Additions to the Workshop manual for the models V1000 G5 and 1000 SP - Code 17920161
The illustrations and descriptions in this booklet are indicative only and the manufacturer reserves itself the right to introduce any modification it may deem necessary for better performance or for constructive or commercial reasons without prior notice.
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MAIN FEATURES

ENGINE
- cylinder disposition  «V» 90°
- bore 88 mm
- stroke 78 mm
- displacement 948.8 cc
- compression ratio 9.2 to 1
- max torque 7.7 kgm at 5200 rpm

VALVE GEARING
O.H.V., push rod operated

CARBURATION
n. 2 carburettors «Dell'Orto» type VHB 30 CD (right)
VHB 30 CS (left)

LUBRICATION
pressure, by gear pump
wire gauze and cartridge filters in oil sump
normal lubrication pressure 3.8 to 4.2 kg/sq cm
(pressure relief control valve in the sump)
oil pressure sender unit in the crankcase

GENERATOR ALTERNATOR
fitted in the front part of the crankshaft (14 V - 20 A)

IGNITION
coil-battery ignition with double contact breaker
and automatic advance with centrifugal masses
- ignition data
  ignition advance (fixed) 2° ± 1°
  automatic advance 33° ± 1°
- contact breaker points gap 0.37 ± 0.43 mm
- spark plugs
  Bosch W 225 T 2; Marelli CW 7 LP; AC-AA XL; Lodge HLNY;
  Champion N 9 Y
- plug points gap 0.6 mm
- ignition coils n. 2 fitted on the frame

STARTING
electric starter (12 V - 0.7 KW) with electromagnetic
ratchet control ring gear bolted on the flywheel
starter button (START) fitted on the R/H side of handlebar

TRANSMISSIONS

CLUTCH
twin driven plates, dry type
fitted on the flywheel side
hand controlled by lever on left handlebar

PRIMARY DRIVE
by gears, ratio 1 to 1.235 (Z = 17/21)

GEARBOX
5 speeds, frontal engagement, constant mesh gears.
Cush drive incorporated
pedal operated on the L/H side of the bike
- gear ratios:
  Low gear 1 to 2 (Z = 14/28)
  2nd gear 1 to 1.388 (Z = 18/25)
  3rd gear 1 to 1.047 (Z = 21/22)
  4th gear 1 to 0.869 (Z = 23/20)
  5th gear 1 to 0.750 (Z = 28/21)

SECONDARY DRIVE
by cardan shaft, bevel gear set
- ratio
- overall gear ratios (engine-wheel)
  Low gear 1 to 11.643
  2nd gear 1 to 8.080
  3rd gear 1 to 6.095
  4th gear 1 to 5.059
  5th gear 1 to 4.366
**FRAME**
duplex cradle, tubular structure

**SUSPENSIONS**
- front
telescopic fork «MOTO GUZZI patent»
  with oil pneumatic shock absorbers
- rear
swinging fork and rear dampers with adjustable external springs concentric to the oil pneumatic shock absorbers

**WHEELS**
- front
WM 3/2.15 x 18" CP2
- rear
WM 3/2.15 x 18" CP2

**TIRES**
- front
  120/90 H 18
- rear
  120/90 H 18

**BRAKES**
- front
disc type with caliper having 2 cylinders, controlled by hand lever on the R/H side of the handlebar
  hydraulic transmission independent from the rear brake:
  disc dia. 300 mm
  braking cylinder dia. 38 mm
  master cylinder dia. 12.7 mm
- rear
disc type with fixed caliper with two cylinders foot controlled with pedal on the R/H side of the bike:
  disc dia. 242 mm
  braking cylinder dia. 38 mm
  master cylinder dia. 15.875 mm
the rear brake is connected by an hydraulic transmission to a second brake on the front wheel having the same features and size as the hand controlled front brake

**DIMENSIONS AND WEIGHTS**
- wheel base (loaded) 1.565 m
- max length 2.370 m
- max width 0.890 m
- max height 1.570 m
- min. ground clearance 0.175 m
- dry weight abt 250 kg

