



# SLICK

**SL2-94**  
FAA APPROVED

## Service Letter

**TO:** Distributors, Dealers, Engine Overhaul Facilities, Owners and Operators of Slick Aircraft Magnetos.

**SUBJECT:** Conversion from TCM/Bendix to Slick Magnetos.

**BACKGROUND INFORMATION:**

Slick 4333 magnetos and ignition harnesses are FAA/PMA approved on certain Teledyne Continental Motors A-65, A-75, C-75, C-85, and C-90 Series engines originally equipped with Bendix, Eisemann, Case and obsolete Slick magnetos. Slick ignition systems are fully shielded and will allow the use of radios. The original system was not shielded.

This Service Letter provides step-by-step instructions for converting ignition systems to Slick products on these engines.

**COMPLIANCE:** As required.

**PROOF OF COMPLIANCE:**

Appropriate logbook entry. 4333 is FAA/PMA approved and requires no FAA form 337.

**MODELS AFFECTED:**

A-65 -1, -3, -6, -6J, -7, -8, -8F, -8FJ, -8J,  
A-75 -3, -6, -6J, -8, -8F, -8J, -8FJ,  
C-75 -8, -8F, -8FH, -8FHJ, -8FJ, -8J  
C-85 -8, -8F, -8FHJ, -8FJ, -8J  
C-90 -8F, -8FJ

**MAGNETOS AFFECTED:**

Bendix SF4R, S4RN-21, and S4RN-20.  
Case 4-CAMA  
Eisemann AM-4  
Slick 4003, 4103, 4030, 4130, 4230, and 4330.

**MAINTENANCE PARTS AFFECTED:**

None

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MO	DAY	YR	MO	DAY	YR		1 OF 6	NONE
03	01	95	—	—	—			

# SLICK Service Letter

**SL2-94**  
FAA APPROVED

- IX. Secure the Ignition Harness to the Engine
  - A. Secure the ignition harness to the engine and airframe baffling using the mounting hardware enclosed with the harness and/or existing hardware on the engine and aircraft baffling.  
**Caution: Care must be taken not to overtighten harness tie wraps. Overtightening tie wraps can crush lead wires.**
  
- X. Ground Test Ignition System
  - A. Test the ignition system on the ground according to the engine manufacturer's recommended procedures.
  
- XI. Documentation
  - A. Make all appropriate logbook entries. 4333 is FAA/PMA approved and does not require FAA Form 337.

**WARRANTY  
PROCESS:**

Refer to Slick Warranty Statement and Instructions, Form L-1096.

ISSUED			REVISED			Slick Aircraft Products Unison Industries 530 Blackhawk Park Avenue Rockford, Illinois, U.S.A. 61104	PAGE NO.	REVISION
MO	DAY	YR	MO	DAY	YR		6 OF 6	NONE
03	01	95	—	—	—	© 1995		

# SLICK Service Letter

**SL2-94**  
FAA APPROVED

- VI. Attach the Ignition P-lead Terminal
- A. Attach the ignition P-lead terminal to the condenser stud using the lockwasher and nut attached to the magneto.
  - B. Torque P-lead terminal nut to 13 - 15 in/lbs.
  - C. Attach P-lead ground shield, if applicable, to the ground screw on the side of the magneto below the magneto data plate. Torque the P-lead ground shield screw to 18 - 20 in/lbs.
- VII. Install Ignition Harness
- A. Attach each ignition harness to the appropriate magneto. The left harness is marked "left" and should be attached to the left magneto. The right harness is marked "right" and should be attached to the right magneto on the engine.
  - B. Torque the mounting cap screws to 18 - 20 in/lbs.
- VIII. Route Ignition Leads
- A. Route the ignition leads to the appropriate spark plug position as indicated by the alpha-numeric markings on each spark plug nut.  
Each spark plug nut is marked with a letter and number code identifying the spark plug position on each respective cylinder. A "T1" marked spark plug nut identifies the **top** spark plug on cylinder #1 to which that ignition lead is to be connected. A "B4" marked spark plug nut identifies the **bottom** spark plug on cylinder #4 to which that ignition lead is to be connected.
  - B. Route the lead wires according to the engine manufacturer's instructions. Lead wires should be positioned to prevent chafing by baffling or engine parts.
  - C. Install the spark plug nut onto the spark plug and torque the nut to 80 - 90 in/lbs for 5/8-24 hardware.  
**Note:** When installed, a hex ferrule will protrude above the spark plug mounting nut. This hex ferrule should be held with a 7/16" wrench while tightening the spark plug nuts to prevent twisting of the ignition lead.

ISSUED			REVISED			Slick Aircraft Products Unison Industries 530 Blackhawk Park Avenue Rockford, Illinois, U.S.A. 61104	PAGE NO.	REVISION
MO	DAY	YR	MO	DAY	YR		5 OF 6	NONE
03	01	95	—	—	—			

# SLICK Service Letter

**SL2-94**  
FAA APPROVED

## IV. Install Magnetos

- A. Install the appropriate magneto to accessory case gasket onto the magneto mounting flange. Mounting surfaces must be clean.
- B. Install the magneto onto the engine.
- C. Secure the magneto using the mounting clamps provided and appropriate nuts or bolts. Tighten the nuts/bolts sufficiently to hold the magneto loosely in position.

