SECTION P

BRAKE LININGS

INDEX

SECTION P BRAKE LININGS

1. Front brake pad replacement (see Fig. 5)

1. Slacken the two calliper assembly screws (1).
2. Remove the calliper retaining screws in the fork leg and swing the calliper clear of the disc.
3. Further slacken screws (1) to allow removal of calliper rear plate (4).
4. Lift off pads from locating pegs (8) on calliper front plate (2).
5. Locate new pads on pegs.
6. Reassemble in reverse order.

2. Front drum brake - shoe replacement

1. Remove front wheel (See Section H).
2. Lift brake assembly from hub.
3. Undo the countersunk Allen screws in the shoe retaining plates and remove the plates.
4. Ease the shoes off the fulcrums and operating cams, and remove the springs.
5. Check the operating cam spindles for friction and wear. If excessive refer to dealer.
6. Lightly smear cams and fulcrums with grease.
7. Fit springs to replacement shoes.
8. Holding a shoe in each hand, tension the springs and locate the shoes on the fulcrums and cams, and press into place.
9. Refit retaining plates and screws.
10. Replace assembly in hub and refit wheel.

Note:

The external operating linkage is set at the factory and needs no adjustment unless the brake operating cams are disassembled or replaced.

3. Rear brake shoe replacement (see Fig. 2)

1. Slacken brake cable and disconnect by removing clevis pin from the operating arm. Remove the cable from the brake plate by screwing the adjuster right out.
2. Remove the torque arm bolt in the brake drum, slacken attachment bolt on the swinging arm and swing the torque arm clear of the brake drum.

3. Undo one spindle nut and remove spindle.

4. Remove spacer (7) from between brake plate and swinging arm.

5. Lift brake assembly out of hub - the wheel can be left in place.

6. Remove shoe retaining screw and plate.

7. Ease shoes off fulcrum and remove springs (5).

8. Check operating cam spindle for friction and wear. If excessive refer to dealer.

9. Lightly smear cam and fulcrum with grease. Avoid getting grease on shoes or drum.

10. Fit springs to replacement shoes.

11. Holding a shoe in each hand and with the springs held in tension, locate the shoes on the fulcrum and operating cam and press into position.

12. Refit retaining plate and screw.

13. Replace assembly in hub.

14. Refit spacer and wheel spindle. Leave spindle nuts slack.

15. Reconnect brake cable and torque arm.

16. Tighten spindle nuts with brake applied hard to centralise brake plate.

17. Adjust brake cable.

SECTION Q

ENGINE TOPHALF - REMOVAL IN SITU

INDEX

SECTION Q ENGINE TOPHALF - REMOVAL IN SITU

1. Cylinder head removal and replacement

Removal

1. Drain coolant at one bottom hose.
2. Remove top hose at the cylinder head.
3. Detach plug leads and remove plugs.
4. Slacken cylinder head steady attachment bolts at frame before removing head bolts.
5. Remove the nine cylinder head bolts.
6. With the pistons at approximately mid-stroke, tap the head sideways with a soft hammer to break seal.

   (If difficulty is experienced, refit plugs and kick over the engine a few times).
7. Remove head and carefully remove gasket for re-use if condition permits.

Replacement

1. Set pistons with crowns below the head-to-block joint.
2. Smear both sides of the thoroughly cleaned gasket with jointing compound and position on cylinder block.

Note:

Do NOT use Silastic 732 on cylinder head gasket if a high proportion of antifreeze is to be used as glycol affects this sealant. Use a normal jointing compound.

3. Carefully place head in position.
4. Refit the nine cylinder head bolts. Ensure that the ring seals are fitted to the bolts passing through the head steady, both above and below the steady.
5. Tighten down the bolts to 18 ft. lb (2.5 kg.m) in the correct order.
6. Tighten head steady bolts at the frame.
7. Refit plugs and leads.
8. Refit top hose to cylinder and check connection of lower hose used to drain the system.
9. Refill the cooling system.

2. Cylinder block removal and replacement

Removal (engine in or out of frame)

1. Remove the cylinder head as detailed in Section 1.
2. Remove the carburettor from the manifold by loosening the clamp, and tie or tape it clear of the block.
3. Detach both coolant hoses from the block.
4. Detach the exhaust pipes from the block by removing the six attachment bolts, and put the gaskets aside for re-use.
5. Remove the five nuts and the two Allen screws (in the top of the manifold) which hold down the block.
6. Gently ease the block upwards clear of the pistons.
7. Remove the gasket and put aside for re-use if condition permits.

