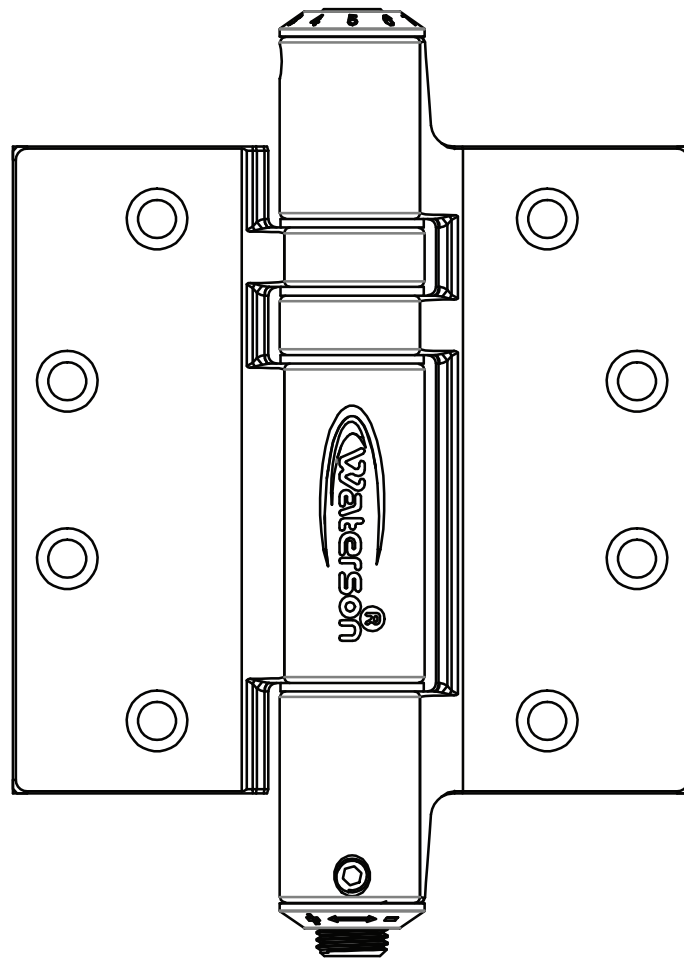




## 3IN1 AUTO DOOR-CLOSER HINGE



# USER GUIDE

Model Type - DS+HA+SB  
For Door <260 Pounds (120 kg)

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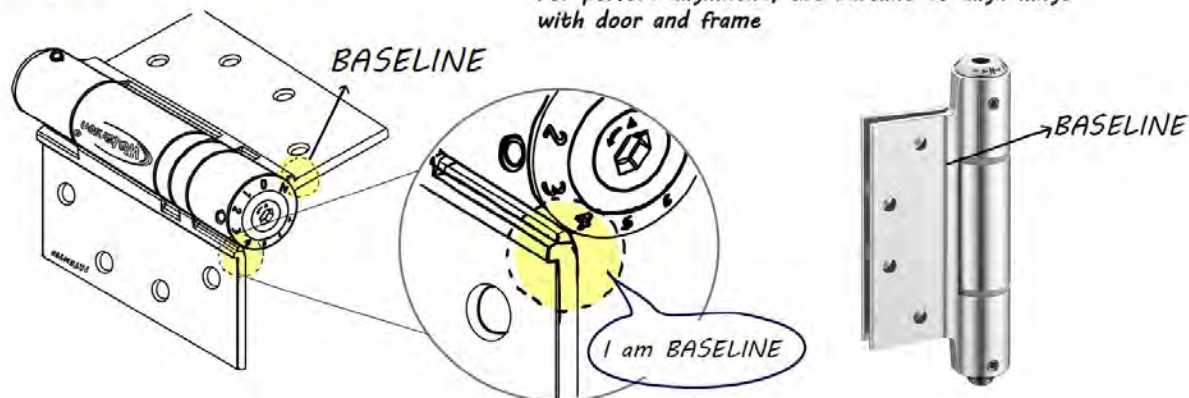
# 1 BEFORE INSTALLATION

**1-1 Utilize the baseline on the hinges to help successful installation, if possible. If not, follow the edge of the leaf.**

## • What is the baseline?

### BASELINE-

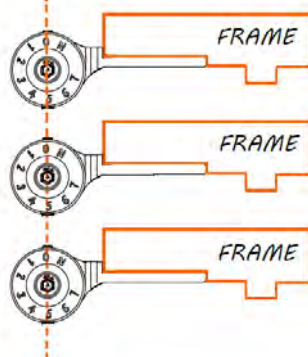
For perfect alignment, use baseline to align hinge with door and frame



## • Why do you need a baseline?

### 1. Align vertically and horizontally

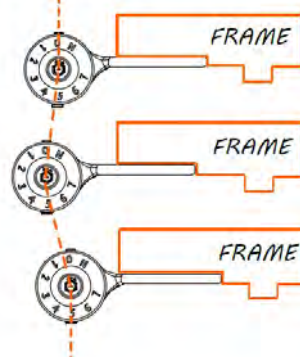
VERTICAL LINE



● Use baseline to ensure vertical alignment of all hinges

### 1. Not vertically aligned

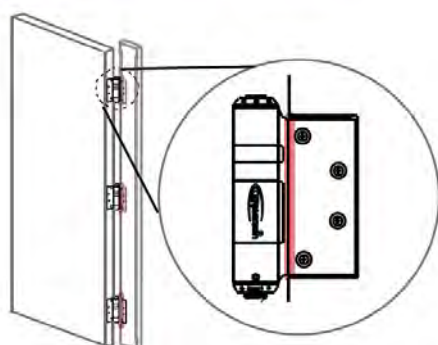
VERTICAL LINE



✗ If alignment is based on the side edges of template, hinges wouldn't be easily aligned

