

Turbochargers

AD/TURBO/1

**Roto-Master (Rajay Industries, Inc.)
Turbochargers - Inspection and Replacement**

3/83

Applicability: Rajay Model 325E10 and 3AT6EE10J2 turbochargers, installed on but not limited to: Continental Engine Models TSIO-360, O-470, IO-470, IO-520, TIO-520; Lycoming Engine Models O-320, IO-320, LIO-320, O-360, IO-360, TO-360, O-540, IO-540, TIO-540. These engines are installed on, but not limited to the following Aircraft: Piper PA-28R-201T, PA-28-RT-201T, PA-28-201T series; PA-34-200, PA-34-200T series; PA-30 and -39 series; Mooney M-20A thru K series; Lake LA-4, LA-4A and LA-200 Series.

Requirement: PART 1: Inspect the engine turbocharger exhaust systems and determine whether or not the turbine housing Rajay P/N TC-60-11 or Rajay P/N 600510, 600510-01, 600510-02 or TCM P/N 643930 of turbocharger model 325E10 or 3AT6EE10J2 is installed.

PART 2: If any of the part numbers listed in Part 1 are installed, or if the turbine housing part number cannot be determined, carry out the following inspections:

- (a) Remove the turbocharger turbine housing exhaust coupling V-Band and tailpipes (see Figure 1).
- (b) Visually inspect the turbocharger turbine housing for cracks using a dye penetrant inspection method.

Note: The suspect area can be viewed through the exhaust port to ascertain possible presence of cracks penetrating through the outer wall as shown in Figure 2.

- (c) Inspect coupling V-Band clamp for cracks by spreading the band segments and checking for failed spot welds and for indication of exhaust flanges bottoming in coupling V-Band (see Figure 1) and clamp bolt for bending, overstress, thread damage, and cracks (see Figure 1).
- (d) Inspect turbochargers and tailpipe flanges for cracks and distortion (see Figure 1). Remove all carbon deposits from mating flanges before reassembly.
- (e) Inspect mating area of turbocharger exhaust flange to exhaust tailpipe connection for proper mating of surfaces.

SCHEDULE OF AIRWORTHINESS DIRECTIVES

- (f) Inspect engine mount for indication of overheating, warpage, and corrosion, or rust. Repair as required.
- (g) If during inspection required by paragraph (b), an internal crack is found that either exceeds the limit shown in Figure 2, View 1 or 2, or a crack penetrates the outer wall of a turbine housing as shown in Figure 2, View 3, the existing turbine housing must be removed from service and replaced with a serviceable turbine housing prior to the next flight.
- (h) If during the inspections required by paragraphs (c) through (f), cracked, distorted, or otherwise damaged parts, components, or assemblies are found, before further flight repair or replace with serviceable parts, components and assemblies of the same part number.

Note: FAA AD 82-27-03 refers.

Compliance: PART 1: Within 50 hours time in service after 31 March 1983.

PART 2: Before further flight after compliance with Part 1 of this Directive and thereafter at intervals of 200 hours time in service.

The inspections required by this Directive may be discontinued when the turbine housing is replaced with a Roto-master P/No. 600510-04 (TCM P/N 643931).

Background: To prevent the possibility of a fire in the powerplant nacelle and/or heat damage to the powerplant installation caused by the engine exhaust gases escaping through a cracked turbocharger turbine housing.

