



**Installation Manual**  
for  
**Single Stack, Canted Rail**  
**RK1040**  
with  
**Beechcraft Retrofit Instructions**

Document P/N RKD1040-2  
Revision A

August 20, 2003

## List of Revisions

| Revision | Date     | Description                                 | Pages |
|----------|----------|---|-------|
| NC       | 04/14/03 | Original Disposition                        | All   |
| A        | 08/20/03 | Removed Experimental kits, added hyperlinks | 1,3   |
|          |          |   |       |
|          |          |   |       |
|          |          |   |       |

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 RK1040 Single Stack, Canted Rail Kit in your aircraft. For Beechcraft installations, Radorax manufactures closeout headers and footers.

| Document #                | Description                               | Used With: RK1040 |
|---------------------------|---|-------------------|
| <a href="#">RKD1040-1</a> | Packing List / Certificate of Conformance | X                 |
| RKD1040-2                 | Installation Manual                       | X                 |
| <a href="#">RKD1040-3</a> | Parts Manual                              | X                 |
| <a href="#">RKD1040-4</a> | Instructions for Continued Airworthiness  | X                 |
| <a href="#">SA01330LA</a> | STC Front Sheet                           | X                 |

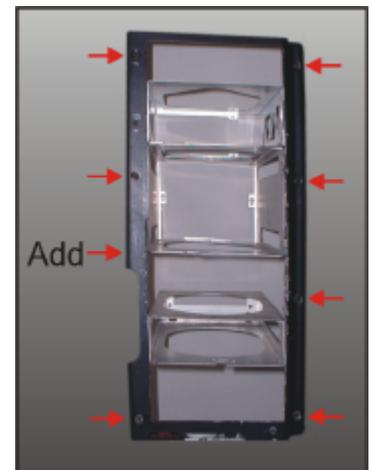
General Notes

- 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.

For an original installation not involving the removal of existing avionics tray attachments, please proceed to step 2.1. All item numbers in parentheses (eg. item xx) refer to item listed in RAS Parts Manual p/n RKD1040-3.

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 the existing canted avionics panel.
  - Beechcraft panels are typically attached with seven or eight #8 screws. In some cases, the eighth screw is added during the installation.



Assembly and Installation of Avionics Support Struts (Step 2)

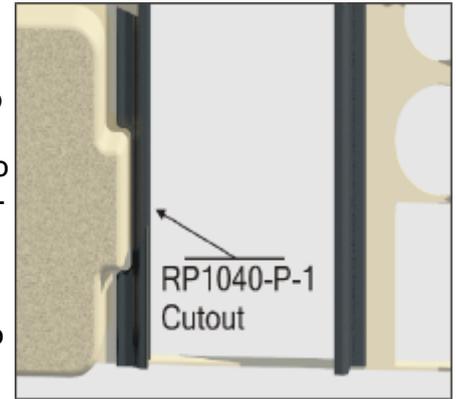
-The new struts are mounted to the instrument panel using the included structural MS24694-S7 screws.

2.1 Cut struts to length. Match to the length of the removed canted panel, if applicable. Trim the strut so as to leave the engraved part number attached and on the forward-facing (visible) side of the strut, when installed.



2.2 Beechcraft ONLY: Some installations require a relief to be cut into the LH rail to clear the control cluster. In addition, it may be necessary in some installations to trim a portion of each end of the RP1040-P-1 strut (See RKD1040-3)

- The inside dimension of the instrument panel cutout may also require trimming to accept the slightly wider dimensions of the Radorax kit. It is recommended that cutout be shifted as far left as possible.



2.3 Instrument panel/strut fastener hole pattern layout. Reference RKD1040-3 Parts Manual for permissible fastener locations. Temporarily fasten the LH and RH struts in place, 6.30" ID apart, and centered on the avionics bay cutout.

- 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. Verify that the strut p/n's are visible.

- If using existing holes for mounting, mark their locations on the strut. A scribe works well for this task.

- Verify that existing hole positions will allow for proper countersinking of the rail flange. If not, new holes will have to be added to the instrument panel.

2.4 Drill a #16 hole in the strut at each fastener location, and countersink for a #8 screw. A reduced diameter countersink may be required to properly address the holes on the RH rail.

2.5 Verify the installation of the total number of sliding nut assemblies (Items 2, 3a, 3, 4) used for the installation, plus 4-6 extra assemblies in each strut before final installation of the strut to the structure.

