

SERVICE MANUAL  
FOR THE  
MAICO 125cc MOTORCYCLE

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## Foreword

There has been a need for a comprehensive service manual for the Maico 125 for quite a while. We have tried to make the terms and instructions in this manual as clear as possible. We are sure you will find it very useful in preparation and maintenance of your 125 Maico. It was prepared for both five speed and six speed models.

Be sure to read the chapter on race preparation as it contains many shortcuts as well as all the modifications that were made to the machine that won the AMA Amateur National Championship Moto-Cross title for 1970. You now have one of the most competitive 125cc machines available. We feel that this manual will help you keep it that way.

Very few special tools are needed to service the 125 Maico. We have included a brief section that describes these tools. If you run into any problems you cannot solve, take them to your dealer, as he has the equipment to handle any service problem that is beyond your ability to solve.

Good Luck!  
The Authors  
Jake Allen  
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Kathy

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## MAICO 125cc. TECHNICAL SPECIFICATIONS

### ENGINE

Type..... Single cylinder, two stroke with reverse scavenging and rotary inlet valve  
Bore..... 54 mm (2.125 in.)  
Stroke..... 54 mm (2.125 in.)  
Displacement..... 125cc (7.63 C.I.)  
Cylinder..... Aluminum alloy with shrunken liner  
Compression..... 10:1  
Maximum Output..... 21.2 H.P. @ 8200 RPM  
Maximum Torque..... 1.48 mkg @ 7000 RPM  
Piston Clearance..... .002-.0016  
Spark Plug..... Beru 280/14S or equivalent  
Gudgeon Pin Bush..... Full length needle bearing  
Connecting Rod Bush..... Early-full length needle bearing  
Late double row needle bearing  
Crankshaft..... Two piece press fit supported by two 20x52x15 combination ball bearings  
Port Timing..... Three transfer ports and exhaust are symmetrical, piston controlled. Intake is controlled by rotary disc valve  
Crankcase Lubrication..... Petroleum base oils in the ratio of 20:1  
Gearbox Lubrication..... Eastern Maico recommends Castrol Hypoid SAE 80

### CLUTCH

Four plate lamellen clutch running in oil bath with eight non-adjustable compression springs.

### TRANSMISSION

Five or six speed with outward lying shift mechanism to control the driving key. Early model-5 speed. Late model- 6 speed.  
Ratios:

	5-speed	6-speed
Primary drive	(23:67)=2.91	2.91
1st gear	(10:48)=4.8	4.8
2nd gear	(15:43)=2.87	(14:44)=3.14
3rd gear	(19:39)=2.05	(17:41)=2.41
4th gear	(22:35)=1.59	(20:38)=1.9
5th gear	(24:33)=1.38	(22:35)=1.59
6th gear		(24:34)=1.42
Final drive	(15:44)=2.93	(16:44)=2.75

ELECTRICAL SYSTEM

5-speed Bosch 0212-124-014 Clockwise rotating flywheel. Magneto 6V35-5/18W  Point Gap .014-.017 Spark Plug Beru 280/14S or equivalent Spark Plug Gap .020 Ignition Advance .108-.118 in.	6-speed Clockwise rotating appt. (Germany) magneto  ----- .020 B.T.D.C.
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CARBURETOR

Bing..1-26-98 needle regulated center float with starting device.  
 Bore..... 26 mm (1.023 in.)  
 Throttle Slide..... B-22-570  
 Throttle Needle..... 5  
 Main Jet..... 125  
 Pilot Jet..... 50  
 Needle Jet..... 46-235  
 Air Adj. Screw..... 3/4 turns off seat  
 Needle Position..... 2nd groove from bottom

FRAME

The frame and suspension are basically identical to the large Maico. Thin wall chrome moly double loop cradle frame is employed. Hydraulic dampened forks, with alloy sliders and triple clamps and constant rate springs are used. Swing arm is mounted on silent bloc metallastic bushings and suspended on hydraulic dampened adjustable rate progressive wound springs. The factory shield is attached to the steering head and indicates the following data:

- Serial Number
- Swept Volume
- Dry Weight
- Model

WHEELS AND TIRES

	Front	Rear
	250x21 Knobby	350x18 Knobby
Tire Pressure	dry track-15 P.S.I. wet track-10 P.S.I.	dry track-15 P.S.I. wet track-10 P.S.I.

### WHEELS AND TIRES (CONT.)

Rear wheel has six rubber dampers mounted between the drive sprocket and wheel.

Rear Chain..... 1/2 x 5/16

### TANK

Fiberglass with 1.2 gallon capacity.

### SEAT

Long thick saddle of foam rubber upholstered with supported fabric.

### DIMENSIONS

Wheelbase.....	55 inches
Dry Weight.....	190 lbs.
Total Length.....	79 inches
Saddle Height.....	30 inches
Ground Clearance.....	6 inches
Overall Width.....	33 inches
Overall Height.....	43 inches

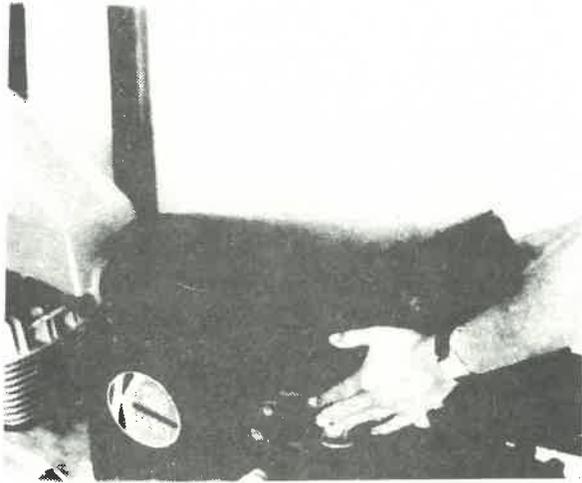
### PRELIMINARY REMARKS

Repairs on the shift mechanism, carburetor and rotary valve can be done after taking off the right case.

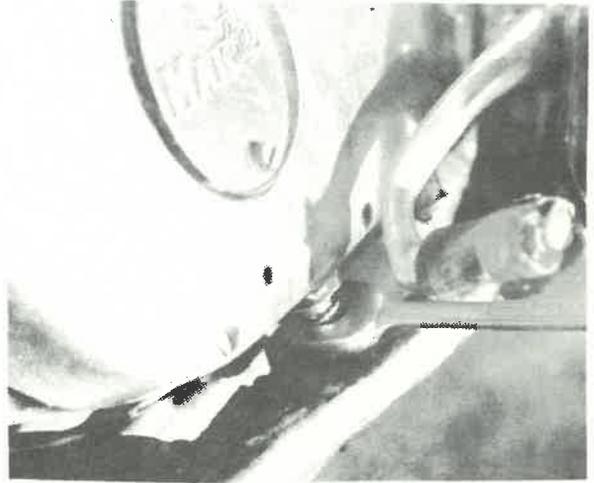
Repairs on the dynamo magneto, primary drive and clutch can be done after taking off the left case cover. For this, drain transmission oil before removing the cover screws.

Dismantling of the motor is necessary for repairs on the transmission, the crankshaft or the kickstarter. For crankshaft and kickstarter damages the complete gearing with output pinion (pinion drive shaft) and the shift mechanism stay in the right case half.

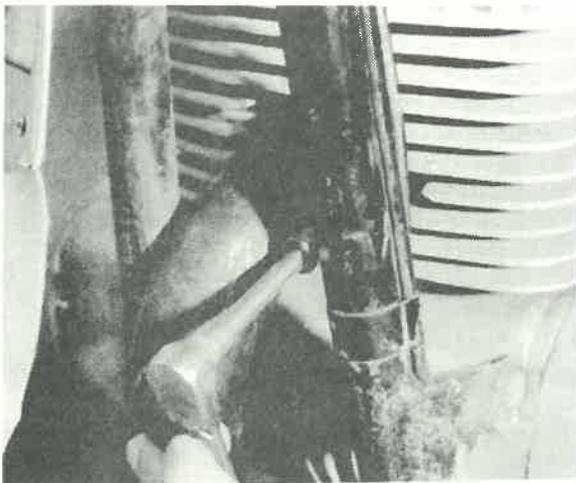
## REMOVAL OF ENGINE FROM FRAME



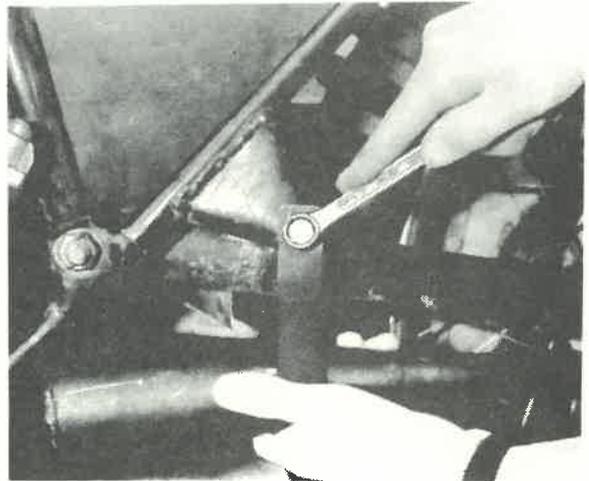
1. Remove seat by removing two cheese head screws on each side of seat. Lift seat about two inches at back and slide rearward.



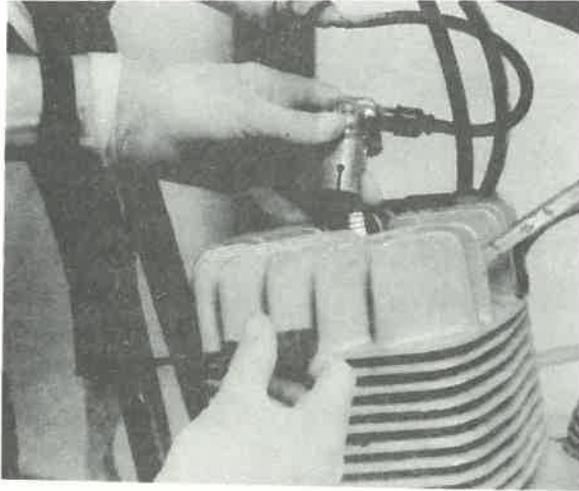
2. Remove gastank by first disconnecting fuel line at shut off valve. Remove bolt at front of tank, lift rear of tank, and slide tank rearward. Drain oil from gearbox. 17 mm drainplug is located beneath left primary cover.



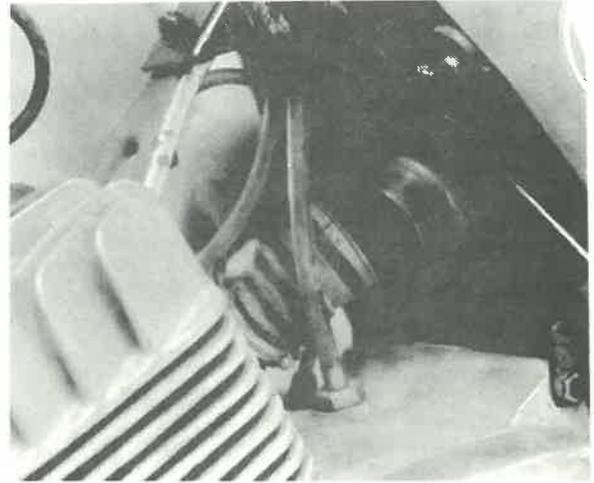
3. Remove 6 mm nut on expansion chamber or muffler header pipe.



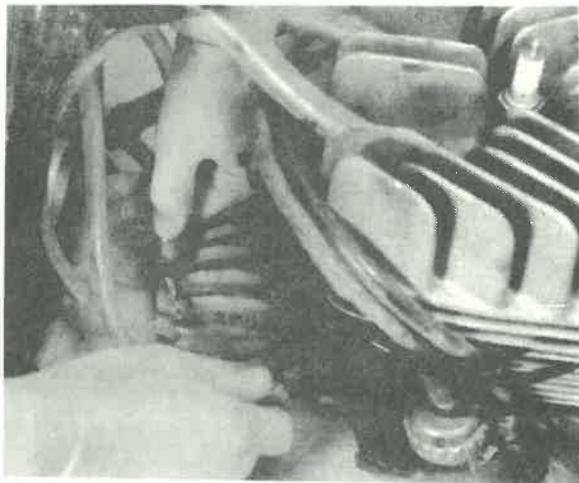
4. Remove bolt holding rear of expansion chamber or muffler and slide complete unit forward for removal.



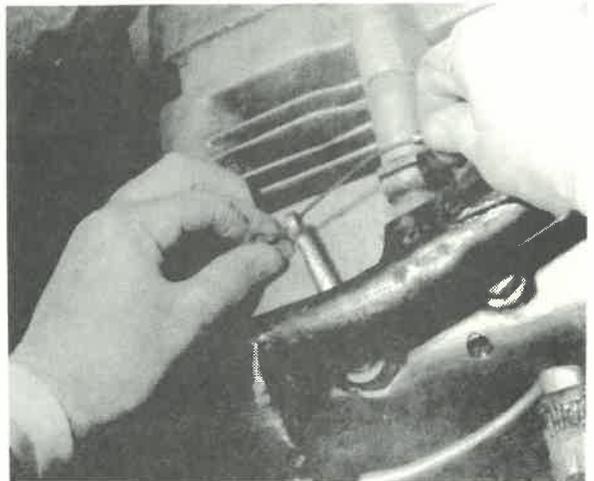
5. Disconnect high tension wire from spark plug and low tension wire (s) from junction block located at the forward frame down tube. Note they are color coded on enduro model whereas there is only one for the motocross model.



6. Remove air tube from aluminum adaptor on air box.

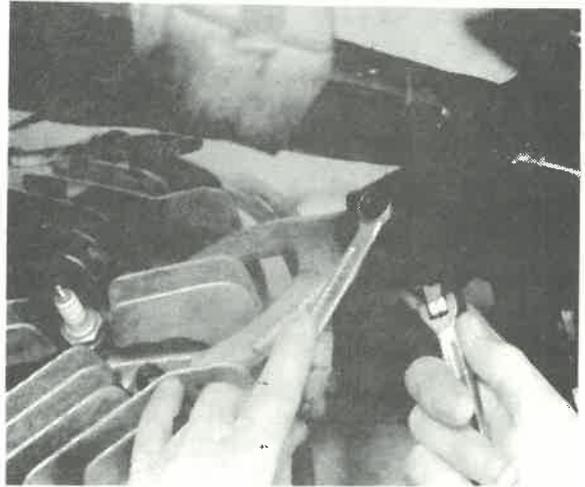


7. Disconnect throttle cable and enrichener cable at the handlebar and wrap cables around cylinder. Disconnect breather tubes from gearbox filler plug and carburetor and put aside.

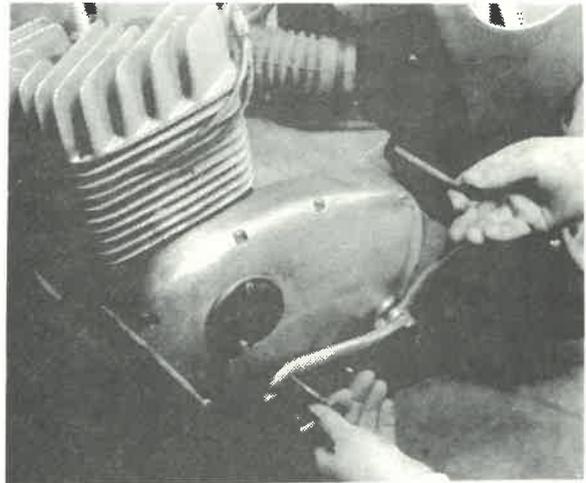


8. Disconnect clutch cable at handlebar first, then remove from cast lug on case, and clutch arm.

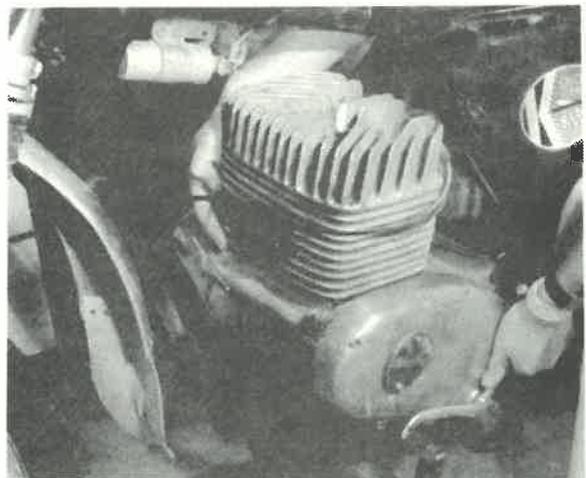
9. Remove four head nuts (11 mm) and frame to yoke bolt (13 mm). Reinstall two head nuts diagonally after removal of yoke to hold head and cylinder to engine during removal. Disconnect master link and remove chain.



10. Remove the three main motor mount bolts. (13 mm)



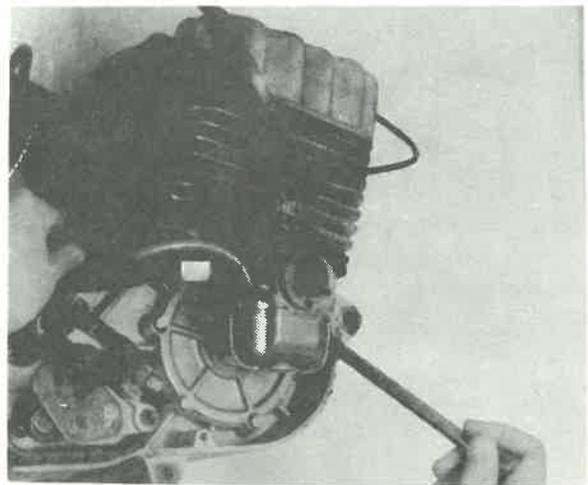
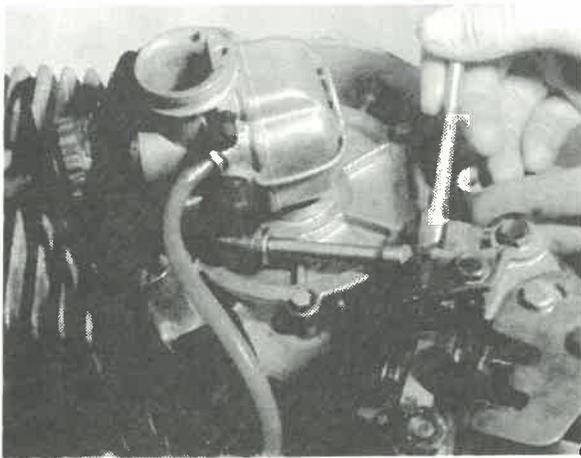
11. The engine is now ready to be lifted and tilted rearward for removal to the left side of the chassis.



## DISMANTLING THE ENGINE

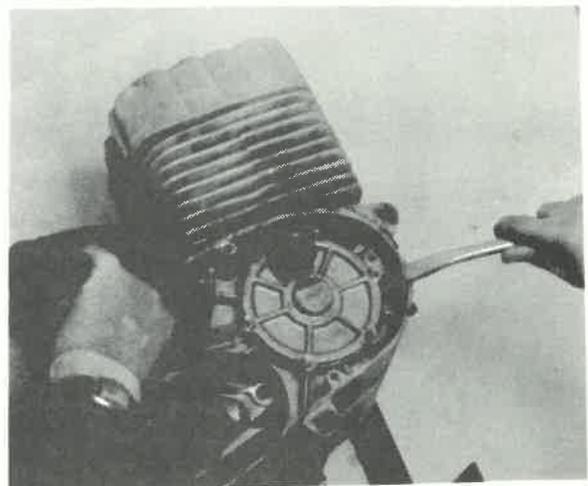
It is recommended that this section be read through completely before dismantling the engine. All threads are right hand (clockwise to tighten) unless otherwise noted. It is not imperative that you use an engine stand, but it will make engine repair much easier.

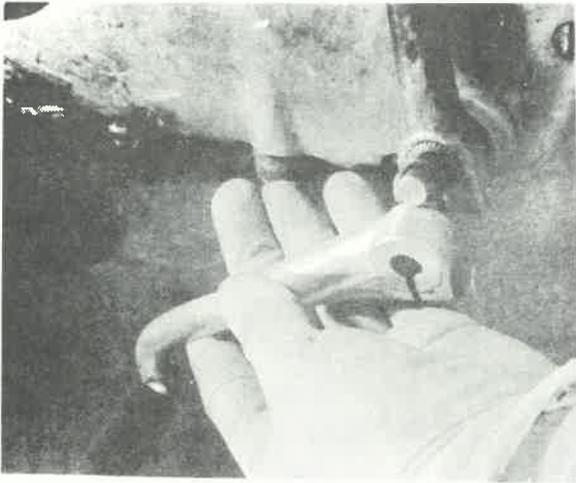
1. Place the engine on the stand with the right cover up. Remove the four cheese head screws and cover will lift off, exposing the shifter mechanism and the carburetor.



