Instructions for Installation of McFarlane Seat Track Repair Kit MCSK101 in Cessna Model 500 or 501 Aircraft

1. Verify the aircraft eligibility for installation of the MCSK101 Repair Kit by referring to McFarlane Drawing 1SR059. Also, compare Part Numbers MC275 and MC276 to existing seat tracks and verify functional compatibility.

2. Remove the aircraft seat from the seat tracks that will be replaced. Note that both seat tracks for a given seat must be replaced at the same time.

3. Remove the carpeting, the floorboard support fairing (Item No. 15 shown in Assembly Drawing 2SR062), the floorboards (Item No. 16 and 17 in Assembly Drawing 2SR062) and any other interior trim pieces requiring removal to gain access to the seat tracks. To avoid drilling out all of the rivets in the area of the rudder pedals, the floorboard support fairing may be cut and spliced a few inches forward of the seat track. This will allow removal of only the section of the fairing that interferes with the seat track area. When replacing the fairing, use a strip of 2024 T3 aluminum the same thickness as the fairing and three 1/8 inch blind rivets on each side of the joint to splice the two pieces of the fairing.

4. As required, cover, mask-off or otherwise protect installed equipment such as radios, throttle quadrants, switches, etc. from possible harm caused by drill chips, metal filings, or tools.

5. Using a tape measure or steel rule and square, locate a seat track adjust hole from a selected datum point in the longitudinal axis. Record this dimension. Do this for both seat tracks to be replaced.

6. Remove the top portion of the original seat track extrusion for both seat tracks to be replaced as shown in Figure 1. A router and/or any other type of cut-off tool may be used. Remove any remaining vertical web until the original extrusion is flat enough across the top so that the new seat track sits flat without rocking. Note: Take care to not allow any tool (cut-off tool, file, etc.) to cut into the horizontal flange of the seat track extrusion.

7. Drill out as many of the flush rivets attaching the original seat track extrusion to the control yoke box as necessary to allow proper fastener spacing as specified in Figure 3. The control yoke box is a bent aluminum box structure that supports the control yoke pivot and attaches to the original seat track extrusion near the front inboard side of the outboard seat track. The locations of the rivets attaching the original seat track extrusion to the control yoke box may be used for fasteners attaching the new seat track to the original seat track extrusion.

8. Position the new seat tracks (P/N's MC275 and MC276) at their proper longitudinal positions as determined in Step 5 above. Use a square with one edge along one of the seat track caps to ensure that the seat adjust holes of the two seat tracks are in alignment. Move one of the seat tracks forward or aft to correct any misalignment. Secure both seat tracks in place with temporary clamps.

9. Using a steel rule or tape measure, measure the distance between the forward ends of the two new seat tracks. To ensure that the seat tracks are parallel, this distance should be the same as the distance between aft ends of the new seat tracks. Loosen the temporary clamps and adjust the seat tracks as necessary while maintaining the required longitudinal position. Re-secure the tracks with the temporary clamps.

10. Match drill or otherwise duplicate the location of the floorboard screw holes from the original seat track extrusion in the new seat tracks with a number 11 drill bit.

11. Match drill or otherwise duplicate the location of the floorboard support fairing rivet holes from the original seat track extrusion in the new outboard seat track with a number 19 drill bit. While drilling the holes in the new seat track, also enlarge the holes in the original seat track extrusion using a number 19 drill bit.

12. Match drill or otherwise duplicate the location of the control yoke box rivet holes (only those that were drilled out in Step 7) from the original seat track extrusion in the new outboard seat track with a number 19 drill bit. While drilling the holes in the new seat track, also enlarge the holes in the original seat track extrusion and control yoke box using a number 19 drill bit.

13. Drill additional holes through both the original extrusions and the new seat tracks (and the control yoke box where applicable) with a number 19 drill bit as shown in Figure 3. Note: Use caution when drilling to prevent damage to wiring or any other sub-floor system components.

14. Remove the new seat tracks. Using these seat tracks as templates, match drill or otherwise duplicate the holes drilled in steps 9 through 12 onto the three Floorboard Attach Flanges (P/N MC277) and the Fairing Attach Flange (P/N MC278). Refer to Figure 2 and Assembly Drawing 2SR062 for proper alignment and configuration.

15. Clean the affected seat track area insuring that drill chips and metal filings will not become trapped between the new seat track and the original seat track extrusion.

