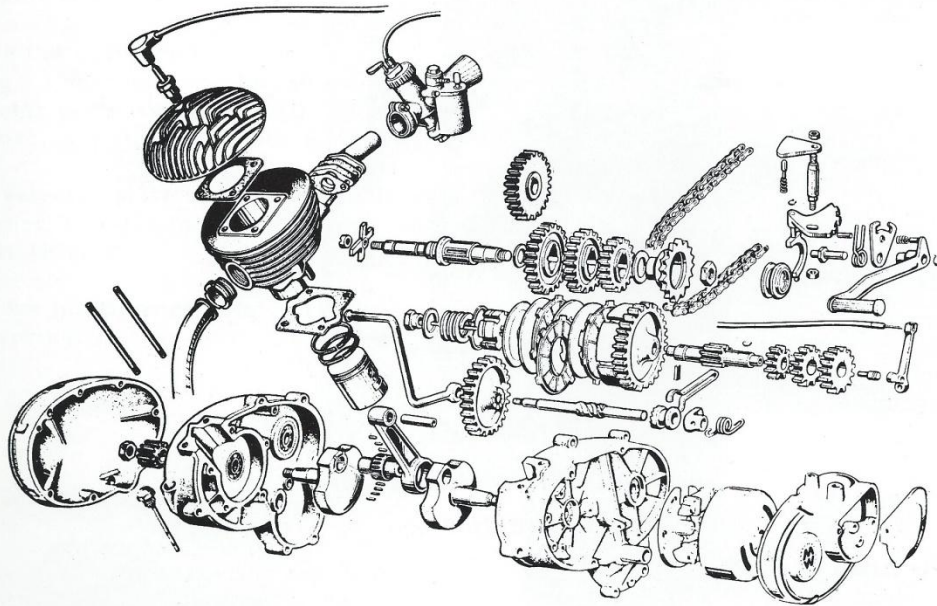


## WORKSHOP MANUAL INSTRUCTIONS FOR DISMANTLING AND REASSEMBLING

### FOREWARD

Benelli cycles are designed to give a high performance; at the same time they are of robust and simple construction. They incorporate cycle comfort, economical running and indisputable stability due to their large diameter wheels.

It is the purpose of this manual to instruct our customers in the best methods for service and repair of our units, thus ensuring efficient after-sales-service for the owner-rider.



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SPECIAL TOOLS



From Left To Right

- |                                 |                                      |
|---------------------------------|--------------------------------------|
| 1. 5mm Allen wrench             | 8. Spool bearing extractor           |
| 2. Flywheel puller              | 9. Clutch nut wrench                 |
| 3. Engine pinion holder         | 10. Crankshaft expandable spacer     |
| 4. Engine pinion extractor      | 11. Piston pin guiding shaft         |
| 5. Exhaust pipe wrench          | 12. Countershaft sprocket extractor  |
| 6. Countershaft sprocket holder | 13. Countershaft sprocket nut wrench |
| 7. Piston pin extractor         |                                      |

OPERATION NO. 1

HOW TO REMOVE L.H. COVER - DIS-  
ASSEMBLY OF PRESELECTOR MECHANISM  
INSPECTION & REASSEMBLY & TIMING OF  
SELECTOR

Note: The cover can be removed and re-  
installed without disturbing pre-  
selector timing.

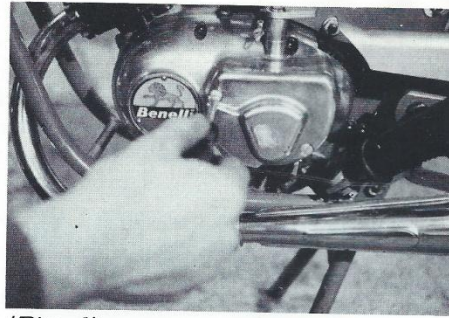
Operations 1 to 5B can be executed  
with the engine on the frame.

- A. Remove the 2 selector cover screws with  
screwdriver. (Pic. 1)
- B. Pressing down on shifting lever, and  
turning rear wheel at the same time,  
engage 4th gear. Using a 5mm Allen  
wrench, unscrew the 4 cover fastening  
screws and remove cover (Pic. 2),  
pulling slightly forward in order to  
disengage the shifting yoke from  
selector shaft spool. (Pic. 3)

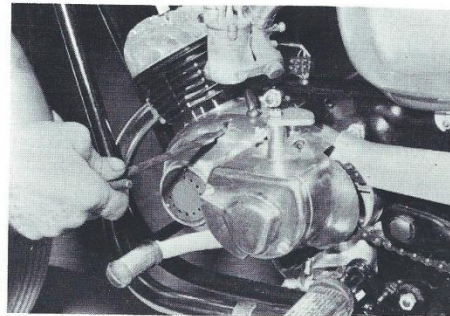
Place the L.H. cover on bench, and  
using a 10mm wrench, loosen the  
selector plate fixing nut. (Do not  
remove, but slightly loosen.) (Pic. 4)

Tap selector plate slightly with plastic  
hammer in order to loosen it from the  
shaft. (Pic. 5)

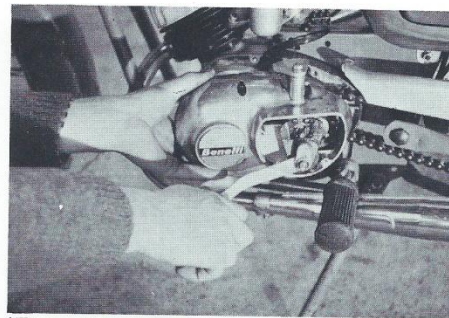
Remove in sequence: Nut, plate, plunger  
and spring.



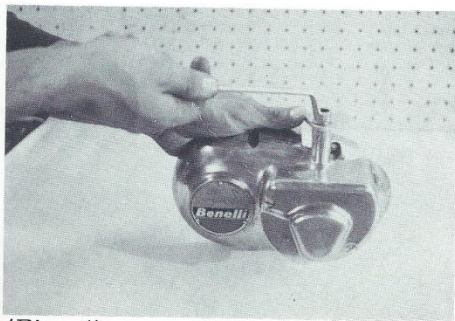
(Pic. 1)



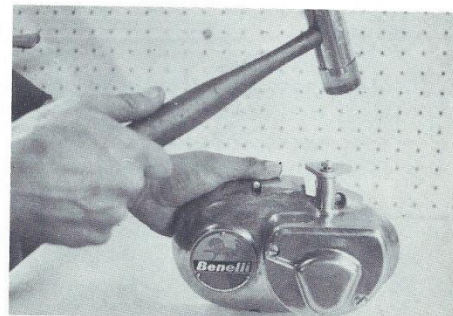
(Pic. 2)



(Pic. 3)



(Pic. 4)



(Pic. 5)

Note: When removing plate fixing nut, hold down on it, or the plunger and spring will eject with force.

- C. To dismantle shifting lever, remove the seeger with needle nose pliers, and pull out, in sequence, the shifting lever, fork, fork pressure spring and lever return spring.

To remove the shifting lever shaft, unscrew, turning counterclockwise with 17mm wrench.

- D. To remove the selector quadrant, unscrew the locking nut with a 10mm wrench and pry out the quadrant.

To disassemble the control yoke, remove circlip.

- E. Before reassembling, check for wear of the shifting fork, shifting lever shaft for loss of tension of the springs, wear of the yoke, quadrant and quadrant spring.

- F. To reassemble, reverse operation.

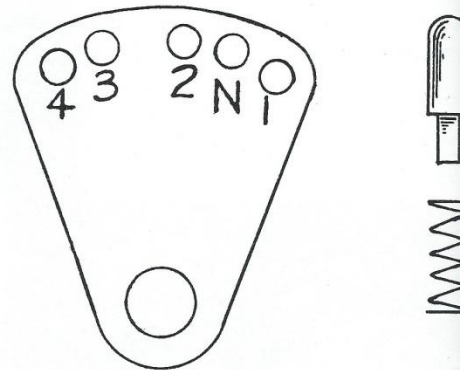
After all the selector components are reassembled, (do not install the selector plate spring and plunger), proceed as follows to install L.H. cover. Engage the yoke with the spool, and turning the rear wheel at the same time, press the cover and tighten the 4 cover fixing screws firmly.

- G. After operation F is executed, press down the shifting lever and engage 4th gear. Install spring plunger and preselector plate matching the 4th gear notch (located under the selector plate) with the plunger. (Pic. 6)

- H. Install and tighten firmly, the washer and locking nut.

To check correct timing of selector, press down on shifting lever and engage 4th gear. The selector plate should not rotate over the 4th gear notch. It is necessary to try out all the gears, including the neutral position. When turning the rear wheel with the shifting lever in neutral position, the gear box should be noise free.

Note: Incorrect timing of selector will affect the proper engagement of gears.