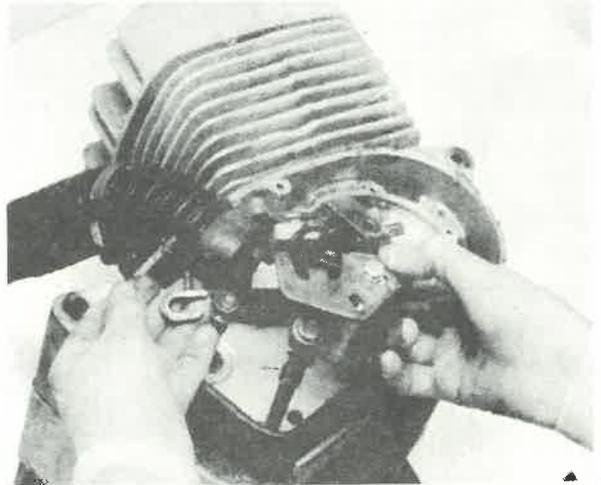
2. With an 11 mm socket, loosen the carburetor pinch bolt, and with the aid of two small pinch bars, gently pry the carburetor from its mounting and remove from engine.

3. Remove six screws (8 mm) and the pinch bars can be used to extract the rotary valve cover plate. Use caution as the plate is a tight fit in the bore and the mounting ears can be damaged if it is lifted off unevenly.

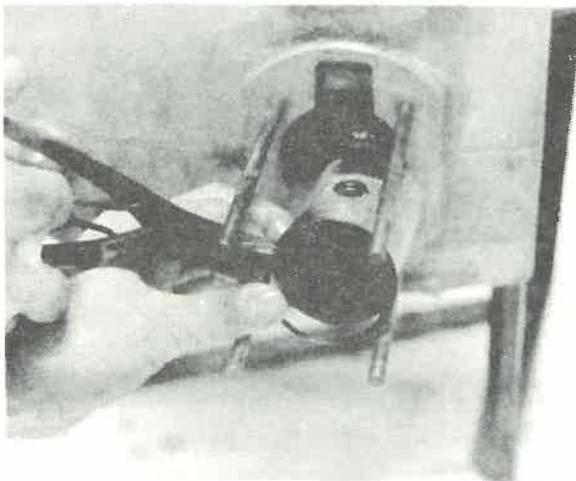




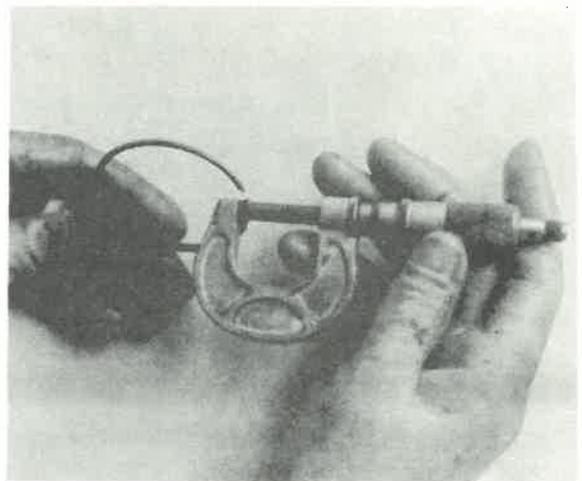
4. Remove gear shift lever (10 mm) and O-ring from shifter shaft.



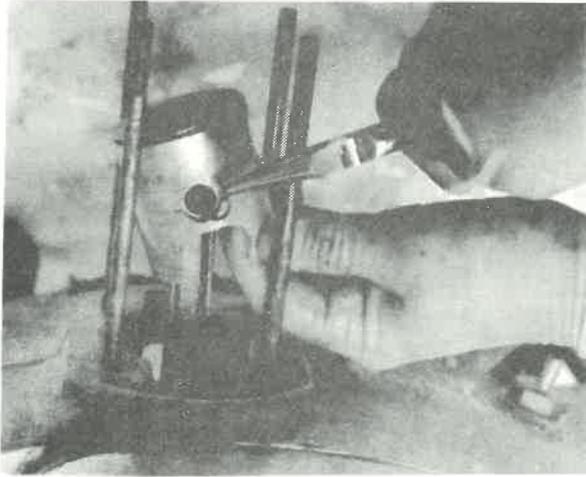
5. Remove three mounting block bolts (10 mm) and withdraw the entire shifter mechanism including shaft, from its mounting dowels. Put this unit aside until reassembly unless it is to be serviced. Remove the shifter mechanism shroud.



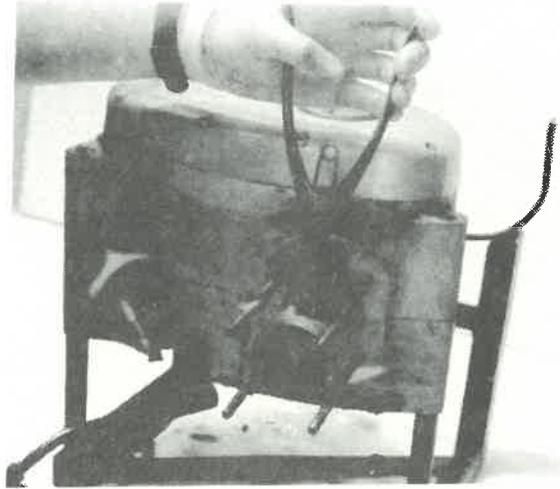
6. Remove air tube and reposition the engine on the stand so that the left side is up. Remove the two remaining head nuts and withdraw the head and cylinder. Remove the ring(s) and check for wear.



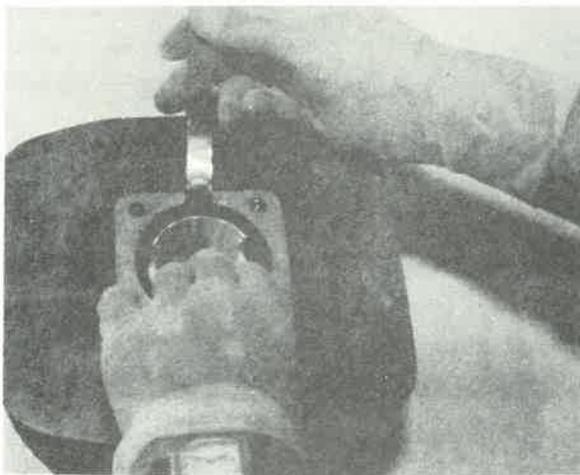
7. If the L-ring is cast iron (early models) and the wear land is .015 or less, it should be replaced. If the L-ring is chromed steel (late models) and the wear land is .018 or less, it should be replaced.



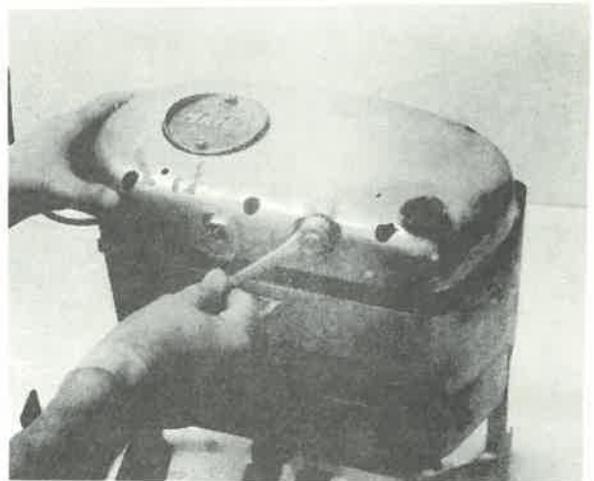
8. Remove piston pin cir-clips.



9. Remove piston pin. Warming the piston will make this job much easier. Remove the piston and needle bearing.

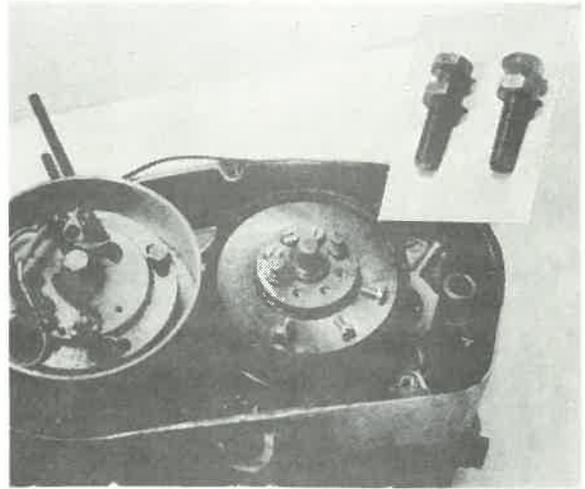


10. Check piston skirt clearance at top of bore of cylinder. If clearance is greater than .006, we recommend the cylinder be rebored to the next oversize piston. Skirt clearance on the new piston should be between .002 and .0016 in.

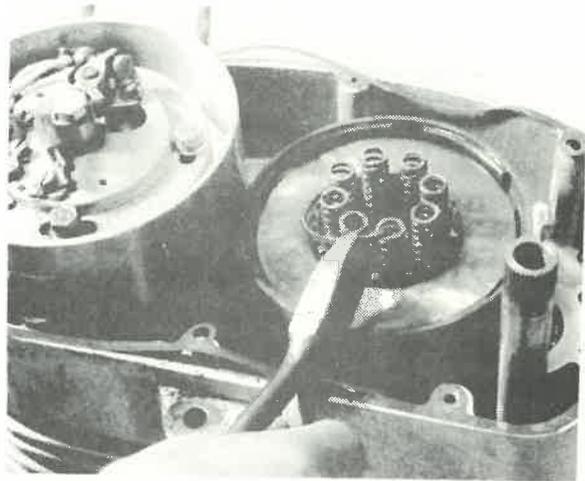


11. Remove the kickstart lever (10 mm). Remove eight cheese head screws from left primary cover. Rotate clutch arm and case will be forced off its mounting dowels.

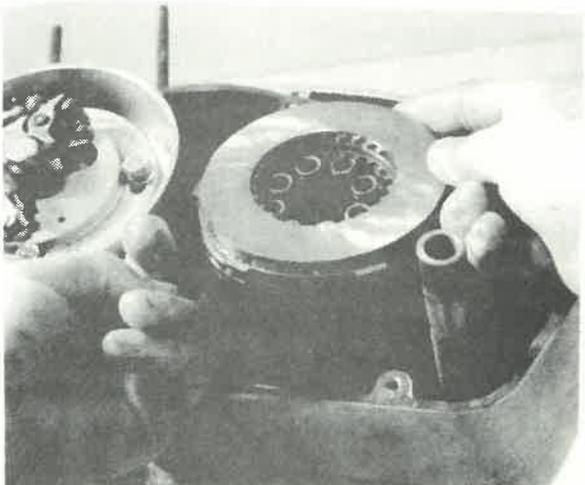
12. Ignition, clutch, and primary gears are now exposed. Remove two diametrically opposed cheese head screws securing throwout plate of clutch and install two 5 x 40 mm hex head cap screws with jamb nuts. Tighten jamb nuts onto plate and remove six remaining screws. Now back off hex nuts evenly until spring pressure is relieved. Remove long screws and plate can be lifted off, exposing clutch hub circlip.



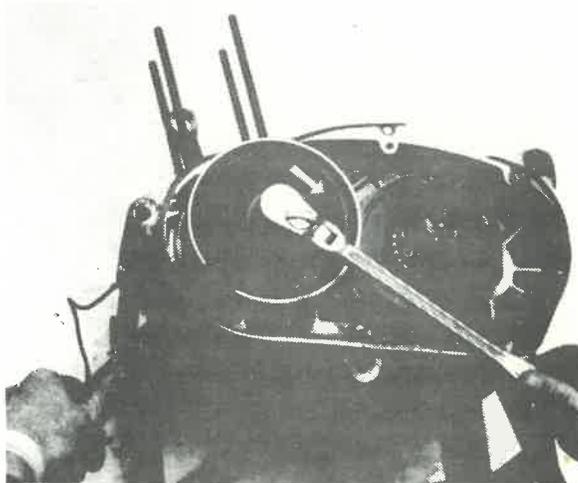
13. The circlip can easily be removed with a pair of diagonals.



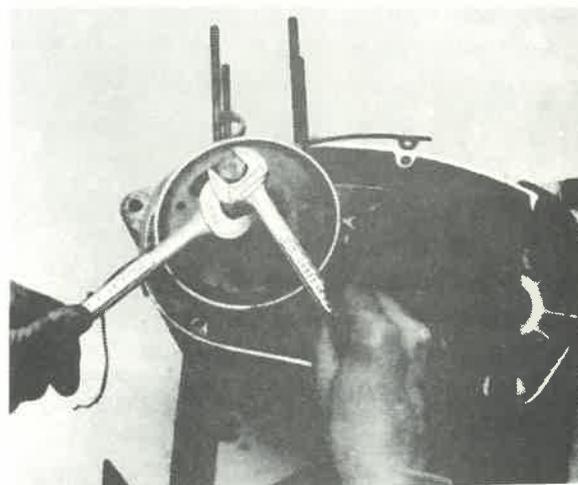
14. Lift out the 5 outer and 4 inner clutch plates.



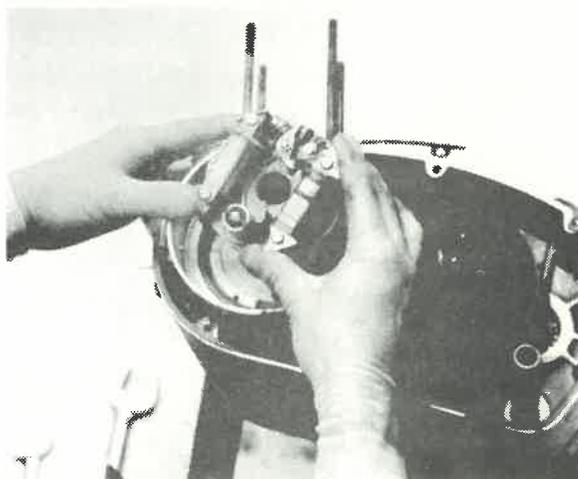
15. We will remove the ignition of the 5-speed first. Place flywheel holding tool in cutouts and remove 17 mm nut that secures flywheel. (Lefthand thread. Turn clockwise to remove) If the engine has been converted to total loss battery ignition, the hub of the flywheel can be held with a pair of channel lock pliers to remove the 17 mm nut.

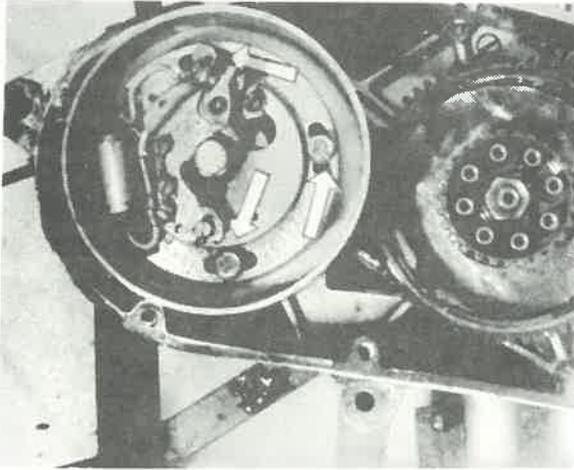


16. With the holding tool still in place, thread the large diameter of the flywheel puller all the way into the flywheel. Hold the puller with a 22 mm spanner and turn the center screw of the puller clockwise. This forces the flywheel off the crankshaft. A sharp rap with a hammer to the head of the puller screw will usually dislodge the flywheel if stuck. Remove the woodruff key from the shaft.

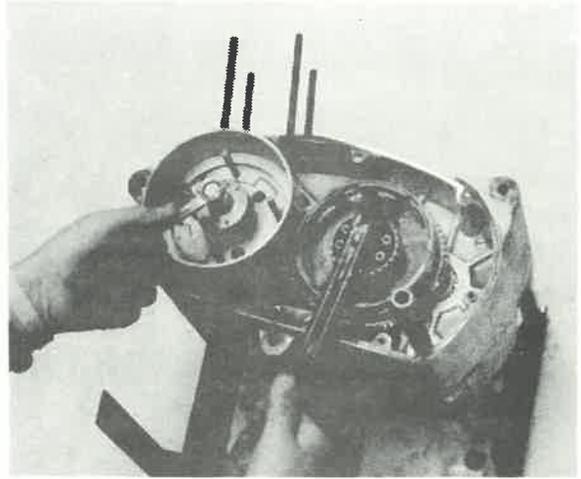


17. Remove three cheese head screws from stator plate and remove it as a unit. The stator plate shown is an enduro model. The MX model has only one coil.





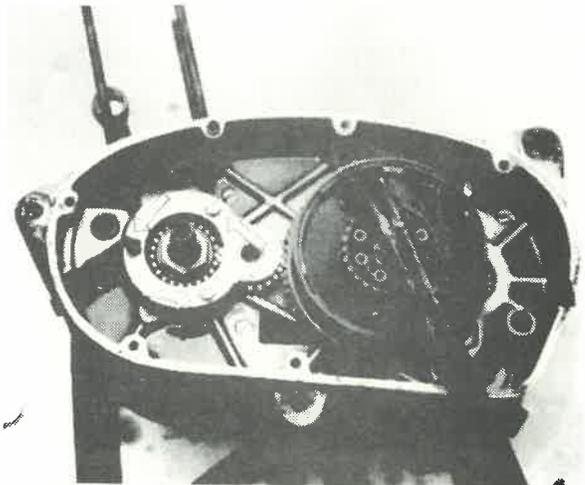
18. To remove the 6-speed ignition, first remove the three 10 mm nuts securing the magneto housing and lift off wire.



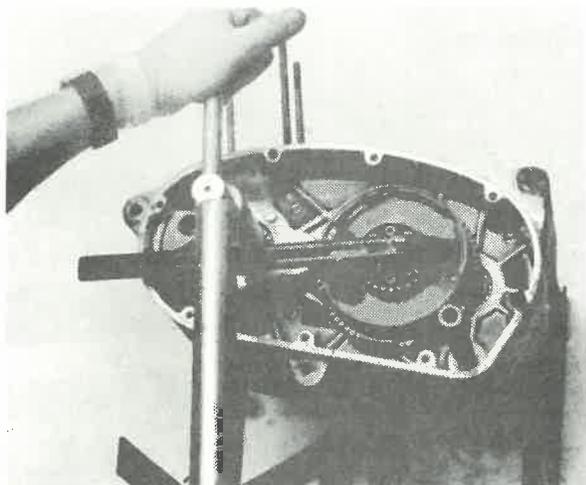
19. Insert the clutch locking tool into the clutch housing and remove the rotor bolt. (right hand thread)



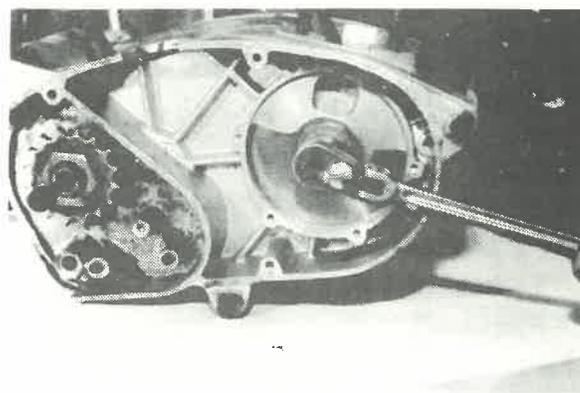
20. Insert the rotor removing pin into the bolt hole and thread rotor bolt into rotor. This will force rotor off the crankshaft taper. A sharp rap with a hammer to the head of the rotor bolt will usually dislodge it if stuck. The pin for pulling the rotor is  $1/4 \times 1-3/4$ .



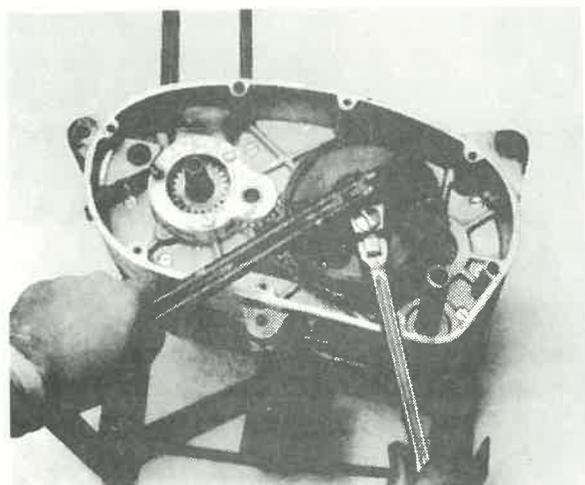
21. Remove three 5 mm socket head screws and magneto housing can be removed. Install three 5 mm socket head screws back into the idler gear mounting block to prevent it from coming loose during the following operations.



