



# Door Hinges

**D**

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EN1935(BS EN1935 Single Axis Hinges)

BS EN 1935 classifies door furniture by using an 8 digit coding system. A similar classification applies to all building hardware product standards so that complementary items of hardware can be specified to, for instance, a common level of corrosion resistance, category of use, etc. Each digit refers to a particular feature of the product measured against the standard's performance requirements.

1. Category of Use

- Four grades are identified:
- Grade 1 : Light duty
- Grade 2 : Medium duty
- Grade 3 : Heavy duty
- Grade 4 : Severe duty

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2. Durability

- Three grades of durability are identified for single-axsi hinges manufactured to this European standard:
- Grade 3 : 10 000 test cycles, for light duty hinges on windows only
- Grade 4 : 25 000 test cycles, for light duty hinges on windows and doors
- Grade 7 : 200 000 test cycles, for medium. heavy and severe duty hinges on door only

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3. Test Door Mass

Eight door mass grades related to single-axis hinges are identified in this European standard as shown in below.

6

Test Door Mass Grade	Door Mass
0	10kg
1	20kg
2	40kg
3	60kg
4	80kg
5	100kg
6	120kg
7	160kg

4. Fire Resistance

- Two grades of fires resistance are identified:
- Grade 0 : Not approved for fire /smoke resistant door assemblies
- Grade 1 : Suitable for fire/smoke resistant door assemblies subject to satisfactory assessment of the contribution of the single-axis hinge to the fire resistance of the specified fire/smoke door assemblies.
- such assessment is beyond the scope of this European standard(see EN 1634-1).

1

5. Safety

Single-axis hinges are required to satisfy the essential requirement of safety in use. Therefore, only Grade 1 is identified.

1

6. Corrosion Resistance

- Five grades of corrosion resistance are identified in accordance are identified in accordance with EN 1670:
- Grade 0: No defined corrosion resistance.
- Grade 1: Mild resistance
- Grade 2: Moderate Resistance
- Grade 3: High resistance
- Grade 4: Very High resistance

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7. Security

- Two grades of security are identified for single-axis hinges:
- Grade 0:Not suitable for use on burglar-resistant door assemblies
- Grade 1:Suitable for applications requiring a degree of security. Annex C of this European standard details the hinge grade to use for the level of security required.

0

8. Hinge Grade

Fourteen grades are identified in this European standard and are detailed in table 2 below. The full classification is shown in the standard.

13

Hinge Grade	Usage	Test Cycles	Door Mass
1	Window	10 000	10kg
2	Window	10 000	20kg
3	Window/Door	25 000	20kg
4	Door	200 000	20kg
5	Window	10 000	40kg
6	Window/Door	25 000	40kg
7	Door	200 000	40kg
8	Window	10 000	60kg
9	Window/Door	25 000	60kg
10	Door	200 000	60kg
11	Door	200 000	80kg
12	Door	200 000	100kg
13	Door	200 000	120kg
14	Door	200 000	160kg

BS EN 1634 Part 1: 2000

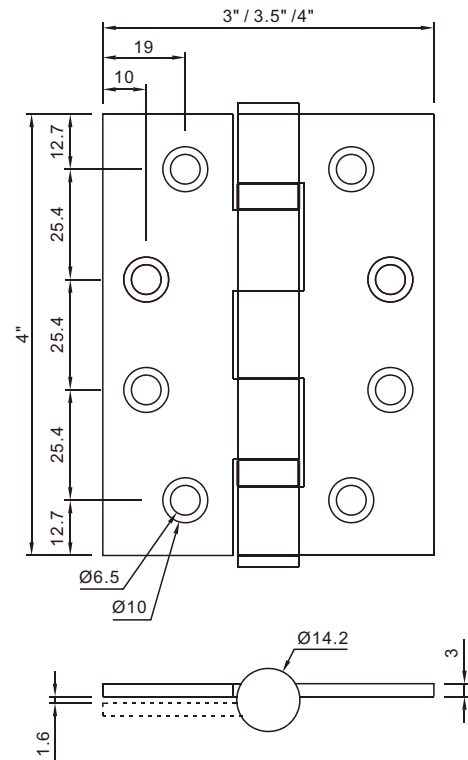
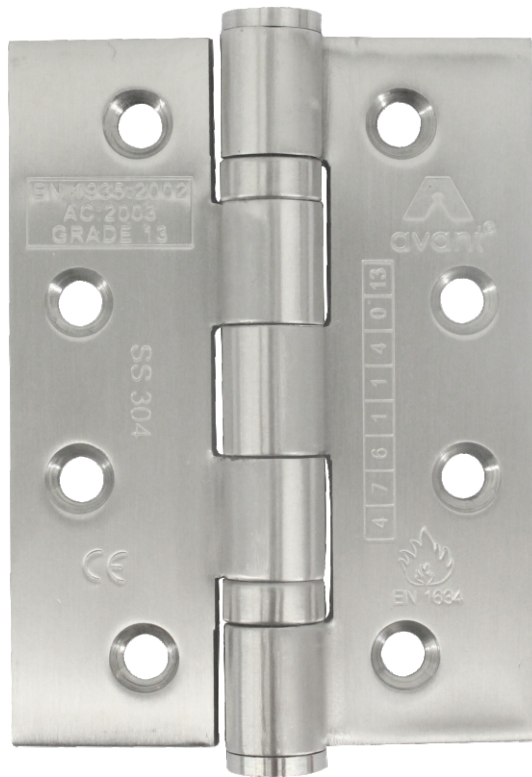
- Is the European Fire safety Standard for determining the fire resistance of door and shutter assemblies including hardware designed for installation within openings incorporated in vertical separating elements(door sets).
- Locks can be assessed to be suitable on:
- FD30 (30 minute) Fire Doors
- FD60 (60 minute) Fire Doors

CE Marking

CE Marking is the easiest and safest route to providing compliance with the latest UK construction Product Directive for hardware used on fire, smoke and escape doors.