(Pic. 6)

OPERATION NO. 1

HOW TO REMOVE L.H. COVER - DIS-  
ASSEMBLY OF PRESELECTOR MECHANISM  
INSPECTION & REASSEMBLY & TIMING OF  
SELECTOR

Note: The cover can be removed and re-  
installed without disturbing pre-  
selector timing.

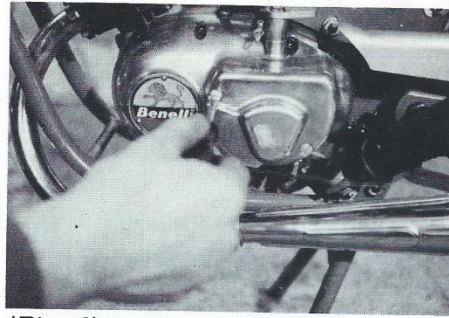
Operations 1 to 5B can be executed  
with the engine on the frame.

- A. Remove the 2 selector cover screws with  
screwdriver. (Pic. 1)
- B. Pressing down on shifting lever, and  
turning rear wheel at the same time,  
engage 4th gear. Using a 5mm Allen  
wrench, unscrew the 4 cover fastening  
screws and remove cover (Pic. 2),  
pulling slightly forward in order to  
disengage the shifting yoke from  
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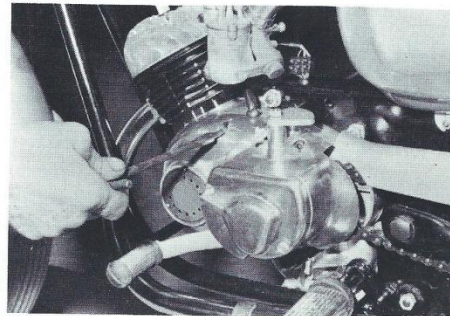
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selector plate fixing nut. (Do not  
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Tap selector plate slightly with plastic  
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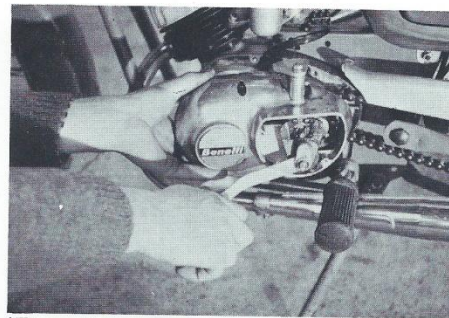
Remove in sequence: Nut, plate, plunger  
and spring.



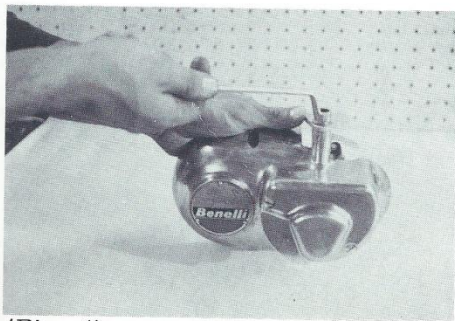
(Pic. 1)



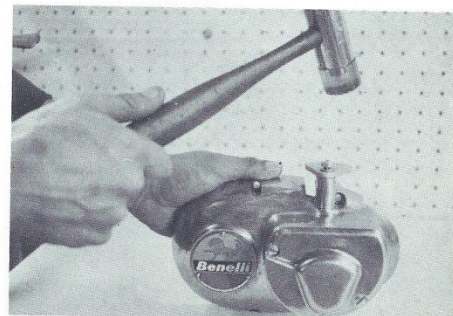
(Pic. 2)



(Pic. 3)



(Pic. 4)



(Pic. 5)

Note: When removing plate fixing nut, hold down on it, or the plunger and spring will eject with force.

- C. To dismantle shifting lever, remove the seeger with needle nose pliers, and pull out, in sequence, the shifting lever, fork, fork pressure spring and lever return spring.

To remove the shifting lever shaft, unscrew, turning counterclockwise with 17mm wrench.

- D. To remove the selector quadrant, unscrew the locking nut with a 10mm wrench and pry out the quadrant.

To disassemble the control yoke, remove circlip.

- E. Before reassembling, check for wear of the shifting fork, shifting lever shaft for loss of tension of the springs, wear of the yoke, quadrant and quadrant spring.

- F. To reassemble, reverse operation.

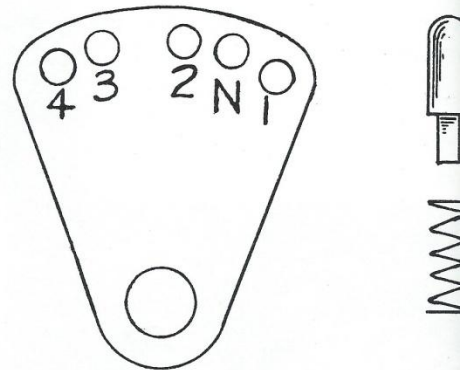
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- H. Install and tighten firmly, the washer and locking nut.

To check correct timing of selector, press down on shifting lever and engage 4th gear. The selector plate should not rotate over the 4th gear notch. It is necessary to try out all the gears, including the neutral position. When turning the rear wheel with the shifting lever in neutral position, the gear box should be noise free.

Note: Incorrect timing of selector will affect the proper engagement of gears.

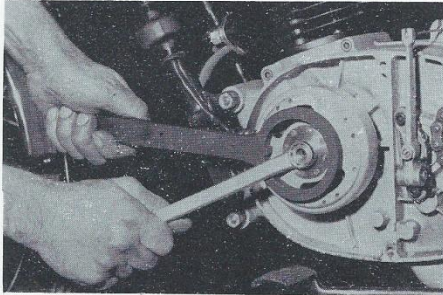


(Pic. 6)

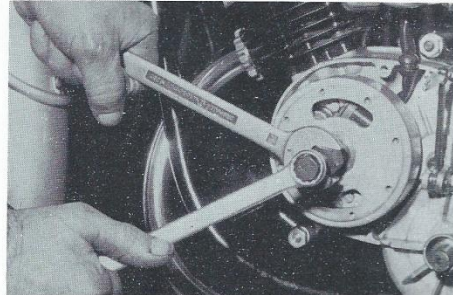
OPERATION NO. 2

IGNITION TIMING - DISMANTLING FLYWHEEL MAGNETO UNIT - INSPECTION AND REASSEMBLY

- A. After operation 1A is executed, hold flywheel with special holder, remove the flywheel nut with 14mm wrench. (Normal right hand thread.) (Pic. 7)



(Pic. 7)

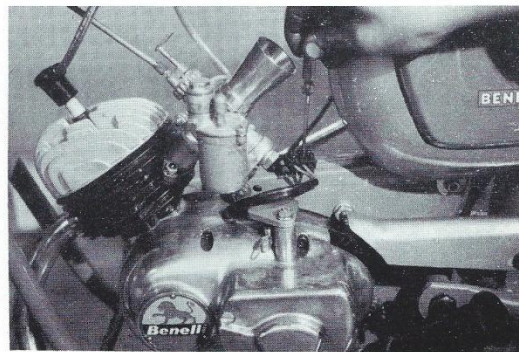


(Pic. 8)

- B. Fit the flywheel magneto puller with 19mm wrench. Holding the puller with the same wrench, turn the extractor screw clockwise, using a 17mm wrench, and pull out flywheel. (Pic. 8)

- C. Remove stator plate by removing the three fixing screws and pull out the plate after the wires are disconnected from junction box. (Pic. 9)

- D. To remove breaker point after flywheel is removed, disconnect the condenser wire B, remove the circlip A, and unscrew the breaker point holding screw and slide the assembly off the rocker spindle. (Pic. 10)

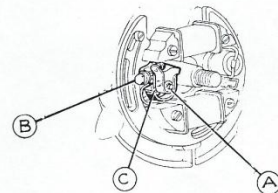


(Pic. 9)

- E. Before reassembling, inspect:
- . If points are pinned.
  - . Dirt on points (clean thoroughly).
  - . Loose wires of coils.
  - . Defective condenser.

- F. Replace necessary parts and reverse operation to reassemble.

Note: When removing the stator plate, it is advisable to mark position of the plate. This will prevent loss of time when reassembling, and during the timing operation.



(Pic. 10)

G. To Time The Ignition Point  
(Flywheel Magneto)

1. Set point gap at 0.016".
2. Turn engine counterclockwise until points begin to open. The line outside diameter of the flywheel must be in direct line with the 0 mark of the crankcase.