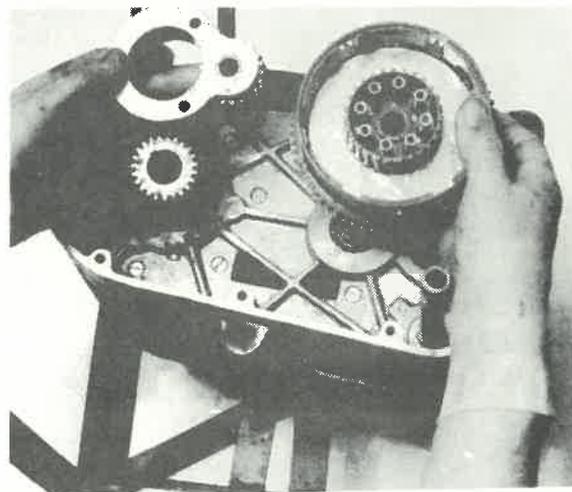
22. With a 1-1/16 in. deep socket remove crankshaft pinion nut (left hand thread) and special washer.



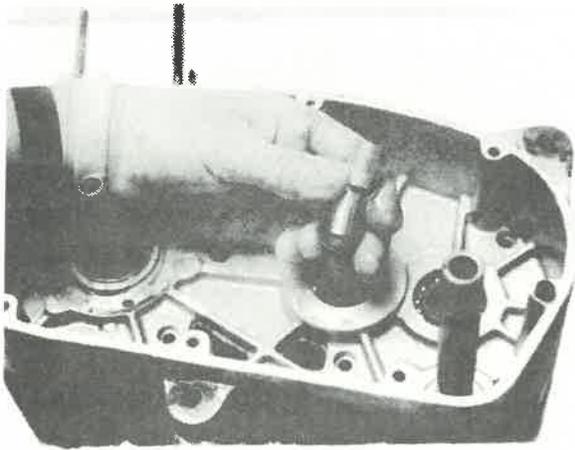
23. Set the engine upright and remove the rotary valve, washers, and spacers. IMPORTANT-Note how these come off as they must be replaced in the exact reverse order upon reassembly. There is usually some shim beneath the washers. These can be removed easily once the washers and spacers are removed.



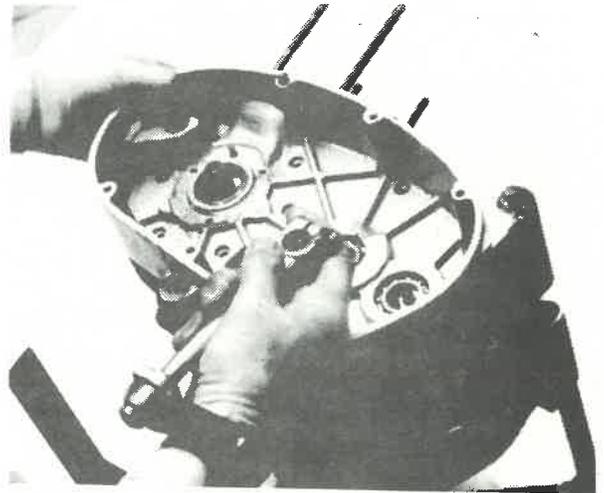
24. Again place the engine left side up and remove the clutch hub nut and wave washer with a 17 mm socket.



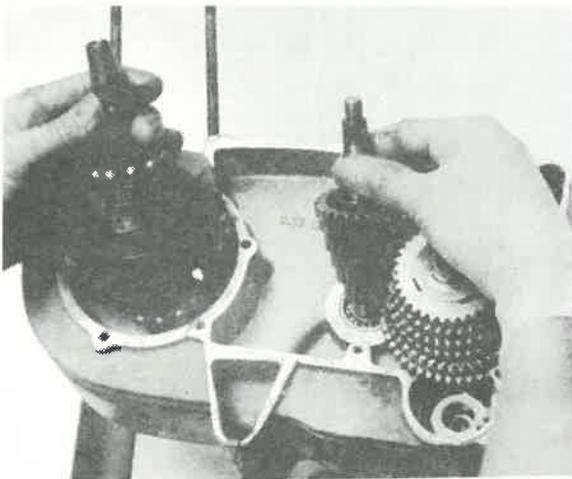
25. Remove 3 socket head screws from idler gear mounting block, and the clutch housing, idler gear block, and crankshaft pinion can be removed. Remove woodruff key from crankshaft.



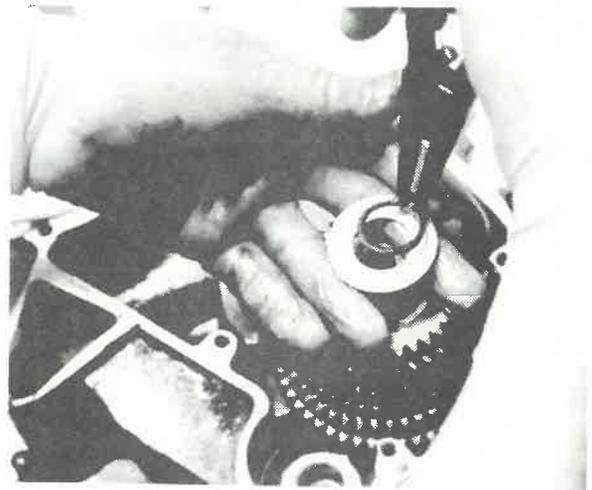
26. Remove bronze bush, steel bush, and thrust washer from input shaft.



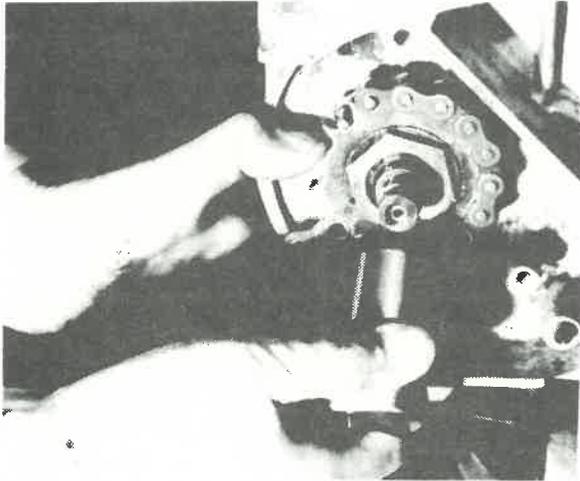
27. Remove 10 cheese head screws securing cases together. Install kickstart lever on shaft, turn  $1/4$  turn clockwise, and the left hand crankcase can be lifted free. The kickstart lever and shaft will come off with the left case.



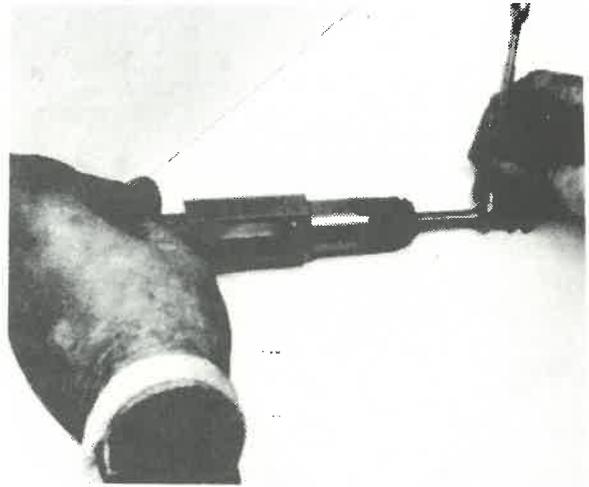
28. The crankshaft, input shaft gear cluster, and output shaft gears are now exposed. Lift the crankshaft straight up to remove. Likewise with the input shaft gear cluster. Right crankshaft bearing may stay in the right crankcase; if so, remove it.



29. Remove snap ring on output shaft. Spacers and gears can now be removed. **IMPORTANT-** Keep gears in exact order in which they are removed for reassembly.



30. To remove the counter-shaft sprocket, bend the lock tab down on the countershaft sprocket nut. Hold the counter-shaft sprocket with a chain wrench and remove nut. The sprocket, lock washer, and spacer ring behind it can be removed now.



31. The output shaft can now be removed from right crankcase bearing. Do not lose thrust washer between large and small diameters of output shaft. To remove the sliding gear selector key from its shaft, insert screwdriver in output shaft slot and turn selector shaft clockwise. Note: All threads on selector shaft are left hand.

32. The engine is now far enough apart to inspect all parts for wear or failure. If any bearings need to be replaced, heat case to approximately 250 degrees F. Tap case on wood surface and bearings should fall out. To install the new bearing, heat case to 250 degrees F and new bearing race can be easily installed. Note: Bearing identification should always be visible after installation.

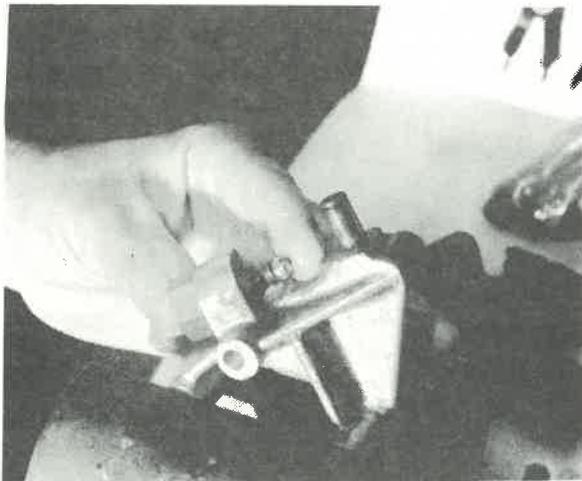
If crankshaft assembly needs service, it is suggested that you take this work to your nearest dealer as it requires special tools to service this assembly. It is suggested you purchase a gasket set before starting the reassembly. It contains all the gaskets and seals pertinent to your engine.

## ASSEMBLY OF THE MAICO 125 ENGINE

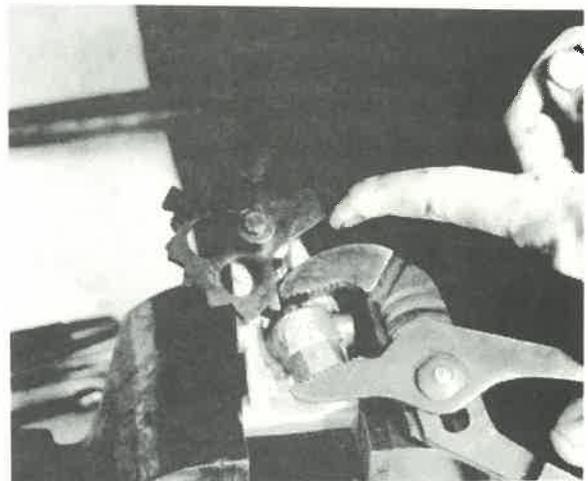
Instructions apply to both five and six speed models unless otherwise noted. Before starting the assembly of the engine, clean and inspect each part for wear. The sub-assemblies, crankshaft and shifter mechanism, should be prepared first.

### SUB-ASSEMBLIES

1. Any servicing of the crankshaft assembly should be done by a competent repair shop as it requires specialized tools. To install or remove left main bearing race, heat race to approximately 275 degrees F. The right inner race is a slip fit on the crankshaft and can be removed easily.
2. To assemble the five speed gear change mechanism:

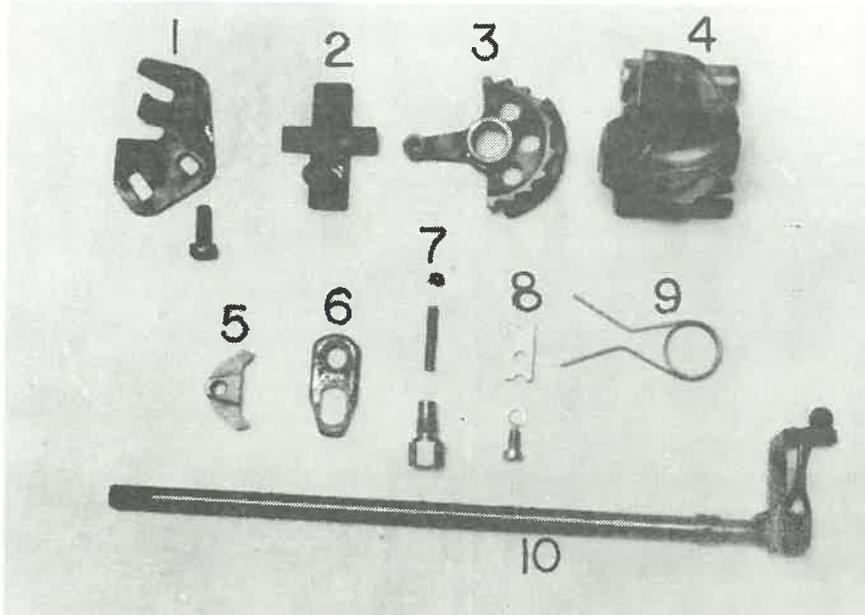


a. Clamp the mounting block in a vise. As you assemble, lubricate all moving parts with a high quality grease. (Moly-di-sulfide base preferred) Insert spring in hollow bolt, followed by 7 mm ball. Mount camplate on spindle so cam is in line with ball and spring.



b. Compress ball and spring into hollow bolt with channel lock pliers and rotate cam enough to imprison the ball into the bolt. Install circlip in ring groove to retain cam on spindle.

3. To assemble the six speed gear change mechanism. The six speed mechanism is comprised of the following components:

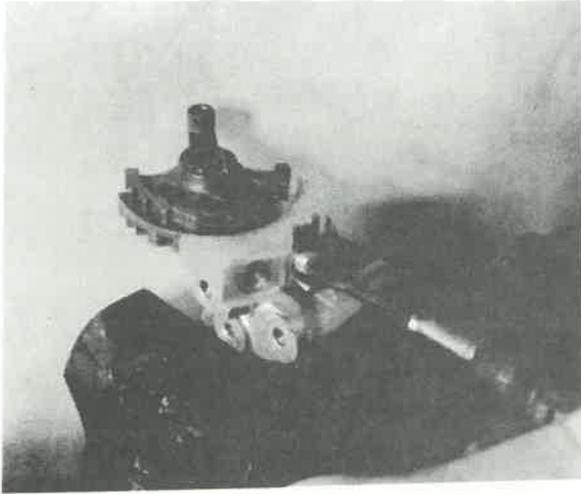


- (1) shifting shaft stop
- (2) serrated spindle
- (3) camplate
- (4) mounting block
- (5) shifting pawl

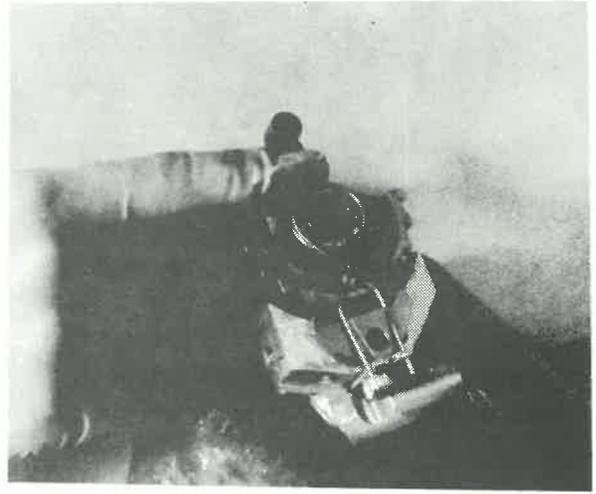
- (6) link with milled slot
- (7) ball, spring, and hollow bolt
- (8) hair spring stop pin
- (9) hairpin spring
- (10) shifting shaft

a. Clamp the mounting block in a vise. As you assemble, lubricate all moving parts with a high quality grease. (Moly-di-sulfide base preferred) Install camplate on mounting block spindle with the detent side down.





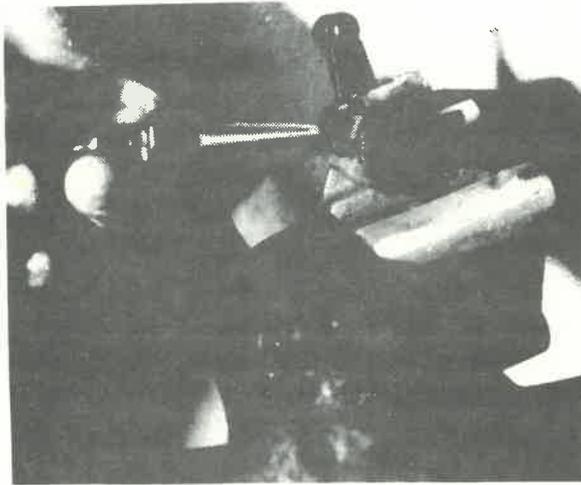
b. Install hairpin spring stop.



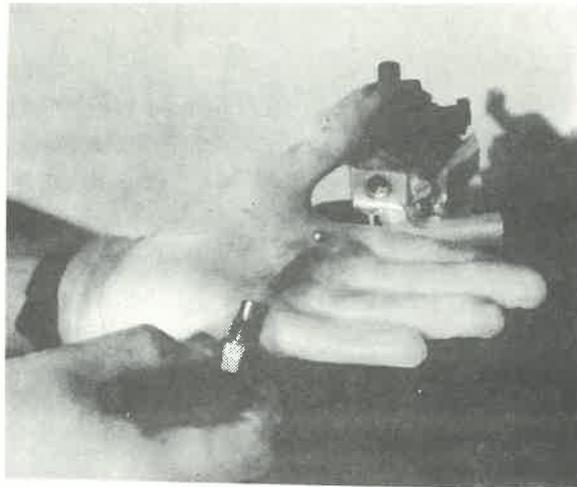
c. Lay the shifting pawl on the mounting block with the cast-lug up. Install hairpin spring as shown.



d. Install the serrated spindle, making sure that the short dowel aligns with hole in shifter pawl. Install link with milled slot and serrated hole on the splined end of the serrated spindle. Be sure the link is positioned 90 degrees from the shifting pawl dowel.

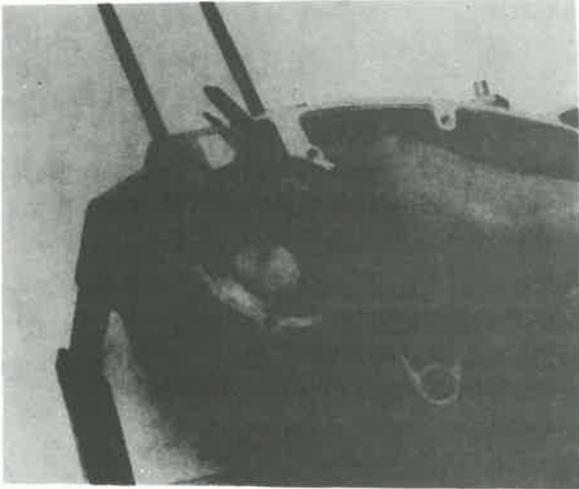


e. Turn mounting block over and install circlip on serrated shaft in ring groove.

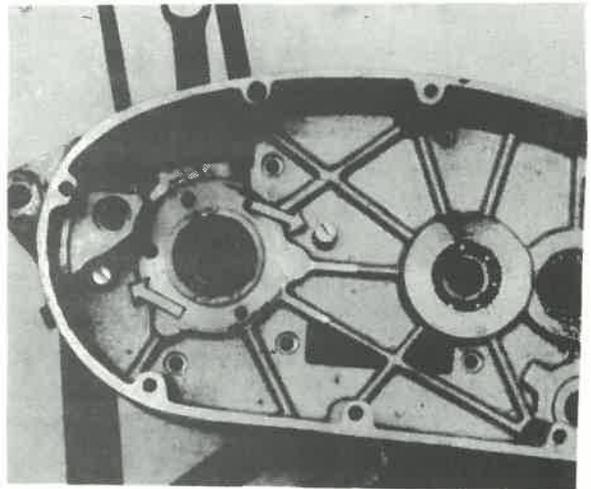


f. Install ball, spring, and hollow bolt into mounting block. (5 ft-lbs torque)

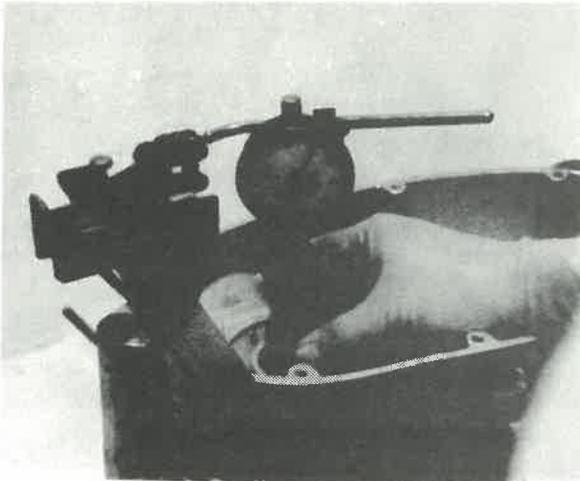
## ENGINE REASSEMBLY



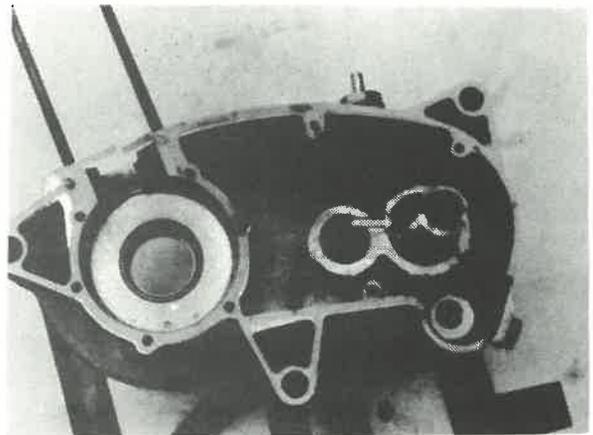
1. Mount the right hand crankcase on the engine trestle with the inside up. Install crankcase gasket. Snip the connecting band on the gasket as shown.



