

# Tim's updated Slick Timing Document

Updated for better readability and more completeness

Note: This wall all originally compiled by Sacramento Sky Ranch. I'm not trying to duplicate it totally, but instead, trim out some of the variety of engine types that they talk about, so that it mainly applies to my IO-540 D4A5, and to correct all of the poor word wrapping and other cosmetic defects such as the ugly ALL-CAPS text, that they put together, so it's easier to read.

## WHERE DO I STICK THE TIMING PIN?

### 1. TIMING INSTRUCTIONS ARE ON THE OUTSIDE OF THE BOX.

Insert the T-118 timing pin in the L OR hole of the distributor block, depending on the rotation of the magneto. **Refer to the Magneto Data Plate for magneto rotation direction.**

2. Turn the 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. Turn the rotor shaft 1/8" turn and reinsert the pin. Turn the rotor shaft 1/8" and reinsert the timing pin. Then repeat steps 1 and 2 above.

3. With the pin fully inserted into the distributor block, the magnto is now aligned to fire cylinder #1. **(My Note: This is NOT TDC, but rather the firing position which is probably about 25 degrees BTDC)**

4. After the magneto is installed on the engine, **remove the timing pin.** Proceed by following the engine manufacturer's timing procedures.

*(What follows is almost verbatim what came with the skyranch info...with obvious chatter trimmed out, and some additions from me)*

**Many thanks to Steve for posting this article on the Sky Ranch Engineering Forum!**

There are two kinds of timing that have to be taken care of with a magneto. There is the internal timing and the external timing. The internal timing is done on the bench with the magneto out of the engine. You have to ensure that the points open at the correct spot in the magneto revolution in reference to the E-gap. Set the point gap and opening correctly by adjusting the point position relative to the rotor.

### **My addition this paragraph:**

Follow the directions on page 7-3 and 7-4 of the Slick overhaul manual very carefully. Some key points are that you need to hold the magneto with the coil in the 12-o'clock position, and look at the rotor slots where you insert the E-Gap gauge carefully so you stick the gauge in the "L" slot for a Left rotation mag, and vice versa. With the coil at the 12-o'clock position, and the E-gap gauge in the proper slots, you rotate the magneto HOUSING (they call it a "frame") (while holding the shaft stationary) clockwise for a left-hand rotation mag, and counterclockwise for a right-hand rotation mag. The E-Gap gauge will stop when it gets to hitting the armature laminations, and that is how you know the rotation is in the proper position. Once the mag is in this position, make sure to hold the rotor shaft orientation steady, and then use a screwdriver to adjust the points to that they just open. If you hook a buzz-box up with the ground wire on the magneto housing, and the other on the terminal where the wire for the points connects, you should be able to detect the instant that the points are open, and at that point, lock down the screws.

Once the internal timing is correct the magneto should put out a good hot spark. If the internal timing if wrong, the magneto will put out a weak spark or even no spark at all. With the Slick magneto there is a hole

in the case. You put a timing pin into this hole to lock the magneto in position with the points just opening at the E-gap. This, of course, depends on the proper internal timing of the magneto.

**My addition this paragraph:**

There are 3 holes in the black distributor block..... "L", "R", and "X". Personally I don't know what the "X" is for, but on mine it was very similar to the "L" position. My mag was a Left rotation mag, and the hole in the distributor block very closely lined up with the hole in the large white nylon gear underneath, with the mag in the firing position. I found it very helpful to actually pull the top spark plugs out and find TDC, and determine the firing stroke (you can tell because compression only builds on the firing stroke) and actually use a buzz-box (timing light) to find the firing position before I started...then leave the prop in that position. If you do that, you should be able to put the timing pin in the distributor block pretty easily and pin the mag before you even remove it from the engine.

**My Note:** (If you have timing marks on your ring gear, and a starter like I do, that has a small hole that aligns with these marks, then you do not need all the special tools for finding TCD or timing marks. Some people may also be able to use their engine case split on top in reference to your ring gear. For me, when the mag was in firing position, all of my timing marks were down in the 4-6 o'clock position, and there was a small hole on my skytec starter that I could stick a small stiff wire in and it poked out next to the timing mark on the ring gear to read the timing. So if you have that situation, the skip the parts below that include using any tools. MAKE SURE to pull a set of plugs so the engine can't fire while you are working on it, as you need to have the key in a position that does not ground out the mag you're working on. On MY plane, I only have a left mag, so I left my Lightspeed ignition OFF, and turned my mag switch to L, so that it was un-grounded. Then only the Left (bottom, on my engine) plugs can fire....and without top plugs in, there is no compression to turn the prop.

