



# Installation Manual

for

**Tray Cams**  
**RP5000-P**

including

**Operating Instructions for the**  
**RK500 Tray Cam Installation Tool Kit**

Document P/N RKD5000-2  
Revision A, October 2, 2003

## List of Revisions

Revision	Date	Description	Pages
NC	03/26/03	Original Disposition	All
A	10/02/03	Updated part numbers, simplified installation instructions.	All

## INTRODUCTION

While avionics manufacturers have established a general guideline for the width of tray mount avionics, they have NOT established a uniform measurement for the distance from the tray mounting holes to the face of their units. Radiorax Tray Cams are designed to assist in the creation of a perfectly flush avionics installation when used in conjunction with a Radiorax Tray Mount Kit. The following documentation is provided to assist in the installation of Radiorax p/n RP5000-P ½" Tray Cams, included in RK5000-(x) kits.

Document #	Description	Used With: RK5000-(x)
<a href="#">RKD5000-1</a>	Packing List	X
RKD5000-2	Installation Manual, with RK500	
	Operation Manual supplement.	X
<a href="#">RKD5000-3</a>	Parts Manual	X
<a href="#">RKD5000-4</a>	Instructions for Continued Airworthiness	X
<a href="#">SA01330LA</a>	STC Front Sheet	X

## GENERAL NOTES

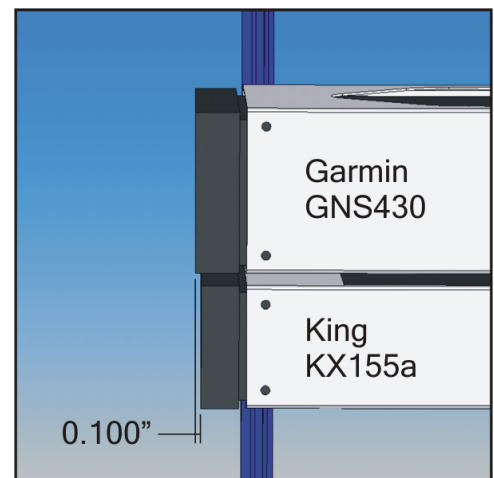
- A. Most trays will not need to be modified with Tray Cams for a particular installation. Only the avionics that are NOT aligned with the majority of the units in the stack will need modification.
- B. Tag all parts, including attaching hardware (unless otherwise noted), removed to gain access to work areas. Protect all parts from damage during the installation process.
- C. Following any drilling or cutting operation, remove burrs and metal particles.
- D. When reinstalling ground wires, or components requiring grounding, clean the structure surface to provide good electrical contact.

### Determine Tray Cam centerline (Step 1)

The following example shows the calculation of the Tray Cam centerline for moving a King KX155a to line up with a Garmin GNS430. In an installation without Tray Cams, there would be a 0.10" mis-alignment between the faces of these units.

When determining the best mounting hole centerline, make sure that all avionics will seat properly in their trays after modification. Be sure that the instrument panel does not interfere with proper seating of the units.

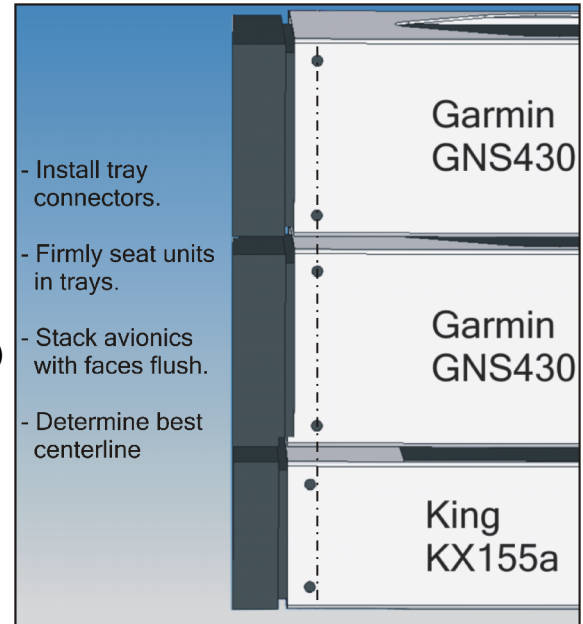
Generally, it is best to move trays "out" from the panel.



