



# Sprite - Barracuda SHOP MANUAL

125cc - 200cc - 250cc

FOUR AND FIVE SPEED

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PRICE \$3.00

**COSMOPOLITAN MOTORS, INCORPORATED**  
**JACKSONVILLE & MEADOWBROOK ROADS, HATBORO, PA. 19040**

(215) OS 2-9100

**ENGINE** - Single cylinder 4 stroke - Over head valves - bore 54 mm. - stroke 54 mm. - Cylinder displacement 123,7cc. - Compression ratio 9,5 to 1 - CV. 16 at 8.800 R.P.M. - Distribution with standard cam - Intake open 30° BTDC - Intake close 75° ABCD - Exhaust open 75° BBDC - Exhaust close 30° ATDC - Valve clearance with hot motor 0.006" - Forced lubrication by gear pump 60 L/H Oil capacity 2 qts - Gravity fuel supply 98 to 100 octane - Carburetor UB 22 BS - Ignition by alternator flywheel magneto with external H.T. coil - Ignition advance 19° - Plus automatic advance of 25° - Point gap 0.016" - Marelli Plug CW 260 L - Champion plug N. 3 - With multiplate clutch - Costant mesh gear box - Foot shift pedal - Primary transmission by helicoidal gears - Secondary transmission by chain 1/2" x 5/16".

**FRAME** - Combination of pressed steel and tubular - Double action hydraulic front fork - Rear swing arm with adjustable hydraulic shock absorbers.

**TIRES** - Pirelli 2.75 x 18" (rib.) front wheel - 3.00 x 18" (univ.) rear wheel - Expanding type brakes.

**LIGHTING EQUIPMENT** - Alternating current 6V 7 amp equipped with battery to ensure steady supply of current to lights and horn - Large 130 mm. headlight - Headlight: 6V 25/25 S. B.

**OVERALL DIMENSIONS** - Length 76.44" - Width 27" - Height 36.64" Weight 229 lbs. (DRY) - Fuel tank capacity 3,5 gallons - Reserve .05 gallons - Maximum speed 78 MPH - Fuel consumption 90 MPG.

**MOTORCYCLE 200cc. (Technical data different from 125cc.)**

**ENGINE** - Bore 66,5 mm. - Stroke 57 mm. - Cylinder displacement 197,9cc. - Compression ratio 8,8 to 1 - CV. 19,5 at 8.600 R.P.M. - Carburetor UB 22 BS - Ignition advance 9° 30' - Plus automatic advance of 29° with flywheel magneto ADP 79/AN.

(Note: with flywheel magneto ADP 54/2ANB ignition advance 17° - plus automatic advance of 25°).