**Skim and mostly ignore these 2 paragraphs if you have timing marks like I do.**

Then you bring the number one cylinder to top dead center. You can do this by putting a special plug into the cylinder that stops the piston from coming all the way to the top. Put your degree ring on the spinner or prop and read the setting where the piston stops with BOTH VALVES CLOSED. Then rotate the engine back the other way until it hits the stop again. Read the setting there. Top dead center is halfway between those two readings. Adjust the degree ring so that the zero reference is halfway between those two positions. Now you have your degree ring set. (This is the stuff you can skip if you have those timing marks)

Remove the blocking plug from the spark plug hole and rotate the engine in a forward direction until you are coming UP toward the zero reference mark on the compression stroke on number one cylinder. Stop at exactly the correct advance setting prior to top dead center. If you go past the point, continue forward two more revolutions until you stop on the correct advance setting while turning the prop in the correct direction. **Needless to say, you want to do all of this turning of the prop with the spark plugs removed from the engine. We would NOT want it to START while we were playing with the prop!**

**This paragraph describes what to do once your internal timing is done and the mag is pinned:**

With the engine positioned at the point in its rotation where you want the magneto to fire, and the locking pin in the Slick magneto, insert the magneto into the proper location on the accessory case. (with a new gasket installed) Do not force it, but let it slide into engagement with the gear that drives it. (most mags will have a pair of rubber isolators between the drive gear and the magneto. When removing and resinstalling the mag, you have to be careful that these don't fall out into the engine and are in place on reassembly. Mine fell out easily but some thick grease held them in place for me during reassembly. Snug the magneto down in position. Now your timing is **approximately** correct, both internal and external. (continue to perfect the timing adjustment)

**Follow this procedure for both magnetos (if you have 2):**

Now, with both magnetos installed, connect your magneto timing box to the p-leads of the two magnetos. Rotate the prop again, once more in the proper direction, two revolutions. As you come up on the second revolution, watch the degree ring carefully. The lights on the buzz box should switch at the proper advance point for both left and right mags. The buzz should let you know the status also.

When both mags are exactly right, as driven forward by the engine gearing with all slack taken out in the direction of rotation, you can disconnect your buzz box and reinstall the plugs and ignition wiring. Make sure the P-leads are properly connected to the ignition switch and are grounded when the mag is switched off.

We will start out with the installation of the magneto since this may be the most confusing area, leading to the most starting problems, etc. based on the calls and letters we receive. The older style, 4050 and 4051, "throw away" models probably should be traded in on the newer 4350 and 4351 rebuildable mags. They are more reliable, more readily obtainable, and are easily repaired or rebuilt even by the owner/builder. Basically the differences between the original "throw away" and rebuildable mags is size. The "throw away" being smaller than the rebuildable. Also, when timing the magneto, prior to installing on the engine, you must "spark out" the "throw away" model by spinning the timing gear to set the magneto on cylinder number one. On the newer, rebuildable magneto's, Slick supplies a little "pin", a T-118 timing pin, which is used to set the magneto timing to the number one cylinder. With the distributor cover off, look into the aft end of the mag, you will see two (or 3) holes in the plastic molding, the top one marked for left hand rotation (L), the bottom one for right hand rotation (R). (or you may see X) Look on the data plate on the body of the mag for its direction of rotation. Left rotation is normal for a Lycoming O-235, O-320, or O-360/O-540. Now, gently push the timing pin into the hold marked (L) until it bottoms. Rotate the timing gear on the shaft of the mag opposite the direction of normal rotation until you feel the pin drop into a hole.

If you have to rotate the magneto very far, you will feel the timing pin trip over a bump inside the mag. Don't force it to rotate. Gently back the timing pin out a 1/4" or so to clear the bump, rotate the shaft and gently push the pin back in. Continue rotating until the pin locates in the hole. The magneto is now internally set on cylinder number one. It is not a bad idea to tape the pin in place with a piece of masking tape. In any case, the pin must remain in this position, without the distributor cover installed, until the magneto is actually in place on the accessory case.

Now, you must set your engine at 25 degrees before top dead center on the number one cylinder (or whatever angle your data plate calls out, as some may be 28 degrees or other). Remove the top spark plug from the number one cylinder, hold your thumb over the hole and rotate the engine in the direction of normal rotation until you feel pressure under your thumb. Continue rotating the crankshaft until the advance timing mark (20, 25, or 28 degrees, check your data plate) is exactly opposite the small hole located at the 2 o'clock position on the front face of the starter housing. (This is for Lycoming engines with a starter and starter ring gear installed.)