Determine Tray Cam centerline (Step 1)

1. Temporarily install at least one electrical connector in each tray.
2. Install the avionic units in their respective trays, using the manufacturer's locking device. Seat each unit firmly.
3. Stack the avionic assemblies as they will be installed in the aircraft. Make sure that the faces of the units are flush.
4. Using a straight-edge, draw a tray mounting hole centerline ( $T_c$ ) which intersects the majority of the existing mounting holes.

Use the Radorax RT500 Tray Cam Installation Tool Kit to simplify the installation of Tray Cams in the trays with mounting holes that do not align with the rest.



## Operating Instructions: RK500 Tray Cam Installation Tool Kit

**IMPORTANT:** Before modifying trays, verify at least .060" total side-to-side internal clearance between the tray and the avionic unit to allow for the thickness of the Tray Cams.

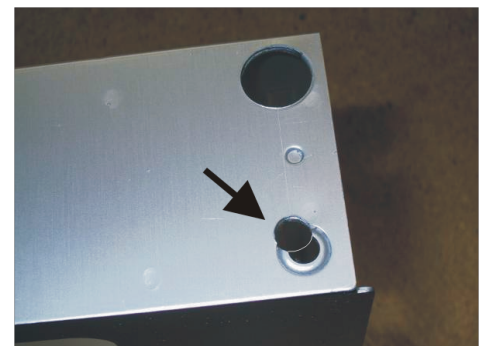
**IMPORTANT:**  $T_c$  (tray mounting hole centerline) must NOT be less than 0.350" from the tray edge. This assures proper edge distance for the Tray Cam 1/2" holes. Ref. RKD5000-3 Parts Manual for dimensions.

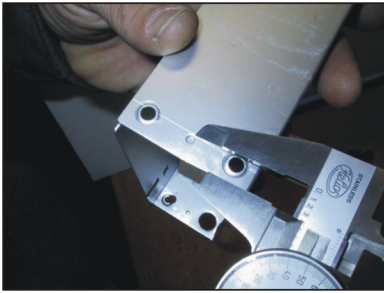
Modify Tray to accept Tray Cams. (Step 2)

This section details the steps necessary to modify an avionics tray to accept Tray Cams. For best results, use the RK500 Tray Cam Installation Tool Kit.



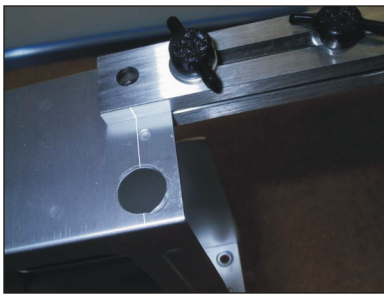
The RT500 kit makes it easy to drill the often necessary partial holes resulting from the Tray Cam pilot hole overlapping the original mounting hole.



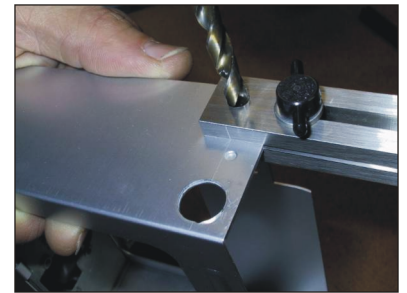


Note: Later versions of the RT500 have a hex-cap screw which replaces the forward thumb screw. This allows for greater tool clamping force, assuring that the guide stays on centerline while drilling.

Step 2.1 : Mark the  $T_c$  dimension on each side of the avionics tray. A precise way to do this is to set a dial caliper to the  $T_c$  dimension, lock it in place, and use the tray's edge as a guide to lightly scribe a line on the tray surface.



