



Installation Manual

for

Cessna 182, 205, 206, 210, and 337 Specific
Tray Mount Kit
RK1005

Document P/N RKD1005-2
Revision A

August 20, 2003

List of Revisions

Revision	Date	Description	Pages
NC	04/14/03	Original Disposition	All
A	08/20/03	Added hyperlinks	3

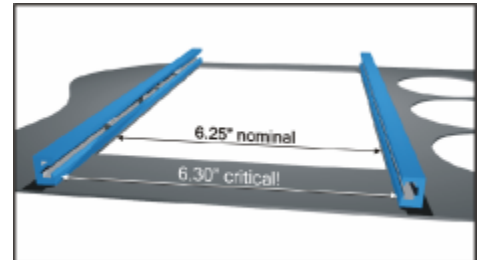
Introduction

The Radorax avionic support strut installation kit provides a straightforward retrofit for almost any aircraft. The following documentation is provided to install the Radorax p/n RK1005 Single Stack, Cessna Single Stack Kit in your aircraft.

Document #	Description	Used With: RK1005
RKD1005-1	Packing List / Certificate of Conformance	X
RKD1005-2	Installation Manual	X
RKD1005-3	Parts Manual	X
RKD1005-4	Instructions for Continued Airworthiness	X
SA01330LA	STC Front Sheet	X

General Notes

- A. **IMPORTANT:** The distance between the faces (inside dimension) of installed Radorax support struts **MUST** be 6.30 inches. This spacing provides maximum compatibility with all avionic trays and facilitates the use of other Radorax products, such as Radorax [Tray Cams](#), [Closeout Panels](#), and [Dzus Adapters](#). Use the RT400 [Installation Spacer Tool](#) for simple, precise alignment of the rails.
- B. Tag all parts, including attaching hardware (unless otherwise noted), removed to gain access to work areas. Protect all parts from damage during the installation process.
- C. Following any drilling or cutting operation, remove burrs and metal particles. Apply a thin coat of zinc chromate, epoxy, or equivalent primer to bare metal surfaces except when the hole is used as a grounding point.
- D. When reinstalling ground wires, or components requiring grounding, clean the structure surface to provide good electrical contact.



Removal of Existing Support Struts (Step 1)

- 1.1 Remove avionics equipment from their trays. Remove screws attaching trays to the existing brackets. Remove all back-straps and attaching hardware supporting the forward end of the trays.
- 1.2 Remove any Pilot and Copilot instrument panel overlays.

Remove the LH and RH tray attaching angles/devices from the instrument panel.

- The pilot's side panel is attached to the LH rail with two #10 screws and ¼" standoff bushings. **DO NOT LOOSE THESE!** They will be re-used when attaching to the RP3040-P pilot instrument panel mount tabs. (Step 2.4)

- Use an angle drill to remove the two lowest rivets mounting the angles to the sub panel.



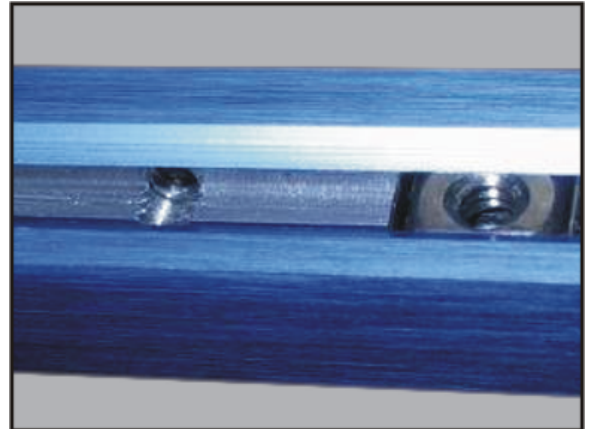
Assembly and Installation of Avionics Support Struts (Step 2)

-The new struts are mounted to the instrument panel using the included structural NAS514P632-4P screws.

