

REPLACING THE PA28 GLARE SHIELD (LATE)

PLEASE READ ALL THE INSTRUCTIONS CAREFULLY BEFORE STARTING

Over the years the glare shield that Piper installed on their panel has in many cases become an eyesore due to its being subjected to the heat buildup from the sun beating down through the windshield(s). The vinyl or plastic covering was installed during the build up of the forward cabin even before the windshield molding was installed and therefore was riveted in place with the molding. Not such a bad idea if you never plan on having to replace it. But since the planes are lasting far longer than the vinyl, the glare shield has become a problem for many.

There are some fiberglass glare shields available as aftermarket options. I have read from those who have them in most cases have been pleased with them other than some say they are difficult and time consuming to install. Others have said they do not like the reflective glare they experience and I would be concerned about the hard surface fiberglass in the event of an impact.

By all definitions you could also call our glare shield a faux glareshield insomuch as it looks like its part of the panel when in reality it just lays on top of the old glare shield area. Not only does this greatly add to the beauty of your plane, the eyebrow is soft should you ever hit it from a sudden stop.

Before I get into the replacement of your old glare shield, I'm sure you are wondering about the legal aspects. I have discussed this to great length with the FAA in Oklahoma City and it has been their opinion that this is only a minor cosmetic addition to the plane and needs no approval other than a log entry.

If you are concerned, I would suggest you discuss the replacement of the glare shield with your local FSDO. If they are uncomfortable with just a log book entry, you could request that your mechanic submit a 337 and request they grant a field approval based on the installation has been previously granted Field approval by the FSDO in Oklahoma City. We have included a sample copy of the FAA field approval (337)

Due to the many different models of PA28 it will be hard to provide specific instructions. I will try to assist with some general instructions regarding the changes that you may need to make. If you have any specific questions regarding your airplane, please feel free to call.

Next regarding the instrument panel covers. Many have either a one piece or two piece molded eyebrow secured to the top of the panel or a separate plastic covered eyebrow attached to the top of the instrument panel plastic covers. No matter which you have, these must be removed for this installation.

If you have the one piece plastic instrument overlay (over the instruments) on the Pilots and co-pilots panel with the molded eyebrow, you will need to temporarily remove these to rework the covers. I have found the best way to trim off the eyebrow is with a Dremil tool using a cut off disc or with the 1/8 inch router bit. Another is with a coping saw with the blade turned 90 degrees. Make the cut along the top of the cover (with about 1/8 inch beyond the radius) and completely remove the molded eyebrow. Sand or file the edge of the overlay instrument covers to a smooth surface. The new glare shield will cover the cut edge. If you find after cutting off the eyebrow that a portion of the panel still shows, we have provided a small strip of the glare shield material covering that you can cut to cover the exposed portion. Just glue the trim to the panel using contact cement.

If you have the single or two piece instrument overlay, just remove the attaching screws and remove it from the panel. If this is the type you have, you may also have a strip of aluminum molding that is riveted to the top of the panel securing the forward edge of the Piper vinyl eyebrow that is fastened to the top of your instrument panel. This eyebrow will be fastened with screws to the forward top edge of the instrument panel. After removing the eyebrow, you do not need to remove the riveted strip unless you just want to. You will need to replace the screws. You may also have a small plastic cover riveted to the top of the old glareshield. This may be removed or left in place. The new glare shield will lie right on top with no problem.

If you do not have an eyebrow, and you have performed the preceding tasks, you are ready to proceed.

There are two ways to do the replacement. One is with the windshields installed and the other is with the windshields removed. The glare shield may be installed without removing the windshields but understand that it is difficult to remove the screws attaching rectangular defroster outlets to the top of the old glare shield.

I personally would recommend removing the windshields rather than fight with the screws. I have done it both ways and prefer doing it with the windshield(s) removed. I feel removing the windshields is an easy task and it also allows me to make sure the windshields are good and sealed when I reinstall them, especially due to their history of the windshields leaking. For the record, I have removed both sides in less than 10 minutes and reinstalled both with new sealant in less than an hour. If adding new windshields, it takes another hour for proper fitting and sealing. Keep in mind, that the windshield installation must be made by or under the supervision of a FAA certified mechanic holding at least an: "Airframe Mechanic Certificate"

There are three ways for securing the glare shield to the top of your instrument panel. One is with Velcro another is by using four screws, counter-sunk washers and small 90 degree angle clips fastened to the existing screws on the face of the instrument panel (this hardware can be procured locally and is not provided). The recommended and third way is to secure it to the top of your panel with the provided PK fasteners. Depending on your specific model, you may find you will want to attach the new glare shield with any one of the above mentioned methods.

The later PA 28 aircraft do not use SCAT hose but rather a fiberglass/plastic distribution manifold for defroster air. The rectangular defroster outlets will need to be removed and are attached with two screws that screw into the distribution manifold.

On the existing glare shield area, the panel is covered with cloth or vinyl. This material extends over the entire original glare shield starting on each side where the instrument panel is next to the windshield. This area next to the instrument panel is very close and can cause the new glare shield to be very tight between the instrument panel and the windshield. I recommend you take an Exacto knife and remove about six inches of the material on each side. Also you may wish to remove about two inches of the cloth or fabric next to the windshield and forward of the instrument panel to provide additional clearance for the new glare shield and provide a bare surface for the Velcro to adhere to the top of the panel (should you choose this method of attachment. This will make the placement of the new glare shield much easier and the new glare shield will cover this entire area.

