Installation Instructions

ASSA ABLOY

Components:

- Spring Power Adjustment Screw (1/8 Hex Drive) 1601SS Only
- "BC" Valve
- Pinion Cap
- "L" Valve
- "S" Valve
- Closer Body
- Soffit Plate
- Connecting Rod
- Forearm Tube
- Main Arm
- Forearm Screw
- 1618AS Soffit Plate Used with Parallel Arm Closers Only
- Regular Arm/Top Jamb Shoe
- Arm Assembly

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:

- It is recommended that the door on which the door closer will be installed be hung on ball bearing hinges. Door must swing freely.
- A separate door stop, supplied by others, is recommended to prevent damage to the door closer, closer arm, or to the door, frame or adjacent walls.
- Door and Frame must be properly reinforced, or use of special fasteners employed, to prevent the mounting screws from pulling out.
- All dimensions are given in inches with corresponding metric dimensions (mm) in parenthesis.
- Door closer must not be installed on the exterior side of doors in exterior walls.

CAUTION:

An incorrectly installed or improperly adjusted door closer can cause property damage or personal injury. These instructions should be followed to avoid the possibility of misapplication or misadjustment.

ASSA ABLOY, the global leader in door opening solutions

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Regular Arm Installation

**Installation Sequence**
- Select door opening angle using template above. Mark 4 holes on door for closer and 2 holes on frame face for arm shoe.
- Prepare door and frame for fasteners. See "Preparation for Fasteners" below.
- **1601SS Models Only.** Set approximate closing power using "Power Adjustment Chart" below right.
- Install closer with "S" and "L" adjustment valves toward hinge edge of door.
- Disassemble arm at elbow (forearm screw).
- Install main arm onto closer pinion shaft, indexing main arm mark “S” with pinion flat as shown at right.
- Reassemble arm by adjusting the length of the forearm, to be perpendicular (at 90° angle) to the door when connected to the main arm (at the preload position).

**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>1/4&quot; - 20 machine screw</td>
<td>Aluminum or Metal: 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>Metal</td>
<td>Drill: #7 (0.201&quot; dia.) Tap: 1/4&quot; - 20</td>
</tr>
<tr>
<td><strong>Optional</strong></td>
<td>Sleeve nuts and bolts</td>
<td>Hollow Metal: 9/32&quot; (7 mm) through; 3/8&quot; (9.5 mm) door face opposite to closer</td>
</tr>
<tr>
<td></td>
<td>Aluminum or Wood</td>
<td>3/8&quot; (9.5 mm) through</td>
</tr>
<tr>
<td></td>
<td>Through-bolts and grommet-nuts</td>
<td>All</td>
</tr>
</tbody>
</table>

**Typical Installation**

- Screw pinion cap onto pinion shaft by hand or with a Phillips screw driver - DO NOT OVER TIGHTEN.
- Adjust closer.

**Adjustment Chart**

<table>
<thead>
<tr>
<th>DOOR</th>
<th>TYPE OF INST.</th>
<th>MAXIMUM DOOR SIZE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1601SS</strong></td>
<td>Regular Arm Top Jamb</td>
<td>34&quot; (0.85M)</td>
</tr>
<tr>
<td></td>
<td>Parallel Arm</td>
<td>36&quot; (0.90M)</td>
</tr>
<tr>
<td></td>
<td>Regular Arm Top Jamb</td>
<td>40&quot; (1.00M)</td>
</tr>
<tr>
<td></td>
<td>Parallel Arm</td>
<td>44&quot; (1.10M)</td>
</tr>
<tr>
<td></td>
<td>*30 FULL (360°) TURNS MAXIMUM AVAILABLE</td>
<td>48&quot; (1.20M)</td>
</tr>
</tbody>
</table>