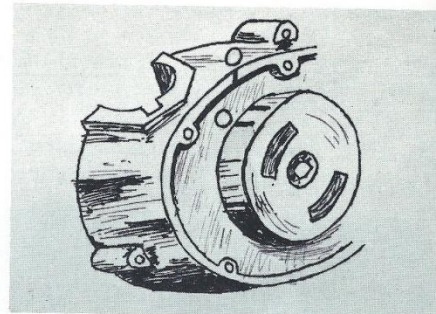
Note: The 0 mark of the flywheel magneto indicates T.D.C. position of the piston. (Pic. 11)

3. Turn stator plate clockwise to advance timing. Turn stator plate counterclockwise to retard timing.

OPERATION NO. 3

HOW TO REMOVE CYLINDER HEAD -  
CYLINDER - PISTON - PISTON RINGS -  
INSPECTION AND REASSEMBLY

- A. To remove cylinder head, pull out spark plug wire and remove spark plug. Using a 10mm socket wrench remove the 4 fixing nuts, and pull out the cylinder head and head gasket. (Pic. 12)
- B. Loosen the carburetor clamp bolt with 8mm wrench, and pull out the carburetor. (Pic. 13) Remove the exhaust pipe ring, using the special tools. (Pic. 14) Unscrew the muffler bolt with a 14mm wrench and pull out the exhaust pipe unit. Remove the cylinder from engine. (Pic. 15)



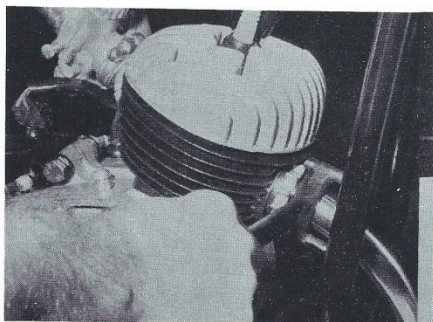
(Pic. 11)



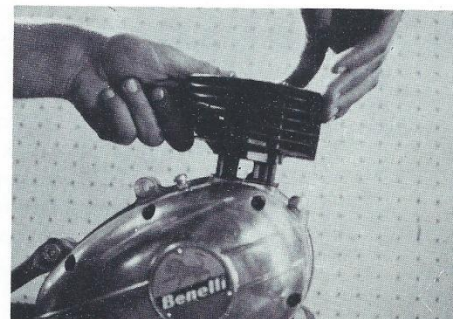
Pic. 12)



(Pic. 13)



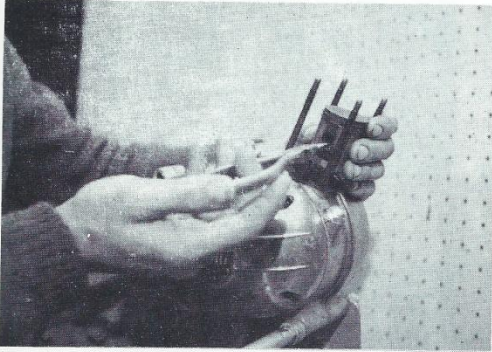
14 (Pic. 14)



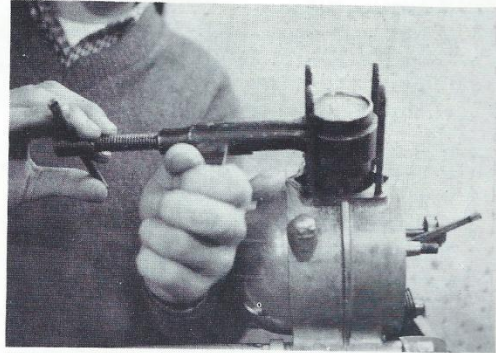
(Pic. 15)



- C. To remove piston, use needle nose pliers to pull out piston pin circlips. (Pic. 16) Using the special tool, press out the piston pin. (Pic. 17) Dismantle rings from piston.



(Pic. 16)



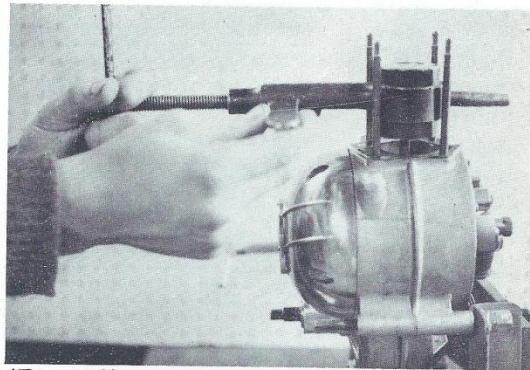
(Pic. 17)

- D. Check for wear of the piston, cylinder, piston ring, piston pin, and wrist pin bushing. (See technical data on page 42)
- E. Before reassembling, remove carbon deposit from piston top, cylinder, exhaust port, exhaust pipe, muffler and cylinder head.

Decarbonization - Every 4,000 to 5,000 miles it is necessary to decarbonize the engine, muffler and exhaust pipe. Muffler must be opened up and cleaned with boiling hot soapy water.

Clean all parts thoroughly, and reassemble, reversing operation. Use the special tools to install the piston pin. (Pic. 18) It is advisable to replace all the gaskets for better sealing.

Torque cylinder head nut at 8 - 10 FT-LB.



(Pic. 18)

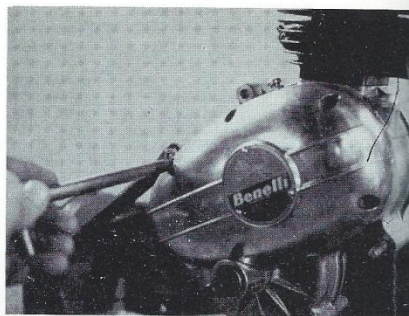
OPERATION NO. 4

HOW TO REMOVE THE R. HAND COVER,  
CLUTCH, ENGINE PINION - INSPECTION  
AND REASSEMBLY

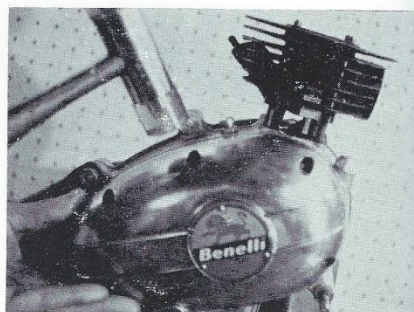
- A. Remove the kickstarter lever. (See instruction page 6, paragraph 20, sketch C of Instruction Manual.)
- B. Using a 5mm Allen wrench, remove the 7 Allen screws (Pic. 19), and remove the kickstarter shaft bushing. Tap the cover lightly with a plastic hammer to separate the cover from crankcase, and remove cover. (Pic. 19A)
- C. To remove clutch plate, push the clutch lever to release clutch spring pressure, and disconnect the seeger ring, using needle nose pliers. (Pic. 20)

Remove in sequence, the clutch plates. Install the special clutch hub holder and using a special wrench (24mm), unscrew the clutch spring nut, tapping with plastic hammer to loosen it. (Pic. 21) Then remove nut, spring, inner clutch hub and the clutch spring pressure release key.

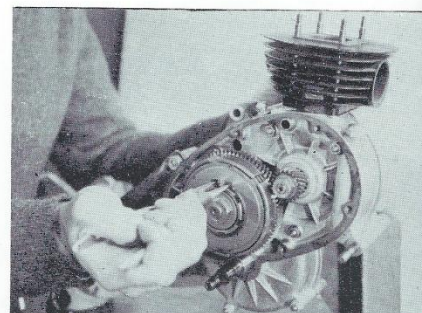
Use needle nose pliers to disconnect the clutch crown seeger ring, and pull out thrust washer and clutch crown. (Pic. 22)



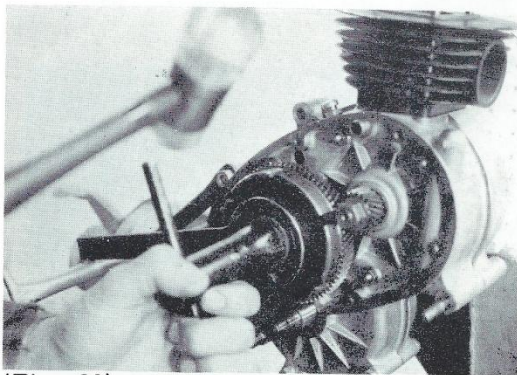
(Pic. 19)



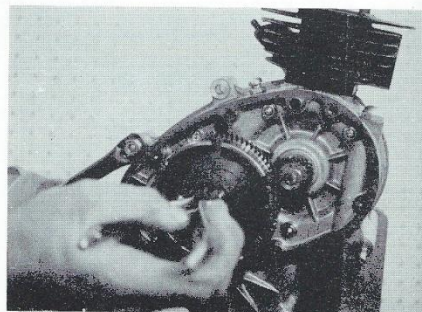
(Pic. 19A)



(Pic. 20)



16 (Pic. 21)



(Pic. 22)

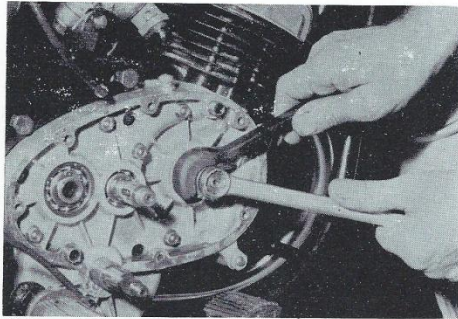
Install special engine pinion gear holder and using a 17mm wrench, unscrew the locking nuts, turning counterclockwise. (R.H. thread) (Pic. 23)

Use special puller to remove the gear. (Pic. 24)

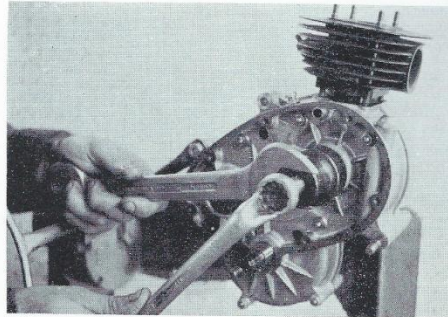
- D. Check for wear of the gears, if clutch plate with lining is hardened or worn, if clutch spring lost tension, if clutch spring pressure release key is worn, and if clutch rod is worn. See specifications on page 45.

