

United States of America  
Department of Transportation -- Federal Aviation Administration  
**Supplemental Type Certificate**  
*Number* SE4-1638

*This certificate issued to* RAYJAY 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.*

*Original Product--Type Certificate Number* 274  
*Make :* Lycoming  
*Model :* O-320-A and -B Series

*Description of Type Design Change:* Installation of one Roto-Master Turbocharger Model No. 3DT5FF10J2, P/N 600572-00 (formerly Rajay Model No. 315F10 P/N RJ0080-100, -101, or -102) in accordance with FAA sealed Roto-Master (formerly Rajay) Drawing List RJ0199, Revision "A", dated 5/24/83 or later, FAA approved revision.

*Limitations and Conditions* This approval covers engine/turbocharger compatibility only. See page 3 for Engine Operating Limitations. This approval should not be extended to other engines of this 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 produce no adverse affect upon the airworthiness of that engine. If the holder agrees to permit another person to use this certificate to alter the product, the holder shall give the other person written evidence of that permission.

*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 :* February 2, 1959

*Date of issuance:* December 5, 1961

*Date reissued:* : Jan. 6, 1964; Jan. 14, 1969; Feb. 10, 1982  
Oct. 30, 1987; Sept. 22, 1995; Jan. 16, 2004;  
June 26, 2006

*Date amended :* May 1, 1962; July 15, 1983



*By direction of the Administrator*

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

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(Title)

Any alteration of this certificate is punishable by a fine of not exceeding \$1,000, or imprisonment not exceeding 3 years, or both.

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# Supplemental Type Certificate

(Continuation Sheet)

Number SE4-1638

## ENGINE OPERATING LIMITATIONS

Where applicable, the following engine limitations supersede those specified on Engine Type Certificate Data Sheet E-274-7.

### Engine Speed (Turbosupercharged)

Maximum - 2400 RPM  
Minimum - 2200 RPM

### Manifold Pressure (Turbosupercharged)

Maximum - 28.0 in. Hg.

### Cylinder head temperature (Maximum)

Unsupercharged - 500 deg. F.  
Turbosupercharged - 475 deg. F.

### Fuel

Model O-320-A - minimum grade aviation - 91/96 octane  
Model O-320-B - minimum grade aviation - 100/130 octane

### Altitude

Maximum - 20,000 ft.  
Minimum - 5,000 ft.

### Fuel pressure

Green arc .5 psi to 5.0 psi with red lines at .5 psi and 5.0 psi.  
Additional green arcs from 1 psi to 13 psi with red lines at 1 psi and 13 psi with note "Turbo Range See Placard".

### Engine and Turbocharger Operation

Do not operate the turbosupercharger unless the throttle is wide open. When increasing power, fully open the throttle, then slowly close the wastegate until desired power setting is obtained. When decreasing power, fully open wastegate, then close the throttle. The mixture control must be in full rich position for all turbosupercharged operation.

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