

How to maintain your moped

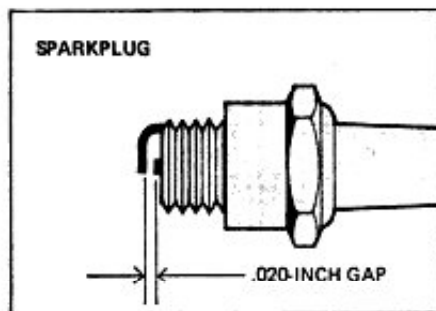
by Eugene A. Sloane

Mopeds are fun to whiz around on, until they start coughing, sputtering and giving other signs of coming down with the two-stroke croup. If you want to keep your moped zooming through the bright sunny days, dark of night and gloom of winter, here's what you'll need to know to do routine maintenance.

Instructions that show you how to tear down the motor and do major repairs would fill a book, so I'll cover what you should do every few thousand miles.

Ignition maintenance

While you will probably need to replace the points and condenser



Gapping sparkplug is basic moped maintenance job; gap's usually .020 inch.

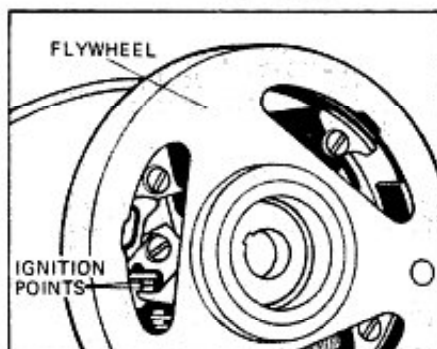
every 3600 miles or sooner, you may find your moped refusing to start for a number of reasons not related to the points. So, eliminate the more common causes first.

For example, on many mopeds a burned-out taillight or defective switch that shorts when brakes are applied, will kill ignition. So check lights; then the stoplight switch.

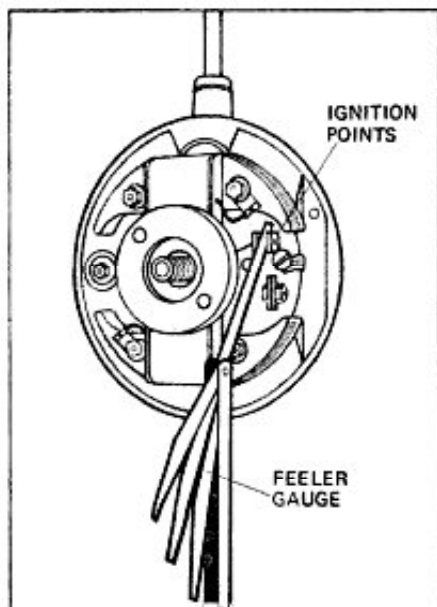
The "kill" switches on most mopeds are flimsy. Check to make sure they work. Use a test light or ohmmeter to test continuity of switch circuit.

If you still have no spark at the sparkplug wire (test by kicking over the engine with plug wire about 1/4 inch above the motor block and observe spark, if any), you can have a defective coil or zener diode, in which case you have a shop job for the dealer to handle.

Make sure the sparkplug itself is



Ignition point gapping can be tricky; access is through hole in flywheel. Feeler gauge (below) is used to adjust points to spec: Loosen screw on movable contact.



clean. If you have used too much oil, the plug will foul quickly. Symptoms are stalling motor at stoplights, hard starting. Clean plugs every 500 miles, replace every 3600 miles. Some plugs look clean, even spark when laid on top of an engine block, but won't fire under compression. You need only one plug, so change it if in doubt.

Whether installing cleaned or new plugs, make sure they are gapped to specs, usually .020 inch.

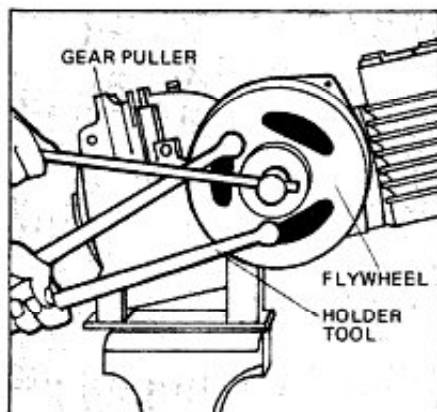
Checking points

To check points, you will need to remove the flywheel cover, underneath which you can see the points through slots in the flywheel. The flywheel cover is usually plastic or light metal and is easily removed.

If points are pitted, badly burned or corroded, they should be replaced. If they are not pitted or burned, you can clean them with very fine emery cloth, followed by a piece of paper. Point gap can then be readjusted to the normal .014 to .018 in. by using a feeler gauge through the flywheel hole and adjusting gap by loosening the point-fastening screw and moving points the correct way.

