MOTO GUZZI

125cc MODELS

MODEL	Road/Sport	Scrambler	ISDT
Displacement—cc	123.2	123.2	123.2
Bore—mm	52	52	52
Stroke—mm	58	58	58
Ignition—			
Spark plug type, Champion	N-5	N-5	N-3
Electrode gap—mm	0.6	0.6	0.6
Inch	0.023-0.024	0.023-0.024	0.023-0.024
Point gap—mm	0.4	0.4	0.4
Inch	0.016	0.016	0.016
Valve clearance (cold)			
Intake—mm	0.1	0.1	0.1
Inch	0.004	0.004	0.004
Exhaust—mm	0.15	0.15	0.15
Inch	0.006	0.006	0.006
Electrical system voltage	6	6	6
Battery terminal grounded	Negative	Negative	Negative
Tire size—front	2.50 x 17	2.75 x 17	2.50 x 19
Rear	2.75 x 17	3.00 x 17	3.00 x 19
Tire pressure—			
Front—kg/cm²	1.68-1.82	1.68-1.82	1.47
Psi	24-26	24-26	21
Rear—kg/cm²	1.82-2.46	1.82-2.46	1.61
Psi	26-35	26-35	23
Rear chain free play—mm	26-30	26-30	26-30
Inch	1-1 3/16	1-1 3/16	1-1 3/16
Number of speeds	4	4	4

Illustrations courtesy Berliner Motor Corp.

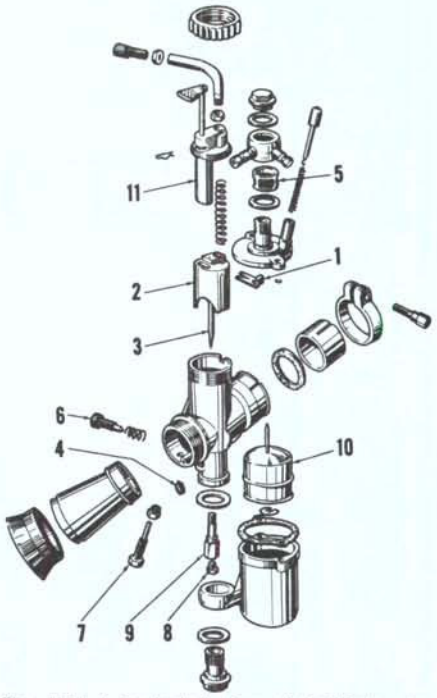

Fig. MG1-1–Exploded view of Del'Orto carburetor used on Sport and Scrambler models. Type used on ISDT is similar.

1. Clip
2. Throttle side
3. Valve needle
4. Pilot jet
5. Filter
6. Idle mixture needle
7. Idle speed stop
8. Main jet
9. Atomizer
10. Float
11. Choke slide

MAINTENANCE

SPARK PLUG. Marelli 260 or Champion N-5 spark plug is recommended for all models except ISDT. Champion N-3 or Marelli 275 should be used for ISDT models. Electrode gap should be 0.6mm (0.023-0.024 inch) for all models.

CARBURETOR. Del'Orto UB20B is used on Sport and Scrambler models. Del'Orto UB22BS2 is used on ISDT model. Refer to Fig. MG1-1 and the following specifications:

Sport and Scrambler

Main jet (8) 90/100
Pilot jet (4) 40/100
Atomizer (9) 260B
Clip (1) in second groove from top of needle (3).

ISDT

Main jet (8) 98/100
Pilot jet (4) 35/100
Atomizer (9) 260A
Clip (1) in third groove from top of needle (3).

IGNITION AND ELECTRICAL. The ignition breaker point gap at maximum opening should be 0.4mm (0.016 inch). Gap can be checked and adjusted through opening in flywheel after removing the gear shift pedal and crankcase right side cover. The crankshaft is at TDC when the mark on flywheel is aligned with mark on crankcase. To check ignition timing, mark the flywheel outer edge at point (IG—Fig. MG1-2) 22mm (0.86 in.) before the TDC mark. Turn the crankshaft slowly clockwise until the breaker points just open. The mark (IG) just affixed to flywheel should be aligned with mark on

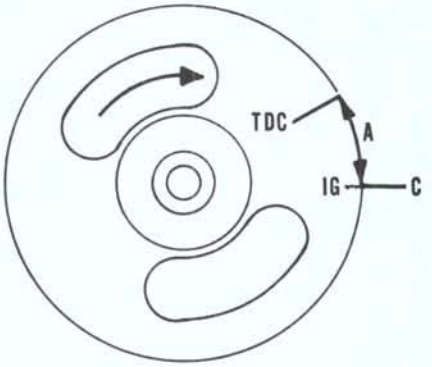

Fig. MG1-2–Normal mark on flywheel indicates Top Dead Center when aligned with mark (C) on crankcase. Refer to text for setting ignition timing.

crankcase (C). If ignition timing is incorrect, it is necessary to remove the flywheel, loosen the three stator retaining screws and reposition the stator.