**NOTE: If the prop is accidentally turned in the direction opposite normal rotation, you must repeat the above procedure since accumulated backlash in the timing gears will make the final timing incorrect.**

At this point, the engine is ready for assembly of the magneto's. With the timing pin still in place, carefully fit the magneto into its hole. When it sits flush on the machined surface of the accessory case, pull the timing pin out (**rotating the prop at this point may shear the timing pin off**) and, while holding the mag firmly in place, install the toe clamps, flat washers, lock washers and nuts and tighten until finger tight. Repeat for the other magneto, being certain that the prop has not moved.

Use a battery powered magneto timing light such as a model E50 from Eastern Electronics. (There is a "kit" buzz box available that is very affordable, for those who want to build their own) Connect it to a convenient

engine case bolt (ground) and to each magneto terminal (the same stud your mag switch is connected to). If the mag switches are wired up, you will have to make both mags "hot" (mag switches to the normal engine running position even though the distributor cover is not yet installed) (**Note: if you only have one mag, you may choose to make only that one mag hot**) . **Make sure the fuel valve is off and the mixture is at idle cut off, and always treat the prop as you would a loaded gun!**

Rotate each magneto in its housing until the timing light comes on. Now slowly turn it in the opposite direction until the light goes out. Slowly turn the magnetos forward again until the timing light just goes on. Tighten the nuts a little.

Now, back the prop off enough to turn both timing lights off. Slowly bring the prop back in the direction of normal rotation until both lights come on. They should come on simultaneously, or very close to it. Now check and see if the appropriate timing mark on the starter ring gear is in perfect alignment with the hole in the starter housing. If it is, tighten the magneto hold-down nuts firmly (maximum torque is 150 inch/lbs., minimum is 110 inch/lbs.). Recheck that the timing lights come on together at the proper time and you are ready to install the distributor caps. The distributor covers are so close to the firewall that a 90 degree screwdriver must be used on the standard Slick screws. Hopefully you have Torx (I think mine are T-20) screws, as those are much easier to deal with blindly.

There you have it! If your airplane has a Lycoming engine and no starter or starter ring gear installed, you will need a timing indicator such as model E25 and a top dead center locator or an equivalent protractor-type indicator. This type indicator fits onto the spinner or prop (does not need to be centered) and has a weighted pendulum-type pointer. Use the top dead center finder in the top spark plug hole on cylinder number one, set the protractor indicator so the pointer points at 0 degrees or top dead center (TDC), then turn the prop backwards to about 35 degrees before TDC, then come slowly forward to 25 degrees (or 28 degrees) to be certain to get rid of all backlash. With no starter ring gear installed, you will need a timing indicator such as model E25 and a top dead center locator (both available from Aircraft Spruce) or an equivalent protractor-type indicator.

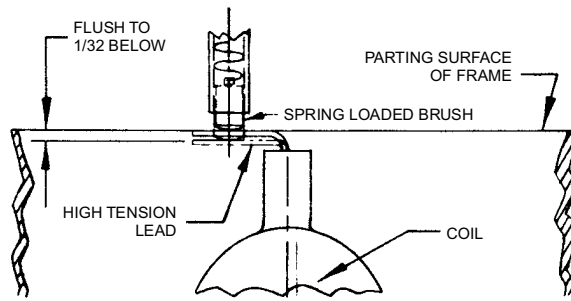


Figure 7.7

**7.8 INSTALL CONTACT POINTS**

**7.8.1 PRIMARY CONTACT POINTS - ALL MAGNETOS**

- A. Attach contact point assembly on the bearing cap using appropriate screw.

NOTE: ON RETARD BREAKER MAGNETOS, THE PRIMARY POINTS ARE SECURED WITH A BLACK ANODIZED SCREW.

**CAUTION:** RETARD BREAKER MAGNETOS USE DIFFERENT LENGTH SCREWS TO SECURE THE CONTACT BREAKER ASSEMBLIES. USE OF INCORRECT MOUNTING SCREWS WILL DAMAGE UPPER MAGNETO BEARING AND CAUSE POSSIBLE MAGNETO FAILURE.

**7.8.2 RETARD BREAKER CONTACT POINTS - RETARD BREAKER MAGNETOS ONLY**

NOTE: INSTALL PRIMARY POINT ASSEMBLY BEFORE INSTALLING RETARD POINT ASSEMBLY.

- A. Place spacer on bearing cap and attach retard contact points assembly using silver screw and plain washer.
- B. Do not tighten screws until magneto is timed.

**7.8.3 TACHOMETER DRIVE CONTACT POINTS - TACHOMETER DRIVE MAGNETOS ONLY**

NOTE: INSTALL PRIMARY POINT ASSEMBLY BEFORE INSTALLING TACHOMETER POINT ASSEMBLY.