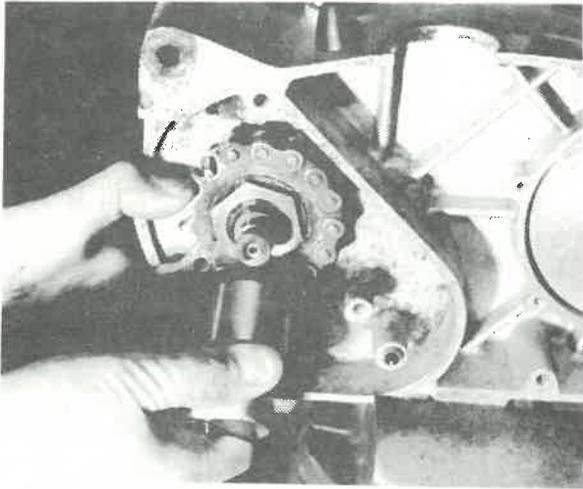
2. Insert the crankshaft assembly (short side down) into the case. Install the left hand crankcase and guide onto aligning dowels. Tap gently to seat when aligned. Install two temporary cheese head screws (6 x 45 mm) as shown and tighten.



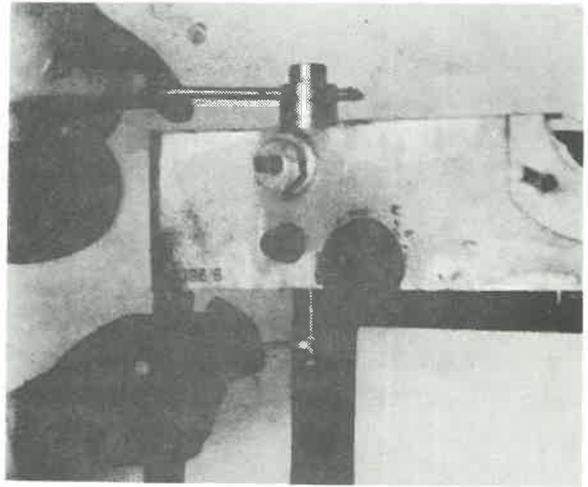
3. Mount indicator and check end play of crankshaft. Correct to .003-.005 in. by adding or subtracting shim washers located behind inner race on short end of crankshaft.



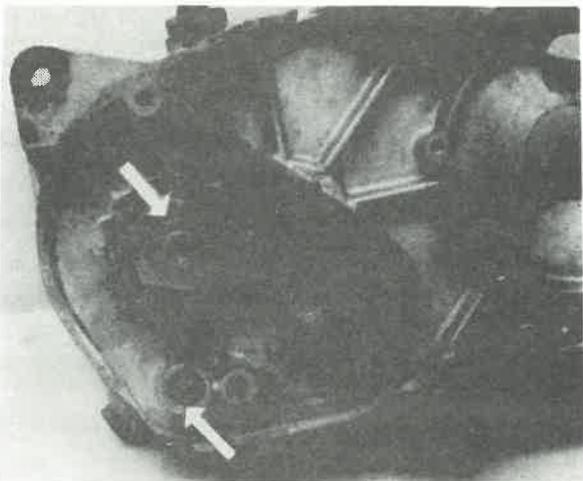
4. Remove two temporary cheese head screws and left hand case. Set the crankshaft aside and install the output shaft into the case. Be sure thrust washer is captured by the shaft. (arrow)



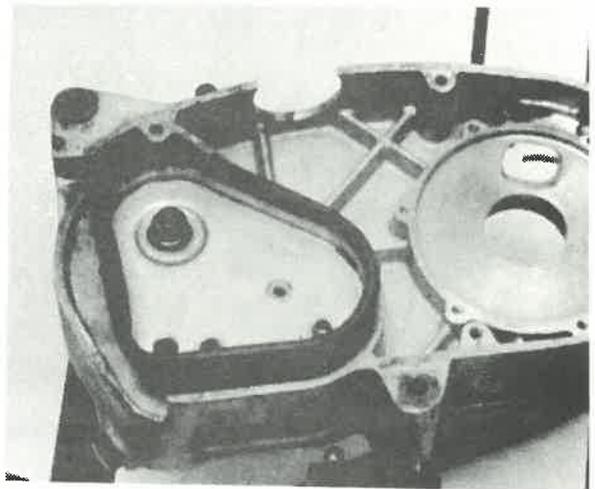
5. Install sprocket (counter-bore out), lockwasher and nut. Hold sprocket with chain wrench and tighten sprocket nut. Bend lockwasher tab against flat on nut.



6. Insert new selector key into slot of output shaft. Apply loc-tite to threads of selector shaft and insert the selector shaft through the bore of the output shaft. Thread into the selector key and tighten. (6 ft-lbs torque) Note: Both ends of shaft have left hand thread.



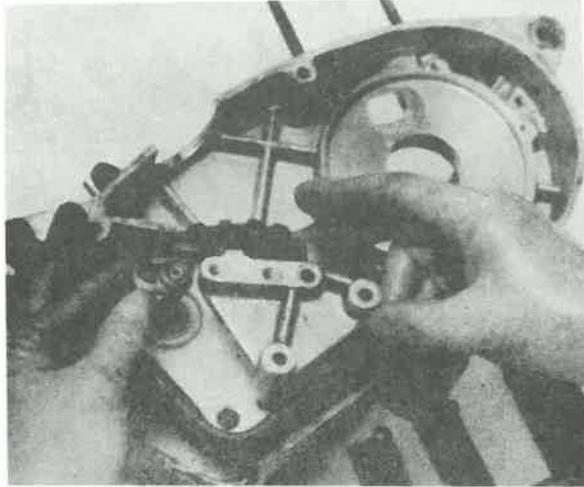
7. Install new O-ring on output shaft. Also new O-ring in counterbore of shifter shaft hole.



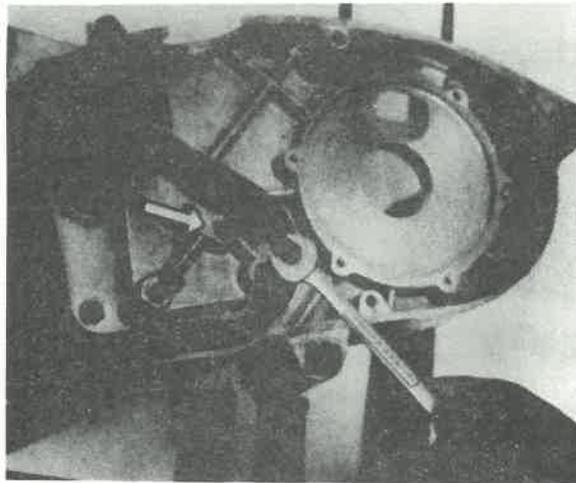
8. Install rubber gasket on metal shifter mechanism shroud and install metal shroud over mounting block dowels.

The five and six speed shifter mechanisms are different.

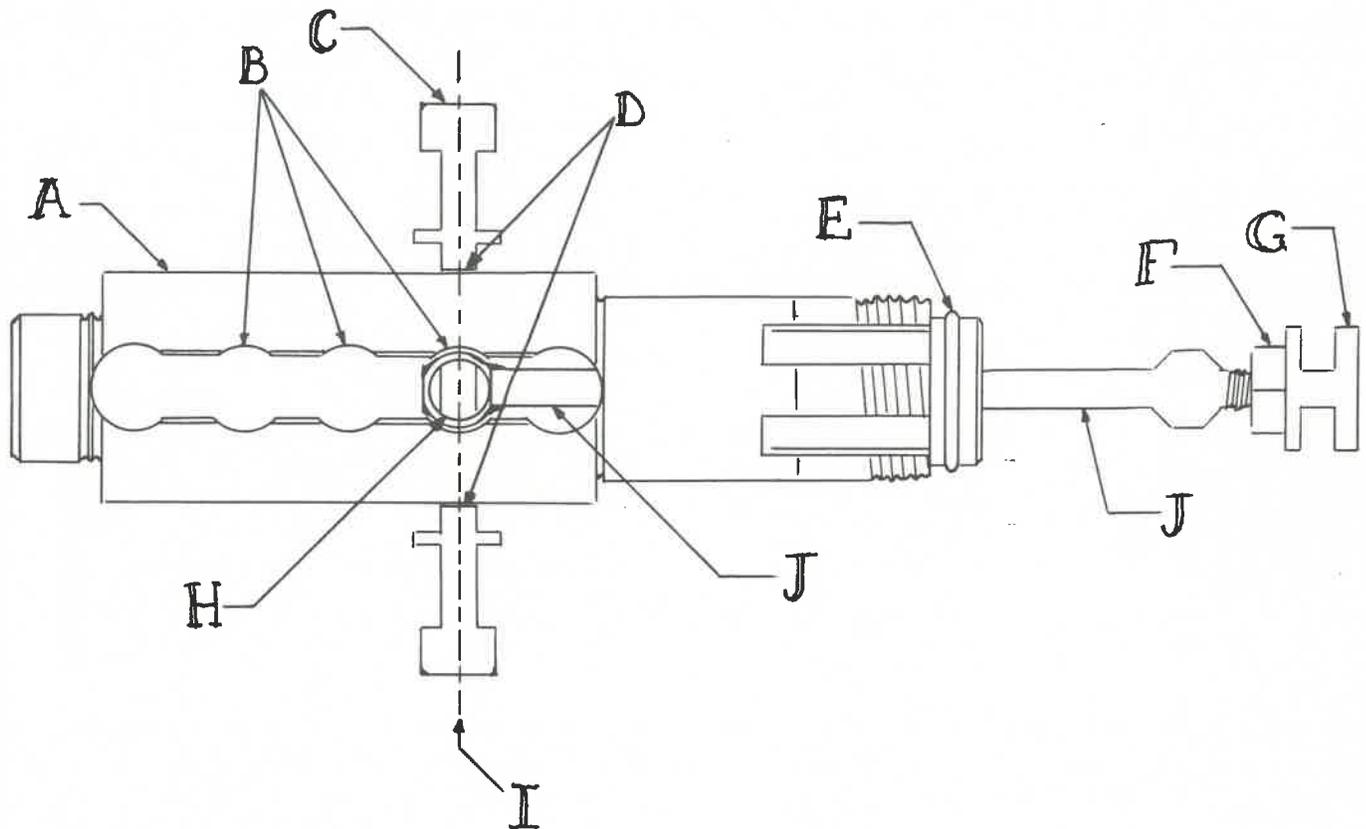
9. To install the five-speed mechanism:



a. Install the yoke, open end forward, on the selector shaft spool. Insert the yoke pin through the hole in the cam-plate. Lower the mounting block onto the mounting block dowels. Tap gently to seat.



b. Install three 10 mm hex head cap screws. Install shortest cap screw in upper position of the selector shaft. (arrow)

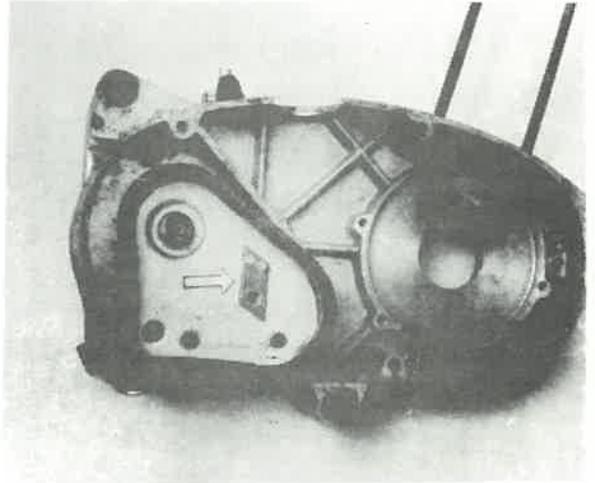


- |                              |   |
|------------------------------|---|
| A. Output shaft              | G. Selector shaft spool   |
| B. Output shaft radii        | H. Selector key   |
| C. Second gear               | I. Center line showing alignment of key, radius and second gear driving lands |
| D. Second gear driving lands | J. Selector shaft   |
| E. Output shaft O-ring       |   |
| F. Lock nut                  |   |

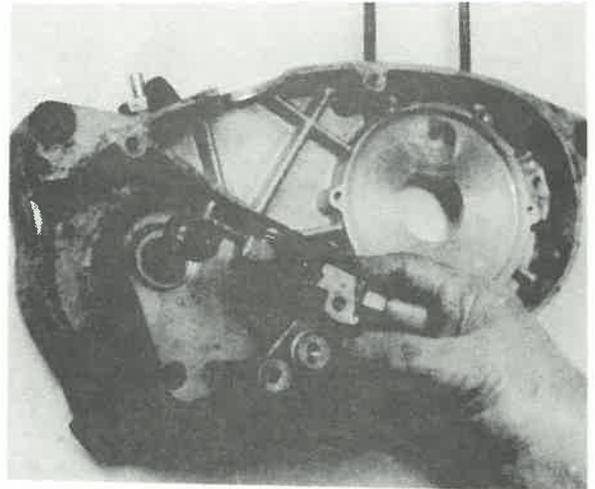
c. You are now ready to adjust the position of the selector shaft key relative to the output shaft radii. To better explain what is involved, we have included a diagram of the output shaft (A) with the selector key (H) in the second gear position. Note how the key is lined up with the second gear position radius (B) of the output shaft. Whenever the machine is shifted into a gear, the key must be aligned with the appropriate radius. If the key does not line up with the mating radius, the machine will jump out of gear. On the six-speed models, the selector key operates the same way with the addition of a sixth gear position and a sixth radius. To adjust selector key, place the camplate in the first gear position, as this gives easier access to the spool (G) and lock nut (F). When this is done, the selector shaft will be in its extreme outer position. Observe the position of the selector shaft key. It should be centered in the matching radius of the output shaft. If adjustment is necessary, loosen 10 mm lock nut, and hold selector shaft while turning the spool. When proper alignment is achieved, tighten lock nut against selector shaft adjustment spool.

10. To install the six-speed mechanism:

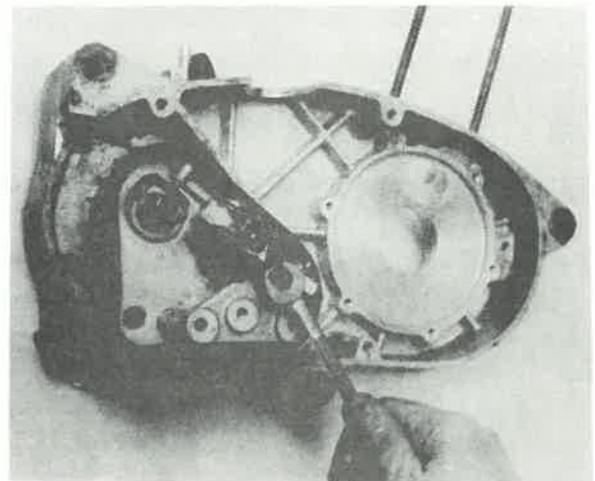
a. Install (thickest) inner shifting pawl stop in position shown.



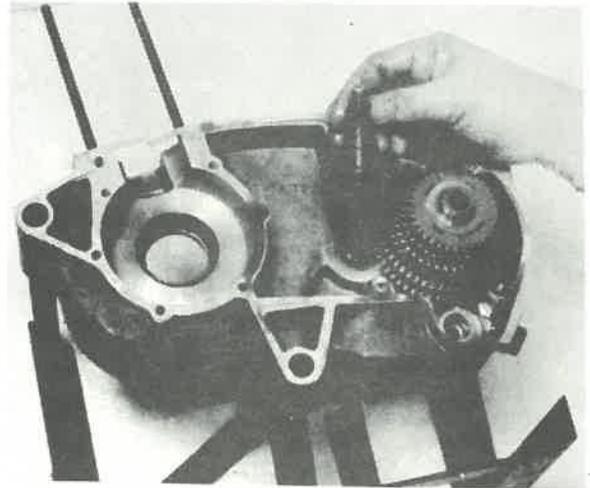
b. Install yoke on selector shaft, open end forward. Insert yoke pin through hole in camplate. Lower mounting block onto dowels and tap gently to seat. Make sure that inner shifting pawl stop is properly aligned.



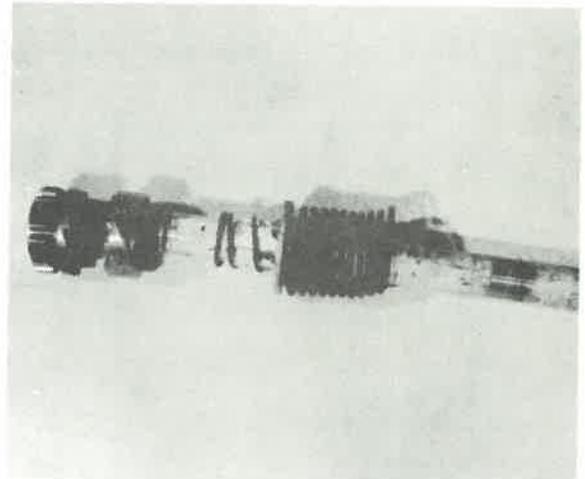
c. Install outer shifting pawl stop and capture with the 6 x 80 mm hex head cap screw. Shifter pawl stops must be forward enough to clear the camplate and rearward enough to clear the top of the pawl actuator. (serrated spline) Late model six-speeds have roll pins to locate the shifter pawl stops and no adjustment is necessary. Install two remaining hex head cap screws. (6 x 70 mm) Torque all three to 5 ft-lbs. Position the camplate in the first gear position. Use the same procedure to adjust the selector shaft as in paragraph 9c.



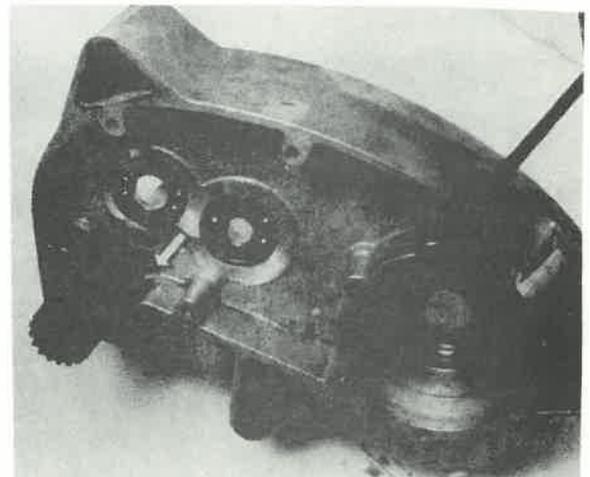
11. Install free gears on output shaft, starting with the largest diameter and proceeding to the smallest, which is last. Make sure the radii of the output shaft slot line up with the driving lands of the gears. Refer to the figure of paragraph 9c for proper assembly. Misalignment will cause the gearbox to mis-shift. Install thrust washer and circlip to output shaft. Install input shaft cluster by rotating back and forth to mesh gears on the shafts.