16. Cut the floorboard attach flanges (3 each, P/N MC277) and the fairing attach flange (P/N MC278) into multiple shorter lengths so that they will fit between the floor structure cross members. Also check for interference between the floorboard attach flanges and the nut-plates on the bottom of the outboard floorboard. Relieve any interference by trimming the floorboard attach flanges as necessary. Specifically, the front corner of the outboard floorboard attach flange that attaches to MC276 may need to be trimmed to avoid interference with the floorboard nut-plates in the area of the control yoke cut-out.

17. Prime the cut-off area of the original seat tracks and all newly drilled holes in both the new and original seat tracks. Also prime the holes and the ends of all cut lengths of the MC277 and MC278 Attach Flanges. Use zinc-chromate primer meeting MIL-P-8585A or MIL-P-6889A.

18. Position the new **Seat Tracks** (P/N's MC275 and MC276), the **Floorboard Attach Flanges** (P/N MC277, 3 each cut into multiple lengths) and the **Fairing Attach Flange** (P/N MC278, cut into multiple lengths). Refer to Figure 2 and Assembly Drawing 2SR062 for proper alignment and configuration.

19. Install the fasteners. Use MS27039-1-13 screws with MS21042-3 nuts and NAS1149F0363P washers for the old floorboard attach holes (the original riveted nut plate may be used instead of the above nut and washer in the area of the control yoke box). Use MS27039-0810 screws with MS21042-08 nuts and NAS1149FN832P washers to attach the outboard side of the MC275 Seat Track and the MC278 Fairing Attach Flange to the original outboard extrusion. Use MS27039-0811 screws with MS21042-08 nuts and NAS1149FN832P washers to attach the inboard side of the MC275 Seat Track to the original extrusion in the area of the control yoke box. Use MS27039-0812 screws with MS21042-08 nuts and NAS1149FN832P washers for the remaining holes. Refer to the appropriate Cessna maintenance manual or AC 43.13-1B for proper fastener installation and required torques.

20. Trim the floorboard panels to relieve the interference between the floorboard panels and the new seat tracks. Refer to Figure 4 for guidance.

21. Drill fastener holes using a #2 drill bit through the modified floorboards and the floorboard attach flanges (P/N MC277) as illustrated in Figure 4.

22. Trim the floorboard support fairing to relieve the interference between the floorboard support fairing and the outboard seat track. Refer to Figure 4 for guidance.

23. Drill rivet holes through the modified floorboard support fairing and the fairing attach flange (P/N MC278) using a #30 drill bit as illustrated in Figure 4.

24. Clean the remaining holes through the modified floorboard support fairing and the original seat track extrusion using a #27 drill bit.

25. Before replacing the floorboards and the floorboard support fairing, remove all drill chips, metal filings, or any other debris from the sub-floor area. Inspect the sub-floor area for misplaced tools.

26. Install one of the original clip nuts at each floorboard screw hole location on the floorboard attach flanges (P/N MC277) and install the floorboards. Use the original screws to secure the floorboards in place. Refer to the appropriate Cessna maintenance manual or AC 43.13-1B for proper fastener installation and required torques.

27. Attach the modified floorboard support fairing to the fairing attach flange (P/N MC278) using CR3213-4-1 Cherry Max or equivalent rivets. Attach the modified floorboard support fairing to the original seat track extrusion using CR3243-4-2 Cherry Max or equivalent rivets. (A longer CR3243-4-3 Cherry Max rivet may be used where the bulkhead structure attaches to the original seat track extrusion.) Use rivet spacing equivalent to the original installation. Refer to the appropriate Cessna maintenance manual or AC 43.13-1B for proper rivet installation. Note: On some aircraft the upper portion of the floorboard support fairing may also be riveted to the aircraft structure. Replace these with rivets and spacing equivalent to the original installation.

28. Remove any protective coverings installed in Step 4, and replace all carpeting and interior trim pieces removed to gain access to the seat tracks.

29. Reinstall seat. Verify that the seat and all of the seat travel stops are properly installed. Test the reinstalled seat several times for proper function.

Notes:

1. If this installation of MCSK101 is to replace a previous installation of MCSK101, then Step 6, Steps 10 through 14, Step 16 and Steps 20 through 24 may not need to be performed. Instead, the hole pattern from the previously installed MC275 and MC276 seat tracks (part of the MCSK101 kit) may be duplicated onto the new MC275 and MC276 seat tracks. This may be accomplished through the use of a sheet metal template, duplicating strap or other means. While performing the installation, insure that the hole patterns in the new replacement seat tracks are aligned with the hole patterns in the original aircraft extrusions and that the alignment requirements of Steps 7 and 8 are satisfied. The previously installed floorboard attach flanges (P/N MC277) and fairing attach flange (P/N MC278) may be reused if they do not show signs of significant corrosion or other damage.

