TITLE
CREW SEAT RECLINE MODIFICATION

EFFECTIVITY

<table>
<thead>
<tr>
<th>Model</th>
<th>Serial Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>172R</td>
<td>17280001 thru 17281262</td>
</tr>
<tr>
<td>172S</td>
<td>172S8001 thru 172S9994</td>
</tr>
<tr>
<td>182S</td>
<td>18280001 thru 18280944</td>
</tr>
<tr>
<td>182T</td>
<td>18280945 thru 18281701</td>
</tr>
<tr>
<td>T182T</td>
<td>T18208001 thru T18208453</td>
</tr>
<tr>
<td>206H</td>
<td>20608001 thru 20608250</td>
</tr>
<tr>
<td>T206H</td>
<td>T20608001 thru T20608570</td>
</tr>
</tbody>
</table>

DESCRIPTION
This modification kit provides instructions and parts to do seat-back recline modifications on both crew seats.


APPROVAL
FAA approval has been obtained on technical data in this publication that affects airplane type design.

REFERENCE
SB04-25-01R4
CHANGE IN WEIGHT AND BALANCE
Negligible

MATERIAL INFORMATION

NOTE: The parts included in these modification kits cover installation for two crew seats in one airplane.

Airplanes that have installed MK172-25-07 or airplanes that have the production manufactured configuration seat (See Figure 1, Detail B), order the kit below.

NOTE: Also refer to Figure 1, View C-C, Detail F, and Detail G. Make sure that the part number 0790007-2 Height Adjustment Nut is installed. If the 0790007-2 Height Adjustment Nut is not installed, then you must order the MK172-25-10C1 kit.

### NEW P/N QUANTITY DESCRIPTION OLD P/N DISPOSITION
MK172-25-10C0 1 Kit, consisting of the following parts:

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>OLD P/N</th>
<th>DISPOSITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>AN4-11A</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>AN4-16A</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>AN4-17A</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>AN4-4A</td>
<td>AN4-12A</td>
<td>Discard</td>
</tr>
<tr>
<td>MS21044N4</td>
<td>MS21044N4 and MS21042-4</td>
<td>Discard</td>
</tr>
<tr>
<td>NAS1149F0463P</td>
<td>16</td>
<td>Washer</td>
</tr>
<tr>
<td>SP22306</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>S2456-6-4</td>
<td>S2456-6-4</td>
<td>Discard</td>
</tr>
<tr>
<td>UL18-019VSP1 or UL18-020VSP1 or UL18-021VSP1 (NOTE)</td>
<td>0719013-2</td>
<td>Return to Cessna</td>
</tr>
<tr>
<td>0790012-2</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>0790012-3</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>0790012-4</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>MK172-25-10</td>
<td>Instructions</td>
<td></td>
</tr>
</tbody>
</table>

NOTE: The UL18-020VSP1 and the UL18-021VSP1 are alternatives for the UL18-019VSP1.

Airplanes that have not installed MK172-25-07 or do not have the production manufactured configuration seat or part number 0790007-2 Height Adjustment Nut installed (See Figure 1, Details B, F, and G, and View C-C), order the kit below.

### NEW P/N QUANTITY DESCRIPTION OLD P/N DISPOSITION
MK172-25-10C1 1 Kit, consisting of the following parts:

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>OLD P/N</th>
<th>DISPOSITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>AN4-11A</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>AN4-16A</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>AN4-17A</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>AN4-4A</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

NOTE: The UL18-020VSP1 and the UL18-021VSP1 are alternatives for the UL18-019VSP1.
MS21044N4 8 Nut MS21044N4 and MS21042-4 Discard
MS24665-136 2 Cotter Pin Same Discard
NAS1149F0463P 16 Washer Same Discard
NAS561P4-10 2 Pin Same Discard
SP22306 2 Ultraloc Actuator Kit None None
S2456-6-4 10 Rivet None None
UL18-019VSP1 or UL18-020VSP1 or UL18-021VSP1 (NOTE)
  0790012-2 2 Ultraloc End Fitting None None
  0790007-2 2 Nut, Height Adjustment 0514037-3 Discard
  0790012-3 2 Ultraloc Clevis Bracket None None
  0790012-4 2 Ultraloc Clevis Bracket None None
MK172-25-10 1 Instructions

NOTE: The UL18-020VSP1 and the UL18-021VSP1 are alternatives for the UL18-019VSP1.