12. Install crankshaft assembly, short side down. Install hardware on kickstart shaft in the order shown.



13. Insert kickstart shaft into left crankcase, placing return spring in the machined recess of the case. (arrow)

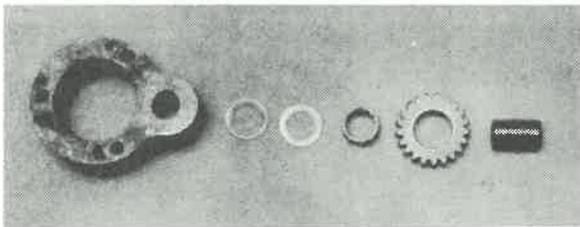
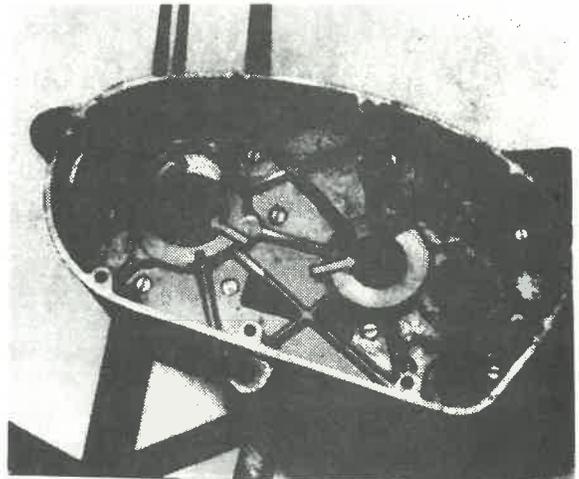


14. Temporarily install the kickstart lever to assist you in prewinding the spring. Place the cam of the kickstart ratchet at 6 o'clock with the engine case in its normal position. Compress the kickstart gears onto the spline of the shaft to assure that they are properly aligned. Take care that they do not rotate when they are released. With the cam of the kickstart ratchet in the 6 o'clock position, rotate the kickstart lever clockwise one revolution to prewind the spring. While holding the lever in this position, lower the case onto the mating crankcase. Line up the dowels and tap gently to seat case. Insert ten 6 mm crankcase screws. The kickstart shaft must be held in prewind position until the crankcase screws have been snugged up. Relieve pressure and remove kickstart lever, then tighten crankcase screws. (5 ft-lbs torque)

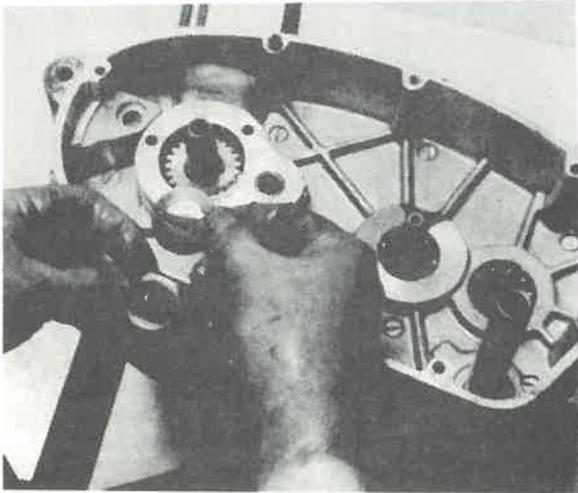


15. If the crankshaft seal is replaced, it must protrude approximately 1/16 in. beyond casting. Trim exposed excess crankcase gasket material from around cylinder base and bore for cylinder sleeve.

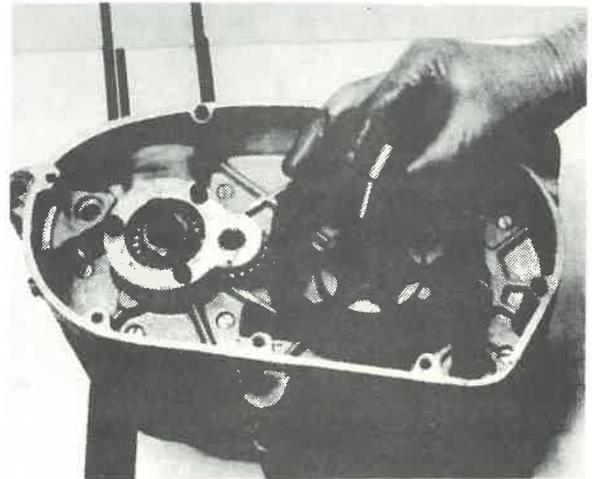
16. Install thrust washer on input shaft, also woodruff key in crankshaft. Install the crankshaft pinion gear. Be sure the keyway is lined up with the key, or the key will be forced out of its seat.



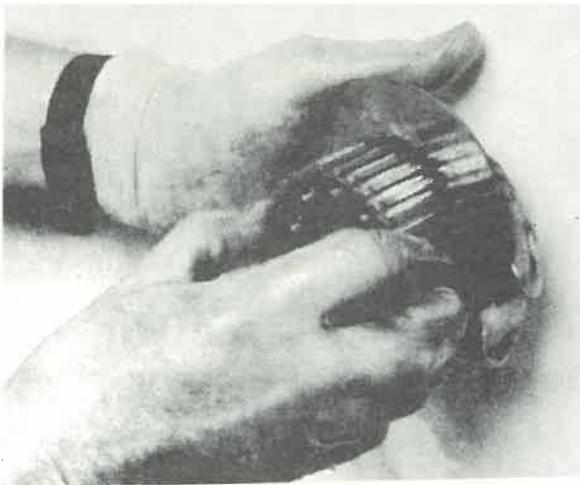
17. Insert needle bearing in idler gear, install gear in carrier with thrust washer on each side of gear and insert pin. Install idler gear carrier to crankcase, making sure that the dowel pin in the case lines up with the hole in the carrier. Make sure that the gears are in mesh.



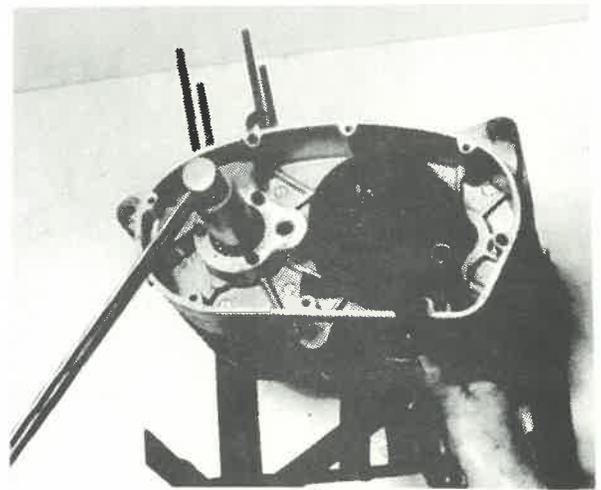
18. Install spring washer and hex nut finger tight. (left hand thread) Insert the three 5 mm socket head screws into idler gear carrier temporarily to hold it.



19. Install clutch housing, steel sleeve, and bronze bush onto input shaft.

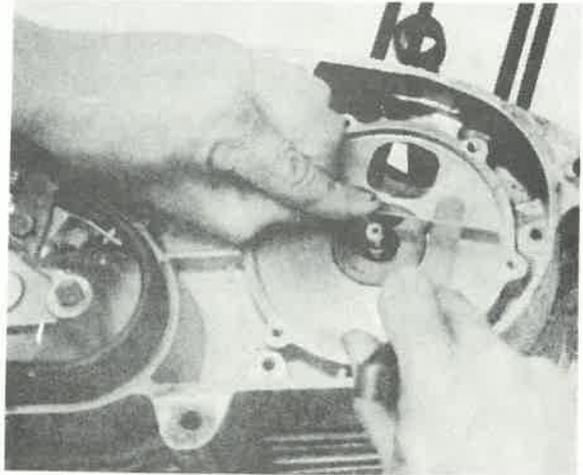


20. Hold pressure plate in left hand and assemble clutch hub onto shafts in various radial positions until the hub splines will go to full depth in the pressure plate. The splines in the hub and teeth will only mesh in one position. The ring groove on the hub must be up.

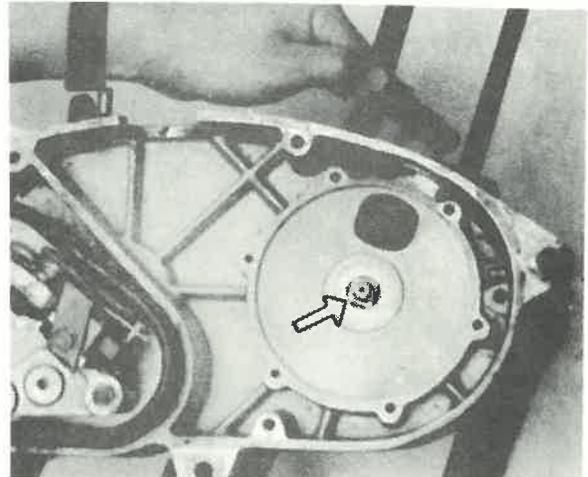


21. Install the hub and pressure plate onto the input shaft. Make sure the splines are aligned on the clutch hub and the input shaft. Install the wave washer and hex nut. (right hand thread) Insert the clutch locking tool and torque the input shaft nut to 20 ft-lbs. Torque the crankshaft pinion nut to 50-60 ft-lbs. (left hand thread)

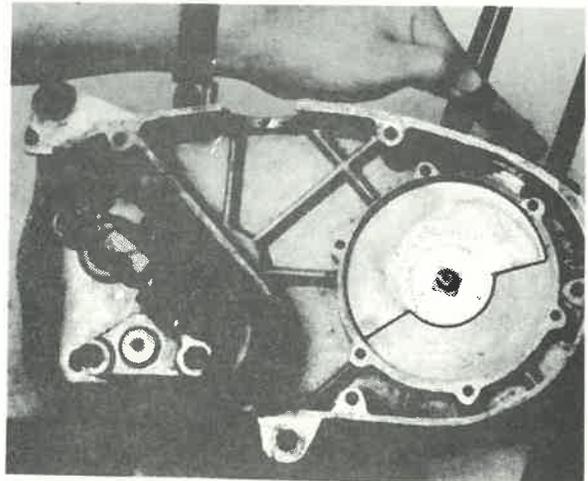
22. To the right end of the crankshaft, assemble the rotary valve spacer ring, then the large flat washer with the beveled side inward. With a straight edge and feeler gauge, determine the clearance between the washer and case. Adjust to .003-.005 by shim washers under the spacer ring. Large washer must extend beyond case or rotary valve will contact it.

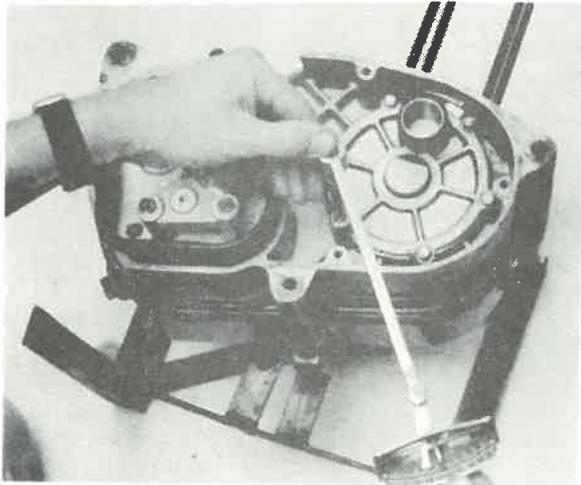


23. To install the rotary valve, depress the connecting rod so it will be at bottom dead center. Note that one corner of the square on the short end of the crank is at approximately 8 o'clock. (arrow) Note also that the rotary valve has an arrow etched at one corner of its driving square. When the valve is installed the etched arrow must coincide with the corner at 8 o'clock on the square of the crank. The etched arrow must be visible when the valve is on the shaft.

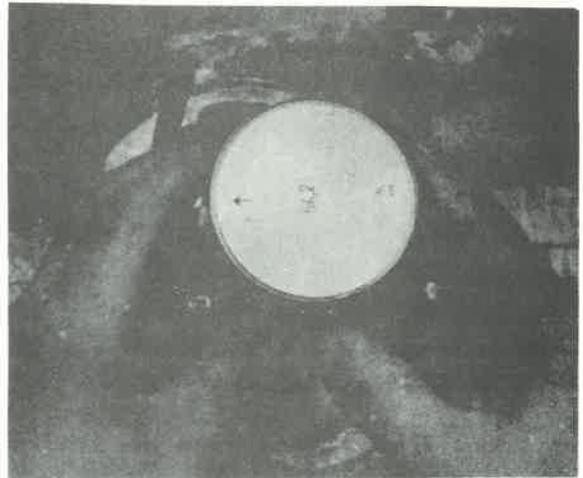


24. Installation of the rotary valve is identical on both 5 and 6 speed. Refer to the race preparation section paragraph 11. The difference between the two rotary valves is illustrated in that section. Install large flat washer, beveled side out, wave washer, and hex nut on shaft. Hold clutch locking tool and tighten nut. (10 ft-lbs)

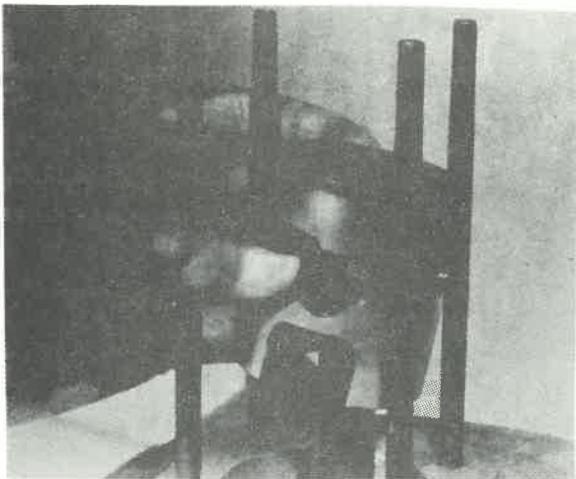




25. Install cover plate and tighten screws. (30-in-lbs)



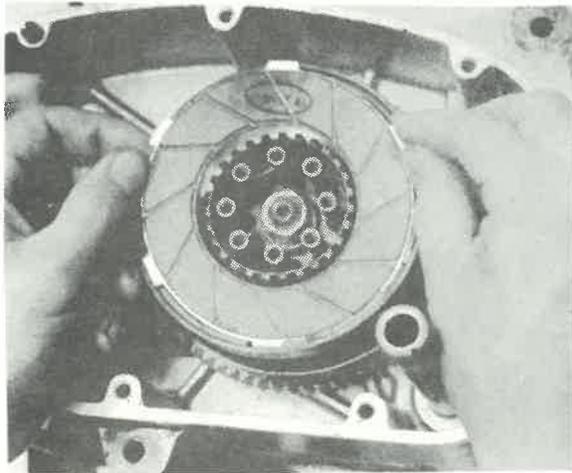
26. Oil gudgeon pin and needle bearing. Insert gudgeon pin into one boss on piston, position the piston so arrow points to front of engine. Install needle bearing in rod, line up gudgeon pin with needle bearing and press pin until it is central in the piston. Warming the piston to approximately 200 degrees F. will simplify this job.



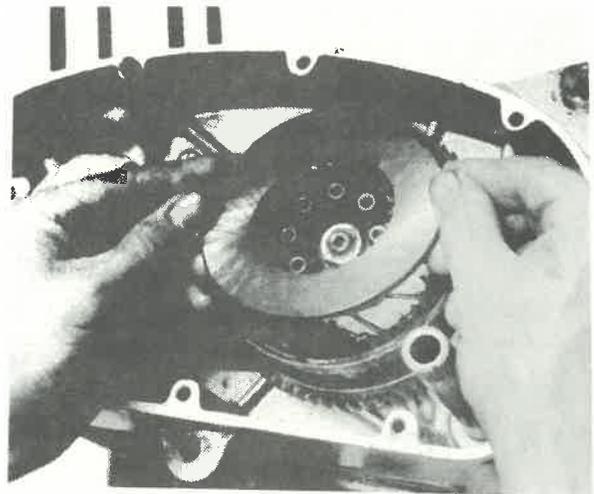
27. Install circlips to retain the gudgeon pin. Make sure they are seated properly in their ring groove. Always use new circlips. Check ring gap in bottom of cylinder bore and adjust to .005-.007 in. Oil ring(s) and position on piston so split ends meet at the small pin in the piston.



28. Install new base gasket over studs. Compress ring(s) and lower cylinder into place with the exhaust port forward. Install head gasket and cylinder head. Install two head nuts diagonally and snug up finger tight.



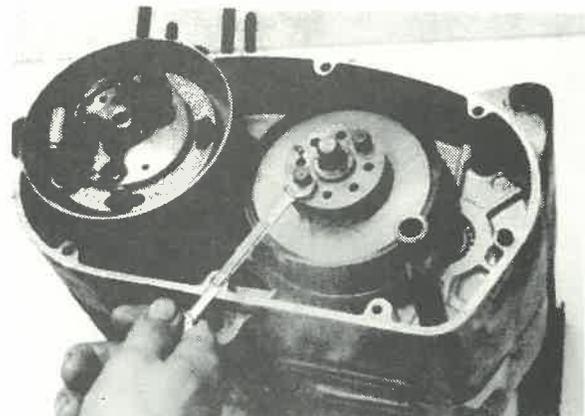
29. Insert tabs of fiber clutch plate in slots of clutch housing. The recessed lines in the fiber of the plate must slant in the direction shown to expell oil from the clutch as it rotates.



30. Follow alternately with steel plate then fiber until you reach the terminal plate. Note the terminal plate is much thicker than ordinary steel plates. It also has a counter bore at the teeth. Install terminal plate with the counter bore facing you. Install retaining circlip.

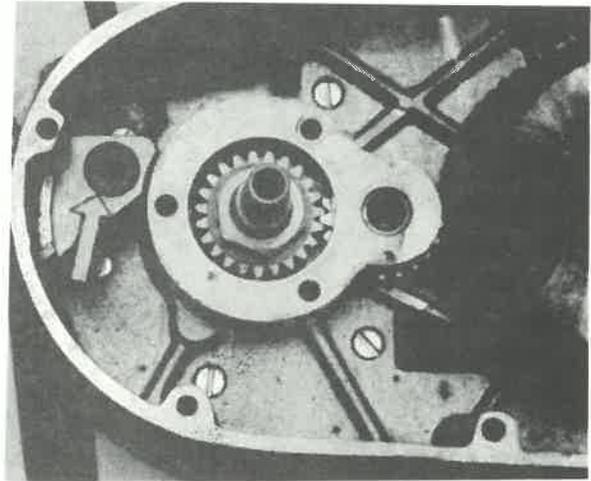


31. Check throw-out bearing on clutch retaining plate. The clearance between the clutch stud and the plate shall be no less than .020. If gap is less, it should be replaced. Check the free length of the clutch springs. If less than 1.540 in. replace. Install eight coil springs on shafts.

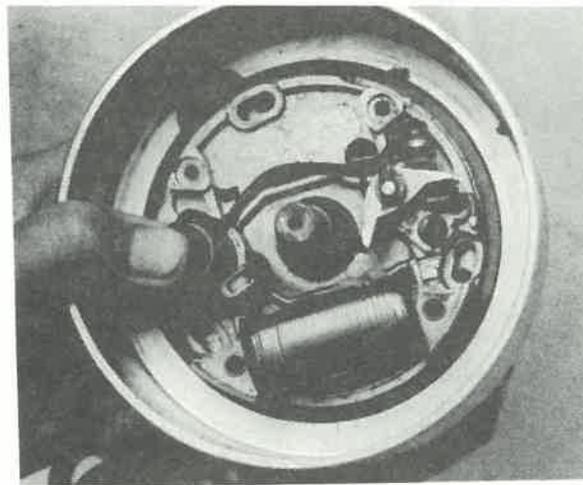


32. Insert two 5 x 40 mm screws with hex jamb nuts through retaining plate in diametrically opposed holes and mount onto mating shafts. Tighten hex nuts and this will compress springs enough to install six standard length cap screws. Install 3/16 lock washers under these screws to prevent them from backing out. Remove the two long screws and replace them with the standard screws and lock washers.

33. Remove three 5 mm socket head screws from idler gear carrier and insert O-ring in recess. (arrow) Install the magneto housing, lining up the access hole for the wire(s). Secure magneto housing with three 5 mm socket head screws. (7 ft-lbs) A copper washer is fitted under the head of each screw.



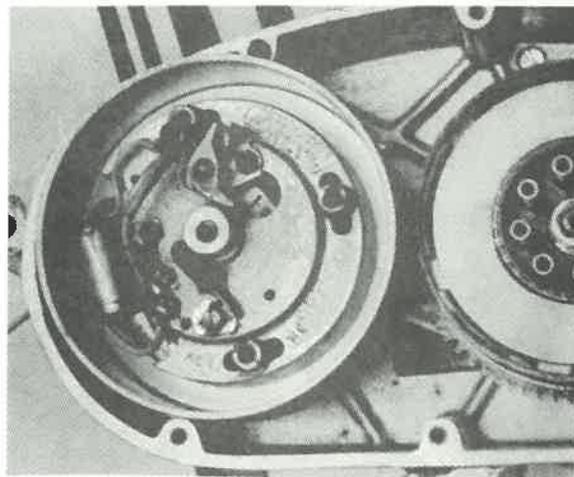
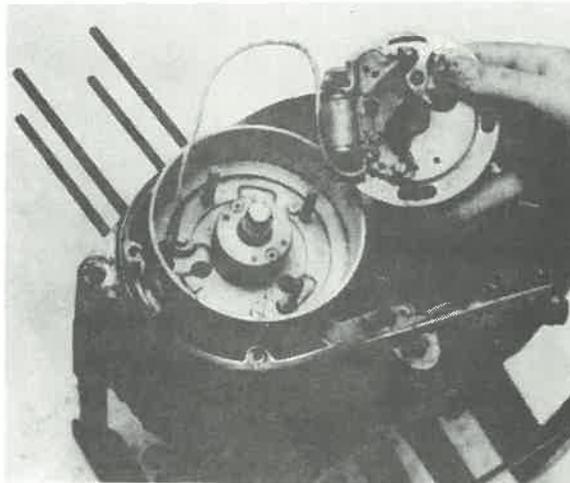
The magnetos differ on the five and six-speed models. We will cover assembly of the five-speed first.