AVANT CE mark Grade 13 Hinges Successfully tested for conformity to all the requirements of BS EN1935, 8 Classification: 476114013

## CE Mortise Hinge Grade 13 AVSS001



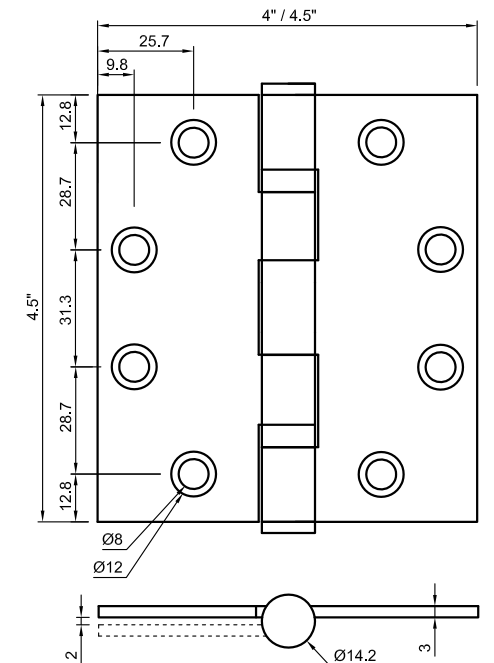
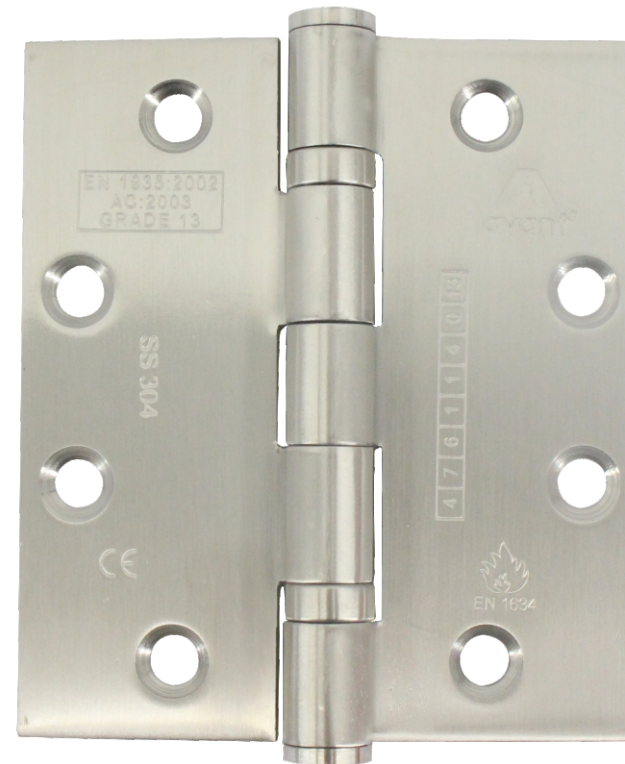
Class: **4 7 6 1 1 4 0 1 3**

### Features

- Double ball bearing, five knuckle hinge
- Successfully type tested for conformity to all the requirements of BS EN1935/ EN 1634
- Supplied with SS Screws
- Load bearing capacity up to 120kg
- Available in square or radius corner
- Tested to over 200,000 cycles
- Suitable for fire/smoke resistant doors
- Finished with softened edges
- Pre-cut intumescent hinge pads available

Data and Features	AVSS001		
Size in inch ( Height x Width )	4 x 3	4 x 3.5	4 x 4
Thickness in mm	3.0	3.0	3.0
Standard Doors	•	•	•
Fire and smoke resistant doors	•	•	•
Non - handed	•	•	•
5 Knuckles	•	•	•
Ball Bearing ( 2BB )	•	•	•
CE mark for building products	•	•	•
Optional Pin Type			
Non-removable Pin ( NRP )	•	•	•
Removable Pin ( RP )			
Security Stud ( SS )			

## CE Mortise Hinge Grade 13 AVSS001



Class: **4 7 6 1 1 4 0 1 3**

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- Pre-cut intumescent hinge pads available

Art. No.	Height (inch)	Width (inch)	Thickness (mm)
1010.01.0101	4.5"	4"	3.0

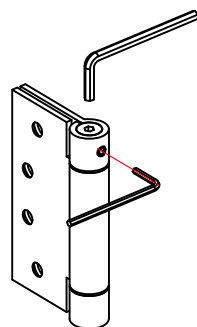
Data and Features	AVSS001	
Size in inch ( Height x Width )	4.5 x 4	4.5 x 4.5
Thickness in mm	3.0	3.0
Standard Doors	•	•
Fire and smoke resistant doors	•	•
Non - handed	•	•
5 Knuckles	•	•
Ball Bearing ( 2BB )	•	•
CE mark for building products	•	•
Optional Pin Type		
Non-removable Pin ( NRP )	•	•
Removable Pin ( RP )		
Security Stud ( SS )		



AVSS033

### Stainless Steel Single Action Spring Hinge

- Open to 180° as long as the frame detail doesn't obstruct it.
- Single Acting, Square Corner Template
- Adjustable Spring Tension
- Self-closing
- Size: 3"/3.5"/4"/4.5"
- Mainly used in occasions that automatically close doors and protect privacy: toilets, commercial doors, etc.
- Hinge leaf with two knuckles is fixed to the frame.



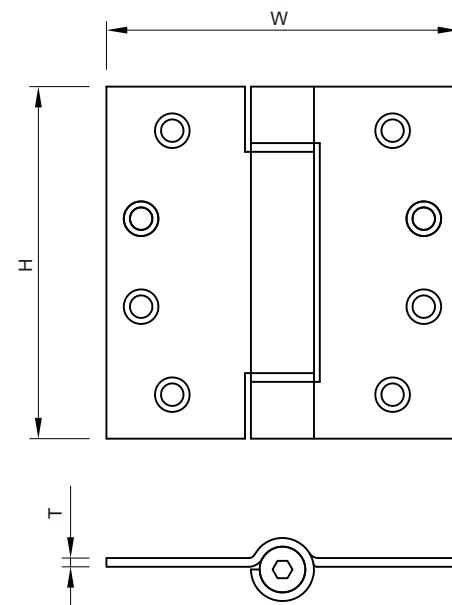
Fixing of adjusted spring force

#### Loosen:

Slacken safety lock screw on the side of the knuckle. Press down firmly and simultaneously turn the hexagon socket screw in the knuckle anti-clockwise. Repeat this action until the hinge is completely loosened. Then install the hinges.