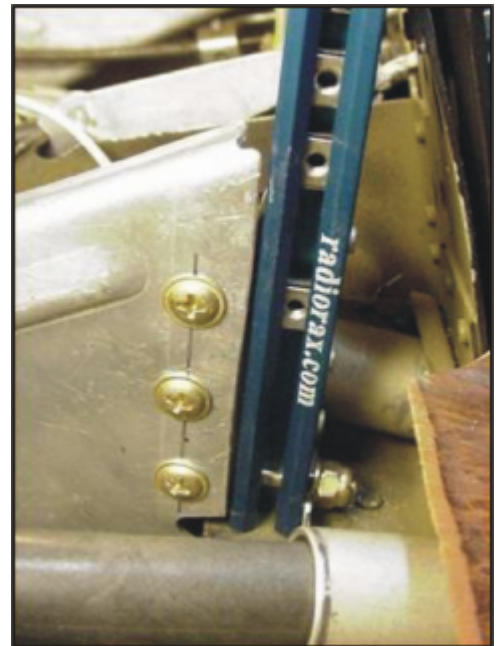
2.1 Instrument panel/strut fastener hole pattern layout. Reference RKD1005-3 Parts Manual for proper fastener types and locations. Temporarily fasten the LH and RH struts in place, 6.30" ID apart, and centered on the avionics bay cutout. Use Radorax RT400 Rail Installation Spacers to lock the struts together and to facilitate the installation of the struts as an assembly.

- Verify an inside dimension of 6.30" between the strut faces. Use the Radorax RT400 Rail Installation Spacer to lock the struts together and to facilitate the installation of the struts as an assembly.

-If using existing holes for mounting, mark their locations on the strut. A scribe works well for this task. Verify that the hole positions do not exceed the dimensions noted in the enclosed RKD1005-3 Parts Manual.



2.2 Drill and tap avionic support struts. Drill a #36 hole in the strut at each fastener location. Thread each hole with a 6-32 tap. While possible to drill a blind hole and use a bottoming tap, it is permissible to drill and tap a through-hole. Some deburring will be necessary for the nut assemblies to move freely, and care should be exercised not to drill and tap deeper than the center of the slot to avoid unnecessary burring on the opposite side.



2.3 205/206/210/337 : The upper tunnel assembly in these aircraft requires modification. Cut the upper tunnel flange (LH & RH) flush with the new support strut and attach using the angles specified in the RKD1005-3 parts manual.

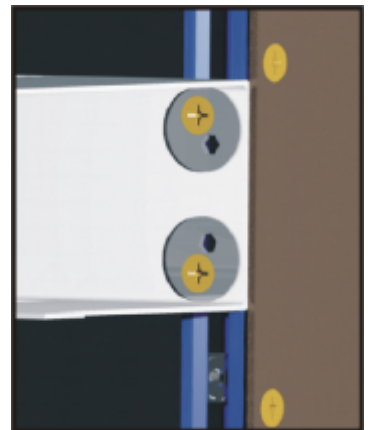
Assembly and Installation of Avionics Support Struts (Step 2), cont.

- 2.4 Temporarily fasten the Pilot Panel Mount Tabs p/n RP3040-P (item 3) in place on the LH support strut. Position the pilot's instrument in place and mark the locations of the pilot panel mount screw on each RP3040-P mount tab. Drill and tap each tab to accept the pilot panel mount screws and rivet in place with (2ea.) rivets (item "+").
- 2.5 Verify the installation of the total number of sliding nut assemblies (Items 5, 6a, 6, 7) used for the installation, plus 4-6 extra assemblies in each strut before final installation of the strut to the structure.
- 2.6 Install the LH and RH struts to the instrument panel using the screws (Item "+") supplied with the kit. A small amount of Loctite (or equivalent) may be used to secure the screws.
- 2.7 Install the avionics trays. Radorax avionics support struts are designed to take advantage of the increased rigidity offered by the use of countersunk screws and dimpled screw receptacles. Because of the integrity of mounting offered by this system, back-strapping the avionic trays is not necessary, provided the Radorax support struts are affixed in a way which will bear the ultimate load factors of your aircraft.