Timing the ignition

Whether you clean and regap points, or install new points and condenser, you will have to retime the engine. The theory is that a sparkplug should ignite gas-air mixture while the piston is coming up to top dead center, to cushion the



Flywheel is removed to change points. Special tools are holder and gear puller.

piston mass travel before it hits top dead center. Most moped specs call for the sparkplug to fire at 23° before top dead center (23° BTDC). You won't be able to measure when the piston is at 23° BTDC directly, so various methods of telling when the points open at this position.

The Motobecane mopeds, for example, use a plug with a traveling

rod with white and blue marks on it. The plug screws into the sparkplug hole. When the piston rises and pushes the rod up to the blue mark, the piston is at the correct BTDC value. At this point the points should just begin to open, as evidenced by a test lamp lighting or an ohmmeter needle deflecting when connected between the primary (blue or red) lead from the magneto coil and ground.

To correct the timing, the magneto stator base plate is held by two fixing screws. To correct retarded timing, loosen these screws,

see that these marks line up while the engine is running. *Remember, anytime you change point gap you have to check engine timing.*

Changing points

If points are pitted or burned, you will have to change them. Always change the condenser while you are at it. To change points you

wheel is loose. Remove flywheel, being careful not to lose the small Woodruff key.

With the flywheel off, the points are right there in front of you, held in place by two screws. Remove the point wire, the two screws, replace points and the wire.

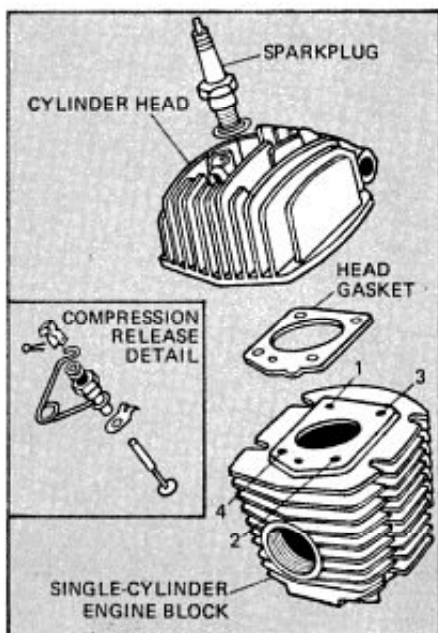
To regap points, remove the sparkplug, turn the engine until points are open fully, check that gap is between .014 and .018 in. with feeler gauge. Replace flywheel and check timing as above.

Decoking the head and muffler

Because all mopeds are two-stroke, oil must be mixed with gas (fuel) to lubricate the piston and, in some cases, the crankshaft assembly. Since oil carbonizes, it will eventually coat the cylinder head and muffler insides with carbon or "coke" as it's sometimes called. These parts, then, must be decoked or decarbonized occasionally.

Symptoms of an engine which has excessive deposits and requires decoking are hot running and loss of power. This occurs so gradually you may not realize how much power you have lost. If the moped acceler-

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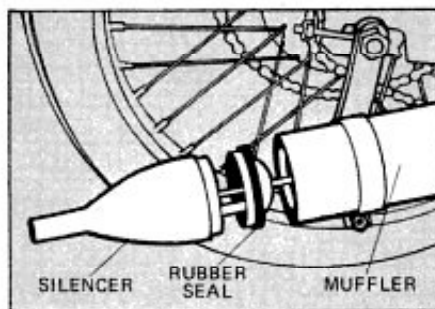
Engines like the one shown here have a compression release in head (insert). When replacing head, tighten head bolts in diagonal order shown (1, 2, 3, 4).

turn the plate counterclockwise and vice versa.

Other makes require you to screw a dial indicator into the sparkplug hole. (This indicator is an expensive instrument, and isn't worth buying unless you have two or three mopeds of the same make engine in the family.) To use the dial indicator, rotate the motor until the dial needle just begins to change direction. Points should open when the dial indicator reads between .032 and .048 in. (0.8 and 1.2 mm). If not, correct the timing by moving stator plate as noted above.

Other makes have marks on the flywheel and engine casing indicating the correct piston BTDC location and point opening. As you rotate the engine clockwise, the points should begin to open (as shown by a test lamp or ohmmeter) when the arrows or marks line up.