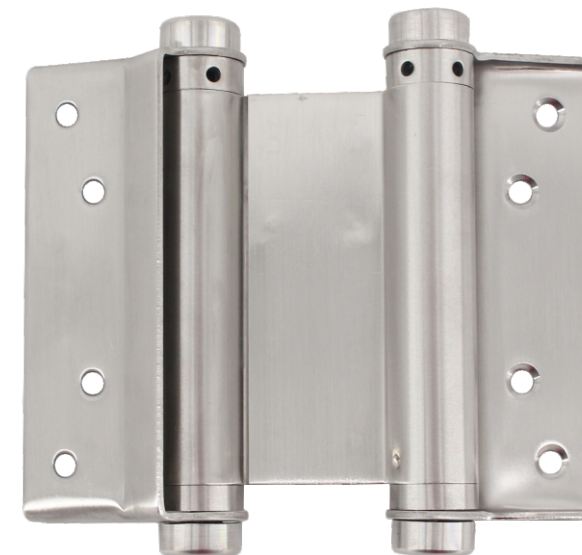
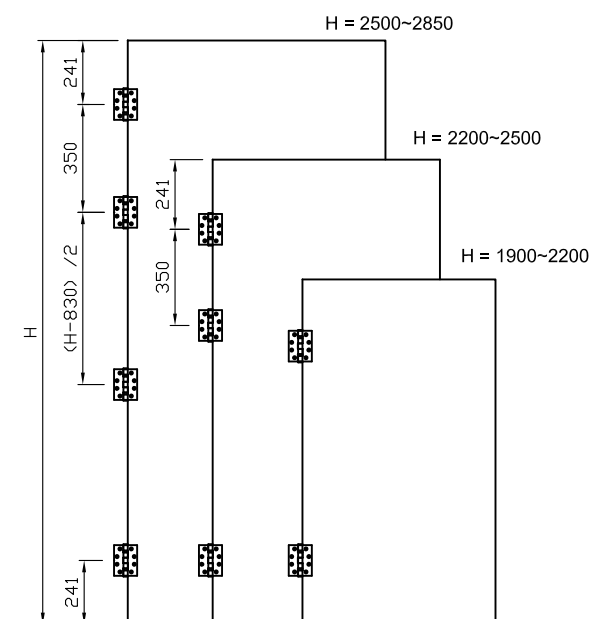
#### Tighten:

Turn the hexagon socket screw in the knuckle clockwise and set spring force of all hinges equally as required. Re-tighten safety lock screw.



### Recommendation: 3 Pieces per door

Dimension(Hx Wx T)	Door Weight/ 3 Pcs
3.0"x3.0"x3.0mm	≤ 28kg
3.5"x3.5"x3.0mm	≤ 35kg
4.0"x3.0"x3.0mm	≤ 40kg
4.0"x4.0"x3.0mm	≤ 40kg
4.5"x4.0"x3.0mm	≤ 50kg
4.5"x4.5"x3.0mm	≤ 50kg
4.5"x4.0"x3.4mm	≤ 60kg
4.5"x4.5"x3.4mm	≤ 60kg



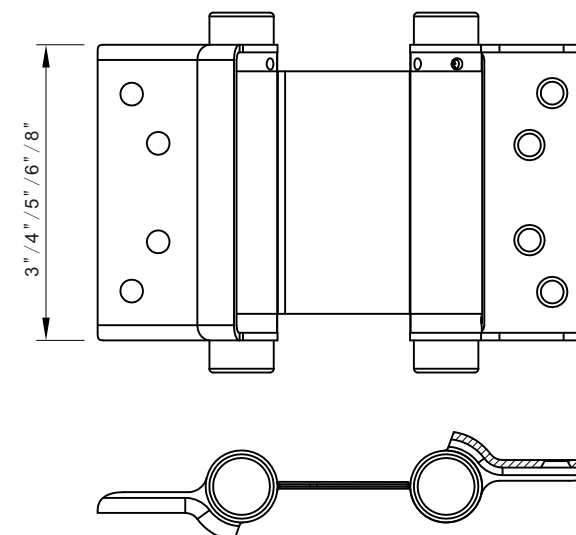
AVSS038

### Stainless Steel Double Action Spring Hinge

- Open to 180° in each direction
- Double Acting
- Adjustable Spring Tension
- Self-closing
- Size: 3"/4"/5"/6"/8" x2.0 Thickness
- Mainly used in two-way free access and automatic door closing occasions. Such as: bar counter, cash register
- Hotel/ Motel Entrance door

### Recommendation: 3 Pieces per door

Size	Door Thickness	Door Weight/ 3 Pcs
3"	22-30	≤ 22kg
4"	25-38	≤ 27kg
5"	25-42	≤ 35kg
6"	30-42	≤ 40kg
8"	30-45	≤ 60kg