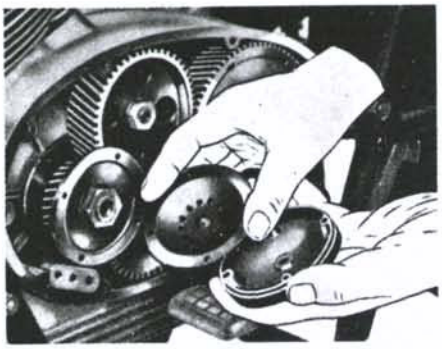

Fig. MG1-4–The centrifugal oil filter, located on the left end of the crankshaft, should be removed and cleaned every 6000 miles.

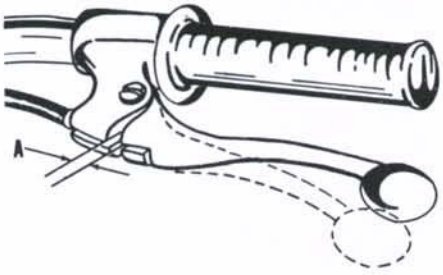

Fig. MG1-5–Clutch hand lever should have approximately ⅛-inch free play at (A). Free play is normally accomplished at cable guides.

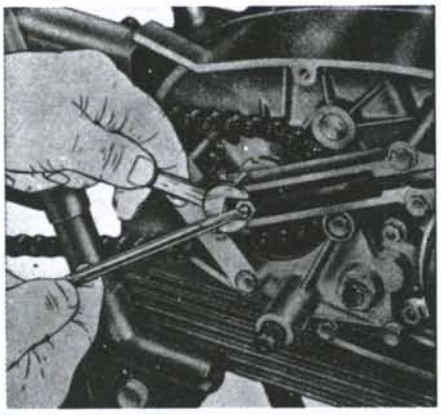

Fig. MG1-6–If normal adjustment is inadequate, additional adjustment is possible after removing right side cover. Refer to text.

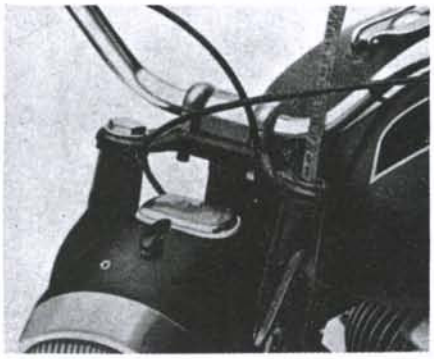

Fig. MG1-8–Oil in front fork should be maintained at 36½cm below level of top brace.

VALVE SYSTEM. Inlet and exhaust valves are actuated by a camshaft located in the crankcase via cam followers, push rods and rocker arms. To check valve clearance, the engine must be cold and the piston should be at TDC on compression stroke with both valves closed. Clearance between top of valve stem and rocker arm should be 0.1mm (0.004 inch) for inlet valve and 0.15mm (0.006 inch) for exhaust valve.

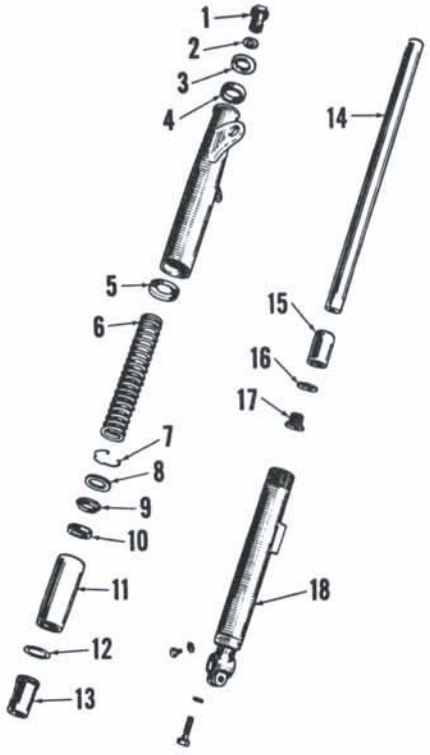

Fig. MG1-9–Exploded view of typical front suspension unit.