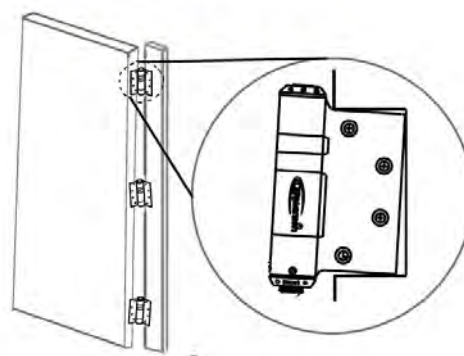
### 2. Fast installation

An experienced installer can properly install and adjust under 10 minutes



### 2. Slow installation

Even an experienced installer would take five times longer to properly install.

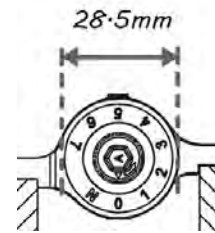


## 1

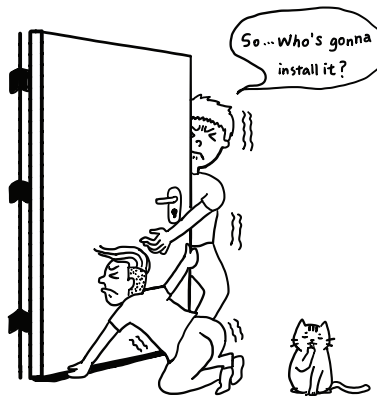
## BEFORE INSTALLATION

**1-2** Do not weld our hinges:

warranty is invalid with welding.

**1-3** Save space for the hinge barrel.**1-4** Prevent sagging.

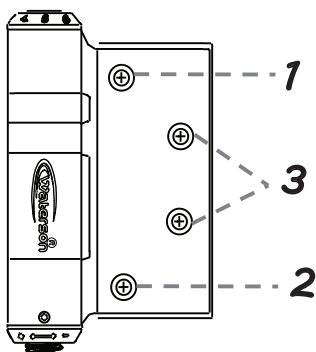
*Waterson  
Hinge Helper*



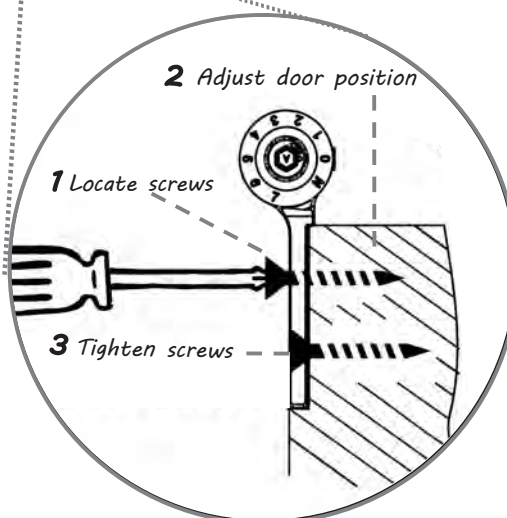
*Installer had to  
wrangle with  
heavy doors*



*Waterson Hinge  
helper contains  
pivot and allow  
installers to easily  
raise up the door,  
and prevent door  
from sagging*



*Locate top and bottom screws first.  
Then locate the rest of the screws.*



1. Locate the screws
2. Adjust door position, make sure it's not sagging
3. Tighten the screws

## 2

## BEFORE ADJUSTMENT

**2-1** The quality of door installation is SUPER important and could affect the self-closing feature greatly.

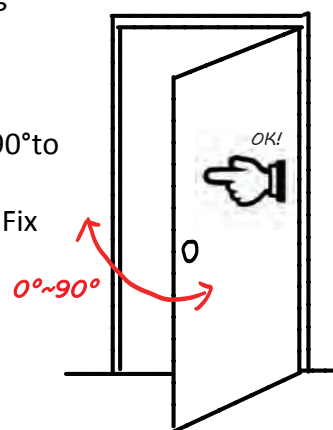
2-1.1 Install like regular hinges with reliable precision and hinge alignment.

After installing the door,

2-1.2 **Moving Freely Without Any Interference:** Push the door edge lightly from 90° to 0° and the door should swing FREELY.

2-1.3 **No Bounce Back in the Lower Closing Angle:** Try to close the door by hand. Fix first if the door springs back in lower angle and can't easily be latched.

