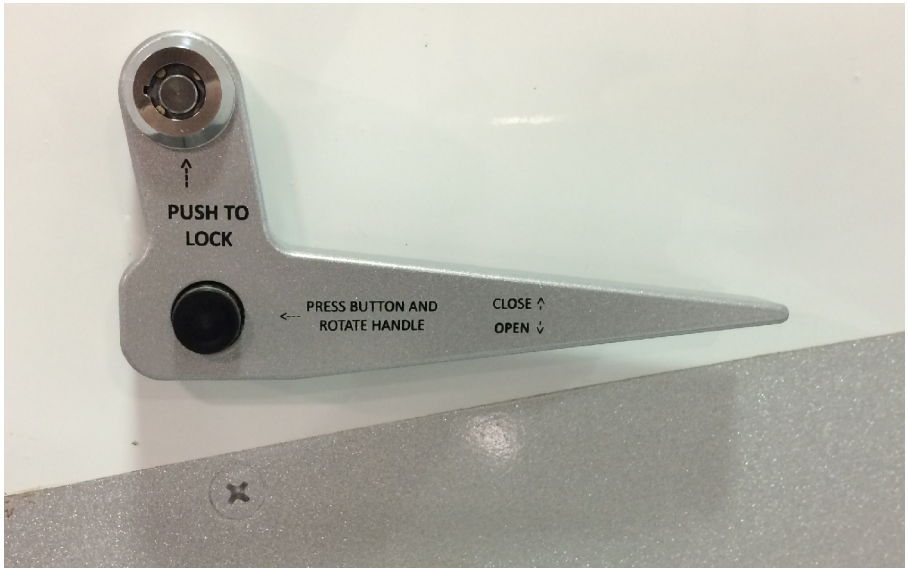
Signature Series
Aircraft Specialty



RV-10 DOOR LOCK INSTALLATION INSTRUCTIONS

Available in Red or Metallic Silver(Pictured)

Thank you for purchasing your RV-10 door locking system from Aircraft Specialty. We are extremely excited about this product as a very easy to install "drop in installation." A lot of thought went into the design and development of a new locking system for the RV-10. As an RV-10 owner, I was looking for the ability to lock our aircraft while also replacing the stock Van's handle. There was also the requirement for an easy to install design that would not risk damaging our paint job. With that in mind, we came up with a solution that provides a very finished appearance and one that is very easy to install.

Let's get to work!

Components included with this kit:

- CNC Machined, powder coated and labeled Door Handle
- Machined pin receptacles to engage locking mechanism
- All required installation hardware, including extra items to account for builder tolerance in installing the handle.
- High security countersunk screw is included for the most tamper proof installation. A regular AN screw is also provided for initial fitting.

RV-10 Canopy Lock Installation Instructions Rev 1 5-25-2016

- Lock mechanisms and 4 keys
- Built in lockout device to prevent inadvertent locking of the aircraft with occupants inside.

Required items for this kit:

- RV-10
- Standard drill bit for #8 screw.
- Drill extension (makes it easier)
- Screwdrivers
- Pliers
- Electrical or cloth tape (type not critical)
- Blue or Purple Loctite recommended

The basic overall installation concept is to replace the stock Vans Door handle with this new version. This handle has a built in “pin lock” that engages a receptacle that is mounted to your fuselage through an existing screw hole.

Step 1: Remove your existing handle from your aircraft by removing the countersunk screw that is installed through the front of your handle. This can be done with a manual screwdriver, or with an electric driver with an extension bit.