1. Top plug
2. Washer
3. Washer
4. Centering ring
5. Centering ring
6. Spring
7. Snap ring
8. Washer
9. Spring holder
10. Oil seal
11. Seal housing (nut)
12. Seal ring
13. Top bushing
14. Inner tube
15. Lower bushing
16. Lock washer
17. Bushing retainer
18. Lower tube

LUBRICATION. The engine, gear box and clutch are lubricated by oil contained in the crankcase. SAE40 oil should be used above 50° F. and SAE 30 should be used below 50° F. Oil should be maintained between marks on oil filler plug dipstick. Plug must not be screwed in when checking. Oil should be drained and filter screen (above drain plug) cleaned every 1200 miles. The centrifugal filter (Fig. MG1-4) should be removed and cleaned every 6000 miles. To remove the centrifugal oil filter, it is necessary to remove the engine left side cover and the oil pipe to filter.

CLUTCH CONTROLS. The clutch hand lever should have approximately ⅛-inch free play at (A—Fig. MG1-5). Normally, adjustment can be accomplished at the cable guides at both ends of cable. If cable guides are nearly screwed out, further adjustment is possible at adjuster shown in Fig. MG1-6. Make certain that lock nuts at all adjustment points are tightened after clutch is adjusted.

SUSPENSION. Each front suspension unit contains 125cc of SAE 20 engine oil. Oil should be maintained at level of 36½ centimeters (14.6 inches) below top brace and can be measured as shown in Fig. MG1-8. Refer to Fig. MG1-9 for exploded view.

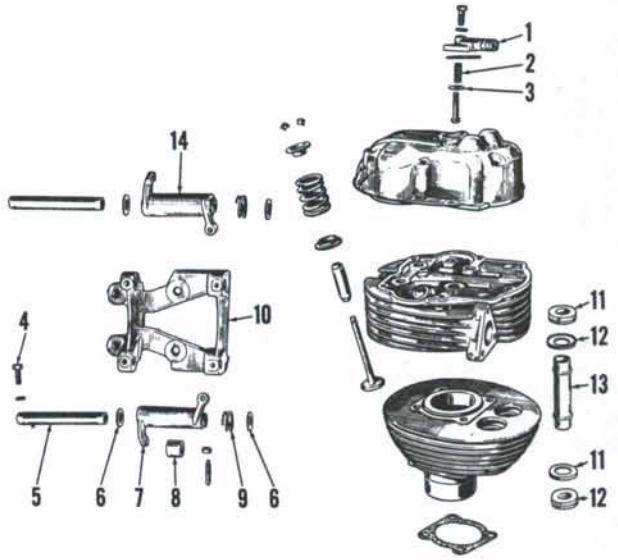

Fig. MG1-11–Exploded view of the cylinder head and associated parts.

1. Breather
2. Spring
3. Breather valve
4. Shaft retaining screw
5. Rocker arm shaft
6. Washers
7. Rocker arm (inlet)
8. Bushings (2 used in each rocker arm)
9. Spring
10. Bracket
11. Oil seals
12. Seal cups
13. Push rod tubes
14. Rocker arm (exhaust)

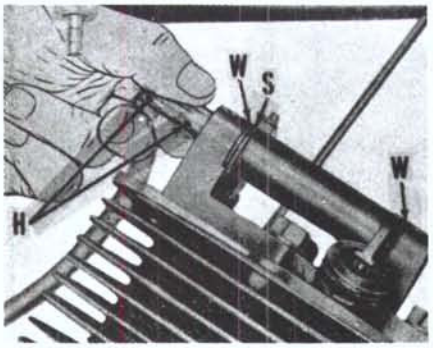

Fig. MG1-12–Spring (S) should be toward rear and washer (W) should be installed on each end next to the bracket. Oil holes (H) should be down as shown.

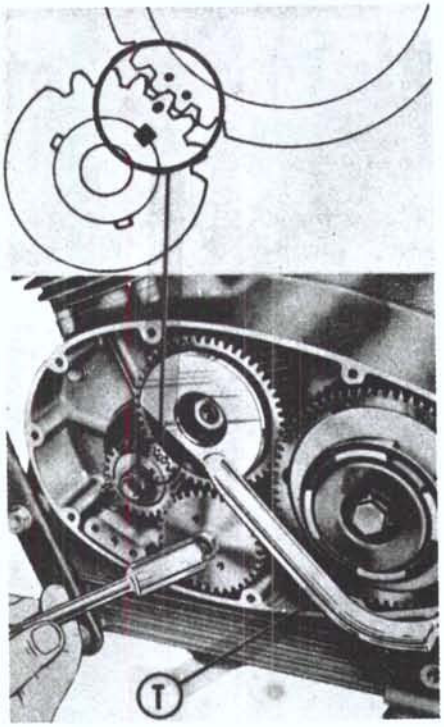

Fig. MG1-14–Refer to text for aligning timing marks on camshaft gear and crankshaft gear. Special tool (T) number 5591-2925 is used to hold shafts when removing gear retaining nuts.