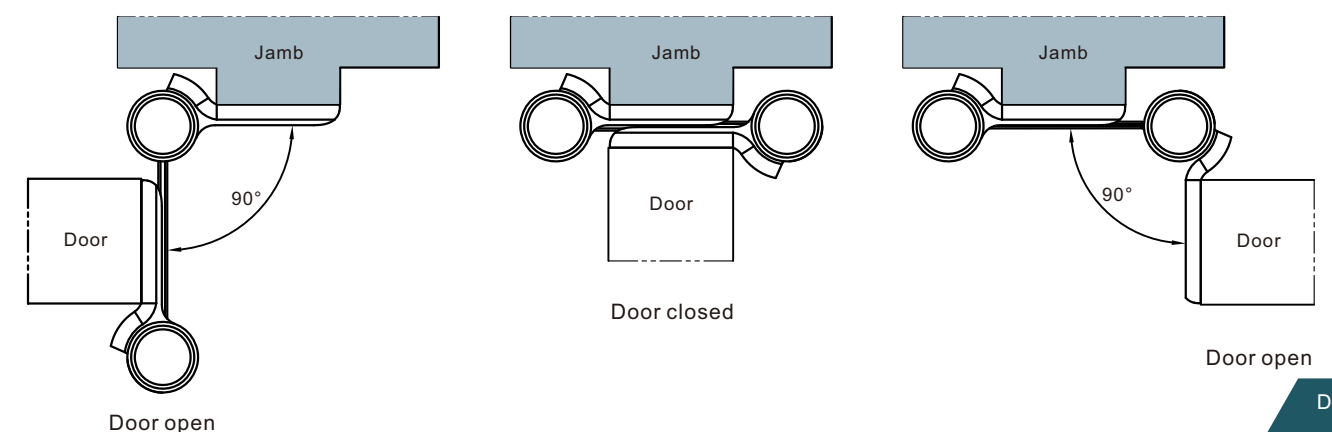


### Double Acting Spring Hinges

Permits doors to open in either direction and automatically return to closed position.

- Provides maximum protection for doors subject to normal abuse of lift trucks, due to resiliency of spring support and shock absorbing reaction of flexible mounting.
- Available in size to accommodate a wide range of door sizes and weights.
- Adjustable spring tension permits power and speed adjustment of each size spring hinge.
- No hanging strip is required on frame.

### Top View of Double Acting Spring Hinge Operation



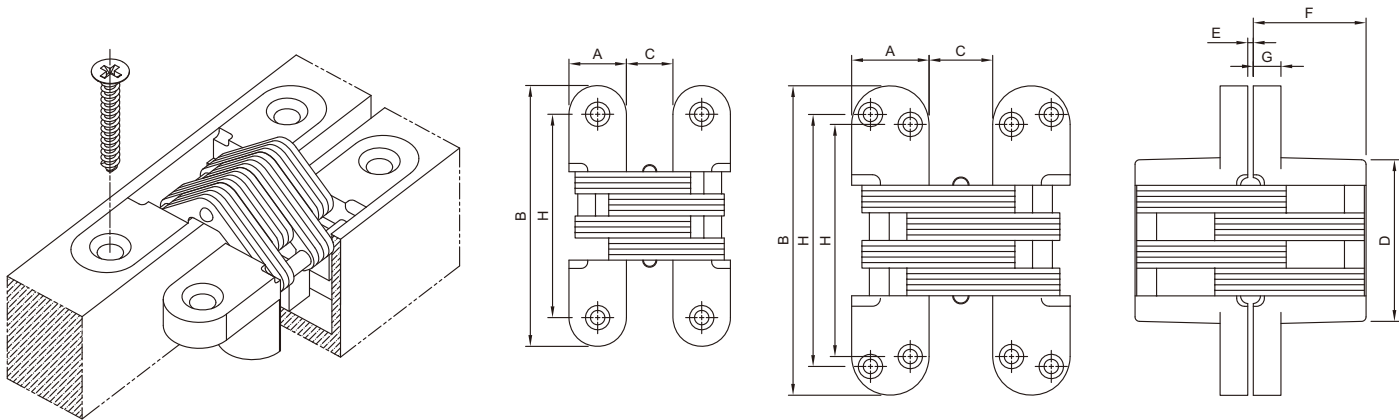




### AVCH006 - Stainless Steel

#### Features

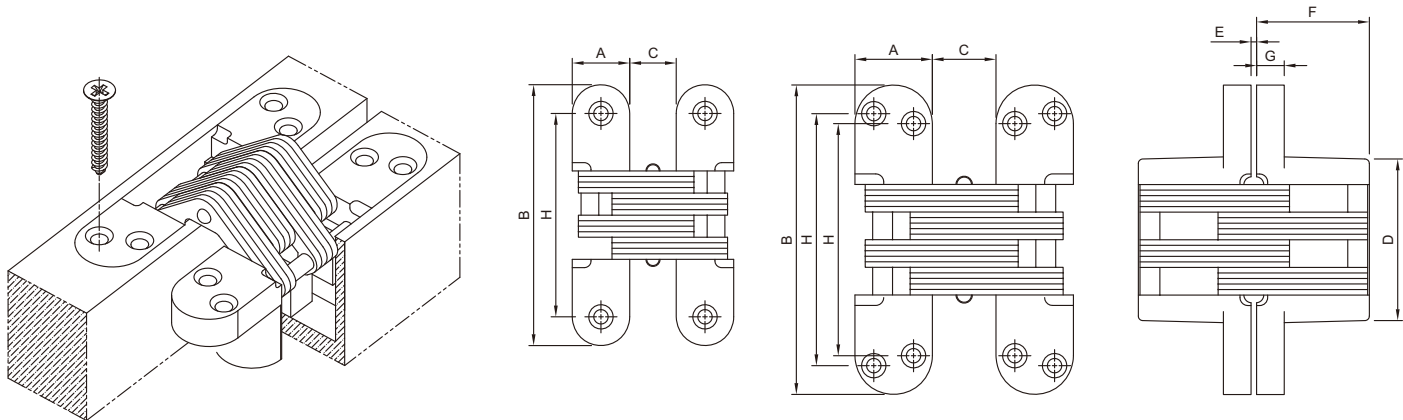
- Casting Stainless Steel Body, Stainless Steel Strips
- Concealed Installation
- Totally Invisible When Door Is Closed
- Non-handed
- Suitable For Timber And Metal Doors
- Finish: SSS, PSS, PB, PVD, AB, AC
- Maximum Opening Angle 180 Degree.
- Standard: 3 Pcs Per Door
- Packed With Screws



### AVCH007 - Zinc Alloy

#### Features

- Casting Zinc Alloy Body, Stainless Steel Strips
- Concealed Installation
- Totally Invisible When Door Is Closed
- Non-handed
- Suitable For Timber And Metal Doors
- Finish: SSS, PSS, PB, PVD, AB, AC
- Maximum Opening Angle 180 Degree.
- Standard: 3 Pcs Per Door
- Packed With Screws