- A. Place tachometer contact points on bearing cap and secure using two screws and plain washers.
- B. Do not tighten screws until magneto is timed.

**7.9 INSTALL ROTOR CAM**

- A. Install cam using a light hammer and T-151 cam and rotor set.

- B. Drive the cam until it bottoms in the rotor cam slot. (See Figure 7.9.)

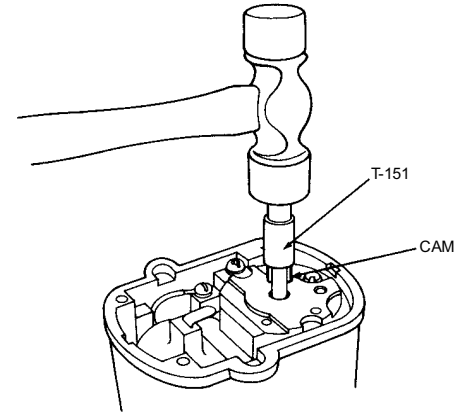


Figure 7.9

**7.10 TIME THE MAGNETO**

NOTE: FOR RETARD BREAKER MAGNETOS, THE PRIMARY POINTS MUST BE SET FIRST. THE RETARD (SECONDARY) POINTS ARE SET IN REFERENCE TO THE PRIMARY POINTS AND THE PRIMARY POINTS MUST BE SET CORRECTLY TO ENSURE ACCURACY OF RETARD CONTACT SETTINGS.

**7.10.1 SET PRIMARY POINTS - ALL MAGNETOS**

- A. Place the magneto on the T-125 base, flange down.

**6300 Series Magnetos** - Remove T-509 timing base adapter.

**Retard Breaker Magnetos** - Install the T-123 timing plug on the rotor shaft before placing the magneto on the T-125 rotor base.

**Impulse Coupled Magnetos** - Do not use T-123 timing plug.

**Direct-Drive Magnetos** - Install the T-123 timing plug on the rotor shaft before placing the magneto on the T-125 base.

- B. Looking directly down on the magneto, align the magneto so that the coil is oriented in the 12 o'clock position.
- C. Insert T-150 "E" Gap Gauge (Figure 7.10.1) between the pole laminations in the rotor shaft and the pole laminations in the frame.

ISSUED			REVISED		
MO	DAY	YR	MO	DAY	YR
04	01	91	02	28	06

**Unison Industries**  
 530 Blackhawk Park Avenue  
 Rockford, Illinois, U.S.A. 61104  
 ©2006 Unison Industries, Inc.

PAGE NO.	REVISION
7-3	C

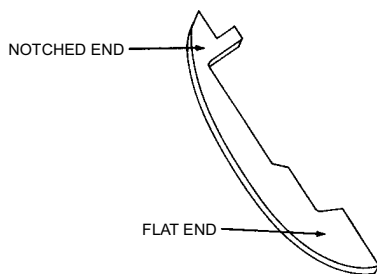


Figure 7.10.1

Insert flat end of T-150 when using old style rotor (no slots on the magnet head). See Figure 7.10.2. Reference the magneto data plate for magneto rotation. Insert the "E" Gap Gauge against the right lamination for right-hand rotation magnetos and against the left laminations for left-hand rotation magnetos.

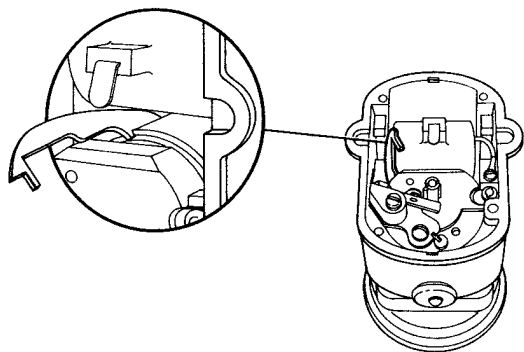


Figure 7.10.2

Insert notched end of T-150 when using new style rotors (with slots on magnet head). See Figure 7.10.3. Locate the appropriate "L" or "R" timing slot on the rotor magnet head and insert the notched end of the "E" gap gauge. Use the "L" slot for left-hand rotation magnetos and the "R" slot for right-hand rotation magnetos.