Replacement

Before replacement of the block it is recommended that a check of the piston ring end-gaps be carried out. If the end gap exceeds 0.012 in (0.30 mm), new rings should be fitted.

When refitting rings, ensure that they are properly seated against the locating spigots in the ring grooves.

Check also the condition of the cylinder bores, pistons, small end bushes and circlips.

1. Place GREASED gasket on to the crankcase - DO NOT use gasket cement.
2. Turn crankshaft so that one piston is at the top of its stroke.
3. Ease the piston into the cylinder, carefully squeezing each ring into the bore.
4. Lower the block and piston so that the second piston rises to the block and repeat the insertion procedure.
5. Press the block over the five holding-down studs and on to the gasket.
6. Refit and tighten the five nuts and washers and the two Allen screws.
7. Refit the exhaust pipe gaskets and the six attachment bolts.
8. Refit the coolant hoses.
9. Refit the carburettor.
10. Refit the cylinder head (see Section Q1).
11. Refill with coolant.

3. Piston removal and replacement

Removal

1. Remove one of the gudgeon pin retaining circlips.
2. With the piston supported, press out the gudgeon pin until it clears the connecting rod.
3. Remove the piston.

Replacement

First check the condition of the piston, rings, small end bush and circlips.

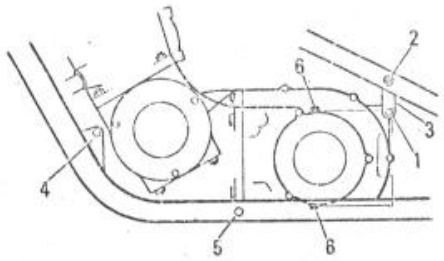
1. Ensure that the piston ring spigots face outwards away from the porting position.
2. Locate the piston over the connecting rod and press the gudgeon pin through to the opposite circlip.
3. Replace the other circlip.

SECTION R REMOVAL AND REPLACEMENT OF ENGINE/GEARBOX UNIT

Removal

1. Ensure that the machine is firmly supported throughout the operation.
2. Remove the primary chain tensioner bolt under the crankcase.
3. Support the engine unit on a suitable block.
4. Drain the coolant from one of the bottom hoses.
5. Disconnect fuel pipe at the fuel tap. The fuel tank can be removed for easier access.
6. Remove the carburettor from the manifold by loosening the clamp. Unscrew the carburettor top and remove the slide. For safety, remove slide from cable, noting the position of the needle. Place carburettor aside.
7. Remove both bottom coolant hoses and the top hose from cylinder head to the header tank.
8. Disconnect clutch cable at the handlebar lever and unclip from the frame.
9. Disconnect the oil control cable from the twistgrip.
10. Remove top and bottom bolts from oil pump and withdraw the unit complete with feed pipe, allowing it to hang clear of the engine unit.
11. Remove the six exhaust pipe attachment bolts from the block and put the gaskets aside for re-use.
12. Disconnect ignition and alternator wiring connectors and plug leads and remove the plugs.
13. Detach cylinder head steady, first from frame and then from cylinder head.
14. Disconnect gear change linkage at the top flexible Rose joint and swing clear.
15. Open rear sprocket enclosure, remove the chain spring-link and pull the chain clear of the gearbox sprocket.
16. Slide the gaiters off the front section of the chain enclosure.
17. If the front gaiter fixture is a fibreglass unit, detach it from the gearbox by removing the two bolts (6).

18. Remove the gearbox mounting bolt (1), slacken the Allen screws (2) in the frame and swing the gearbox mounting fork (3) rearwards to clear the gearbox unit.



19. Remove the front through-bolt (4).

20. Remove the two lower engine bolts (5).

21. Lift the engine/gearbox unit upwards and sideways out of the right hand side of the frame.

Replacement

1. Firmly support the frame and position a block between the frame tubes to support the engine/gearbox unit.

2. Lift the unit into the right-hand side of the frame and lower onto the support block.

3. Adjust the support to allow replacement of lower engine bolts (5) and front through bolt (4).

4. Swing the gearbox mounting fork forwards and locate the mounting bolt (1).

5. Tighten bolts (4), (5) and (1) and Allen screws (2).

6. Smear the joint faces of the oil pump assembly with Silastic 732 or equivalent sealing compound, and refit using two new 'O' rings, ensuring that they are correctly positioned and that the drive engages accurately in the end of the crankshaft. Tighten up top and bottom attachment bolts.

