

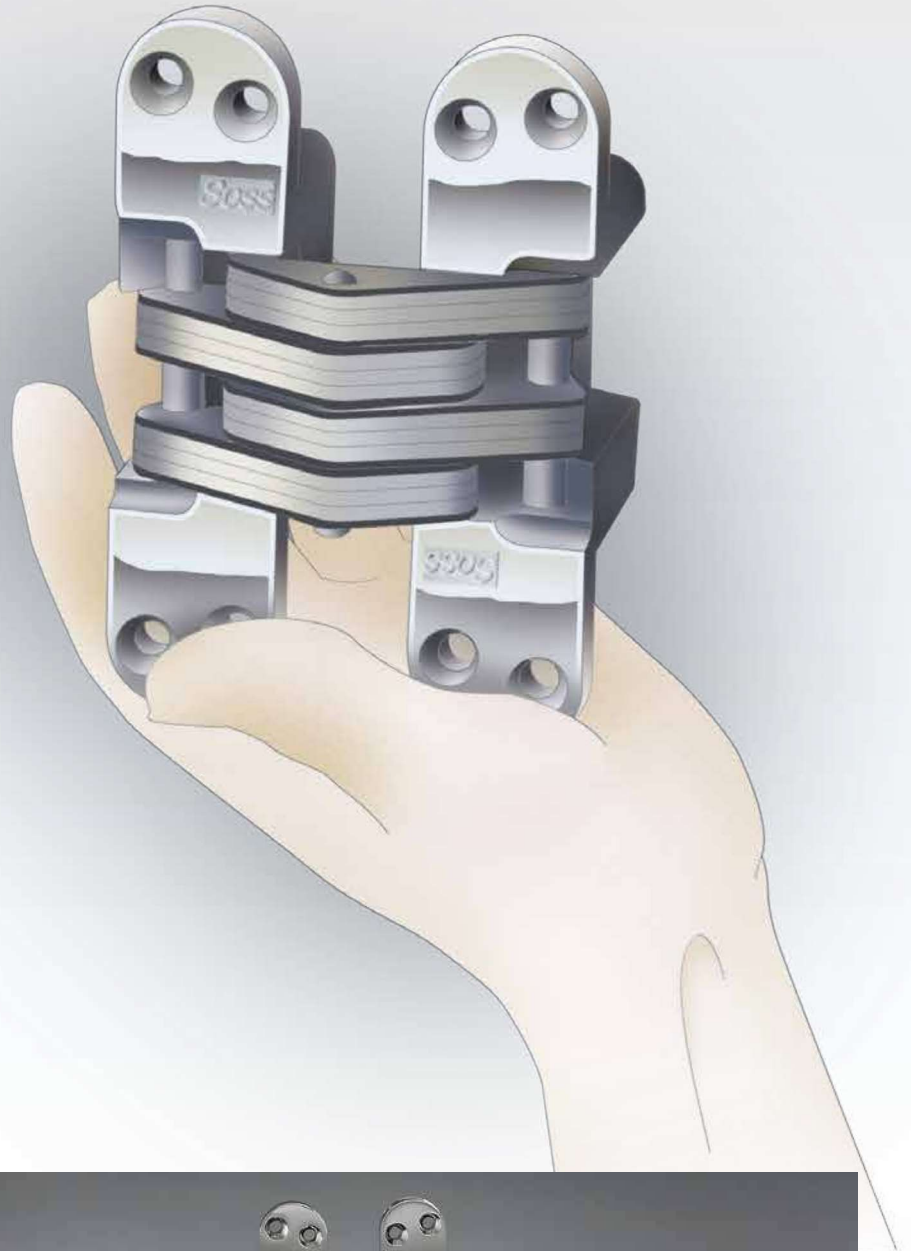
SOSS Invisible Hinges

Hinge model #216 shown in black E-coat finish.

"An Engineering Marvel"

For more than 115 years, SOSS Invisible Hinges have been known as the strongest and most beautiful, completely invisible hinges available. Today they are used worldwide in commercial buildings, private homes, furniture and other products. From the largest entrance doors to the smallest jewelry boxes, SOSS Door Hardware has the perfect size hinge for you.

SOSS Invisible Hinges are engineered with you in mind. They will never need adjusted. The moving pivot point remains inside the hinge during travel, eliminating an external pinch point on the back side of the door. When closed, the SOSS Invisible Hinge cannot be seen or tampered with. When open, the riveted hinge pin is non-removable. These features make our hinges ideal for a wide variety of uses.



New! Now Fire-Rated!

Invisible Closer Hinge

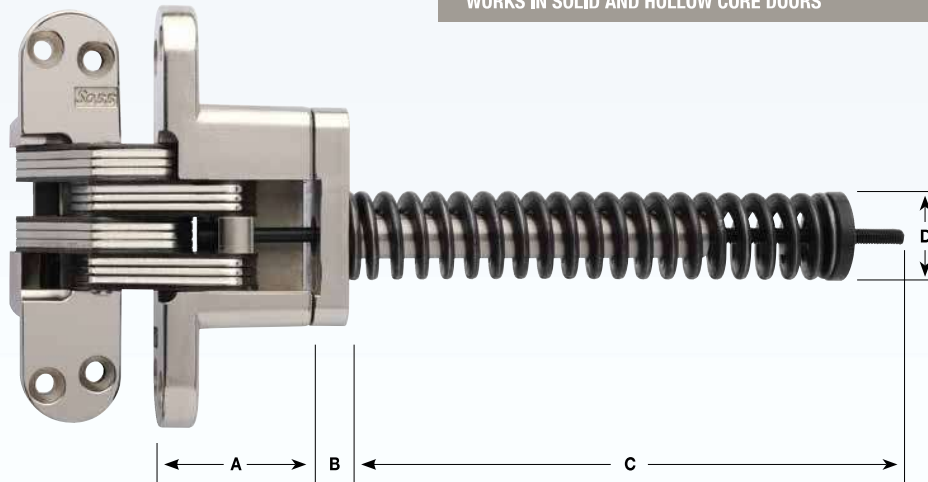
The SOSS Invisible Closer gives you a fire-rated closer that is totally invisible from either side when the door is closed. When the door is open, you see only the hinge face and links.

The closure rate is completely adjustable with an Allen wrench after installation. Installation can be either inside the door itself or inside the door jamb. The SOSS Invisible Closer is ideally suited for all types of doors 1 3/8" thick or more. Recommended spacing is one half of the distance from the center of the door to the center of the top hinge.

The Underwriters Laboratories labeled 416IC, 416SSIC, 418IC, 418SSIC, 220ASIC, and 220SSIC SOSS Invisible Closer hinges can be used on hollow metal, sheet metal, tin clad, and steel composite swinging type fire doors and frames rated up to and including three hours. They can also be used on wood core doors and frames rated up to 20 minutes.

Additionally, they can be used on wood/plastic composite doors constructed with Georgia Pacific FSI or FSII banding for a rating up to and including 90 minutes.

The Underwriters Laboratories labeled 420IC and 420SSIC SOSS Invisible Closer Hinges can be used on hollow metal, sheet metal, tin clad, and steel composite swinging type fire doors and frames rated up to and including three hours. Additionally, they can be used on wood core doors and frames rated up to 20 minutes.



Door Thickness	Closer Model #	Description	A	B	C	D
1 3/8"	216IC	20 minute fire-rated closer for wood or metal	1 15/32"	3/8"	6 5/16"	3/4"
1 3/8"	416IC/416SSIC	3 hour fire-rated closer for metal, 90 minute for wood/plastic composite, 20 minute for wood	1 15/32"	3/8"	6 5/16"	3/4"
1 3/4"	218IC	20 minute fire-rated closer for wood or metal	1 41/64"	3/8"	7"	1"
1 3/4"	418IC/418SSIC	3 hour fire-rated closer for metal, 20 minute for wood	1 41/64"	3/8"	7"	1"
2"	220IC	20 minute fire-rated closer for wood or metal	1 63/64"	3/8"	6 7/8"	1"
2"	220ASIC/220SSIC	3 hour fire-rated closer for metal, 90 minute for wood/plastic composite, 20 minute for wood	1 63/64"	3/8"	6 7/8"	1"
2"	420IC/420SSIC	3 hour fire-rated closer for metal	1 31/32"	3/8"	6 7/8"	1"

The Underwriters Laboratories labeled 216IC, 218IC, and 220IC SOSS Invisible Closer hinges can be used on hollow metal, sheet metal, tin clad, steel composite or wood core swinging type fire doors and frames with 20 minute ratings.