**TIRES** - Pirelli 3.00 x 18" rib. front wheel - 3.00 x 18" univ. rear wheel.

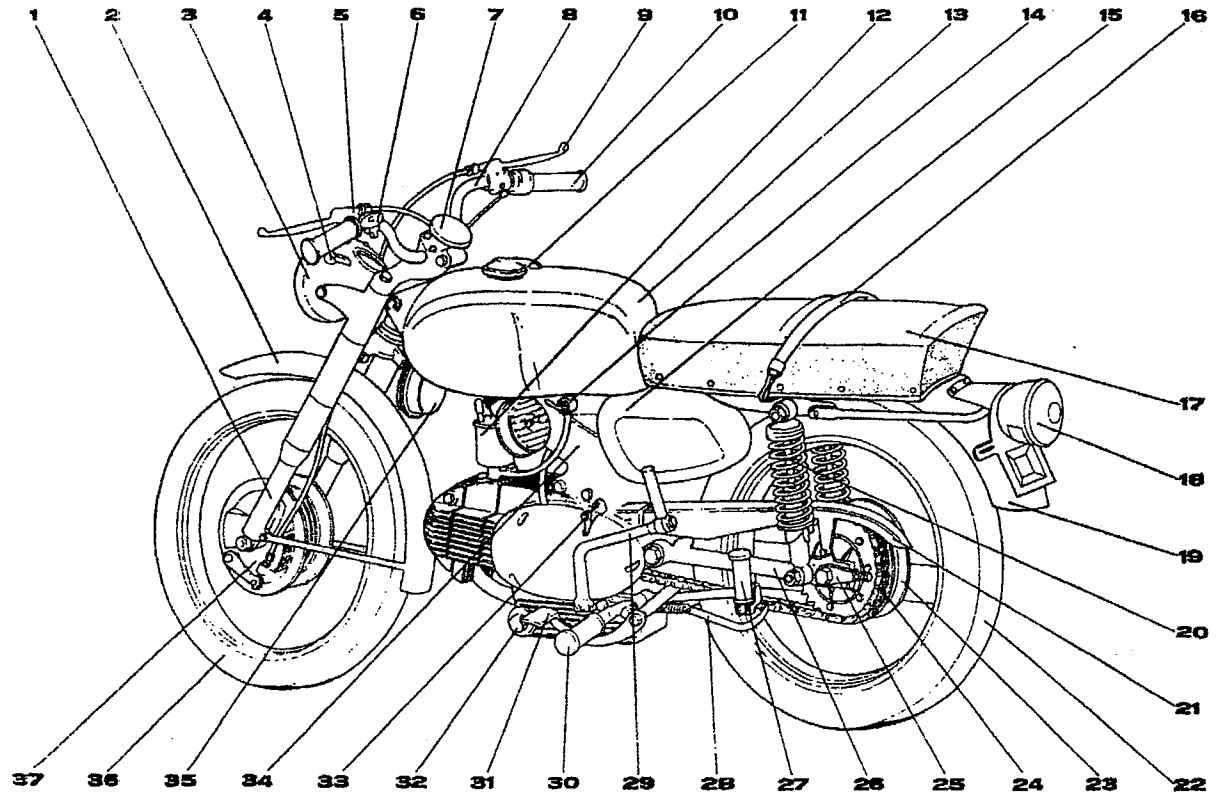
**OVERALL DIMENSIONS** - Weight 231 lbs. (DRY) - Maximum speed 90 MPH - Fuel consumption 85 MPG.

**MOTORCYCLE 250cc. (Technical data different from 125cc.)**

**ENGINE** - Bore 74 mm - Stroke 57 mm - Cylinder displacement 245.1cc. - Compression ratio 8,5 to 1 - CV. 24 at 8.500 R.P.M. - Carburetor UB 24 BS 2 - Ignition advance 9° 30' - Plus automatic advance of 29° with flywheel magneto ADP 79/AN and ADP 78/2ANB.

**TIRES** - Pirelli 3.00 x 18" univ. front wheel - 3.25 x 18" univ. rear wheel.

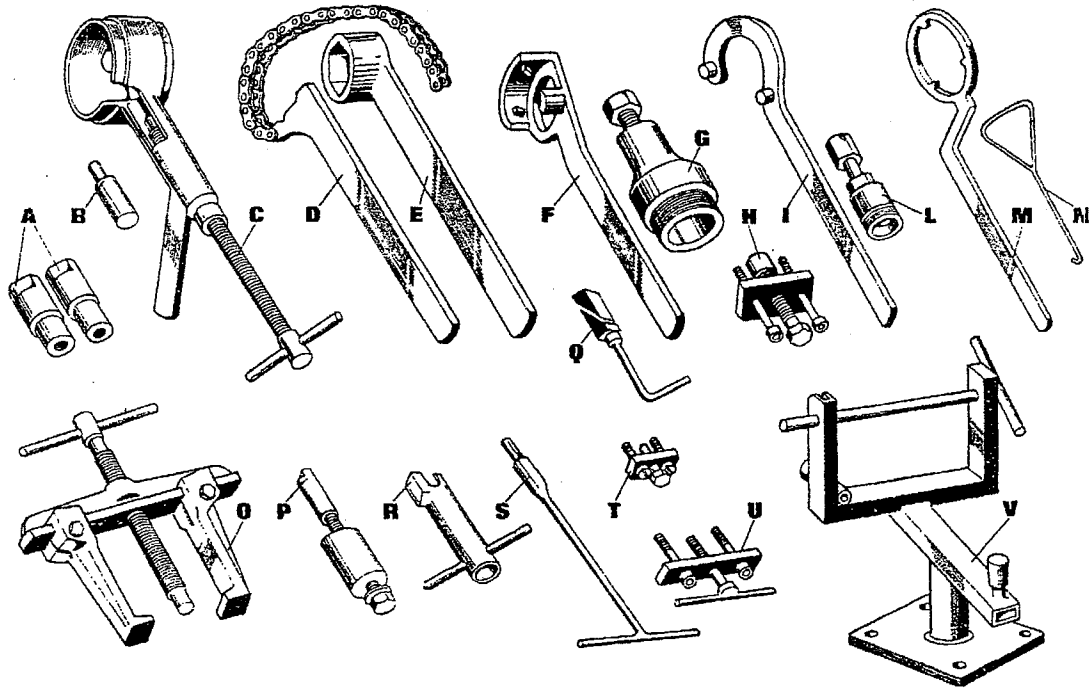
**OVERALL DIMENSIONS** - Weight 232 lbs. (DRY) - Maximum speed 95 MPH - Fuel consumption 80 MPG.