To remove clutch rod, remove L.H. cover (Operation 1). Remove clutch lever shaft seeger ring and pull out shaft (Pic. 25), lever, thrust pin, 3/16" ball bearing, and clutch rod.

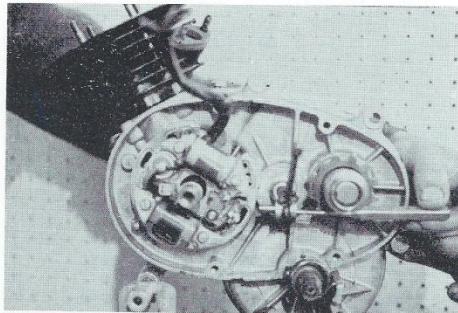
To reassemble, reverse operation. Fill the crankcase with 13 fluid ounces of fresh SAE 30 oil.



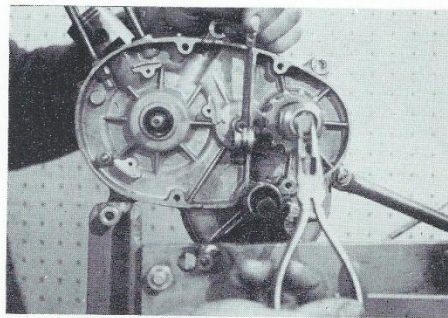
(Pic. 23)



(Pic. 24)



(Pic. 25)



(Pic. 26)

#### OPERATION NO. 5

#### HOW TO SEPARATE THE CRANKCASE - INSPECTION AND REASSEMBLY

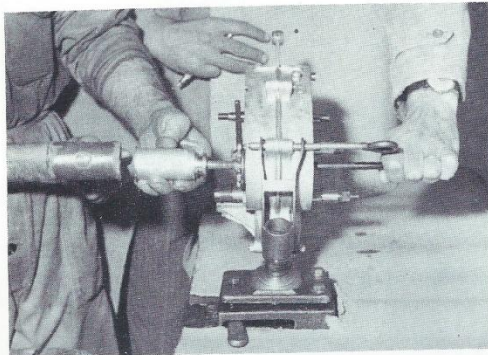
- A. After the operations 1, 2, 3 and 4 are executed, remove the shifting shaft spool seeger ring, and remove dust cap. (Pic. 26)

Insert a pin into the secondary shaft hole in order to prevent damages to the gear engaging shaft, and with the help of a second person, press out the spool from the bearing, use a tube and tap with hammer. (Pic. 27)

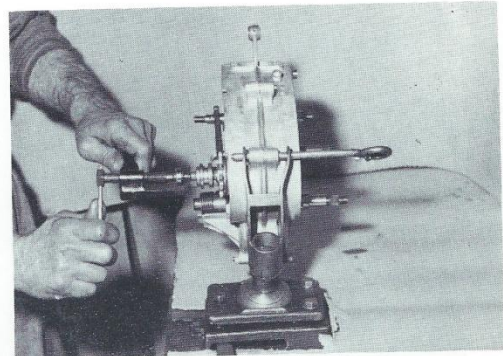
Dismantle bearing retainer seeger ring, using screw driver Use special puller to remove bearing, and pull out spool. (Pic. 28)

B. Install the special countershaft holder. (Pic. 29) Turn counterclockwise to unscrew the nut, using a 24mm wrench.

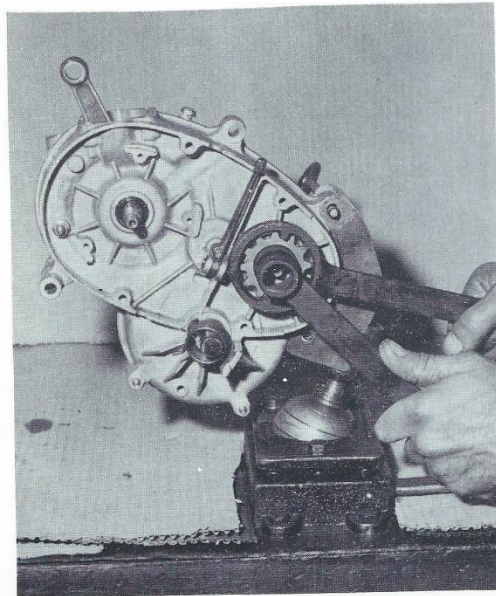
Use special puller to remove the countershaft sprocket. (Pic. 30)



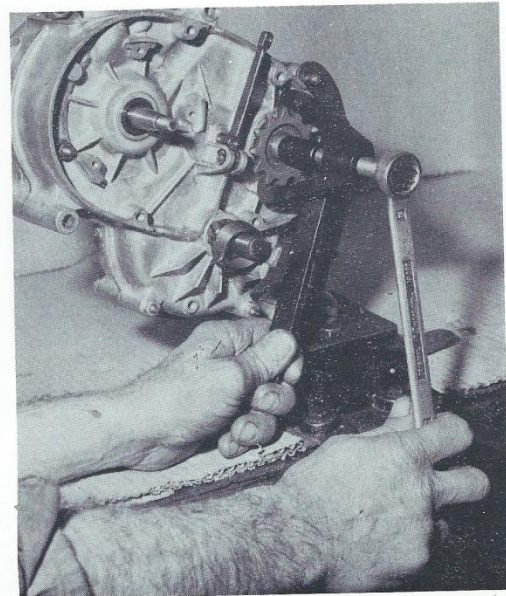
(Pic. 27)



(Pic. 28)

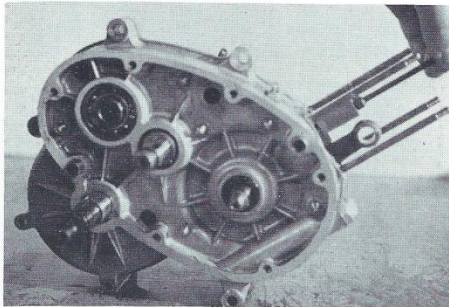


(Pic. 29)

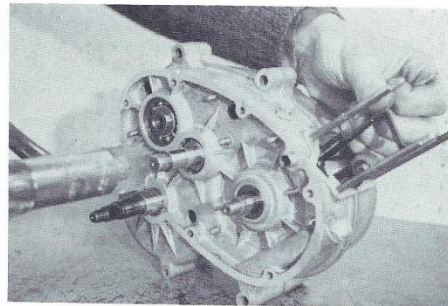


(Pic. 30)

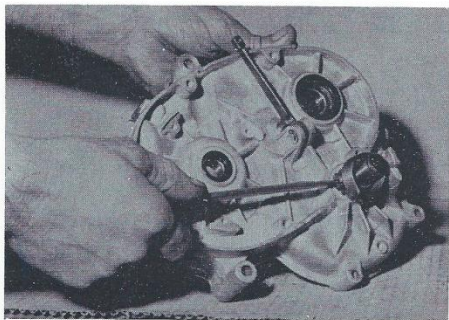
- C. Remove the 10 crankcase bolts and nuts. Insert the special spacer, (Pic. 31) between the two half crankshafts at opposite sides of the crankpin. Tighten the special spacer, turning the screw until a slight pressure is obtained. Remove seeger ring of secondary shaft. Separate the crankcase by tapping the gear box primary shaft, and crankshaft, with a plastic hammer. (Pic. 32) Remove the crankshaft from half crankcase and gear box.
- D. To remove the kickstarter shaft, unscrew the return spring locking screw, and pull out the springs, the stop and shaft. (Pic. 33)



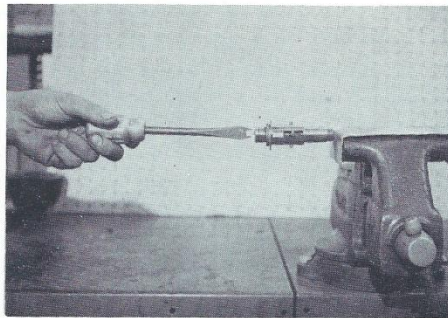
(Pic. 31)



(Pic. 32)



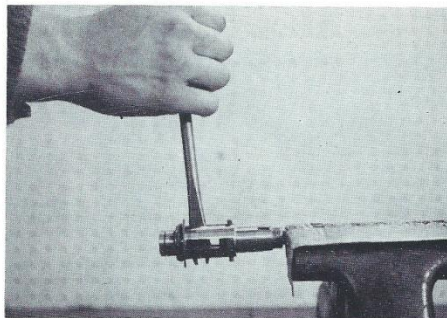
(Pic. 33)



(Pic. 34)

- E. To dismantle the gear engaging plate, tighten the sliding shaft in the vise, and with the special screwdriver, remove the locking nut. (Pic. 34) Unscrew the secondary shaft counterclockwise. (Pic. 35)

Note: When reassembling, indent the sliding shaft after the engaging plate and locking nut are assembled, in order to avoid the loosening of the nut.