7. Refit oil control cable to twistgrip; reclip to frame at both sides of the adjuster.

8. Refit the clutch cable to handlebar lever, reclip to the frame, and adjust.

9. Refit cylinder head steady, tightening first to the head and then to the frame.

10. Reconnect ignition and alternator wiring connectors.

11. Refit sparking plugs and leads.

12. Reconnect gear change linkage coupling, ensuring the Rose joint moves freely.

13. Refit slide to carburettor, replace on manifold and tighten clamp ring.

14. Reconnect fuel pipe to fuel tap.

15. Refit bottom coolant hoses and top coolant hose.

16. Refit the exhaust pipe gaskets and six attachment bolts.

17. Feed the rear chain onto the top of the gearbox sprocket and carefully work the chain round until the end can be withdrawn from bottom opening.

18. Feed the chain ends through the front section of the chain enclosure and refit enclosure to gearbox with two bolts (6).

19. Attach a length of wire to each chain and use wire to pull chain through top and bottom chain gaiters.

20. Feed the chain ends through the rear section of chain enclosure.

21. Locate gaiters on chain enclosure sections.

22. Locate chain round rear sprocket and refit spring link.

Note:

It may be necessary to slacken the chain adjusters in order to position the chain on the sprocket (see Section G12).

23. Refit rear chain enclosure access panel.

24. Adjust chain as described in Section G12.

25. Remove packing from under crankcase and refit primary chain tensioner bolt.

26. Adjust primary chain as described in Section G11.

27. Refill coolant system (see Section Z4).

SECTION Z

MAINTENANCE DATA AT A GLANCE

INDEX

SECTION Z MAINTENANCE DATA AT A GLANCE

Machine numbers — To be quoted in all correspondence.

- Frame number: On right hand side of steering head.
- Engine number: On right hand side of crankcase.

Tyres

	Front	Rear
Type:	Avon Roadrunners or Dunlop TT100.	
Size:	3.60 x 18	4.10 x 18
Pressure, Solo:	24 lb/sq in (1.7 Kg/sq cm)	27 lb/sq in (1.9 Kg/sq cm)
" Two-up:	24 " " " (1.7 Kg/sq cm)	30 lb/sq in (2.1 Kg/sq cm) (Depending on load)

Fuel

- Tank capacity: 3 gals.(13½l)(spring). 4 gals.(18 l.)(touring).
- Grade: 4-star petrol, 98/99 octane.

Engine oil

- Tank capacity: 3¼ pints (1.8 litres)
- Grade: 2-stroke non-mixing. Duckhams 2-stroke or Filtrate Super 2
- Consumption: 300 miles (500 km.) per pint approx. or better.

Clutch/chaincase oil

- Capacity: ¼ pint (.13 l)
- Grade: Automatic transmission fluid.
- Change: At 500 miles (800 km.) then every 12,000 miles (20,000 km.)

Gearbox oil

- Capacity: 1 pint (.5 l)
- Grade: EP 80/90 with Graphoidal Developments "Supergrad" additive.
- Change: At 500 miles (800 km.) then every 12,000 miles (20,000 km.)

Coolant

- Capacity: 7 pints (3.8 l)
- Type: Water + Bluecol AA antifreeze, or equivalent for "all-aluminium" engine, when required.

Front forks

- Quantity: ½ pint (.25 l) per leg.
- Type: Automatic transmission fluid.

General lubrication

Any normal automotive grease or oil.

Swinging arm pivot: grease frequently.

All hinges, fulcrums, control cables, rear brake arm, etc.: oil frequently.

Front fork sliders

Keep clean to avoid wear on seals if gaiters not fitted.

Front brake hydraulic fluid

Top up with fluid (Lockheed 329S).

Light bulbs

Head:	Thorn Halogen, H4, 60/55 W N0463
Pilot:	5 w
Stop/tail:	21/5 w. offset bayonet pins
Trafficators:	21 w.

Fuse

25 amp

Ignition timing

.3" before T.D.C. on full advance.

Sparking plugs

Type:	Champion L10 (for running in and sustained low speed use) KLG F220 (for high speed touring) NGK B8 HC L60R (for racing and high speed touring)
Gap:	0.025" (0.65 mm.)

Air cleaner

Type:	Unike foam element
Change:	Every 13,000 miles or as required.

Chain adjustment

Primary:	See section G paragraph 11
Final drive:	½"-¾" (13-19 mm) at centre of top run.

Chain lubrication

Use Renolds "Duckhams" aerosol lubrication frequently during early running and thereafter as required.