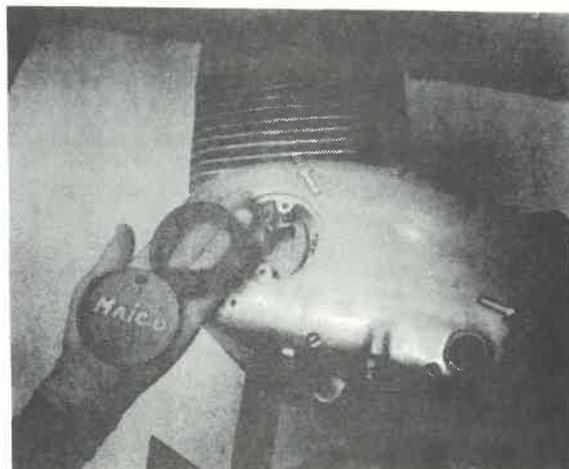
34. Feed wire(s) through access hole and install stator plate in housing, locating it into the fiber ring as shown. Take care to make sure it is properly seated. Secure with three 4 mm cheese head screws. Line up keyway in rotor with key on shaft and install magneto rotor. A sharp rap with hammer will seat it when it is properly aligned. Hold rotor and torque retaining nut to 40 ft-lbs. (left hand thread) Point gap can now be set by working through slots in magneto rotor. Adjust point gap to .014-.017 in. and check time. The points should just open when the piston is .110-.118 in. before top dead center turning the rotor in a clockwise direction. If correction is necessary, loosen three screws and rotate stator plate to achieve correct timing. Note: Refer to race preparation section, paragraph 10a.

## ASSEMBLY OF 6-SPEED MAGNETO

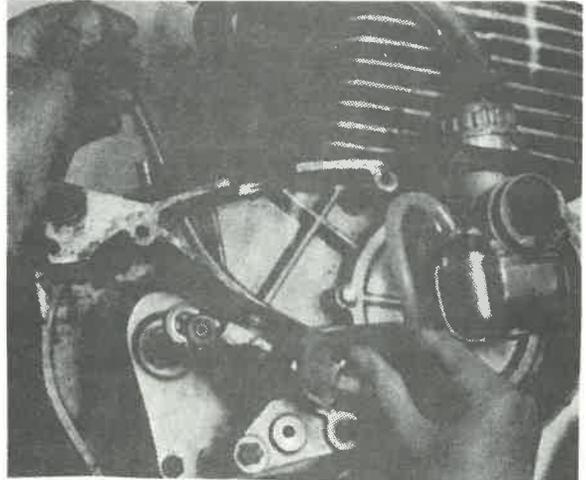
35. Set rotor on tapered shaft. Do not insert bolt. Do not press onto taper yet. Feed wire through access hole and mount magneto housing into the bore in the position shown. Place housing so retaining studs are central in the adjusting slots. Secure with three 10 mm nuts. Position the piston .110-.118 in. before top dead center. The crankshaft rotates clockwise facing the magneto. Install jamb nut on rotor bolt and thread into rotor. While holding the clutch housing to prevent crankshaft rotation, rotate the rotor until the mark can be seen through the round window of the magneto housing. Put the mark in the middle of the circle and rap the end of the bolt to seat the rotor on the crankshaft taper. Remove jamb nut and install rotor bolt with wave washer. (5 ft-lbs) Adjust points so they are just opening. Recheck time and repeat operation if necessary. Minute adjustments can be made by loosening three 10 mm screws and rotating magneto housing.



36. Install primary case gasket and cover onto mounting dowels. Secure with eight 6 mm cheese head screws. There are two screws longer than the others. The long screws belong in the holes that coincide with the mounting dowels. (arrows) (4 ft-lbs) Install rubber gasket and ignition access cover. Install kickstart lever and tighten pinch bolt. It should lean to the rear of the engine about ten degrees. Install the magnetic drain plug. Tighten to 20 ft-lbs.

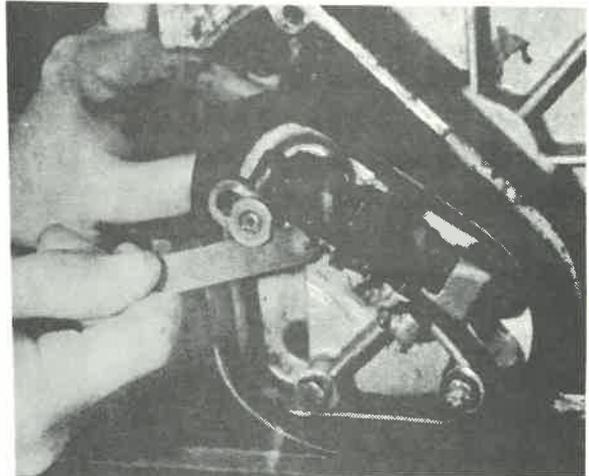


37. Install new grommet on carburetor if needed. Install carburetor on spigot and secure by tightening 11 mm pinch bolt to 4 ft-lbs. Make sure the grommet is properly seated between the case and the carburetor. Apply a light coat of oil to the gas line and insert through the rubber grommet and connect to the carburetor.

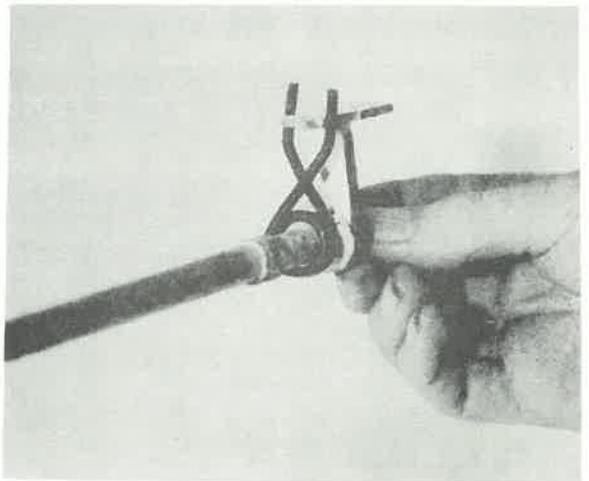


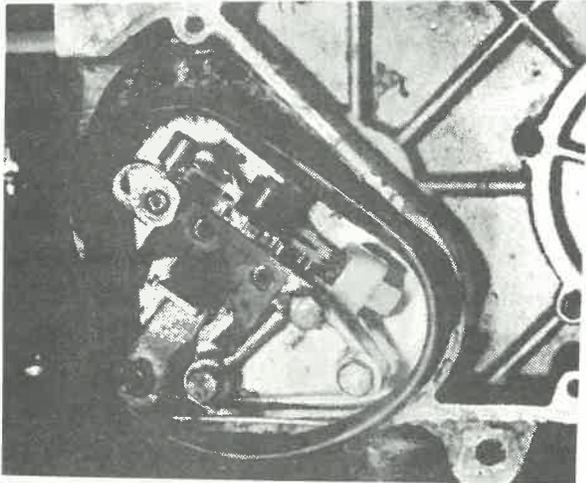
The assembly and adjustment of shifter mechanisms differ between five and six-speed models. We will cover the five-speed first.

38. Recheck the adjustment of the selector shaft spool by placing the camplate in the 2nd gear position. Rotate the countershaft sprocket either direction until you feel resistance. This causes the selector key to seek its proper radius in the output shaft. While still applying pressure to the sprocket, check the clearance between the yoke and the spool on both sides. Clearance must be equal on both sides.

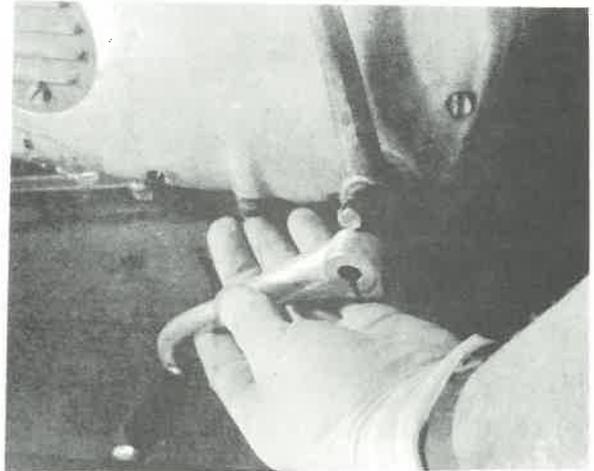


39. The correct way to install the hairpin spring on the shifter shaft is shown here. There will be too much free movement in the shift lever if it is installed improperly. Insert the shifter shaft into its hole and push completely through the cases.

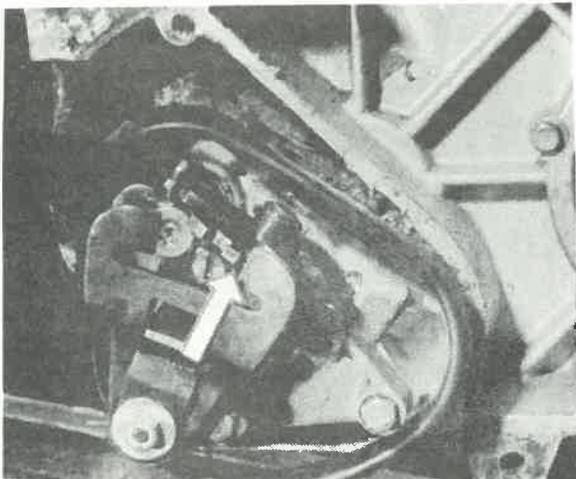




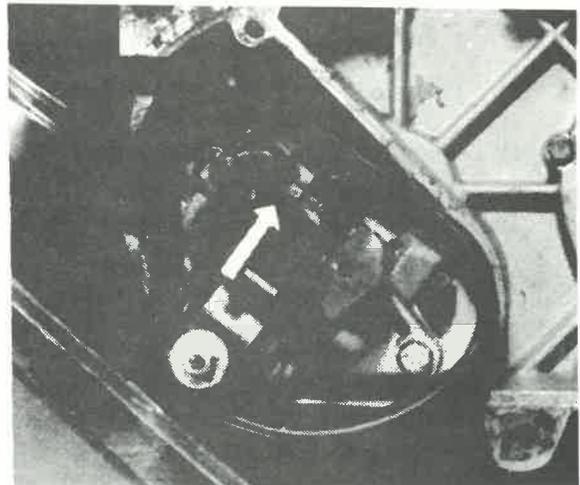
40. Install shifter shaft stop and secure with two 10 mm screws. (4 ft-lbs) Note the elongated holes. Install shifter pawl and leaf spring. Secure with flat washer and 10 mm nut (4 ft-lbs).



41. Install O-ring on shifter shaft and install shift lever while supporting other end of shaft to prevent pushing it through the cases.



42. Lift shift lever all the way up and hold in this position. Determine the clearance between the notch on the camplate and the shifter pawl. (arrow)

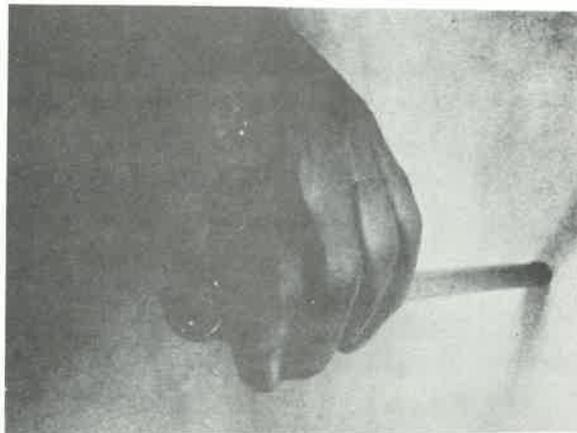


43. Now depress the shift lever and hold it in this position. Determine the clearance between the notch on the cam and the opposite side of the shifter pawl. (arrow) In both cases, rotate the counter shaft sprocket to insure that the gears are meshed. Clearance between the cam and pawl must be equal in both directions.

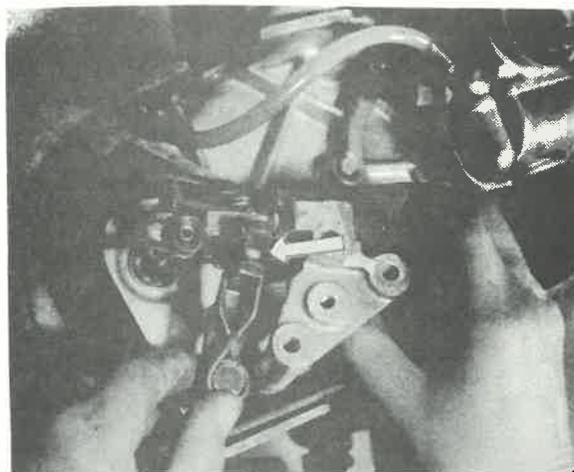
44. If correction is required, remove the 10 mm hex nut, flat washer, leaf spring, and shifter pawl. This will give you access to shifter shaft stop. Loosen two 10 mm nuts and move plate in direction required. Re-assemble and repeat paragraph 43 until desired results have been obtained.

#### SIX SPEED

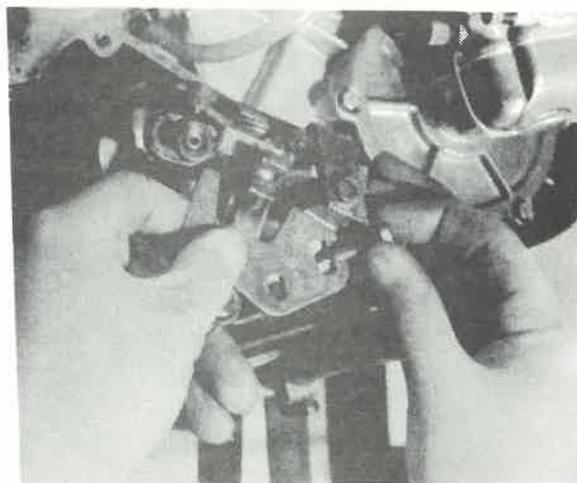
45. Note the correct position of the return spring on the shifter shaft. Insert shifter shaft into its hole as far as possible.

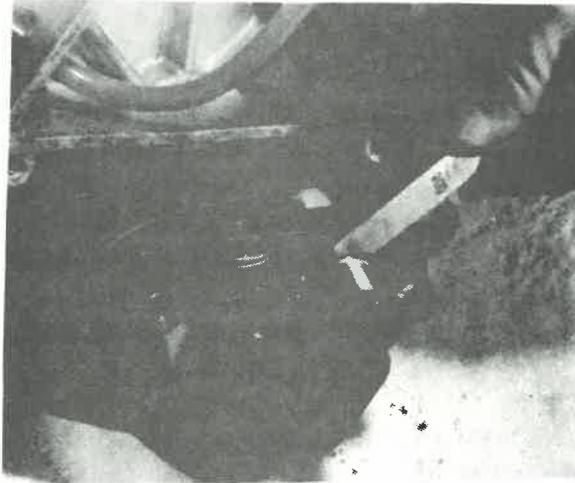


46. To engage shaft with shifting mechanism, remove three 10 mm screws securing the shifter mechanism mounting block. Lift the mounting block off its dowels and it can be moved enough to enable you to insert the ball of the shifting shaft into the milled slot.

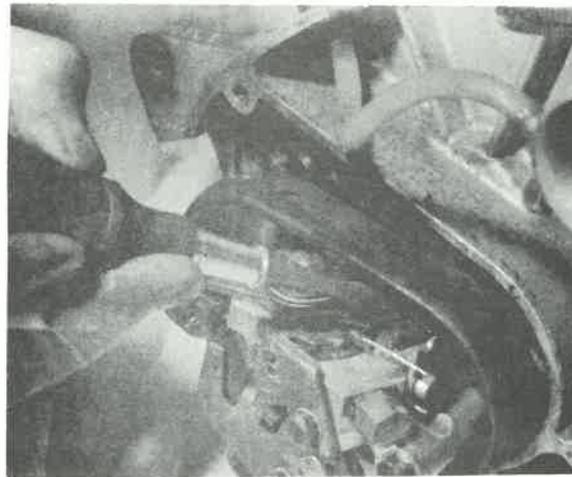


47. Reinstall mounting block on its dowels and tap gently to seat. Install longest 10 mm screw securing shifting pawl stops. Position stops as described in paragraph 10c. Place shifter shaft stop on block and install three remaining 10 mm screws. Note the elongated slots for adjustment purposes in the shifter shaft stop.

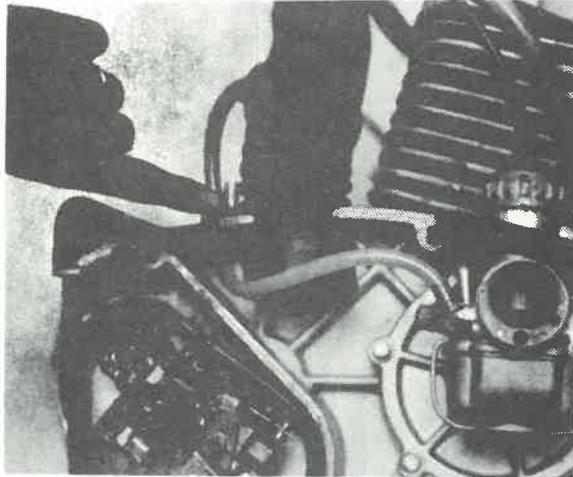




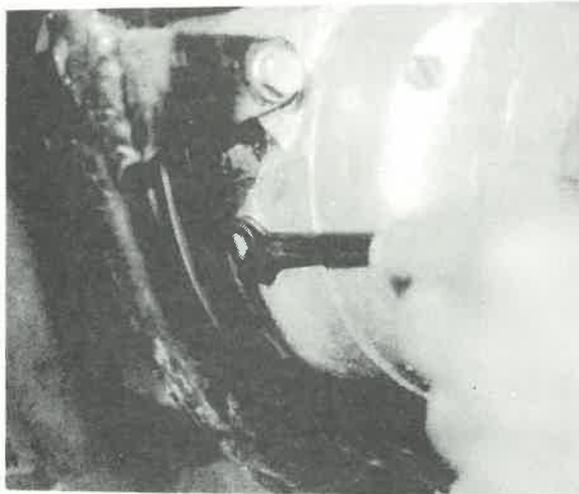
48. Install O-ring on shifter shaft, then install the shift lever on shaft, while supporting the shaft from the opposite end. To adjust the shifting mechanism, raise the shift lever until the shifting shaft contacts its stop, and hold in this position. Using a feeler gauge, check the clearance between the shifting pawl and its stop. Adjust to .008 in. by moving the shifter shaft stop on its elongated slots.



49. Depress the shift lever until the shifter shaft is contacting the other side of the stop plate. By pushing on the serrated spindle with a screwdriver, check the clearance between the inner shifting pawl stop and the shifting pawl. Correct to .008 in. Both clearances should be equal or as close to .008 in. as possible. Recheck by repeating both operations. Liberally coat all parts of shifter mechanism with a high quality grease. Note: In both cases, rotate the countershaft sprocket to make sure the gears are meshed. When proper alignment is attained tighten two 10 mm nuts to 4 ft-lbs.



50. The air tube has two steel rings installed on one end. These two rings must be on either side of the crankcase when tube is installed. Apply a non-hardening gasket sealer to the right hand cover. It is imperative that you seal this case thoroughly, as there is an inherent vacuum present when the engine is running. Place the cover on the case, making sure that the carburetor grommet is properly seated. Secure with four 6 mm cheese head screws. (4 ft-lbs)



51. Install the motor in the frame exactly in the reverse order of disassembly. Installation will be easier if you remove the head to install the motor. After the engine is installed and the engine yoke bolt is in place, torque the head bolts to 100 in-lbs. Tighten the three engine mount bolts and the yoke bolt to 15 ft-lbs. With the engine level, fill the engine crankcase with a high quality multi-viscosity oil, until oil overflows from oil level hole. Eastern Maico recommends Hypoid Gear Lube SAE 80.

## CHASSIS

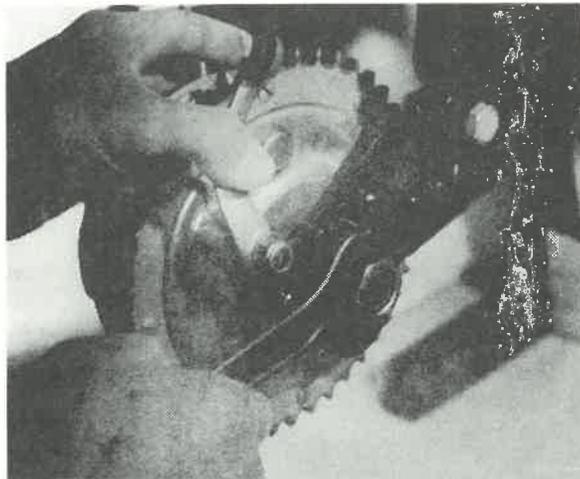
1. To remove the front wheel, disconnect the front brake cable and remove the brake anchor bolt. Jack up the machine and loosen the pinch bolt on the axle side of the forks. Turn the axle out. Never loosen the pinch bolt on the axle nut. Remove the front wheel, backing plate and brake anchor.