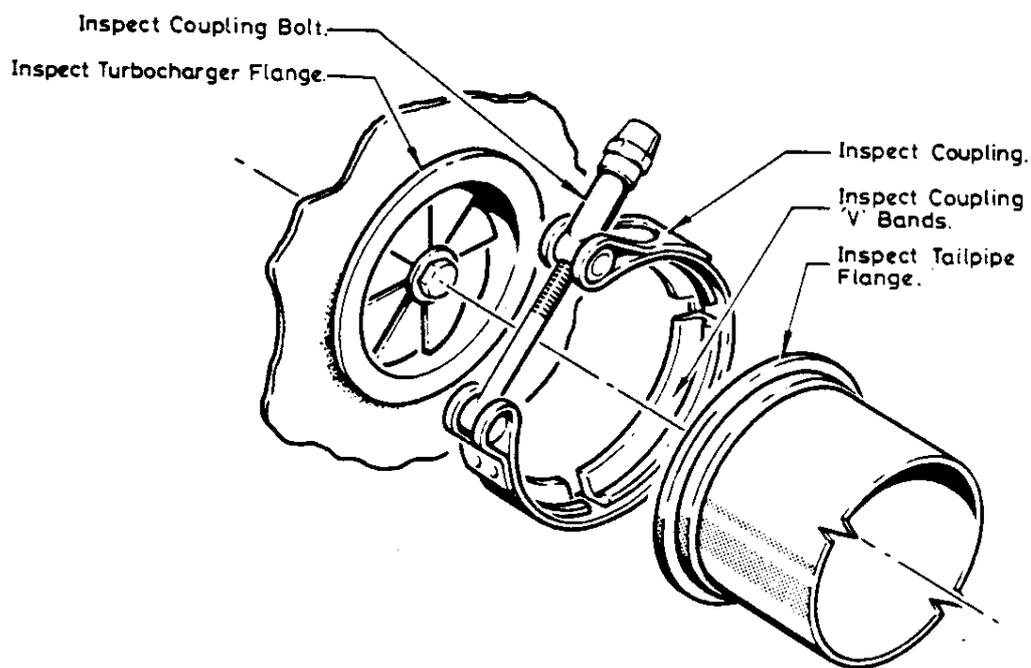
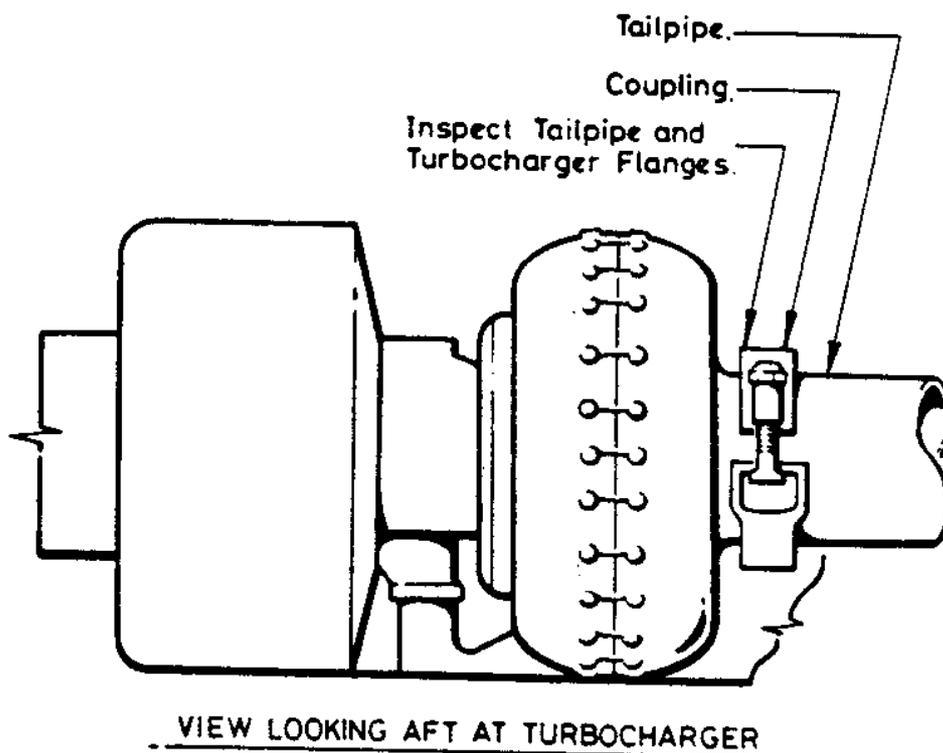


Figure 1.