- |                     |                   |                    |
|---------------------|-------------------|--------------------|
| 1 Front fork        | 14 Petcock        | 27 Rear foot rest  |
| 2 Front fender      | 15 Tool box       | 28 Stand           |
| 3 Headlamp          | 16 Strap          | 29 Kickstart       |
| 4 Switch key        | 17 Seat           | 30 Foot rest       |
| 5 Clutch lever      | 18 Rear light     | 31 Brake pedal     |
| 6 Dimmer switch     | 19 Rear fender    | 32 Oil drain plug  |
| 7 Damper            | 20 Shock absorber | 33 Clutch adjuster |
| 8 Handlebar         | 21 Chain guard    | 34 Frame           |
| 9 Front brake lever | 22 Rear wheel     | 35 Horn            |
| 10 Throttle control | 23 Rear hub       | 36 Front wheel     |
| 11 Gas cap          | 24 Chain          | 37 Front hub       |
| 12 Carburetor       | 25 Chain adjuster |                    |
| 13 Gastank          | 26 Rear fork      |                    |

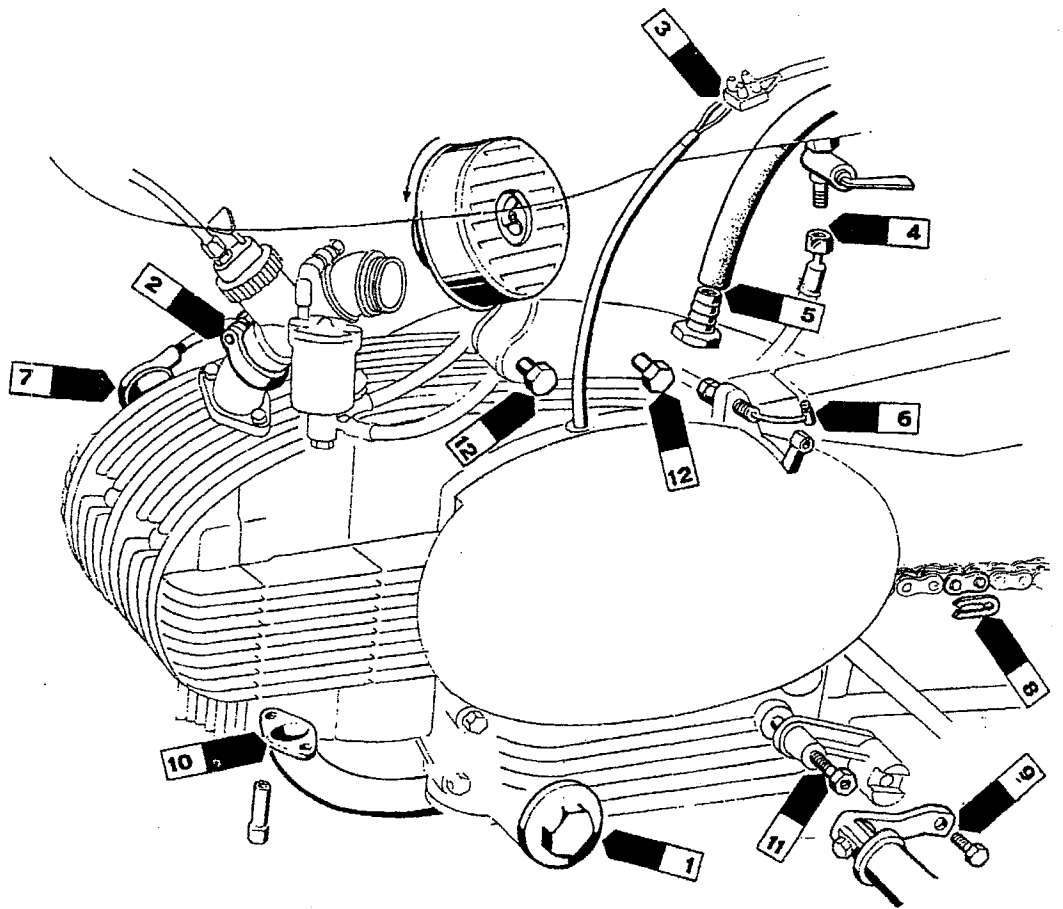
**SPECIAL TOOLS**

Special tools are made in order to facilitate disassembly and reassembly operations, and used with metric wrenches, will enable you to perform all necessary operations.



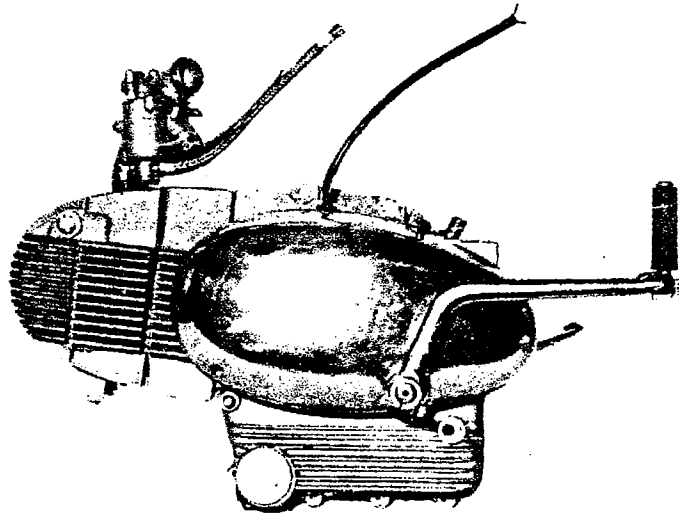
- |   |                              |            |   |                                |        |
|---|------------------------------|------------|---|--------------------------------|--------|
| A | Thread protecting bushings   | 138&139/MB | N | Clutch spring tool             | 135/MB |
| B | Piston pin shaft extractor   | } 144/MB   | O | Universal puller               | 133/MB |
| C | Piston extractor             |            | P | Cam follower bushing extractor | 134/MB |
| D | Countershaft sprocket holder | 141/MB     | Q | Crankshaft spacer              | G 276  |
| E | Countershaft sprocket wrench | 140/MB     | R | Kich starter spring holder     | 142/MB |
| F | Engine pinion holder         | 131/MB     | S | 5mm Allen wrench               | G 262  |
| G | Engine pinion puller         | 143/MB     | T | Shifting drum puller           | 136/MB |
| H | Engine pinion puller         | 146/MB     | U | Cam gear extractor             | 147/MB |
| I | Flywheel magneto holder      | 132/MB     | V | Engine support                 | 145/MB |
| L | Flywheel magneto extractor   | 137/MB     |   |                                |        |
| M | Clutch hub holder            | 130/MB     |   |                                |        |

Before performing any operation, it is advisable to thoroughly clean the machine, in order to prevent any dust particles from accumulating on engine components.