In addition to the MK172-25-10C0 and MK172-25-10C1 parts kits, the following may be necessary.

<table>
<thead>
<tr>
<th>NEW P/N</th>
<th>QUANTITY</th>
<th>DESCRIPTION</th>
<th>OLD P/N</th>
<th>DISPOSITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>MS24694S101</td>
<td>2</td>
<td>Screw</td>
<td>AN4-7A</td>
<td>Discard</td>
</tr>
<tr>
<td>MS21044N4</td>
<td>2</td>
<td>Nut</td>
<td>Same</td>
<td>Discard</td>
</tr>
</tbody>
</table>

For Airplanes 17280001 thru 17280830, 172S8001 thru 172S8347, 18280001 thru 18280660, 20608001 thru 20608082, and T20608001 thru T20608146, the part below may be necessary.

<table>
<thead>
<tr>
<th>NEW P/N</th>
<th>QUANTITY</th>
<th>DESCRIPTION</th>
<th>OLD P/N</th>
<th>DISPOSITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>MC5794-24</td>
<td>2 (As Required)</td>
<td>Seat Control Assembly</td>
<td>MC100-24 or MC194-24</td>
<td>Discard</td>
</tr>
</tbody>
</table>

The materials, or equivalent, listed in this table will be necessary.

<table>
<thead>
<tr>
<th>NAME</th>
<th>NUMBER</th>
<th>MANUFACTURER</th>
<th>USE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retaining Compound</td>
<td>Loctite 242 (alternate U074062)</td>
<td>Cessna Aircraft Company Cessna Parts Distribution 5800 East Pawnee PO Box 1521 Wichita, KS 67218 USA</td>
<td>Retention of the AN4-4A Bolts.</td>
</tr>
<tr>
<td>Alodine 1132 Marker</td>
<td>U074093 (or equivalent)</td>
<td>Cessna Aircraft Company Cessna Parts Distribution 5800 East Pawnee PO Box 1521 Wichita, KS 67218 USA</td>
<td>To apply to bare metal.</td>
</tr>
<tr>
<td>Corrosion Resistant Primer</td>
<td>K000912</td>
<td>Cessna Aircraft Company Cessna Parts Distribution 5800 East Pawnee PO Box 1521 Wichita, KS 67218 USA</td>
<td>To apply to bare metal.</td>
</tr>
</tbody>
</table>
ACCOMPLISHMENT INSTRUCTIONS

WARNING: READ AND MAKE SURE THAT YOU UNDERSTAND ALL OF THE INSTRUCTIONS BEFORE YOU INSTALL THIS MODIFICATION KIT. AN INCORRECTLY INSTALLED MODIFICATION KIT CAN POTENTIALLY CONTRIBUTE TO THE FAILURE OF AN ULTRALOC.


1. Prepare the airplane for maintenance.
   A. Make sure that all switches are in the OFF/NORM position.
   B. Disconnect electrical power from the airplane.
      (1) Disconnect the airplane battery.
      (2) Disconnect external electrical power.
   C. Attach maintenance warning tags to the battery and external power receptacle that have "DO NOT CONNECT ELECTRICAL POWER - MAINTENANCE IN PROGRESS" written on them.

WARNING: FOLLOW ALL SAFETY PRECAUTIONS WHEN YOU WORK ON OR NEAR THE INFLATABLE RESTRAINT SYSTEM. THE INFLATOR ASSEMBLY IS A STORED, GAS/ENERGETIC MATERIAL DEVICE AND CAN CAUSE DAMAGE TO THE SYSTEM AND/OR INJURY TO PERSONNEL IF ACCIDENTALLY DEPLOYED.

2. Disconnect and remove the crew seat belts from the crew seats as necessary. Keep the attaching hardware. (Refer to the applicable Maintenance Manual, Chapter 25, Flight Compartment and Inflatable Restraint System - Maintenance Practices.)

3. Remove the crew seats from the airplane. (Refer to the applicable Maintenance Manual, Chapter 25, Flight Compartment - Maintenance Practices.)

4. (Refer to Figure 1, Detail B.) Look at the crew seats to see if MK172-25-07 is installed, the production manufactured configuration seat is installed, or if neither is installed, and go to Step 5 or Step 6 as applicable.

NOTE: Airplanes with MK172-25-07 installed have the hydrolok slip fitting riveted to the seat frame.

NOTE: Airplanes that have the production manufactured configuration seat installed have the hydrolok slip fitting welded to the seat frame.