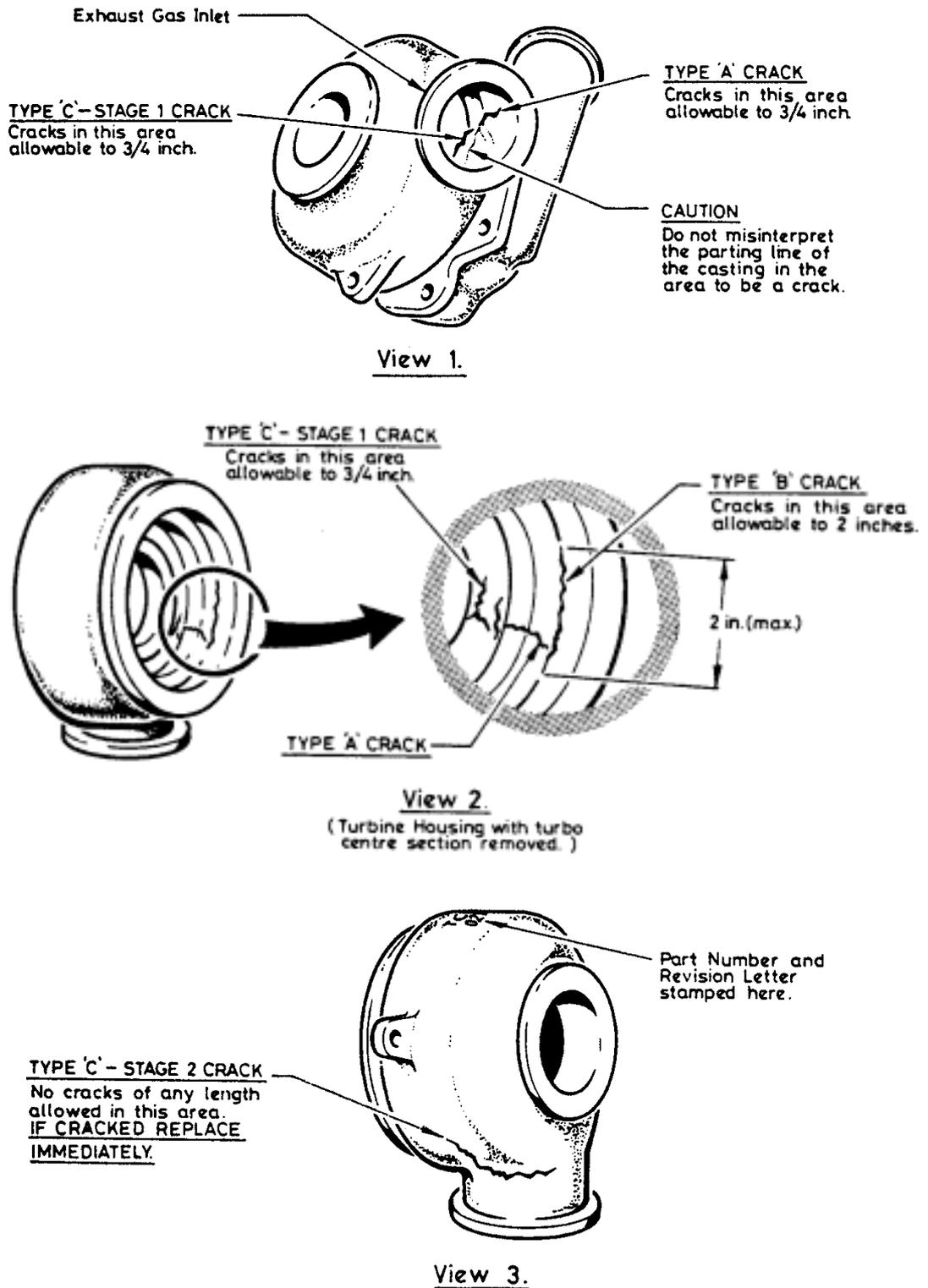


Figure 2. - TURBINE HOUSING - INTERNAL CRACKS.