**Caution: Do not rotate the magneto or propeller with the timing pin inserted into the distributor block. Rotation of the rotor shaft or the propeller may damage the internal components of the magneto and render the unit non-airworthy.**

- D. Remove the timing pin from the distributor block.

## V. Timing Magneto to Engine

- A. Attach a timing light to the magneto condenser stud according to the timing light manufacturer's instructions.
- B. Rotate the magneto in the direction of normal rotation (see data plate) until the timing light indicates the breaker points are open. Most timing lights indicate open points with a light "on" condition or an audible signal.
- C. Slowly rotate the magneto in the opposite direction of normal rotation until the light goes "out" or the audible signal stops.
- D. Tighten the magneto mounting clamps to secure the magneto to the engine.

- 1. Alternately tighten the engine mounting clamp nuts to 8 ft/lbs of torque.
- 2. Continue to tighten both nuts alternately in several steps to 17 ft/lbs of torque.

**Caution: In no case should 17 ft/lbs be exceeded. If the mounting nuts are torqued in excess of 17 ft/lbs, damage to the magneto mounting flange may result rendering the unit non-airworthy.**

- E. Remove the timing light from the magneto condenser stud.

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MO	DAY	YR	MO	DAY	YR
03	01	95	—	—	—

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### Slick Aircraft Products

Unison Industries  
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PAGE NO.

4 OF 6

REVISION

NONE

# SLICK Service Letter

**SL2-94**  
FAA APPROVED

## DETAILED INSTRUCTIONS:

### Conversion of Magnetos and Complete Harness Assembly.

- I. Engine Preparation
  - A. Remove the existing ignition system from the engine. Warning: The magneto is "on" when the ignition switch wire (P-lead) is detached from the magneto. Normal precautions must be taken to prevent accidental engine ignition.
  - B. Replace the existing P-lead terminal with suitable eyelet type terminal to mate with 3/16" condenser stud of Slick magneto.
  - C. Remove the old magneto gasket from accessory case. Clean the residual gasket material from the mounting surface.
  
- II. Engine Set-up
  - A. Set the engine to #1 cylinder full advance firing position according to the engine manufacturer's recommended procedures.
  
- III. Align Magneto Rotor Shaft to Fire Cylinder #1
  - A. Insert the T-118 timing pin provided in the L or R hole of the distributor block depending on the rotation of the magneto. Reference the data plate for magneto rotation.
  - B. Turn rotor shaft opposite the specified direction of rotation until the timing pin is inserted approximately 7/8" into the distributor block. When properly engaged, the timing pin will "seat" against the distributor block.

Note: If the rotor shaft cannot be turned and the timing pin is not seated 7/8" into the distributor block, remove the pin and turn the rotor shaft 1/8 turn and reinsert the timing pin. Repeat steps A and B.

With the timing pin fully inserted in the distributor block, the magneto is aligned to fire cylinder #1.

**Caution: Do not rotate the magneto rotor shaft with the timing pin fully inserted into the magneto distributor block. Rotation of the rotor shaft may damage the internal components of the magneto and render the unit non-airworthy.**

ISSUED			REVISED		
MO	DAY	YR	MO	DAY	YR
03	01	95	—	—	—

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PAGE NO.

3 OF 6

REVISION

NONE

# SLICK Service Letter

**SL2-94**  
FAA APPROVED

**WEIGHT CHANGES:**

Conversion from Bendix to Slick ignition systems result in the following weight changes:

Note: Apply appropriate moment arm from the aircraft manual for weight and balance calculations.

**Weight Change Per Magneto**

Bendix SF4R to Slick 4333	-3.7 lbs.
Bendix S4RN-21 to Slick 4333	-.90 lbs.
Bendix S4RN-20 to Slick 4333	-.70 lbs.
Case 4-Cama to Slick 4333	-2.2 lbs.
Eisemann AM-4 to Slick 4333	-.95 lbs.
Slick 4000, 4100, 4200, 4300 to Slick 4333	None
Harness Weight Change	None

**PARTS REQUIRED PER LETTER:**

Magnetos

Left 4333  
 Right 4333  
 Model 4333 is impulse coupled with 35° lag angle.

Ignition Harness

<u>Qty</u>	<u>Part No.</u>	<u>Description</u>
1	M-2045	Complete 5/8-24 Spark Plugs

Ignition Upgrade Kit

Ignition Upgrade Kits contain both magnetos and complete ignition harness.

K-4334 Contents

<u>Qty</u>	<u>Part No.</u>	<u>Description</u>
2	4333	Impulse Coupled Magneto. Includes gear.
1	M-2045	Ignition Harness
2	M-3411	Gaskets

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MO	DAY	YR	MO	DAY	YR
03	01	95	—	—	—

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<b>PAGE NO.</b>
2 OF 6

<b>REVISION</b>
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