Important: Note the position of spacers and dust cover for reassembly, especially the spacer under the dust cover.

2. Clean or smooth the inner surface of the front brake drum with a rag soaked in a nonflammable cleaning solvent or with sandpaper. If the brake shoes show uneven contact with the brake drum or is glazed, go over the surface with sandpaper or hand file. The brake shoe actuating spindle should be cleaned and lubricated with a high quality grease at this time.

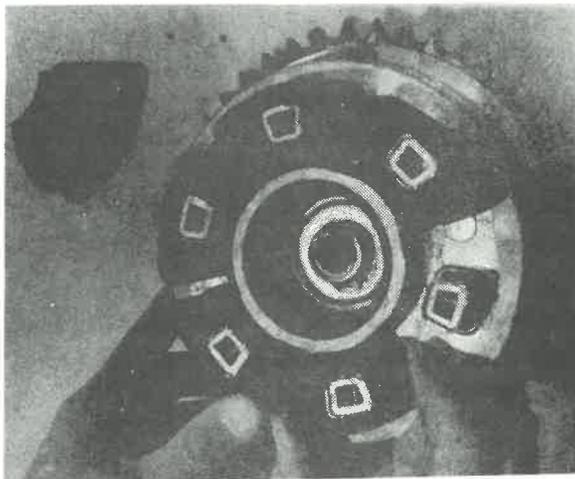
3. If the bearings allow excessive play in the wheel or if it does not turn smoothly, replace with sealed bearings.

4. To remove the rear wheel and brake drum, remove the master link and drop the chain from the rear sprocket. Disconnect the brake rod by unscrewing the wing nut. The chain and brake rod can be left in place if only the wheel is to be removed. Remove the rear axle nut. Jack up the machine and pull out the rear axle. Remove spacers from left side of wheel and rear wheel can be moved to the left, off the rubber buffers and removed from the frame.



5. To remove the brake drum and sprocket assembly, remove the right axle sleeve nut (27 mm) and the brake assembly can be removed. Check the rear wheel bearings for excessive wear and replace with sealed bearings if necessary.

6. To service the rear brake drum assembly, remove backing plate from brake drum. Service shoes and drum as in paragraph 2 of the chassis section. Note that front and rear shoes can be interchanged if necessary. Replace worn rubber buffers. Check fiber ring and the ball bearing. The brake shoe actuating spindle should be cleaned and lubricated at this time.



7. With the rear wheel off, check lateral movement in the swing arm. Excessive movement indicates wear in the swing arm spindle bolt or swing arm bushing or the frame itself. This is caused by running the machine with the swing arm spindle bolt loose. Repair of this component is difficult to perform and we recommend that this work be done by your local dealer.

8. Check chain and sprockets for wear. Do not use a worn chain, as you run the risk of having it come off and possibly damaging the shift mechanism and right hand engine case.

9. Chain tension should be adjusted so that there is total up and down free play of approximately 1 1/2 in. at the center of the lower section with the rear wheel on the ground. During this adjustment the machine must be unladen. To adjust, loosen rear axle nut and axle sleeve nuts. Loosen or tighten adjusting nuts (13 mm), moving the wheel to achieve correct chain tension. In achieving proper tension make sure the rear wheel is in proper alignment by measuring from the center of the axle to the center of the swing arm pivot bolt on each side. The two distances must be equal.

**Important:** Whenever you adjust the chain tension, be sure to check rear brake lever adjustment. If proper brake lever adjustment cannot be achieved using wing nut, small brake arm on hub can be moved on its serrated shaft.

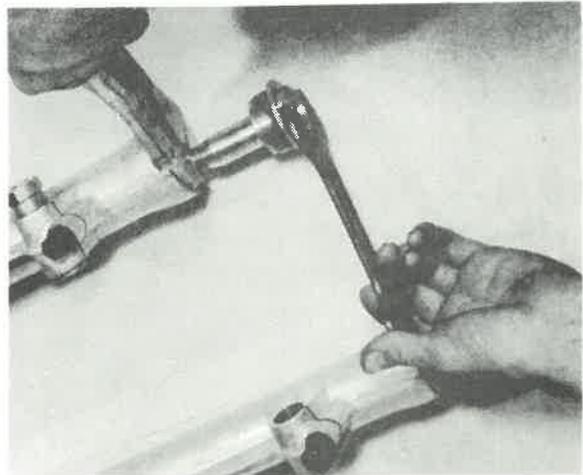
10. The front fork oil should be changed approximately every four races. In changing the fork oil it is a good idea to drain the forks, flush with solvent, and allow to drain for five minutes. To drain the forks, unscrew the drain plugs from the slider tubes. Pump the forks up and down to facilitate drainage.

Refill with 200 cc of oil in each leg. We recommend using Lubri-tech fork oil with the following weights depending on temperature.

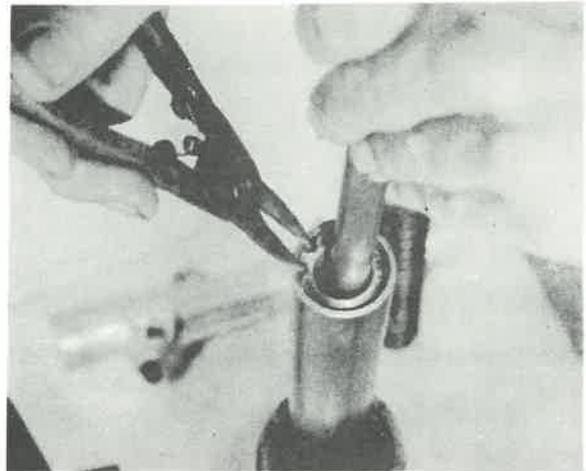
Above 80 degrees F.	30 wt. oil
60 to 80 degrees F.	20 wt. oil
30 to 60 degrees F.	10 wt. oil
0 to 30 degrees F.	5 wt. oil
Below 0, stay home!	

To refill, replace drain plugs, loosen the upper triple clamp pinch bolts and remove the two top cover nuts. On earlier models it may be necessary to loosen the handle bars and slide to left or right to remove the cover nuts.

11. If forks need service other than oil change, the drain plug must be disconnected from the damper rod. To accomplish this, first loosen fork boot clamps and unscrew drain plug from slider tube. Depress fork and clamp damper rod with vice grips as shown. Unscrew drain plug.

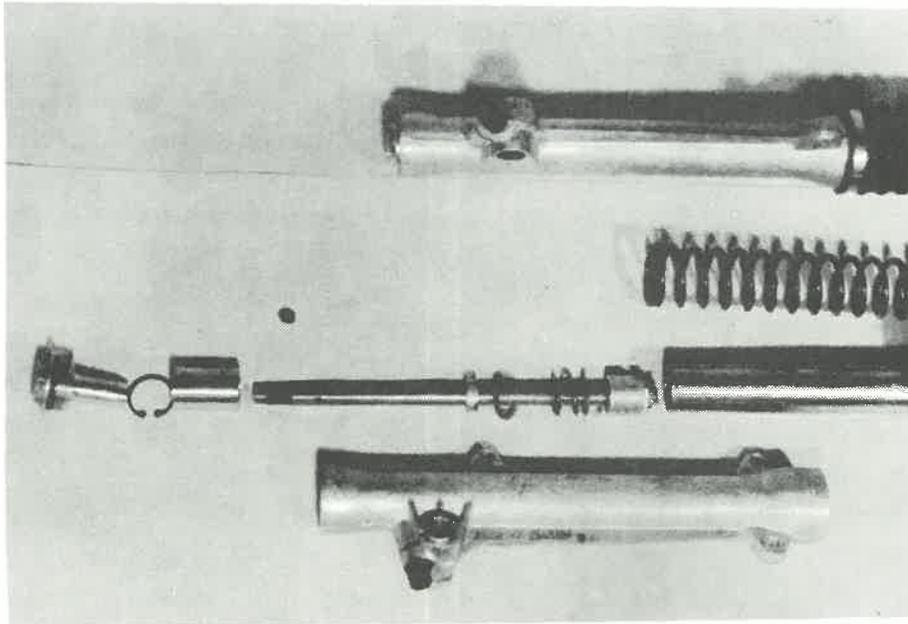


12. Release vice grips and slider can be withdrawn from stanchion along with spring(s). Remove circlip from bottom of stanchion tube and damper assembly can be withdrawn. Check components for wear or failure and replace as needed. Reassemble and fill with oil.



13. To check the steering head bearing tightness, grasp the front brake and place fingers under upper crown. Rock the bike up and down on the forks. Any fore and aft movement between the crown and gas tank indicates that the steering head is too loose. To tighten, loosen the bottom triple clamp pinch bolts and tighten the stem nuts until no movement is evident. Do not overtighten, as the forks must pivot freely. Retighten the pinch bolts.

14. To remove the fork assembly, remove the handlebars, loosen the upper triple clamp pinch bolts, and remove the fork tube cover nuts. Remove the nuts and upper clamp. The fork assembly can be removed. The ball bearings are captured in a cage. Check the ball races and steel balls for pitting or wear. Clean and grease the balls and races. Reassemble in reverse order and check steering head tightness as in paragraph 13.

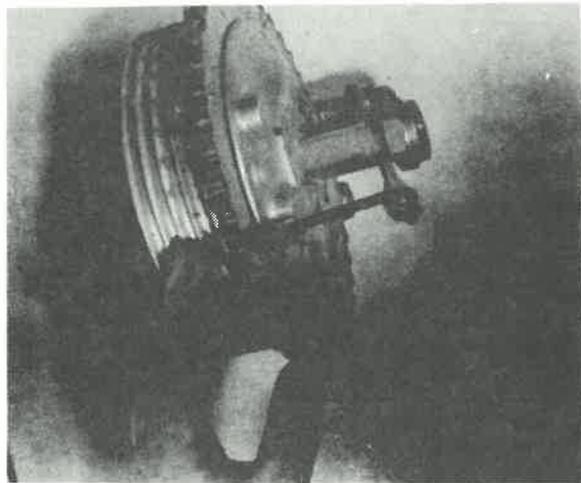


Front fork with one leg disassembled.

15. Some 125 Maicos come equipped with Boge rear shocks and some come equipped with Girling shocks. We recommend the installation of Girling shocks with progressive wound spring. (60/90 spring rate)

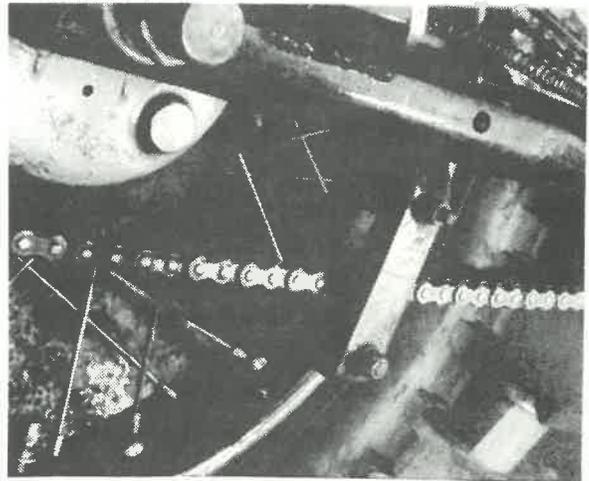
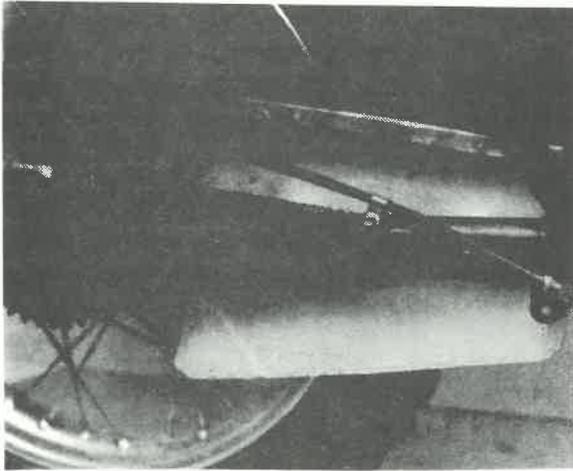
## PREPARING THE MAICO 125 FOR RACING

There are many aspects of proper preparation for winning races, both for yourself physically and the machine mechanically. We will assume here that you are in a superb state of physical fitness, including mental attitude, and we will deal only with the preparation of the machine. Any good moto-cross course in our opinion has an abundance of mud. Fortunately, in the middle and eastern states we have an ample supply of this ingredient. Mud and water eliminate more contestants than any other hazard so they will be our primary enemy in completing races. Needless to say, it is not always the fastest machine that wins the race, but the most reliable. So, our primary aim here is to make your machine as reliable as possible, with enough power to make you competitive with the most formidable of opponents. In this section are presented modifications that should be made to the 125 cc Maico to enhance its reliability. These modifications were the only changes made to the machine that finished number one overall to win the AMA amateur moto-cross championship for 1970. All of the modifications apply to both five and six speed models unless otherwise indicated. At the end of this section are presented steps that should be taken between each race to keep your machine race ready.



### MODIFICATIONS

1. Rear sprocket bolts are too small for the power delivered by the engine. Remove stock bolts one at a time, tap through with 1/4-20 tap, and install 1/4-20 x 3/4 flat allen head cap screw. Install lock washer and hex nut. Tighten nut after bolt has been tightened.



2. No chain guard is provided on the moto-cross model and mud and debris is carried into the shifter mechanism area. Also the chain is much more apt to come off the sprocket with no chain guard or guide. If you cannot fabricate a good guard and/or guide as shown, take the machine to your local dealer and have him install one for you.

3. Power band is too narrow, especially on the five-speed. First change the gearing on the five-speed to 14 countershaft teeth and 44 rear sprocket teeth. Or since the countershaft sprocket is difficult to change, leave the standard 15 tooth on and install a 47 or 48 tooth rear sprocket. The gearing should be left standard at 16 and 44 on the six-speed. On the five-speed add 2.5 in. to the length of the stinger. Do not alter the six-speed exhaust. Change the profile of the carburetor needle to .062 at the small end. It tapers to its full diameter in .625 in. of length from the small end. Alter the needle on the six-speed only if you are lacking torque at midrange.

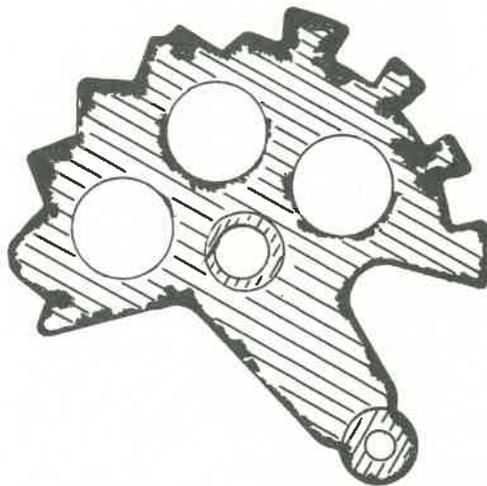
4. Too many neutrals are present in the gearbox. This can be any or all of three things. Worn or broken selector key, selector shaft out of adjustment, or the stop on the shifter shaft is out of adjustment. Always replace the selector key first.

a. The engine need not be torn down to replace the selector key. All that is needed is a pencil magnet, small diameter stiff wire, and patience enough to turn the selector key lengthwise in the bore of the output shaft. When you have done this, the key can be withdrawn through the end of the shaft with the aid of the magnet.

b. To remove the selector shaft, remove the shifter mechanism as described in the dismantling procedure. Apply wrench to flats of selector shaft and turn clockwise while rear wheel is locked to prevent output shaft turning.

c. Raise rear wheel and rotate back and forth as you use the wire to position the key lengthwise in the bore. You can observe your progress with the aid of a flashlight or droplight aimed into the bore of the shaft.

d. When you get the key aligned properly in the bore, it can be withdrawn with the pencil magnet. To install the new key, reverse the above procedure. Be sure to apply loc-tite to threads of selector shaft to prevent key from spinning off selector shaft during operation.



e. If you have a five-speed model, be sure the camplate looks like the one shown. Note that the profile of the detents has been altered. It is then heat-treated to lengthen its life. Also the hollow bolt must have a slot milled in it for clearance of the modified camplate. If your machine is not equipped with the camplate shown, it can be obtained from your distributor. The machine will never shift properly until this change is made.

f. Install the shifter mechanism on its mounting dowels and shift the transmission into low gear. Rotate the countershaft sprocket to and fro and observe the selector shaft. It will show a slight movement in or out seeking the proper radius in the output shaft. When the selector shaft is properly adjusted the following conditions will prevail. With the camplate in first gear, when the rear wheel is rotated the selector key will center itself in the proper radius of the output shaft, THE CLEARANCE ON EITHER SIDE OF THE YOKE AND THE ADJUSTING SPOOL WILL BE EQUAL. Now adjust the shifter shaft stops as described in paragraph 42, assembly for five-speed or paragraph 48, assembly for six-speed. In both cases rotate the rear wheel to make sure the gears are completely meshed.

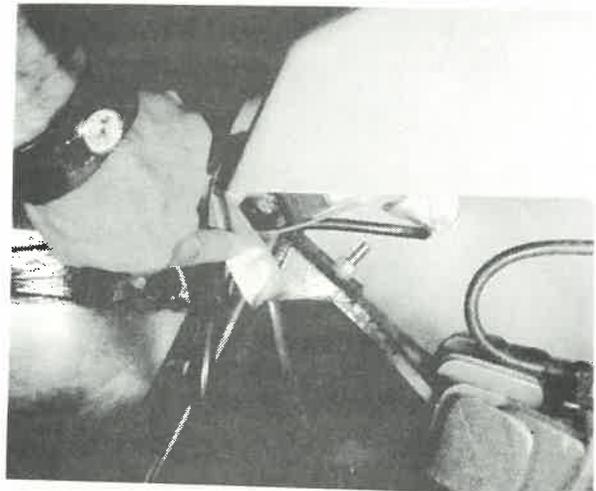
5. The shifter shaft freezes to the kickstart shaft and the machine cannot be properly started or shifted. Remove the left primary cover and drill a very small hole (.030 in.) through one wall of the kickstart shaft 1-1/4 in. from its serrated end. This will allow oil from the gearbox to lubricate the friction between these shafts and prevent them from freezing together. It is imperative to make this modification before the problem occurs or the shifter shaft will have to be removed and the mating parts cleaned to permit freedom of movement. Also the shaft will be very difficult to remove once they are frozen together. This modification will cause the machine to weep a small amount of oil on your garage floor, but it is a small price to pay for a smooth shift pattern.



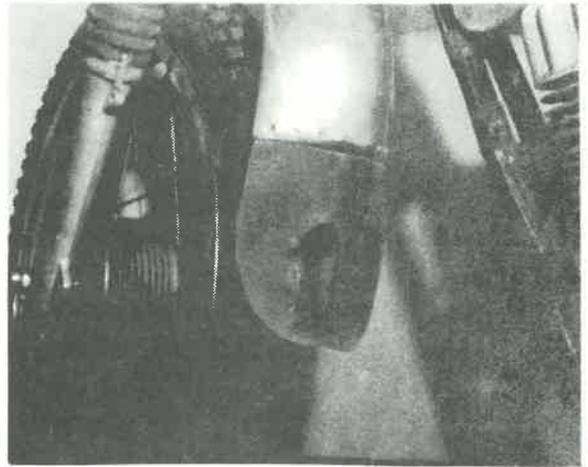
6. Two bolts in the rear of the lower triple clamp act as the fork stops by contacting the frame. Repeated contact causes the frame tubes to indent. If you then take a hard fall causing the steering to lock, you run the risk of smashing the fiberglass gas tank with the upper section of the fork stanchion tubes. We recommend that steel stops be either brazed or epoxied onto the frame as shown to prevent this.



7. The gas tank is only connected to the frame at the front of the tank. Because of this the rear of the tank is free to bounce up and down on the frame. This can cause the rear seam of the tank to fracture. To prevent this, tape or tie down the rear of the tank to the frame as shown.



8. To better protect the engine from mud and water spray, a mud flap should be attached to the rear of the front fender (as shown). Drill a 3/16 in. hole in the bottom of the air box for drainage. The 125 Maico comes with a paper air cleaner element. It is recommended that this be replaced with a filtron air cleaner. And for extremely dusty (desert) racing conditions combine a filtron with a K&N filter.



9. The five-speed model was equipped with a large flywheel magneto that would actually break the crankshaft at high RPM. The best cure is to convert the machine to total loss battery ignition. If you have an enduro model and are going to use it for that purpose, it is not necessary to convert to total loss ignition. But the machine will be more apt to break a crankshaft than one which has been converted.

a. A diagram of a typical total loss battery ignition system is included on the next page to assist you in this change. You will have to purchase a battery and a battery type coil as the existing coil will not work. Either a 12 or 6 volt battery coil combination will work. Remove the flywheel and have the center pressed out.

b. Remove stator plate, coil(s), and snip off unnecessary wires. All that we need is one wire from condenser to points (black) and one wire to ignition (blue).

c. Re-install the center on the crankshaft, check point gap, and re-time engine.