NOTE: Airplanes without MK172-25-07 or production manufactured configuration seats installed do not have a hydrolok slip fitting installed.
5. (Airplanes that have installed MK172-25-07 or have the production manufactured configuration seat) Do a modification to each crew seat.

**NOTE:** Airplanes that do not have MK172-25-07 or the production manufactured configuration seat installed, go to Step 6.

A. Disassemble the crew seats as follows.

1. (Refer to Figure 1, View A-A before modification.) Remove and discard the nut, washers, and bolt that attach the aft end of the cylinder lock assembly or steel bar to the seat back frame.

2. Remove and keep the washers and the bolt that attach the aft end of the seat base frame to the seat back frame on the right side. Discard the nut.

3. (Refer to Figure 1, View B-B before modification.) Remove and discard the nut, washers, and bolt that attach the aft end of the seat base frame to the seat back frame on the left side.

4. (Refer to Figure 1, Detail B.) Remove and discard the nut, washers, and bolt that attach the cylinder lock assembly or steel rod/bar to the hydrolok slip fitting.

5. (Refer to Figure 1, Detail C.) Remove the end of the MC5794-24 Seat Control Cable Assembly, with the long adjustment nut attached, from the cylinder lock assembly. Keep the long adjustment nut on the bracket and the jam nut on the cable. If the steel bar had been installed, remove the tie wraps securing the MC5794-24 Seat Control Cable Assembly to the seat frame.

**NOTE:** The MC100-24 and the MC194-24 Seat Control Cable Assemblies do not have the long adjustment nut attached to the cylinder lock assembly.

(a) If the MC100-24 or the MC194-24 Seat Control Cable Assemblies are installed, remove and replace them with MC5794-24 Seat Control Cable Assemblies.

6. Return the removed cylinder lock assembly to Cessna as described in the CREDIT INFORMATION section of SB04-25-01R4 (or latest revision). Discard the steel rod/bar.

7. (Airplanes that have installed MK172-25-07) Remove the hydrolok slip fitting as follows.

**NOTE:** Airplanes with the production manufactured configuration seat, go to Step 5B.

(a) (Refer to Figure 1, Detail B.) Remove and discard the nut, washers, and bolt that attach the hydrolok slip fitting to the 1214192-18 Bracket.

(b) Remove the two rivets that attach the hydrolok slip fitting to the bracket and the seat base frame.

(c) Discard the shim if installed and the hydrolok slip fitting.

B. (Refer to Figure 1, View B-B after modification.) Drill a bolt hole in the seat base frame to attach the forward end of the UL18-019VSP1, UL18-020VSP1, or UL18-021VSP1 Ultraloc as follows.

1. From the lower edge of the angle that is on the left side of the seat base frame, measure 1.44 inches up to locate the center of the new bolt hole location.

2. From the aft edge of the angle, measure 0.47 inch to locate the center of the new bolt hole.

3. Make a mark at this location to show the center of the new bolt hole that you will drill.

4. Drill a 0.256-inch diameter hole through the angle. Deburr the hole.

**NOTE:** The angle is made of steel, and it is recommended that you use a titanium nitrate coated (gold or yellow in color) drill bit and also that you use lubricant cutting oil (or equivalent) when you drill. When you drill through steel, it is recommended to drill at a slow speed and to use light hand pressure to help keep the material from an overheat condition.

5. Apply Alodine 1132 and primer to the hole area as necessary.
C. (Refer to Figure 1, View A-A after modification and View B-B after modification.) Drill a bolt hole in the seat back frame to attach the 0790012-4 Ultraloc Clevis Bracket as follows:

1. Put the 0790012-4 Ultraloc Clevis Bracket in position on the inside surface of the seat back frame as shown. Align the top and the bottom holes on the bracket with the bolt holes in the seat back frame.

2. Put a mark on the seat back frame where you will match drill the new hole in the seat back frame with the existing middle hole in the 0790012-4 Ultraloc Clevis Bracket.

3. Remove the 0790012-4 Ultraloc Clevis Bracket from the seat frame.

4. Drill a 0.256-inch diameter hole through the seat back frame. Deburr the hole.

5. Apply Alodine 1132 and primer to the hole area as necessary.

D. (Refer to Figure 1, View A-A after modification.) Install the 0790012-4 Ultraloc Clevis Bracket to the seat back frame with the new AN4-11A Bolt, two NAS1149F0463P Washers, and MS21044N4 Nut.

