



STOL CH 701 Bubble doors



Rear view



Front view
Right door



7F19-12D
Door Sill



Inside view, left top corner
of cabin frame

See Section 2 Door – Final assembly
The Door Sill is riveted to the sides of the Upper Tubes 7F12-2 with the wing removed from the fuselage.

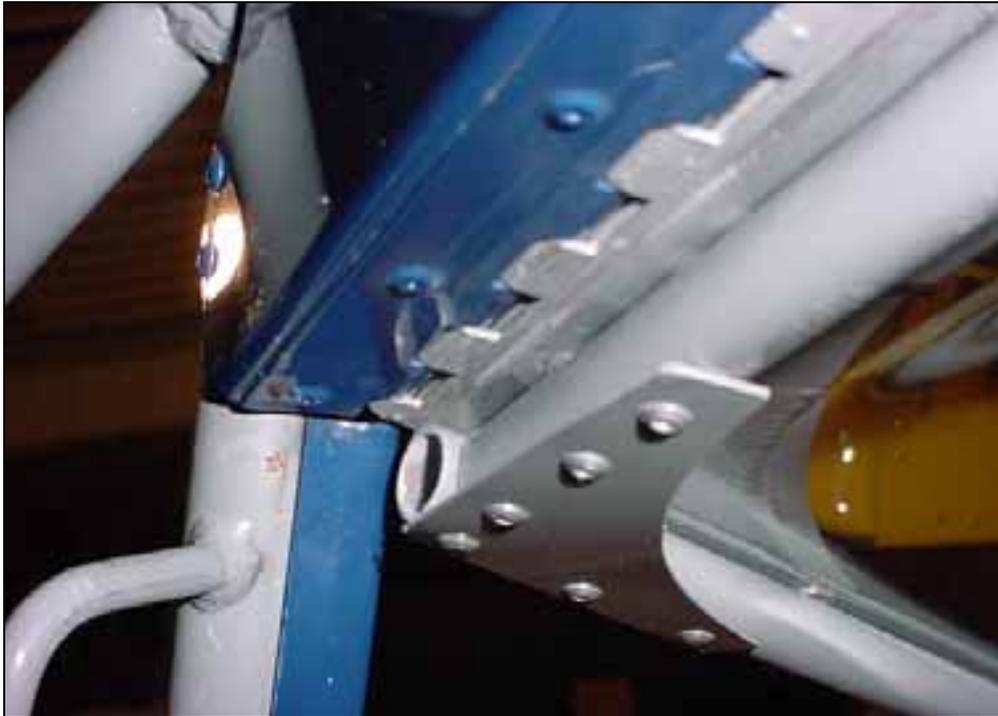


7F19-13D
Piano Hinge

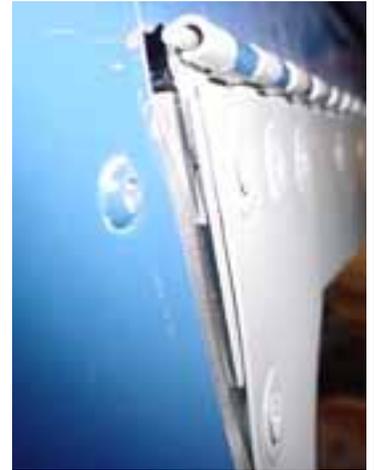
Pull the pin to separate
the two halves of the
piano hinge.

ORIENTATION: The
Hinge is installed to the
door sill with the spine on
the outboard side pointing
up.

Cut the length of the hinge the full length of the door sill (between the cabin frame and fuselage). The ends are cut square. Wait to trim the other half.



