Installation Instructions

Note: For Special Applications a separate door and frame preparation template is packed with these instructions. Use this instruction sheet for installation sequence and closer adjustments only.

“DA” Suffix - Delayed Action closing is an optional feature.

The closing force for series 8381 & 8581 door closers is adjustable from a size 1 to a size 6, as outlined in ANSI Standard A156.4. When these series of door closers are installed and adjusted to conform to ADA reduced opening force requirements (5 lbs max.) for interior doors, they may not have adequate closing force to reliably close and latch the door. Power adjustments charted on page 4 are recommended where possible, to ensure proper door control.

Regular Arm Installation
Closer mounts on hinge (pull) side of door
See Page 2

Parallel Arm Installation
Closer mounts on opposite to hinge (push) side of door
See Page 3

Closer Components:
- Backcheck Valve
- Latch Valve
- Sweep Valve
- Power Size
- Spring Adjustment Shaft
- Cover Insert
- Insert Cutouts
- Pinion Cap
- Cover Clips
- Cover Screws
- Optional Narrow Plastic Cover
- Standard Full Cover
- 8380
- 8580
- Optional Metal Cover
- 8580M
- Optional Architectural Plastic Full Cover
- 8580A
- Optional Architectural Metal Cover
- 8580MA

Note:
For Special Applications a separate door and frame preparation template is packed with these instructions. Use this instruction sheet for installation sequence and closer adjustments only.

"DA" Suffix - Delayed Action closing is an optional feature.

The closing force for series 8381 & 8581 door closers is adjustable from a size 1 to a size 6, as outlined in ANSI Standard A156.4. When these series of door closers are installed and adjusted to conform to ADA reduced opening force requirements (5 lbs max.) for interior doors, they may not have adequate closing force to reliably close and latch the door. Power adjustments charted on page 4 are recommended where possible, to ensure proper door control.

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ASSA ABLOY, the global leader in door opening solutions
80-9380-2210-020 (05-14)
**Installation Instructions**

**Regular Arm**

**Installation Sequence**
- Select door opening angle. Using template dimensions mark **4 holes on door** for closer or **4 holes (0)** for 8146 Drop Plate and **2 holes on frame** for arm shoe.

- Prepare for fasteners – See "Fasteners Chart", this page.

- Remove forearm screw from arm assembly and fasten the arm shoe assembly to the frame face. (Slot facing down.)

- Mount closer body to door. Place end with **2 regulating valves toward hinge edge** of door. NOTE: If using full metal cover, cover mounting clips must be slipped under ends of closer when closer is being mounted.

- Install main arm on top of pinion shaft. Align the **pinion flat** with the letter "S" (See Figure 1). Fasten with arm screw.

- Reassemble Arm. Adjust forearm perpendicular to door (90° angle). Install and tighten set screw. See illustration below template.

- Adjust closer. See page 4.

- Install Pinion Cap and/or Cover. See page 4.

### Preparation for Fasteners

<table>
<thead>
<tr>
<th>Fasteners</th>
<th>Door or Frame</th>
<th>Drill-Sizes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Standard</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-Drilling Screw</td>
<td>Aluminum or Metal</td>
<td>No drill required</td>
</tr>
<tr>
<td></td>
<td>Wood</td>
<td>3/16&quot; (4.30 mm) Pilot hole required</td>
</tr>
<tr>
<td></td>
<td>1/4&quot; - 20 machine screw</td>
<td>Drill: #7 (0.201&quot; dia.) Tap: 1/4&quot; - 20</td>
</tr>
<tr>
<td></td>
<td>Metal</td>
<td></td>
</tr>
<tr>
<td>Sleeve nuts and bolts</td>
<td>Hollow Metal</td>
<td>9/32&quot; (7 mm) through; 3/8&quot; (9.5 mm) door face opposite to closer</td>
</tr>
<tr>
<td>Optional</td>
<td>Aluminum or Wood</td>
<td>3/8&quot; (9.5 mm) through</td>
</tr>
<tr>
<td>Through-bolts and grommet-nuts</td>
<td>All</td>
<td>9/32&quot; (7 mm); 3/8&quot; (9.5 mm) dia. x 3/8&quot; (9.5 mm) deep on door opposite to closer</td>
</tr>
</tbody>
</table>

**Figure 1**

**Right Hand Door**

**Left Hand Door**

**“S” and “L” Valves**

**Pinion Flat**

**Arm Mark**

---

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**Installation Instructions**

**Parallel Arm**

### Installation Sequence

- Select door opening angle. Using template dimensions mark 4 holes on door for closer body or 4 holes (*) For 8148/8158 Drop Plate and 4 holes on frame soffit for soffit plate.

