SUPERIOR AIR PARTS, INC

Service Letter

Technical Aspects are FAA Approved

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INITIAL RELEASE

Date: 06/17/2004

Subject: Superior PMA replacement Piston Ring gap information for Lycoming engines with choked steel or nitrided cylinder bores or chrome plated cylinder bores.

Engine Application:

Make	Models
Lycoming	235, 320, 340, 360, 480, 540, 541 and 720 Series

Compliance: Any time new Superior piston rings are installed

Superior Piston Rings:

The applicable engine models, when equipped with choked steel or nitrided bore cylinders and three ring pistons, use the following piston ring part numbers:

Engine Models	Ring Part Numbers and Location
235 Series (Except O-235-C Series)	SL78862 - Top Compression Ring SL78862 - Second Compression Ring SL78864 - Oil Control Ring
320, 340, 360, 480, 540, 541 and 720 Series	SL74241A - Top Compression Ring SL74241A - Second Compression Ring SL73857A - Oil Control Ring

Note: These rings also are available in plus .010 oversize. The ring gap data in this document applies to both standard and plus .010 Superior piston rings.

The applicable engine models, when equipped with chrome plated bore cylinders and three ring pistons, use the following piston part numbers.

Engine Models	Ring Part Numbers and Location
235 Series (Except O-235-C Series)	SL14234 - Top Compression Ring SL14234- Second Compression Ring SL14235 - Oil Control Ring
320, 340, 360, 480, 540, 541 and 720 Series	SL74673A - Top Compression Ring SL74673A - Second Compression Ring SL73998A - Oil Control Ring

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Piston Ring Gaps:
The table below provides the correct gaps for new Superior piston rings when installed in the cylinder bore.

Part No.	Ring Type	Ring Gap.	Maximum-Used Cylinder
SL14234, SL74241A, SL74673A and SL78862	Compression	.045-.055 in.	.067 in.
SL14235, SL73857A, SL73998A and SL78864	Oil Control	.015-.030 in.	.047 in.

The ring should be inserted into the cylinder bore and pushed in to the first 4.0 inches of the barrel, using a piston (Superior recommends measuring the gap at approximately 1.2 inches from the bottom of the cylinder barrel, because the bore is normally most round in the flange area). Always apply a small amount of engine oil to the cylinder bore and ring face before inserting it in the cylinder bore. Use of a piston will assure the ring is square with the cylinder bore. If the ring is not squared up in the bore, erroneous readings will occur. Measure the gap using a feeler gage. The oil control ring gap is measured without the expander spring installed.

Caution: The ring gap must also be measured at the top of the ring travel. Failure to do so may result in engine damage and loss of power. For 235, 320 and 480 series engines, check the compression ring gaps at approximately 6.0 inches from the bottom of the barrel and the oil control ring approximately 5.5 inches from the bottom. For 360, 540, 541 and 720 series engines, check the compression rings at approximately 6.5 inches from the bottom and the oil control ring 6.0 inches from the bottom. **The minimum gap at the top of the ring travel is .0075 inch.** Always gap rings in the same cylinder in which they will be installed**.**

Again, a piston should be used to push the ring to the correct position. A piece of intake coupling hose may be trimmed to length and set into the combustion chamber to stop the piston and ring from accidentally going past the top end of the barrel and becoming lodged in the cylinder. Again, measure the ring gap with a feeler gage.

If a ring gap is below the minimum limit at either the 1.2 to 4.0 location or at the top of the ring travel locations, it must be dressed until the acceptable gap is reached. It is recommended that a ring gap dressing tool be used. These are available from most mechanic tool suppliers. If a file is used for this purpose, care must be exercised to keep the ends of the ring square and true. After dressing the ring gap, break the edges very slightly (.005 inch or less) to remove sharp edges and burrs, using a fine flat file.

Note: Certain cylinders with a large amount of choke may slightly exceed the maximum gap at the 1.2 to 4.0 location when gapped to .0075 at the top of the ring travel.

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