

## Installation Instructions for Cessna 177 Cardinal Sunvisor System

### Kit RCS-300-5

This is an FAA STC installation and requires an Aircraft Maintenance log entry.

Doc: 9050-0118-019

Rev	Date	Approved
C	6/2/2005	GH

The enclosed NSA Sunvisor System from Rosen Sunvisor Systems will provide that extra margin of safety and comfort that the Cardinal has never had in relation to Sun shielding protection.

The Installation is attractive in appearance and fits well with the aircraft. Care should be taken during the installation process not to rush in order to insure the final trim fit is professional in every way.

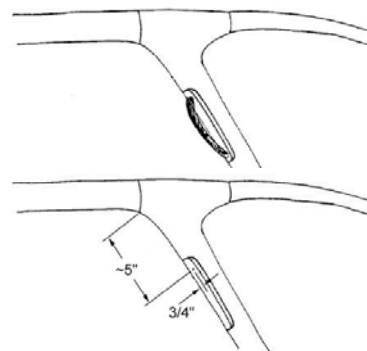
Installing your Rosen Sunvisor System is easily performed and should take approximately 4 to 6 hours.

Please read these short instructions **COMPLETELY** before starting.

Installation Hardware (included):

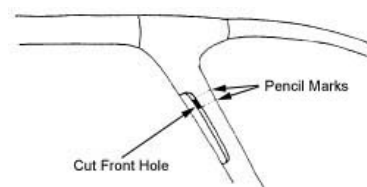
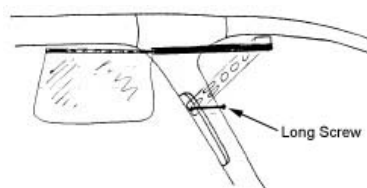
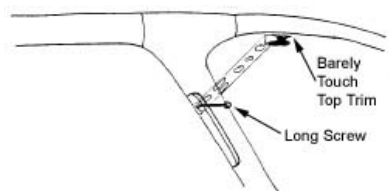
Qty: (1) 5/32 Allen Key for #10-32 Cap Screw  
(1) 9/64 Allen Key

- Remove the old auto style visors by pulling them outboard.
- Most Cardinals have hand grips on the door posts and your unit is designed to pick up the top #10 fastener from this grip. Aircraft without this handgrip will need to install an A10K80 rivnut (provided). Figures to the right illustrate the handgrip and location for rivnut if needed.



### Aircraft with Handgrips

- First, remove the small metal cover over the handgrip screws. This can be done using a small common screwdriver and prying or popping them off.
- Remove the two #10 screws that secure the handgrip.
- Take the Pilot's NSA visor and using the long #10 screw provided (MS16996-14B), put it through the slot in the bottom of the bracket and temporarily install it in the top handgrip screw hole as shown. The top of the arm should barely touch the top trim.
- Position the visor towards the rear of the aircraft and extend the sliding arm. The top of the visor should be parallel to the top of the door frame with the door open. Use a pencil to mark either side of the bracket on the door frame liner.
- Rotate the visor to the front. The visor arm should just fit under the center overhead console while the bracket is still between the pencil marks. The flat surface of the bracket should be parallel with the flat surface of the door post where the screw is attached.
- Check your marks very carefully by going through the above steps several times to assure a perfect fit.
- The trim pieces should be marked as shown.
- Remove the top royalite trim piece that runs around the top of the pilot's window.

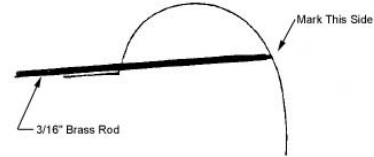


- Remove the royalite trim piece that covers the door post. Be aware that the royalite may be very brittle from sitting in the sun and extreme care should be used when removing and installing it. If it has been cracked, or gets a small crack, you may want to consider using duct tape on the back side as reinforcement. We have seen this done on different Cessna trim pieces with good result.

- Use a 3/16" drill or smaller to drill through the trim between the marks as shown.

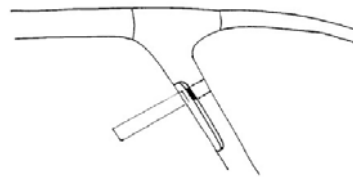
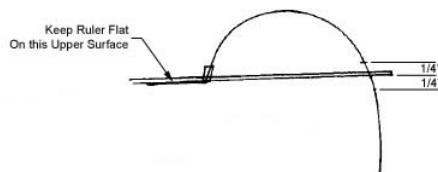
- Trim the hole so the 1/4" by 1" bracket will pass through the hole.

- Take the 3/16" pointed rod provided and while aligned with the pencil marks and flush with the flat surface on the front side mark the opposite side of the royalite as shown.