E. (Refer to Figure 1, View D-D.) Install the 0790012-3 Ultraloc Clevis Bracket to the crew seat base frame as follows.

1. Put the 0790012-3 Ultraloc Clevis Bracket in position on the bottom of the seat base frame. Align the bolt hole in the bracket with the new hole that you drilled in the seat base frame.

2. (Refer to Figure 1, Detail D.) If necessary for the correct bolt hole alignment, trim the forward edge of the 0790012-3 Ultraloc Clevis Bracket as shown. Make sure that you remove no more than 0.10 inch of material from the 0790012-3 Ultraloc Clevis Bracket.

3. (Refer to Figure 1, Detail D.) (Airplanes with production manufactured configuration seat) If necessary to install the 0790012-3 Ultraloc Clevis Bracket in the correct position, you can trim the aft end of the hydrolok slip fitting as follows:
   a. Trim as necessary.
   b. Make sure that you do not remove material from the seat frame.
   c. Apply Alodine 1132 and primer to the area as necessary.

4. (Airplanes with MK172-25-07 installed) Put marks on the 0790012-3 Ultraloc Clevis Bracket to match the two existing rivet holes in the seat base frame where the hydrolok slip fitting was attached.

5. (Refer to Figure 1, View D-D and Detail D.) (Airplanes with production manufactured configuration seat) Mark and drill two Number 5 (0.205-inch diameter) holes in the 0790012-3 Ultraloc Clevis Bracket and on the seat frame.

6. Put marks on the 0790012-3 Ultraloc Clevis Bracket and on the seat base frame for the three new rivet holes that you will drill.

7. Drill three equally-spaced Number 5 (0.205-inch diameter) holes through the seat base frame.

8. Match drill five Number 5 (0.205-inch diameter) holes through the 0790012-3 Ultraloc Clevis Bracket. Deburr the holes.

9. Apply Alodine 1132 and primer to the holes and forward edge as necessary.

10. Install the 0790012-3 Ultraloc Clevis Bracket to the seat base frame with five S2456-6-4 Rivets.

11. (Refer to Figure 1, View C-C, Detail F, and Detail G.) Determine what part number height adjustment nut is installed on your airplane and do as follows:
   a. If the 0790007-2 Height Adjustment Nut (2.00 inches in length) is installed, make sure that it is installed exactly in the correct configuration as shown. If it is not installed exactly in the correct configuration as shown, correct the installation.
   b. If the 0514037-3 Height Adjustment Nut (1.51 inches in length) is installed, remove it and replace it with the 0790007-2 Height Adjustment Nut with a new NAS561P4-10 Pin and a
new MS24665-136 Pin. Make sure that you install the 0790007-2 Height Adjustment Nut exactly as shown.

F. Install the seat back frame to the seat base frame on the right side of the crew seat with the kept hardware and new MS21044N4 Nut.

G. (Refer to Figure 1, View A-A after modification.) With the AN4-17A Bolt, two NAS1149F0463P Washers, and MS21044N4 Nut, install the seat back frame (with the new 0790012-4 Ultraloc Clevis Bracket installed to it) to the seat base frame.

NOTE: For airplanes equipped with the AMSAFE restraint system, one 0514232-3 Bushing and two NAS1149F0563P Washers are installed also.

NOTE: Use a longer AN4 bolt as necessary to make one to three threads show beyond the nut when it is installed.

H. Install the UL18-019VSP1, UL18-020VSP1, or UL18-021VSP1 Ultraloc on the crew seat as follows.

1. (Refer to Figure 1, View D-D, and Detail K.) Put the 0790012-2 Ultraloc End Fitting in position between the 0790012-3 Ultraloc Clevis Bracket and the angle.

CAUTION: MAKE SURE TO INSTALL THE 0790012-2 ULTRALOC END FITTING WITH THE 0.68-INCH END TOWARDS THE OUTSIDE OF THE CREW SEAT BASE FRAME. IF THE END FITTING IS INSTALLED INCORRECTLY THE ULTRALOC CYLINDER WILL NOT BE ALIGNED AND THE SEAT WILL NOT OPERATE CORRECTLY.

2. (Refer to Figure 1, View D-D.) Install the 0790012-2 Ultraloc End Fitting to the angle and the 0790012-3 Ultraloc Clevis Bracket with the two AN4-4A Bolts and the two NAS1149F0463P Washers. Apply Loctite 242 or equivalent to the threads of the bolts.