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



2.6 Install the LH and RH struts to the instrument panel using the screws (Item 7) supplied with the kit.

2.7 Install the avionics trays. Radorax avionic 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, backstrapping 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.

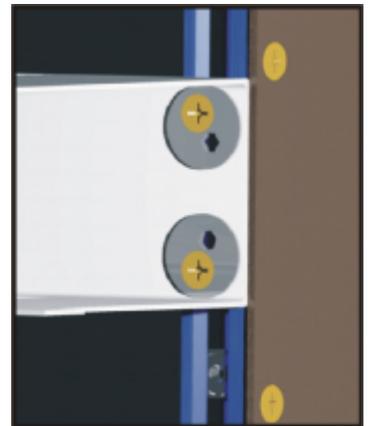
For trays not supplied with countersunk holes, dimple each mounting hole with a #6 dimple-die, or equivalent means. To achieve perfect face alignment of all avionics, use Radorax RP5000-P [Tray Cams](#).

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 2,3a,3,4 ) into place that are being used to mount the top tray.

Move the tray into position and fasten using the supplied screws (Item 5). 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.

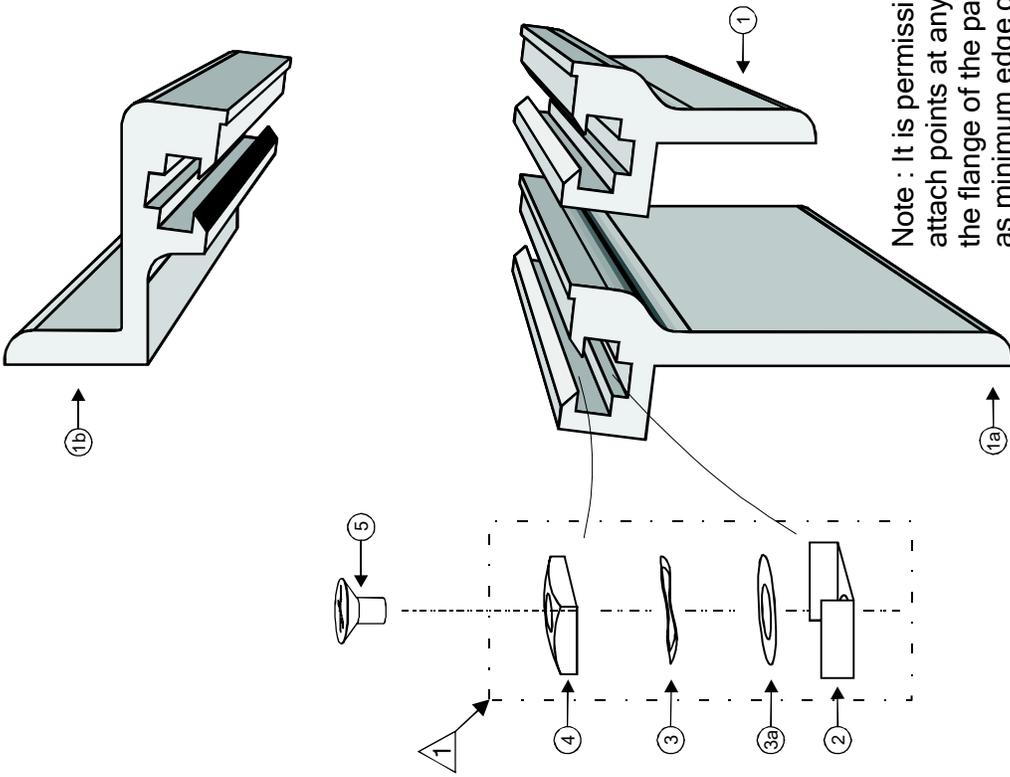
Nut assemblies for future use may be stored between the nuts used to mount trays, or grouped toward one end of the strut.