Step 2.2 : Slide the RT500 into place on the tray and line up the index mark on the side of the tool with the  $T_c$  centerline. Verifying that the lower portion of the tool is seated firmly against the edge of the tray with the "foot" slid over the tray's edge, lock the tool in place with the included allen wrench. Drill the pilot hole with the included drill bit.



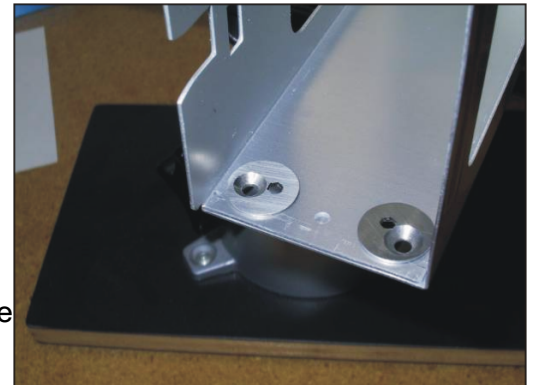
Note: Preserve your tool dimension setup for the next hole by loosening only the screw closest to the tray when moving the tool to the next hole.

Step 2.3 : Use the 1/2" draw punch to enlarge the pilot hole. De-burr the hole.

### Installation of Modified Avionics Trays (Step 3)

Position the tray in the stack, align the sliding nut assemblies in the Radorax Tray Mount rails, place each Tray Cam (Item 1) in place, and fasten using the supplied screws (Item 2). Do not fully tighten the screws until the tray is verified level in its proper position. Adjust the tray's pitch and depth by turning the Tray Cams with a 1/8" allen wrench. Tighten screws to lock in place.

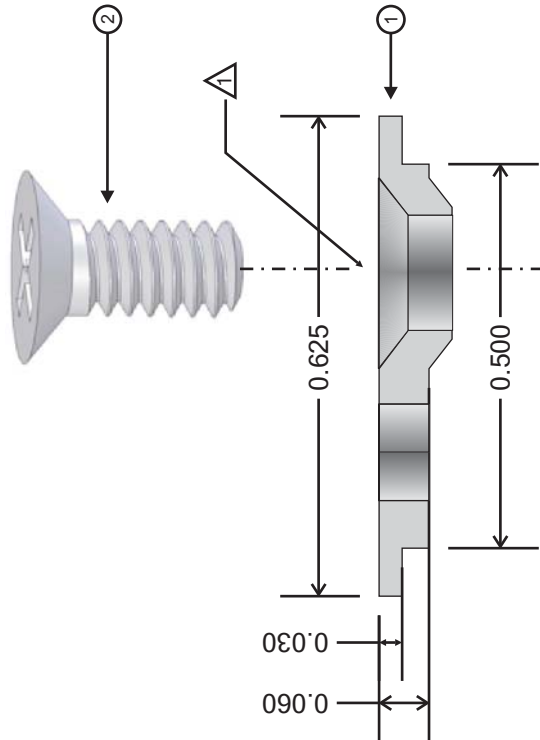
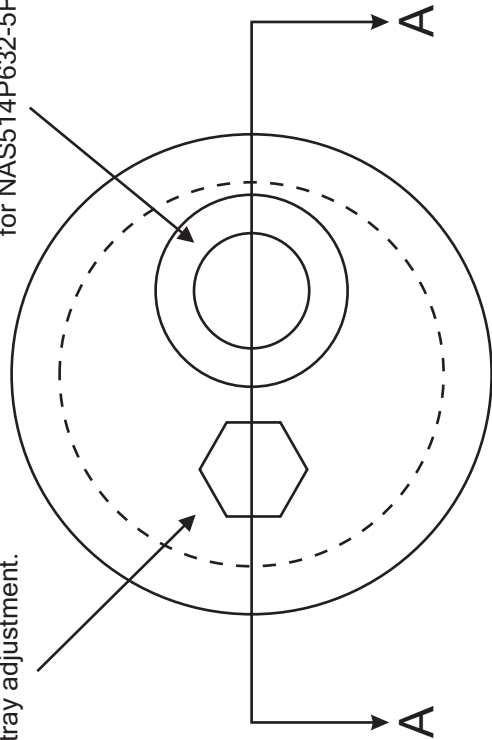
Each additional tray is mounted by positioning the nut assemblies, installing the mounting screws, sliding the tray into position beneath the last permanently affixed tray, installing the Tray Cams, if applicable, and tightening the screws.