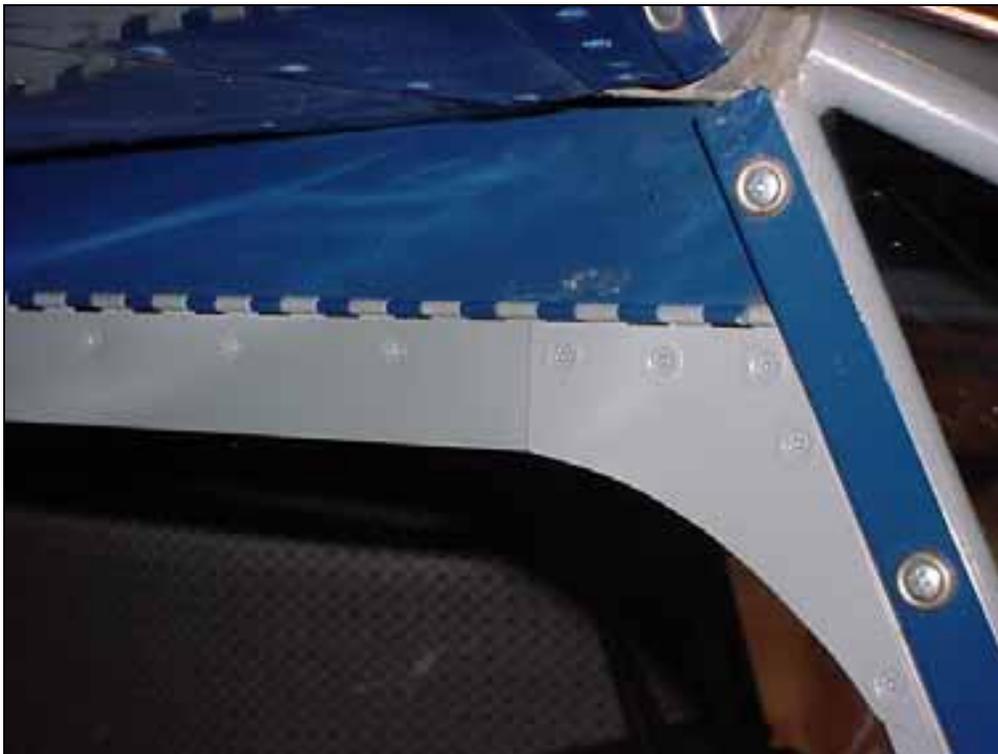
Rivet the hinge to the bottom flange of the door sill.
 Photo with door open, looking up at hinge riveted to the bottom of the door sill.



Rear outside corner of right door in closed position.

Note: The spine is installed on the outboard side pointing up

A4 PITCH 40



Cut the hinge section that rivet on the door to fit between the cabin frame at the front and the edge of the fuselage side skin at the rear.

Note: it is acceptable to cut through a spine.

The front edge of the hinge is trimmed parallel to the side tube of the cabin frame. Leave approximately 2mm clearance to the cabin frame.



Each leg of the top Gusset is 70mm, Ref middle diagram on drawing 7-F-19 (Gusset at top of Bent Door Frame 7F19-2 and the Upper Tube 7F19-3)

**#40 pilot holes
PITCH 60**

For 9 screws between gussets (3 screws in each leg of gussets).

Mark a line 70mm from each end of the hinge for the Gusset, Layout the pitch between the gussets.

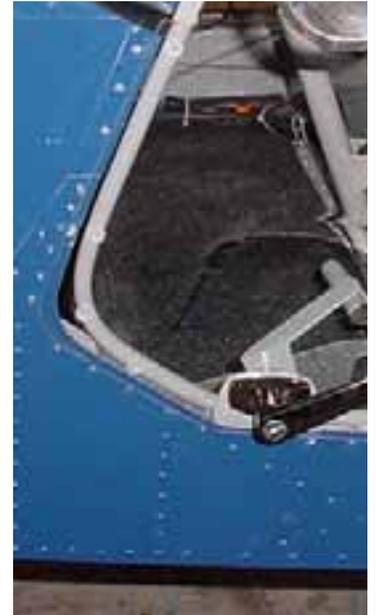


**7F19-3
Upper Tube**

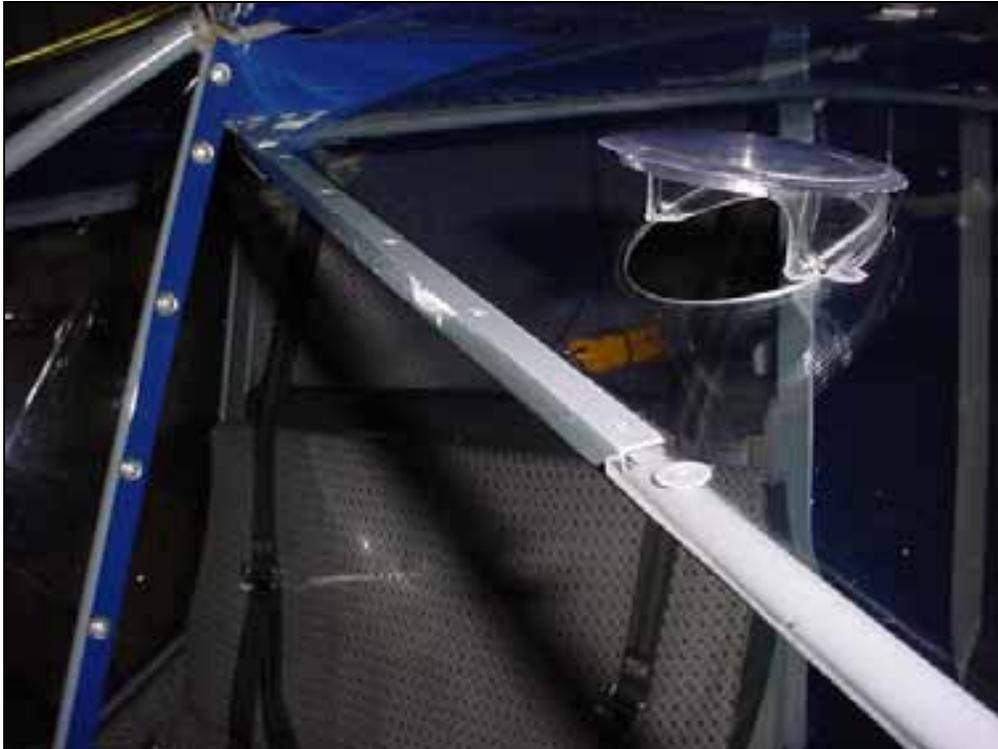
Back drill the hinge to the center line of the tube with #40 pilot holes.
CUT: Trim the ends of the Upper Tube 7F19-3 12mm shorter than the end of the piano hinge (to make room for the Bent Door Frame 7F19-2)