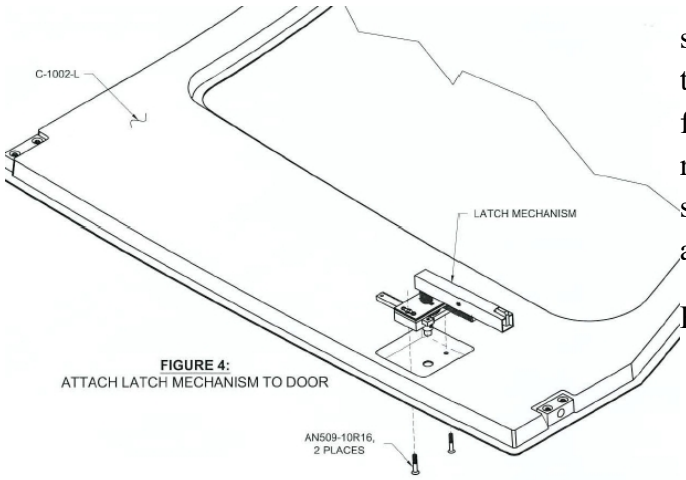
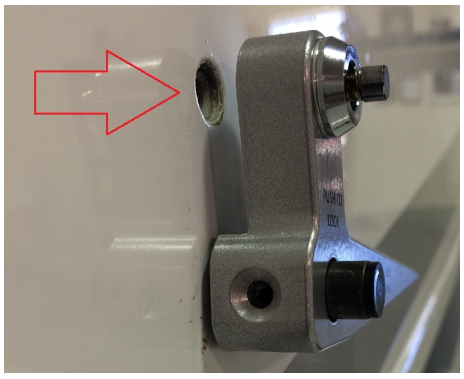


FIGURE 4:
ATTACH LATCH MECHANISM TO DOOR

Step 2: Carefully remove the top AN509-10R16 screw that is shown to the left. Make sure you remove the top screw as viewed from the outside of the aircraft. If you fiberglassed this screw in, you will need to take care removing it. There is a receptacle that fits over it that is significantly larger than the screw hole which will cover up any slight scratches or paint scuffs.

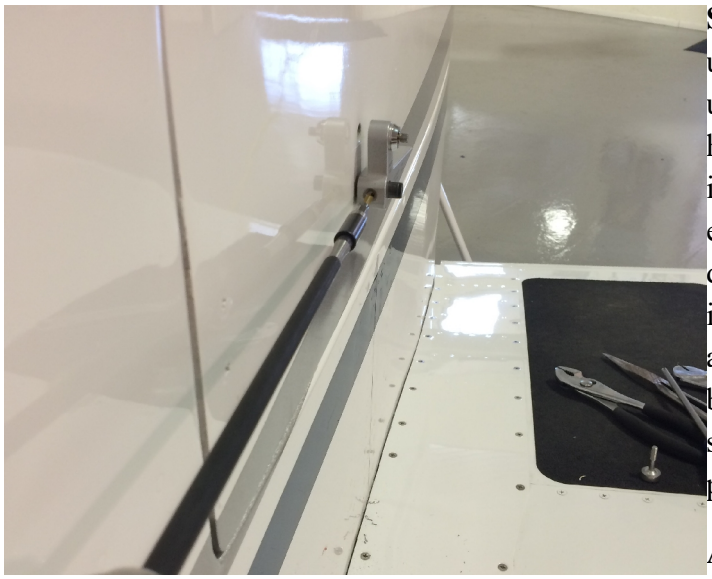
Below is a picture of the hole with the screw removed.



Step 3: Use the included AN screw and install it into your handle for test fitting. This will ensure that the threads are clean and there is no powder coating excess that has worked its way into the hole. If there is, you can utilize an 8-32 tap to clean the hole out. However, inspection of sample handles shows that this step is most likely unnecessary.

Step 4: Place your new door handle onto the aircraft in the location of the old handle. Push it all the way in until it bottoms out. Now you will want to check the hole alignment. If the original hole was drilled perfectly to plans, the holes will line up square through the whole handle. At this point, you will want to utilize the included countersunk head AN screw to secure the handle to your aircraft temporarily. If the hole does not line up perfectly, and the screw does not fit all the way through, skip this step for now and manually position the handle so the hole lines up as closely as possible.

