

No: 000358

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By: FLC Date: 02-08-84 Page: 1 of 1

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Subject: EXHAUST SNUBBER KIT  
AVAILABLE FOR EAGLE II  
AIRCRAFT

The exhaust system on the Eagle II aircraft is composed of stainless steel welded tubular assemblies which are bolted to the engine cylinders and which attach to each other with clamp-type telescoping joints. The joints allow limited movement between the assembly sections. This movement reduces the transmission of engine-induced vibration which flexes the exhaust system parts and may cause metal fatigue and eventual cracking.

Although the original Eagle II jointed exhaust system was effective in reducing exhaust system fatigue, several early Eagle II owners experienced cracking of the exhaust assemblies in the area of the rear Y-joints. Reinforcement gussets were added to the Y-joint areas and this reduced the cracking significantly; however, cracking still occurs occasionally in cases where engine-induced vibration is greater than usual, or where the vibration pattern tends to focus in the exhaust area of the airframe.

To eliminate the cracking problem, an exhaust snubber kit has been developed and tested. It is composed of a temperature resistant silicone rubber strap which loosely ties the exhaust tubes to the aircraft firewall with universally adjustable stainless steel hardware. The strap dampens vibration in the exhaust tubes and limits their movement. The snubber system is depicted in the enclosed Engineering Sketch X-90179.

The snubber system is available as a kit for retrofit to existing Eagle II aircraft. Prepaid orders are being accepted now for deliveries to be made via UPS freight collect in April, 1984. Beginning in May, 1984, the 918 Engine Equipment Kit will include the snubber parts at an adjusted price.

We encourage all Eagle II owners to purchase and install the exhaust snubber kit to prevent exhaust cracking problems, particularly if the new 918-HT Heater Kit has been installed. Following is price information:

918-SN EXHAUST SNUBBER KIT  
918-SN CRATING CHARGE

ENCLOSURE: ENGINEERING SKETCH X-90179

# AVCO LYCOMING DIVISION

WILLIAMSPORT, PENNSYLVANIA 17701

## Service Bulletin



DATE: January 6, 1984

Service Bulletin No. 465A  
(Supersedes Service Bulletin No. 465)  
Engineering Aspects are  
FAA Approved

SUBJECT: Crankshaft Flange Inspection for Aerobatic Engines

MODELS AFFECTED: AIO-360-A1A, -A2A, -A1B, -A2B, -B1B with Serial Nos. up to and including L-257-63A.  
AEIO-360-A1A, -A1B, -A1B6, -A2A, -A1C, -A2C, -A1D, -A1E, -A2B, -B1B, -B1D, -B1F, -B1F6, -B2F, -B2F6, -B4A, -H1A with Serial Nos. up to and including L-23521-51A.

Remanufactured engines of these models shipped before June 1, 1983. Engine models above the affected serial number and remanufactured engines shipped on or after June 1, 1983 incorporate a redesigned crankshaft and are not subject to this bulletin.

TIME OF COMPLIANCE:

Procedure I

Visually inspect within next 25 hours of operation and every 25 hours thereafter. Logbook entry must be made upon completion of this procedure.

O R

Procedure II

Magnaflux within next 25 hours of operation and every 100 hours thereafter. Logbook entry must be made upon completion of this procedure.

O R

Procedure III

1. Remove engine from aircraft and disassemble per applicable overhaul manual.
2. Install new redesigned crankshaft and reassemble engine in accordance with applicable overhaul manual.

NOTE: Table 1 lists applicable crankshaft part numbers.

3. Make logbook entry.

NOTE: The initial inspections must be performed as directed. However, if no subsequent aerobatic maneuvers are practiced, additional inspections are not required. If any subsequent aerobatic maneuvers are practiced, inspection is required in accordance with the above "TIME OF COMPLIANCE."

**NOTE**

In order to ascertain that there is no residual magnetism remaining in the flange, perform the following test as depicted in Figure 3. Hang one steel paper clip from another paper clip; hold 1/8 inch from flange. If any movement of hanging paper clip is detected toward flange, repeat demagnetization procedure in step 8. Repeat paper clip test until satisfied that no magnetism of the flange is present.

9. Remove magnaflux solution from crankshaft by flushing with kerosene or other suitable solvent.

10. Reinstall all removed parts in the reverse order of removal.

**NOTE**

All propeller mounting bolts must be reinstalled, torqued and safety wired per the propeller manufacturer's instructions.

11. Make a suitable logbook entry for this inspection.

Magnaflux Corporation has the following locations through the United States that are fully equipped and staffed to perform the magnetic-particle inspection by appointment.