*Swing freely*

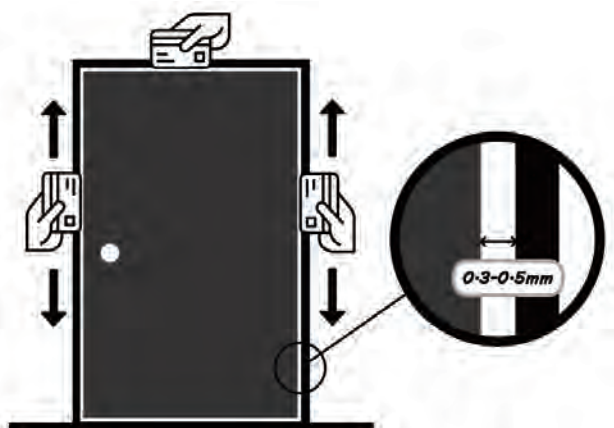


**2-2** If the above 2 concerns have solved – move to the hinge adjustment section.

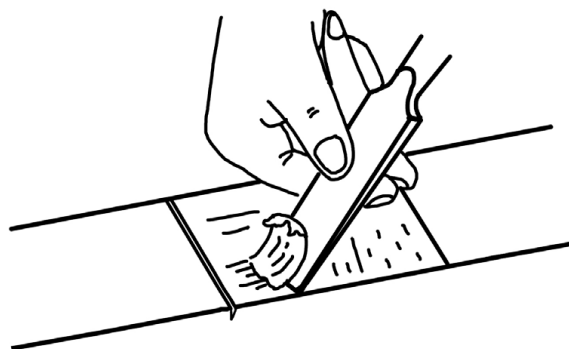
If no – follow the 4 check points (2-2.1~2-2.4) below to solve the problems.

**2-2.A : Do your door and frame have enough clearance in between or they are hitting each other?**

**2-2.A1** Use a piece of 0.3-0.5mm thick metal (credit card / gap gauge) to verify the clearance.



**2-2.A2** If clearance is not enough, Shim the door (reference to P.3,4) or chisel the door or frame for more clearance.



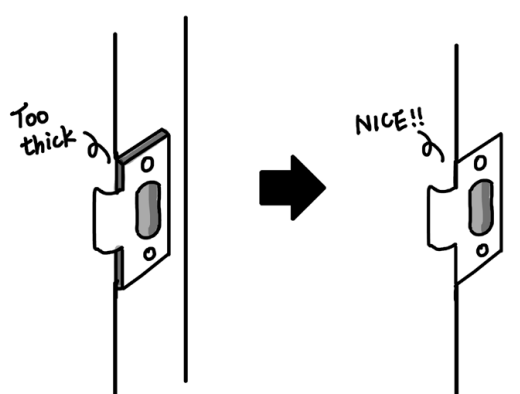
**2-2.B: Do your door lock and the strike plate match properly or they are creating interference?**

**2-2.B1** Check you latch bolt. It should engage properly with the strike plate.



*The strike plate is too thick and interfere closing? Replace it!*

**2-2.B2** Realign the strike plate/ create fitting depth for it or Grind it a bit off/ replace the original strike plate.





**2-2.C:** *Is your door binding or sagging? Or there are uneven gap between frame and door? Use shim to adjust the door position.*

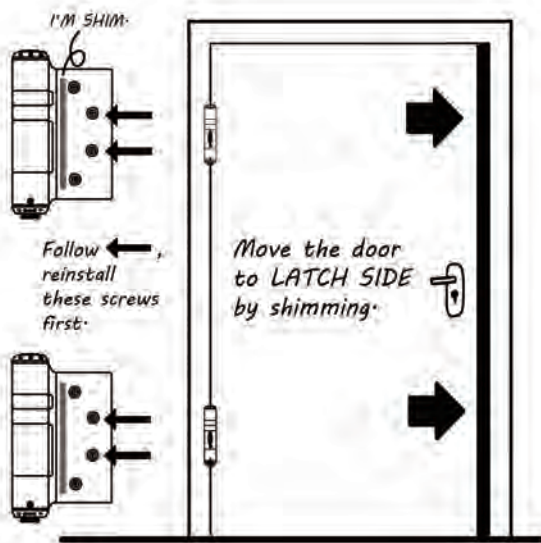
**2-2.C1** Check the type of binding problem first, see the four types of door binding below.

Then loosen all the screws

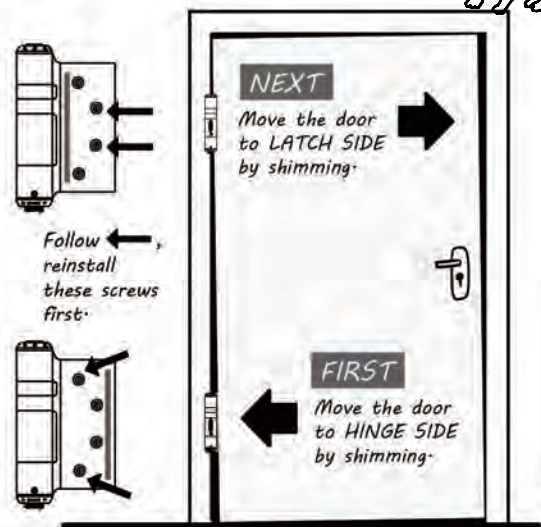
**2-2.C2** Adhere the shims as illustrated and fasten two screws indicated with arrows.  
(not all the way)

