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SERVICE INSTRUCTION

DATE: April 28, 2026

Service Instruction No. 1125E
(Supersedes Service Instruction No. 1125D)
Engineering design data in this service document is FAA approved.

SUBJECT: Alternate Crankcase Parting Surface Sealants

MODELS AFFECTED: All Lycoming opposed cylinder engines.

TIME OF COMPLIANCE: During engine assembly.

REASON FOR REVISION: Reformatted the entire document to include additional approved methods of sealing the crankcase. Inform customers of approved replacements for No. 4 Perfect Seal Sealant. Clarify that "00" silk thread is the correct size of thread to be used. Added approved alternate methods for applying sealant and thread. Updated manufacturer of RTV-102.

NOTICE: Incomplete review of all the information in this document can cause errors. Read the entire Service Instruction to make sure you have a complete understanding of the requirements.

This Service Instruction provides Instructions for Continued Airworthiness (ICA).

This Service Instruction provides Instructions for Continued Airworthiness (ICA) for the acceptable methods of sealing the crankcase halves on Lycoming opposed cylinder engines. The methods and sealants described herein are tested and approved by Lycoming.

The use of a sealant, and "00" silk thread has been used generally for sealing finished parting surfaces that do not employ gaskets. Lycoming is aware that No. 4 Perfect Seal Sealant (also referred to as POB) has been discontinued by its manufacturer. Customers can continue to use No. 4 Perfect Seal until all remaining supplies are consumed. Lycoming has approved both Permatex® Aviation Form-A-Gasket #3, and LOCTITE® 5923 as direct replacements for No. 4 Perfect Seal. Table 1 lists currently available, approved sealants.

NOTICE: This Service Instruction contains methods that differ from previous revisions of SI 1125. There are new options for applying sealant; allowing the use of silk thread with additional approved sealants; and sealing the crankcase halves without silk thread for field service overhaul facilities where trouble may have been experienced in applying a sealant with silk thread. Lycoming has found the use of LOCTITE® 515 or 518 and silk thread to be the preferred method, but field service facilities may choose to use any of the approved methods contained in this instruction.

⚠ **CAUTION** ONLY LYCOMING APPROVED SEALANTS ARE TO BE USED IN THIS APPLICATION. USE OF ANY OTHER NON-APPROVED SEALANT COULD RESULT IN A LOSS OF CLAMPING FORCE AND/OR TORQUE, WHICH WILL RENDER THE ENGINE UNAIRWORTHY.

Table 1 - Lycoming Approved Sealants

LOCTITE® 515 LOCTITE® 518 LOCTITE® SF 7649 (Primer) LOCTITE® 5923	Permatex® Aviation Form-A-Gasket #3	RTV-102®	"00" Silk Thread
Henkel Loctite Corp. 1001 Trout Brook Crossing Rocky Hill, CT 06067 Website: www.loctite.com	Permatex Inc. (HQ) 6875 Parkland Blvd, Solon, OH 44139 Website: www.Permatex.com	Momentive® Performance Materials 2750 Balltown Road Niskayuna, NY 12309 Website: www.momentive.com	Any commercial grade "00" silk thread is acceptable, from any supplier.

Figures 1 and 2 - Sealing of crankcase parting surfaces with LOCTITE® 515 or 518 sealant and silk thread applied per the Recommended Method or Options A and B are as follows:

NOTICE: The use of LOCTITE® SF 7649 primer with LOCTITE® 515 or 518 is recommended as it promotes better adhesion on aluminum parts. Refer to the LOCTITE® TDS for Directions for use.

Ensure the crankcase parting faces are cleaned with a de-greasing cleaner, and dry. As shown in Figure 1, apply a film of LOCTITE® 515 or 518 on both halves of the crankcase. The film must be uniform. Visibly, where sealant is properly applied, it will produce a wet appearance on the machined surface. If it does not have a wet appearance, reapply. Be certain to wipe clean all inner edges of any excess sealant. Also, be certain that no sealant has come in contact with the bolt holes or any surface other than the shaded areas shown in Figure 1.

After sealant is properly applied, run two lengths of "00" silk thread on only one of the crankcase halves inside of the bolt holes without touching together and press firmly into sealant to keep thread in place. Any commercial grade of No. "00" silk thread is acceptable.