Data Unit (mm)	Stainless Steel Body, Stainless Steel Connecting Strips											
Product Code	Size	Min. Door Thickness	Max. Door Weight	A Hinge Width	B Hinge Length	C	D Mortise Length	E Dimension From Door Edge	F Mortise Depth	G Plate Depth	H < CTC >	
AVCH006-09	34 x 140	50mm	120kgs	34	139.5	27.5	74.5	1.6	51	11.5	113.5	102.5
AVCH006-08	28 x 118	40mm	100kgs	28	118	22	61.5	1.4	41	9.5	93	88
AVCH006-07	25 x 118	35mm	80kgs	25	118	18	65.3	1	36.5	11.3	90.5	
AVCH006-06	19 x 95	30mm	60kgs	19	95	13	52.5	1.2	27	9	73	
AVCH006-05	16 x 70	25mm	45kgs	16	70	11	34	0.8	22.5	7.4	51	
AVCH006-04 Spring Type	28 x 118	40mm	100kgs	28	118	22	61.5	1.4	41	9.5	93	88
AVCH006-03 Spring Type	25 x 118	35mm	80kgs	25	118	18	65.3	1	36.5	11.3	90.5	

Data Unit (mm)	Zinc Alloy Body, Stainless Steel Connecting Strips											
Product Code	Size	Min. Door Thickness	Max. Door Weight	A Hinge Width	B Hinge Length	C	D Mortise Length	E Dimension From Door Edge	F Mortise Depth	G Plate Depth	H < CTC >	
AVCH007-09	34 x 140	50mm	70kgs	34	140	27.5	74.5	1.6	51	11.5	113.5	102.5
AVCH007-09	28 x 118	40mm	55kgs	28	117.5	22	61.5	1.4	41	9.5	93	87
AVCH007-09	25 x 118	35mm	45kgs	25	117.5	18	64	1.6	36	11	90	
AVCH007-09	19 x 95	30mm	35kgs	19	95	13	51.2	1.2	27	9	73	
AVCH007-09	16 x 70	25mm	25kgs	16	70	11	34	0.8	22.5	7	51	
AVCH007-09	13 x 60	20mm	14kgs	13	60	9	30.5	0.8	18	6	47	
AVCH007-09 Spring Type	13 x 45	20mm	10kgs	13	45	9	19	0.8	18	5	30.5	
AVCH007-09 Spring Type	28 x 117.5	40mm	50kgs	28	117.5	25	61.5	1.4	44	12	90	

### 3-D Adjustable Invisible Hinge AVCH008



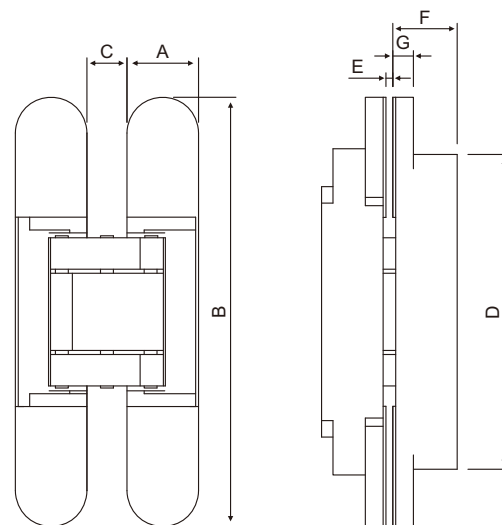
**Polished Screw Hole Details**  
Fine workmanship, surface grinding treatment. The texture is more prominent.



**One Piece**  
Key parts are processed in one piece. Strong load bearing.



**Uniform force on hinge arm**  
Hinge movement groove adopts precision abrasive. Exercise to improve service life.



Data Unit (mm)	AVCH008 - Zinc Alloy Body + Stainless Steel Cover									
Product Code	Size	Min. Door Thickness	Max. Door Weight	A Hinge Width	B Hinge Length	C	D Mortise Length	E Dimension From Door Edge	F Mortise Depth	G Plate Depth
AVCH008-40	25 x 150	35mm	40kg	25	150	14	121	3.5	22.5	6.5
AVCH008-80	28 x 177	40mm	80kg	28	177	16	145	3.5	25.5	9
AVCH008-120	34 x 246	45mm	120kg	34	246	18	212.5	3.5	27.5	9

Color Option : Silver, Black, Gold, Polish Brass, AB, etc.

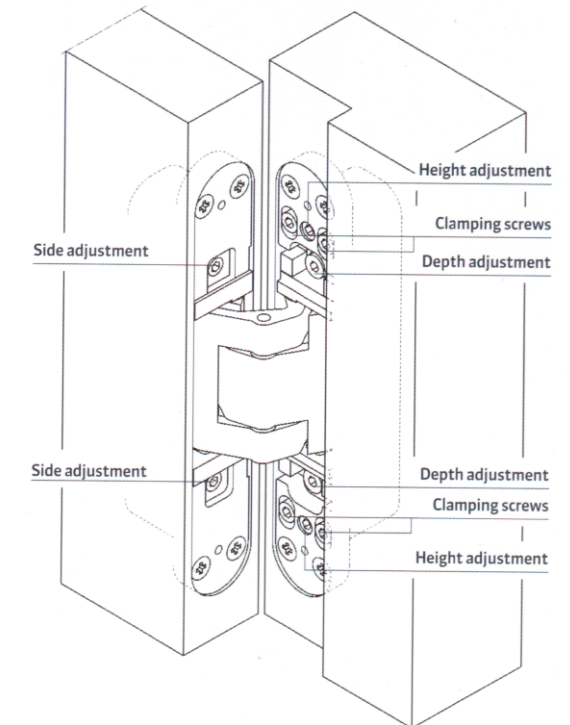
## ADJUSTMENT

#### Three Way Adjustable

Side	+/- 3mm
Height	+/- 2mm
Depth	+/- 1mm

#### Side Adjustment ( Horizontal )

- Adjust The Adjusting Spindles Using A 4mm ( 0.157" ) Allen Key
- Turn Side Adjustment Screw Counterclockwise For Increasing The Air Gap Max. 3mm ( 0.118" ) On The Locking Side
- Turn Side Adjustment Screw Clockwise For Decreasing The Air Gap Max. 3mm ( 0.118" ) On The Locking Side