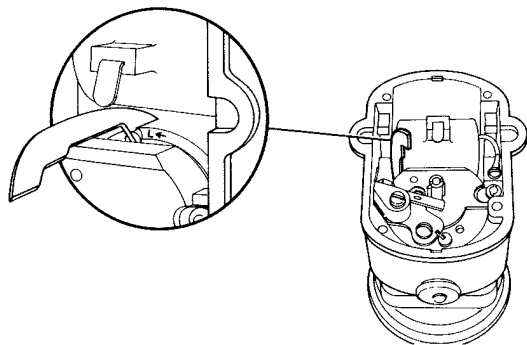


Figure 7.10.3

D. Rotate the magneto frame on the T-100 base until the T-150 "E" gap gauge rests against the pole lamination in the magneto frame. Rotate the magneto frame clockwise for left-hand rotation magnetos and counterclockwise for right-hand rotation magnetos. The magneto rotor shaft is now in "E" gap position.

- E. Using a timing light, adjust the contact points to be just opening when the frame is against the T- 150 gauge. This will provide a point gap opening of .008-.010 inches.
- F. Impulse Coupled and Direct Drive Magnetos: Secure the points in this position by tightening the screws. Torque adjusting screw to 18-20 in-lbs. Torque the pivot screw to 15-18 in- lbs.

**Retard Breaker Magnetos:** Secure primary points by tightening the adjusting screw. Torque to 15-18 in-lbs. Proceed to 7.10.2.

**Tachometer Drive Magnetos:** Secure primary points by tightening the adjusting screw. Torque to 15-18 in-lbs. Proceed to 7.10.3.

- G. Apply cam grease sparingly to each lobe of the cam. (See Figure 7.10.4.)

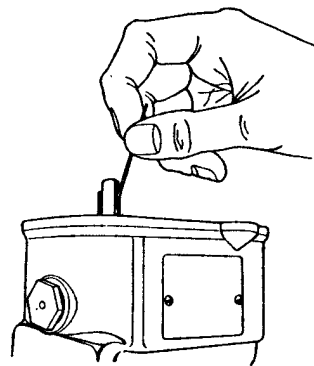


Figure 7.10.4

- H. Attach coil lead wire to the vertical bronze male terminal of the primary point assembly.

**7.10.2 SET SECONDARY POINTS - RETARD BREAKER MAGNETOS ONLY**

NOTE: FOR RETARD BREAKER MAGNETOS, THE PRIMARY POINTS MUST BE SET FIRST. THE RETARD (SECONDARY) POINTS ARE SET IN REFERENCE TO THE PRIMARY POINTS, AND THE PRIMARY POINTS MUST BE SET CORRECTLY TO ENSURE ACCURACY OF RETARD CONTACT SETTINGS.

- A. Set primary points according to instructions in Section 7.1 0.1 above. Do not remove T- 1 50 " E " gap gauge, and do not remove magneto frame from T-125 base.

NOTE: RETARD POINTS ARE SET IN REFERENCE TO PRIMARY POINT SETTINGS. THE LAG ANGLE ON THE MAGNETO DATAPLATE IS THE RETARD BREAKER'S RETARD ANGLE MEASURED IN DEGREES. THE FOLLOWING PROCEDURE WILL SET THE RETARD POINTS THE REQUIRED NUMBER OF DEGREES FROM THE PRIMARY POINTS.

ISSUED			REVISED		
MO	DAY	YR	MO	DAY	YR
04	01	91	02	28	06

**Unison Industries**  
 530 Blackhawk Park Avenue  
 Rockford, Illinois, U.S.A. 61104  
 ©2006 Unison Industries, Inc.

PAGE NO.	REVISION
7-4	C

- B. Holding magneto securely in base (in “E”, gap position), tip magneto and T-125 base and loosen timing disk retaining screws. Timing disk should rotate freely.
- C. Ensure that the T-150 “E” gap gauge is still positioned against the correct lamination. Rotate magneto frame until it contacts the pin in the T-125 base. Rotate the magneto frame clockwise for left-hand rotation magnetos, counterclockwise for right-hand rotation magnetos.
- D. Hold magneto securely in base and tip magneto and T-125 base. Tighten one timing disk retaining screw to hold the timing disk in place. Remove magneto from T-125 base.
- E. Turn T-125 base over so that timing disk is facing you. Loosen timing disk retaining screw. Scribe a mark on the timing disk corresponding to the index mark on the T-125 base. This represents a point-of-reference for primary point “E” gap. (See Figure 7.10.5.)

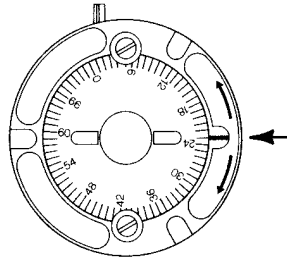


Figure 7.10.5

NOTE: THE ACTUAL NUMBER AT THE TIMING DISK INDEX MARK IS NOT CRITICAL. THIS INDEX MARK WILL BE USED AS A POINT OF REFERENCE FOR SETTING THE RETARD POINTS A SPECIFIED NUMBER OF DEGREES FROM THE PRIMARY POINTS.