2. Minor screw hole misalignment during installation must be corrected in the replacement seat track extrusion. Major misalignments of the hole pattern are not acceptable.

3. No. 10 screws may be substituted for No. 8 screws provided that the hole spacing requirements of Figure 3 are maintained.

4. The average weight added to the aircraft due to the installation of MCSK101 on an aircraft with an OEM seat track configuration is 3.80 pounds. If MCSK101 is replacing a previous installation of MCSK101, then the aircraft weight is unchanged.

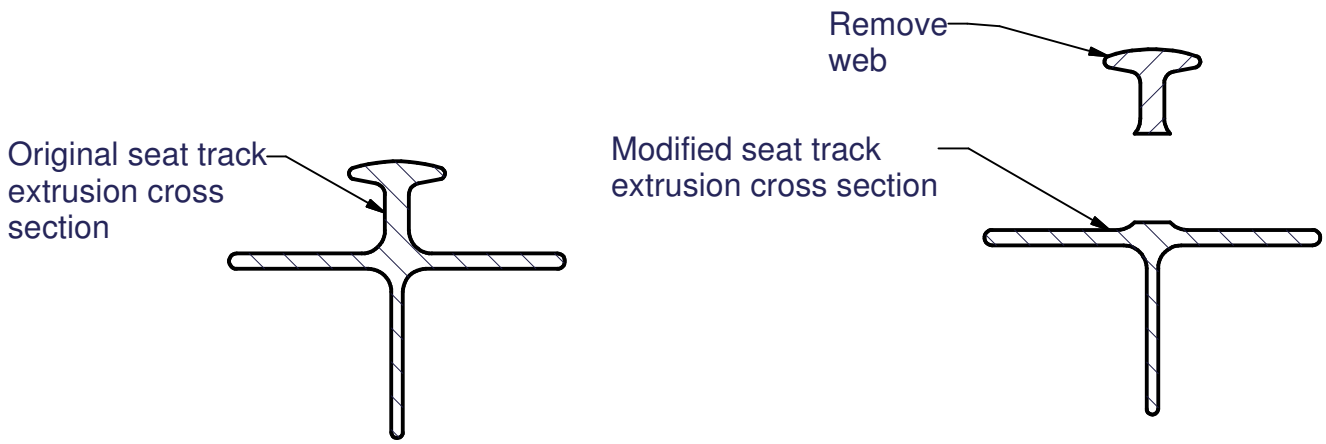


Figure 1: Original and modified seat track extrusion geometry.