* Door/Wall/Hardware/Jamb conditions permitting

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Installation Sequence

- Select door opening angle using template above. Mark 4 holes on frame face for closer and 2 holes on door for arm shoe.
- Prepare door and frame for fasteners. See “Preparation for Fasteners” at bottom of Page 2.
- 1601SS Models Only. Set approximate closing power using “Power Adjustment Chart” at bottom of Page 2.
- Install closer with “S” and “L” adjustment valves toward hinge edge of door.
- Remove forearm from arm assembly. Mount arm shoe to door.
- Install main arm onto closer pinion shaft, indexing main arm mark “S” with pinion flat as shown at right.
- Reassemble arm by adjusting the length of the forearm to be perpendicular (at a 90° angle) to the door, when connected to the main arm (at the preload position).
- Screw pinion cap onto pinion shaft by hand or with a Phillips screwdriver - DO NOT OVER TIGHTEN.
- Adjust closer.

Door Closer Adjustment (Continued)

“DA” suffix (Delayed Action) is an optional feature.
A separate instruction will be packed with these instructions showing valve locations and adjustment procedures.

<table>
<thead>
<tr>
<th>Opening</th>
<th>Dimension A</th>
</tr>
</thead>
<tbody>
<tr>
<td>To 100°</td>
<td>7-1/2</td>
</tr>
<tr>
<td>101° to 120°</td>
<td>6</td>
</tr>
<tr>
<td>121° to 180°</td>
<td>3-1/2</td>
</tr>
</tbody>
</table>

* Door/Wall/Hardware/Jamb conditions permitting

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Unit Adjustment

- Valve “S” controls sweep range.
- Valve “L” controls latch range.

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Closing Speed Control

**CAUTION:**
DO NOT BACK VALVES OUT OF CLOSER OR A LEAK WILL RESULT

Attention: Adjust Closing Speed Time to between 4 to 7 seconds from 90°. Use of the door by handicapped, elderly or small children may require greater closing time.

Opening Door Control

**CAUTION:**
DO NOT BACK VALVES OUT OF CLOSER OR A LEAK WILL RESULT

*Backcheck (“BC”) valve controls the hydraulic resistance to door opening in backcheck range. NEVER close this valve completely – it is not to provide a positive stop.*
Parallel Arm Installation

**Template**

<table>
<thead>
<tr>
<th>Door Opening</th>
<th>Dimension A</th>
<th>Dimension B</th>
<th>Dimension C</th>
</tr>
</thead>
<tbody>
<tr>
<td>To 100°</td>
<td>9-1/4</td>
<td>7-5/8</td>
<td>194</td>
</tr>
<tr>
<td>101° to 130°</td>
<td>7-3/4</td>
<td>6-1/8</td>
<td>156</td>
</tr>
<tr>
<td>Over 131°</td>
<td>5-3/4</td>
<td>4-1/8</td>
<td>105</td>
</tr>
</tbody>
</table>

- Do not scale drawing
- Left Hand shown
- Dimensions are in inches (mm)

**Installation Sequence**

- Select door opening angle using template above. Mark 4 holes on door for closer or 1688 Drop Plate and 4 holes on frame for soffit plate.
- Prepare door and frame for fasteners. See “Preparation for Fasteners” bottom of Page 2.
- Mount soffit plate to frame.
- **1601SS Models Only.** Set approximate closing power using “Power Adjustment Chart” at bottom of Page 2.
- Mount closer to door with 2 regulating valves toward lock edge of door.
- Install main arm onto closer pinion shaft. Rotate pinion 45° toward hinge edge of door to align main arm letter “B” (right hand) or “A” (left hand) with pinion flat. Fasten with main arm screw.
- Fasten forearm to soffit plate. Adjust forearm length to set arm elbow about 1-1/2” (38mm) from door when connected to main arm.
- Screw pinion cap onto pinion shaft by hand or with a Phillips screw driver - DO NOT OVER TIGHTEN.
- Adjust closer. See closer adjustments on Pages 2 and 3.

**Side Elevation**

**Typical Installation**

To identify your model:

1-6=1601SS
3=1603BCSS
4=1604BCSS