Use at least one fire-rated closer for every 20" of door height or portion thereof, or one closer for each 55 lbs. of door weight or fraction thereof, whichever calculation demands more closers.

New! SOSS Hercules Hinge®

The new SOSS Hercules Hinges® are ideal for doors of extreme weight or size. They can be used in place of standard model #218 or #220 invisible hinges when the use of fewer hinges is needed.

For example, a standard 80" tall, 36" wide, 1-3/4" door that weighs 150 lbs, normally needs four model #218 SOSS Invisible Hinges. With the SOSS Hercules Hinge® model #218H on this size door, only two hinges are required.



SOSS Hercules Hinges are currently available in three popular finishes; Satin Chrome (US26D), Satin Brass (US4), and Satin Nickel (US15).

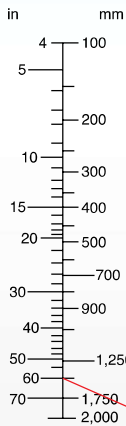
For assistance with choosing the correct number of SOSS Hercules Hinges, please consult the factory.

Hinge #	Description	Door Material	Fire Rating*	Min. Door Thickness
218H	Solid alloy steel body & links, similar to model #218	Wood/Metal	2 Hour	1 1/4"
220H	Solid alloy steel body & links, similar to model #220	Wood/Metal	2 Hour	2"

*Rating is in accordance with BS EN 1634-1 standards. These hinges are not UL fire rated.

This sizing chart is intended for doors that exceed sizing chart on page 51.

Door Width in Inches and Millimeters

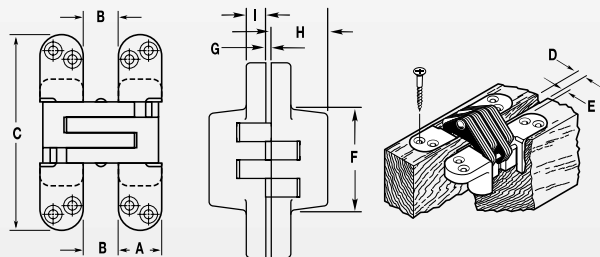


Example:
A 60" wide door weighing 300 lbs. would require four #218H or three #220H Hercules Hinges. The red line shows how the sizing and selection were determined from the sizing chart.

Hinge Number	Hercules Hinge Door Weight in Pounds and Kilograms		Number of Hinges Required
	kg	lb	
218H	495	1089	12
220H	440	968	10
	405	891	8
	385	847	9
	360	792	7
	330	726	8
	315	693	7
	275	594	6
	220	484	5
	225	495	6
	180	396	5
	165	363	4
	135	297	4
	110	242	3
	90	198	3

Dimension	218H	220H
A	1 1/8" (28.58 mm)	1 3/8" (34.93 mm)
B	5 5/64" (21.83 mm)	1 1/16" (26.99 mm)
C	4 39/64" (117.08 mm)	5 1/2" (139.70 mm)
D	2 3/64" (9.13 mm)	1/2" (12.70 mm)
E	1/4" (6.35 mm)	3/32" (7.14 mm)
F	2 7/16" (61.91 mm)	2 31/64" (75.41 mm)
G	1/16" (1.59 mm)	3/32" (2.38 mm)
H	1 41/64" (41.67 mm)	1 3/64" (50.40 mm)
I	1 3/32" (10.32 mm)	1 5/64" (11.91 mm)
Minimum Material Thickness	1 3/4" (44.45 mm)	2" (50.80 mm)
Wood Screw Sizes	#10 x 2 1/2"	#12 x 2 1/2"
Soft Wood Pilot Hole	No. 43	No. 38
Hard Wood Pilot Hole	No. 31	No. 25
Machine Screw Size	#10-24 x 3/4"	#12-24 x 1"
Hinge Weight	2.15 lbs	3.80 lbs.

KEY TO DIMENSIONS SHOWN IN CHARTS

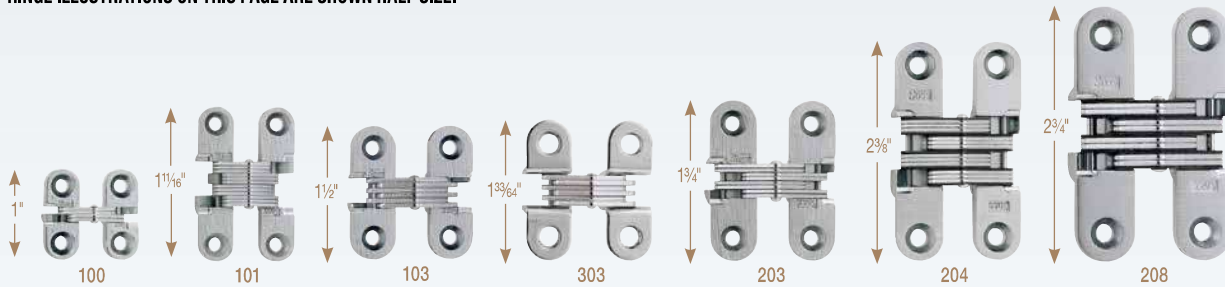


All SOSS Hercules Hinges are shipped with the proper size wood and machine screws unless ordered without. Do not exceed "E" dimension.

Specifications

FOR WOOD OR METAL APPLICATIONS

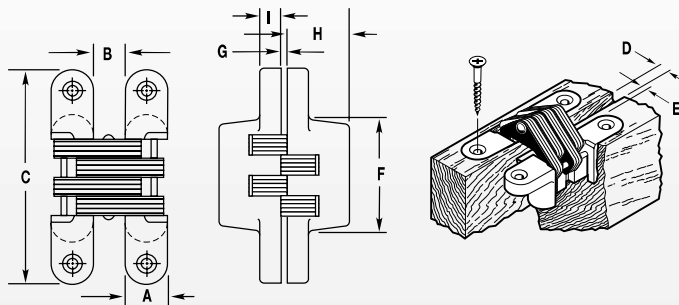
HINGE ILLUSTRATIONS ON THIS PAGE ARE SHOWN HALF SIZE.



