

United States of America
Department of Transportation -- Federal Aviation Administration
Supplemental Type Certificate
Number SE96SO

This certificate issued to RAJAY Parts LLC
10 Harbor Island Drive
Key Largo, Florida 33037

certifies that the change in the type design for the following product with the limitations and conditions therefore as specified hereon meets the airworthiness requirements of Part 13 of the Civil Air Regulations.
Dated June 15, 1956

Original Product--Type Certificate Number 3E1
Make : Continental-Teledyne
Model : IO-470-D, E, M, N, S, U, and V

Description of Type Design Change: Installation of two (2) Roto-Master Turbochargers Model 3DT5FF10J2, P/N 600572-00 (formerly Rajay Model 315F10, P/N RJ0080-102) on Continental-Teledyne engine models listed above in accordance with FAA sealed Roto-Master (formerly Rajay) Drawing No. R00404, dated April 4, 1963 and Revision C, dated January 25, 1979 or later FAA approved revision.

This STC establishes the eligibility of the engines listed for operation with the Roto-Master turbochargers in accordance with the engine operation limitations specified.

Limitations and Conditions: This approval should not be extended to other specific engines of this model on which other previously approved modifications are incorporated unless it is determined that the interrelationship between this change and any of those others previously approved modifications will introduce no adverse effect upon the airworthiness of that engine. This approval covers engine turbocharger compatibility only. A copy of this STC must be included in the permanent records of each engine modified in accordance with this STC. See page 3 for engine operation limitations.

This certificate and the supporting data which is the basis for approval shall remain in effect until surrendered, suspended, revoked or a termination date is otherwise established by the Administrator of the Federal Aviation Administration.

Date of application : October 21, 1963

Date of issuance : March 31, 1964

Date reissued : Jan. 14, 1969; Feb. 10, 1982;
Oct. 30, 1987; Sept. 22, 1995;
Nov. 14, 2003; June 26, 2006

Date amended : May 27, 1966; July 27, 1971;
Feb. 6, 1979; July 15, 1983

By direction of the Administrator



(Signature)
Melvin D. Taylor, Manager
Atlanta Aircraft Certification Office

(Title)
Any alteration of this certificate is punishable by a fine of not exceeding \$1,000, or imprisonment not exceeding 3 years, or both.
This certificate may be transferred in accordance with FAR 21.47.

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ENGINE OPERATING LIMITATIONS

Where applicable, the following engine limitations supersede those specified on Engine Type Certificate Data Sheet 3E1 as applicable:

Engine Speed (Turbocharged)

	Manifold Pressure		Engine Speed
Takeoff	29.5" Hg.A	-	2625 RPM (5 minutes)
Max. Cont.	27.0" Hg.A	-	2500 RPM

- No fuel mixture leaning allowed at and above 75% of takeoff power.

NOTE To extend the maximum continuous power of the engine throughout the altitude envelope (Sea Level to 25,000 feet), an engine fuel boost pump may be required. This boost pump must be capable of delivering 100% of fuel flow required to produce maximum continuous power of the engine and within the -2 psi to +10 psi pressure limits at the inlet to the engine driven fuel pump.

Fuel: Minimum grade Aviation gasoline 100/130

Altitude: Maximum operating altitude - 25,000 MSL (Density)

ENGINE AND TURBOCHARGER OPERATION:

- Do not operate the turbochargers unless the throttle is wide open.
- When increasing power, fully open the throttle, then slowly close the waste-gate until the desired manifold pressure is obtained.
- When decreasing power, fully open wastegate, then close throttle.

CAUTION: During turbocharger mode of operation at high altitude, selection of idle power by closing the throttle will result in unstable engine operating and/or power loss. Appropriate engine operation procedures or system design to prevent this must be established as part of the aircraft certification.

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SUPPLEMENTAL TYPE CERTIFICATE SE96SO

ADDENDUM

This approval covers engine-turbocharger compatibility only. For power limitations with this installation, refer to Roto-Master Drawing R00404. The approval of this change in type design applies basically to IO-470-D, E, M, N, S, U engines only. This approval should not be extended to other engines of the model on which other previously approved modifications are incorporated unless it is determined by the installer that the interrelationship between this change and any of those other previously approved modifications will introduce no adverse effects upon the airworthiness of that engine. This determination should include consideration of significant changes in weight distribution such as an increase in the fixed disposable weight in the aircraft fuselage.