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

Hole for 1/8" Allen Wrench-  
used for tray adjustment.

100 degree countersink  
for NAS514P632-5P



A-A

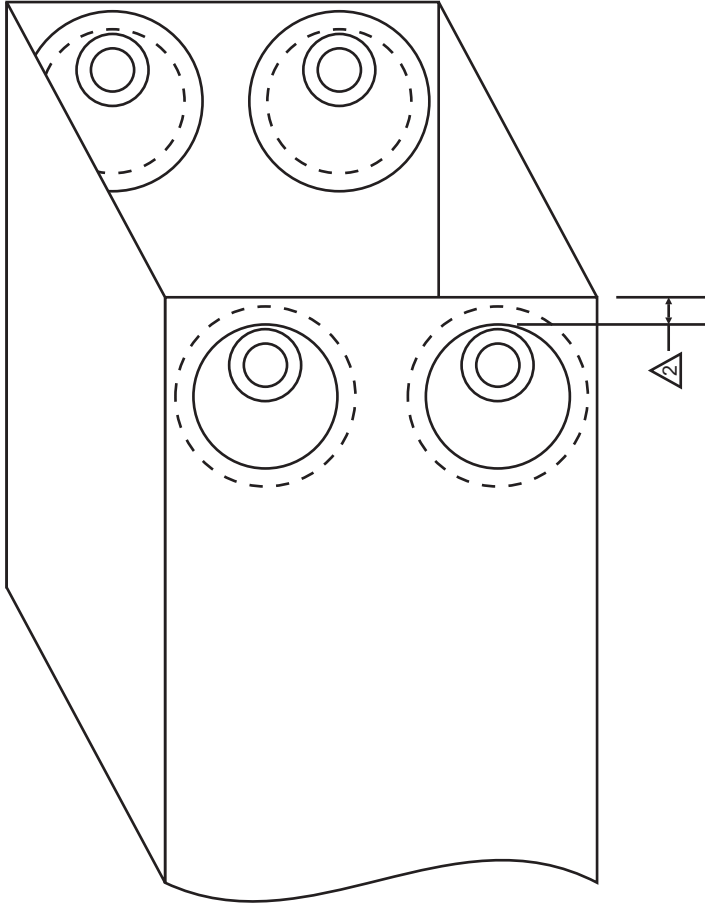
- 1 Use the included NAS514P632-5P screws when mounting trays with Tray Cams. Radorax Tray Mount kits are supplied with -4P screws for mounting trays. These are too short for use with Tray Cams.

Revisions		
REV	DESCRIPTION	DATE



Minimum edge distance for 0.500" hole to tray edge: 0.10"  
Minimum 0.500" hole center to tray edge: 0.350"

Note: use the Radorax RK500 Tray Cam Installation Tool Kit to simplify avionics tray modification.



1	NAS514P632-5P	STRUCTURAL TRAY SCREW - 100° C-Sunk	Steel	6-32 x .3125	2
1	RP5000-P	TRAY CAM	Stainless	.625 x .040	1
QTY.	PART NO.	DESCRIPTION	MATERIAL	SIZE/SPECIFICATION	ITEM NO.
N/A	FAA/PMA	UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES	Radorax Aviation Systems www.radorax.com		
		TOLERANCES ARE:	TITLE		
		DECIMALS ANGLES .XX ± .01 ± 0.25° .XXX ± .005	RADIORAX TRAY CAM		
		MATERIAL	DWG. CODE -		
		FINISH	REV.		
NEXT ASSY	USED ON	DO NOT SCALE ON DRAWING	APPROVED	DATE	REV
APPLICATION					