



Service Bulletin

TAT SB11-04, Revision None

Issued: 07/14/2011

Model SR22 w/ Turbonormalizer

Installed per STC SA10588SC

And SE10589SC

COMPLIANCE

HIGHLY RECOMMENDED: 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.

EFFECTIVITY

All Cirrus Design SR22 aircraft equipped with a Tornado Alley Turbo Inc. Turbonormalizing System installed per STC SA10588SC and SE10589SC that incorporate the FS-167 turbocharger inlet valve assemblies.

Note: Some early turbonormalizing systems on the Cirrus SR22s do not incorporate the spring loaded screen in the check valve assembly. This Service Bulletin does not apply to those aircraft

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 turbocharger oil supply inlet screens inspected and cleaned on a regular basis to ensure that the turbo system continues to function properly.

DESCRIPTION

The turbocharger oil supply systems on most Cirrus SR22 aircraft modified per STC's SA10588SC and SE10589SC employ a spring loaded screen at the inlet to each turbocharger bearing housing to filter the oil entering the turbocharger. The primary purpose of the funnel shaped basket screen is to protect the downstream check valve from contamination. If this screen should become blocked with foreign matter, it pushes against the spring and unseats itself to allow the oil to bypass the screen and continue to supply oil to the turbocharger. However, in that event, it is possible that small amounts of unfiltered material can get past the screen. While generally this is not a problem, under some circumstances, those particles may interfere with the closing of the 10 PSI check valve that is immediately downstream of the spring loaded screen. If the check valve does not close properly, it can allow oil from the oil line to drain down and pool in the turbocharger or compressor or to otherwise drain out the tail pipe after the engine is shut down and the oil scavenge pump is no longer actively returning oil to the engine oil sump. This event is often misinterpreted as a turbocharger failure. Note: Do not always assume an oil leak from the turbocharger is simply a blocked inlet screen - thoroughly troubleshoot for causes of all turbocharger oil leaks.

FREQUENCY

The initial turbo screen inspection and cleaning is recommended to be completed at the first oil change after installation of the turbo system. Subsequent inspections and cleanings are recommended to be performed at the following times:

- At each annual inspection
- Whenever an engine cylinder or cylinders are changed
- 25 hours after engine overhaul or cylinder replacement

- Whenever the oil filter is opened to inspect for suspected engine damage
- Whenever the turbocharger is leaking oil

WARRANTY INFORMATION

Initial and repetitive inspection labor time is not covered under warranty.

MANPOWER REQUIREMENTS

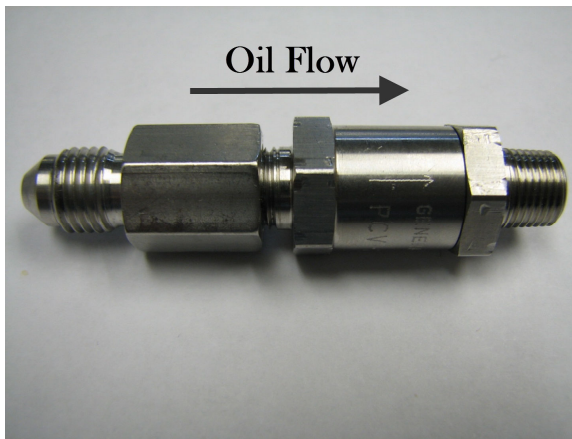
For inspection and cleaning of turbo inlet filters: One mechanic, 1 to 1½ hour.

WEIGHT AND BALANCE

Weight change: None.

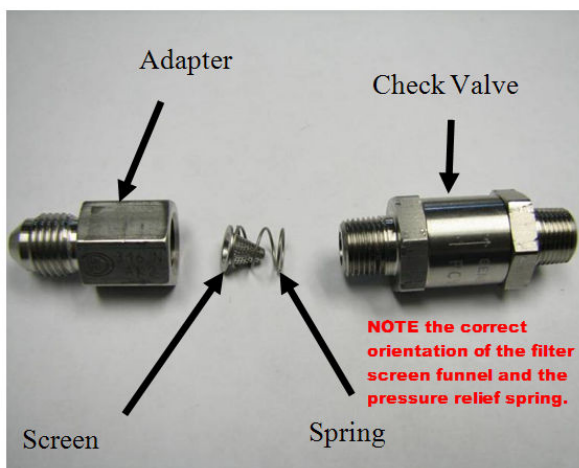
ACCOMPLISHMENT INSTRUCTIONS (PER TURBOCHARGER)

1. Verify that the oil inlet to the turbocharger has the FS-167 valve assembly installed. If the check valve on the turbo bearing housing inlet fitting does not have an adapter on the inlet end of the check valve, this service bulletin does not apply (see pictures below).
2. Remove oil line to turbocharger bearing housing inlet and cap.
3. Remove FS-167 valve assembly from turbocharger oil inlet fitting:



FS-167 Valve Assembly

4. Remove adapter from inlet end of FS-167 Valve Assembly



5. Thoroughly clean adapter and screen with solvent. An ultrasonic cleaner may be required to properly clean the screen, depending on how much debris is in it.
6. Reassemble the FS-167 Valve Assembly in the order shown in the picture above (if the screen and/or the spring are installed incorrectly, the bypass feature of the screen will not work). Apply a thread sealant such as Loctite 545 on the external threads of the check valve before screwing the adapter onto it.
7. Torque the adapter to the check valve 85 in-lbs.
8. Install the FS-167 onto the turbo oil adapter with a thread sealant such as Loctite 545 and torque to 85 in-lbs.
9. Reinstall the oil supply hose onto the adapter using normal -4 hose torque value.
10. Ground run engine and check for oil leaks after shut down.

PARTS AVAILABILITY

Contact Tornado Alley Turbo Inc. for replacement turbonormalizing system components.