

»» Service Letter

Technical Aspects are FAA Approved

Number: L85-05A

Replaces ServL 85-005

Date: 07/13/2004

Subject: Grinding of 0-235 cylinders to .010 oversize.

Application: Lycoming Engines 0-235 – K, L, M, N and P Series

Compliance: At time of engine overhaul.

Superior Air Parts Inc., is now supplying pistons and piston rings for the above referenced 0-235 engines in .010 oversize. These parts will facilitate the regrounding of nitrided cylinder barrels on these engines to the .010 oversize as an alternative to chrome plating or rebarreling. This procedure is approved by the FAA under STC SE5945SW.

Inspection:

Measure the cylinder barrel to determine if the barrel can be cleaned up at the .010 oversize. Measured at the maximum point of barrel wear, .002 per side (a total of .004 on the diameter) must be allowed for clean up.

Regrounding:

Several manufacturers provide grinding and/or honing equipment for the reconditioning of aircraft cylinder barrels in the field. Follow the recommendations of the manufacturer of your specific equipment as to holding fixtures, grit, speed and coolant necessary to [produce the surface finish, crosshatch and choke profile specifications listed below. (See figure 1 for illustration). The grinding and/or honing must be accomplished at a Federal Aviation Administration approved facility.

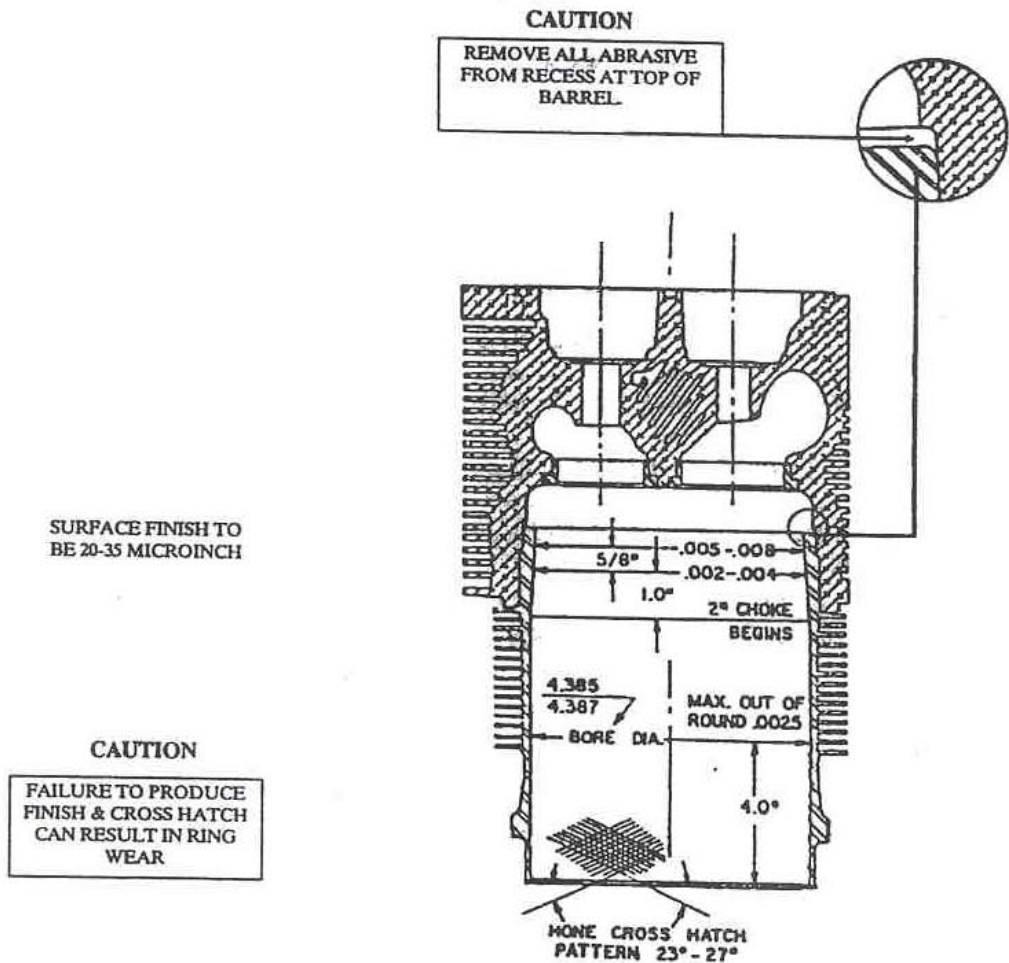


Figure 1

NOTE: CHOKE DETAILS NOT TO SCALE AND ENLARGED FOR VISUAL CLARITY.

Note: Surface finish should be 20-35 micro inch. Hone crosshatch pattern should be 23-27 degrees. Failure to produce proper finish and crosshatch can result in improper ring seating or excessive ring wear.

Cleaning:

After the grinding and honing process is complete, wipe as much of the abrasive residue from the barrel as possible. Use a hooked tool to loosen any abrasive build-up in the recess formed where the top of the cylinder barrel meets the cylinder head. This procedure should be repeated each time you flush the cylinder.

Note; All abrasive residue must be removed from the recess formed where the top of the cylinder barrel joins the cylinder head.

Next, flush the Cylinder barrel using Varsol (or equivalent solvent) under air pressure. Use a soft (not wire) bristle brush to remove all abrasive residue from barrel and recesses.

After cleaning, the cylinder should be thoroughly oiled to prevent rusting.

Identification:

Identify cylinders after grinding to .010 oversize with green paint on the cylinder head fins below the spark plug hole and between push rods.

Piston and Piston Ring Information

Piston	Ring Number	Location	End Gap	Side Clearance
SL18729 P10	SL78862 P10	Top Compression	.045-.055*	.0025-.0055L
	SL78862 P10	Second Compression	.045-.055*	.000-.004L
	SL78864 P10	Oil Control	.015-.030	.002-.004L

- * Note: 1. End gap at top of ring travel must not be less than .0075 inch.
2. Maximum clearance between piston skirt and cylinder wall .018L.

WARNING:

Because of weigh differences, the SL18729 P10 and SL13623 P10 piston should be installed in complete sets, only.

United States of America
Department of Transportation — Federal Aviation Administration
Supplemental Type Certificate

Number SE5945SW

This certificate, issued to Superior Air Parts, Inc.
15050 Beltwood Parkway East
Addison, Texas 75001

certifies that the change in the type design for the following product with the limitations and conditions thereof as specified herein meets the airworthiness requirements of Part 13 of the Civil Air Regulations.

Original Product — Type Certificate Number: E-223

Make: Avco Lycoming

Model: O-235-K, L, M, N, P Series

Description of Type Design Change:

Grind nitrided choked engine cylinders .010" oversize and install .010" oversize pistons and rings as specified in Superior Air Parts Service Letter No. 85-005 dated June 18, 1985, or later FAA approved revision.

Limitations and Conditions:

Compatibility of this modification with other previously approved modifications must be determined by the installer.

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

Date of application: May 30, 1985

Date issued:

Date of issuance: June 18, 1985

Date amended:



By direction of the Administrator

for Don P. Watson (Signature)
Manager, Aircraft Certification Division
Southwest Region
(Title)

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

FAA Form 8110-2 (10-68)

This certificate may be transferred in accordance with FAR 21.67.