



# Service Bulletin

**TAT SB10-01**

Issued: 01/20/10

Model SR22 w/ Turbonormalizer

Installed per STC SA10588SC

And SE10589SC

## COMPLIANCE

**MANDATORY:** Tornado Alley Turbo considers this Service Bulletin to be **MANDATORY**. These instructions are effective on the date of issue. First inspection should be completed at the next maintenance event where cowl removal is required or within 50 hours of issuance of this Service Bulletin, whichever comes first.

## EFFECTIVITY

All Cirrus Design SR22 aircraft equipped with a Tornado Alley Turbo Inc. Turbonormalizing System installed per STC SA10588SC and SE10589SC.

## APPROVAL

Engine Technologies, Inc., the Turbonormalizing System STC holder, has approved all technical data in this Service Bulletin that affect the type design.

## PURPOSE

The purpose of this Service Bulletin is to instruct owners of Turbonormalized Cirrus Design SR22 airplanes to have the hinge pin ends on the alternate air door inspected for cracks, loose rivets, and/or missing retention methods that may damage the turbocharger due to release of the hinge pin. A one time installation of a hinge pin stop rivet may be required to prevent loose hinge pins from completely slipping out of the hinge and entering the turbocharger compressor.

## DESCRIPTION

Three different retention methods have been used to secure the hinge pins on the alternate air door assemblies:

1. **Weld, stake, or crimp on one end of the hinge pin.**
2. **Weld on one end of the hinge pin and stake or crimp on the other end of the hinge.**
3. **Weld on both ends of the hinge pin of the alternate air door.**

## FREQUENCY

The alternate air door hinge inspection is to be completed at the next 50 hour inspection after release of this bulletin and at every annual inspection after. The installation of a hinge pin stop, if required, is a one time operation to be completed within the next 50 hours of the issuance of this bulletin.

## WARRANTY INFORMATION

Since labor is to be performed in conjunction with other standard maintenance, labor is not warranted. If an alternate air door hinge is found to **not** be in safe working order contact Tornado Alley Turbo, Inc. for instructions to send parts to Tornado Alley Turbo Inc. for repair or replacement of alternate air door assembly if required. Only aircraft that are still under warranty may receive free repair or replacement of alternate air door assemblies.

## MANPOWER REQUIREMENTS

For inspection and installation of hinge pin stop: One mechanic, one hour

For subsequent inspections: One mechanic, 15 minutes

## WEIGHT AND BALANCE

Weight change: None.

## MATERIAL INFORMATION

One Cherry CR3213-4-04 rivet

Two butt or knife splices with insulation

## ACCOMPLISHMENT INSTRUCTIONS

1. Remove cowling.
2. Disconnect flexible couplings from both ends of air door assembly to gain visual access to the hinge on the inside of the alternate air door assembly.
3. Using a bright flashlight inspect both ends of the alternate air door hinge for method of hinge pin retention. If the hinge pin is retained by a stake or crimp on the air filter end only, proceed to Step 4. If there is a weld on one end of the hinge and no retention method on the other end of the hinge, insert a stiff wire into the hinge from the unsecured end and gently push on the hinge pin to verify that the hinge pin is held securely by the weld. If the hinge pin is not held securely by the weld, contact Tornado Alley Turbo, Inc. for instructions on sending the alternate air door assembly to TATI for repair. If both ends of the hinge have a means of retention in place, inspect both ends of the alternate air door hinge for cracks in the hinge, cracks in the weld, and signs that the hinge pin is slipping out of the hinge. If there are no signs of a positive means of hinge pin retention or there are signs that the hinge pin is slipping, contact Tornado Alley Turbo, Inc. for instructions on sending the alternate air door assembly to TATI for repair or replacement. See Step 4 for instructions on removal of alternate air door assembly. See photos below for samples of hinge pin retention.