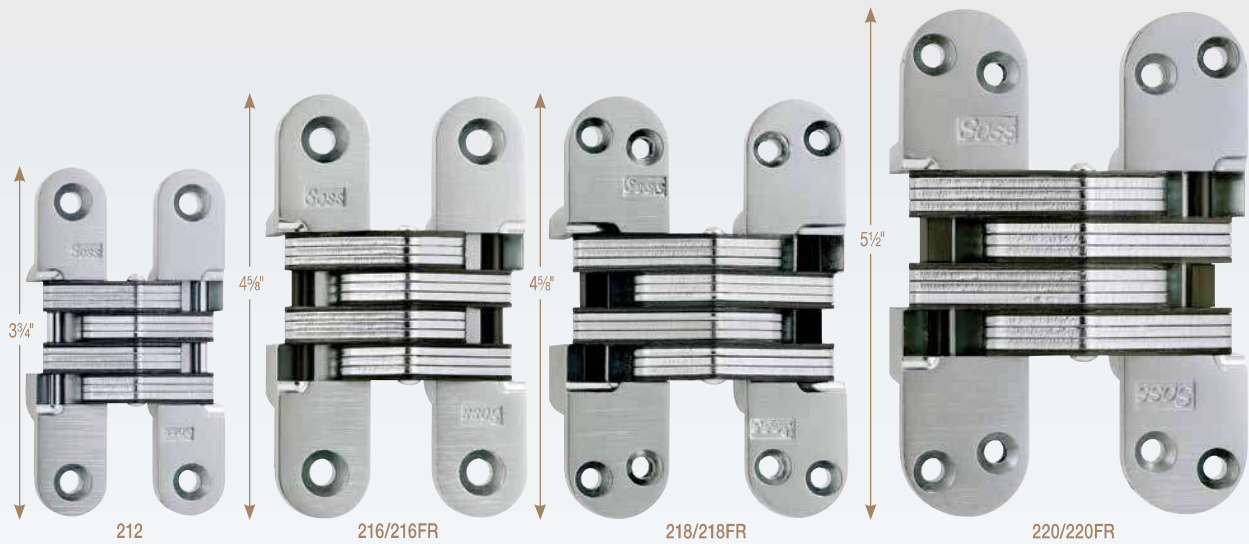
	Light Duty					Medium Duty	
Dimension	100	101	103	303	203	204	208
A	3/8" (9.53mm)	3/8" (9.53mm)	1/2" (12.70mm)	1/2" (12.70mm)	1/2" (12.70mm)	1/2" (12.70mm)	5/8" (15.8mm)
B	9/32" (7.14mm)	19/64" (7.54mm)	3/8" (9.53mm)	3/8" (9.53mm)	23/64" (9.13mm)	23/64" (9.13mm)	29/64" (11.51mm)
C	1" (25.40mm)	1 1/16" (42.86mm)	1 1/2" (38.10mm)	1 33/64" (38.50mm)	1 3/4" (44.45mm)	2 3/8" (60.33mm)	2 3/4" (69.85mm)
D	3/32" (2.38mm)	7/64" (2.78mm)	1/8" (3.18mm)	1/8" (3.18mm)	7/64" (2.78mm)	7/64" (2.78mm)	9/64" (3.57mm)
E	3/32" (2.38mm)	3/32" (2.38mm)	1/8" (3.18mm)	1/8" (3.18mm)	1/8" (3.18mm)	1/8" (3.18mm)	5/32" (3.97mm)
F	3/8" (9.53mm)	7/8" (22.23mm)	1 1/16" (17.46mm)	1 9/32" (15.08mm)	3/4" (19.05mm)	1 1/4" (31.75mm)	1 11/32" (34.13mm)
G	1/32" (.79mm)	1/32" (.79mm)	1/32" (.79mm)	1/32" (.79mm)	1/32" (.79mm)	1/32" (.79mm)	3/64" (1.19mm)
H	1 5/32" (11.91mm)	2 3/64" (11.51mm)	1 9/32" (15.08mm)	4 1/64" (16.27mm)	2 3/32" (18.26mm)	2 3/32" (18.26mm)	2 9/32" (23.02mm)
I	1 5/64" (5.96mm)	7/32" (5.56mm)	7/32" (5.56mm)	.054" (1.37mm)	3/16" (4.76mm)	1/4" (6.35mm)	9/32" (7.14mm)
Minimum Material Thickness	1/2" (12.70mm)	1/2" (12.70mm)	3/4" (19.05mm)	1 1/16" (17.46mm)	3/4" (19.05mm)	3/4" (19.05mm)	1" (25.40mm)
Wood Screw Sizes	#5x3/4" (3.5x19mm)	#5x3/4" (3.5x19mm)	#6x1" (3.5x25mm)	#5x3/4" (3.5x19mm)	#6x1" (3.5x25mm)	#7x1 1/4" (3.9x32mm)	#8x1 1/4" (4.2x32mm)
Soft Wood Pilot Hole	No. 53	No. 53	No. 52	No. 53	No. 52	No. 51	No. 48
Hard Wood Pilot Hole	No. 47	No. 47	No. 44	No. 47	No. 44	No. 39	No. 35
Machine Screw Sizes	#4-40x1/2"	#4-40x1/2"	#6-40x1/2"	#5-40x1/2"	#6-40x1/2"	#8-32x3/8"	#8-32x3/8"
Hinge Weight	.04 lb.	.07 lb.	.09 lb.	.05 lb.	.11 lb.	.20 lb.	.34 lb.

NOTE: Refer to page 51 for assistance with choosing the right hinge for the job. Refer to inside back cover for color chips.

KEY TO DIMENSIONS SHOWN IN CHARTS



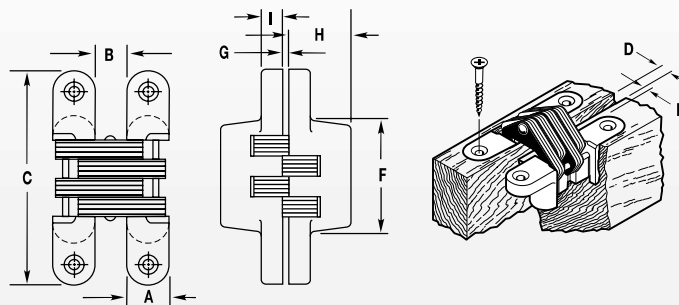
All hinges are shipped with the proper size wood screws unless ordered without. Machine screws available upon request for an additional charge. Do not exceed "E" dimension.



	Medium Duty		Heavy Duty	
Dimension	212	216/216FR	218/218FR	220/220FR
A	3/4" (19.05mm)	1" (25.40mm)	1 1/8" (28.58mm)	1 3/8" (34.93mm)
B	35/64" (13.89mm)	4/64" (18.65mm)	7/8" (22.23mm)	1 1/16" (26.99mm)
C	3 3/4" (95.25mm)	4 5/8" (117.48mm)	4 5/8" (117.48mm)	5 1/2" (139.70mm)
D	1 1/64" (4.37mm)	1 5/64" (5.95mm)	3/8" (9.53mm)	1/2" (12.70mm)
E	3/16" (4.76mm)	1/4" (6.35mm)	1/4" (6.35mm)	3/32" (7.14mm)
F	2 1/16" (52.39mm)	2 9/32" (65.88mm)	2 15/32" (62.71mm)	2 15/16" (74.61mm)
G	3/64" (1.19mm)	1/16" (1.59mm)	1/16" (1.59mm)	1/16" (1.59mm)
H	1 5/64" (27.38mm)	1 15/32" (37.31mm)	1 41/64" (41.67mm)	1 63/64" (50.40mm)
I	3/8" (9.53mm)	1 5/32" (11.91mm)	1 3/32" (10.32mm)	1 5/32" (11.91mm)
Minimum Material Thickness	1 1/8" (28.58mm)	1 3/8" (34.93mm)	1 3/4" (44.45mm)	2" (50.80mm)
Wood Screw Sizes	#10x1 1/4" (4.8x32mm)	#14x1 1/2" (6.3x38mm)	#10x1 1/2" (4.8x38mm)	#12x1 1/2" (5.5x38mm)
Soft Wood Pilot Hole	No. 43	No. 32	No. 43	No. 38
Hard Wood Pilot Hole	No. 31	No. 10	No. 31	No. 25
Machine Screw Sizes	#10-24x3/4"	#1/4-20x1"	#10-24x1"	#12-24x1"
Hinge Weight	.75 lb.	1.65 lb.	1.86 lb.	3.15 lb.

NOTE: Refer to page 51 for assistance with choosing the right hinge for the job. Refer to page 40 for fire-rated information. Refer to inside back cover for color chips.

KEY TO DIMENSIONS SHOWN IN CHARTS



All hinges are shipped with the proper size wood screws unless ordered without. Machine screws available upon request for an additional charge. Models 216/216FR, 218/218FR and 220/220FR are shipped with the proper size wood and machine screws unless ordered without. Do not exceed "E" dimension.

Fire-rated



SOSS offers a complete line of fire-rated invisible hinges. Whether your doorway is made of wood or metal, rated 20 minutes or three hours, there is a SOSS fire-rated hinge that will comply and still give you the “uniquely invisible” hinge that you expect from SOSS.

SOSS Invisible Hinge models #418, #418SS, #220AS, #220SS, #420 and #420SS are classified in accordance with Underwriters Laboratories test standards UL10C and UBC7-2(1997).

The chart below lists the SOSS Invisible Hinges that are currently available for fire-rating.

420, 420SS

The SOSS Invisible #420 Hinges are specifically designed with square edges for metal doors.

The Underwriters Laboratories labeled #420 SOSS Invisible Hinges can be used on hollow metal, sheet metal, tin clad and steel composite swinging-type fire doors and frames rated up to and including **three hours**. Additionally, they can be used on wood core doors and frames rated up to **20 minutes**.

Use at least one fire-rated hinge for every **20"** of door height or portion thereof, or one hinge for every **60 lbs.** or fraction thereof, whichever calculation demands more hinges.

416, 416SS, 418, 418SS, 220AS, 220SS

The Underwriters Laboratories labeled 416, 416SS, 418, 418SS, 220AS, 220SS. SOSS Invisible Hinges can be used on hollow metal, sheet metal, tin clad and steel composite swinging-type fire

doors and frames rated up to and including **three hours**. They also can be used on wood core doors and frames rated up to **20 minutes**.

Additionally, they can be used on wood/plastic composite doors constructed with Georgia Pacific FS I or FS II banding for a rating up to and including **90 minutes**.

