Danger: A spring brake contains a very powerful compression spring. Failure to comply with all of these instructions may result in forceful release of the piggyback or spring chamber and its contents which could CAUSE DEATH, SEVERE PERSONAL INJURY AND/OR PROPERTY DAMAGE.

A spring brake or combination service/spring brake must be disarmed before disposal or forceful release of the compression spring may occur in the future without warning.

WARNING: Cancer and Reproductive Harm www.P65Warnings.ca.gov
### S-Cam Spring Brake Chamber Installation Instructions

1. When preparing to install a spring brake chamber, ensure that the unit is fully released (power caged). If the brake is released, re-cage it.

2. Inspect mounting bracket mating surface to assure that it is free from debris, burns, cracks, weld spatter and is flat within 1/64” (.4mm).

3. Attach chamber to the bracket using supplied mounting hardware. Torque to specifications shown in the Installation Torque Value Chart shown in Instruction 3. If Fig. 1 - Dim. A and Fig. 2 - Dim. A are not identical, the chamber mounting bracket is either bent and must be straightened or replaced, the chamber has been mounted improperly in the bracket, or the length of the adjuster installed is incorrect. Make any necessary corrections before proceeding further.

4. Measure the distance from the centerline of the S-Cam to the centerline of the pushrod (towards the chamber bracket). DO NOT insert spacers, washers or shims between mounting bracket and brake housing.

5. Always mount the brake chamber directly to the bracket, or the length of the adjuster installed is incorrect. Make any necessary corrections before proceeding further.

6. If Fig. 1 - Dim. A and Fig. 2 - Dim. A are not identical, the chamber mounting bracket is either bent and must be straightened or replaced, the chamber has been mounted improperly in the bracket, or the length of the adjuster installed is incorrect. Make any necessary corrections before proceeding further.

7. From Mark #2, measure toward the chamber bracket the distance listed in Table A, Column “D” for the brake chamber type being installed. Mark the pushrod at this point and cut it using a suitable tool.

8. Thread the clevis jam nut onto the pushrod. Thread the clevis onto the pushrod until the clevis pin hole, to the bottom of the yoke assembly. (See Fig. 3).

9. Use the brake adjuster hex clockwise to draw adjuster into the clevis until the pin holes align. DO NOT physically pull pushrod out to make initial contact with the drum.

10a. Apply anti-seize to the clevis pin. Insert pin through the aligned holes. Secure with a new cotter pin. (See Fig. 3).

11a. Torque the clevis jam nut to specifications in the Installation Torque Value Chart shown in Instruction 3.

12a. From Mark #2, measure toward the chamber bracket the distance listed in Table A, Column “D” for the brake chamber type being installed. Mark the pushrod at this point and cut it using a suitable tool.

13a. Apply anti-seize to the clevis pin. Insert pin through the aligned holes. Secure with a new cotter pin. (See Fig. 3).

14a. Torque the clevis jam nut to specifications in the Installation Torque Value Chart shown in Instruction 3.

**Pushrod Cutting Procedure**

**Threaded Pushrod Version Only**

5a. Measure and record the length of the clevis to be used. This measurement should be taken from the center of the clevis pin hole to, the end of the pushrod appears inside the clevis. (See Fig. 3).

6a. Using a square, mark the pushrod at the 90° setting (See Fig. 1 - Mark #1). From this mark, subtract the measured length of the clevis (clevis length). Make a second mark on the pushrod (towards the chamber bracket). (See Fig. 1 - Mark #2).

7a. From Mark #2, measure toward the chamber bracket the distance listed in Table A, Column “D” for the brake chamber type being installed. Mark the pushrod at this point and cut it using a suitable tool.

8a. Thread the clevis jam nut onto the pushrod. Thread the clevis onto the pushrod until the end of the pushrod appears inside the clevis ears.

9a. Use the brake adjuster hex clockwise to draw adjuster into the clevis until the pin holes align. DO NOT physically pull pushrod out to make initial contact with the drum. (See Fig. 3).

10a. Apply anti-seize to the clevis pin. Insert pin through the aligned holes. Secure with a new cotter pin. (See Fig. 3).

11a. Torque the clevis jam nut to specifications in the Installation Torque Value Chart shown in Instruction 3.

**Welded Clevis Version Only**

Follow Steps 1-4, Follow Steps 5a-7a, then proceed as follows.

5b. Use the brake adjuster hex clockwise to draw adjuster into the clevis until the pin holes align. DO NOT physically pull pushrod out to make initial contact with the drum. (See Fig. 3).

6b. Apply anti-seize to the clevis pin. Insert pin through the aligned holes. Secure with a new cotter pin. (See Fig. 3).

### Installation Torque Values

<table>
<thead>
<tr>
<th>Column A</th>
<th>Column B</th>
<th>Column C</th>
<th>Column D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chamber Type</td>
<td>Avail. Stroke</td>
<td>Readjustable Stroke</td>
<td>“Maximum” Stroke</td>
</tr>
<tr>
<td>90 Long Stroke</td>
<td>2 1/4&quot;</td>
<td>2 1/4&quot;</td>
<td>2 1/4&quot;</td>
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<tr>
<td>90 Medium Stroke</td>
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<td>2 1/4&quot;</td>
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<tr>
<td>90 Short Stroke</td>
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<td>120 Long Stroke</td>
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<tr>
<td>120 Short Stroke</td>
<td>3&quot;</td>
<td>2 1/2&quot;</td>
<td>2 1/2&quot;</td>
</tr>
</tbody>
</table>

**Attach Airports**

Connect Service and Emergency aircraft to the proper air ports. Torque to specifications in the Installation Torque Value Chart shown in Instruction 3.

Uncage spring brake chamber. Go to Haldex.com and search for Literature #L31171 for uncaging instructions. DO NOT use impact tools on caging nuts. (See Fig. 3).

**Final Adjustment and Verification**

A. Tighten the brake adjuster until either shoe makes initial contact with the drum.

B. Back off brake adjuster 1/2 turn.

C. Release spring brake chamber by applying 80-130 PSI at Emergency port. Verify that there is no interference present and that the pushrod is fully retracted into the actuator. (See Fig. 3).

D. Apply 90-100 PSI air pressure at Service port. Check that the stroke is within limits. (Torque Value Table above, Column C)

E. The angle between the pushrod and the centerline of the brake adjuster must not be exactly 90° with the brake applied. The angle can be anywhere between 85° - 110° for proper brake performance. Go to Haldex.com and search for Literature #L31171 for further details.

**Air Fittings**

<table>
<thead>
<tr>
<th>Column A</th>
<th>Column B</th>
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</tr>
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<tbody>
<tr>
<td>24 Long Stroke</td>
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<tr>
<td>24 X-Long Stroke</td>
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<td>2 1/2&quot;</td>
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<tr>
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<td>2 1/2&quot;</td>
<td>2 1/2&quot;</td>
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<tr>
<td>24 X-Long Stroke</td>
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</tbody>
</table>

**Threaded Pushrod Version Only**

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<td>2 1/2&quot;</td>
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</tbody>
</table>

**Welded Clevis Version Only**

Follow Steps 1-4, Follow Steps 5a-7a, then proceed as follows.

5b. Use the brake adjuster hex clockwise to draw adjuster into the clevis until the pin holes align. DO NOT physically pull pushrod out to make initial contact with the drum. (See Fig. 3).

6b. Apply anti-seize to the clevis pin. Insert pin through the aligned holes. Secure with a new cotter pin. (See Fig. 3).

11a. Torque the clevis jam nut to specifications in the Installation Torque Value Chart shown in Instruction 3.

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