3. Tighten the two bolts until they are snug and then back them off one quarter turn.

4. (Refer to Figure 1, Detail E.) Install the SP22306 Ultraloc Actuator Kit on the UL18-019VSP1, UL18-020VSP1, or UL18-021VSP1 Ultraloc.

5. (Refer to Figure 1, View A-A after modification.) Put the UL18-019VSP1, UL18-020VSP1, or UL18-021VSP1 Ultraloc in position and install it to the seat frame and the 0790012-4 Ultraloc Clevis Bracket with one AN4-16A Bolt, two NAS1149F0463P Washers, and one MS21044N4 Nut.

6. (Refer to Figure 1, Detail E.) Connect the MC5794-24 Control Cable with the jam nut to the Ultraloc Actuator Kit.

NOTE: The SP22306 Ultraloc Actuator Kit includes the jam nut and the adjustment nut.

7. (Refer to Figure 1, Detail E.) Adjust the cable tension to minimize free play at the MC5794-24 Control Jam Nut end. Go to Step 7.

6. (Airplanes that have not installed MK172-25-07 or do not have the production manufactured configuration seat) Do a modification to each crew seat.

A. Disassemble the crew seat as follows.

1. (Refer to Figure 1, View A-A before modification.) Remove and discard the nut, washers, and bolt that attach the aft end of the cylinder lock assembly or steel bar to the seat back frame.

2. Remove and keep the washers and bolt that attach the aft end of the seat base frame to the seat back frame on the right side. Discard the nut.

3. (Refer to Figure 1, View B-B before modification.) Remove and discard the nut, washers, and bolt that attach the aft end of the seat base frame to the seat back frame on the left side.

4. (Refer to Figure 1, Detail B.) Remove and discard the nut, washers, and bolt that attach the forward end of the cylinder lock assembly or steel rod/bar to the bracket on the crew seat.

5. (Refer to Figure 1, Detail C.) Remove the end of the MC5794-24 Control Cable, with the long adjustment nut attached, from the cylinder lock assembly. Keep the long adjustment nut on
the bracket and the jam nut on the cable. If the steel bar had been installed, remove the tie wraps securing the MC5794-24 control cable to the seat frame.

NOTE: The MC100-24 and the MC194-24 Seat Control Cable Assemblies do not have the long adjustment nut attached to the cylinder lock assembly.

(a) If the MC100-24 or the MC194-24 Seat Control Cable Assemblies are installed, remove and replace them with MC5794-24 Seat Control Cable Assemblies.

(6) Return the removed cylinder lock assembly to Cessna as described in the CREDIT INFORMATION section of SB04-25-01R3 (or latest revision). Discard the steel rod/bar.

B. (Refer to Figure 1, View B-B after modification.) Drill a bolt hole in the seat base frame to attach the forward end of the UL18-019VSP1, UL18-020VSP1, or UL18-021VSP1 Ultraloc as follows:

(1) From the lower edge of the angle that is on the left side of the seat base frame, measure 1.44 inches up to locate the center of the new bolt hole location.

(2) From the aft edge of the angle, measure 0.47 inch to locate the center of the new bolt hole.

(3) Make a mark at this location to show the center of the new bolt hole that you will drill.

(4) Drill a 0.256-inch diameter hole through the angle. Deburr the hole.

NOTE: The angle is made of steel, and it is recommended that you use a titanium nitrate coated (gold or yellow in color) drill bit and also that you use lubricant cutting oil (or equivalent) when you drill. When you drill through steel, it is recommended to drill at a slow speed and to use light hand pressure to help keep the material from an overheat condition.

(5) Apply Alodine 1132 and primer to the hole as necessary.

C. (Refer to Figure 1, View B-B after modification.) Drill a bolt hole in the seat back frame to attach the 0790012-4 Ultraloc Clevis Bracket as follows:

(1) Put the 0790012-4 Ultraloc Clevis Bracket in position on the inside surface of the seat back frame as shown. Align the top and the bottom holes in the bracket with the bolt holes in the seat back frame.

(2) Put a mark on the seat back frame where you will match drill the new hole in the seat back frame with the existing middle hole in the 0790012-4 Ultraloc Clevis Bracket.

(3) Remove the 0790012-4 Ultraloc Clevis Bracket from the seat frame.

(4) Drill a 0.256-inch diameter hole through the seat back frame. Deburr the hole.

(5) Apply Alodine 1132 and primer to the hole as necessary.