### KNOW THE FOUR TYPES OF PROBLEMS

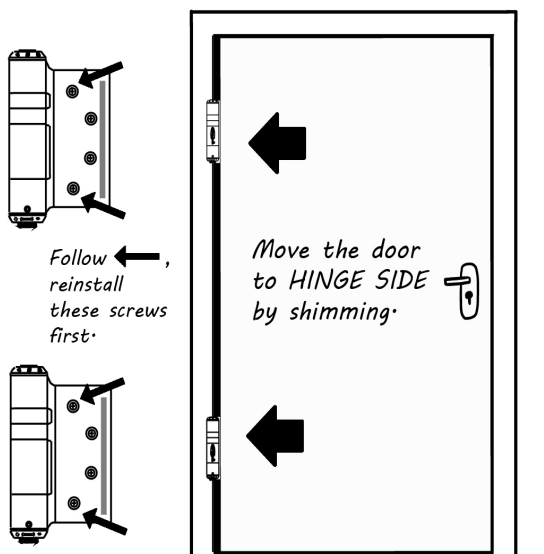
- Large gap is present at latching side



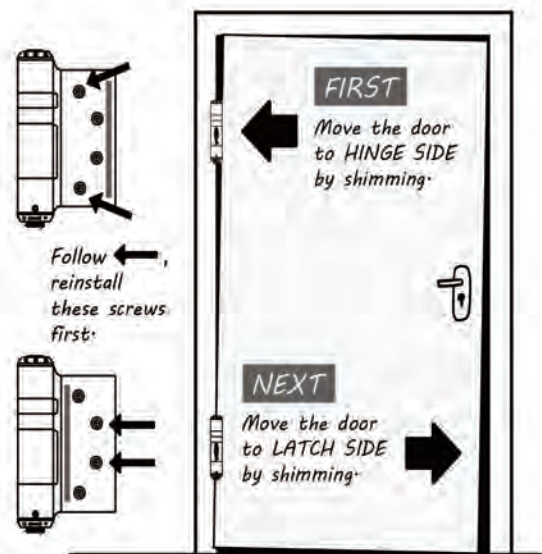
- Door Panel may be tilted



- Large gap is present at hinge side



- Door panel may be tilted



### 3-1 Go to the hinges with numeric adjusters. Set up minimum closing power. Adjust N-7 numeric adjuster for closing power.

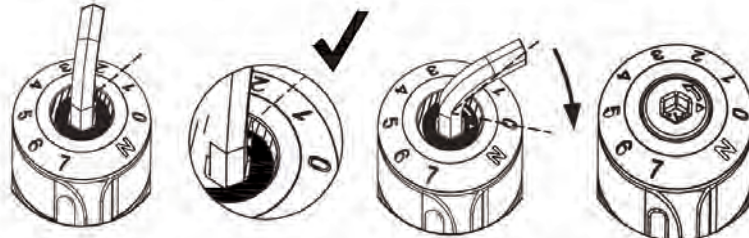


#### 3-1.A How to Increase or decrease power setting

3-1.A1 Use 5 mm hex wrench to adjust closing power.

3-1.A2 To increase power: adjust the numeric adjuster to higher numbers

3-1.A3 To decrease power: press down the numeric adjuster and turn to lower numbers.



#### 3-1.B How to decide the self-closing power setting: make sure door can close at 20°.

3-1.B1 Each adjuster includes N-7 setting value.

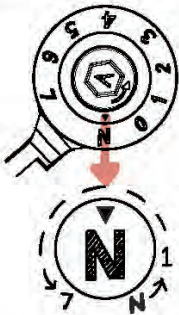
One setting value provides about 15-22 pounds(7-10 kgs) of closing power.

3-1.B2 Adjust one by one, set up **the minimum closing power** for your door.

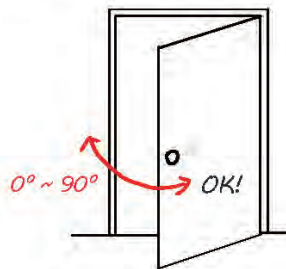
3-1.B3 **The door may slam at this stage. Keep going. Just make sure the door could close at 20°**

#### Find Minimum Closing Power

**A** Out of box is "N".



**B** Make sure door swings freely from 0° to 90°.



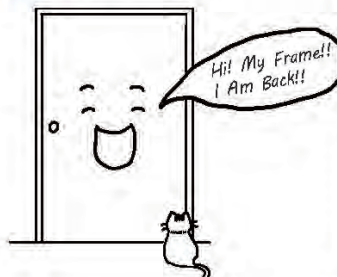
**C** Move the door to 20°



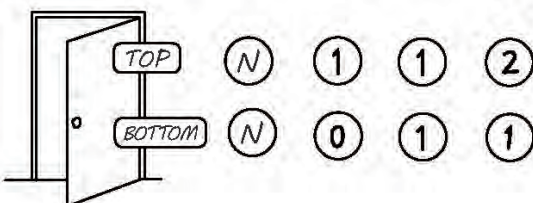
**D** Add 1 click one by one each time.  
※ Don't go straight to "7"!!



**E** ✓ Door closes well by itself from 20° to 0°.



✗ Door doesn't close. Back to **B**.



※ It's the minimum closing power.

Door may close slowly after all adjustment (Hold-open Dampers)

Add 1 or 2 click to speed up!!



## 3-2 Go to Middle hinge (Type HA Hinge) to set up mechanical buffer in 20-80°. Only adjust the bottom of hinge.

### 3-2.A What does A mechanical buffer do

SA mechanical buffer provides speed control in 20-80°. You can adjust it through the speed screw at the bottom of the hinge.