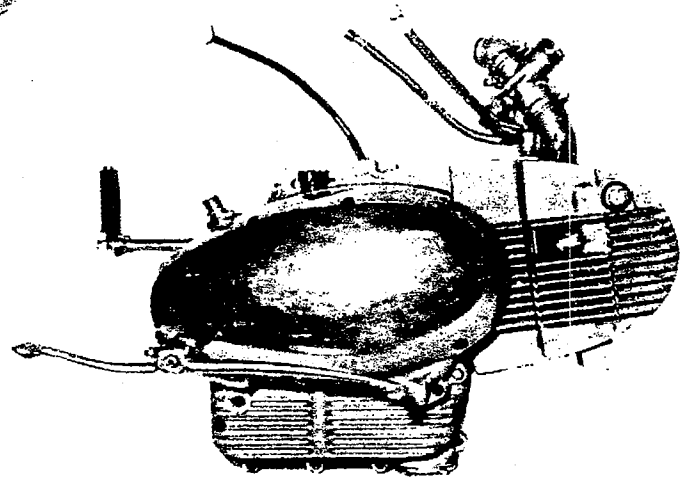


- 1) Remove engine oil, using 27mm wrench to unscrew oil plug. Then remove oil filter assembly.
- 2) Loosen carburetor clamp with 8mm wrench and pull out carburetor after air filter has been removed.
- 3) Remove electric wires from junction box.
- 4) Unscrew fuel lines with 12mm wrench.
- 5) Pull out engine breather tube.
- 6) Loosen clutch cable clamp and pull out cable.
- 7) Pull out the spark plug cap.
- 8) Remove with pliers, master link clip, master link and chain.
- 9) Unscrew foot peg bolts with 17mm wrench. Remove knurled nut of brake rod.
- 10) Remove exhaust pipe and muffler.
- 11) Unscrew lower engine stud nut using 17mm wrench - press out stud.
- 12) Remove upper engine studs nuts with 14mm wrench, also studs and engine from frame.

**To reassemble, reverse above instructions.**



Engine view flywheel magneto side



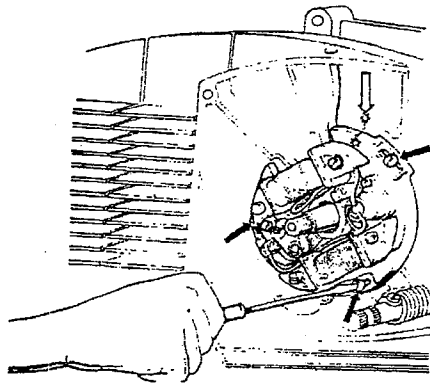
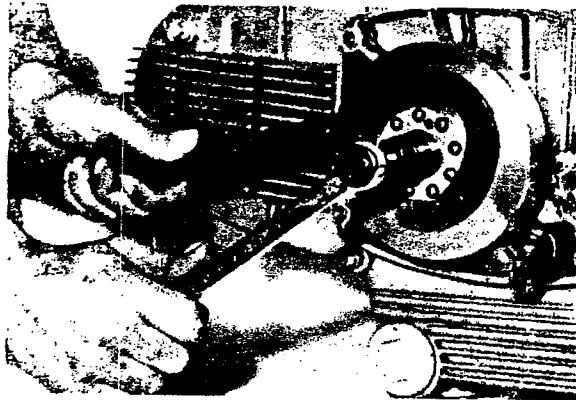
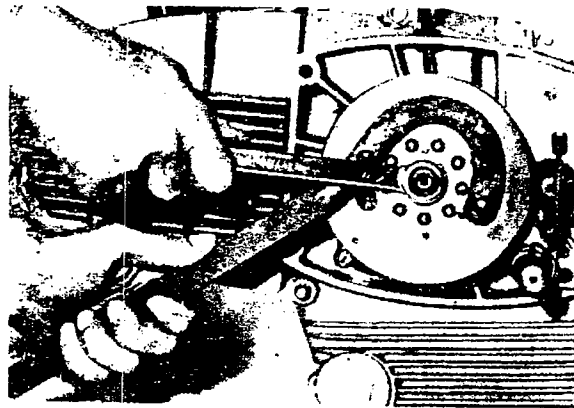
Engine view clutch side

**NOTE:**

Due to the unique characteristics of the engine, most of the operations shown in this book can be made with the engine on the frame. Only if the crankcase must be split, will engine have to be removed.