- Prepare for fasteners – See "Fasteners Chart" at bottom of page 2.

- Mount soffit plate to frame.

- Mount closer body to door (or mount drop plate to door and then the closer body to the plate). Place end with 2 regulating valves toward lock edge of door.

  **NOTE:** If using full metal cover, cover mounting clips must be slipped under ends of closer when closer is being mounted.

- Install main arm on top of pinion shaft. Rotate pinion 45° toward hinge edge of door and align the pinion flat with arm mark:
  - "2" for left hand door
  - "3" for right hand door

  (See figure 2 below) Fasten with arm screw.

- Fasten arm tube to soffit plate with soffit plate screw.

- Assemble arm. Open door slightly and insert rod into arm tube. Close door and adjust forearm length so that the arm elbow is 1-1/2" (38mm) from door surface. Install and tighten forearm screw.


- Install Pinion Cap and/or Cover. See Page 4

**NOTE:** Architectural Covers CAN NOT be used for doors swinging over 120° using parallel mount.

**Installation Instructions**

**Parallel Arm**

### Installation Sequence

- Select door opening angle. Using template dimensions mark 4 holes on door for closer body or 4 holes (*) For 8148/8158 Drop Plate and 4 holes on frame soffit for soffit plate.

- Prepare for fasteners – See "Fasteners Chart" at bottom of page 2.

- Mount soffit plate to frame.

- Mount closer body to door (or mount drop plate to door and then the closer body to the plate). Place end with 2 regulating valves toward lock edge of door.

  **NOTE:** If using full metal cover, cover mounting clips must be slipped under ends of closer when closer is being mounted.

- Install main arm on top of pinion shaft. Rotate pinion 45° toward hinge edge of door and align the pinion flat with arm mark:
  - "2" for left hand door
  - "3" for right hand door

  (See figure 2 below) Fasten with arm screw.

- Fasten arm tube to soffit plate with soffit plate screw.

- Assemble arm. Open door slightly and insert rod into arm tube. Close door and adjust forearm length so that the arm elbow is 1-1/2" (38mm) from door surface. Install and tighten forearm screw.


- Install Pinion Cap and/or Cover. See Page 4

**NOTE:** Architectural Covers CAN NOT be used for doors swinging over 120° using parallel mount.

### Fasteners Chart

*3400A and 3400MA Covers cannot be used when door swings beyond 120°.*

---

**Figure 2**
Unit Adjustment

Control Valve Adjustments
(see Figure 3.)

Closing Speed Controls (Figure 4.)
• Valve "S" Controls Sweep Range.
• Valve "L" Controls Latch Range.
• Valve "D" (Optional for all models) Controls Delay Range.

Opening Cycle
• "Backcheck" valve controls the strength of cushioning in Backcheck Range. NEVER close this valve completely – it is not to provide a positive stop. (see Figure 5 and Figure 6).

Closing Speed Controls

Closing Power Control
To increase power turn Spring Adjustment Shaft clockwise. A total of 20 360° turns of the nut will provide maximum power. Factory set at 10 turns.

Arm Placement in Shoe
7-1/2 % Stronger
7-1/2 % Weaker

Opening Door Control

Backcheck Control
* NEVER close this valve completely.

Adjustment Chart

<table>
<thead>
<tr>
<th>MAXIMUM DOOR SIZE</th>
<th>32&quot; (0.85M)</th>
<th>36&quot; (0.90M)</th>
<th>42&quot; (1.00M)</th>
<th>48&quot; (1.20M)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of Inst.</td>
<td>5</td>
<td>8</td>
<td>11</td>
<td>13</td>
</tr>
<tr>
<td>Regular Arm Top Jamb</td>
<td>7</td>
<td>10</td>
<td>13</td>
<td>16</td>
</tr>
<tr>
<td>Parallel Arm</td>
<td>7</td>
<td>10</td>
<td>13</td>
<td>16</td>
</tr>
<tr>
<td>Regular Arm Top Jamb</td>
<td>9</td>
<td>12</td>
<td>15</td>
<td>18</td>
</tr>
</tbody>
</table>

*20 FULL (360°) TURNS MAXIMUM AVAILABLE
Closer is shipped set at mid range setting = 10 turns

To identify your model:

Closer Size
Blank = 8381/8581
2 = 8382/8582
3 = 8383/8583
4 = 8384/8584
5 = 8385/8585
6 = 8386/8586