3IN1 AUTO DOOR-CLOSER HINGE

USER GUIDE

Model Type - SA+SA+SA1
For Door <260 Pounds (120 kg)

www.watersonusa.com
INDEX

1. BEFORE INSTALLATION........P.1
2. BEFORE ADJUSTMENT........P.3
3. ADJUSTMENT PROCEDURE...P.5
4. HINGE ORIENTATION & CODE FOR HINGE.........................P.8
5. TOOLS YOU NEED...............P.9
1-1 Utilize the baseline on the hinges to help successful installation, if possible. Or, follow the edge of the leaf like normal hinge.

**What is the baseline?**

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

**Why do you need a baseline?**

1. Align vertically and horizontally
   - Use baseline to ensure vertical alignment of all hinges
   - If alignment is based on the side degrees 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.
1-2 Do not weld our hinges:
- warranty is invalid with welding.

1-3 Save space for the hinge barrel.
- 28.5mm

1-4 Prevent sagging.
- Locate top and bottom screws first.
- Then locate the rest of the screws.

So, who's gonna install it?

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

So easy!

Locate the screws
- Adjust door position, make sure it's not sagging
- Tighten the screws
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 to be latched.

2-2 If the above 2 concerns have solved – move to the hinge adjustment section.
   If no – follow the 3 check points (2-2.A~2-2.C) 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.
   2-2.B2 Realign the strike plate/ create fitting depth for it or Grind it a bit off/ replace the original strike plate.

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

![Diagram showing large gap at latching side](image1)

![Diagram showing door panel tilted](image2)

![Diagram showing large gap at hinge side](image3)

![Diagram showing door panel tilted](image4)
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°.

* 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 TOP and Middle hinge (Type SA 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 Go to Bottom hinge (Type SA1 Hinge) to set up mechanical buffer in 0°-20°. Only adjust the bottom of hinge.

3-3.A What does A1 mechanical buffer do
A1 mechanical buffers provide speed control in 0-20°. You can adjust it through the speed screw at the bottom of the hinge.

3-3.B How to increase or decrease buffer
3-3.B1 Adjust the Bottom section of the SA1 hinge with 5 mm hex wrench.
3-3.B2 Turn 5 mm hex wrench from + to – to slower speed & from - to + to faster speed
3-3.B3 Adjust this mechanical buffer 1/2 turn at a time. Test the door opening again.
3-3.B4 If the speed screw is more engaged in the barrel, the brake is more engaged.

*If the buffer system of SA1 is more engaged, you may need to release the buffer system of SA. The braking in SA1 and SA is interactive. You could add one more click for power adjuster to add more force.

3-4 Lock in the adjustment
3-4.A Make sure self-closing feature works in all angles.
3-4.B Tighten the 2 side setscrews on each hinge using 3 mm hex wrench to lock in the settings.
HINGE ORIENTATION & 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

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

● In WATERSON Hinge Box

1. One set of Waterson hinges

2. Hex wrench 3 mm
   Hex wrench 5 mm
   x1pc
   x1pc

3. Cross head self tapping screws
   (#12 x 1 - 1/4" (31.75 mm) L)
   x8 pcs for one hinge.
   + 5 pcs extra for one set.

4. Flat head machine screws
   (#12-24 UNC - 1/2" L)
   x8 pcs for one hinge.
   + 5 pcs extra for one set.

5. Leaf holder - use it to help install the hinge
   x1pc

6. Steel shim
   x1pc for one hinge.

● Please Prepare By Yourself

1. Screw driver
2. Electric drill
3. Spirit level