Use at least one fire-rated hinge for every **20"** of door height or portion thereof, or one hinge for every **60 lbs.** or fraction thereof, whichever calculation demands more hinges.

216/216FR, 218/218FR, 220/220FR, 218PT and 220PT

The Underwriters Laboratories labeled 216/216FR, 218/218FR, 220/220FR, 218PT and 220PT

SOSS Invisible Hinges can be used on hollow metal, sheet metal, tin clad, steel composite or wood core swinging-type fire doors and frames with **20 minute** ratings.

Use at least one fire-rated hinge for every **20"** of door height or portion thereof, or one hinge for each **60 lbs.** or fraction thereof, whichever calculation demands more hinges.

Special door and jamb preparation may be required for all fire-rated hinges.

NOTE: SOSS Invisible Hinge product specifications available on request.

Never exceed maximum door size of 4' wide by 8' tall for fire-rated doors only.

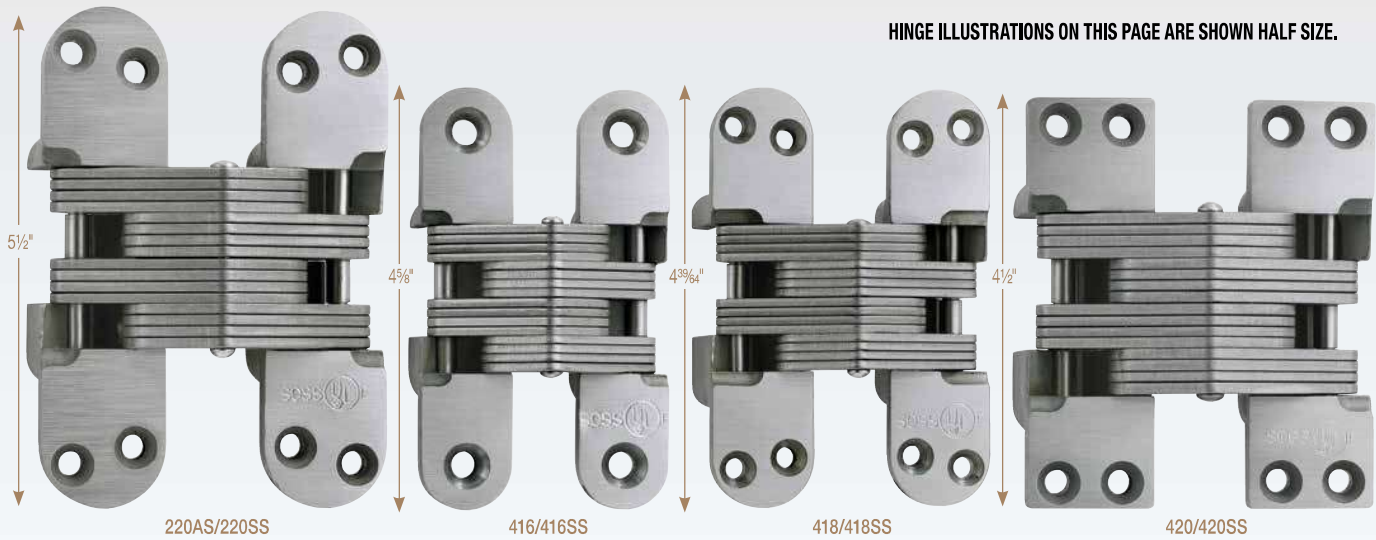
Min. Door Thickness	Description	Rating	Door Material
1 3/8"	216/216FR	20 Min.	wood or metal
1 3/4"	218/218FR, 218PT	20 Min.	wood or metal
2"	220/220FR, 220PT	20 Min.	wood or metal
1 3/8"	416, 416SS	90/180*	wood or metal
1 3/4"	418, 418SS	90/180*	wood or metal
2"	220AS, 220SS	90/180*	wood/metal
2"	420, 420SS	180	metal

* All fire rated hinges are shipped with the proper size wood and machine screws unless ordered without. Do not exceed "E" dimension.

NOTE: The hinge side door style for 90 minute wood faced doors must be a minimum of 2 1/4" wide.



HINGE ILLUSTRATIONS ON THIS PAGE ARE SHOWN HALF SIZE.

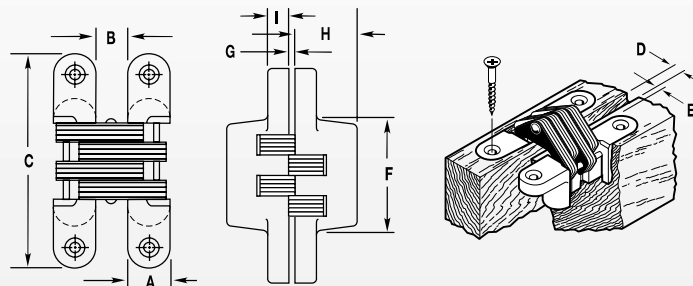


Fire-Rated Applications for Metal or Wood

Dimension	220AS/220SS	416/416SS	418/418SS	420/420SS
A	1 ³ / ₈ " (34.93mm)	1" (25.40mm)	1 ¹ / ₈ " (28.58mm)	1 ³ / ₈ " (34.93mm)
B	1 ¹ / ₁₆ " (26.99mm)	⁷ / ₁₆ " (18.65mm)	⁵ / ₁₆ " (21.83mm)	1 ¹ / ₁₆ " (26.59mm)
C	5 ¹ / ₂ " (139.70mm)	4 ⁹ / ₁₆ " (117.48mm)	4 ³ / ₁₆ " (117.08mm)	4 ¹ / ₂ " (114.30mm)
D	1 ¹ / ₂ " (12.70mm)	1 ⁵ / ₁₆ " (5.95mm)	³ / ₁₆ " (9.13mm)	³ / ₁₆ " (12.30mm)
E	⁹ / ₃₂ " (7.14mm)	1 ¹ / ₄ " (6.35mm)	1 ¹ / ₄ " (6.35mm)	⁹ / ₃₂ " (7.15mm)
F	2 ³ / ₃₂ " (75.41mm)	2 ³ / ₁₆ " (66.28mm)	2 ¹ / ₁₆ " (61.91mm)	2 ¹ / ₁₆ " (74.62mm)
G	³ / ₃₂ " (2.38mm)	1 ¹ / ₁₆ " (1.59mm)	1 ¹ / ₁₆ " (1.59mm)	³ / ₃₂ " (2.38mm)
H	1 ⁶ / ₁₆ " (50.40mm)	1 ¹ / ₂ " (37.31mm)	1 ⁴ / ₁₆ " (41.67mm)	1 ³ / ₁₆ " (50.01mm)
I	1 ⁵ / ₃₂ " (11.91mm)	1 ⁵ / ₃₂ " (11.91mm)	1 ³ / ₃₂ " (10.32mm)	1 ⁵ / ₃₂ " (11.91mm)
Min. Mat. Thickness	2" (50.80mm)	1 ³ / ₈ " (34.93mm)	1 ³ / ₄ " (44.45mm)	2" (50.80mm)
Wood Screw Sizes	#12x2 ¹ / ₂ "	#14x2 ¹ / ₂ "	#10x2 ¹ / ₂ "	N/A
Soft Wood Pilot Hole	No. 38	No. 32	No. 43	N/A
Hard Wood Pilot Hole	No. 25	No. 10	No. 31	N/A
Machine Screw Sizes	#12-24x1"	# ¹ / ₄ -20x1"	#10-24x ³ / ₄ "	#12-24x1"
Hinge Weight	3.80 lbs.	1.92 lbs.	2.15 lbs.	3.44 lbs.

NOTE: Refer to page 40 for selecting the right hinge for fire-rated applications.

KEY TO DIMENSIONS SHOWN IN CHARTS



All fire rated hinges are shipped with the proper size wood and machine screws unless ordered without. **Do not exceed "E" dimension.**

Power Transfer Hinge



The SOSS Power Transfer Hinge gives you the ability to send power through our hinges. They are perfect for providing a route to run electrical wires from the frame into the door. This allows the transfer of electrical current to power electronic door devices, such as locks, strikes or door viewers. Two models, the 218PT and 220PT, are available. The 218PT is for doors with a 1³/₄" thickness, and the 220PT is for doors of 2" or more. Both models have been labeled by Underwriters Laboratories for use on hollow metal, sheet metal, tin clad, steel composite or wood core swinging type fire doors and frames with 20-minute ratings.