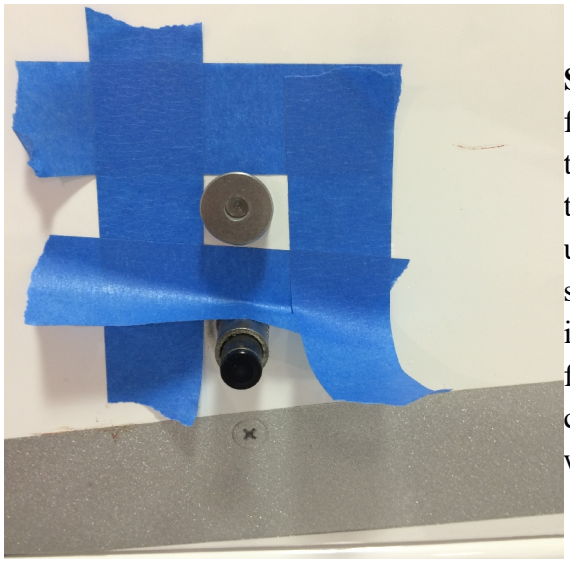
Step 5: Hold the receptacle up next to the fuselage and check the gap between the handle and the receptacle. You will want enough of a gap to allow the receptacle to slide between the door and handle. However, if there is more than about .040 gap, you will want to slid a shim washer over the receptacle in order to make the gap how you want it. There are two thick and two thin washers included in this kit which will give you more than enough adjustment options to account for installation variance.



Step 6: In step 4, your hole may or may not have lined up perfectly. If it didn't it is not a huge issue. You can utilize our handle as a drill guide to slightly enlarge the hole for the #8 screw and ensure perfect alignment. This is most easily accomplished utilizing a drill extension to ensure that the drill is perpendicular. In lieu of this, a 90 degree drill can also be used if available. On test installations we utilized an 11/64" drill bit which is about .006 oversized for a #8 screw hole. When drilling be careful not to damage the handle threads that the #8 screw threads into. If you do slightly damage them, please utilize an 8-32 tap to clean them up.

Also, pictured at the left is an included washer if the handle slides in too far to line up with the hole properly. This washer is included as an accessory and is not required, but will give the whole assembly a slightly tighter fit with less slop if there is a gap.

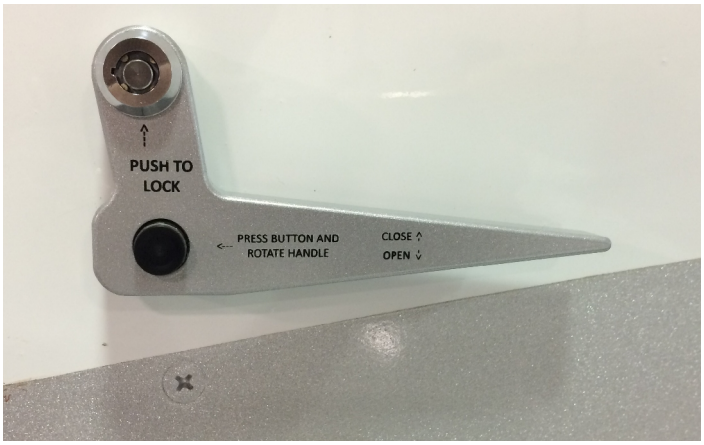
Once this step is complete, please install the 8-32 countersunk screw if it has not already been completed. Recheck your spacing gap for your receptacle and washers if required.