#### Height Adjustment ( Vertical )

- Slightly Loosen All Four Clamping Screws On All Hinges
- Adjust The Vertical Position Of The Door
- Turn The Lower Height Adjustment Screw Clockwise For Raising The Door
- Turn The Lower Height Adjustment Screw Counterclockwise For Lowering The Door Note: Before Raising The Door, Make Sure That The Upper Adjustment Screw Is Loosened.
- Retighten The Clamping Screws On All Hinges

#### Depth Adjustment ( In / Out )

- Slightly Loosen The Fixing Screws
- Align The Door To The Desired Compression
- Retighten The Clamping Screws

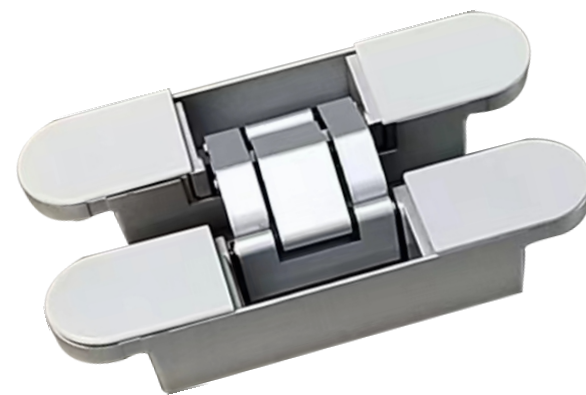
All Adjustment Can Be Performed With A 4mm ( 0157" ) Allen Wrench.



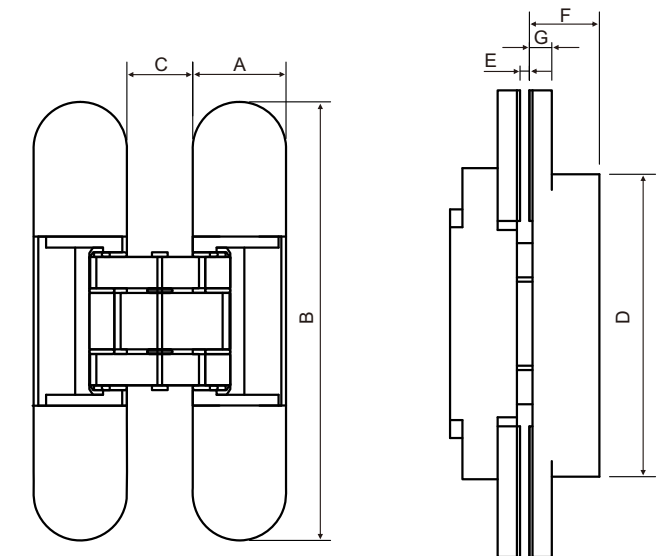
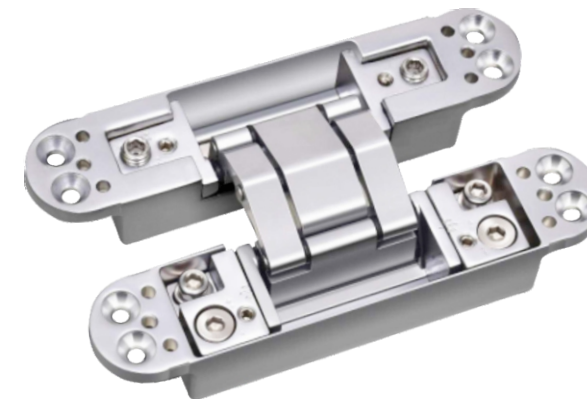
## 3-D Adjustable Invisible Hinge AVCH011

### Features

- Material Zinc Alloy and Aluminum
- Concealed Installation
- Totally Invisible When Door is Closed
- Non-handed
- Suitable For Timber And Metal Doors
- Finish: SSS, PSS, PB, PVD, AB, AC
- Maximum Opening Angle 180 Degree.
- Standard: 2 pcs Per Door
- Packed With Screws



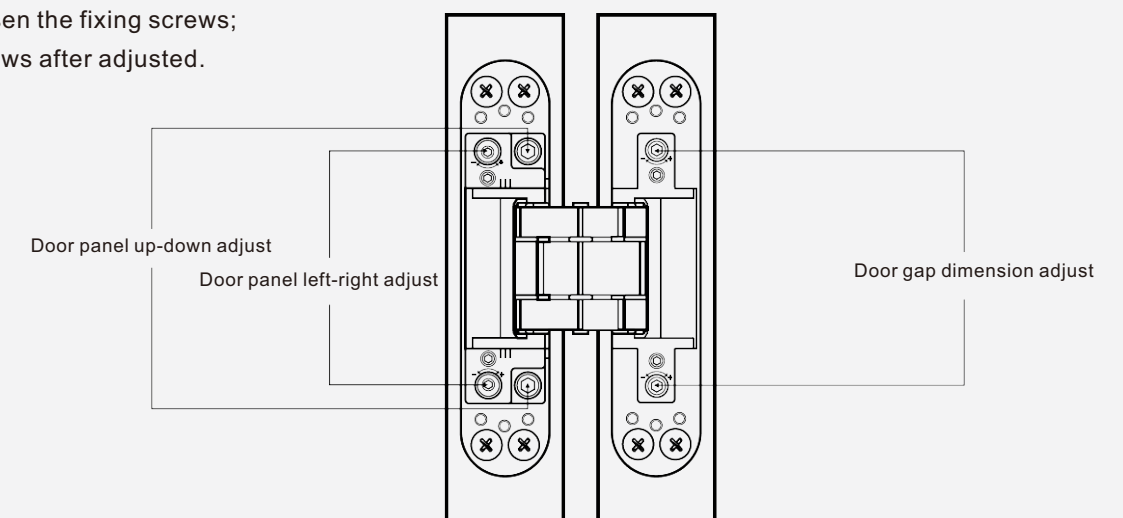
Color Option : Silver, Black, Gold, Polish Brass, AB, etc.