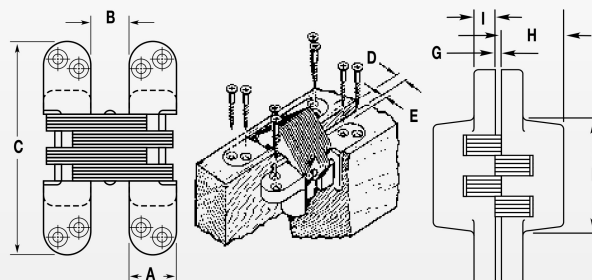
These hinges come with 4" of wires on one side and 1" on the other.

The SOSS Power Transfer Hinges are for use with **four or six** wire applications. **Maximum wire rating is 2.5 ampere at 24 volts of direct current.** For devices requiring **more than 2.5 AMP, do not use** SOSS Power Transfer Hinge. The maximum total current for a four wire hinge is two times the maximum current shown in the electrical ratings chart: two wires in, two wires out of door. The wires are 24 & 26 AWG for both the model #218PT and #220PT hinges. These wires are **not** to be connected to wires larger than 18 American wire gauge wires.

See page 40 for detailed fire rated information.

Model 218PT			Model 220PT		
Dimension	Inches	mm	Dimension	Inches	mm
A	1 ³ / ₄ "	28.58 mm	A	1 ³ / ₈ "	34.93 mm
B	7 ⁸ / ₈ "	22.23 mm	B	1 ¹ / ₁₆ "	26.99 mm
C	4 ⁵ / ₈ "	117.48 mm	C	5 ¹ / ₂ "	139.70 mm
D	3 ⁸ / ₈ "	9.53 mm	D	1 ² / ₂ "	12.70 mm
E	1 ⁴ / ₄ "	6.35 mm	E	9 ³ / ₃₂ "	7.14 mm
F	2 ¹⁵ / ₃₂ "	11.91 mm	F	2 ¹⁵ / ₁₆ "	74.61 mm
G	1 ¹ / ₁₆ "	1.59 mm	G	1 ¹ / ₁₆ "	1.59 mm
H	1 ⁴¹ / ₆₄ "	41.67 mm	H	1 ⁶³ / ₆₄ "	50.40 mm
I	1 ³ / ₃₂ "	10.32 mm	I	1 ⁵ / ₃₂ "	11.91 mm
Min. Mat. Thickness: 1 ³ / ₄ " (44.45 mm)			Min. Mat. Thickness: 2" (50.80 mm)		
Wood Screw Size: #10x1 ¹ / ₂ "			Wood Screw Size: #12x1 ¹ / ₂ " (5.5x38 mm)		
Soft Wood Pilot Hole: No. 43			Soft Wood Pilot Hole: No. 38		
Hard Wood Pilot Hole: No. 31			Hard Wood Pilot Hole: No. 25		
Machine Screw Size: #10-24x1"			Machine Screw Size: #12-24x1"		
Hinge Weight: 1.95 lb.			Hinge Weight: 3.24 lb.		

KEY TO DIMENSIONS SHOWN IN CHARTS



All power transfer hinges are shipped with the proper size wood and machine screws unless ordered without. Do not exceed "E" dimension.



Metal Cabinet Applications

HINGES ARE SHOWN HALF SIZE.

An assortment of specially modified SOSS Invisible Hinges is available for use in cabinets, computers, copiers and other electronic equipment. If you have a unique hinge installation application for our invisible hinge, modifications can be made to any of our standard models.

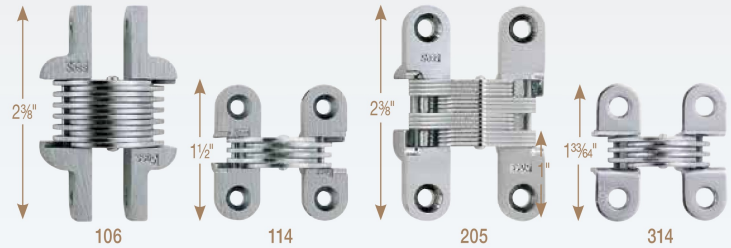
INSTALLATION OF METAL CABINET HINGES

Hinges 114, 205 and 314 are designed for easy installation in metal cabinets. A typical installation is shown in adjacent drawings. Hinge is shown in the open and closed position.

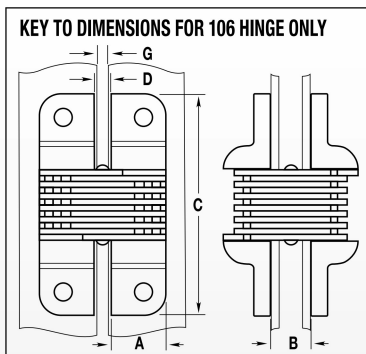
When installing hinges, sheet metal flange should be slotted for link bunch and drilled for fastener.

Model 106:

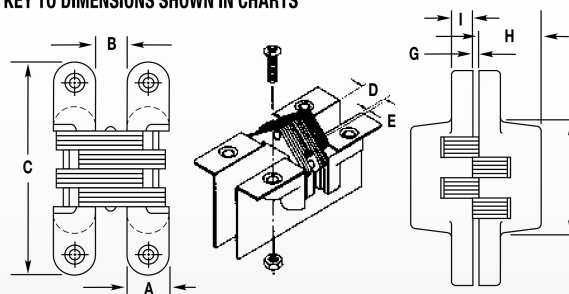
Mounts on BACK of door and frame and requires no mortise. Hinge is visible from the back, maximum door thickness is 5/64".



Dimension	106	114	205	314
A	1 ⁹ / ₃₂ " (15.08mm)	1 ¹ / ₂ " (12.70mm)	1 ¹ / ₂ " (12.70mm)	1 ¹ / ₂ " (12.70mm)
B	7 ¹ / ₈ " (11.11mm)	2 ⁹ / ₆₄ " (11.51mm)	3 ⁷ / ₆₄ " (14.68mm)	2 ⁹ / ₆₄ " (11.51mm)
C	2 ³ / ₈ " (60.33mm)	1 ¹ / ₂ " (38.10mm)	2 ³ / ₈ " (60.33mm)	1 ³ / ₃₂ " (38.50mm)
D	1 ³ / ₆₄ " (5.16mm)	1 ³ / ₆₄ " (5.16mm)	2 ¹ / ₆₄ " (8.33mm)	1 ³ / ₆₄ " (5.16mm)
E	N/A	1 ⁸ / ₈ " (3.18mm)	1 ⁸ / ₈ " (3.18mm)	1 ⁸ / ₈ " (3.18mm)
F	N/A	1 ¹ / ₆ " (17.46mm)	1 ¹ / ₄ " (31.75mm)	1 ⁹ / ₃₂ " (15.08mm)
G	1 ⁹ / ₃₂ " (15.08mm)	3 ⁵ / ₃₂ " (2.38mm)	1 ⁵ / ₆₄ " (5.95mm)	3 ⁵ / ₃₂ " (2.38mm)
H	N/A	1 ⁹ / ₃₂ " (15.08mm)	2 ³ / ₃₂ " (18.26mm)	4 ¹ / ₆₄ " (16.27mm)
I	N/A	7 ¹ / ₃₂ " (5.56mm)	1 ¹ / ₄ " (6.35mm)	1 ¹ / ₆ " (1.59mm)
Max. Matl. Thickness	3 ¹ / ₆₄ " (1.984mm)	3 ¹ / ₆₄ " (1.190mm)	3 ¹ / ₆₄ " (2.381mm)	N/A
Machine Screw Sizes	????	#6-40x1/2"	#8-32x3/8"	#5-40x1/2"
Hinge Weight	.18 lb.	.10 lb.	.22 lb.	.06 lb.



KEY TO DIMENSIONS SHOWN IN CHARTS



All metal cabinet hinges are shipped without screws unless otherwise specified.