D. (Refer to Figure 1, View A-A after modification.) Install the 0790012-4 Ultraloc Clevis Bracket to the seat back frame with the new AN4-11A Bolt, two NAS1149F0463P Washers, and one MS21044N4 Nut.

E. (Refer to Figure 1, View D-D and Detail D.) Install the 0790012-3 Ultraloc Clevis Bracket to the crew seat base frame as follows.

(1) Put the 0790012-3 Ultraloc Clevis Bracket in position on the bottom of the seat base frame and align the bolt hole in the bracket with the new hole that you drilled in the seat base frame.

(2) Put marks on the 0790012-3 Ultraloc Clevis Bracket and on the seat base frame for the five new rivet holes that you will drill as shown.

(3) Drill five Number 5 (0.205-inch diameter) holes through the seat base frame as shown. Deburr the holes.

(4) Match drill five Number 5 (0.205-inch diameter) holes through the 0790012-3 Ultraloc Clevis Bracket. Deburr the holes.

(5) Apply Alodine 1132 and primer to the holes as necessary.
(6) Install the 0790012-3 Ultraloc Clevis Bracket to the seat base frame with the five S2456-6-4 Rivets.

F. Install the seat back frame to the seat base frame on the right side of the crew seat with the kept hardware and new MS21044N4 Nut.

G. (Refer to Figure 1, View A-A after modification.) With the AN4-17A Bolt, two NAS1149F0463P Washers, and one MS21044N4 Nut, install the seat back frame (with the new 0790012-4 Ultraloc Clevis Bracket installed to it) to the seat base frame.

NOTE: For airplanes equipped with the AMSAFE restraint system, one 0514232-3 Bushing and two NAS1149F0563P Washers are installed also.

NOTE: Use a longer AN4 bolt as necessary to make one to three threads show beyond the nut.

H. Install the UL18-019VSP1, UL18-020VSP1, or UL18-021VSP1 Ultraloc on the crew seat as follows.

1. (Refer to Figure 1, View D-D.) Put the 0790012-2 Ultraloc End Fitting in position between the 0790012-3 Ultraloc Clevis Bracket and the angle.

   CAUTION: MAKE SURE TO INSTALL THE 0790012-2 ULTRALOC END FITTING WITH THE 0.68-INCH END TOWARDS THE OUTSIDE OF THE CREW SEAT BASE FRAME. IF THE END FITTING IS INSTALLED INCORRECTLY THE ULTRALOC CYLINDER WILL NOT BE ALIGNED AND THE SEAT WILL NOT OPERATE CORRECTLY.

2. (Refer to Figure 1, View D-D.) Install the 0790012-2 Ultraloc End Fitting to the angle and the 0790012-3 Ultraloc Clevis Bracket with the two AN4-4A Bolts and the two NAS1149F0463P Washers. Apply Loctite 242 or equivalent to the threads of the bolts.

3. Tighten the two bolts until they are snug and then back them off one quarter turn.

4. (Refer to Figure 1, Detail E.) Install the SP22306 Ultraloc Actuator Kit on the UL18-019VSP1, UL18-020VSP1, or UL18-021VSP1 Ultraloc.

5. (Refer to Figure 1, View A-A after modification.) Put the UL18-019VSP1, UL18-020VSP1, or UL18-021VSP1 Ultraloc in position and install it to the seat frame and the 0790012-4 Ultraloc Clevis Bracket with one AN4-16A Bolt, two NAS1149F0463P Washers, and one MS21044N4 Nut.

6. (Refer to Figure 1, Detail E.) Connect the MC5794-24 Control Cable with the jam nut to the Ultraloc Actuator Kit.

   NOTE: The SP22306 Ultraloc Actuator Kit includes the jam nut and the adjustment nut.

7. (Refer to Figure 1, Detail E.) Adjust the cable tension to minimize free play at the MC5794-24 Control Jam Nut end.

I. (Refer to Figure 1, View C-C.) Install the new 0790007-2 Height-Adjustment Nut as follows.

1. Remove the NAS561P4-10 Pin at the aft end of the height adjustment shaft.

2. Lower the seat to the lowest position before you remove the height adjustment nut.

   NOTE: If necessary, adjust the height of the seat to remove the existing height adjustment nut from the seat.

3. Remove the existing height adjustment nut and keep the hardware that attached it to the bell crank. Discard the cotter pin.