Another way to check this timing is to use a timing strobe light to



Rubber seals are used between sections of some mufflers; replace after decoking.

will need two special tools to remove the flywheel cover: a flywheel holder and a gear puller that fits your make moped. Hold the flywheel in place with the holder, remove the flywheel nut, screw in the gear puller, turn the gear puller shaft until the fly-

TYPICAL MOPED MAINTENANCE SCHEDULE*								OPERATIONS TO PERFORM
FREQUENCY								
(After...miles)			(Every...miles)					
300	600	900	600	900	1800	3600	7200	
●			●					Check tire wear and condition
	●					●	●	Adjust throttle cable
		●		●		●	●	Check gearbox oil level
	●			●		●	●	Clean and lubricate chain
	●				●	●	●	Clean air filter
	●					●		Change gearbox oil
	●	●		●		●	●	Check sparkplug
					●		●	Decarbonize engine
					●	●	●	Clean exhaust baffle
	●				●		●	Retighten screws and nuts
	●					●		Clean gasoline petcock and lines
	●				●		●	Clean carburetor
	●				●		●	Adjust idle speed
	●					●		Check ignition timing
	●					●		Adjust clutch
	●			●	●	●	●	Check brakes/linings
	●					●		Check/lubricate hub bearings
	●						●	Adjust/lubricate steering bearing
	●			●		●	●	Lubricate control cables

NOTE: Above time schedule applies to moped use on dry paved surfaces. If moped is used in wet, muddy or sandy areas, maintenance should be more frequent. Always check controls and lights before any trip.
*May vary slightly from make to make. Please check owner's manual or shop manual.

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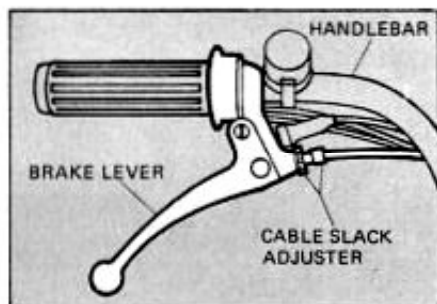
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ates so slowly from a standing start you find yourself pushing off with both feet, chances are your little engine needs decoking.

A word about oil

As you know, your owner's manual tells you to use a lot more oil during the break-in period than afterward. If you overdo the oil fuel ratio spec on the theory that overoiling means less wear, you'll need to decoke the engine a lot sooner than normal. This also applies after break-in.

There are two types of oil formulated for two-stroke engines—natural and synthetic. Use one of them, and not the ordinary motor oil you use in your car. Two-stroke oil is designed to mix well with gasoline



Brake levers have adjusting nuts where you can take up slack in brake cable.

and to burn with a minimum of deposits on plug, engine head and muffler.

Of the two types of two-stroke oil, I prefer the synthetic because it is cleaner burning and therefore leaves less deposit, thus extending decoking and sparkplug cleaning intervals. Also, you can use about half as much synthetic oil as natural two-stroke oil.

For example, if your owner's manual calls for 40:1 ratio (40 parts of gas to one part of oil) you can use an 80:1 ratio if you use synthetic two-stroke oil (after break-in). You can use synthetic oil with oil injection systems. *But, never mix natural and synthetic oil in the same batch!* If you have a five gallon can of natural oil/gas mixture use it all up before switching to synthetic. Synthetic, by the way, also burns cleaner which reduces smoke emissions from the muffler, and it also prevents ring sticking.

Decoking the head

To decoke the head, all you need do is remove the cylinder head, scrape out the accumulated carbon from inside the head and from the

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top of the piston. Replace the head.

Just remove the sparkplug, and the four head bolts. Install a new gasket when reinstalling the head. If the head has a compression release, slip the cable out of the unit so you can remove the head. The Motobecane motor, for example, uses a compression release, and this motor must be removed from the moped before the head can be removed.

When reinstalling the head, you should use a torque wrench and follow the shop manual torque specs in tightening head bolts. It's easy to strip the threads, either on the bolt, or worse, in the engine block internal threading. Typical head-bolt torque spec is 7 ft.-lb.—not much, so you see how easy thread stripping is.

Decoking the muffler

If you are lucky enough to have a moped with a muffler that can be taken apart and decoked, fine. Otherwise you will need a new muffler, say, every 3000 or 4000 miles.

Take-apart mufflers have one or two sheet-metal screws near the rear end of the muffler. Just remove the screws to pull out muffler innards.

Some makes have a rubber seal between the silencer section and the main muffler section. It should be replaced when reassembling the muffler after decoking. The decoking procedure is simple: Clean off deposits with a wire brush and/or burn them off with a propane torch.

Brakes

As brake cables stretch and brake shoes wear, cable slackening must be taken up. Most mopeds have a simple barrel/hex nut arrangement at the brake lever which, when adjusted, will take up this slack. Adjust application with about a half-inch brake-lever squeeze. Cables should be lubricated every six months, more often if you ride in the rain a lot. If you need more adjustment than you can get on the lever barrel, take up the cable at the brake itself by pulling the cable slack through the fixing bolt and retightening the ferrule. Use pliers to pull the excess cable through, first readjusting the barrel at the brake lever to open position so you can fine-adjust the cable later on.

Check brake-shoe wear by looking in the inspection port or checking the brake-shoe-wear indicator labels. Better mopeds provide some means of inspecting brake-shoe wear without removing wheels. If shoes are at the wear point, replace them. ★ ★ ★