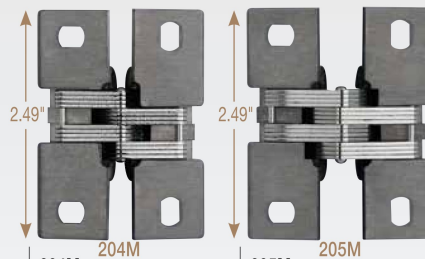
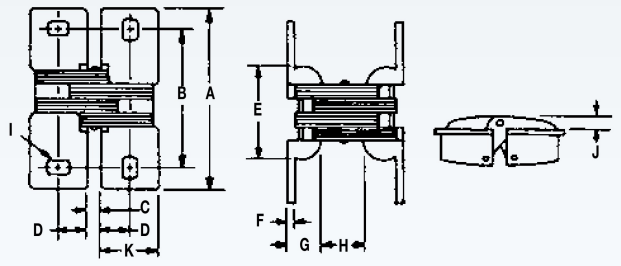
Do not exceed "E" dimension.

Metal Cabinet Applications

Special Applications

HINGES ARE SHOWN HALF SIZE.

KEY TO DIMENSIONS SHOWN IN CHARTS



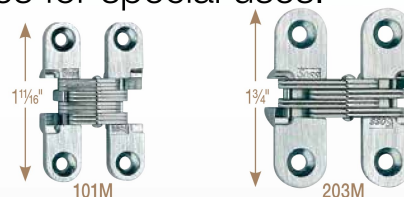
Dimension	204M	205M
A	2.49"(63.25mm)	2.49"(63.25mm)
B	1.89"(48mm)	1.89"(48mm)
C	.05"(1.27mm)	.23"(5.84mm)
D	.41"(10.41mm)	.41"(10.41mm)
E	1.25"(31.75mm)	1.25"(31.75mm)
F	.11"(2.79mm)	.11"(2.79mm)
G	.50"(12.70mm)	.50"(12.70mm)
H	.36"(9.14mm)	.58"(14.73mm)
I	.31"x.22"(7.87x5.59mm)	.31"x.22"(7.87x5.59mm)
J	-	.18"(4.57mm)
K	.80"(20.32mm)	.80"(20.32mm)
Hinge Weight	.20 lb.	.22 lb.

Modifications Are Available!

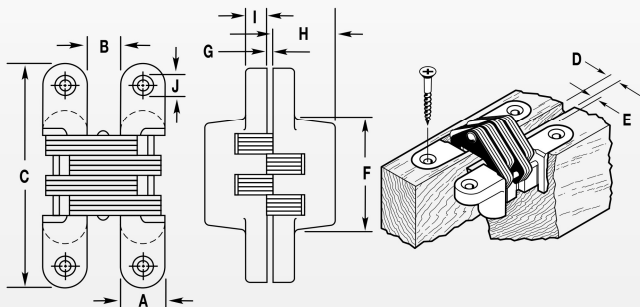
HINGES AT RIGHT ARE SHOWN HALF SIZE.

For special applications, unusual sizes and weights, engineering and design assistance is available free of charge. Please consult the SOSS Home Office.

We have modified the screw hole sizes for special uses.



KEY TO DIMENSIONS SHOWN IN CHARTS

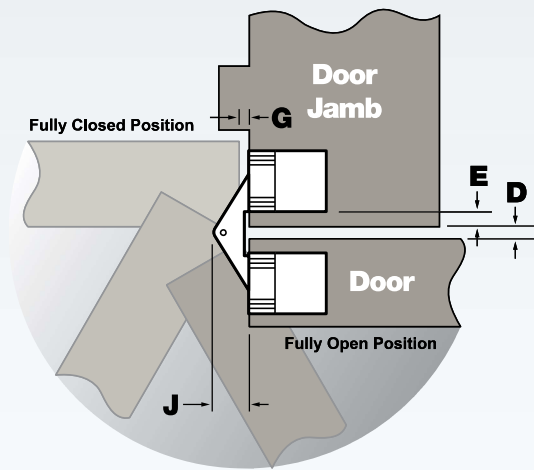


Modified hinges are not supplied with screws.
Do not exceed "E" dimension.

Dimension	101M	203M
A	3/8"(9.53mm)	1/2"(12.70mm)
B	19/64"(7.54mm)	23/64"(9.13mm)
C	1 1/16"(42.86mm)	1 3/4"(44.45mm)
D	7/64"(2.78mm)	7/64"(2.78mm)
E	3/32"(2.38mm)	1/8"(3.18mm)
F	1/8"(22.23mm)	3/4"(19.05mm)
G	1/32"(7.9mm)	1/32"(7.9mm)
H	29/64"(11.51mm)	23/32"(18.26mm)
I	7/32"(5.56mm)	3/16"(4.76mm)
J	.150"(w/.281" Countersink)	.230"(w/3/8" dia. x .09" Deep C' Bore)
Min. Mat. Thickness	1/2"(12.70mm)	3/4"(19.05mm)

Counterboring available by special request.

Path & Clearance for Doors



The diagram below left shows the typical path of a SOSS hinged door. The table shows the door clearance when fully opened for each SOSS hinge.

Hinge No.	Dimensions							
	E		D		G		J	
	Inch	mm	Inch	mm	Inch	mm	Inch	mm
101	3/32	2.4	7/64	2.78	1/32	0.8	11/64	4.37
103	1/8	3.2	1/8	3.18	1/32	0.8	7/32	5.56
303	1/8	3.2	1/8	3.18	1/32	0.8	15/64	5.95
314	1/8	3.18	13/64	5.16	3/32	2.4	1/4	6.35
203	1/8	3.2	7/64	2.78	1/32	0.8	15/64	5.95
204	1/8	3.2	7/64	2.78	1/32	0.79	15/64	5.95
208	5/32	4.0	9/64	3.57	3/64	1.2	5/16	7.94
212	3/16	4.8	11/64	4.37	3/64	1.2	3/8	9.53
216	1/4	6.4	15/64	5.95	1/16	1.6	33/64	13.10
218	1/4	6.4	3/8	9.53	1/16	1.2	1/2	12.70
220	9/32	7.1	1/2	12.7	1/16	1.6	39/64	15.48

Open Clearance for Special Doors with Added Material

Many doors often have applied material to the pull or push side of a door. This could be an applied mirror, paneling, trim or baseboard. When using SOSS Invisible

hinges and applying material to the push side of your door and/or frame, there is no concern with the hinges working as designed. However, as material is applied to

the pull side face of the door and/or frame, modifications to how the hinges are installed are often times required. Following are diagrams and information about typical

modifications to the installation of SOSS Invisible Hinges when applying material to the pull side face of the door and/or frame.

180° Opening – Standard basket with material applied to door and frame	180° Opening with no basket and material applied to door and frame	90° Opening – Standard basket with material applied to door only	90° Opening – Standard basket with material applied to frame only
<p>Dotted lines show any thickness can be used for 90° opening</p> <p>A 45° bevel on applied material with a thickness less than half the max. door clearance will provide 180° door opening. See hinge template drawing for door clearance at 180° opening.</p>	<p>The maximum added material thickness = dimension "E".</p>		
		<p>Clearance reduces to approximately 1/64" as door approaches the frame upon opening. Beyond that point, the clearance increases to the maximum clearance when the door reaches its fully open position at 180°. See the hinge template drawing for that dimension. If the template "E" dimension is exceeded, the door will hit the jamb and bind. See specifications for SOSS Invisible Hinges on previous pages for dimension "E".</p>	

Barrel Hinge

SOSS Invisible Barrel Hinges are made of solid brass with brass links. They are easily installed. Just drill to the proper size and insert the hinge. SOSS Invisible Barrel Hinges are totally invisible from either side when the door is closed.

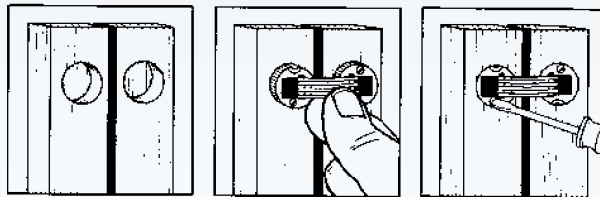
EASILY INSTALLED

Secure mounting in wooden door or panel is assured by tightening the tensioning screw on all models except BH085. It is held in place with #2 screws supplied with each hinge. On all other models to accommodate more demanding weight applications, the cylinders can be additionally secured by installing a chipboard or wood screw in the groove on the exposed end. Forstner drill bits are recommended for best results.

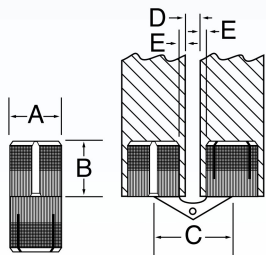


Not recommended for vertical or load bearing applications. No load recommendations available. Light applications only.