(Pic. 35)

F. Use a press to separate the two half crankshafts from crankpin. (Pic. 36).

G. To reassemble crankshaft, reverse operation.

To control alignment of the two half crankshafts, see Pic. 38 and data page 43.

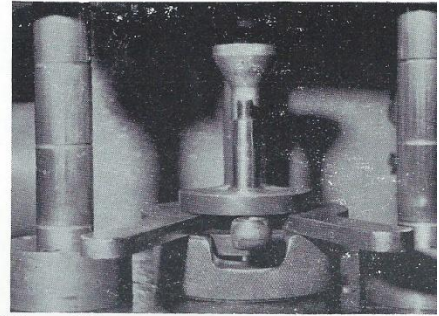
To align the crankshaft assembly, tap the half crankshaft which is out of alignment with lead hammer. (Pic. 39)

H. Before reassembling, check for wear of the gears, bearing, connecting rod roller cage, rollers, engaging bar and oil seal. See data on page 43.

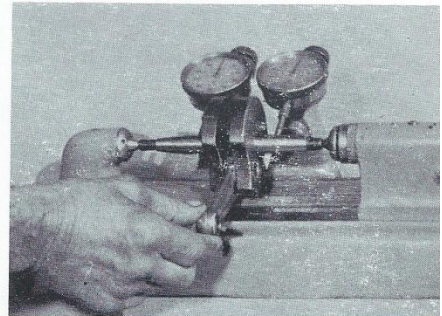
I. Clean thoroughly, and reassemble, reverse operation.

When reassembling crankcase, install gear box and kick starter components. See sequence of exploded view on page 15. Install adjustable spacer in crankshaft, and assemble in the L. half crankcase, tapping lightly. (Pic. 40) Brush gasket cement on crankcase base, and install gasket. Join the R. half crankcase, tapping lightly. (Pic. 41) Install washers, bolts and nuts. (See torque specifications on page 43)

Note: It is suggested to replace all oil seals. **SPECIAL ATTENTION** must be given to the oil seal. Any damage or improper re-assembling will cause oil leak and irregular running of the engine and difficulty in starting.



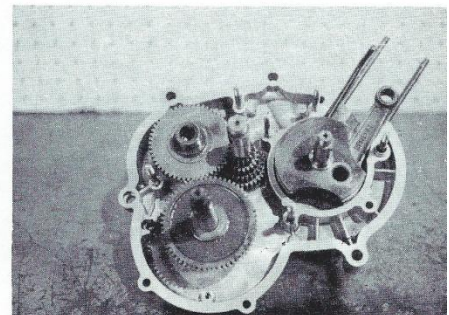
(Pic. 36)



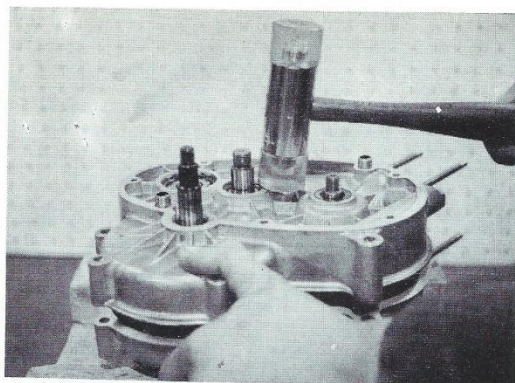
(Pic. 38)



(Pic. 39)



(Pic. 40)



(Pic. 41)

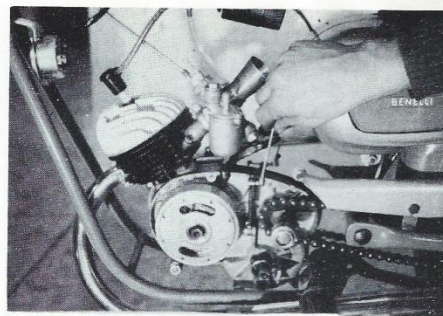
#### OPERATION NO. 6

#### HOW TO REMOVE ENGINE FROM FRAME AND REASSEMBLY

Note: Operations 1, 2, 3, 4 and 5A can be executed with the engine in the frame. Only in the event of internal repairs must the engine be removed from the frame.

Proceed as follows:

- A. Remove exhaust pipe and carburetor. See operation 3B.
- B. Disconnect clutch cable from clutch lever. (Pic. 42)
- C. Disconnect the spark plug cap from plug.
- D. Disconnect the flywheel magneto wire from connector. (Pic. 8)
- E. Disconnect the rear wheel chain master link and remove the chain. (Pic. 43)
- F. Unscrew the 3 nuts of the engine mounting bolts with 14mm wrench, and press out the bolts. (Pic. 44)
- G. Tilt the engine as shown in Pic. 45, and remove from the frame.
- H. To reassemble, reverse operation.



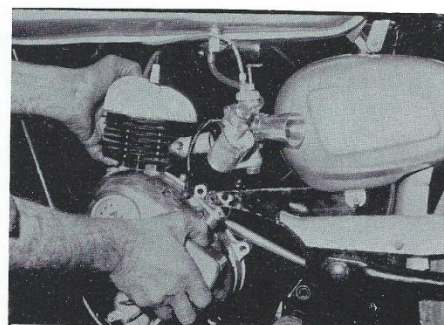
(Pic. 42)



(Pic. 43)



(Pic. 44)



(Pic. 45)

## OPERATION NO. 7

### HOW TO CHECK ELECTRICAL SYSTEM

The engine is equipped with a 28 watt flywheel magneto. It consists of flywheel, contact-breaker, condenser, lighting coil, stator plate and a low tension coil which feeds the H.T. coil.

The flywheel supplies current to the lighting and spark systems. The contact-breaker, condenser, lighting coil and low tension coil are fastened to the stator plate, located under the flywheel. This unit is trouble free. However, to get the best performance of the engine, it is necessary to check periodically. See maintenance and following instructions.

IMPORTANT NOTE: The stop light switch is wired in circuit with the H.T. coil system. Therefore, if light bulb is defective, it may kill the engine when the brake is applied while the engine is running.

If the stop light switch is defective, or there is an improper adjustment of brake lever, which will open the circuit of stop light switch, the stop light bulb will remain on while the engine is running.

If light bulb is burned out and the stop light switch is defective, or there is an improper adjustment of brake lever, which will open the circuit of stop light switch, the engine will not start.

In case of emergency, ground the green wire of the flywheel magneto unit the necessary parts are replaced.

If lighting equipment is working improperly after the bulb, light switch and wire connections are checked, test the output of the lighting coil connecting the bolts meter to the headlight bulbs terminal. (For proper output, see technical data on page 37.)

If replacement of lighting coil is necessary, see operation 2, dismantling flywheel magneto unit. (Note: If light is abnormally dim, check if the flywheel has lost magnetism. Remove flywheel and have it re-magnetized at a shop which specializes in this work.)