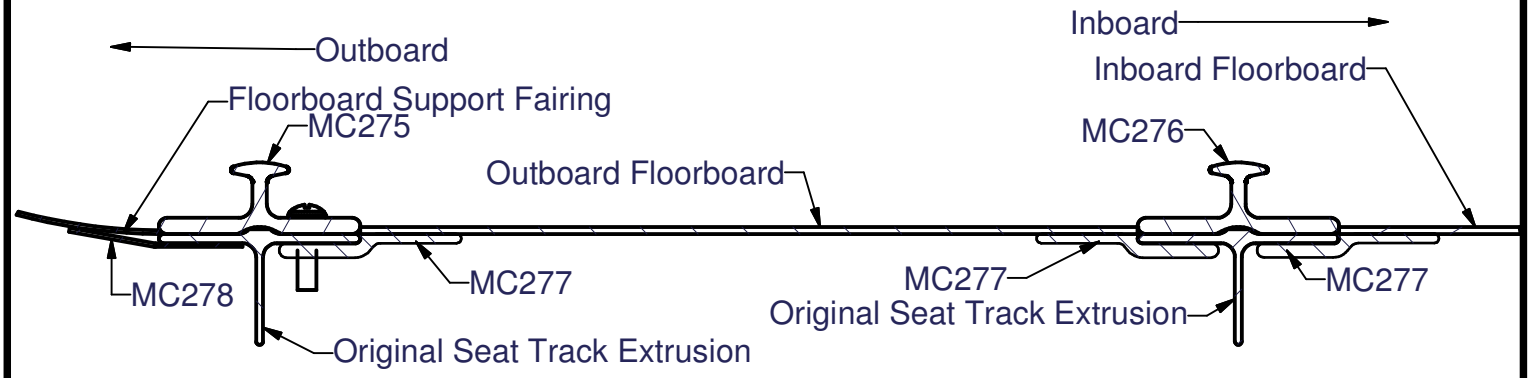
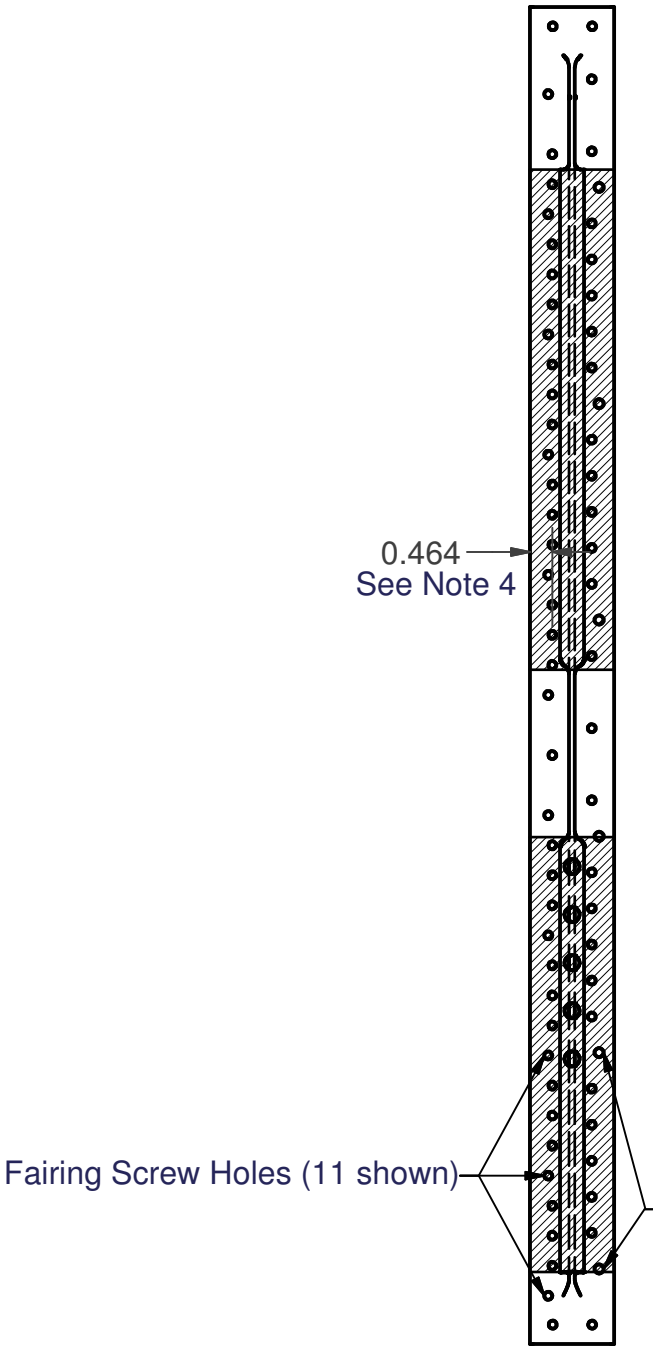


Figure 2: Typical cross section of installed repair kit.



Notes:

1. Maximum center-to-center hole spacing is 0.8 inch for the shaded segments plus at least one pair of fasteners into the non-shaded segments and 3.0 inches for the remainder of the non-shaded segments.

2. Minimum center-to-center hole spacing is 3 times the largest hole diameter.

3. Minimum edge distance is 2 times the hole diameter. Note: Edge distance is distance between edge and hole center.

4. Maintain a minimum edge distance of 0.464 inch for all holes in the shaded region except floorboard and fairing holes. Use existing edge distance for these.

5. Space holes evenly between floorboard and fairing holes while observing the min. and max. spacings.

6. Hole configuration shown is for MC275 (outboard seat track). MC276 hole configuration is similar except there are no fairing screw holes but there are floorboard holes on both sides.

7. Use caution to adjust hole spacing within the above requirements to avoid interference with crossmembers below the floor.

Figure 3: Attach screw hole location requirements.

Notes:

1. Remove material to allow clearance for the replacement seat tracks. This may be accomplished with a router, saw, or any other means. Take care to remove as little material as possible while assuring an interference free fit.

2. New floorboard and fairing attach holes should be drilled to replace those cut out. Spacing shall be identical to the original holes and an edge distance of 0.4 inch shall be maintained. Note: Edge distance is the distance between edge and hole center.