Hinge BH104 used in solid wood flybox manufactured by Southern Heritage Craftsmen, 843-342-5393.



Part #	Min. Door Thickness	Drill Bit (mm)	Drill Bit (in.)	Dimensions (mm)					Wood Screw
				A	B	C	D min.	E max.	
BH085	7/16"	8 mm	Letter "O"	8.18	9.9	11.6	1.9	0.8	#2x3/8"
BH104	1/2"	10 mm	25/64"	10	11.5	15.7	2	1.8	#3x3/8"
BH124	5/8"	12 mm	15/62"	12	13.3	19	2.7	2.1	#4x1/2"
BH144	3/4"	14 mm	35/64"	14	15.5	23	3	3	#6x1/2"
BH164	7/8"	16 mm	5/8"	16	16.5	23.5	3	2.3	#6x5/8"
BH184	1 1/8"	18 mm	45/64"	18	18	27	3	3	#6x3/4"
BH244	1 1/4"	24 mm	15/16"	24	24.9	35.1	4.1	3.5	#10x1 1/4"



If desired, a customer-supplied secondary screw may be installed in the groove that is 180 degrees from the tensioning screw; this is optional and not supplied with the hinges.

NOTE: For exact applications it is recommended the hinge be measured before installation as the above dimensions may vary slightly.

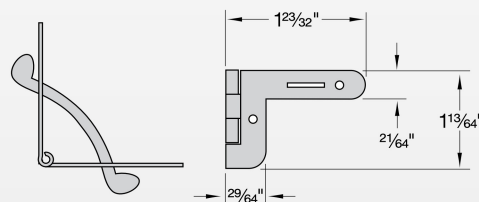
Quadrant Hinge

Constructed of stainless steel, the SOSS Quadrant Hinge is now available for woodworkers or manufacturers of high-quality wood products. The hinge support is mortised into the case or frame, so when the case is closed it is virtually invisible.

Available in either a bright gold or bright brass finish, the SOSS Quadrant Hinge adds a custom touch to that special wood project.

Part #	Description
QH6	Quadrant Hinge, Bright Gold on Stainless Steel
QH7	Quadrant Hinge, Bright Brass on Stainless Steel

Packaged two per bag, #2x3/8" flat head Phillips wood screws included.



Magnetic Door Holder & Stop

Sturdy, practical and easy to install, SOSS Magnetic Door Holder and Stop holds doors open even in a heavy wind.

Mount either vertically to the floor or horizontally to baseboard or wall.

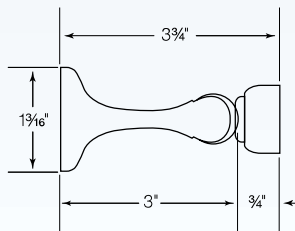
Available for bulk shipment or in full-color point-of-purchase cards.



EIGHT FINISHES AVAILABLE:

Oil Rubbed Bronze, Antique Bronze, Satin Nickel, Black Powdercoat, Satin Chrome, Bright Chrome, Bright Gold and White Powdercoat.

Part #	Finish Description
MDHBUS10B-HS	Oil Rubbed Bronze
MDHBUS10-HS	Antique Bronze
MDHBUS15-HS	Satin Nickel
MDHBUS19-HS	Black Powdercoat
MDHBUS26D-HS	Satin Chrome
MDHBUS26-HS	Bright Chrome
MDHBUS3-HS	Bright Gold
MDHBWH-HS	White Powdercoat

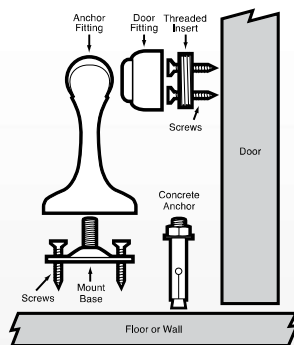


DIMENSIONS

Overall Length	3 3/4"
Main Stem Length	3"
Base Length	3/4"
Base Diameter	1 3/16"

MATERIAL

Zamac & Steel



HOLDING POWER

SOSS Magnetic Door Holders have a magnetic holding power of 9 lbs. when installed properly.

MULTIPLE POSITION MOUNTING

SOSS Magnetic Door Holders mount either vertically to the floor or horizontally to the baseboard or wall.

HARDWARE

Three plastic anchors, five #7-1" screws and one 1/4x20x1 3/16" concrete anchor are included.



Router Guide Templates & Template System

ROUTER GUIDE TEMPLATES

SOSS Invisible Hinges now can be installed easier and faster than ever before. Router guide templates are available for hinges as shown on the chart.

A perfect routed outline is foolproof (the only critical dimension is the depth of the shallow mortise), so you can expect a perfect installation every time.



Each router guide template is individually handcrafted for exactness. The template is held on the door and jamb with nails; guide pins locate the deep mortise. The edges of the template assure a perfect outline when used with SOSS RGB100 Template Guide and Lock Nut, or the Porter-Cable Template Guide #42024 (Lock Face Routing) and #42237 (Lock Nut).

CAUTION:

Do not use resharpened bits.

NOTE:

Please visit our website, www.soss.com, for a video on how to use the SOSS Installation Templates and Template Systems to install SOSS Invisible Hinges.



Hinge Model	Router Bit Size	Router Guide Template #
#101	1/4"	101IT
#103	3/8"	103IT
#203	3/8"	203IT
#204	3/8"	204IT
#208	3/8"	208IT
#212	3/8"	212IT
#216	1/2"	216IT
#218	1/2"	218IT
#220	1/2"	220IT
#416	1/2"	416IT
#418	1/2"	418IT

ROUTER GUIDE SYSTEM EASILY APPLIED TO DOOR AND FRAME

The SOSS Router Guide System saves you time and measurements. The router guide templates can be positioned exactly to the hinge locations desired, and then locked into place. The system, with two, three or four router guides locked into place, can be moved from door to door jamb, thereby eliminating time consuming measurements.

For complete instructions for installation with a router guide system, please visit our website or contact the SOSS office. Complete instructions are supplied with each Router Guide System.

Three-Piece Router Guide System	For Hinge#
212RG3	#212
216RG3	#216 and #416
218RG3	#218 and #418
220RG3	#220
Four-Piece Router Guide System	For Hinge#
212RG4	#212
216RG4	#216 and #416
218RG4	#218 and #418
220RG4	#220



Router Bits

SOSS Door Hardware now has available Amana Tool Router Bits to be used with each of our router guides. These router bits are manufactured with the highest quality materials, so you can expect the same great quality from Amana Tool that SOSS Door Hardware has been providing for more than 115 years.

NOTE: The 46259S Amana Tool Router bit requires the use of a $\frac{3}{8}$ " collet. Your router must be fitted with this size collet in order to use this router bit.

Recommended Amana Tool® Router Bits

SOSS Router Guide #	Router Bit Part Number	Router Bit Size
101IT	43828	$\frac{1}{4}$ " x $2\frac{7}{8}$ "
103IT	46259S	$\frac{3}{8}$ " x $3\frac{1}{4}$ "
203IT	46259S	$\frac{3}{8}$ " x $3\frac{1}{4}$ "
204IT	46259S	$\frac{3}{8}$ " x $3\frac{1}{4}$ "
208IT	46259S	$\frac{3}{8}$ " x $3\frac{1}{4}$ "
212IT	46259S	$\frac{3}{8}$ " x $3\frac{1}{4}$ "
216IT	51310	$\frac{1}{2}$ " x $3\frac{1}{4}$ "
218IT	51310	$\frac{1}{2}$ " x $3\frac{1}{4}$ "
220IT	51310	$\frac{1}{2}$ " x $3\frac{1}{4}$ "
416IT	51310	$\frac{1}{2}$ " x $3\frac{1}{4}$ "
418IT	51310	$\frac{1}{2}$ " x $3\frac{1}{4}$ "



Router Guide Bushing & Lock Nut

RGB100 ROUTER GUIDE BUSHING & LOCKNUT

Guide bushing and locknut for use with SOSS Invisible Hinge Router Guide. Guide bushing I.D. $2\frac{1}{32}$ "; O.D. $\frac{3}{4}$ "; distance past base $\frac{3}{16}$ "; locknut fits bushing.



Fits most routers.

Steel Door Reinforcements

Save time and expense by using these all-steel reinforcements that are ready to weld into place. Reinforcements are available for the SOSS hinges #216, #218, #220, #416 and #418.