**PERFORMANCES**
- top speed 190 km/h (118 mph), solo
- fuel consumption 5.8 l x 100 km

**FUEL AND OIL CAPACITIES**
- fuel tank
  25 l (6.15 US gls) supergrade petrol (98/100 NO-RM)
  (reserve 3 l about) (3.1/4 quarts)
- oil sump
  3 l (3.1/4 quarts) oil «Agip SINT 2000 SAE 10 W/50»
- gear box
  0.750 l (1.3/4 pints) oil «Agip F.1 Rotra MP SAE 90»
- rear drive box
  (bevel gear set lubrication)
  0.250 l (9 oz abt) oil of which: 0.230 l (8.1/4 oz abt)
  «Agip F.1 Rotra MP SAE 90» and 0.020 l (3/4 oz)
  «Agip Rocol ASO/R» or Molikote «A» type
- front fork (each leg)
  0.060 l (2 oz abt) fluid «Agip F.1 ATF Dexron»
- braking circuits
  (front and rear)
  fluid «Agip F.1 Brake fluid - SAE J 1703 B»
# Service Schedule

<table>
<thead>
<tr>
<th>ITEMS</th>
<th>Mileage Covered</th>
<th>900 mi. 1500 km</th>
<th>1800 mi. 3000 km</th>
<th>3700 mi. 6000 km</th>
<th>5600 mi. 9000 km</th>
<th>7500 mi. 12,000 km</th>
<th>9400 mi. 15,000 km</th>
<th>11,300 mi. 18,000 km</th>
<th>13,200 mi. 21,000 km</th>
<th>15,100 mi. 24,000 km</th>
<th>17,000 mi. 27,000 km</th>
<th>18,900 mi. 30,000 km</th>
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<td>Wheel and steering bearings</td>
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<tr>
<td>Starter motor and generator</td>
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<td>Brake pads</td>
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</tbody>
</table>

A = Inspections - Adjustments - Possible replacements - Servicing / C = Cleanings / R = Replacements.

- Operation required for maintaining the vehicle according to emission regulations (USA).
- Occasionally, check the electrolyte level in battery, lubricate joints and cables; every 500 km (300 miles) check the engine oil level.
- In any case, renew this oil at least once a year.
**CYLINDERS**

**SELECTION OF CYLINDER DIAMETER**

<table>
<thead>
<tr>
<th>GRADING A</th>
<th>GRADING B</th>
<th>GRADING C</th>
</tr>
</thead>
<tbody>
<tr>
<td>88.000 mm ± 88.006 mm</td>
<td>88.006 mm ± 88.012 mm</td>
<td>88.012 mm ± 88.018 mm</td>
</tr>
<tr>
<td>3.4645&quot; ± 3.4648&quot;</td>
<td>3.4648&quot; ± 3.4655&quot;</td>
<td>3.4655&quot; ± 3.4652&quot;</td>
</tr>
</tbody>
</table>

**PISTONS**

**SELECTION OF PISTON DIAMETER**

<table>
<thead>
<tr>
<th>GRADING A</th>
<th>GRADING B</th>
<th>GRADING C</th>
</tr>
</thead>
<tbody>
<tr>
<td>87.968 mm ± 87.974 mm</td>
<td>87.974 mm ± 87.980 mm</td>
<td>87.980 mm ± 87.986 mm</td>
</tr>
<tr>
<td>3.4633&quot; ± 3.4635&quot;</td>
<td>3.4635&quot; ± 3.4637&quot;</td>
<td>3.4637&quot; ± 3.4640&quot;</td>
</tr>
</tbody>
</table>

The pistons of an engine must be balanced; a weight difference between them of 1.5 gr is allowed. When fitting a piston check that the word «SCA» (exhaust) are facing the exhaust hole in the cylinder.

**CHECKING CRANKSHAFT BALANCING**

To balance statically the crankshaft it is necessary to add a weight of 1.650 ± 1.652 kg.
CARBURATION

REPLACING THE AIR FILTER

Every 6000 km (3700 miles) check conditions of air filter, if necessary clean it using compressed air; it is advisable to replace it every 9000 km (5600 miles).
To replace the air filter lift the saddle, remove fuel tank and side covers. Take out R/H carburettor and undo the screws fixing the air intake to the bike frame: remove the two side screws and take out from the R/H side the container «A» complete with the air filter.
FRONT FORK SPRINGS
For the values of the springs refer to mod. V 1000 G 5 (see page 102).

FRONT FORK LUBRICATION
To replace the oil in the front fork legs, proceed as follows:
- With the bike on the central stand, loosen the side screw «C» locking the steering head to the fork arm; disconnect compensating pipe and completely unscrew the hexagonal screw plug «B»; then undo drain plug «A»;
- Slightly press the front part of the bike to force out the plug «B» which is solidal to the shock absorber. Do this paying attention not to damage the instruments panel;
- Refit plug «A» and introduce the quantity of fluid necessary (60 cc Agip F. 1 ATF Dexron) through the space existing between the inner diameter of the fork and the shock absorber body;
- Release the front part of the bike refit plug «B» and lock the side screw. Repeat the same operation for the other fork leg;
- Reconnect compensating pipe and check the pressures keeping to the given values.