By removing the left hand cover, the flywheel magneto, clutch adjuster and countershaft sprocket are accessible.

By removing the right hand cover, the clutch, preselector components and cam distribution gears are visible. These are operated in oil bath, therefore, this cover must be perfectly sealed. The cylinder head, rocker arm and cylinder are removable from the front side.



hand cover (flywheel magneto side) with tool S, removing the three fastening screws.

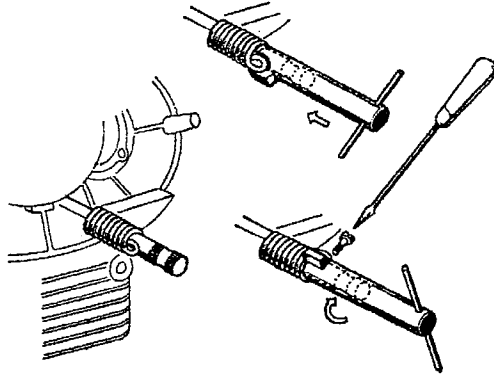
Remove the flywheel magneto nut, using 19mm wrench, holding at the same time, the flywheel with tool I.

Lock the flywheel puller L in position and with 22mm wrench, loosen the flywheel from crankshaft. Tap on the puller bolt slightly with a hammer if the flywheel is hard to remove.

Before removing the backing plate, it is advisable to make a reference mark on the crankcase in order to facilitate the reassembly operation.



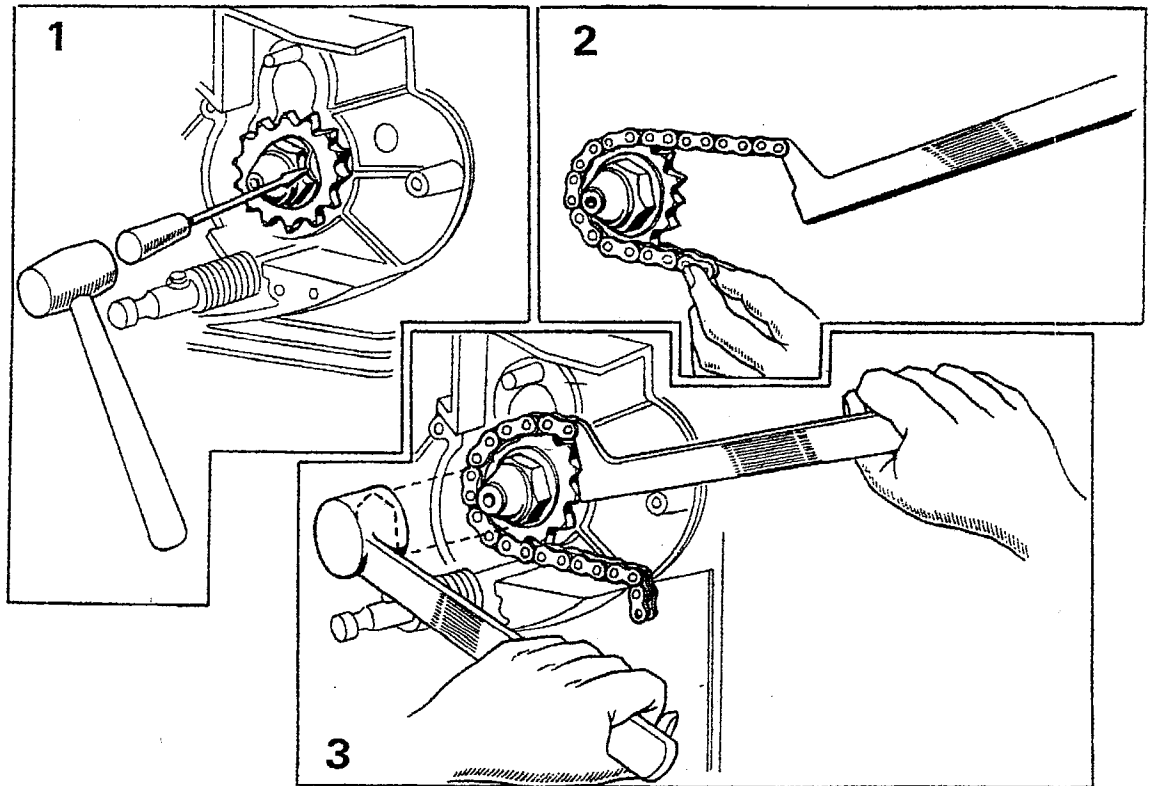
Remove clutch lever support screws using tool S. With screw driver, unscrew flywheel protection cover fastening screws.

