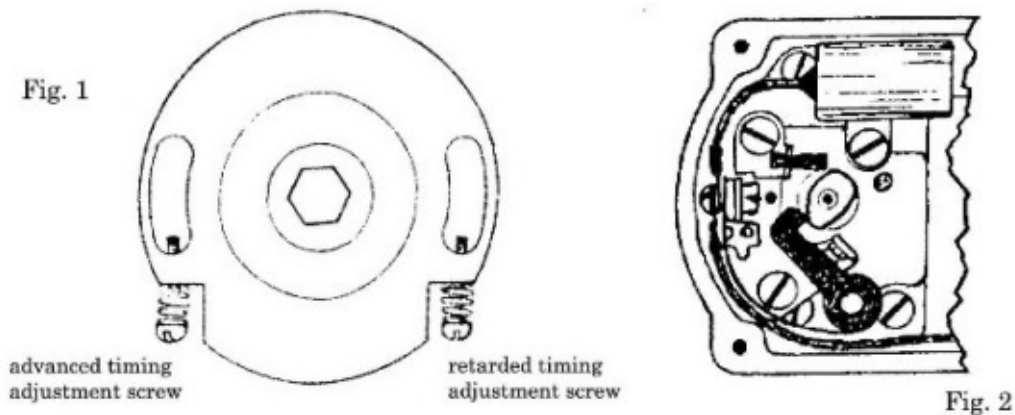

MM2 Instructions, '71-'81 XL

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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:

- Remove your **rear** spark plug only.
- Kick until you feel **front** cylinder compression; rear piston will be on the way up.
- Continue turning the motor until the rear piston gets to the top. At this point, the correct front cylinder advanced timing mark will be appearing in the inspection hole.

Temporarily install the drive unit and the mount base, through the tach drive hole. Check for rotational gear lash (some shaft side play is normal). The less gear lash, the better, but zero gear lash could indicate a bind. Because the cam cover tach drive hole is a 'cored' hole, the location can vary slightly. Also, if your cam cover has been chromed or polished where the magneto mount housing sits, the drive alignment will shift when tightened. To correct these problems, we have included a tapered shim to be used between the cam cover and the mount housing. The thick notched side should be turned toward the front of the motorcycle to lessen the gear lash, or back to increase it.

There are 3 pairs of holes in the bronze plate, providing 3 different positions the magneto can sit in. Install the studs in the pair you decide to use by drawing them in, using the nut, washer, and spacer provided. Do not over-tighten, to avoid warping the bronze plate. Bolt the plate up to the magneto using loctite on the button head bolts provided. Next, remove magneto cap (unless it is clear). Set magneto rotor so narrow cam lobe is located counter-clockwise from cam follower as in Picture 2, and breaker points are just opening. This is your correct advanced timing position. On the bottom of the magneto, note position of hex socket in relation to mounting studs. Hex on drive unit will need to line up to engage with the socket (may vary from picture). If hex position on drive is not similar to socket, position can be changed 5° by removing drive, turning hex one flat+, and reinstalling. Repeat if necessary. Position is correct when magneto can be installed in the advanced timing position, with enough movement in slots to set retard timing as outlined below.

For final installation, use a magic marker to place aligning marks on the mount housing and one of the hex flats, so you can re-assemble in the same position. Remove the drive, apply grease liberally to the gear teeth, and wipe off the peaks of the teeth to prevent getting grease on the tach drive hole threads. Clean oil off the threads in the hole and on the drive. Securely fasten drive unit to your engine using loctite, with a deep 7/8 socket. Upon final tightening, twist the mount housing counter-clockwise to help prevent the assembly from loosening. This can be done by using a screwdriver tip against the intake tappet block. Fill the mount housing with oil until it is over the level of the drive thrust washer.

Apply grease to hex drive, magneto bronze plate, and large o-ring (if supplied). Install magneto with washers, lockwashers, and stopnuts, checking to see that tappet block bolts do not hit the magneto or the bronze ring. Tighten nuts until lockwashers begin to compress. Install timing adjustment screws and pieces of the small spring (cut as required), using blue loctite. Attach the large spring between front (retarded) adjusting screw and rear magneto mount stud. Set advanced timing (rear adjusting screw) visually as outlined and shown above. Static timing is all that is required. Timing can be dialed in exactly by using Morris Magneto p/n **KATT**, timing and testing tool. We do not recommend the 'cellophane' method. Re-install cap if removed (make sure coil springs line up), and tighten screws no more than 1/8 turn past hand-tight. Retard timing adjusting screw should be set so that end of magneto moves approximately 3/4" from advanced timing position. Retard timing is used for starting and can also be used for idling. When riding, magneto must be advanced, or you could overheat engine.

With the proper mounting nuts tension, magneto will stay retarded for starting and idling. As the throttle is opened, vibration from the engine permits the spring to pull the magneto advanced automatically. For racing applications, we recommend a stronger advanced spring and/or greater hold-down nuts tension. 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!

Stuff to know: 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 only original Morris type black bakelite cap (**p/n P2**), clear polycarbonate cap (**P2T**), gasket (**P3**), points (**P5**), and condenser (**P6**). Initial spark plug gap, .020 -.025". Due to the hot spark, you can expect the gap to burn larger somewhat faster than with a battery ignition. Use of a single-fire module, Morris p/n **MSF**, may help prolong plug life. We recommend Autolite 4275, 4316, or 996 spark plugs. Use copper or stainless steel solid core (non-suppression) spark plug wires (Morris p/n **MWS**). US Patents 4191157; D375509 **US Patents 4191157; D375509**

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