- F. Note the lag angle from the magneto dataplate.
- G. The ticks on the timing disk each represent 5 degrees. To set the timing disk in the proper position, rotate the timing disk counterclockwise for left-hand rotation magnetos and clockwise for right-hand rotation magnetos. Rotate the disk according to the following chart:

Magneto Retard Angle	Number of Ticks on Timing Disk
5°	1
10°	2
15°	3
20°	4
25°	5
30°	6
35°	7
40°	8

**EXAMPLE:**

Lag angle as noted from dataplate: 25°  
 Rotation as noted from dataplate: L  
 To set timing disk, turn the timing disk 5 ticks (5 x 5° = 25) counterclockwise using scribed mark as reference point.

- H. Tighten timing disk retaining screws. Reverse T-125 base and place magneto in it, flange down (use T-123 timing plug). Remove T-150 “E” gap gauge from magneto.
  - 1. Rotate magneto against the direction of normal rotation (clockwise for left-hand rotation magnetos and counterclockwise for right-hand rotation magnetos) until the magneto bumps against the pin in the T-125 base. The magneto rotor shaft is now retarded from E-gap position the number of degrees indicated on the magneto data plate.
- J. Using a timing light, adjust the retard contact points to where they are just opening. Tighten the adjusting screws to secure the retard points in this position. Torque adjusting screws to 18 - 20 in-lbs.
- K. Apply cam grease sparingly to each lobe of the cam. (See Figure 7.10.6.)

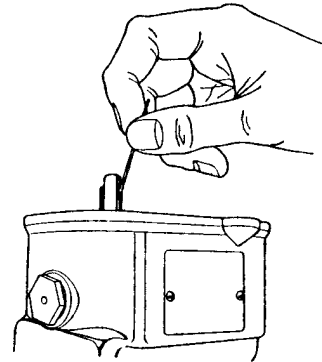


Figure 7.10.6

- L. Attach coil lead wire to the male terminal of the primary point assembly.
- 7.10.3 SET TACHOMETER DRIVE POINTS - TACHOMETER DRIVE MAGNETOS ONLY**
- A. Set primary points according to instructions in Section 7.10.1 above.
  - B. Adjust tachometer drive points to have an opening of .013 (± .002) with the rotor oriented to the position of maximum cam lift.
  - C. Tighten the adjusting screws to secure the points in this position. Torque adjusting screws to 18-20 in-lbs.
  - D. Apply cam grease sparingly to each lobe of the cam. (See Figure 7.10.6.)

ISSUED			REVISED		
MO	DAY	YR	MO	DAY	YR
04	01	91	02	28	06

**Unison Industries**  
 530 Blackhawk Park Avenue  
 Rockford, Illinois, U.S.A. 61104  
 ©2006 Unison Industries, Inc.

PAGE NO.	REVISION
7-5	C

**7.11 INSTALL CONDENSER**

- A. Assemble the condenser into the distributor housing, being sure to rotate the condenser wire the same rotation as the condenser is tightened in the housing. (See Figure 7.11.)

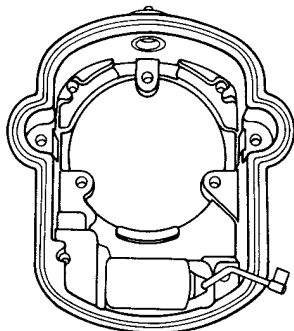


Figure 7.11

Retard Breaker Magnetos Only - Ensure retard breaker contact lead is channeled underneath condenser. See Figure 7.11.1.

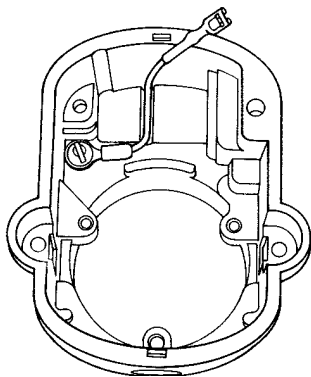


Figure 7.11.1

**CAUTION:** RETARD BREAKER LEAD WIRE MUST BE CHANNLED SECURELY UNDER CONDENSER. FAILURE TO DO SO MAY CAUSE THE LEAD WIRE TO INTERFERE WITH ROTOR GEAR MOVEMENT OR POINT OPERATION.

**7.12 DISTRIBUTOR GEAR ASSEMBLY**

- A. Install carbon brush into spring.
  - 1. Insert small end of carbon brush into tapered end of spring.
  - 2. Turn carbon brush clockwise until the shoulder of carbon brush seats on the spring.