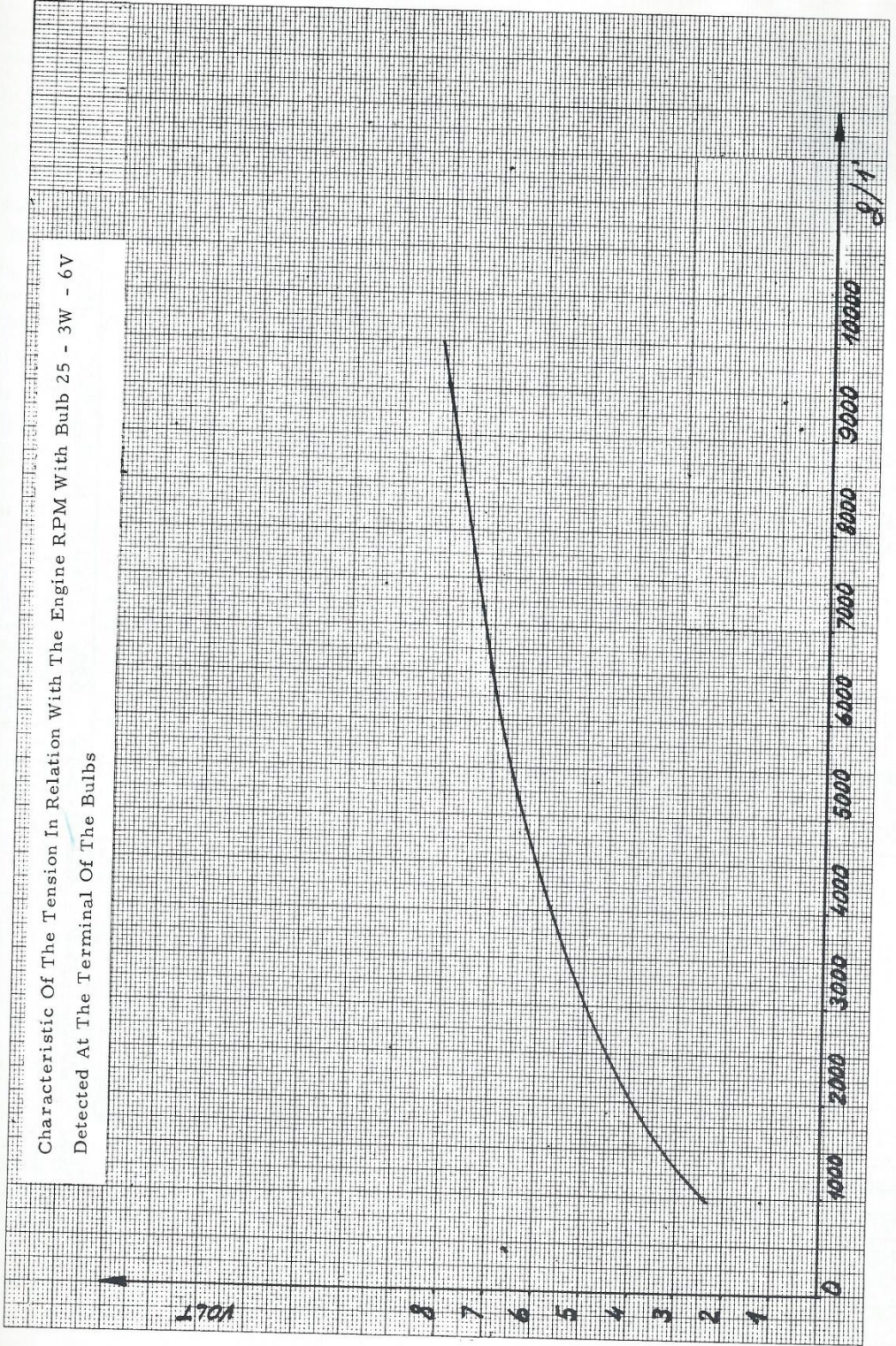
If horn doesn't work, check for loose wires at the horn and switch connection. Test horn.

#### If Ignition System Is Working Improperly, Check:

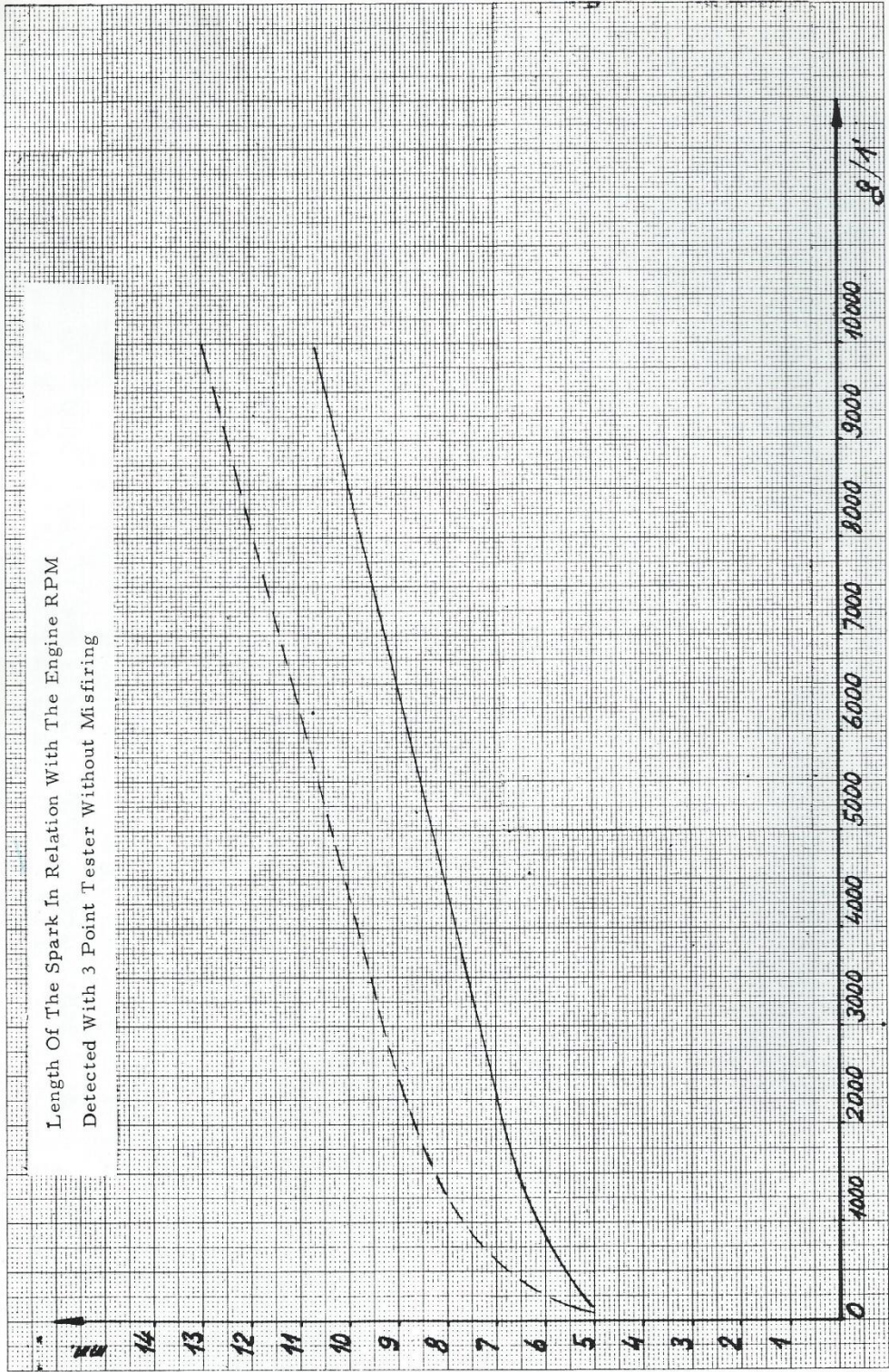
- . Spark plug.
- . Spark plug wire and cap.
- . See important note above.
- . Loose wire of H.T. coil or junction box stop light switch.
- . Test output of feeding coil of flywheel magneto, disconnecting red wire of flywheel magneto at the junction box, and connect the testor with the same wire. If replacement is necessary, see operation 2.
- . Test H.T. coil. (See data on page 39.)
- . Proper adjustment of breaker points.
- . Defective condenser



Characteristic Of The Tension In Relation With The Engine RPM With Bulb 25 - 3W - 6V  
Detected At The Terminal Of The Bulbs



Length Of The Spark In Relation With The Engine RPM  
Detected With 3 Point Tester Without Misfiring



## INSTRUCTIONS FOR CARBURETOR TUNING

**IDLE ADJUSTMENT** It is necessary that this adjustment always be made when the engine has reached its normal running temperature.

In the first step (Idle system adjustment with throttle open from 0 to 1/8 - Section A of sketch. The proper setting of the air screw is 1 turn from locked position. If in order to obtain proper running of the engine, the air screw must be set more or less than the above instructions. A larger or smaller idle jet may be required.

Bear in mind that when closing the air adjusting screw, the fuel and air mixture is richer, and leaner when it is opened.

In the second step (Throttle valve corresponding with section B of sketch - from 1/8 to 1/4 opening.) After a satisfactory idle adjustment is obtained, select the proper throttle valve and proceed as follows.

- 1) Open the throttle gradually corresponding to specifications of section B of the sketch. If the engine is running normal, the cutaway of the throttle valve is correct.
- 2) If the engine gives signs of falling in R. P. M. or backfiring, it means that the fuel and air mixture is too lean and it is necessary to replace the throttle valve with a lower cutaway (lower number).
- 3) If the engine is omitting black smoke from the exhaust pipe or is running irregular, it means that the mixture is too rich and it is necessary to replace the throttle valve with one higher cutaway (higher number).