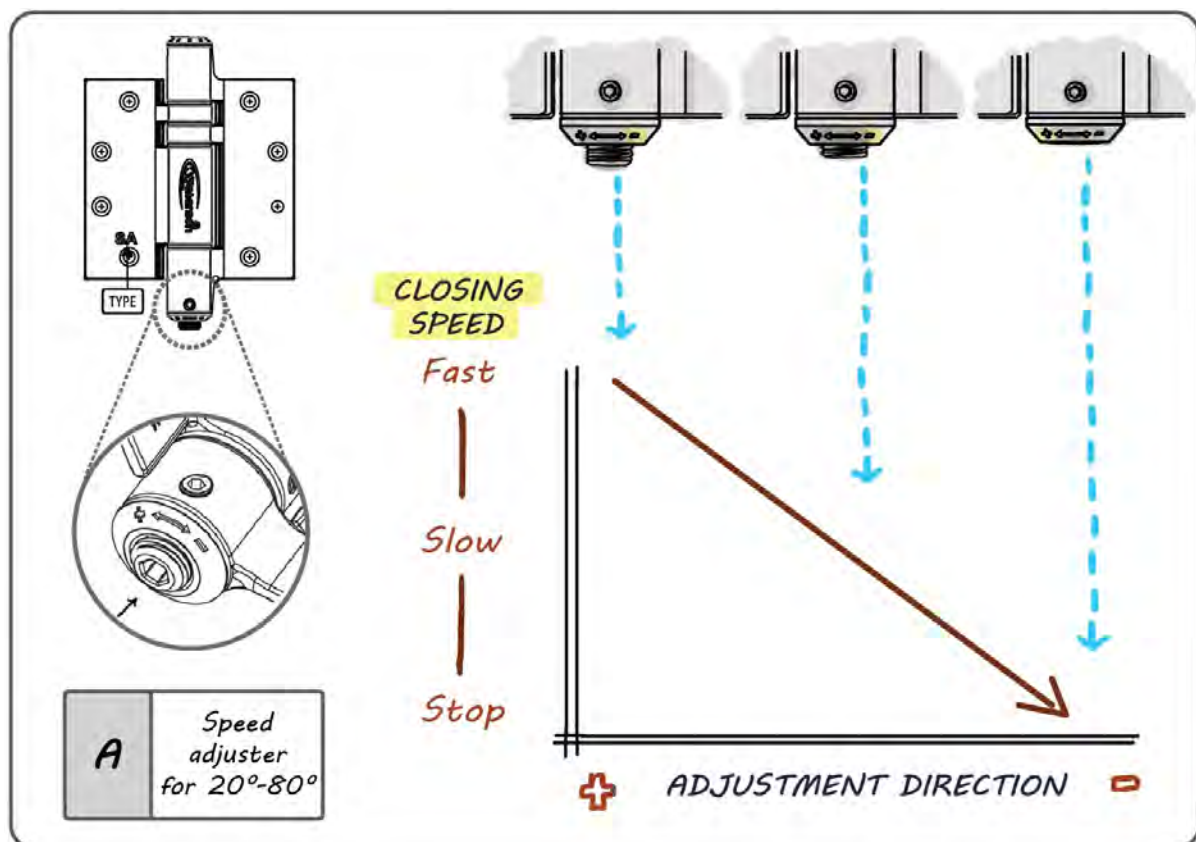
### 3-2.B How to increase or decrease buffer

3-2.B1 Adjust the Bottom section of the SA hinge with 5 mm hex wrench.

3-2.B2 Turn 5 mm hex wrench from + to – to slower speed & from - to + to faster speed

3-2.B3 Adjust this mechanical buffer 1/2 turn at a time. Test the door opening again.

3-2.B4 If the speed screw is more engaged in the barrel, the brake is more engaged.

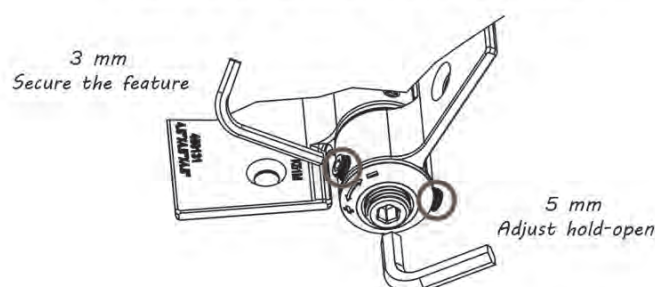


## 3-3 Lock in the adjustment

3-3.A Make sure self-closing feature works in all angles.

3-3.B Tighten the 2 side setscrews on each hinge using 3 mm hex wrench to lock in the settings.

*Tighten all the set screws to lock the settings!*





### 3-4 Go to Middle hinge (Type HA Hinge) to set up hydraulic buffer. Only adjust the TOP of hinge.

#### 3-4.A What does hydraulic buffer do

The initial buffer zone comes into engagement during the swing from  $50^\circ$  to  $25^\circ$ . The door would start to slow down. The buffer would then disappear below  $20^\circ$  so that the door is with enough closing power for the door latch.

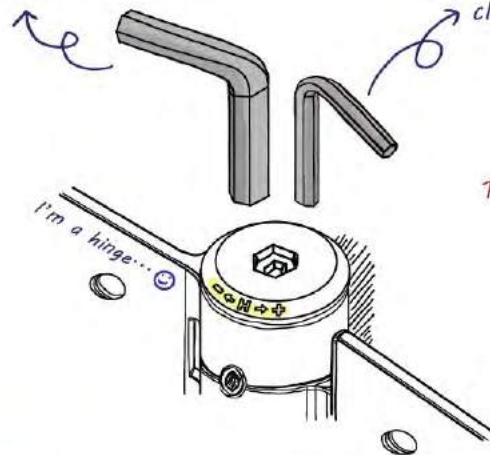
In some cases (e.g., door without latch. The door does not need latching power in the end.), we need to move the buffer zone to  $25^\circ$ - $0^\circ$  so that the buffer effect would be still in power at lower angle, creating a quieter closing experience.