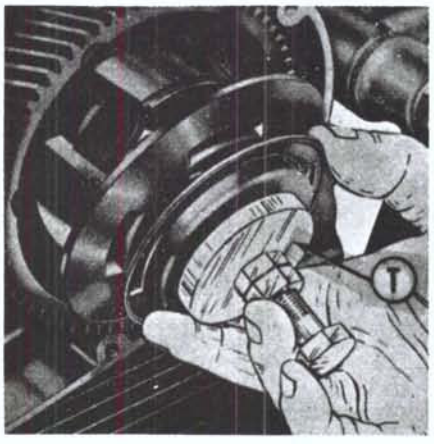

Fig. MG1-15–Special tool (part number 55906500) or equivalent must be used to compress springs for removing and installing pressure plate, springs and spring plate.

REPAIRS

CYLINDER HEAD AND VALVES. To remove the cylinder head, the fuel tank must be raised slightly. Remove the rocker cover and both rocker arms. Remove the four retaining screws and lift off the rocker arm bracket and cylinder head. The breather assembly on rocker cover should be disassembled and cleaned.

When reassembling, make certain that the cylinder and cylinder head mating surfaces are clean and smooth. Renew the four rubber washers in cylinder head around the studs. When assembling the rocker arms, springs should be toward rear and a washer should be between bracket and spring. Make certain that a washer is at front between rocker arm and bracket. When installing rocker arm shafts, make certain that lubrication holes (H—Fig. MG1-12) are down. Valve clearance should be adjusted to 0.1mm (0.004 inch) for inlet and 0.15mm (0.006 inch) for exhaust with engine cold and piston at TDC on compression stroke.

PISTON, RINGS AND CYLINDER. The piston can be removed after removing the cylinder head, push rods and cylinder. Standard cylinder bore diamter is 52mm (2.047 inches) and oversize pistons and rings are available. Piston skirt to cylinder clearance should be 0.05-0.07mm (0.0020-0.0028 inch) when measured at bottom of skirt at right angles to piston pin.

CRANKSHAFT, CONNECTING ROD AND CAMSHAFT. To separate the crankcase halves, it is necessary to remove the engine from the frame. Remove the cylinder head, cylinder, piston, magneto assembly (including stator plate), clutch assembly, crankshaft and camshaft gears. Remove the screws attaching halves of crankcase together, then carefully separate the halves.

When assembling, install the crankshaft gear with marked tooth nearly in line with the key in crankshaft and between the two marked teeth on camshaft gear. Refer to Fig. MG1-14. NOTE: The crankshaft gear has three key slots and only the one closest to the marked tooth should be used.

CLUTCH. The clutch is located on the left end of the transmission input shaft and is driven by the camshaft

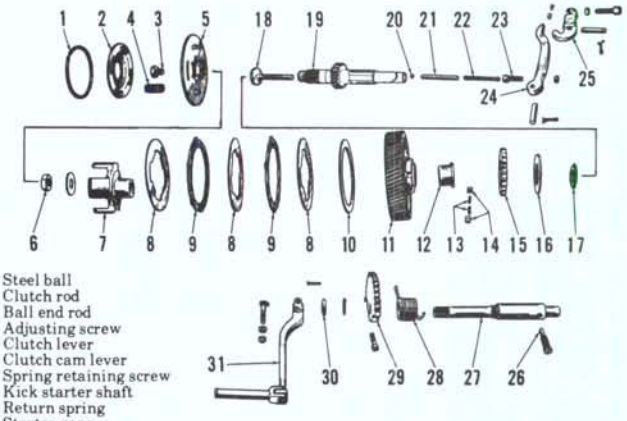

Fig. MG1-16–Exploded view of clutch and kick starter assembly. On ISDT models, five bronze friction discs are used instead of two (shown at 9) and five driven plates (8) are used.