4. Discard the removed height adjustment nut.

5. (Refer to Figure 1, View E-E, Detail H and Detail J.) Do an inspection of the pilot's and copilot's crew seat left rear crank arm for the installation of the MS24694S101 Countersunk Screw.

   a. (Refer to Figure 1, Detail H.) If the pilot's and copilot's crew seat left rear crank arm have the MS24694S101 Countersunk Screw installed, then go to Step 6.I.(6).
(b) If the pilot's and/or copilot's crew seat left rear crank arm does not have the MS24694S101 Countersunk Screw installed, go to Step 6.I.(5)(c).

(c) Install a MS24694S101 Countersunk Screw in the pilot's crew seat left rear crank arm.

1. Remove the AN4-7A Bolt and the MS21044N4 Nut from the crank arm and seat angle at the left side aft end of the seat frame that is adjacent to the Ultraloc.

   NOTE: The crank arm for the crew seat may or may not have lightening holes, but this does not affect this modification.

2. (Refer to Figure 1, Detail J.) Countersink the existing bolt hole on the inboard side of the crank arm to 0.50-inch X 100 degrees as shown.

   NOTE: The new MS24694S101 Screw head must be flush with the surface of the crank arm.

3. Install a MS24694S101 Screw in the crank arm and through the seat angle hole.

4. (Refer to Figure 1, View E-E.) Install a new MS21044N4 Nut on the MS24694S101 Screw. Tighten the nut completely and then back off one complete turn.

(d) Repeat Step 6.I.(5)(c) for the co-pilot's seat.

(6) (Refer to Figure 1, View C-C, Detail F and Detail G.) Install the 0790007-2 Height Adjustment Nut to the height adjustment shaft and attach it to the bell crank with the kept hardware.

   WARNING: THE 0790007-2 HEIGHT ADJUSTMENT NUT MUST ONLY BE INSTALLED IN THE CONFIGURATION AS SHOWN FOR THE SEAT TO OPERATE CORRECTLY AND SAFELY.

(a) Install the pin through the height adjustment nut with the head on the pin on the inner side of the seat bracket.

(b) Install the kept washer and a new MS24665-136 Cotter Pin on the outer side of the seat bracket.

(c) Install a new NAS561P4-10 Pin in the aft end of the height adjustment shaft.

(d) Turn the height adjustment crank to make sure that the seat moves up and down smoothly.

7. (Refer to Figure 1, View D-D and Detail E.) Do an adjustment of the MC5794-24 Seat Control Cable Assembly.

   A. Turn the jam nut to unlock the adjustment nut.

   B. (Refer to Figure 1, Detail E.) Turn the adjustment nut to tighten the cable. Make sure that there is no less than a 0.015-inch gap between the Ultraloc and the lock mechanism.

   CAUTION: DO NOT TIGHTEN THE CABLE TOO MUCH SINCE THIS CAN CAUSE THE SEAT RECLINE MECHANISM TO RELEASE FROM A LOCKED POSITION UNCOMMANDED.

   C. Tighten the jam nut to lock the tension on the cable.

   D. Move the seat back forward and aft a few times to make sure that it operates smoothly and that it locks.

8. (Refer to Figure 1, Detail F.) Do an operational check as follows:

   A. Move the seat through the full up and full down height adjustment range, and make sure that the seat operates smoothly and does not bind.

   B. If the seat does bind, you must correct the installation as necessary to make sure that the seat operates correctly.
WARNING: MAKE SURE THAT THERE IS A MINIMUM OF 0.12-INCH CLEARANCE BETWEEN THE ULTRALOC AND THE SEAT CRANK ARM BELL CRANK. WITHOUT THIS 0.12-INCH MINIMUM CLEARANCE, THE ULTRALOC MAY FAIL.

C. Move the seat height to the full down position. Have an occupant sit in the seat and then do a check to make sure that there is a minimum of 0.12-inch clearance between the ultraloc and the seat crank arm bell crank.

D. If there is less than 0.12-inch clearance between the ultraloc and the seat crank arm bell crank, check the installation of the height adjustment nut. Make sure that the 0790007-2 Height Adjustment Nut is installed and that it is oriented correctly.

9. Install the crew seats in the airplane. (Refer to the applicable Model Maintenance Manual, Chapter 25, Flight Compartment - Maintenance Practices.)

10. With the kept hardware, install the seat belts. (Refer to the applicable Maintenance Manual, Chapter 25, Flight Compartment and Inflatable Restraint System - Maintenance Practices.)