#### ADJUSTMENT TO HYDRAULIC HINGE - TOOLS

5mm hex wrench  
to move buffer zone.

3mm hex wrench  
to adjust setscrew and  
closing speed.

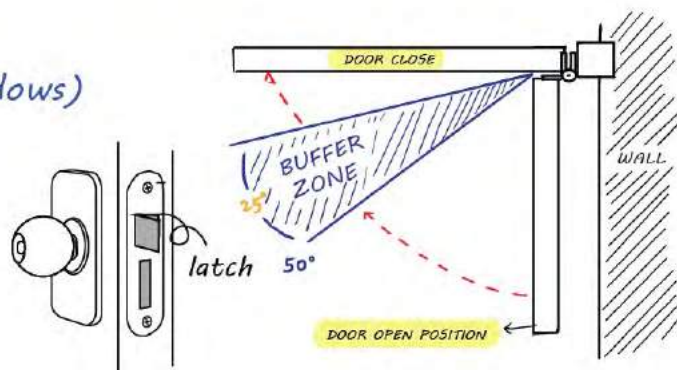


YES...  
THAT IS ALL YOU NEED!!

#### ADJUSTMENT TO HYDRAULIC BUFFER - DIFFERENT APPLICATIONS

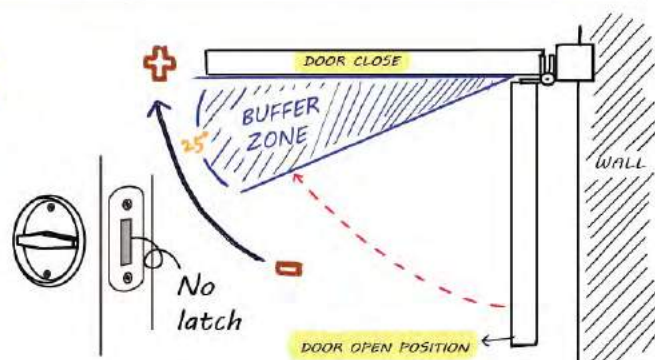
Door with latch bolt  
(or room without windows)

Out of box buffer zone:  
from  $50^\circ$  to  $25^\circ$ .  
Skip 3-4.C  
Go to 3-4.D directly



Door without latch bolt  
(or quiet zone setting)

Quiet zone buffer zone:  
from  $25^\circ$  to  $0^\circ$   
Follow all steps,  
move the buffer zone



**3-4.C How to move buffer zone**

3-4.C1 Remove at least one of the pink stickers. Use 3 mm hex wrench to loosen the setscrews a little.

3-4.C2 Adjust the TOP section of the HS hinge. Use 5 mm hex wrench and rotate from - to + 1 circle turn.

3-4.C3 Turn from - to +: move engagement angle toward direction of 0°  
(turn only 1/4 circle at a time)

3-4.C4 Turn from + to -: move engagement angle toward direction of 50°  
(turn only 1/4 circle at a time)

3-4.C5 Check the buffer zone by testing the self-closing feature.



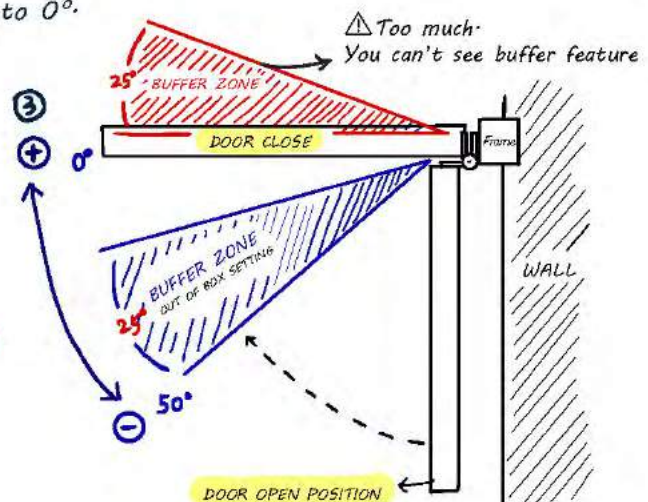
### ADJUSTMENT TO HYDRAULIC BUFFER - HOW TO MOVE BUFFER ZONE ?

► Please Follow The Steps:

① Remove the pink stickers. Use 3mm hex wrench to loosen the set screw a little.

② Use 5mm hex wrench to move the buffer zone, turn only 1/4 circle each time.

③ Buffer zone can be moved from 50° to 0°.



# ADJUSTMENT PROCEDURE

## 3-4.D How to increase or decrease buffer

3-4.D1 Adjust the TOP section of the HS hinge with 3 mm hex wrench

3-4.D2 Turn 3 mm hex wrench from + to - to slower speed

(turn only 1/4 circle at a time)

3-4.D3 Turn 3 mm hex wrench from - to + to faster speed

(turn only 1/4 circle at a time)

3-4.D4 Usually, total 2 circles turn could get the largest buffer effect.



