



# Service Bulletin

**TAT SB12-02, Revision None**

Issued: 10/27/2012

Model SR22 w/ Turbonormalizer

Installed per STC SA10588SC

And SE10589SC

## COMPLIANCE

**MANDATORY:** Tornado Alley Turbo considers compliance with this Service Bulletin to be a very important part of the aircraft maintenance program that should not be ignored. These instructions are effective on the date of issue. First inspection should be completed the next time the cowling is removed for routine maintenance.

## SUPERSEDURE

This Service Bulletin supersedes Service Instruction TAT SB11-02 regarding the recommended inspection of engine driven fuel pumps on turbonormalized Cirrus SR22 aircraft. Because of reports that some aircraft have not timely received the prescribed inspection, and in order to emphasize the importance of this matter, this Service Bulletin now makes the inspections outlined in TAT SB11-02 MANDATORY along with an additional replacement schedule for mixture control shaft O-rings and the O-rings on the associated mixture shaft insert.

## 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 engine driven fuel pump inspected for leakage around the mixture control shaft and to have the mixture control shaft seals replaced with alternative seals if needed.

## DESCRIPTION

The fuel pumps on Cirrus SR22 aircraft with the turbonormalizing system installed per STC's SA10588SC and SE10589SC employ engine driven fuel pumps that are modified from the original engine driven fuel pumps. During the modification of the fuel pump for installation on a turbonormalized engine the fuel pump is dismantled, modified with newly manufactured parts, and then reassembled. Note: The components of those pumps that are associated with this service bulletin are not modified as part of the conversion of the pumps for use with the turbonormalizing system. During this process the fuel pump will receive a new O-ring seal on the mixture control shaft and new O-ring seals on the mixture control insert. These seals were originally made of Nitrile or Buna N. Service has shown that some of these O-ring seals appear to deteriorate over time. When mixture control shaft O-ring seals begin to deteriorate they may allow a very small amount of fuel to leak past the O-rings into the engine compartment. This is normally first evident by small amounts of blue fuel

stains in the area around the mixture shaft where it exits on the back side of the fuel pump. Newer O-ring seals made from an improved fluorocarbon rubber elastomer can replace the original Nitrile O-rings and provide improved durability and performance. However, regardless of which styles of O-rings are installed in the fuel pump, and until subsequent service history allows otherwise, O-rings should be replaced on a regular basis to ensure they will not initiate fuel leaks.

## **FREQUENCY**

The initial five step engine driven fuel pump inspection described below is to be completed at the next cowling removal. Repeat that inspection at each annual inspection or every 50 hours, whichever comes first. (It may be convenient to perform the inspection of the fuel pump O-rings at the same time that the 50 hour exhaust system inspection per Service Bulletin TAT SB09-01 is performed.)

In addition, each time the cowling is removed, visually check engine driven fuel pump for fuel stains around the mixture control shaft. Fuel stains around the mixture control shaft are an indication of deteriorated O-ring seal.

Replace the engine driven fuel pump mixture control shaft O-ring whenever there are signs of fuel leakage from the fuel pump mixture control shaft, or at every fifth annual inspection, or at the next annual inspection after the aircraft has accumulated 400 hours time in service, whichever occurs first. Replace the mixture control insert O-rings whenever the mixture control shaft O-ring is replaced. If the pump has previously had the O-rings replaced, then restart the five year / 400 hour repetitive service interval from the time the pump previously had the O-rings replaced. This schedule is tailored to coordinate the required time limited service interval with the normal annual inspection in order to minimize any down time for the aircraft.

## **WARRANTY INFORMATION**

Initial and repetitive inspection labor time is not covered under warranty. Parts and labor are warranted by Tornado Alley Turbo, Inc. for turbonormalizing systems still under the initial 2 year warranty period. Removal and replacement labor time will only be approved after verification of failure. Contact Cirrus Aircraft for warranty considerations for turbonormalizing systems still under the third year of the 3 year warranty. All other turbonormalizing systems are not warranted.

All customers requesting inspection and repair of fuel pump **must** receive an RMA number from TATI prior to sending pump to TATI, if package arrives without a RMA number it will be returned to shipper without any work performed (see note below).

## **MANPOWER REQUIREMENTS**

For inspection of engine driven fuel pump for leaks at the mixture control shaft: Two mechanics, 10 minutes

For removal and replacement of engine driven fuel pump: One mechanic, 4 hours

## **WEIGHT AND BALANCE**

Weight change: None.

## **MATERIAL INFORMATION**

The following items should be replaced when replacing the engine driven fuel pump:  
1 each Continental P/N 649982 fuel pump gasket

## ACCOMPLISHMENT INSTRUCTIONS

1. Remove cowling.
2. Visually check engine driven fuel pump for fuel stains around the mixture control shaft. Fuel stains around the mixture control shaft are an indication of deteriorated O-ring seals.
3. If there are no visible fuel stains around the mixture control shaft, have someone in the cockpit turn the auxiliary fuel boost pump on HIGH and cycle the mixture control while the throttle is closed. Watch the fuel pump for signs of leakage while the auxiliary fuel pump is on and the mixture control is cycled.
4. In either case, if there are signs of fuel leaks around the mixture control shaft of the engine driven fuel pump, contact TATI to obtain an RMA number (see note below), remove the fuel pump, and send to Tornado Alley Turbo, Inc. for rework to replace the O-ring on the mixture control shaft with new fluorocarbon O-ring and mixture control insert O-rings with new, either nitrile or fluorocarbon, O-rings. Include with the fuel pump: engine serial number, total time in service, date the last time the mixture control and insert O-rings were replaced and time in service since last fuel pump O-ring replacement.
5. Upon return of the fuel pump reinstall onto engine. Check fuel flow and adjust as required as outlined in Tornado Alley Turbo, Inc. Continued Airworthiness Report 22-6460004 (available on-line at [www.taturbo.com/drawings/](http://www.taturbo.com/drawings/)).

Note: Assignment of an RMA number is required prior to sending fuel pump to TATI in order for TATI to properly schedule the rework of the fuel pump. This will allow TATI to provide a quick turnaround time on the rework. Generally, fuel pump rework to replace the mixture shaft and insert O-rings will take one week after receipt of fuel pump with RMA number.