Data Unit (mm)	Zinc Alloy Body									
Product Code	Size	Min. Door Thickness	Max. Door Weight	A Hinge Width	B Hinge Length	C	D Mortise Length	E Dimension From Door Edge	F Mortise Depth	G Plate Depth
AVCH011-60	30 x 140	23.5mm	60kg	30	140	21	100	3	25	7.2
AVCH011-100	32 x 165	27.2mm	100kg	32	165	23	118	3	29.5	8.2

### • Hinge Adjusting method

Slightly loosen the fixing screws;  
Fasten Screws after adjusted.

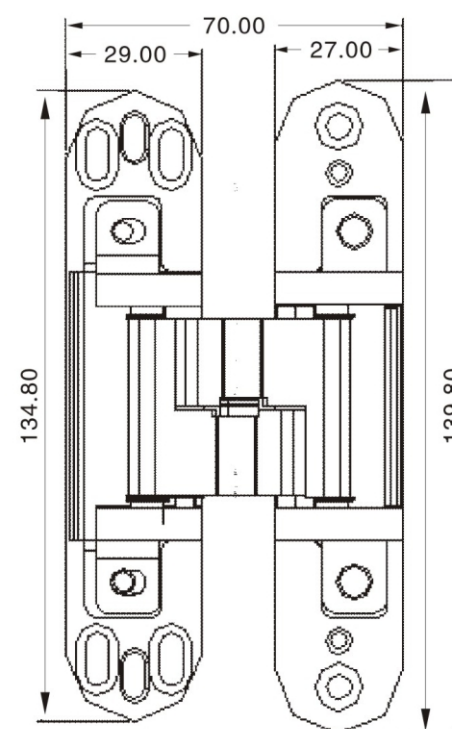


Adjust Model	Door panel up-down adjust	Door panel left-right adjust	Door gap dimension adjust
AVCH011-60	±1.5mm	±1.5mm	±2mm
AVCH011-100	±2mm	±1.5mm	±2.5mm



AVCH012

3D Hidden Hinge



### Features

- **Suitable for** wooden doors, swing doors, metal doors, etc
- **Concealed installation**
- **Three dimensional adjustable range:** up and down  $\pm 3$ mm  
Left and right  $\pm 3$ mm, front and rear  $\pm 1$ mm  
can be adjusted without removing the door
- **Opening degree:** 180°
- **Overall material:** SUS304
- **Finish:** SSS, PSS, PB, PVD, AB, AC

### Parameter

- Size: 28x135x140mm
- Maximum bearing capacity of 3 Pcs Per Door: 60kg
- Minimum thickness of door leaf: 40mm
- Maximum width of door leaf: 1000mm
- The door height is 2100mm,  
and each door shall be equipped with 4 hinges

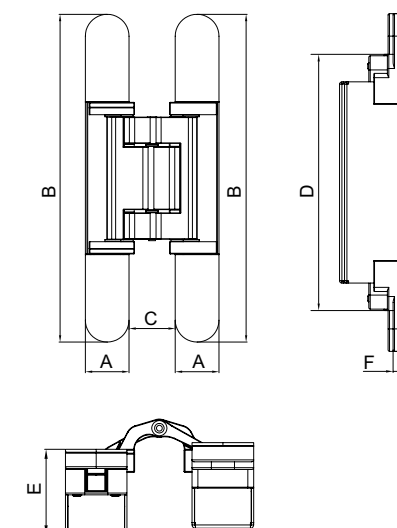
**Note: 304 precision casting connector is selected, and the total bearing capacity is increased to about 80kg on the original basis.**



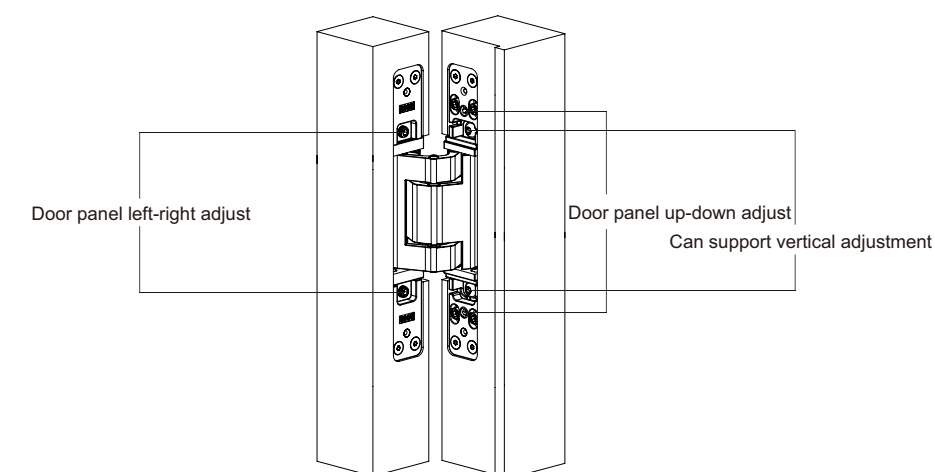
### 3D Adjustable Hidden Hinge AVCH018

#### Features

- Adjustable after installed
- Materials: SUS304
- Opening Angle: 180°
- Applicable to the left/right hand door



Data Unit (mm)	AVCH018-Stainless Steel Body							
Product Code	Size	Max. Door Weight	A Hinge Width	B Hinge Length	C	D Mortice Length	E Mortice Depth	F Plate Depth
AVCH018-120	160x30	120kg	30	160	16.5	122	34	10
AVCH018-200	240x32	200kg	32	240	34	182	44.5	10



Adjust Model	Door panel up-down adjust	Door panel left-right adjust	Can support vertical adjustment
AVCH018-120	$\pm 2.0$ mm	$\pm 1.5$ mm	$\pm 1.5$ mm
AVCH018-200	$\pm 3.0$ mm	$\pm 2.0$ mm	$\pm 2.0$ mm





Standard offered

The standard in the industry is the Flat Button Tip for 5-knuckle hinges.