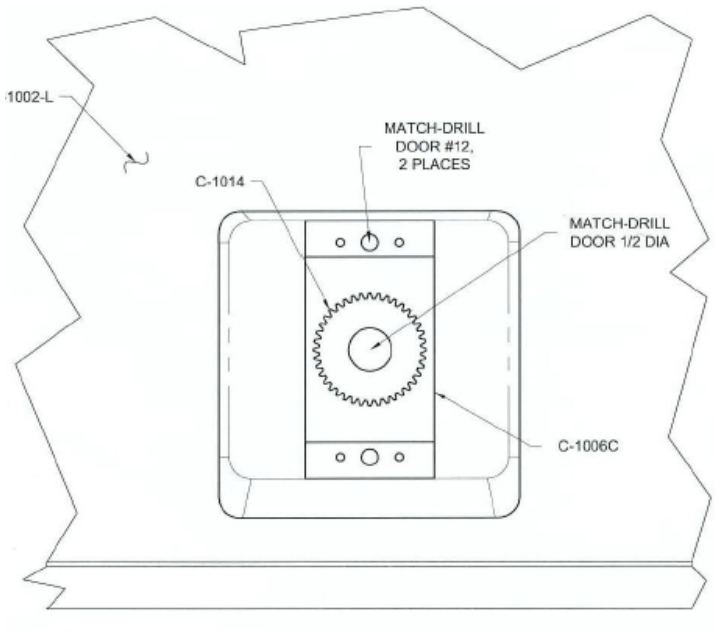


Step 7: Utilize some painters tape or equivalent to protect your fuselage from scratches around the area of the pin receptacle. Insert the pin receptacle and spacer washers if required and thread it into the hole and tighten it securely. The easiest way to tighten it is to use some masking or cloth tape to protect the receptacle from scratches and then utilize a long handled pliers to carefully thread it in and tighten it. This image is shown with the handle removed from the aircraft. This is done for clarity purposes, but the handle can be located in place for this step as long as it is rotated out of the way.

Step 8:

Now it is time to test the door lock assembly. First, fully close and latch your door as if it was in the inflight position. (picture on the left) You will notice that the handle has an offset position to it. This is intentional and prevents the handle from being externally locked when the door is in the flight position. In order to lock the door you will need to push the black knob in and rotate the handle slightly toward the open position which will cause the pin to align with the lock receptacle. (as shown in the picture on the right) You will now be able to push the pin into the locked position which will immobilize your handle and prevent the door from opening up.