In the 3rd step corresponding to throttle valve opening from 1/4 to 3/8 - section C of the sketch. During this adjustment, the position of the jet needle must be checked. If the carburation seems to be lean, the needle position must be raised. If the carburation seems too rich, the needle position must be lowered. The needle is equipped with 5 grooves and the average position of the needle is at the third groove, beginning from the top groove.

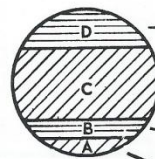
The 4th step corresponds to the throttle valve opening from 3/4 to fully open position. Section C of the sketch.

- 1) If, when running the engine, black smoke is omitted from the exhaust pipe with missing explosion and closing the air mixture piston (choke) the abnormality increases, a smaller main jet must be installed. Repeat test until the correct size is selected.
- 2) If when running the engine at full open throttle, it will not reach the proper R. P. M. or backfiring and closing the air mixture piston (choke) the engine increases in performance, this indicates that the mixture is too lean. It is necessary to install a larger size jet. Repeat test until the correct size is selected.

**NOTE:** This test must be made with the air mixture piston in open position. It is advisable to select the main jet which will give the best performance, but keeping the engine at normal temperature.

Proving diagram of the different running phases.

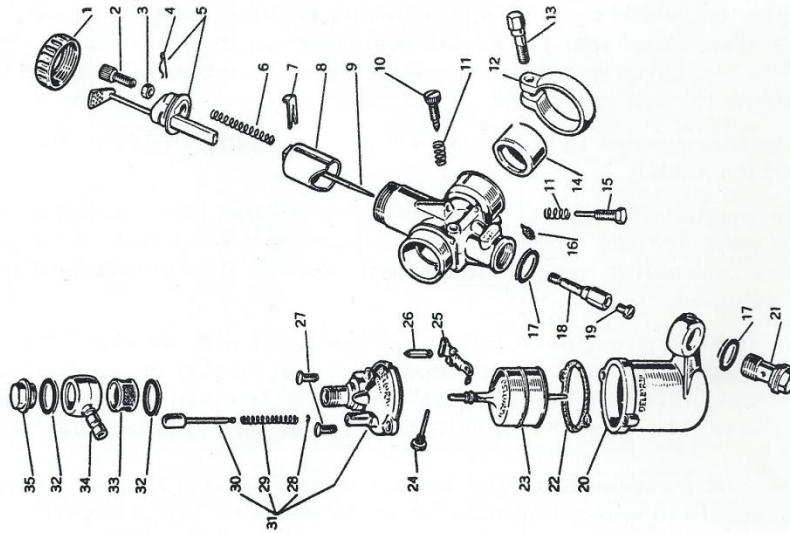
EXACT MAIN JET - normal engine temperature  
SMALL MAIN JET - higher engine temperature  
LARGE MAIN JET - lower engine temperature



Throttle 3/4 to fully opened  
Main jet adjustment  
Throttle from 1/4 to 3/4 opened  
Jet needle adjustment.  
Throttle from 1/8 to 1/4 opened  
Adjustment for choosing the suitable throttle cutaway.  
Throttle from 0 to 1/8 opened  
Idle system adjustment.

DELLORTO CARBURETOR UA 16S - 50 CC FIREBALL - CARBURETOR COMPONENTS AND TUNING

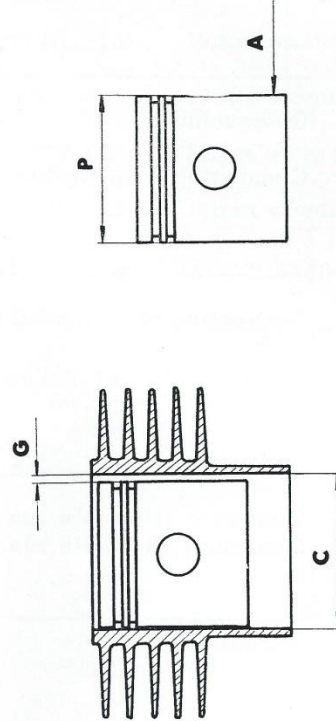
Fig.	Numero	Denominazione
1	1427 - 60	<p><u>Tuning Specifications</u></p> <ul style="list-style-type: none"> <li>- Slide No. 65 (Fig. 8)</li> <li>- Needle jet 260 (Fig. 8)</li> <li>- Needle C1 3rd notch (Fig. 9)</li> <li>- Main jet 77 (Fig. 19)</li> <li>- Idle jet 40 (Fig. 10)</li> <li>- Air funnel 2993</li> <li>- Air mixture screw set to about 1 turn open (Fig. 10)</li> <li>- Float bowl 5 gr. (Fig. 23)</li> </ul> <p>NOTE: If the air cleaner F 16/S is installed, the main jet must be replaced with the No. 72 (size).</p>
2	1481 - 37	
3	1692 - 27	
4	3570 - 21	
5	1642 - 53	
6	1409 - 61	
7	1407 - 21	
8	4884 X 64	
9	1425 X 08	
10	2115 - 37	
11	1411 - 61	
12	1721 - 50	
13	1111 - 36	
14	4477 - 62	
15	1532 - 37	
16	1488 X 02	
17	1382 - 30	
18	1485 X 28	
19	1486 X 02	
20	2087 - 96	
	1866 - 96	
	4225 - 96	
	4889 - 96	
21	2086 - 34	
22	1414 - 30	
23	3076 X 80	
24	2835 - 22	
25	3073 - 26	
26	2838 - 05	
27	1580 - 36	
	1580 - 36	
28	1493 - 21	
29	1410 - 61	
30	1492 - 25	
31	5748 - 54	
32	1416 - 30	
33	1416 - 29	
34	2706 - 38	
	3072 - 38	
	3581 - 38	
35	1494 - 34	



PISTON AND CYLINDER SPECIFICATIONS

SIZE	CYLINDER C	PISTON P	G-CLEARANCE ON A-ASSEMBLY	G-CLEARANCE AND A-WEAR LIMIT
STD.	40 = to 1.5748"	$\emptyset$ 39.96 = to 1.5734"	Minimum 4/100 mm = to .00139"	Maximum 5/100 mm = to .00196"
1st Oversize	+ 20/100 mm = to + .00787"	+ 20/100 mm = to + .00787"	As per Specification	As per Specification
2nd Oversize	+ 40/100 mm = to + .01574"	+ 40/100 mm = to + .01574"	Std.	Std.
3rd Oversize	+ 60/100 mm = to + .02362"	+ 60/100 mm = to + .02362"	Specification	Specification

The clearance of the piston must be checked at the position A.



CRANKSHAFT SPECIFICATIONS

On Assembly

Side play G + .008" minimum  
- .010" maximum

Maximum wear  
.018"

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Dimensions S 35mm or 1.3779" + .001"  
- .0025"

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On assembly

Connecting Rod Big End + .00050"

Maximum wear  
.002"

---

Connecting Rod Small End and Wrist Pin

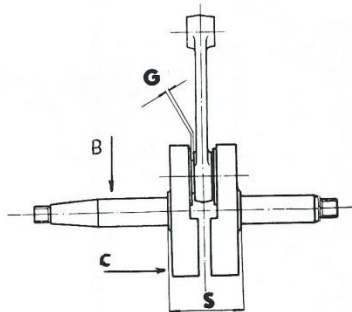
On assembly + .001"  
- .00

Maximum wear  
.002"

---

Maximum allowable run out B .003"  
Maximum allowable run out C .008"

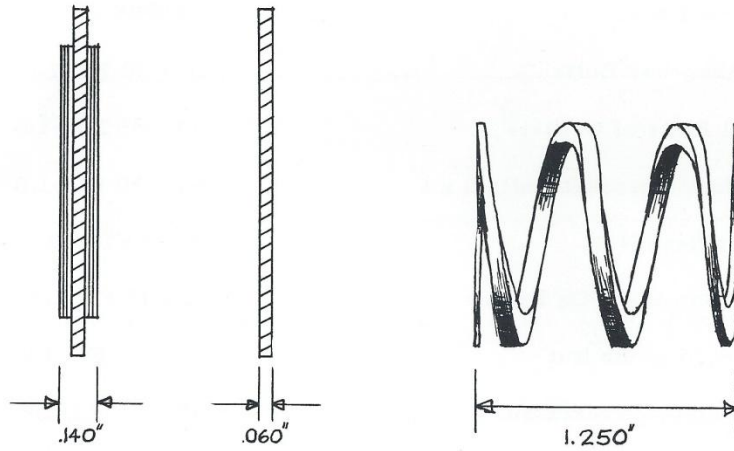
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TORQUE SPECIFICATIONS FOR FIREBALL

Front Wheel Nuts	22 - 25 FT-LB	17mm wrench
Rear Wheel Nuts	22 - 25 FT-LB	17mm wrench
Shock Absorber Bolts	16 - 20 FT-LB	17mm wrench
All 6 x 1 Bolts of Chassis	40 - 45 IN. -LB	10mm wrench
Rear Wheel Sprocket Bolts 6 x 1	45 - 50 IN. -LB	10mm wrench
Cylinder Head Nuts	8 - 9 FT-LB	10mm wrench
All 8 x 1mm Bolts On Frame	12 - 15 FT-LB	14mm wrench
Flywheel Magneto Nut	22 - 25 FT-LB	14mm wrench
Countershaft Sprocket Nut	30 - 35 FT-LB	24mm wrench
Clutch Nut	30 - 35 FT-LB	24mm wrench
Crankcase Stud 6 x 1	50 - 55 FT-LB	10mm wrench

## CLUTCH SPECIFICATIONS



Replace clutch plate with lining, when measuring less than  $0.110''$ .