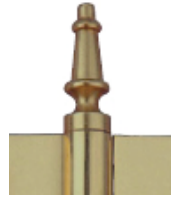
Tri-Con Flush Pin

The flush/concealed tip is standard on 3-knuckle. If button tip is required, specify Exposed Tip.



Ball Tips

Decorative tips such as Acorn, Ball, Steeple, and Urn are used in decorative areas of offices and residences.



Steeple Tips



Fast Riveted Pin

Fast Riveted Pins are spun on both ends, making the pin permanent.



Hospital Tips

Hospital tips are used primarily for security areas in hospital mental wards and in prison areas. This type prevents hanging any objects on the tip of the hinge.

Hospital type are also used in area where cleanliness is an important concern leg, operating rooms, laboratories, clean-rooms, etc.

The beveled tips prevent the collection of dust and germs and their smooth surface is easily cleaned.

### Residential Ball Tip Kit

Materials: Brass tips and stainless steel pin

Finishes: US3, US4, US5/ABA, US10A, US10R, US15, US15A/AN, US26, US26D

Notes: • Includes 2 ball tips and 1 pin

• For use with 3-1/2" (89 mm) or 4" (102 mm) hinges

### Residential Steeple Tip Kit

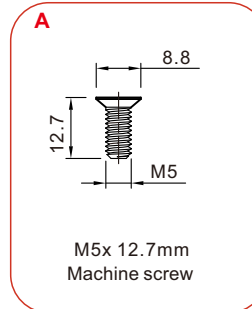
Materials: Brass tips and stainless steel pin

Finishes: US3, US4, US5/ABA, US10A, US10R, US15, US15A/AN, US26, US26D

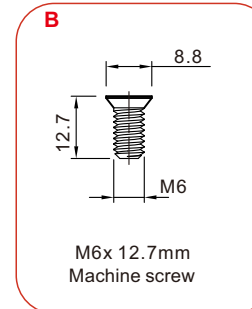
Notes: • Includes 2 ball tips and 1 pin

• For use with 3-1/2" (89 mm) or 4" (102 mm) hinges

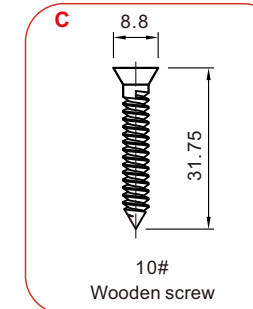
### Screw Options:



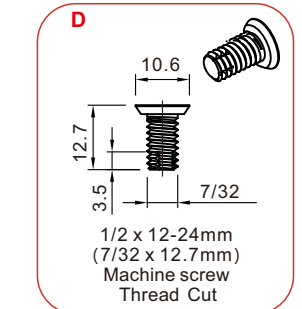
M5x 12.7mm  
Machine screw



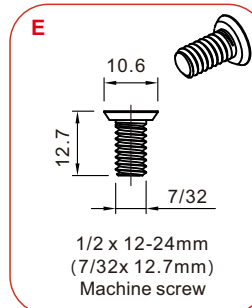
M6x 12.7mm  
Machine screw



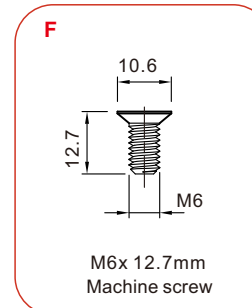
10#  
Wooden screw



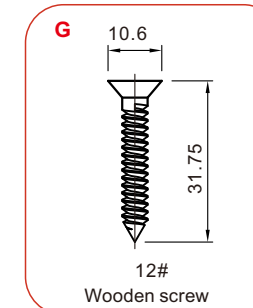
1/2 x 12-24mm  
(7/32 x 12.7mm)  
Machine screw  
Thread Cut



1/2 x 12-24mm  
(7/32 x 12.7mm)  
Machine screw



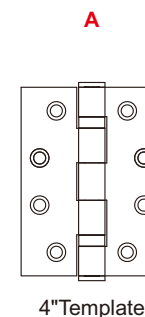
M6x 12.7mm  
Machine screw



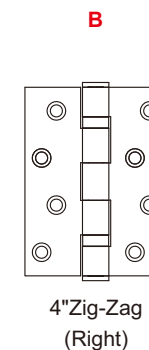
12#  
Wooden screw

Other  
Length  
is  
Available

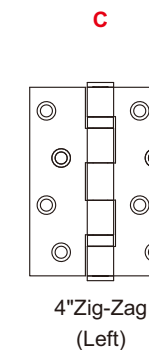
### Hole Options:



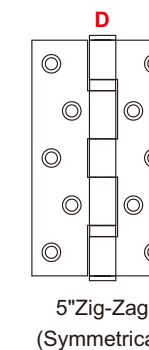
4" Template



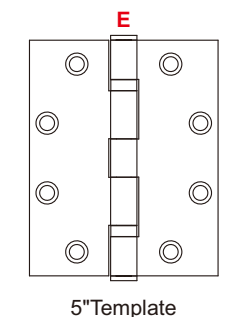
4" Zig-Zag  
(Right)



4" Zig-Zag  
(Left)

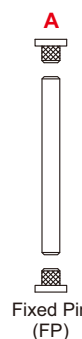


5" Zig-Zag  
(Symmetrical)



5" Template

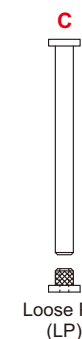
### Pin Options:



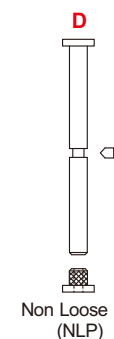
Fixed Pin  
(FP)



Non Removable  
Fixed Pin  
(NRFP)



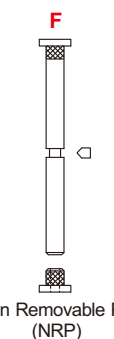
Loose Pin  
(LP)



Non Loose Pin  
(NLP)



Loose Non-rising Pin  
(LNP)



Non Removable Pin  
(NRP)