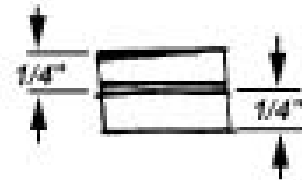


- The rod should have left marks that you can see from the other side. Drill through these and square out a small slot with a file.

- Slide a 1" rule through the slot and align it with the pencil marks. Enlarge the back hole as necessary until the rule slides through as shown.



- Because of the blocking plate that is on the back of the bracket, the back hole in the royalite will need to be approximately 1/2" by 1". It is important to use the rule on the flat surface so that the back hole can be proportioned correctly and in the right plane. The figure shows a view if you could look from the back side of the royalite with the rule protruding. Again take your time and make sure the trim is cut correctly.



- When the pilot's visor bracket with the backing bar can slide into the trim with the slots you have just cut, re-install the top piece of trim that runs around the top of the window and into the center control.

- Now mount the visor and bracket without the door post trim. You may need to cut a small piece of the insulation to get the bracket to fit tight against the door post. This will allow you to adjust the backing bar to the contour of the door post and keep the bracket from turning.

- Adjust the bracket so the top just barely hits the top trim and the extended visor is parallel to the top of the door frame (door open) when it is rotated and extended to the rear. Tighten the backing bar against the door post with the hex key provided.

- Your Pilot side mounting bracket is now in place. Remove the visor arm and mounting block from the vertical mounting post.

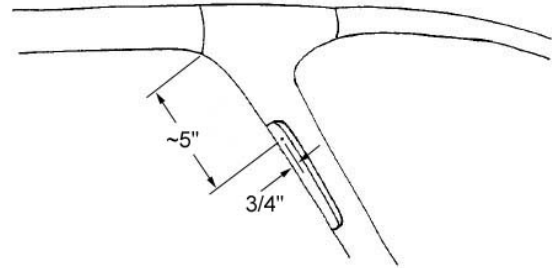
- Remove the overhead trim piece.

- Now slip the visor bracket through the slots in the door post trim and carefully re-install the door post trim. Align the small trim screw holes and then install the bottom handgrip fastener and install the MS16996-14B screw provided in the top location.

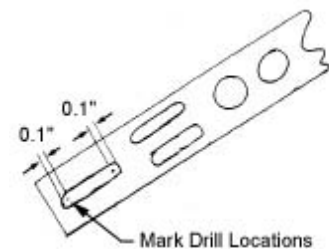
- Check to insure the top of the visor bracket is not hitting the windscreen. If it does loosen the visor bracket and reposition it to provide clearance and retighten.
- Replace the top trim piece and erase any pencil marks that might be left on the trim.
- Replace the visor arm assembly and retaining screw and tension to provide tension that is free but not loose.
- Repeat for the co-pilot's side.
- Place the FAA STC and AML (if appropriate) in the Aircraft Maintenance Log and make an installation entry.

### **Aircraft without Handgrips**

- This installation is easier in that no special work on the trim needs to be done, but rivnuts need to be installed in the door post to secure the bracket. (This is the same type of rivnut and location Cessna uses for the hand grip installation.)



- Use a pencil to mark the approximate location for the fastener as shown.
- Hold the bracket of the pilots visor assembly against the door post so you can see the mark in the slot and angle the bracket so that it just hits the overhead trim.
- Holding the bracket stationary swivel the visor to the rear and make sure the unit is parallel and inline with the door line (door open).
- As with the handgrip instructions, pencil mark the outside of the bracket on the trim.
- When swiveled forward the visor should just miss the center overhead console.
- When the front and side criteria are met, make a pencil mark in the center of the bottom bracket slot.
- Adjust the blocking plate so that it rides on the side of the door post.
- Mark the front and rear of the bracket bottom slot then make a mark 0.1" in from either end as shown.
- When you are sure of the bracket location and your slot marks are centered and correct, drill a 1/8" hole through the trim and door post. **Be careful not to drill into the outer skin of the aircraft!**
- Remove the door post trim (you may need to remove the front overhead trim piece as well).
- Install the A10K80 rivnuts into the 1/8" holes using appropriate tooling.



- Re-install the trim
- Using the #10-32 Socket head cap screws provided install the pilot's visor.
- Repeat for the co-pilot's side.
- Place the FAA STC and AML (if appropriate) in the Aircraft Maintenance Log and make an installation entry.

**For continued airworthiness: (Ground operations only)**

- Periodically clean the visor with a soft non-abrasive cloth and mild soap or aviation grade windscreen cleaner.
- Hex Keys are provided to periodically adjust the tension on all the pivot points so that they move freely but not loosely.
- Every movement of your new Rosen Sun visor is tensionable, so you can adjust it to your preference before flight.