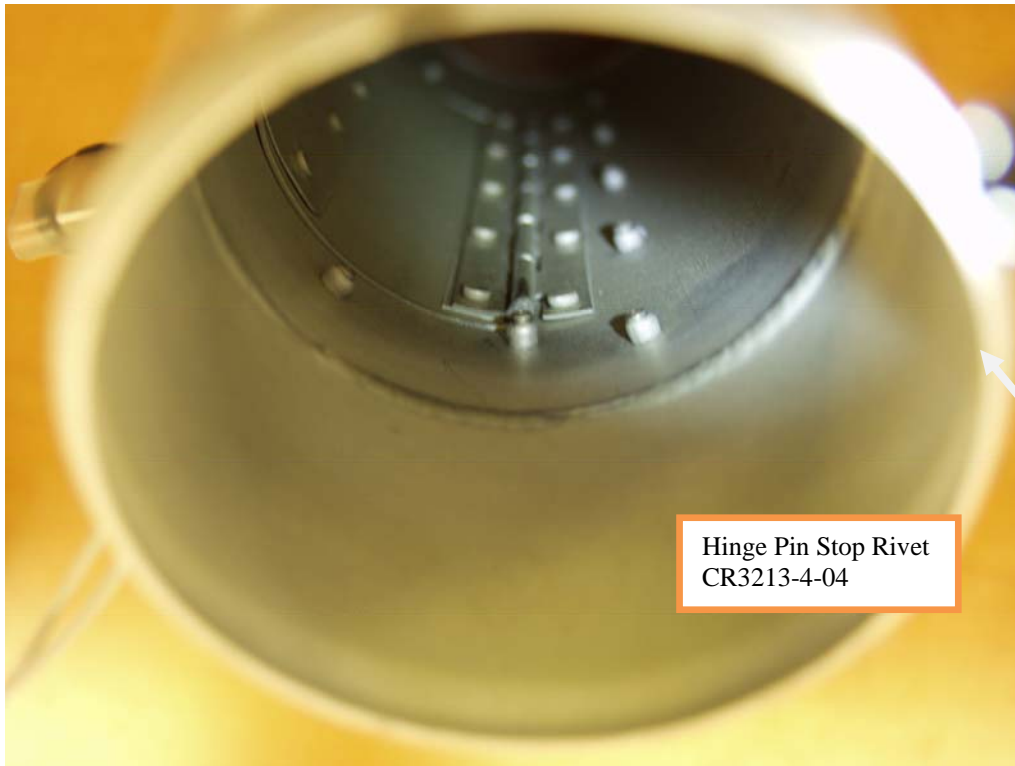
Welded hinge pin retention.



Crimped hinge pin retention

4. If required, remove alternate air door assembly. Trace the wire pair from the alternate air door switch to connector J207. Separate the connector halves and remove the wire along with the alternate air door assembly. On some earlier systems there is no J207 connector. On these aircraft, the wires may be cut and spliced with staggered butt or knife connectors on reinstallation (be sure to insulate the connector junctions). If routing of the wire pair from the alternate air door switch to connector J207 is difficult to access, the wires may be cut and spliced with staggered butt or knife connectors on reinstallation (be sure to insulate the connector junctions).

5. On alternate air door assemblies with crimp or stake at air filter side only, install rivet at compressor end as follows: With an angle drill and #30 drill bit, drill a hole in line with the hinge pin as close to .25 inch from end of pin as possible while at least 3/16 inch from edge of air door cutout. Drill through air door assembly. Install a Cherry CR3213-4-04 rivet with manufactured head on outside of alternate air door assembly in hole. It is important that the stop rivet is directly in line with the hinge pin in order to provide a stop for the hinge pin in case the hinge pin slips. Do not substitute any other style rivet for Cherry CR3213-4-04 rivet. See picture below:



6. If the alternate air door assembly is replaced with a new one, the same style connector as used on J207 will be incorporated into the annunciator wire. If the J207 style connector is not needed the wires may be cut and spliced with staggered butt or knife connectors (be sure to insulate the connector junctions).
7. Reinstall alternate air door assembly. After installation is complete, operate the air door to verify that the wiring is working properly and the air door annunciation shows on the instrument panel. Make appropriate log book entry in aircraft maintenance files.
8. At each annual inspection, disconnect flexible couplings from both ends of air door assembly to gain visual access to the hinge on the inside of the alternate air door assembly. Using a bright flashlight, inspect both ends of the alternate air door hinge for cracks, loose rivets, and/or signs of hinge pin slippage. If there are signs of hinge pin slippage, contact Tornado Alley Turbo, Inc. for instructions on sending the alternate air door assembly to TATI for repair or replacement.

#### **PARTS AVAILABILITY**

Contact Tornado Alley Turbo Inc. for repair or replacement of alternate air door.