T5 Instructions, '99-up Big Twins

Install Twin Cam gear set per supplier's instructions, substituting the cam gear bolt with parts supplied: magneto drive gear, spacer, and bolt. Gear should run concentric within .001" t.i.r. upon final tightening, so it will be necessary to mount a dial indicator; making sure all threads and surfaces are oil free, apply red loctite between the rear cam gear and the base of the mag drive gear-mount, as well as to the threads of the 3/8 bolt, including under the hex-head contact area. Tighten bolt in steps, tapping on base of drive gear assembly to achieve concentricity while turning cam. Final tighten to 45 ft/lbs. **Note:** if using chain drive, we have seen the H-D large rear sprocket run out-of-true laterally, due to the way they manufacture it. Face of sprocket should be dial indicator checked for 'wobble'. We suggest using an Andrews sprocket, as they run true when machined.

Using a 12-point 1½" socket, remove drive shaft assembly from cam cover, being careful to not loose any shim washer(s). NOTE: be sure to keep socket straight to prevent damaging drive top. Place cover on engine, and shift cover around; there are a number of different support plates, make sure nothing is interfering, so that bolt holes will align. Mount cover with gasket, and hand tightening bolts provided. Now thread the drive shaft assembly back into cover (should thread in freely by hand, do not cross-thread) to about 40 ft/lbs. Gear lash must be set by shifting cover; location is proper when gears are free, and any lash is barely noticeable; rotate cam gear to check lash in different positions. Lock down cover mounting screws securely. Remove drive shaft assembly.

Set your engine on the correct stroke & position for installation, as follows:

motor not completely assembled, use conventional 'front valves closed' method;

motor fully assembled, you may find the following method easier:

1. Set your engine on the correct stroke & position for installation, as follows:

a) Remove your ***rear*** spark plug only.
b) Kick until you feel ***front*** cylinder compression; rear piston will be on the way up.
c) Continue turning the motor until the rear piston gets to the top. This is 45° before front cylinder TDC, a good starting point from which to set timing. We have achieved best results with a timing of 34 to 36°, so you will need to rotate engine about 10° further; this can be done by using a degree wheel, checking piston position, or accessing the flywheel notches thru the stock pickup port (11.25° per 'tooth'). Due to whatever combination of components and modifications have been done, you may need to change your timing spec.

Remove magneto cap. Set magneto rotor so narrow cam lobe is located counter-clockwise from cam follower as in Picture 2, and breaker points are just opening. You may find it helpful to hold magneto cam position with your thumb as shown in the added picture. This is your correct front cylinder advanced timing position. On the bottom of the magneto, note position of drive lugs in relation to mounting flange. Install the drive shaft assembly so that either pair of slots on drive is in a similar position in relation to hold-down stud holes; this way, slots will line up and engage lugs when installing mag head, with both the engine and mag head in firing position. Slot position can be changed in 18° increments. Note that there are 2 sets of holes in which you can install the studs; choose whichever pair lines up best for mounting mag head in the position you want. Using a drop of blue loctite, securely install studs by using 2 nuts jammed together. Tighten drive shaft assembly 80 ft/lbs with threads lightly oiled. Grease gears liberally, install side plate and gasket.

Install the magneto and gasket, securing with the nuts and heavy washers provided, in the advanced

timing position as shown. You can check for 'points just opening' by eye, or for exact position use our p/n **KATT** timing and testing tool. Re-install cap (make sure coil springs line up), and tighten 1/8 turn past hand tight. Stud on side of magneto is used to "kill" magneto with a grounding toggle switch or lever (p/n **KSL**). Do not connect to your 12-volt system! **Note:** Impulse mechanism is intended for starting only. Maintain a high enough idle so that it does not engage while running.

Stuff to know: This magneto was designed to start with a moderate kick; hard kicks may actually hamper starting. Unit is also fully compatible with electric start, however, due to weak gears in the electric start system, it is recommended that you eliminate the compensating sprocket by replacing or welding. The long-lasting OEM-type points in your magneto have been set at .015, and will require no attention for years. When replacement is necessary, use Morris p/n **P5** and condensor p/n **P6**. **Note:** if you are using chain drive cams you will nee **P5L** points, as the points cam turns reverse, ccw. Use only original type cap, gasket, points and condenser. Initial spark plug gap, .025". Due to the hot spark, plug gap may burn larger faster than before. Use of a single-fire module, Morris p/n **MSF**, may help prolong plug life. Use copper or stainless steel solid core (non-suppression) spark plug wires (Morris p/n **MWS**).

Morris Magnetos mf'd under US Patents 4191157, D375509, applicable pat's pend.

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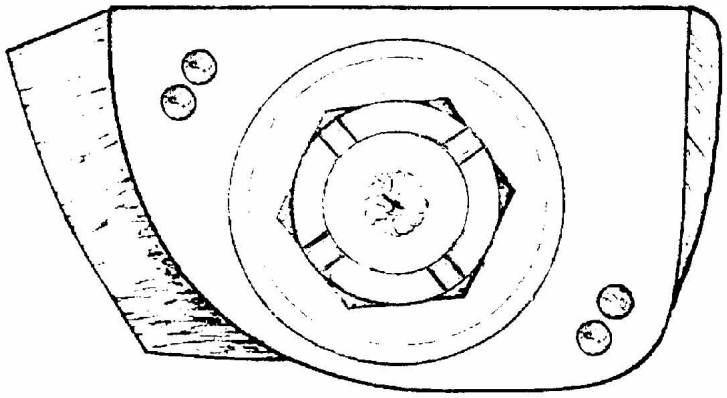

Fig. 1

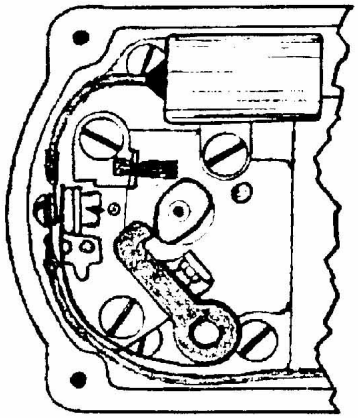

Fig. 2