### ADJUSTMENT TO HYDRAULIC BUFFER - CLOSING SPEED

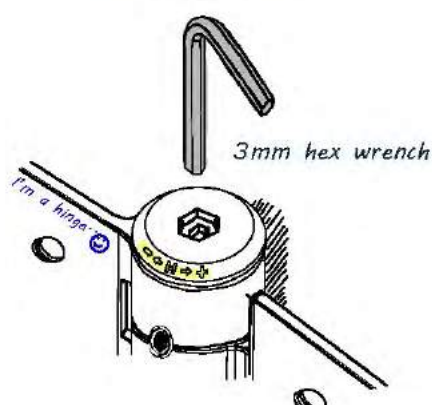
#### ► Please Follow The Steps:

① Open the door to 90° before adjustment.

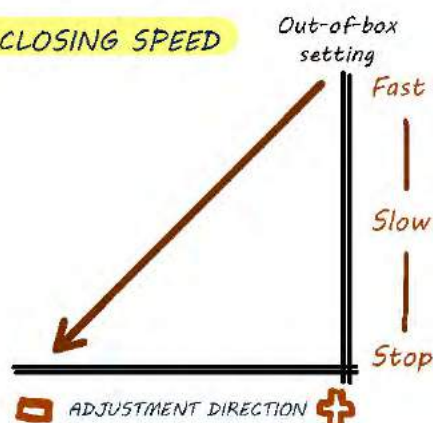
② Adjust the TOP section of the hinge with 3mm hex wrench.

→ FROM + TO - : SLOWER SPEED

→ FROM - TO + : FASTER SPEED



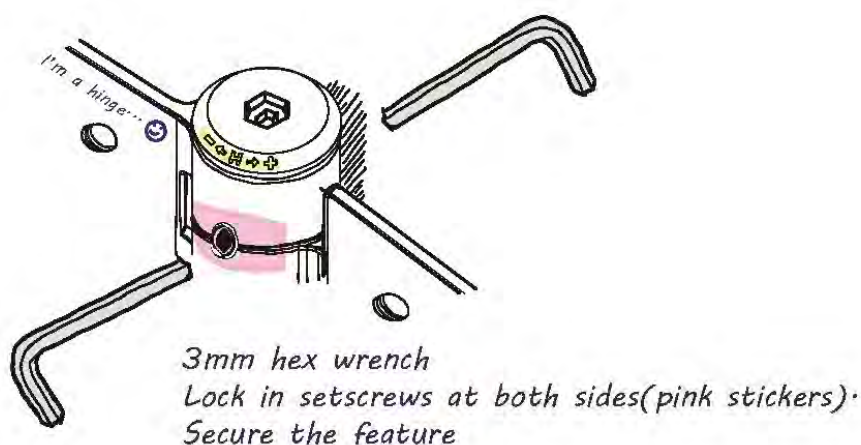
#### CLOSING SPEED



## 3-4.E Lock in the adjustment (Insufficient tightening of setscrews may damage the hinges)

3-4.E1 Make sure buffer zone position and closing speed all work as your requirement.

3-4.E2 Tighten the loosened setscrews (pink stickers position) in step 3-4.C1 with 3 mm hex wrench.



# ADJUSTMENT PROCEDURE

## 3-5 Go to Bottom hinge (Type SB Hinge) to set up hold-open feature. Only adjust the bottom of hinge.



### 3-5.A What does hold-open feature do

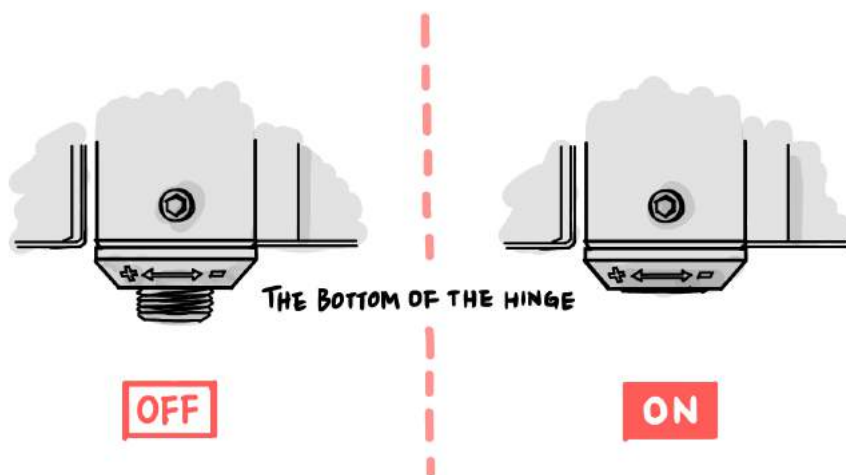
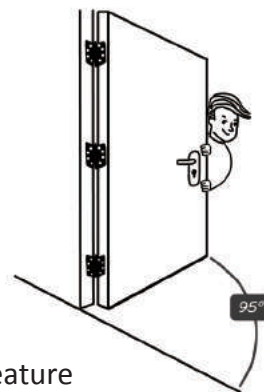
Open the door to 90°, the door could temporarily stop at around 80°-90°.

### 3-5.B How to set up or release hold-open feature

3-5.B1 The hinge is without hold-open feature out of box. If you don't need hold-open feature, just skip this process

3-5.B2 Locate the BOTTOM section of the SB hinge.