Mix up a small solution of dishwasher soap and water and brush on the glare shield in the area where the new glare shield fits between the windshield and the instrument panel. This area is very close and needs the lubrication of the soap to slip into place.

Place the new glare shield on top of the area above the instrument panel forcing it under the windshield molding around the entire lower edge of the windshield to the vertical windshield posts (make sure it is on top of the old portion of the covering, if applicable). Don't be concerned if you have small bumps on top of your panel, the new glare shield will conform over them with a smooth contour. In the area near the center post, make sure the glare shield doesn't get caught on the rivets. If it does, the glare shield will not extend under the molding.

NOTE

When positioning the new glare shield in place, do not be afraid to be a little aggressive, especially as it conforms around the sides of the instrument panel near the windshield. Just hit the eyebrow with your open fist forcing it down into the cavity between the windshield and under the windshield molding above the firewall. Continue forcing it down until it is laying flush on top of the instrument panel. With the new glare shield in Position and all the way forward against the windshield molding, verify the holes for the defroster outlets on the glare shield line up with the defroster openings on top of your old panel. We have found that in some cases the holes in the manifolds were not always located in the exact same location and you may need to cut or enlarge the existing holes in the new glare shield to allow these holes to match up. You will also need to determine where to locate and drill the defroster outlets attachment holes so they will align up with the fiberglass/plastic manifold.

Place the new glare shield on top of your panel making sure it is all the way forward under the windshield. You may find one means of attachment better than the other for your installation. If you decide on the Velcro for attachment, remove the paper protective covering from the Velcro strip on the underside of the glare shield and press the glare shield down firmly on top of your panel starting in the center and working outward on both sides. When you arrive at the ends of the glare shield, just force them down between the instrument panel and the windshield.

NOTE

You might wish to loosen a few of the screws (3 on each side) of the windshield retaining strip to make it easier to position the ends of the glare shield between the panel and the windshield. Be sure to tighten the screws when finished.

Due to the design of the new glare shield, should you decide to attach the glare shield with the clips and screws, you will also have to locate and drill attachment holes to match the clips. If you use the recommended method and secure it to the top of your panel with the provided PK fasteners, you will need to determine, locate and carefully drill holes through the vinyl and Lexan. The recommended four (4) locations are approximately 4" and 12.5" left and right from the center and approximately one inch from the forward edge of the eyebrow (windshield side). Due to the .025 aluminum sheet on top of the panel, you will find it easy to drill a 1/4" (6.4mm) fastener hole for the PK fasteners and install them. Install the defroster outlets with the air slots facing to the rear using the previously removed screws. AIR SLOTS MUST FACE AFT OR DAMAGE TO THE WINDSHIELD IS LIKELY TO OCCUR. Do not over tighten.

This completes the replacement of glare shield. All that is remaining is a log book entry. I recommend the following:

Replaced old glare shield with a new glare shield in accordance with manufacturer's instructions. This is a minor cosmetic change requiring no 337, Name and Date

WINDSHIELD INSTALLATION

You as the owner may also remove the windshields but when it comes to reinstalling the windshields, this must be done by or supervised by a licensed mechanic holding at least an "Airframe" Mechanics Certificate.

I have been using a system that is easy, very inexpensive, does not use the foam tape and provides a windshield that is absolutely water tight, easy to apply and cleans up with plain water

Clean all of the old sealer, tape, silicone (or what have you) from the windshield channel, trim molding and windshield(s).

I highly recommend PolySeamseal All purpose Adhesive caulking made by OSI Sealants. It comes in clear as well as white. Use the clear for the windshield installation and the white for the final out side sealing. It can be purchased from Home Depot, Lowes or Ace hardware.

Lay a heavy bead of the sealant on the fuselage frame work (on one side only) for the windshield, (keep it 1/4 in below the edges so it won't squeeze out on the inside). Fill inside the upper channel and side channel where the windshield slips into place.

Apply two heavy beads of the sealant down the center post.

Place the windshield into position and press against the sealer. Repeat the process for the other side. With both windshields in position, lay a heavy bead of the sealer down the center post between the Plexiglas and on the edge of the Plexiglas and along the bottom edge of the windshield making sure you leave no gaps. Apply a large amount of the sealer in the center at the very bottom, totally filling the open cavity and install the center and lower trim strips. When you have all the screws installed, clean up the residue (sealer/caulk) with water). Note: the clear Poly-seamseal is white when you use it and dries clear.

When all finished, mask off (with 1/4 inch vinyl tape) the windshield around the outside periphery leaving a 5/16 in gap between the tape and the windshield molding. Apply a bead of the white Polyseamseal around the entire area masked of and smooth off with your finger (keeping your finger wet at all times). When the bead is complete, remove the tape very carefully pulling away from the beaded area. "Do not wait until the Polyseamseal is dry before removing the tape."

Please note that you will need your mechanic to assist you with the windshield installation and log entry.

You are now ready to enjoy your new glare shield.

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