



# SLICK

**SL1-93**  
FAA APPROVED

## Service Letter

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

**SUBJECT:** Slick 4300 Series Magnetos for TCM A-65, A-75, C-85, C-90 Series engines.

**BACKGROUND INFORMATION:**

Slick 4330 magnetos and shielded ignition harness 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 Slick 4003 magnetos. The 4330 is a direct bolt-on replacement for Slick 4030, 4130, 4230 Series and is installed using existing drive gears and spacers.

Because the 4330 is impulse coupled, a spacer is required to add depth on the engine accessory case to provide clearance for the impulse coupling. Due to varied depth dimensions of the accessory case, the engine must be measured to determine the spacer thickness required to achieve proper magneto drive gear engagement. Engines originally equipped with Slick 4003 Series must be upgraded with spacers to install the 4330.

The magneto drive gears used on the Bendix Scintilla SF, Eisemann, Case, and Slick 4003 are not compatible with 4330 magnetos. A TCM or equivalent p/n 36066 magneto drive gear must be used with the 4330.

The Slick ignition harness is shielded and requires the use of shielded 5/8-24 spark plugs. Due to the added length of the shielded spark plug, some minor cowling or engine baffling modifications may be required to provide clearance.

The K-4521-X Kit contains two impulse coupled magnetos, complete shielded harness, spacers, mounting studs, gaskets and instructions. Magneto drive gears and spark plugs are **not** included and must be purchased separately.

This Service Letter provides step-by-step instructions for converting to Slick 4300 Series products on these engines.

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	YEAR			
07	01	93	—	—	—	1 OF 8	NONE	

# SLICK Service Letter

**SL1-93**  
FAA APPROVED

**COMPLIANCE:** As required.

**PROOF OF COMPLIANCE:** Appropriate logbook entry. 4330 is FAA/PMA approved and requires no FAA Form 337.

**MODELS AFFECTED:** Teledyne Continental Motors A-65, A-75, C-75, C-85, C-90

### Affected Engines

A-65 -3, -6, -8,  
A-75 -8  
C-75 -8  
C-85 -8  
C-90 -8

**MAGNETOS AFFECTED:** Bendix Scintilla SF4R, Eisemann AM-4, Case 4-CAMA and Slick 4003

**MAINTENANCE PARTS AFFECTED:** None

**SERVICE LITERATURE REQUIRED:** To aid in product maintenance and overhaul, the following required service literature should be ordered. The Slick Master Service Manual F-1100 is available on a one year subscription basis and includes Manual L-1363 and Service Bulletin SB2-80.

Slick Master Service Manual	F-1100
4300/6300 Maintenance and Overhaul Manual	L-1363
Magneto Maintenance Schedule	SB2-80

CHECK WITH SLICK TO BE SURE THAT YOU HAVE THE MOST CURRENT REVISIONS OF SLICK MANUAL L-1363 AND PERTINENT SLICK SERVICE BULLETINS AND SERVICE LETTERS BEFORE PERFORMING MAINTENANCE AND OVERHAUL.

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		2 OF 8	NONE
07	01	93	—	—	—	©1993		



# SLICK Service Letter

**SL1-93**  
FAA APPROVED

- B. Using a scale, depth micrometer, or other suitable measuring device, measure from the end of the camshaft gear to the mounting pad on the accessory case. See Figure 1.

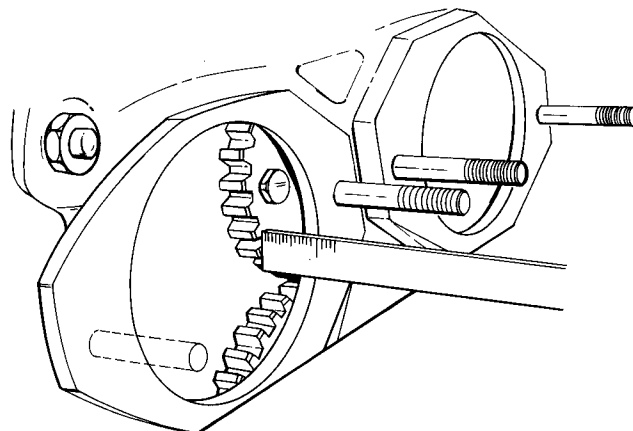


Figure 1

- C. Using the following table, select the adapter closest to the measured dimension on the engine. If the measured distance falls between two spacers, use the next higher dash number spacer.

