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# MORRIS MAGNETOS, INC.

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The MORRIS MAGNETO M-5 kit is the latest advance in ignitions for Harley-Davidsons, incorporating mechanisms which make strong kicking and/or cranking no longer necessary. Automatic retarding for starting, and independent from your electrical system, yielding more horsepower than any other ignition!

1. Remove push rods and pick-up or advance unit. Measure cam end play, then remove stock gearcase cover. Shim cam so that end play will be .001 to .005", check for breather valve thrust washer, and install the M-5 gearcase cover. Use longer top front allen bolt provided. Locations and sizes of bushings and dowels are blueprinted to H-D specifications, so cover should install easily. Re-check cam end play.
2. Remove spark plugs. Install pushrods per H-D or manufacturer's instructions. Making sure that front cylinder is on compression stroke (both valves closed), locate advanced timing mark in timing hole. If you are not sure which mark to use, an easy way to determine is to see which mark appears in hole just after rear cylinder TDC.
3. Using red loctite on allen bolt and mating surface, install drive gear to end of cam, with pin properly engaged in cam end notch. Coupling slot position must be close to the same ( $\pm 9^\circ$ ) as in Fig. 1. If not, remove drive gear, turn small gear three teeth, and reinstall drive gear. This will change position  $18^\circ$ . NOTE: Gear insert has two holes; by installing small pin in the other hole, you can make a half-tooth change, effectively giving you a  $9^\circ$  change. Install gear cavity gasket, plate, and screws.
4. Remove magneto cap. Turn magneto rotor so that narrow cam lobe and cam follower block are positioned as shown in Fig. 2, and points are just opening. This is static-timed position. Install magneto and teflon-coated gasket with washers and nuts provided. Drive lugs will engage with coupling slots. Replace cap and cork gasket. Tighten screws no more than 1/2 turn past hand-tight, so that corners of cap compress cork gasket thickness no more than 1/3. Always insure that screw threads are properly engaged, and that coil springs are seated on metal inside cap.
5. Gap spark plugs at .025", and install with solid-core wires. Start motorcycle. Best starting will probably be near or at idle. Set idle at 800 RPM or higher. When kick starting, an easy, priming-type kick works best. Using a timing light, "zero in" your ignition timing and lock down base nuts. Do not over-tighten!

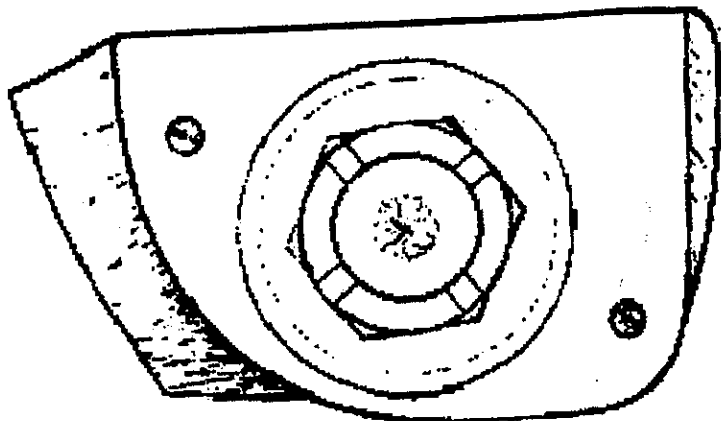


Fig. 1

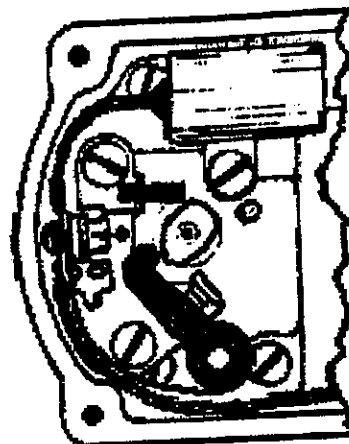


Fig. 2

Installation is to be performed by a qualified mechanic. Verify that the gearcase cover supplied matches your engine and oiling system! If in doubt, call us. Suffix letter indicates fitment for stock configuration as follows: -B for '70-early'73, -C for late'73-'92, -D for '93-up Big Twins. Manufactured under US Patent No. 4191157.

Your point gap is stamped on the bottom of the magneto itself on the outside front corner (installed). Gap points accurately on large lobe. EXAMPLE: If gap should be .016, .015 should have a loose spot (hold feeler gauge loosely to line up straight with points), .017 should be noticeably tighter than .016, and follower should lift from cam slightly. Do not apply grease to cam lobes, wick supplies sufficient lube. Use only original type cap, points, and condensor!

We have found that the easiest way to tell when points just open is by using a good digital ohmmeter. As magneto is turned, reading will increase .2 or .3 ohms (ignore 'spikes' while turning).

Bear in mind, if you try to check timing by turning the motor after the magneto is installed, you will need to go past the timing mark until wind-up spring releases (mag "clicks"), then back the motor up until timing mark appears in hole. Use caution- when it clicks, it sparks.

The output of MORRIS MAGNETOS increases as RPMs increase, so your spark plug gap will burn wider at a faster rate than with a battery-coil system. Given this fact, you can also expect more horsepower at higher RPMs. For normal heat range, we recommend using Autolite #4275 spark plugs, or #4265 for 1975 and later Big Twins using long reach plugs.