through Wire
 - (ETM) = Electric Through Wire & Monitor
 - (RSS) = Reverse Safety Stud
 - (SH) = Safety Stud

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

Three Knuckle



Full Surface Heavy Weight Prison Hinge

For use on small doors, access doors and observation shutters. Two hinges support the weight of 150 lbs.

990 Utility Hinge
Steel with Steel pin - ANSI A8383

- Plain bearing
- Welded pin
- Prime painted
- Torx button head bolt

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



Full Surface Heavy Weight Prison Hinge

For use on small doors, access doors and observation shutters. Two hinges support the weight of 150 lbs.

992 Pass Through Hinge with Stop
Steel with Steel pin - ANSI A8383

- Plain bearing
- Welded pin
- Prime painted
- Torx button head bolt

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



Architectural Hinges

Accessories



Set Screw Set

This set converts removable pin hinges to non-removable pin (set screw in barrel) hinges as required

100

- 1/8" x 10-32 Set Screws (qty. 300)
- 3/16" x 10-32 Set Screws (qty. 300)
- 3/32" Hex Key
- Hand Tap "T" Wrench
- 10-32 Tap
- #21 Drill Bit



Sleeve Bolt

For use in securing push bars, exposed door closers and other fixtures to doors 1 3/4" (45 mm) thick or greater

263 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)



Molly Jack Nut (8S JN)

For use in properly anchoring various products to hollow metal frames 3/16" to 3/8" (4.8 to 9.5 mm) thick

265 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



Hinge Reinforcement Plate

305 Steel

- For metal frames
- Four holes

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



Back Plate

417 Steel

- For wood doors
- For full or half surface hinges

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

Decorator Tip Kits

Conversion tips and pins for architectural grade hinges



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", 4", 4 1/2", 5"
- Heavy Weight Hinge Size - 4 1/2", 5"
- Solid brass with stainless steel pin