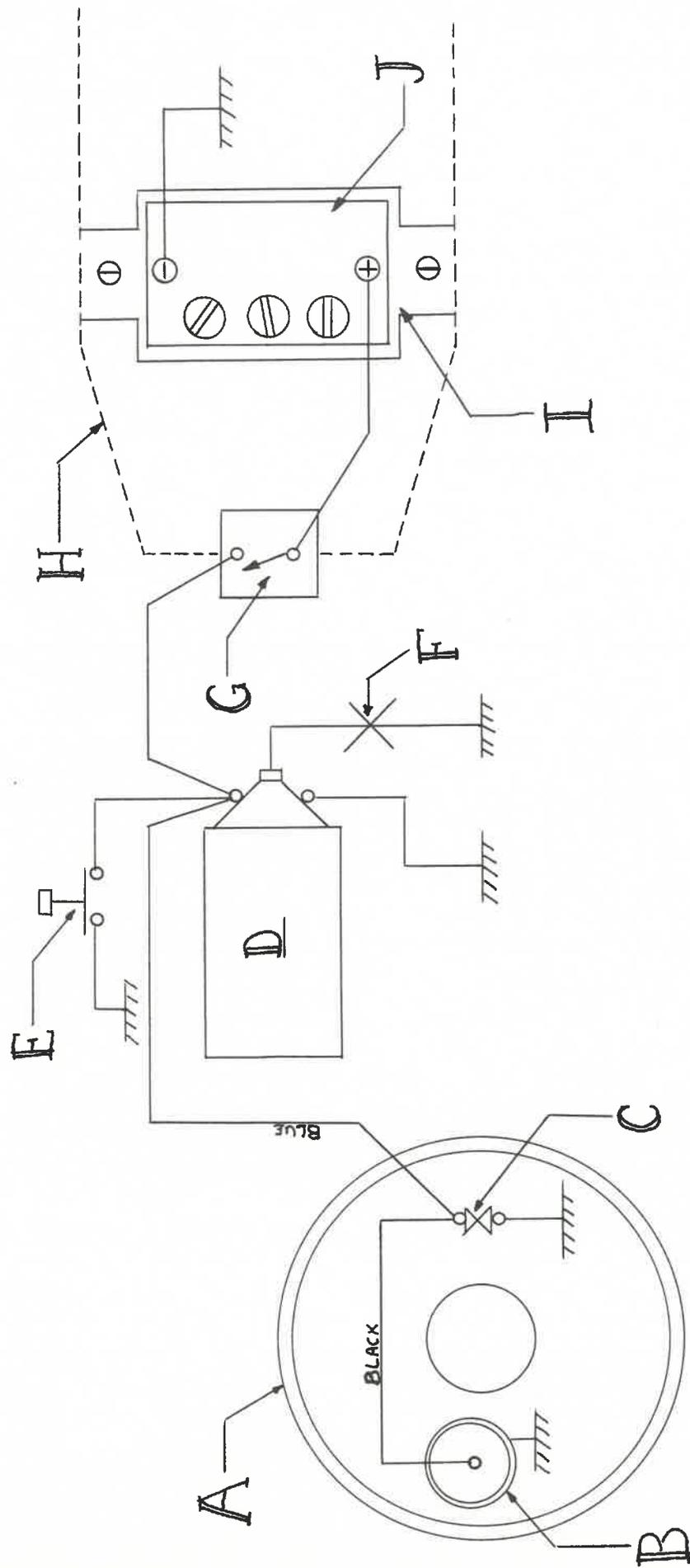
d. Fabricate battery box and install it in the cavity of the airbox under the seat.

e. Install toggle switch in front panel of airbox just above the filter element.

f. Install coil in stock location beneath the gas tank.

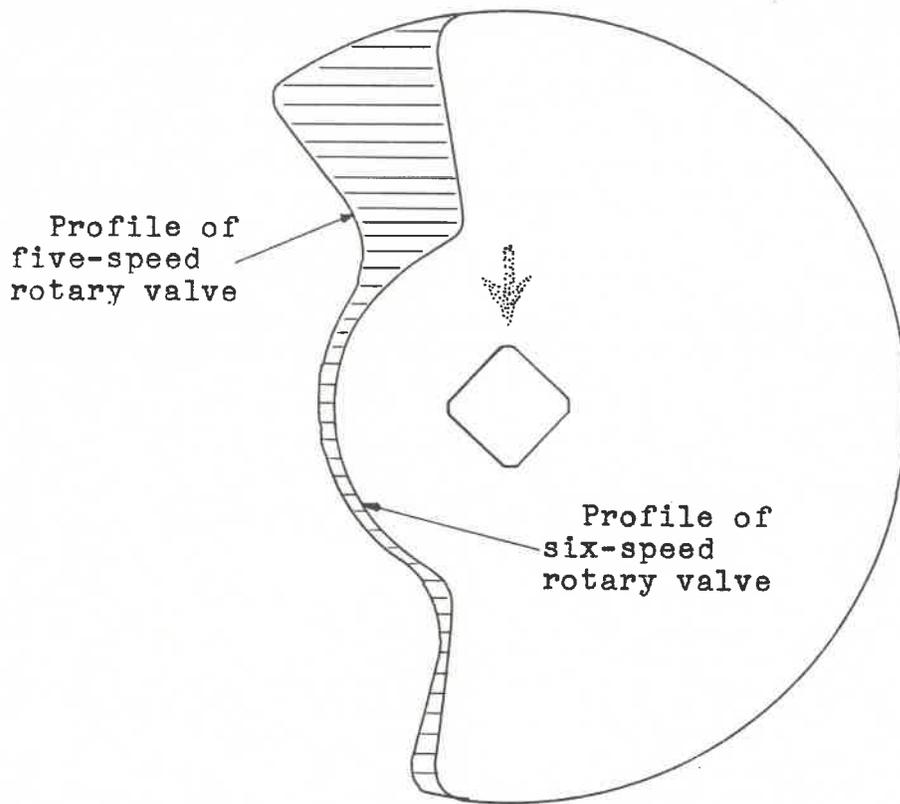
g. Since the battery will only discharge while running it will be necessary to buy a small (1 amp or less) battery charger to charge the battery between races. It is a good idea to purchase a battery tester to know the degree of charge. A fully charged battery will easily last an entire day of racing.

10. TOTAL LOSS CONVERSION DIAGRAM



- A. Stator Plate
- B. Condenser
- C. Points
- D. Coil (battery type)
- E. Kill Button

- F. Spark Plug
- G. Toggle Switch (power on/off)
- H. Air Cleaner Box
- I. Battery Holder
- J. Battery



11. Actual size drawing of six-speed rotary valve superimposed over five-speed rotary valve. Driving squares lined up, arrows one on top of the other.

We recommend replacing five-speed valve with six-speed valve. Note that the peak HP will go up but power band narrows. Modify five-speed or buy a new six-speed valve.

## PRE-RACE PREPARATION

It is best to clean the machine after each race and immediately attend to the chain. If the chain is not oiled after getting wet it will rust causing the links of the chain to freeze up. Before each race perform a routine maintenance check. The following paragraphs cover most of the things that should be checked before a race. Some of the items should be checked between each moto.

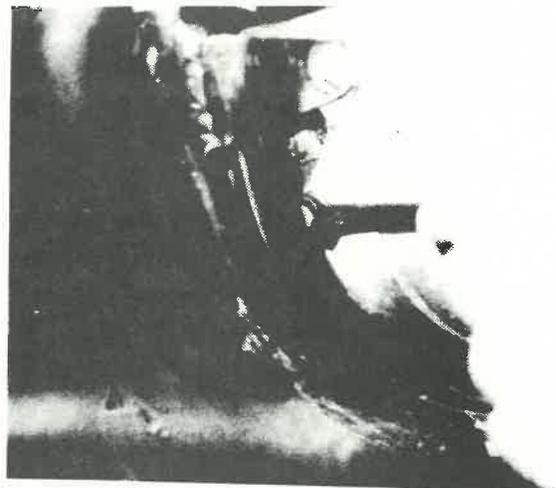
1. Check the air cleaner. Wash the filtron air cleaner in gasoline. Allow to dry and oil with 40 wt. oil. If in addition to the filtron you use a K&N cleaner, wash the K&N in gasoline and oil with 5 to 10 wt. oil. When you reinstall the cleaner use grease to obtain a better seal to the air box. Remove the right engine cover and clean out any dirt and oil. When replacing the cover use a non-hardening sealing compound to keep dirt out of this section of the induction system. Be sure to seal around the breathing tube and carburetor grommet. Check the rest of the induction system for leaks.

2. Check chain adjustment as described in the chassis section. Remember to check rear brake pedal adjustment afterwards.

3. Lubricate and adjust all controls at the handlebars. Dry-slide is an excellent lubricant for this. Be sure to lubricate the cable barrels in the levers. If the barrels can not pivot freely the cables will eventually fray and break. If proper clutch adjustment cannot be achieved at the handlebars, the clutch arm spindle is serrated and can be repositioned.

4. Check spoke nipple tension and rear sprocket bolts. Check rim locks. Do not use valve stem nuts so that the tube is less likely to be torn from the stem. Tire and tube movement on the rim will cause the stem to bend rather than tear and the stem becomes an indicator of tire movement. Check tire pressure: Dry track: 15 lbs. front, 15 lbs. rear. Wet track: 8 lbs. front, 10 lbs. rear.

5. Check gear box oil level. Fill until oil starts to flow from the oil level hole. Use a high quality multi-grade detergent oil. Eastern Maico recommends Castrol Hypoid SAE 80.



6. There is a small vent hole in the magneto case cover to prevent build-up of moisture. It is a good idea to tape over this hole before each moto-cross and remove immediately after.

7. Check wheel bearings and steering head bearing play as described in the chassis section.

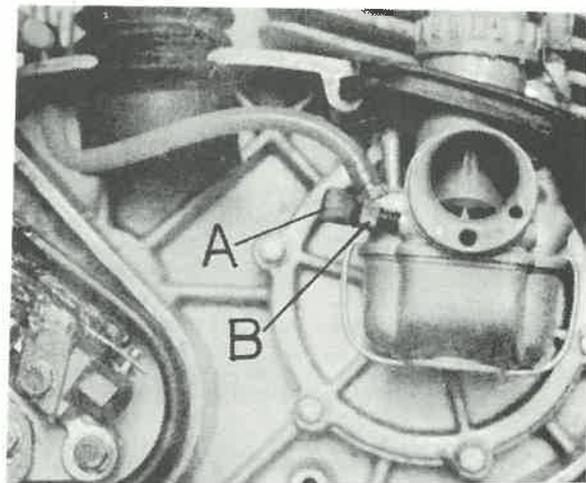
8. Check all electrical connections.

9. Check fork boot vent holes, make sure they are open as they prevent vacuum build-up during operation and drain off any excess oil or water that might accumulate. If the two vent holes are missing install them at the bottom of the fork boots. If cap nuts leak excessive oil, dismantle the integral check valve assembly, clean and reassemble. When reinstalling, the check valve screw should be flush with the top of the cap nut for proper spring tension.

10. Check spark plug--preferably between motos. Refer to technical data section for plug specifications.

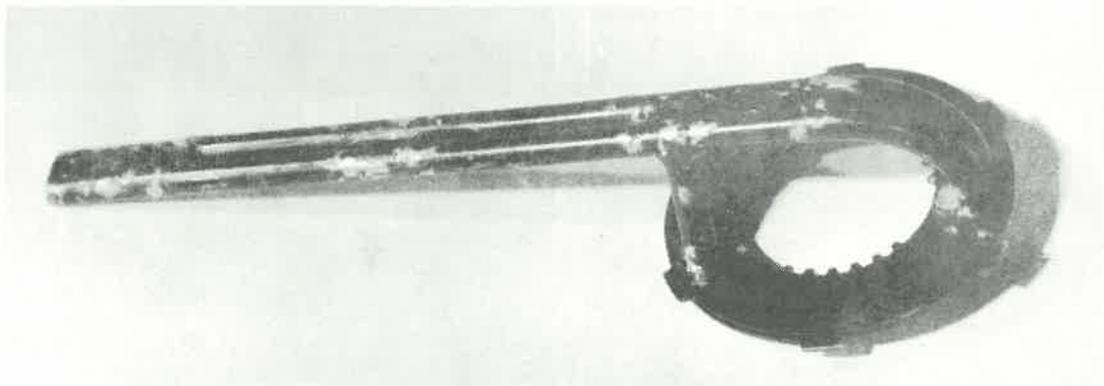
11. Check all nuts and bolts: motor mounts, expansion chamber (muffler) bolts, exhaust manifold bolts (these are often overlooked!), swing arm nut, yoke to frame bolt, head nuts, seat cheese head screws, handlebar cap screws, rear brake lever pivot bolt, rear axle nut, front axle pinch bolt, foot peg bolts, and rear shock absorber bolts.

12. Once the carburetor is set it should not need readjustment, but if it should, there are only two external adjustments. The large slotted screw (A) controls idle speed. The small slotted screw (B) controls the ratio of fuel:air at idle speed. Adjust screw A until engine just ticks over, then adjust screw B until smooth idle and good throttle response is obtained. This will usually be  $3/4$ -1 turn off its seat. Also refer to the technical data section.



### SPECIAL TOOLS

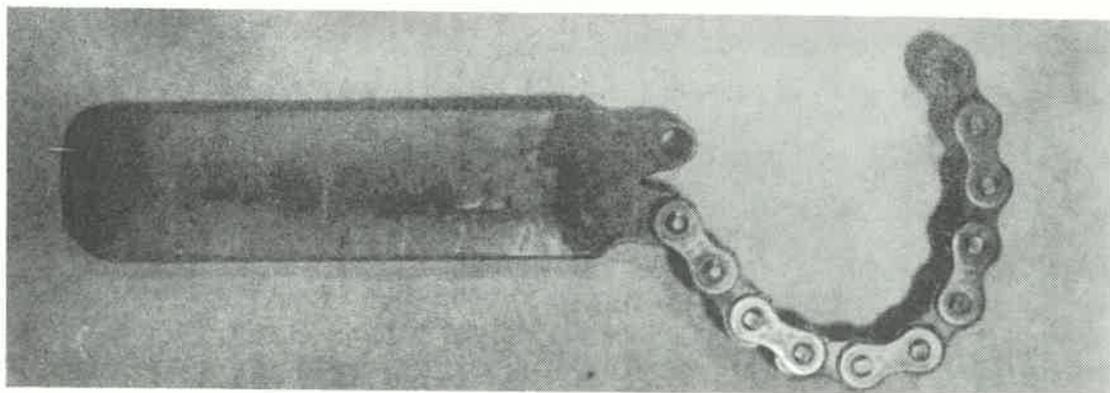
To service the 125 Maico engine a few special tools are needed. These tools are illustrated in this section. All but the five-speed flywheel puller can be fabricated quite easily.



1. Clutch locking tool (A). This can be fabricated from used driving and driven steel clutch plates.



2. Five-speed flywheel holding tool (B). This tool will only be needed if you have not converted to a total loss ignition system.



3. Chain wrench. Made from steel bar and short length of chain.

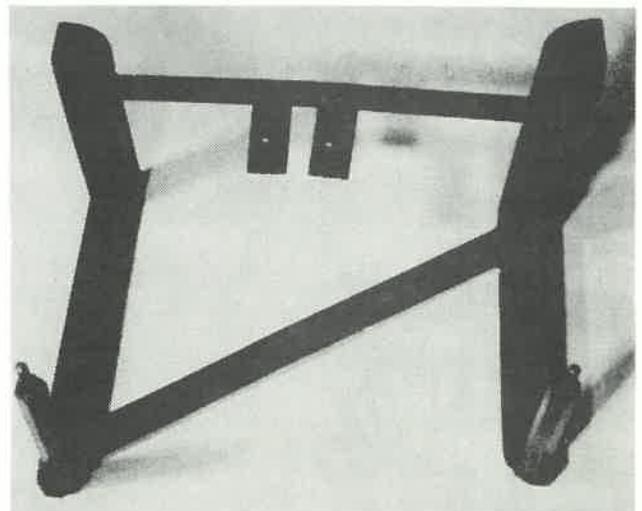
4. Five-speed magneto flywheel puller. This tool can be purchased from your dealer.



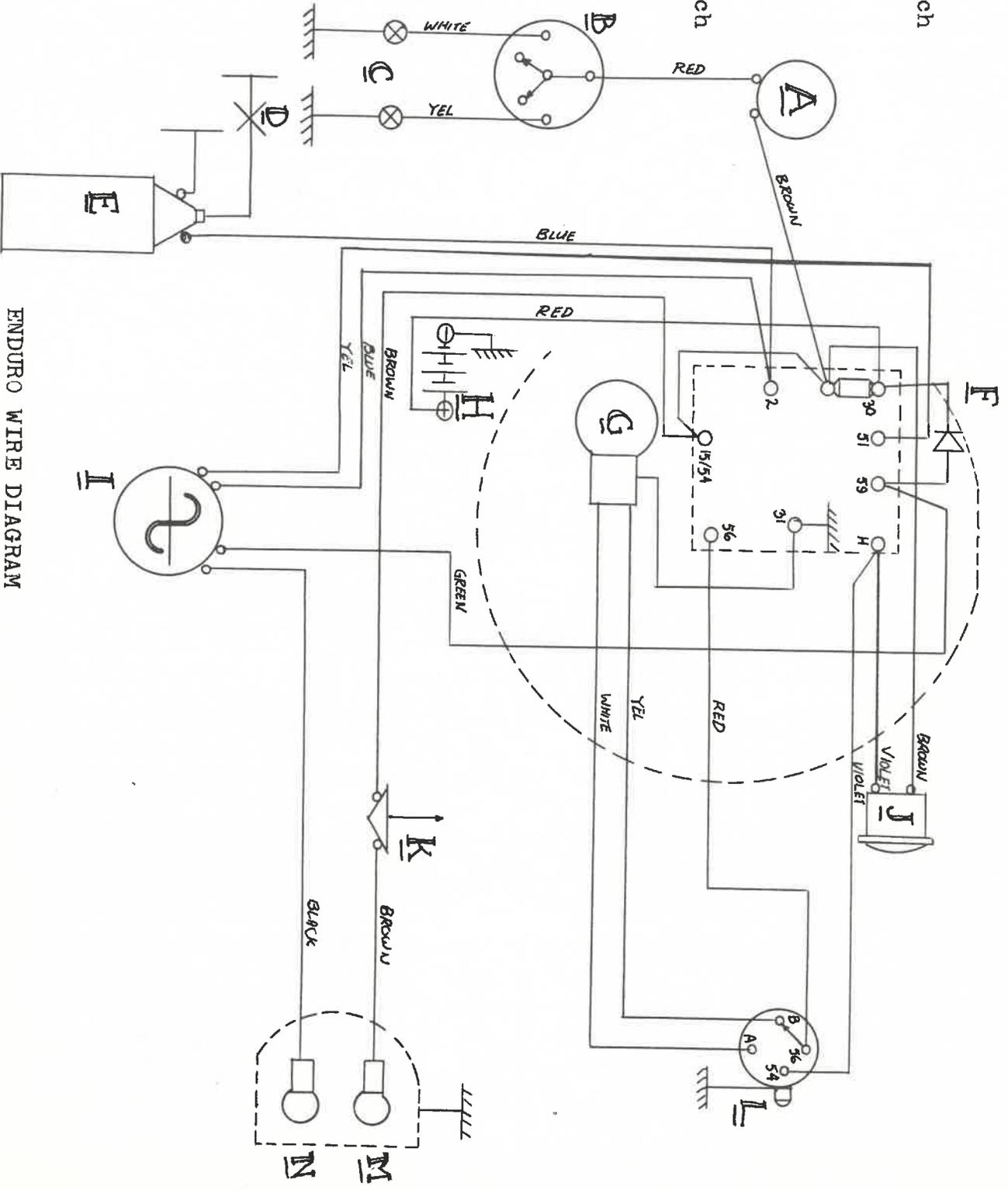
5. Six-speed magneto rotor removing pin. Make from drill rod or equivalent 1/4 in. diameter 1 3/4 in. length.



6. Engine stand (trestle). A useful tool for engine repair but not entirely necessary. Can be purchased from your dealer or fabricated from steel bar and rod stock.



- A. Flashing Unit
- B. Turn Signal Switch
- C. Turn Signals
- D. Spark Plug
- E. Coil
- F. Rectifier
- G. Head Light
- H. Battery
- I. Magneto
- J. Horn
- K. Brake Light Switch
- L. Horn & Dimmer Switch
- M. Brake Light
- N. Tail Light



ENDURO WIRE DIAGRAM

Note: A wiring diagram for MX models is unnecessary. External coil is under tank. Terminal No. 15 is ground. Terminal No. 4 is high tension. Terminal No. 1 is from the points.