1. Snap ring
2. Spring plate
3. Plug
4. Springs (6 used)
5. Pressure plate
6. Hub retaining nut
7. Hub
8. Driven plates
9. Friction discs
10. Bronze discs
11. Gear and drum
12. Bushing
13. Springs
14. Kick starter ratchet pawls
15. Kick starter gear
16. Plate
17. Washer
18. Clutch release plunger
19. Transmission input shaft
20. Steel ball
21. Clutch rod
22. Ball end rod
23. Adjusting screw
24. Clutch lever
25. Clutch cam lever
26. Spring retaining screw
27. Kick starter shaft
28. Return spring
29. Starter gear
30. Seal
31. Kick starter pedal

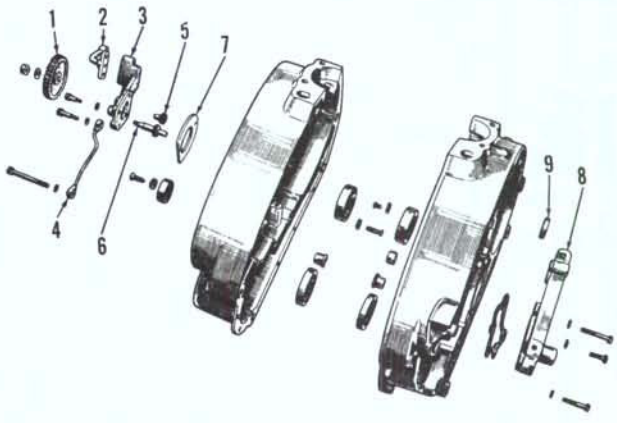

Fig. MG1-18–Exploded view of the crankcase halves and oil pump.

1. Oil pump drive gear
2. Delivery tube to centrifugal filter
3. Pump housing
4. Oil tube to cylinder head
5. Pump gear
6. Pump gear and shaft
7. Bearing retaining flange
8. Control cover
9. Oil seal

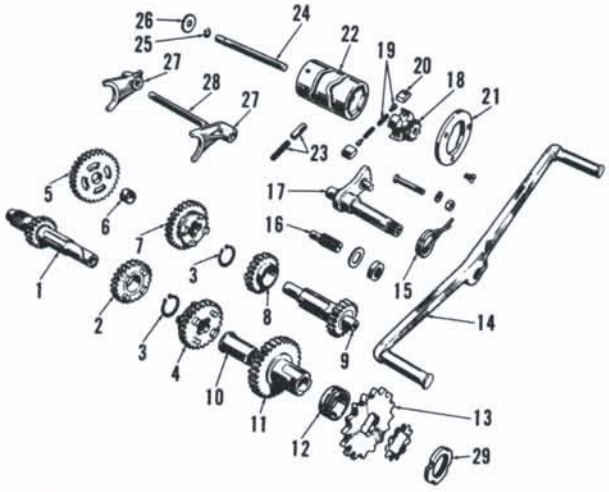

Fig. MG1-19–Exploded view of the transmission. Refer to Fig. MG1-20 for installation.

1. Input shaft and first gear
2. Second gear
3. Snap rings
4. Sliding gear (3rd)
5. First gear
6. Bushing
7. Sliding gear (2nd)
8. Third gear
9. Countershaft and fourth gear
10. Bushing
11. Output shaft (4th gear)
12. Spacer
13. Output sprocket
14. Change pedal
15. Pedal return spring
16. Adjusting screw
17. Selector shaft
18. Ratchet
19. Plungers and springs
20. Ratchet pawls
21. Stop plate
22. Shift drum
23. Detent and spring
24. Shift drum axle
25. Snap ring
26. Washer
27. Shift forks

gear. To remove the clutch, remove the left side cover and plug (3—Fig. MG1-16), then screw special tool (T—Fig. MG1-15) into plug hole and tighten nut enough to relieve spring tension. Remove snap ring (1—Fig. MG1-16) and lift off the pressure plate (5), springs (4) and spring plate (2). Driven plates (8) and friction discs (9) can now be removed.

CRANKCASE AND GEAR BOX. The crankcase halves can be separated after removing the cylinder head, cylinder, piston, magneto assembly, clutch, crankshaft gear and camshaft gear. Remove the screws attaching halves together, and carefully separate the halves. Bearings are retained in crankcase bores with screws and retainer plates.

Fig. MG1-20–Before assembling crankcase halves, engage shift drum detent (1) in first gear and make certain that shift forks engage grooves. Position shift ratchet so that pawl (20) is in line with detent hole (2) for second gear.

When assembling, make certain that shift ratchet is positioned as shown in Fig. MG1-20. Pawl (20) should be aligned with detent hole (2) for second gear. The transmission and shift drum should be in first gear with detent engaging hole for first gear as shown at (1).