For trays not supplied with countersunk holes, dimple each mounting hole with a #6 dimple-die, or equivalent means. To achieve perfect face alignment of all avionics, use Radorax RP5000-P [Tray Cams](#).

After each tray is prepared for installation, stack the tray in its respective position, pushed forward far enough to access the sliding nut assemblies. Slide all the nut assemblies (Items 5, 6a, 6, 7) into place that are being used to mount the top tray.

Move the tray into position and fasten using the supplied screws (Item 8). Do not fully tighten the screws until the tray is verified level in its proper position. Tighten screws to lock in place.



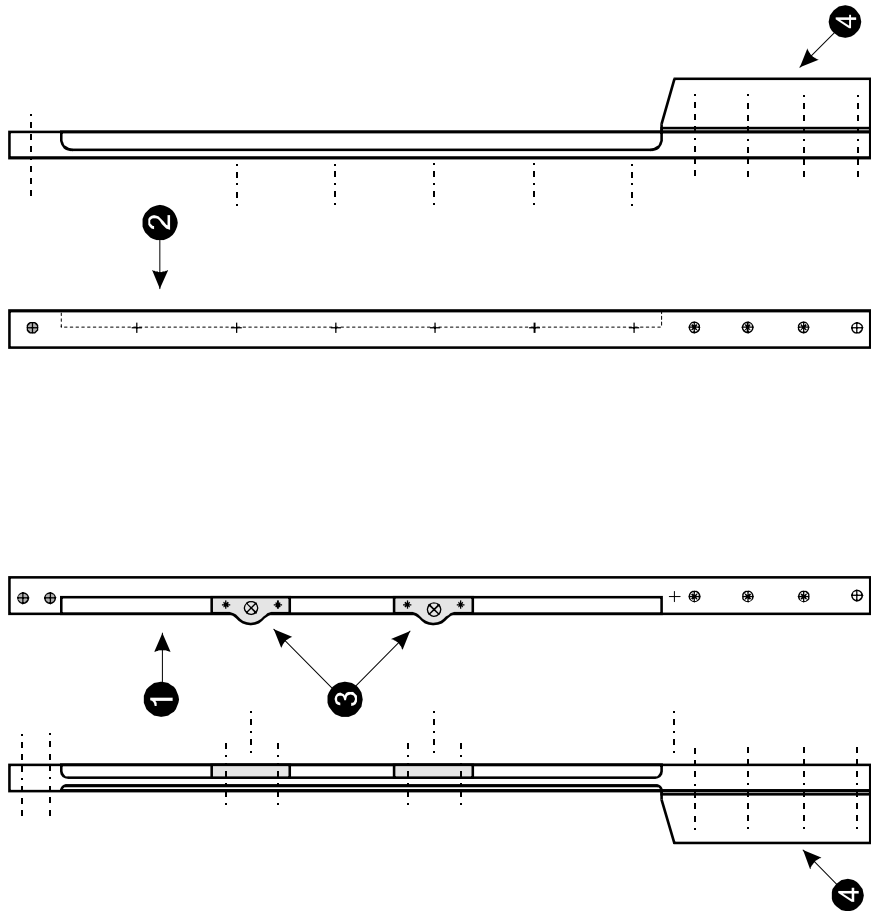
Each additional tray is mounted by positioning the nut assemblies, installing the mounting screws, sliding the tray into position beneath the last permanently affixed tray, and tightening the screws.

Nut assemblies for future use may be stored between the nuts used to mount trays, or grouped toward one end of the strut.

Use a Radorax RK4000-(x) [Closeout Panel Kit](#) to close out any remaining space.