The front of the bubble door is trimmed back to fit behind the Side Windshield Trim 7F19-8M. An aluminum extrusion is installed over the front edge of the door parallel to the side tube of the cabin frame. Plan to leave approximately 2mm gap between the front edge of the extrusion on the door and the back edge of the trim.



The bottom of the bubble door will overlap on the outside of the cabin side.



Extrusion along front of door. The front edge of the extrusion on the bubble door is the reference to install the door on the fuselage.



Detail showing the bottom of the Side Windshield Trim 7F19-8M

**P/N EXT.50”
1/2x1/2x.040” 6061-T6
EXTRUSION
l=750 qty =2**



Peel back the protective plastic sheet to expose the flange on both side of the bubble door.

Look through the Plexiglas, notice the optical distortion

REFERENCE: Install the optic distortion line parallel to the cabin frame

CLAMP the aft edge of the extrusion over the optic distortion line.

The bubble door is bowed out in the middle with a flat flange all around. Notice the demarcation or transition line between the flat flange and where the bubble begins. This is an area of visible distortion – look through the Plexiglas to see the optic distortion line. The purpose of the extrusion P/N EXT .050” is to cover this area of optical distortion.



CHECK: the optic distortion line is covered by the extrusion. Hold the door upright to check that the extrusion will cover up the distortion. If necessary readjust the position of the extrusion.

With a grease pencil or a marker, mark a line along the front edge of the extrusion. This is the reference line to install the door to the fuselage.



Reference line along the front edge of the extrusion. The line is approximately 12mm forward of the optic distortion line.

Photo of right bubble door.



Keep the door as height as possible and still have approximately 8mm overlap long the bottom with the cabin side.

LAYOUT: Mark the bottom of the hinge along the top of the bubble door.

Hold the bubble door on the fuselage. Line up the reference line even with the aft edge of the windshield trim 7F19-8M



The bubble door is oversized, the over lap may be irregular.

The bottom edge of the door will be trimmed just above the rivet line in the cabin sides as shown in the photo.



CHECK: The door is height as possible on the fuselage, the bottom edge of the bubble door overlaps the cabin frame.



Front bottom overlap with cabin sides.

It is best to work with an assistant to help hold the door on the fuselage.



Remove the door from the aircraft.

In this photo we used a hand held grinder with a 1/16" cutting wheel.

CUT: Trim the top of the bubble door.

Draw a straight line, connect the front and rear that were drawn even with the piano hinge along the top of the bubble door.

Note: The top of the door is along the edge of the work bench.



With the hinge in place, position the bubble door on the fuselage, the reference line is behind the windshield trim, the top edge is just below the spine of the piano hinge.

LAYOUT: Mark the front and aft edge of the piano hinge along the top of the bubble door.

Reassembly the piano hinge, slide the pin to connect the two halves of the piano hinge to the fuselage. Mark the location hinge on the bubble door.



Position the bubble door flat on the workbench, lay the hinge on top of the bubble door. Line up the hinge with the previously made reference line when the door was on the fuselage.



Back drill through the pre-drilled holes in the hinge to Cleco the hinge to the bubble door.

#40 Drill bit

Cleco the hinge to the bubble door.



Hinge along top of bubble door.

Cleco the hinge on the outside and the Upper tube 7F19-3 on the inside (with the bubble door in between).



Detail of top rear corner of left door. Aft edge of the bubble door is tapered back to make it easier to install the pin through the piano hinge.

Install the door assembly to the fuselage.
If you have trouble getting the pin in, it may be necessary to trim back the aft edge of the bubble door.



Unit bit (step drill)

The hole diameter required for the Exterior Handle P/N1226A62 is a **7/8" HOLE**

Photo of unit bit. Drilling is done later in section 13B



Drill half the hole from one side then finish drilling from the other side.

First drill #40 holes through the bubble door into the Bent Door Frame 7F19-2 then remove the frame to oversize the holes in the bubble door with a step drill: approximately 1/4" diameter hole.