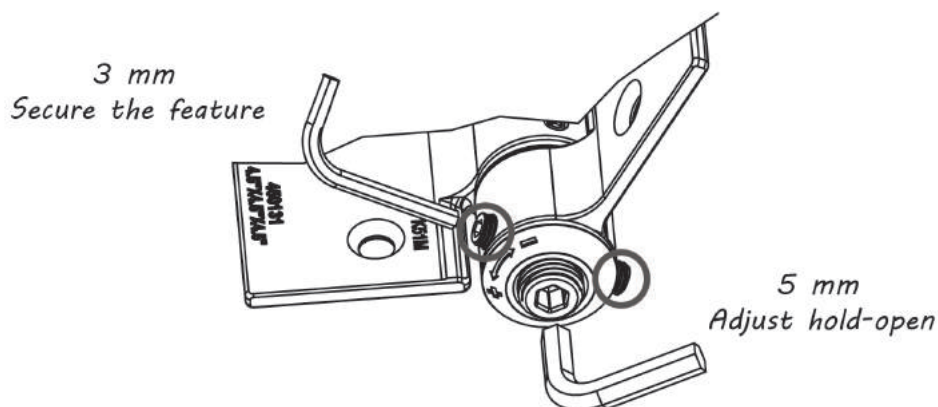
3-5.B3 Turn 5 mm hex wrench from + to – to active hold-open feature & from - to + to close the feature



3-5.C4 Open the door to 95°, hold it, and release it. If the door can stop at 90°, then hold-open is set correctly. If not, repeat 3-5.B3.

3-5.C5 After setting up hold-open properly, tighten the 2 set screws at hinge bottom to secure the feature

*Tighten all the set screws to lock the settings!*





## 4

## HINGE ORIENTATION &amp; CODE FOR HINGE

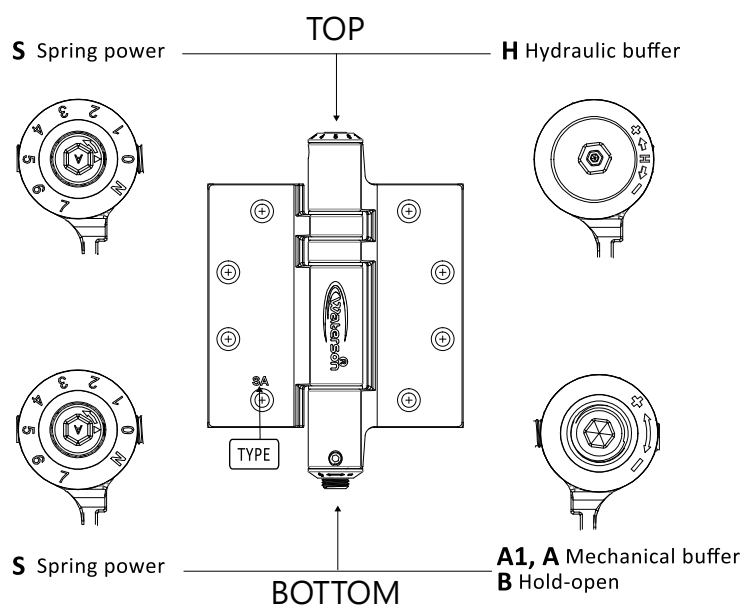
**S:** Spring power; offers closing force

**H:** Hydraulic buffer; offers speed buffer

**A1:** Mechanical buffer; offers speed buffer for 0-20°

**A:** Mechanical buffer;  
offers speed buffer for 20-90°

**B:** Hold-open for 90°±5°



## Hinge Function Types

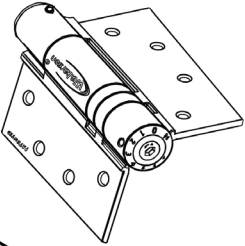
Type for order	Mechanism	Top	Function	Bottom	Function
<b>DS</b>	Spring power + Spring power	<b>S</b>	Spring power	<b>S</b>	Spring power
<b>SA1</b>	Spring power + Latch speed adjuster	<b>S</b>	Spring power	<b>A1</b>	Speed adjuster Control closing speed in 0°-20°
<b>SA</b>	Spring power + Swing speed adjuster	<b>S</b>	Spring power	<b>A</b>	Speed adjuster Control closing speed in 20°-90°
<b>SB</b>	Spring power + Hold-open	<b>S</b>	Spring power	<b>B</b>	Hold-open 90°±5°
<b>HS</b>	Hydraulic Buffer + Spring power	<b>H</b>	Hydraulic Damper	<b>S</b>	Spring power
<b>HA</b>	Hydraulic Buffer + Swing speed adjuster	<b>H</b>	Hydraulic Damper	<b>A</b>	Speed adjuster Control closing speed in 20°-90°

## 5

## TOOLS YOU NEED

## ● In WATERSON Hinge Box

1. One set of  
Waterson hinges



2. Hex wrench 3 mm  
Hex wrench 5 mm



3. Cross head  
self tapping screws  
(#12x1-1/4" (31.75mm) L)



x 8 pcs for one hinge.  
+ 5 pcs extra for one set.

6. Steel shim



x1pc  
for one hinge.

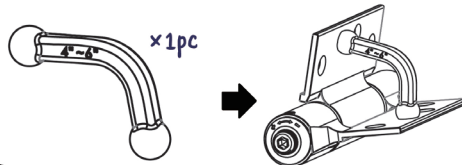


4. Flat head  
machine screws  
(#12-24 UNC - 1/2" L)



x 8 pcs for one hinge.  
+ 5 pcs extra for one set.

5. Leaf holder - use it  
to help install the hinge.



## ● Please Prepare By Yourself

1. Screw driver

2. Electric drill

3. Spirit level