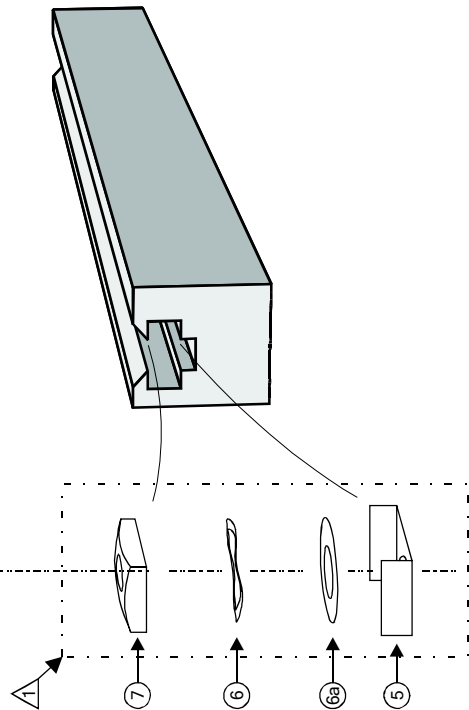


Please visit www.radorax.com for more information, including kit documents.



- + Drill #36 and tap 6-32. Tip: Hand turn a 6-32 tap chucked in a drill press to achieve perfect thread alignment.
- ⊕ Drill through for #8 screw. Secure with 8-32 screw and nut.
- ⊗ Drill and tap 10-32.
- * Drill #30 through tab and spline. Attach with AN470AD4-9 rivets 2 ea.
- ⊗ Drill #30 through rail and angle (if applicable). Attach with AN426AD4-12 rivets.

Revisions			
REV	DESCRIPTION	DATE	APPROVED
A	Added shim washer to accommodate upgraded wave washer, revised RAS mfg. component part numbers, updated drawing part number.	06/23/03	M. Landes



1 When installing hardware assemblies, verify proper orientation of the square nut. The beveled face of the nut should be visible when the assembly is installed.

QTY.	PART NO.	DESCRIPTION	MATERIAL	SIZE/SPECIFICATION	ITEM
7	NAS514P632-4P	Structural C-sunk #6-32 Screw	Steel	6-32 x 1/4"	+
6	AN426AD4-12	Rivet, C-sunk	2117-T4	.125" x 3/4"	⊗
4	AN470AD4-10	Rivet, Universal	2117-T4	.125" x 9/16"	*
5	AN364-832A	Attaching Hardware- #8-32 Sheer Nut	Steel	8-32 x 25/32"	⊕
5	AN960-8L	Attaching Hardware- #8-32 Washer	Steel	8-32L	⊕
3	MS24694-S9	Structural #8-32 Screw, C-sunk Head	Steel	8-32 x 25/32"	⊕
2	MS27039-0812	Structural #8-32 Screw, Pan Head	Steel	8-32 x 25/32"	⊕
18	NAS514P632-4P	6-32 STEEL SCREW C/SUNK HEAD	Steel	100 degree x .250	⊕
18	RP3030-P	6-32 STAINLESS SQUARE NUT	Stainless	.310 x .310 x .105	⑦
18	RP3020-P	THREE-WAVE WASHER	Stainless	-	⑥
18	RP3010-P	SHIM WASHER	Stainless	-	Ⓢ
18	RP3000-P	RETAINER	Stainless	.350 x .310 x .140	⑤
2	ANGLE	4.0" Length Extruded Angle	2024-T3	1.0"x1.0"x1/16"	④
2	RP3040-P	PILOT PANEL MOUNT TAB	6061-T6	.515" x 1.500"	③
1	RP1005-P-2	FAA/PMA CESSNA SINGLE RAIL, RH	6063-T6	.500" x .700"	②
1	RP1005-P-1	FAA/PMA CESSNA SINGLE RAIL, LH	6063-T6	.500 x .700	①
CONTRACT NO.		DATE		Radiator Aviation Systems www.radiator.com	
DIMENSIONS/UNLESS OTHERWISE SPECIFIED TOLERANCES ARE:		APPROVALS		FILE	
DECIMALS ANGLES		DRAWN		DATE	
XX - .01		M. J. Landes		06/23/03	
XXX - .005		CHECKED		06/23/03	
MATERIAL		FINISHED		CAGE CODE	
FINISH		APPROVED		SCALE	
DO NOT SCALE ON DRAWING		V. D. L'Esperance		FILE: RKD1005-3revA.cdr	
NEXT ASSY USED ON APPLICATION		M. J. Landes		RKD1005-3	
				REV	
				1 of 1	