LOCATION	AREA CODE TELEPHONE	PERSONNEL	LOCATION	AREA CODE TELEPHONE	PERSONNEL
MAIN OFFICE/ Magnaflux Quality Services 7300 W. Lawrence Avenue Chicago, Illinois 60656	(312) 867-8000		ST. LOUIS/ Magnaflux Quality Services 8256 Brentwood Industrial Drive St. Louis, Missouri 63144	(314) 781-3212	T. Hanlon Manager
BUFFALO/ Magnaflux Quality Services 986 Oliver Street N. Tonawanda, New York 14120	(716) 694-3432	A. Talenti, Manager	LITTLE ROCK/ Magnaflux Quality Services 9917 Mann Road Mabelvale, Arkansas 72103	(501) 562-4445	C. Mead, Supervisor
CHICAGO/ Magnaflux Quality Services 2301 Arthur Avenue Elk Grove Village, Illinois 60007	(312) 981-0890	K. Bronder, Manager	LOS ANGELES/ Magnaflux Quality Services 6800 East Washington Blvd. Los Angeles, California 90040	(213) 724-3811	R. Higgins, Sr., Manager
CINCINNATI/ Magnaflux Quality Services 11407 Landon Lane Springdale, Ohio 45246	(513) 771-3292	C. Wood, Manager	MEMPHIS/ Magnaflux Quality Services 650 New York St., P. O. Box 14486 Memphis, Tennessee 38114	(901) 278-2104	T. Hanlon, Manager
CLEVELAND/ Magnaflux Quality Services 5350 Grant Avenue Cleveland, Ohio 44125	(216) 271-1900	W. Gliniski, Manager	MILWAUKEE/ Magnaflux Quality Services 5512 W. State Street Milwaukee, Wisconsin 53208	(414) 771-3060	E. Bielecki, Manager
DENVER/ Magnaflux Quality Services 3390 Peoria Street Aurora, Colorado 80010	(303) 364-1657	D. Culver, Supervisor	MINNEAPOLIS/ Magnaflux Quality Services 1920 Oakcrest Avenue Roseville, Minnesota 55113	(612) 633-7616	D. Olson, Manager
DETROIT/ Magnaflux Quality Services 32063 Townley Avenue Madison Heights, Michigan 48071	(313) 589-1215	S. Morris, Manager	MORGAN CITY/ Magnaflux Quality Services P. O. Box 2085 Morgan City, Louisiana 70380	(504) 384-6202	J. Childers, Manager
HARTFORD/ Magnaflux Quality Services 230 Murphy Road Hartford, Connecticut 06114	(203) 522-3253	F. Schmidt, Manager	NEW ORLEANS/ Magnaflux Quality Services 901 Peters Road Harvey, Louisiana 70059	(504) 362-8884	J. Childers, Manager
HOUSTON/ Magnaflux Quality Services 3741 Trailmobile Drive Houston, Texas 77229	(713) 673-3660	J. Childers, Manager	PHILADELPHIA/ Magnaflux Quality Services Scottsville Industrial 270 Andrews Road Treviso, Pennsylvania 19047	(215) 322-4100	W. Lanagan Manager
INDIANAPOLIS/ Magnaflux Quality Services 5307 W. 86th Street Indianapolis, Indiana 46268	(317) 872-8196	R. Reinholdt, Manager	PHOENIX/ Magnaflux Quality Services 2305 N. 35th Avenue Phoenix, Arizona 85063	(602) 269-7868	R. Higgins, Jr., Manager
JERSEY/ Magnaflux Quality Services 3 Harding Place Little Ferry, New Jersey 07643	(201) 487-8600	G. Youler, Manager	PITTSBURGH/ Magnaflux Quality Services 210 Vista Park Drive Pittsburgh, Pennsylvania 15205	(412) 923-1722	J. Metrovich, Manager

TABLE 2 (Cont.)

HEAVY-WALL BEARING KITS (Cont.)			THIN-WALL BEARING KITS (Cont.)		
KIT P/N LW-19050			KIT P/N LW-LW-19053		
LW-13884	Bearing, Front	2 each	LW-13884	Bearing, Front	2 each
LW-16047	Bearing, Main	4 each	LW-16711	Bearing, Main	4 each
LW-14954	Bearing, Rod	8 each	LW-14954	Bearing, Rod	8 each
74241	Ring, Piston	8 each	74241	Ring, Piston	8 each
73857	Ring, Piston	4 each	73857	Ring, Piston	4 each
75060	Bolt, Con/Rod	8 each	75060	Bolt, Con/Rod	8 each
LW-12186	Nut, Con/Rod	8 each	LW-12186	Nut, Con/Rod	8 each
LW-10964	Seal & Gas/Set	1 each	LW-10964	Seal & Gas/Set	1 each
KIT P/N LW-19051			KIT P/N LW-19054		
LW-13884	Bearing, Front	2 each	LW-13884	Bearing, Front	2 each
LW-16047	Bearing, Main	4 each	LW-16711	Bearing, Main	4 each
LW-13521	Bearing, Rod	8 each	LW-13521	Bearing, Rod	8 each
74241	Ring, Piston	8 each	74241	Ring, Piston	8 each
73857	Ring, Piston	4 each	73857	Ring, Piston	4 each
75061	Bolt, Con/Rod	8 each	75061	Bolt, Con/Rod	8 each
LW-12186	Nut, Con/Rod	8 each	LW-12186	Nut, Con/Rod	8 each
LW-10964	Seal & Gas/Set	1 each	LW-10964	Seal & Gas/Set	1 each