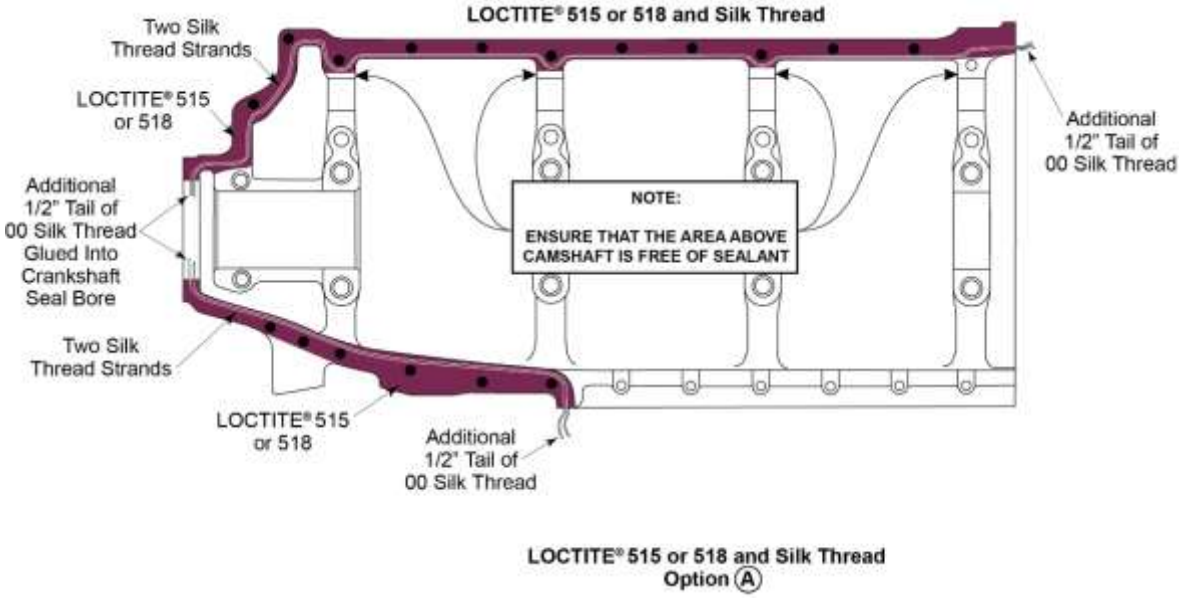

Figure 1
LOCTITE® 515 or 518 and Silk Thread - Recommended

See Figure 2 for Options A and B for thread locations when using LOCTITE® 515 or 518 and silk thread together.

Options A and B

NOTICE: The use of LOCTITE® SF 7649 primer with LOCTITE® 515 or 518 is recommended as it promotes better adhesion on aluminum parts. Refer to the LOCTITE® TDS for Directions for use.

After sealant is properly applied, run two lengths of "00" silk thread to the bottom of the crankcase (Figure 1) on only one of the crankcase halves inside of the bolt holes without touching together and press firmly into sealant to keep thread in place. Apply a single length of "00" silk thread to the top of the crankcase (Figure 2) on only one of the crankcase halves inside of the bolt holes and press firmly into sealant to keep thread in place or as shown in the Option B Detail, the silk thread can be looped around the front nose bolt hole.

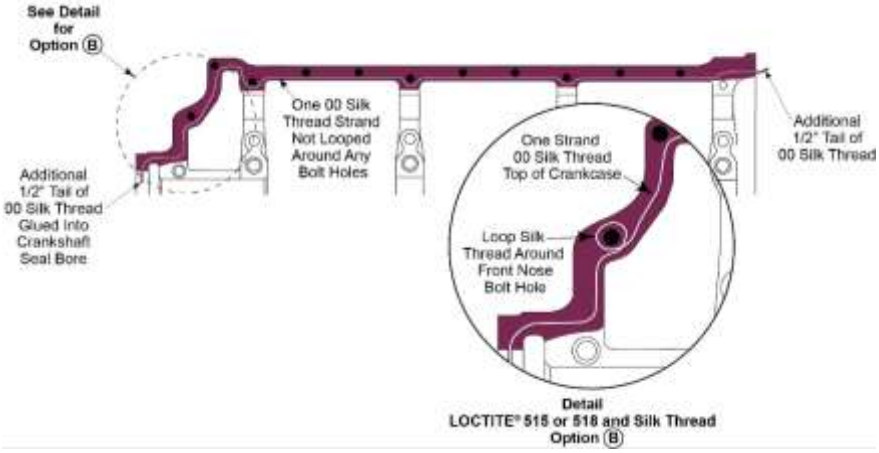

Figure 2
LOCTITE® 515 or 518 and Silk Thread – Options A and B

Figure 3 - Sealing of crankcase parting surfaces with No. 4 Perfect Seal, Permatex® Aviation Form-A-Gasket #3, or LOCTITE® 5923 and "00" silk thread is as follows:

Ensure the crankcase parting faces are cleaned with a de-greasing cleaner, and dry. On the outside mating surfaces, as shown in Figure 3, apply a film of sealant on only one half of the crankcase. The film must be uniform. No build-up is permissible. Visibly, where sealant is properly applied, it will produce a wet appearance on the machined surface. If it does not have a wet appearance, reapply. Note that this sealant is used primarily to hold the "00" silk thread in place. Be certain to wipe clean all inner edges of any excess sealant. Also, be certain that no sealant has come in contact with the bolt holes or any surface other than the shaded areas shown in Figure 3.

