

# **BL Motorcycles Ltd**

*Professional Workshop Manual - English Translation*

## **BSA - SECTION GD**

D14/4 GENERAL DATA GD1

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## D14/4 GENERAL DATA GD3

### ENGINE

#### PISTON

|                                   |                                    |
|-----------------------------------|------------------------------------|
| Material .....                    | "Lo-ex" aluminium                  |
| Compression ratio .....           | 10 : 1                             |
| Clearance (bottom of skirt) ..... | 0.00380-0.0039" (0.0960-0.099 mm.) |
| Clearance (top of skirt) .....    | 0.00770-0.0078" (0.1950-0.198 mm.) |
| (both measured on major axis)     |                                    |

#### PISTON RINGS

|                            |                                   |
|----------------------------|-----------------------------------|
| Material .....             | Cast-Iron                         |
| Width .....                | 0.0970-0.102" (2.4632-5.90 mm.)   |
| Depth .....                | 0.06150-0.0625" (1.5621-5.87 mm.) |
| Clearance in groove .....  | 0.0025" (0.0635 mm.)              |
| Fitted gap (maximum) ..... | .013" (.3302 mm.)                 |

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Fitted gap (minimum) . . . . . 009" (-2286 mm.)

## CYLINDER BARREL

Material . . . . . Close-grained cylinder iron

Bore size (standard) . . . . . 61.5 mm.

Stroke . . . . . 58 mm.

Oversizes . . . . . 020" & .040" (-508 mm. & 1.016 mm.)

Inlet port size . . . . . 1" (25.4 mm.)

Exhaust port size . . . . . 1¼" (32 mm.)

## IGNITION TIMING (Fixed)

Crankshaft (before top dead centre) . . . . 16.5°

Piston (before top dead centre) . . . . 0.060" (1.524 mm.)

## CARBURETTER (Concentric)

Type . . . . . Amal R626/12

Main jet . . . . . 160

Pilot jet . . . . . 25

Needle jet size . . . . . 105" (2.667 mm.)

Needle position . . . . . 3

Throttle valve . . . . . 3

Nominal choke size . . . . . 26 mm.

Throttle slide return spring (free length) . . . . 3-1/16" (78 mm.)

## D14/4 GENERAL DATA GD4

### BEARING DIMENSIONS

Crankshaft bearing (left- and right-hand) . . . . . 75 x 1.875 x .5625"

(19.05 x 47.625 x 14.2875 mm.)

Crankshaft bearing outer (right-hand) . . . . . 17 x 40 x 12 mm.

Layshaft bush, left- and right-hand (bore) . . . . . 6105.6115" (15.50715.532 mm.)

Gearbox sleeve pinion bearing . . . . . 875 x 1.875 x .375"

(22.225 x 47.625 x 9.525 mm.)

Mainshaft final drive gear bush (bore) . . . . . 4965.4975" (12.61112.636 mm.)

Mainshaft diameter (gear-side) . . . . . 6247.6250" (15.86715.944 mm.)

Mainshaft diameter (drive-side) . . . . . 498.499" (12.64912.675 mm.)

Layshaft diameter (left- and right-hand) . . . . . 6095.6100" (15.48115.608 mm.)

Gearbox mainshaft bearing . . . . . 625 x 1.5625 x .4735"

(15.875 x 39.6875 x 11.1125 mm.)

Big-end roller (18) . . . . . 4 x 8 mm.

Small-end bearing . . . . . 5625 x .75 x .625"

(14.2875 x 19.05 x 15.875 mm.)

Gudgeon pin diameter . . . . . 5617.5620" (14.26714.275 mm.)

### TRANSMISSION

#### CLUTCH

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|   |                                |
|---|--------------------------------|
| Type .....  | Multi-plate                    |
| Number of plates .....                              | 7                              |
| Driving (bonded segments) .....                     | 4                              |
| Driven (plain) .....                                | 3                              |
| Overall thickness of driving plates and segments .. | " (3 mm.)                      |
| Clutch springs .....                                | 6                              |
| Free length of springs .....                        | 1-9/64" (29 mm.)               |
| Clutch push rod, short (length) .....               | 1.9982-002" (50.7550-85 mm.)   |
| Clutch push rod, short (diameter) .....             | 186-188" (4.72444-7752 mm.)    |
| Clutch push rod, long (length) .....                | 5.7785-782" (146.76146-86 mm.) |
| Clutch push rod, long (diameter) .....              | 180-182" (4.574-62 mm.)        |

## SPROCKETS

|                  |          |
|------------------|----------|
| Engine .....     | 17 teeth |
| Clutch .....     | 38 teeth |
| Gearbox .....    | 16 teeth |
| Rear wheel ..... | 47 teeth |

## CHAIN SIZE

..... 0.500 x 0.205 x 120 links

## D14/4 GENERAL DATA GD5

### GEAR RATIOS

|                     |          |
|---------------------|----------|
| Gearbox(top) .....  | 1.0 :1   |
| (third) .....       | 1.301 :1 |
| (second) .....      | 1.831 :1 |
| (first) .....       | 2.843 :1 |
| Overall (top) ..... | 6.57 :1  |
| (third) .....       | 8.55 :1  |
| (second) .....      | 12.03 :1 |
| (first) .....       | 18.68 :1 |

## FRAME AND FITTINGS

### FRONT FORKS

Type .....