- B. Install carbon brush assembly into the distributor gear.
  - 1. Insert the open end of the spring into the open end of the distributor gear shaft.
  - 2. Gently press the carbon brush and spring assembly into the shaft until the spring seats on the bottom of the shaft. The top of the carbon brush should protrude from the top of the shaft approximately 1/4 inch. (See Figure 7.12.)

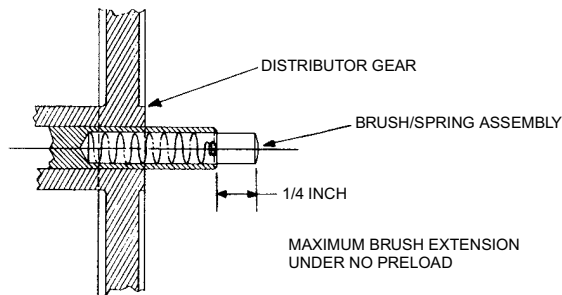


Figure 7.12

**7.13 ASSEMBLE DISTRIBUTOR BLOCK**

- A. Using a clean cotton swab, lubricate bearing bar bushing and distributor block bushing with a small amount of clean engine oil.
- B. Assemble the distributor gear in the distributor block with the L&R facing you.
- C. Assemble the bearing bar to the distributor block with the brush shield facing the notch in the distributor block as shown in Figure 7.13.

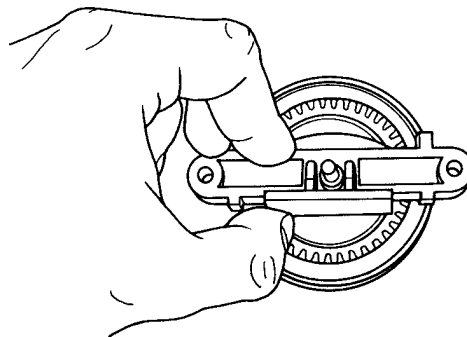


Figure 7.13

**7.14 ALIGN ROTOR GEAR**

- A. Install rotor gear onto end of rotor shaft.
- B. Align the "L" or "R" (depending on the rotation of the magneto - look at data plate) on the rotor gear so that it points up, toward the high tension lead of the coil. Secure rotor shaft to prevent rotation during assembly. Alignment of rotor gear is critical. (See Figure 7.14.)

ISSUED			REVISED		
MO	DAY	YR	MO	DAY	YR
04	01	91	02	28	06

**Unison Industries**  
 530 Blackhawk Park Avenue  
 Rockford, Illinois, U.S.A. 61104  
 ©2006 Unison Industries, Inc.

PAGE NO.	REVISION
7-6	C



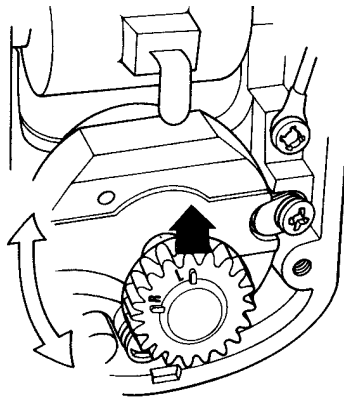


Figure 7.14

**7.15 ALIGN DISTRIBUTOR GEAR**

- A. Align the “L” or “R” hole in the distributor gear with the “L” or “R” in the distributor block. Use “L” for left-hand rotation and “R” for right-hand rotation magnetos.
- B. Lock the distributor gear in place with the T-118 timing pin through the appropriate hole in the block and gear.
- C. Place distributor block spacers on magneto frame. (See Figure 7.15.)

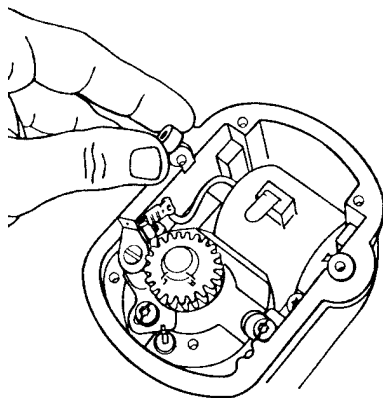


Figure 7.15

- D. Place the distributor block on magneto frame. The distributor gear and rotor gear are properly meshed when the index mark on the rotor gear aligns with the reference mark on the distributor block. (See Figure 7.15.A.)