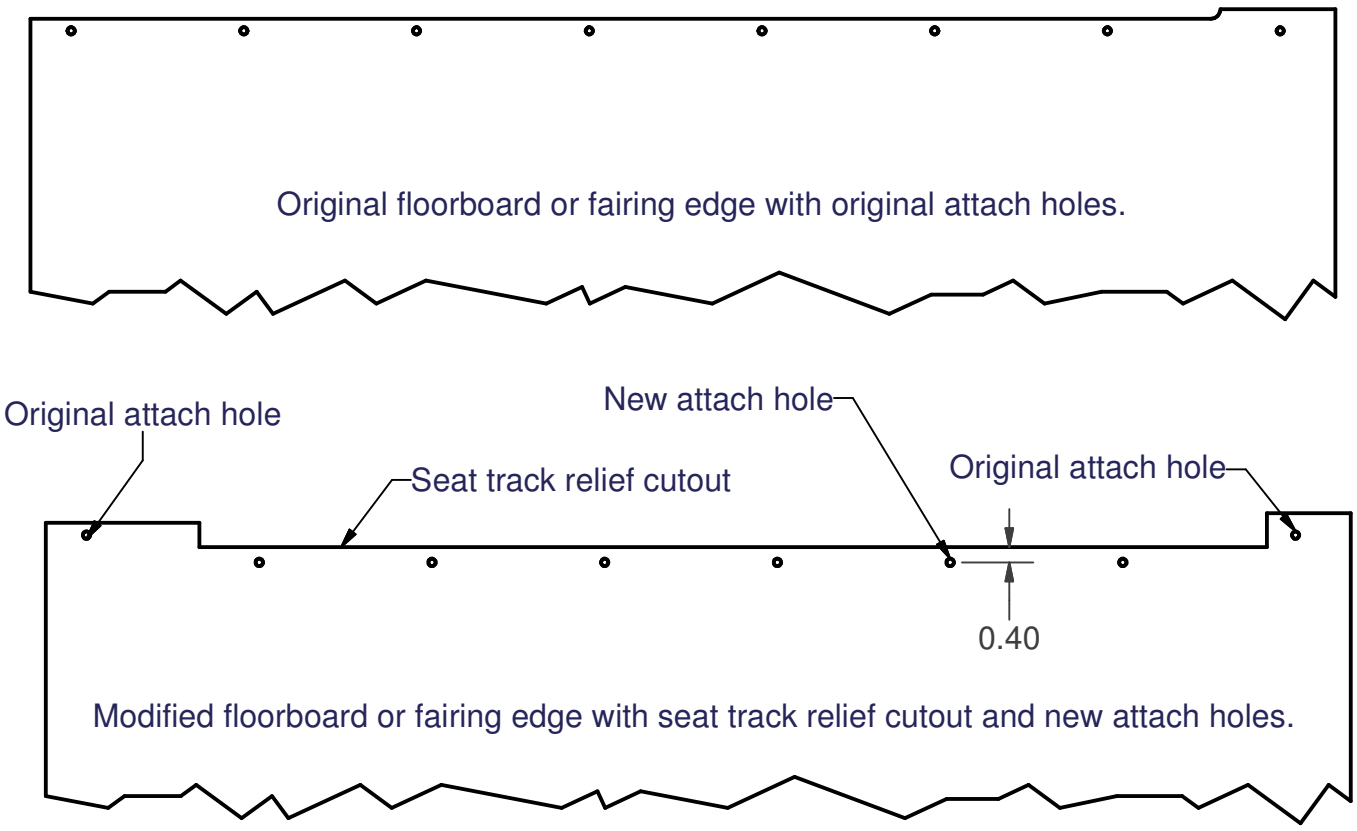


Figure 4: Floorboard and fairing clearance cutout requirements.

Continued Airworthiness Requirements for the MCSK101 Seat Track Repair Kit for Cessna Model 500 or 501 Aircraft

The replacement seat tracks installed with the MCSK101 repair kit and attaching OEM structure and hardware shall be inspected by the same requirements and schedule set forth in the applicable maintenance manual for the OEM seat tracks, structure and hardware. In addition, the following inspections shall be performed every 36 months or 1200 hours, whichever comes first.

1. Inspect the fasteners that attach the MC275 and MC276 seat tracks to the original extrusion for security and evidence of failure. As necessary, tighten or replace any suspect fasteners.
2. Inspect MC277 and MC278 attach flanges for cracks, corrosion, failed or loose fasteners and evidence of structural damage. Tighten or replace fasteners as necessary, and replace attach flanges that show evidence of significant structural damage, corrosion or cracking.

Notes:

1. Refer to the appropriate Cessna maintenance manual or AC 43.13-1B for proper fastener installation and required torques.