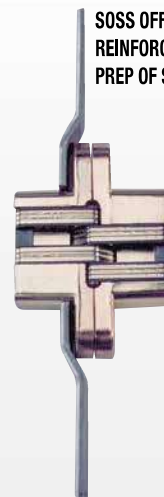
Hinge reinforcement drawings are available. Contact the SOSS office for further information.

U.I.P. #	Description	Hinge
216SDB	Steel, Two Pieces Per Side	216, 416
218SDB	Steel, Two Pieces Per Side	218, 418
220SDB	Steel, Two Pieces Per Side	220



As seen from the inside of the door looking out.

SOSS OFFERS READY-MADE REINFORCEMENTS FOR EASY PREP OF STEEL DOORS.

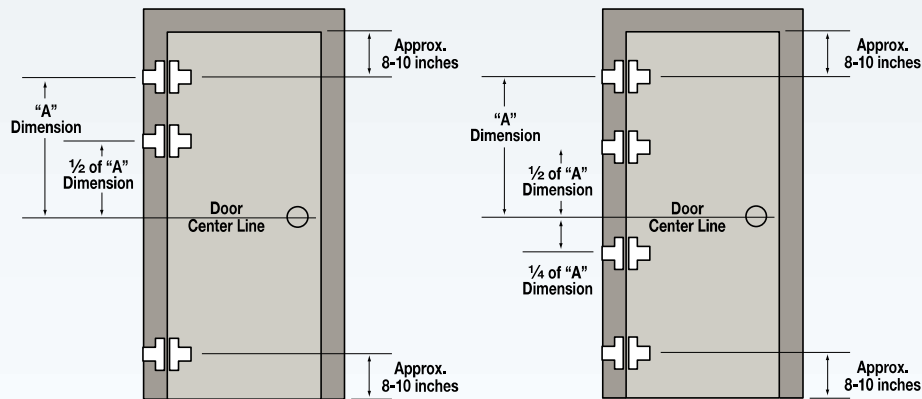


Installation Information

Recommended Spacing

Notice in the illustration showing three hinges, that the "center" hinge is not shown in the usual location near the center of the door. The "center" hinge should be located one-half the distance from the horizontal center line of the door to the center line of the top hinge.

On installations requiring four SOSS Invisible Hinges, the second hinge from the top should be located one-half the distance from the door's horizontal center line to the center line of the top hinge. The third hinge from the top should be located one-quarter of the "A" dimension below the horizontal centerline of the door.



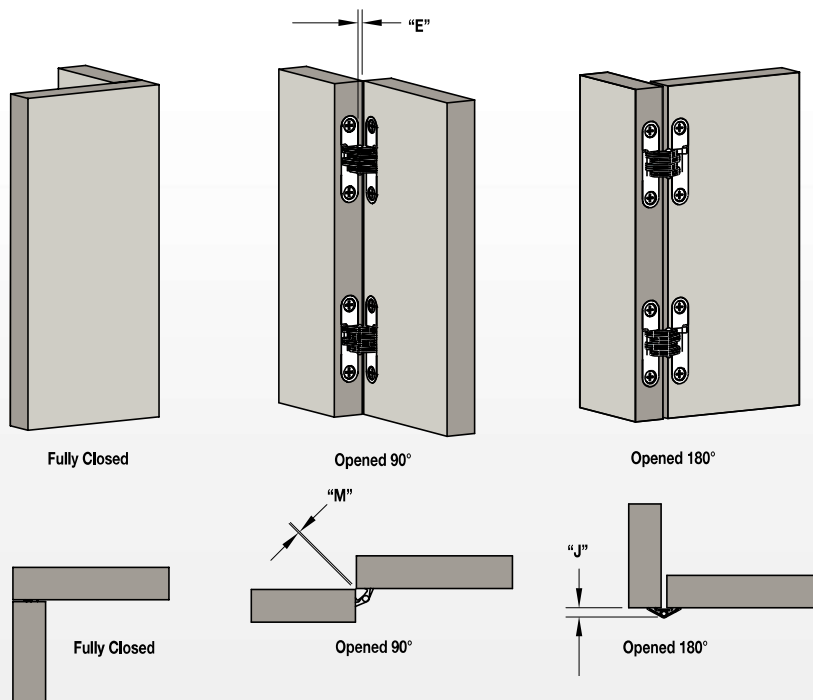
For small cabinet doors using the light or medium duty hinges the spacing for the top and bottom hinges need only be 2- 4 inches from the top or bottom of the door to the center line of the top or bottom hinge respectively.

NOTE: For spacing information beyond what is shown, visit our website at www.soss.com.

Overlay Applications

SOSS Invisible Hinges are not just for use in flush inset doors applications. They also can be used in some overlay door applications. The illustrations show how our hinges operate in this type of application. Please contact our customer service department for further assistance.

Hinge #	"M"	"J"	"E"
100	0.020"	1 ¹ / ₆₄ "	3 ³ / ₃₂ "
101	0.032"	1 ¹ / ₆₄ "	3 ³ / ₃₂ "
103	0.016"	7 ³² / ₃₂ "	1 ¹ / ₈ "
203	0.016"	15 ⁵ / ₆₄ "	1 ¹ / ₈ "
204	0.020"	15 ⁵ / ₆₄ "	1 ¹ / ₈ "
208	0.021"	5 ¹ / ₁₆ "	5 ³ / ₃₂ "
212	0.025"	3 ¹ / ₈ "	3 ¹ / ₁₆ "
216	0.045"	33 ³ / ₆₄ "	1 ¹ / ₄ "
218	0.084"	1 ¹ / ₂ "	1 ¹ / ₄ "
220	0.128"	39 ³ / ₆₄ "	3 ³ / ₃₂ "



Choosing the Right Hinge and the Right Number of Hinges

For your convenience, an interactive, easy to use hinge sizing calculator is available on our website, www.soss.com.

If the information you need is not on the online calculator or this chart, consult the factory.

To obtain the best performance from SOSS Invisible Hinges, it is recommended that the largest hinge model be used for the material thickness of the door.

Every door should be provided with at least one hinge for every 30 inches in height or portion thereof; however, more hinges may be required per chart below.

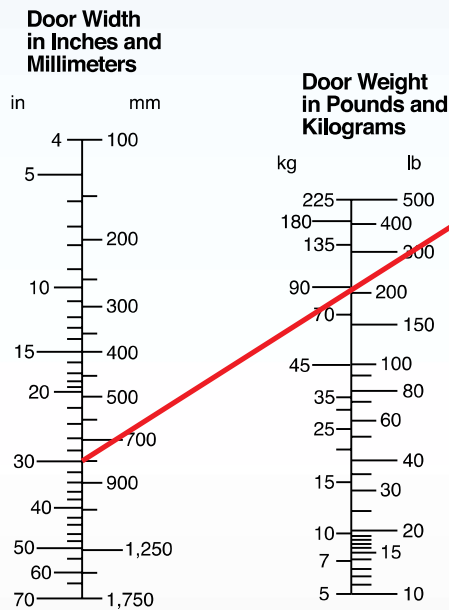
For example, a 90" door needs three hinges and a 91" door needs four.

DIRECTIONS

After determining the weight and width of the door, draw a straight line through the door width and weight to line "A", as indicated in the example.

Continue with a horizontal line sideways from the point of intersection with line "A" until the door thickness is reached. Use the number of hinges and the model number indicated on this line.

To use this chart as a working guide, we suggest that you photocopy this page.



NOTE: For Fire-Rated Hinges, use formulas described on page 40.

EXAMPLE

A wood door 30" wide, 200 lbs., with a thickness of 1 3/4" will require four #218 SOSS Invisible Hinges. The red line shows how the sizing and selection were determined from the hinge sizing chart.

The hinge sizing chart above has been developed to assist you in determining the correct size and number of hinges for your installation.

NOTE: For doors that exceed size/weight on this chart, consider using our new Hercules hinges shown on page 37.

Hinge Number	METAL				WOOD & METAL							
	9/16	5/8	1/2	11/16	3/4	1	1 1/8	1 3/8	1 3/4	1 7/8	2	
Minimum Door Thickness	14.29mm	15.88mm	12.70mm	17.46mm	19.05mm	25.40mm	28.56mm	34.93mm	44.45mm	50.80mm		
114												
314												
205												
106												
100												
101												
303												
103												
203												
204												
208												
212												
216												
218												
220												