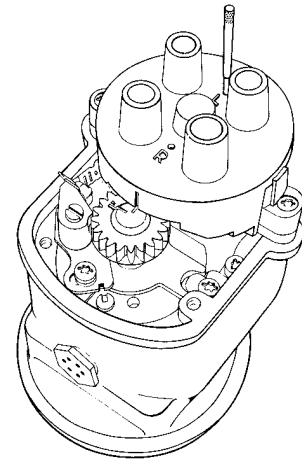


Figure 7.15.A

- E. Secure the distributor block to frame using screws provided.

**7.16 CONNECT CONDENSER WIRE**

- A. Connect condenser wire to the primary terminal of the contact assembly.
- B. Attach the terminal with the lead pointing left. (See Figure 7.16.)

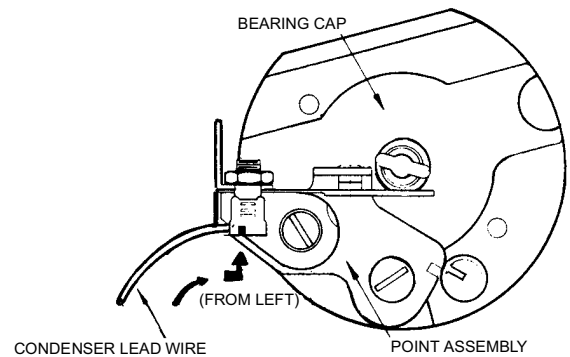


Figure 7.16

**7.17 CONNECT RETARD CONTACT WIRE**

- A. Connect retard terminal wire to retard contact points. (See Figure 7.17.)

ISSUED			REVISED		
MO	DAY	YR	MO	DAY	YR
04	01	91	02	28	06

**Unison Industries**  
 530 Blackhawk Park Avenue  
 Rockford, Illinois, U.S.A. 61104  
 ©2006 Unison Industries, Inc.

PAGE NO.	REVISION
7-7	C

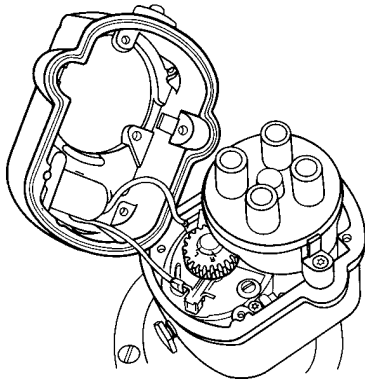


Figure 7.17

**7.21 SECURE DISTRIBUTOR HOUSING**

- A. Secure the housing with three screws and one screw. Torque to 24 in-lbs.
- B. Remove T-118 timing pin.

**CAUTION:** DO NOT ROTATE MAGNETO ROTOR SHAFT WITH THE T-118 TIMING PIN INSERTED IN THE DISTRIBUTOR BLOCK. IF ROTOR SHAFT IS ROTATED WITH TIMING PIN INSERTED, THE MAGNETO MUST BE DISASSEMBLED AND INSPECTED FOR DISTRIBUTOR BLOCK AND GEAR DAMAGE.

**7.18 CONNECT TACHOMETER CONTACT WIRE**

- A. Connect wires to tachometer contact points. (See Figure 7.18 )

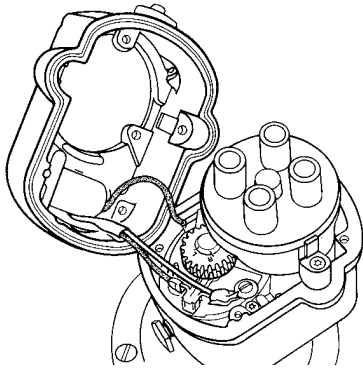


Figure 7.18

**7.19 ATTACH THE DISTRIBUTOR HOUSING - NON PRESSURIZED MAGNETOS**

- A. Place the distributor housing onto the magneto frame.

**7.20 ATTACH THE DISTRIBUTOR HOUSING - PRESSURIZED MAGNETOS**

- A. Install housing gasket.
- B. Place the distributor housing onto the magneto frame.

**CAUTION:** MAKE SURE THE CARBON BRUSH IS CONTAINED IN THE DISTRIBUTOR SHAFT DURING ASSEMBLY. IF THE CARBON BRUSH CATCHES ON THE SIDE OF THE DISTRIBUTOR SHAFT, THE COIL STRAP WILL BE BENT INTO THE WRONG POSITION DURING ASSEMBLY.

ISSUED			REVISED		
MO	DAY	YR	MO	DAY	YR
04	01	91	02	28	06

**Unison Industries**  
 530 Blackhawk Park Avenue  
 Rockford, Illinois, U.S.A. 61104  
 ©2006 Unison Industries, Inc.

PAGE NO.	REVISION
7-8	C