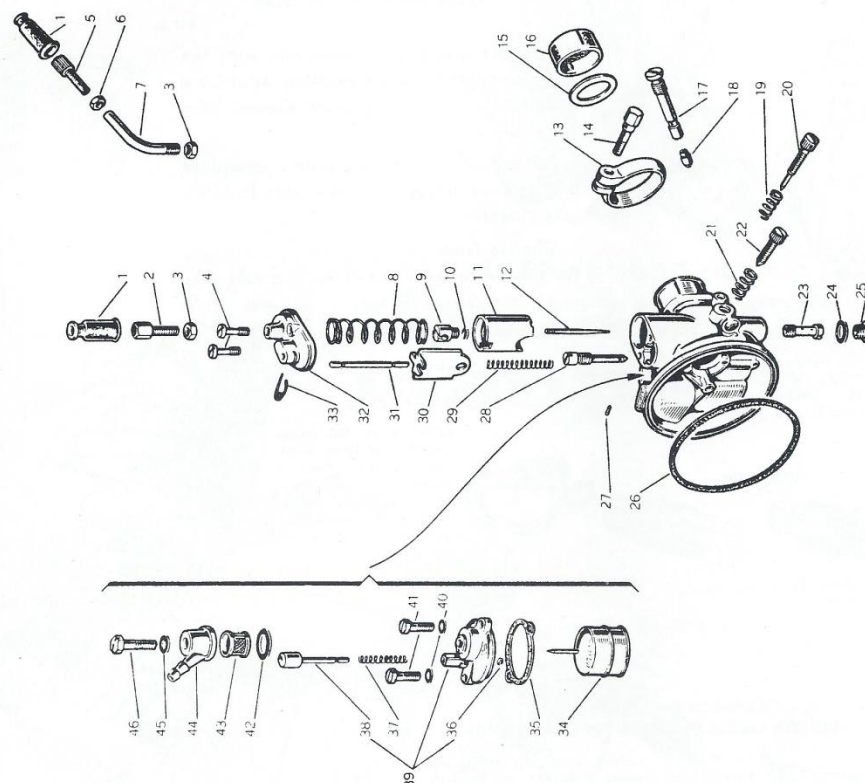
VALVE SPRING PRESSURE - compressed at  $0.590''$  = to 160 LBS.

Replace spring when it has lost 20% of the original pressure.

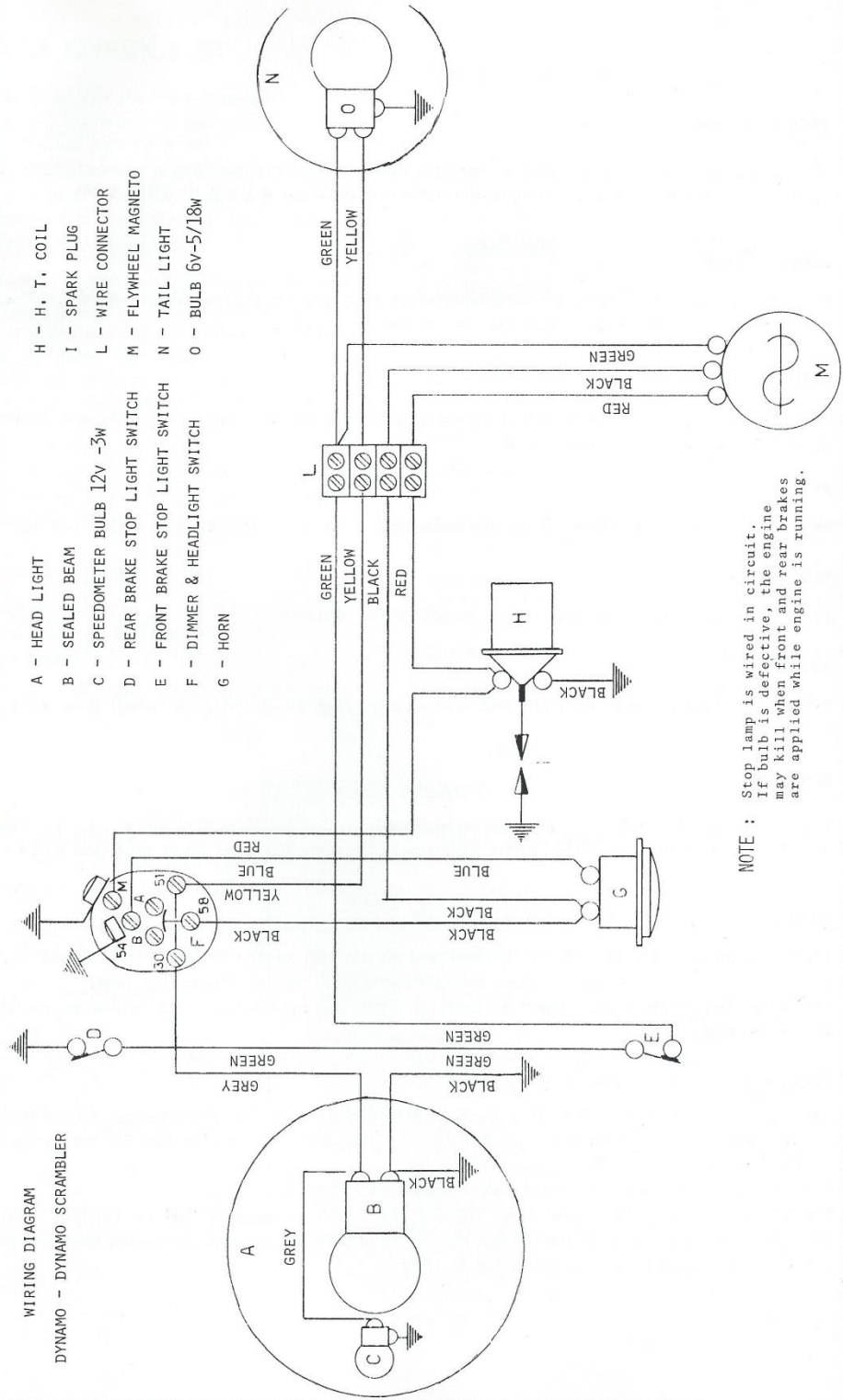


65cc Dynamo - Scrambler - Woodsbike Series ME 15 BS

Fig.	Numero	Denominazione
1	1476 - 06	
2	1104 - 37	
3	1691 - 27	
4	3318 - 36	
5	3318 - 36	
6	1481 - 37	
7	1592 - 27	
8	3600 - 35	
9	3698 - 35	
10	4064 - 61	
11	4018 - 40	
12	3322 - 21	
13	4019 X 64	
14	4045 X 08	
15	1721 - 50	
16	1111 - 36	
17	5656 - 36	
18	4472 - 30	
19	4477 - 62	
20	4783 - 62	
21	5687 - 62	
22	5039 - 62	
23	4017 - 32	
24	3315 X 02	
25	3606 - 67	
26	3387 - 31	
27	1411 - 61	
28	4626 - 37	
29	4020 X 28	
30	4498 X 28	
31	4022 - 30	
32	4021 - 34	
33	4024 - 30	
34	4024 - 34	
35	3426 - 03	
36	4025 X 02	
37	4024 X 61	
38	4023 X 54	
39	3917 - 53	
40	3479 - 21	
41	4167 X 60	
42	4045 - 30	
43	1493 - 21	
44	4046 - 61	
45	4169 - 53	
46	5011 - 23	
47	5011 - 23	
48	1308 - 23	
49	1308 - 36	
50	1308 - 36	
51	1432 - 30	
52	1435 - 29	
53	4628 - 38	
54	5000 - 38	
55	5000 - 38	
56	5071 - 38	
57	5071 - 38	
58	3365 - 30	
59	3370 - 36	



WIRING DIAGRAM  
DYNAMO - DYNAMO SCRAMBLER



NOTE : Stop lamp is wired in circuit.  
If bulb is defective, the engine  
may kill when front and rear brakes  
are applied while engine is running.