Coil spring, hydraulically-damped

Springs:

(free length) .....

17¼" (43.8 cm.)

(spring rate) .....

35 lb./in.

(number of coils) .....

82

Shaft diameter (top) .....

1.0451-046" (26.54326-568 mm.)

Shaft diameter (base) .....

1.0001-001" (25.425-425 mm.)

Sliding tube bore .....

1.1251-129" (28.57528-677 mm.)

Upper bush (outer diameter) .....

1.1211-122" (28.47328-499 mm.)

Upper bush (bore) .....

1.0581-059" (26.87326-899 mm.)

Working clearance .....

0.013" (0.330 mm.)

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Lower bush (outer diameter) . . . . . 1·1181·119" (28·39728·425 mm.)

Lower bush (bore) . . . . . 1·0001·001" (25·425·425 mm.)

Working clearance . . . . . 0·0060·011" (0·1520·279 mm.)

Length (upper and lower) . . . . . 1" (25·4 mm.)

## REAR DAMPERS

Type . . . . . Coil spring, hydraulically-damped

Springs:

(fitted length) . . . . . 5·7" (144·78 mm.)

(spring rate) . . . . . 100 lb./in.

(colour identification) . . . . . Yellow/tan

## SWINGING ARM

Bush material . . . . . Phosphor-bronze

Bush (outside diameter) . . . . . ·993·994" (25·2225·24 mm.)

Bush (bore) . . . . . ·860·865" (21·8421·97 mm.)

Housing diameter. . . . . ·990·991" (25·1425·17 mm.)

Interference fit on spindle . . . . . ·0085·014" (·215·355 mm.)

Spindle diameter . . . . . ·8735·8740" (22·18722·200 mm.)

## D14/4 GENERAL DATA GD6

### WHEELS, BRAKES AND TYRES

#### WHEELS

Rim size and type (front and rear) . . . . . WM1-18

Spoke sizes:

(front, left-hand) . . . . . 12 s.w.g. × 8·1/16" (2·641 × 204·78 mm.)

(front, right-hand, inner) . . . . . 12 s.w.g. × 6½" (2·641 × 165·1 mm.)

(front, right-hand, outer) . . . . . 12 s.w.g. × 6·9/16" (2·641 × 166·69 mm.)

(rear, right-hand) . . . . . 10 s.w.g. × 7·5/16" (3·251 × 201·612 mm.)

(rear, left-hand, inner) . . . . . 10 s.w.g. × 6½" (3·251 × 165·1 mm.)

(rear, left-hand, outer) . . . . . 10 s.w.g. × 6½" (3·251 × 165·1 mm.)

#### WHEEL BEARINGS

Front:

(left-hand) . . . . . 15 × 35 × 11 mm.

(right-hand) . . . . . 17 × 40 × 12 mm.

Spindle diameter (at ground portions):

(right-hand) . . . . . ·6687·6692" (16·98516·998 mm.)

(left-hand) . . . . . ·5899·5904" (14·983514·9962 mm.)

Rear:

(left- and right-hand) . . . . . 17 × 40 × 12 mm.

Spindle diameter (at ground portions): . . . . . ·6687·6692" (16·98516·998 mm.)

#### BRAKES

Front and rear (diameter) . . . . . 5½" (139·7 mm.)

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Front and rear (width) ..... 1" (25.4 mm.)  
Lining thickness ..... 5/32" (.4 mm.)  
Total lining area (front and rear) ..... 20 sq. in. (129 sq. cm.)

## **TYRES**

Size (front and rear) ..... 3.00 x 18"  
Pressure (front) ..... 17 p.s.i. (1.2 atm)  
Pressure (rear) ..... 22 p.s.i. (1.5 atm)  
(see also page F12)

## **ELECTRICAL EQUIPMENT (6 volt)**

Battery ..... Lucas 6 volt PUZ5E/11  
Alternator type ..... Wipac 1G1768  
Contact breaker unit ..... Wipac S0584  
Ignition coil ..... Wipac S0769  
Rectifier ..... Wipac S2642  
Bulbs:  
(headlight, main) ..... 30/24 watt pre-focus  
(headlight, pilot) ..... 3 watt M.E.S.  
(stop/tail light) ..... 6/18 watt S.B.C. staggered pin  
(speedometer light) ..... 0.6 watt B.A. 7S lug cap  
Horn ..... Clearhooter HF900

## **D14/4 GENERAL DATA GD7**

### **CAPACITIES**

Petrol proportion ..... See page A3  
Fuel tank ..... 1.875 gallons or  
2.25 U.S. gallons (8.5 litre)  
Gearbox ..... ¾-pint (0.5 litre)  
Front fork (each leg) ..... -pint (0.07 litre)

### **BASIC DIMENSIONS**

Wheelbase .....