OIL PNEUMATIC SHOCK ABSORBERS
The operating load pressures of these shock absorbers are the following:
- Front: 2 ± 3 kg/sqcm
- Rear: 3 ± 5 kg/sqcm
To check the pressure it is advisable to use a pressure gauge having a very short pipe (better if any), as the capacity of the pipe may affect the pressure existing inside the shock absorbers. To ascertain to which extent your pressure gauge reduces, when taking the measurement, the pressure inside the shock absorber it is sufficient to carry out two consecutive measurements: the difference between the two readings gives approximately the pressure reduction occurring whenever a measurement is taken.
The measurement must be taken with the bike on the central stand and with cold shock absorbers; to charge the shock absorbers only use moistureless air.
N.B. — Pressures gauges as above, are found on the market; however it can be necessary to place a supplementary gasket in the gauge head, in order that the valve stem inside the shock absorber will be pressed only when the gasket has made a perfect tightening.
SWINGING FORK

20 mm

470 mm

40.5 mm

39.992 ± 39.967 mm

25 mm

136 mm

22 mm

61.991 ± 61.961 mm

85.050 ± 84.950 mm

135.200 ± 135.100 mm

18.150 ± 18.050 mm

60.000 ± 60.100 mm

40.5 mm

124 mm

136 mm

32.5 mm

141.5 mm

249.200 ± 248.800 mm

253
### LEGEND ELECTRICAL WIRING DIAGRAM

<table>
<thead>
<tr>
<th>Number</th>
<th>Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Headlight</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>High and low beam bulb 60/55 W</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Parking light 4 W</td>
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<tr>
<td>4</td>
<td>4-way connector Molex</td>
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<tr>
<td>5</td>
<td>Electromagnetic horns</td>
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<tr>
<td>6</td>
<td>Turn flasher, front right 21 W</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Turn flasher, front left 21 W</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Coils device</td>
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<tr>
<td>9</td>
<td>Engine starting and stop button</td>
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<tr>
<td>10</td>
<td>4-way connector Molex</td>
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<tr>
<td>11</td>
<td>Instrument panel</td>
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<tr>
<td>12</td>
<td>Warning light, right turn signal 1.2 W</td>
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<tr>
<td>13</td>
<td>Speedometer light 3 W</td>
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</tr>
<tr>
<td>14</td>
<td>Voltmeter light 3 W</td>
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<tr>
<td>15</td>
<td>Warning light, left turn signal 1.2 W</td>
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<tr>
<td>16</td>
<td>Rev-counter light 3 W</td>
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<tr>
<td>17</td>
<td>Warning light, oil pressure 1.2 W</td>
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<tr>
<td>18</td>
<td>Warning light, generator 1.2 W</td>
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<td>19</td>
<td>Warning light, neutral position 1.2 W</td>
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<td>20</td>
<td>Warning light parking position 1.2 W</td>
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<tr>
<td>21</td>
<td>Warning light, high beam 1.2 W</td>
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<td>22</td>
<td>Ignition key 1.2 W</td>
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<tr>
<td>23</td>
<td>12-way connector for device posit. 24</td>
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<tr>
<td>24</td>
<td>Flashing light, horn, turn signals, lights</td>
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</tr>
<tr>
<td>25</td>
<td>Generator</td>
<td></td>
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<td>26</td>
<td>Cables connector</td>
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<td>27</td>
<td>Rectifier</td>
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<td>29</td>
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<td>30</td>
<td>15-Way connector for panel cables</td>
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<td>32</td>
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<td>Neutral position solenoid</td>
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<td>Turn flasher, rear right 21 W</td>
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</table>
IGNITION SWITCH POSITION

Position 1: No contacts
Position 2: Contacts on all terminals
Position 3: Contacts on terminals 16 / 30

- B = White
- N = Black
- G = Yellow
- V = Green
- R = Red
- M = Blue
- V = Violet
- A = Pink
- A = Orange
- M = Brown
- B/N = White-Black
- G/N = Grey
- A = Light blue
- A = Blue-Black
- G = Green-Black
- R-N = Red-Black
- A7-N = Light blue-Black
IGNITION SWITCH POSITION

Posit. 1: No contacts
Posit. 2: Contacts on all terminals
Posit. 3: Contacts on terminals 15/30