After sealant is properly applied, run two lengths of "00" silk thread on the inside of the bolt holes without touching together and press firmly into sealant to keep thread in place. Any commercial grade of No. "00" silk thread is acceptable.

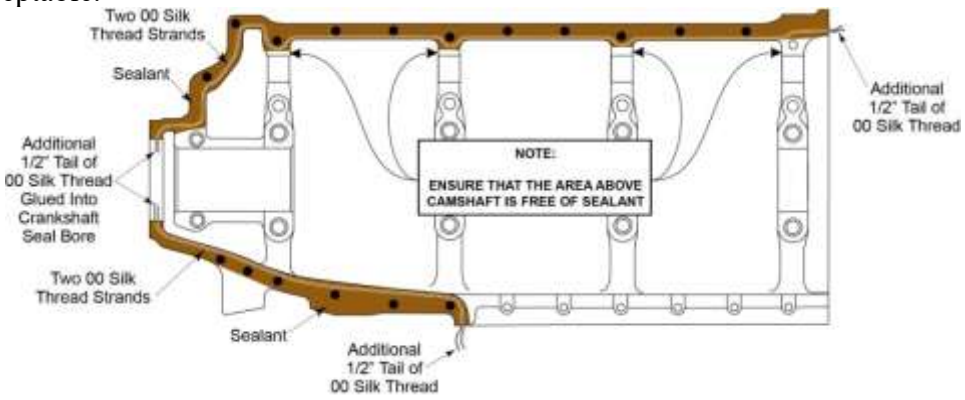

Figure 3
No. 4 Perfect Seal, Permatex® Aviation Form-A-Gasket #3, or LOCTITE® 5923 and "00" Silk Thread

Figure 4 - Sealing of crankcase parting surfaces with LOCTITE® 515, 518, or RTV-102 sealant without silk thread is as follows:

Ensure the crankcase parting faces are cleaned with a de-greasing cleaner, and dry. On the outside mating surfaces.

NOTICE: The use of LOCTITE® SF 7649 primer with LOCTITE® 515 or 518 is recommended as it promotes better adhesion on aluminum parts. Refer to the LOCTITE® TDS for Directions for use.

LOCTITE 515 or 518 - As shown in Figure 4, apply a film of sealant on both halves of the crankcase. The film must be uniform. Visibly, where sealant is properly applied, it will produce a wet appearance on the machined surface. If it does not have a wet appearance, reapply. Be certain to wipe clean all inner edges of any excess sealant. Also, be certain that no sealant has come in contact with the bolt holes or any surface other than the shaded areas shown in Figure 4.

RTV-102 - As shown in Figure 4, apply a film of sealant on only one half of the crankcase. The film must be uniform. No build-up is permissible. Be certain to wipe clean all inner edges of any excess sealant. Also, be certain that no sealant has come in contact with the bolt holes or any surface other than the shaded areas shown in Figure 4.

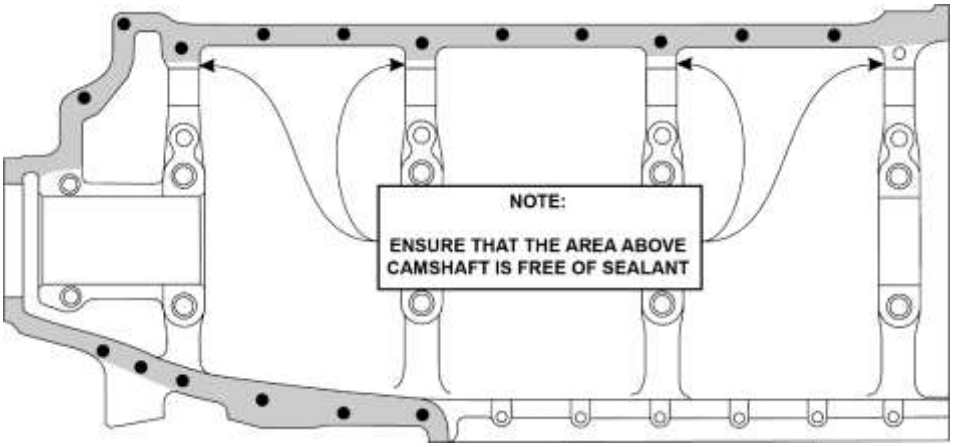

Figure 4
LOCTITE® 515, 518 or RTV-102 Sealant Without Silk Thread