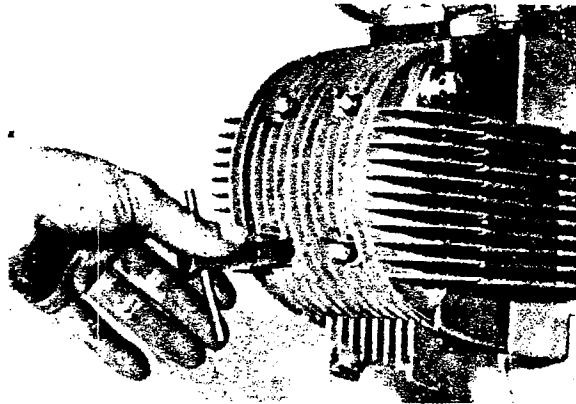


Holding kick starter spring with tool R, remove with screw driver the spring fastening screw.

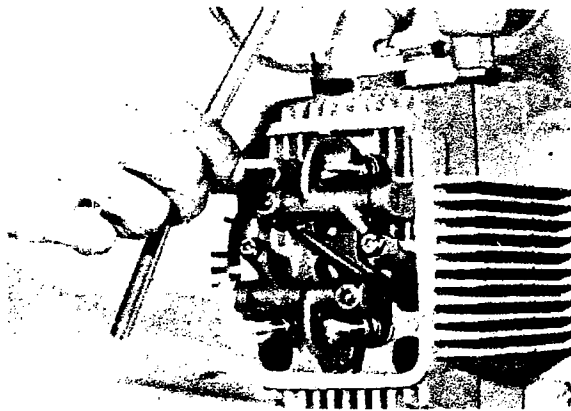
To remove countershaft sprocket it is necessary to:

- 1) Lift up the safety washer loop.
- 2) Install the special tool D.
- 3) Remove the nut with special wrench E, holding at the same time the countershaft sprocket with tool D.





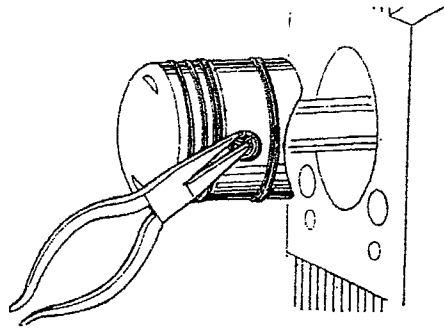
With 10mm socket wrench, remove the 4 rocker cover fastening screws. Pull out cover and aluminum gasket.



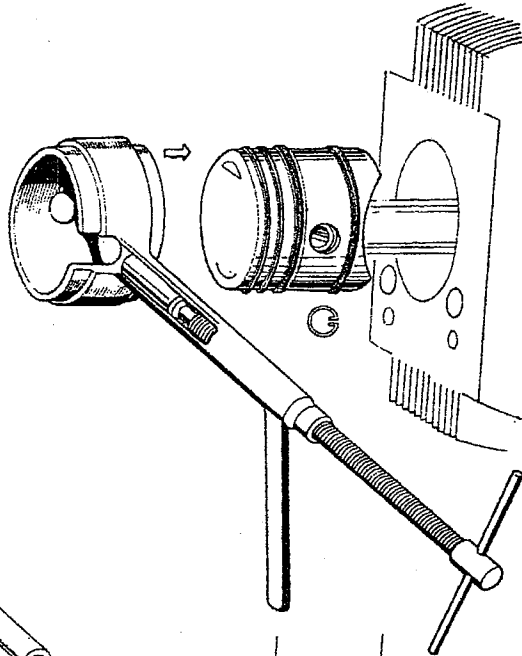
Before removing with 12mm socket wrench, the four cylinder head nuts, be certain that the piston is in compression stroke position. Pull out the rocker arm support carefully in order not to damage the threads of the cylinder studs.



