

**CANADIAN AERO MANUFACTURING**  
**INSTRUCTIONS FOR CONTINUING AIRWORTHINESS OIL PUMP**  
**ASSEMBLY, Part Numbers CAM18109-1, CAM18110-1, CAM61174,**  
**CAM78528 and CAM78531**  
 CI-09-01 Revision: F Issue Date: May 28, 2003 Print Date: 28/05/03 Page 1 of 1

This ICA is Transport Canada Accepted

**RECORD OF REVISIONS**

Revision	Effective date for new revision	Date of withdrawal of previous revision	Person making revision	Organization
F	May 28, 2003	N/A	Ron Newburg	CAM
5	Jan. 29, 2003	N/A	Ron Newburg	CAM
4	May 7, 2002	N/A	Jim Watson	CAM
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## 1. INTRODUCTION:

1.1 The Canadian Aero Manufacturing Oil Pump Assembly for Lycoming engines is comprised of the following parts: Impellers CAM18109-1-1, CAM18110-1-1, Impeller Drive Shaft CAM61174, and Pump Bodies CAM78528 or CAM78531. These parts are direct replacement parts for all of the Lycoming engines listed on the accompanying applicability listing.

1.2 This ICA describes the installation and required maintenance elements. All CAM Oil Pump Assemblies are currently manufactured as per Canadian Aero Manufacturing PDA00-17, issue # 2 or later approved revisions.

1.3 Distribution of this ICA is accomplished at the time of sale of a CAM Oil Pump Assembly. This ICA is also available via the CAM website. Should there be a revision, the latest version will be available on the CAM website.

1.5 Revisions of this ICA are done by entire replacement only. All pages are at the same revision status, and are in effect as shown in the Header.

## 2. ELIGIBILITY:

2.1 This replacement Oil Pump Assembly may be installed on the engines as per CAM Document No. CA-09-01 (Rev: E) or latest revision.

## 3. INSTALLATION:

3.1 The following instructions may be used with respect to the complete assembly, or certain combination of parts approved under this PDA. If only some CAM parts are being installed, as opposed to the entire CAM Oil Pump Assembly, the installer should use the instructions in their entirety, substituting the non-CAM parts into the appropriate places in the instructions. These parts are installed in the same manner as the Lycoming originals.

**IMPORTANT: The Impellers CAM18109-1& CAM18110-1 must be replaced as a pair only, meshing one CAM Impeller with any other source Impeller is not permitted.**

3.2 Installation of the CAM Oil Pump Assembly is accomplished in exactly the same way as the oil pump body it is replacing. Following steps should be adopted :

- Unpack and inspect the CAM Oil Pump Assembly parts for shipping damage.
- Identify the CAM parts included in your shipment. The possible parts are: Impellers CAM18109-1, CAM18110-1, Impeller Drive Shaft CAM61174, and Pump Bodies CAM78528, or CAM78531. The Impellers and Impeller Drive Shaft are approved for use in either of the CAM78528, CAM78531, or Lycoming 78528, or 78531 Oil Pump Bodies. The CAM78528 and CAM78531 Oil Pump Bodies, however, must be used as identified on the CAM Applicability List for that part. Note: Other PMA approved Impellers may have been substituted in your shipment, they are to be installed as per these instructions.

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- Confirm that the CAM supplied and/or Lycoming oil pump parts intended for installation, are approved for use on that specific engine model.
- Follow all of the procedures outlined in the Lycoming Overhaul Manual, and any Service Bulletins or AD's applicable to the engine upon which installation is undertaken. In particular Lycoming Service Instruction No.1341 of July 30 1976 must have been accomplished. If an oil pump body with a stationary (pinned) idler impeller shaft has been removed, the engine will be affected. The Service Instruction provides information for drilling an extra lubricating hole connecting the oil cavity between the two impellers to the idle impeller shaft bore in the accessory case. If a 1/8" diameter hole is visible in this location, the engine is compliant.

USE OF THE CAM REPLACEMENT OIL PUMP IMPELLERS  
WITHOUT THIS IDLE SHAFT LUBRICATION WILL RESULT IN  
IMPELLER SEIZURE AND ENGINE FAILURE.

- Prior to attaching the oil pump body to the inside of the rear case, inspect all of the fits and clearances with reference to the accompanying table of limits for new and serviceable parts. Once satisfied that the fits are all correct, remove, lubricate, and replace the parts and test fit to the rear case. Lubricate using a suitable assembly grease to ensure that the pump parts get adequate lubrication at first start up.
- PUMP BODY FINAL POSITIONING, VERY IMPORTANT: Following the test fitting of the impellers, drive shaft, and pump body to the engine accessory case, but prior to final torquing, perform the following: With the nuts finger tight, or slightly torqued, spin the drive shaft and impellers by hand in both directions to ensure they spin freely. With the assembly grease coating the parts, they will not "coast down" as they might if dry, but you are trying to ensure that there is no binding. Although CAM oil pump bodies are made with a impeller center to center distance controlled to within .001", Lycoming accessory cases have been found with center distances differing .003" from one to the next. ANY binding or friction will require slightly repositioning the oil pump body. Repeat this step until it is possible to spin the impellers freely. Once a suitable position is found torque the three nuts to the prescribed value. CHECK AGAIN that the impellers still spin freely, final torquing can pinch them. DO NOT use any power tool to turn the drive and do not attempt to "break in" the impellers and drive shaft by spinning at high speed. If it is not possible to position the body so that finger force is sufficient to freely spin the drive and impellers.
- Following installation, ensure that the appropriate log entries are made, and that this Instruction sheet is kept with the logs for continued airworthiness instructions.

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- Pre-oiling the internal engine parts prior to the first start, is highly recommended. This will reduce the chance of damage caused by a dry start. The oil pump, even worn to service limits, is very effective, and turning it over, even by hand, with a source of oil, will result in a substantial flow of oil.
- Prior to engine start, ensure that the engine is filled to the proper level with the correct grade of aviation piston engine oil.
- Positively ensure that within 30 seconds of the first engine start, there is adequate oil pressure, and,
- Ensure that there is adequate oil pressure prior to and during each flight.

#### **4. CONTINUING AIRWORTHINESS INSTRUCTIONS:**

4.1 The CAM Oil Pump Assembly is installed and maintained in the same way as described in the applicable Lycoming publications for that engine model. There are no additional procedures to be followed by the maintainer or the operator.

4.2 As would be the case with any aircraft engine, the operator is strongly warned to confirm that:

- the oil grade, temperature and quantity are adequate prior to starting the engine, and,
- the oil pressure and temperature are within the proper limits prior to accelerating the engine to takeoff power, and remain so during the operation of the engine.

4.3 Canadian Aero Manufacturing further recommends frequent oil and filter changes as the front line protection against premature engine wear and damage, resulting from contamination of the oil system.

Note: Any questions regarding the sleeve should be addressed to Canadian Aero Manufacturing, 2648 Ego Side road, Orillia, Ontario, Canada L3V 6H3; Tel # (705) 326 1368.

Residents of USA may call for assistance to Niagara Air Parts, Inc., 9900 Porter Road, Niagara Falls, New York, USA 14304; Tel. # (800) 565 4268.

The preceding constitutes the entire ICA for Canadian Aero Manufacturing Sleeves.

**E N D**