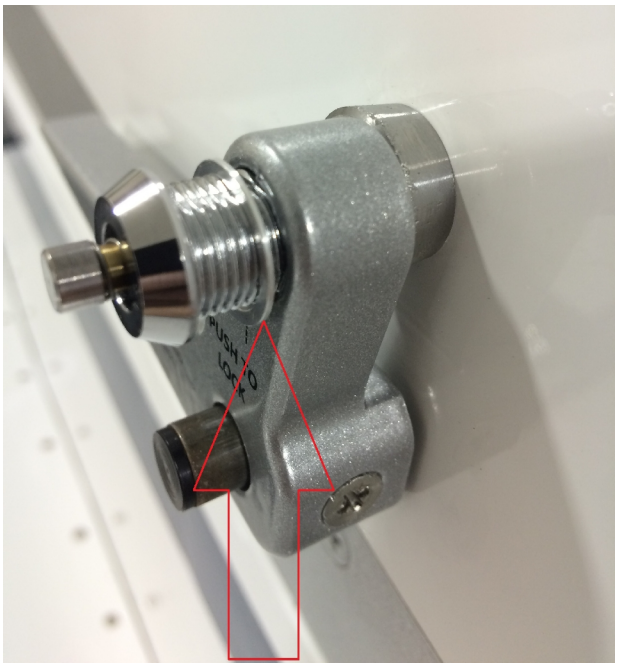


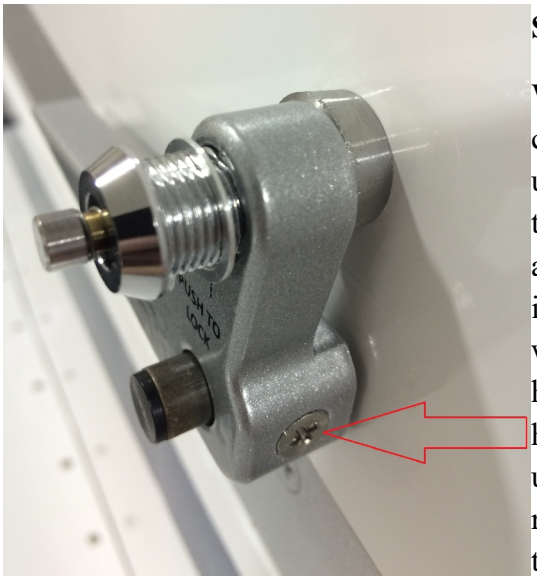


NOTE: The alignment of the door lock receptacle and the pin is dependent upon an accurate drilling of the #12 holes shown below. If they were drilled slightly out of square, the pin receptacle position on the outside may not be in perfect alignment with the door handle. This is easily rectified by slightly increasing the diameter of the hole in the pin receptacle. This can be done either by drilling incrementally to a large enough size to align with the pin....or it can be done with a dremel tool to enlarge the hole slightly vertically to line up with the pin. We recommend that this step be done with the receptacle mounted to the aircraft as when it is tightened, it will be in its final position and will allow you to target a very specific hole elongation to match your pin. Again, this should not be necessary if that initial hole was drilled perfectly square. On our aircraft, one hole fit perfect and one required elongation of the hole utilizing a drill bit. I would recommend not drilling larger than approx .25". If you needed more clearance than that, it would be better to utilize a dremel tool to oblong the hole in the direction required for the pin to push in

easily. If you do utilize a drill bit, we recommend using a drill with a "clutch" on it that can be found on battery powered electric drills. The reason for this is that you can set a tension setting on them and that way you won't be putting too much tightening pressure on the receptacle while drilling it.

Step 9: Once the door lock assembly is installed and tested, there are a few final steps to complete the installation. First off, we want to make sure that the locking mechanism is secure. Utilizing the key as a "screwdriver", back the lock out of the door handle. Depending on the version of lock that you receive, there may or may not be a washer underneath the lock. (Red arrow) Do not remove the washer if it is there. Place a bead of loctite on the threads and screw the lock back into place until it is fully seated.





Step 10: (OPTIONAL)

When you are satisfied with the installation, you can install the countersunk security screw. We recommend holding off on this step until you have fully tested your handle and everything opens and closes to your satisfaction. Remove the AN screw as indicated with the red arrrow. The security screw has a hex head on it. You tighten the screw in place until the hex snaps off, leaving you with a flat head. The head will sit slightly proud to the surface. This will allow you to file the head slightly if you need to knock of any burrs without damaging the handle. If this head ever needs to be removed, center drilling and utilizing a screw extractor will be the most efficient method. We recommend loctite blue or purple on this screw also. Please note that the picture shown is of the screw installed on an rv-12 canopy lock instead of the RV-10.

Note: DO NOT PUT A LOT OF LOCTITE ON. A VERY MINIMAL AMOUNT IS NEEDED. SHOULD YOU DESIRE TO REMOVE THE HANDLE DOWN THE ROAD.....LESS LOCTITE IS BETTER.

THANK YOU FOR YOUR PURCHASE! AS ALWAYS, PLEASE FEEL FREE TO CONTACT US WITH ANY INSTALLATION QUESTIONS.

FAQ on the Aircraft Specialty Door Lock Assembly

Q. Why did you design this assembly, and what makes it different from other door locks out there?

A. This door lock is the result of nearly two years of product development. The goal was to create a very high quality and good looking handle first and then find a way to incorporate a simple and effective locking mechanism into it. In order to make this a truly finished product, we decided that powder coating and silkscreen labeling would make it a very good looking addition to the RV-10. We also wanted to build a product that can easily be installed on a painted aircraft with no damage to the paint or extensive rework required.

Q. Is Installation Difficult? I notice that a lot of different washers and shims included and am wondering why so many are needed for installation variances?

A. The reality is that this handle could probably be installed with no washers and shims and it would function just fine. However, the included items allow builders to get a nice close tolerance fit on the assembly so that there is very little play in the mechanism and also so that it looks as if it was built with the original aircraft and made to fit perfect. When I installed it on our RV-10, I utilized the items shown in this install manual. It took 2 hours for the initial installation including picture taking and figuring out the best installation sequence. I fully anticipate that most builders will be able to easily install these on their aircraft in 1-2 hours.

Q. Can I get locked in my aircraft inadvertently?

The really neat thing about this design is that the handle has an offset in it which prevents the door from being inadvertently locked from outside when it is in the flying (fully closed and locked) position.