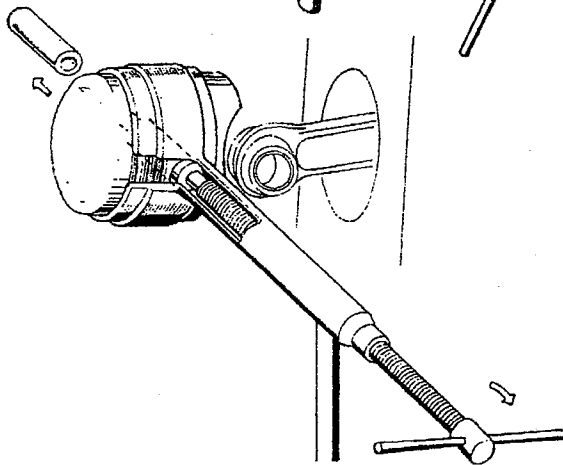
Pull out the cylinder head, gasket, cylinder and base gaskets.



Remove with pliers the two piston pin circlips.

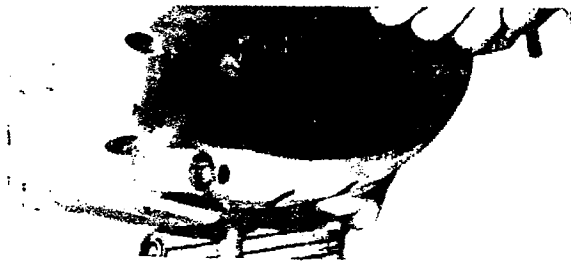


Insert the pin B in the tool C. Install the tool C on the piston. (It is advisable to slightly heat the piston before removing the pin).

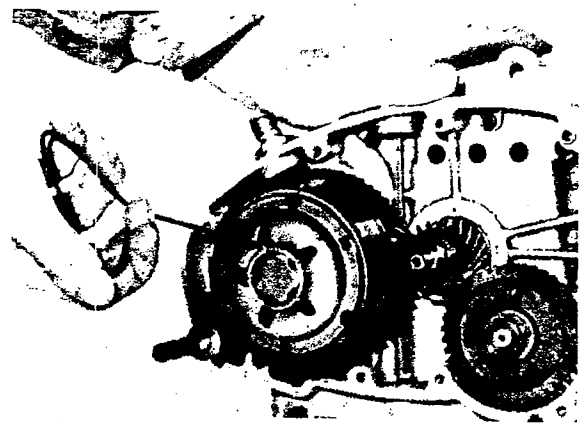


Turn the spindle until the piston pin is removed from the connecting rod.

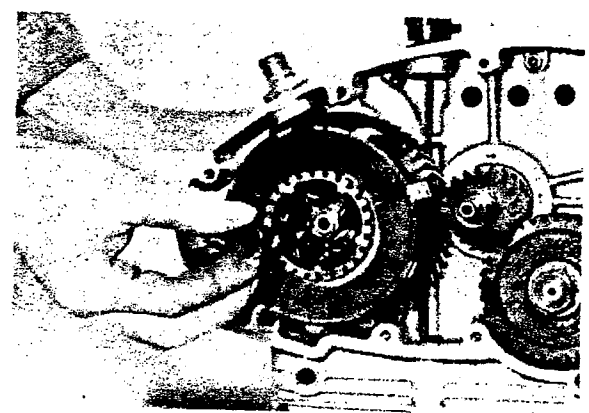
NOTE: It is not necessary to remove the piston rings, to remove the piston.



After the shifting lever has been removed, unscrew the 10 Allen screws with the tool S. Tapping slightly with plastic hammer, pull out cover.



**Dismantling of the clutch**  
With the special curved tool N, disconnect the five clutch springs.



Remove the clutch plates and the short clutch rod.  
Lift up the loop of the safety washer (bent over the nut).