11. For airplanes with the AMSAFE inflatable restraint system, do an operational check of the seat belt system. (Refer to applicable Maintenance Manual, Chapter 25, Inflatable Restraint System - Maintenance Practices.)

12. Remove maintenance warning tags from battery and external power receptacle and reconnect electrical power. (Refer to the applicable Maintenance Manual, Chapter 24, Electrical Power.)

13. Make an entry in the airplane logbook stating that this modification kit has been installed.
NOTE 1: AIRPLANES THAT HAVE THE AMSAFE RESTRAINT SYSTEM ALSO HAVE ONE 0514232–3 BUSHING AND TWO NAS1149F0563P WASHERS INSTALLED.

AN4–17A BOLT (1 REQUIRED) NAS1149F0463P WASHER (2 REQUIRED) MS21044N4 NUT (1 REQUIRED) (NOTE 1)
0790012–4 ULTRALOC CLEVIS BRACKET (1 REQUIRED)
AN4–16A BOLT (1 REQUIRED) NAS1149F0463P WASHER (2 REQUIRED) MS21044N4 NUT (1 REQUIRED)
UL18–019VSP1 OR UL18–020VSP1 OR UL18–021VSP1 ULTRALOC (1 REQUIRED)

Figure 1. Crew Seat Recline Modification (Sheet 1)
Figure 1. Crew Seat Recline Modification (Sheet 2)

NOTE 2: ALL DIMENSIONS SHOWN ARE IN INCHES.

0.256-INC6 DIAMETER HOLE THROUGH SEAT BACK FRAME TO MATCH 0790012–4 ULTRALOC CLEVIS BRACKET (1 REQUIRED)

1.44

0.47

VIEW B–B
BEFORE MODIFICATION

VIEW B–B
AFTER MODIFICATION
Figure 1. Crew Seat Recline Modification (Sheet 3)

**NOTE 12:** THIS HYDROLOK SLIP FITTING BRACKET IS ATTACHED WITH RIVETS.

Figure 1. Crew Seat Recline Modification (Sheet 4)
NOTE 4: THE JAM NUT AND THE ADJUSTMENT NUT ARE INCLUDED IN AND ARE PART OF THE SP22306 ULTRALOC ACTUATOR KIT.

NOTE 13: INSTALL THE ULTRALOC END FITTING WITH THE 0.68 INCH END TOWARD THE OUTSIDE EDGE OF THE CREW SEAT BASE FRAME.

Figure 1. Crew Seat Recline Modification (Sheet 5)
NOTE 5: TRIM NO MORE THAN 0.10 INCH FROM THE FORWARD END OF THE 0790012–3 ULTRALOC CLEVIS BRACKET TO GIVE CLEARANCE BETWEEN THE BRACKET AND THE HYDROLOK SLIP FITTING.

NOTE 6: MAKE SURE THAT YOU KEEP THE MINIMUM EDGE DISTANCE OF APPROXIMATELY 0.20 INCH BETWEEN THE CENTER OF THE RIVET HOLE AND FORWARD EDGE OF THE 0790012–3 ULTRALOC CLEVIS BRACKET.

NOTE 7: TRIM THE AFT END OF THE HYDROLOK SLIP FITTING AS NEEDED TO GIVE CLEARANCE BETWEEN THE 0790012–3 ULTRALOC CLEVIS BRACKET AND THE HYDROLOK SLIP FITTING.

NOTE 8: MAKE SURE THAT THERE IS NO LESS THAN A 0.015–INCH GAP BETWEEN THESE TWO POINTS OF THE LOCK MECHANISM.
NOTE 9: THE HEIGHT ADJUSTMENT NUT MUST BE INSTALLED AS SHOWN FOR THE SEAT TO FUNCTION CORRECTLY AND FOR PROPER CLEARANCE BETWEEN THE ULTRALOC AND THE SEAT CRANK ARM BELL CRANK.

Figure 1. Crew Seat Recline Modification (Sheet 7)
Figure 1. Crew Seat Recline Modification (Sheet 8)
DO NOT USE
OLD 0514037-3 HEIGHT
ADJUSTMENT NUT

DETAIL G

Figure 1. Crew Seat Recline Modification (Sheet 9)
Figure 1. Crew Seat Recline Modification (Sheet 10)

NOTE 11: REPLACE THE AN4–7A BOLT WITH A MS24694S101 SCREW IF NOT PREVIOUSLY ACCOMPLISHED.