<u>DIMENSION</u>	<u>1.04</u>	<u>.94</u>	<u>.84</u>	<u>.79</u>
Kit Dash Number	-1	-2	-3	-4

## II. Engine Set-up

- 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.
- D. Remove magneto mounting studs from engine.
- E. Install M-2369 magneto mounting studs onto engine.

ISSUED			REVISED		
MO	DAY	YR	MO	DAY	YR
07	01	93	—	—	—

©1993

## Slick Aircraft Products

Unison Industries  
530 Blackhawk Park Avenue  
Rockford, Illinois, U.S.A. 61104

PAGE NO.

4 OF 8

REVISION

NONE

### III. Magneto Preparation

**Note:** The spacer and gasket must be assembled onto the magneto prior to installing magneto drive gear as described in the following instructions. See Figure 2.

- A. Install M-3411 gasket onto magneto mounting flange.
- B. Install M-2638-X spacer onto the magneto.
- C. Install TCM p/n 36066 drive gear onto magneto impulse coupling.
- D. Place the nut and washer provided onto the rotor shaft and torque to 120-320 in/lbs. (.010 to .030 endplay between gear and impulse coupling is normal.)
- E. Insert the cotter pin through the nut castellations and rotor shaft and secure appropriately.

Note: If the cotter pin will not align with the pin hole with the specified torque range, remove the nut and lightly lap the bottom of the nut with a piece of emery cloth and repeat steps D and E.

**IMPORTANT: Use only this nut and washer.**

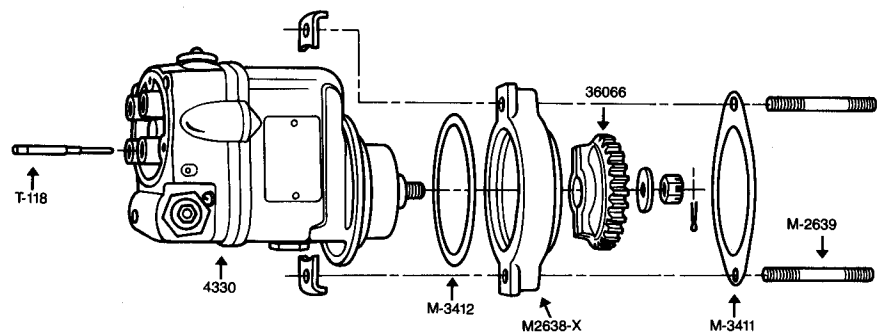


Figure 2

### IV. Align Magneto Rotor Shaft to Fire Cylinder #1

- A. Insert the T-118 timing pin provided in the R hole of the distributor block. See Figure 2

<b>ISSUED</b>			<b>REVISED</b>			<b>Slick Aircraft Products</b> Unison Industries 530 Blackhawk Park Avenue Rockford, Illinois, U.S.A. 61104	<b>PAGE NO.</b>	<b>REVISION</b>
MO	DAY	YR	MO	DAY	YR		5 OF 8	NONE
07	01	93	—	—	—			

# SLICK Service Letter

**SL1-93**  
FAA APPROVED

- 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.**

- V. Install Magnetos
- A. Install the M-3412 spacer to accessory case gasket onto the magneto mounting flange. Mounting surfaces must be clean. See Figure 2
- 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.

VI. 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.

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 8	NONE
07	01	93	—	—	—			

# SLICK Service Letter

**SL1-93**  
FAA APPROVED

- D. Tighten the magneto mounting clamps to secure the magneto to the engine.
1. Alternately tighten the magneto 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.
- VII. 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.
- VIII. 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.
- IX. 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.

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		7 OF 8	NONE
07	01	93	—	—	—	©1993		

# SLICK Service Letter

**SL1-93**  
FAA APPROVED

- 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.

X. 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.**

XI. Ground Test Ignition System

- A. Test the ignition system on the ground according to the engine manufacturer's recommended procedures.

XII. Documentation

- A. Make all appropriate logbook entries. 4330 is FAA/PMA approved and does not require FAA Form 337.

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		8 OF 8	NONE
07	01	93	—	—	—	©1993		