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

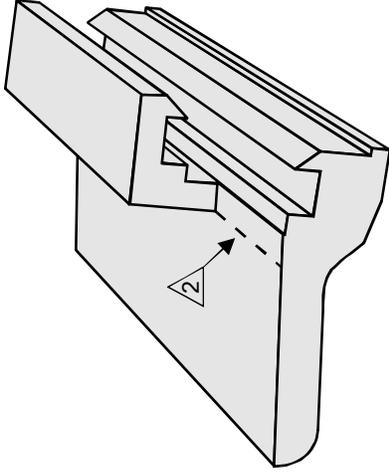
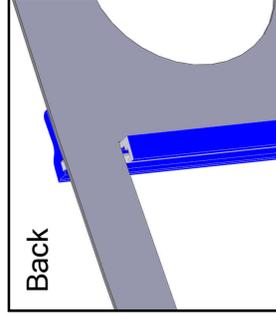
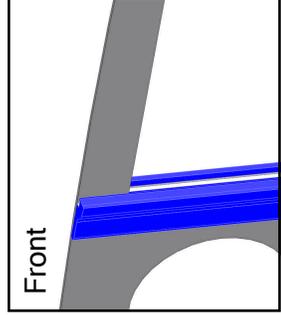


Please visit [www.radorax.com](http://www.radorax.com) for more information, including kit documents.



Note : It is permissible to drill attach points at any point on the flange of the part, as long as minimum edge distances are maintained (ref. AC43.13)

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. Sufficient hardware is included in the kit for 18 hardware assemblies in each strut.



2 It is permissible to trim the ends of the -1(a) struts in order to allow the ends of the support strut to overlap the ends of the instrument panel cutout. This may be desirable in some installations for cosmetic purposes.

| QTY.                  | PART NO.      | DESCRIPTION                         | MATERIAL                                      | SIZE/SPECIFICATION       | ITEM NO. |
|-----------------------|---------------|-------------------------------------|---|--------------------------|----------|
| 20                    | MS20426AD3-4  | NUT/PLATE RIVET - INSTRUMENT PANEL  | 2117 Aluminum                                 | 100 degree x .094 x .250 |          |
| 10                    | K2000-08      | NUT/PLATE - INSTRUMENT PANEL        | Steel   | -                        |          |
| 10                    | MS24694-S5    | 8-32 SCREW C/SK - INSTRUMENT PANEL  | Steel   | 100 degree x .250        |          |
| 36                    | NAS514P632-4P | 6-32 STEEL SCREW C/SUNK HEAD        | Steel   | 100 degree x .250        | 5        |
| 36                    | RP3030-P      | 6-32 STAINLESS SQUARE NUT           | Stainless                                     | .310 x .310 x .105       | 4        |
| 36                    | RP3020-P      | THREE-WAVE WASHER                   | Stainless                                     | -                        | 3        |
| 36                    | RP3010-P      | SHIM WASHER                         | Stainless                                     | -                        | 3a       |
| 36                    | RP3000-P      | RETAINER                            | Stainless                                     | .350 x .310 x .140       | 2        |
| 1                     | RP1040-P-2    | RH AVIONIC SUPPORT STRUT            | 6061-T6                                       | .980 x 1.15 x 18.0       | 1b       |
| 1                     | RP1040-P-1a   | LH AVIONIC SUPPORT STRUT - Extended | 6061-T6                                       | 2.00 x .680 x 18.0       | 1a       |
| 1                     | RP1040-P-1    | LH AVIONIC SUPPORT STRUT            | 6061-T6                                       | 1.12 x .680 x 18.0       | 1        |
|                       |               | CONTRACT NO.                        | Radiator Aviation Systems<br>www.radiator.com |                          |          |
|                       |               | APPROVALS                           | DATE  |                          |          |
| N/A                   |               | FAA/PMA                             | 08/06/03                                      |                          |          |
|                       |               | DRAWN                               | M. J. Landes                                  |                          |          |
|                       |               | CHECKED                             | V. D. L'Esperance                             |                          |          |
|                       |               | DESIGNER                            | M. J. Landes                                  |                          |          |
|                       |               | APPROVED                            | V. D. L'Esperance                             |                          |          |
| NEXT ASSY APPLICATION |               | USED ON                             | 08/06/03                                      |                          |          |
|                       |               | SCALE                               | D   |                          |          |
|                       |               | REV                                 | RKD1040-3                                     |                          |          |
|                       |               | NC                                  | RKT1040-3                                     |                          |          |
|                       |               | FILE                                | RKD1040-3.revVNC.cdf                          |                          |          |
|                       |               | SHEET                               | 1 of 1  |                          |          |

| Revisions |             |      |
|-----------|-------------|------|
| REV       | DESCRIPTION | DATE |
|           |             |      |
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