The following AEIO-360-A1A, -A1B6, -B1F, -B2F were manufactured with thin-wall, high-crush bearings:

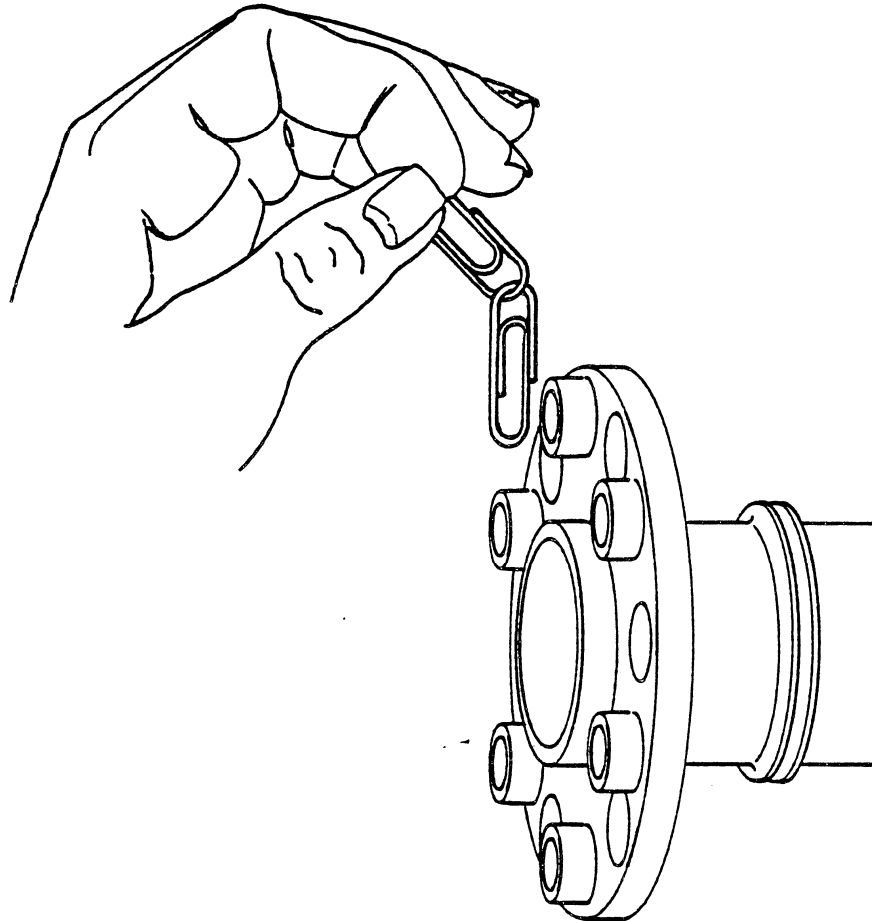
AEIO-360-A1A . . . . S/N L-23393-51A  
 AEIO-360-A1B6 . . . . S/N L-23323-51A  
 AEIO-360-B1F . . . . S/N L-23364-51A, L-23365-51A, L-23556 thru L-23560-51A, L-23577-51A thru L-23586-51A,  
 L-23598-51A thru L-23607-51A.  
 AEIO-360-B2F . . . . S/N L-23281-51A thru L-23291-51A, L-23522-51A, L-23544-51A, L-23545-51A, L-23546-51A,  
 L-23649-51A, L-23650-51A, and L-23651-51A.

Special Exchange Price \$2466.60, plus an additional \$1500.00 deposit. (For Procedure III)  
 F.O.B. Williamsport, PA.

NOTE: This special Crankshaft and Kit price is only available to owners of engines listed on this bulletin by serial number.

WARRANTY INFORMATION : For those operators who are within Avco Lycoming's six (6) month warranty period, all parts are available at no charge through any Avco Lycoming authorized distributor on a crankshaft exchange basis. It is necessary that the kit be ordered. The special adjusted price will be granted upon the acceptance and approval of a properly executed warranty application submitted by the distributor and upon the return of the removed crankshaft. A 33 hour labor assistance for installed engines, and 13 hours for non-installed engines, will be allowed at posted shop rates to complete this modification. Crankshaft assemblies may be returned freight collect.

For those operators who are beyond Avco Lycoming's six (6) month warranty period, parts only will be available at the special price. This special adjusted price will be granted upon the acceptance and approval of a properly executed warranty application submitted by the distributor, and upon the return of the removed crankshaft.



**Figure 3. Test For Determining Residual Magnetism in Propeller Flange**

**NOTE: Revision "A" adds bearing kits, inspection procedures and Magnaflux Inspection Centers.**

**21818, 21818A, 21818B - These numbers for Avco Lycoming reference only.**