

ROUTINE LUBRICATION

Ref No.

EVERY 250 MILES		
1	Check oil level.	-
EVERY 1,000 MILES		
2	Check oil level in primary chaincase	Page 29
EVERY 2,000 MILES		
3	Check oil level in transmission case (gearbox)	Page 32
15	Lubricate center and side stand pivots (oil)	-
4	Lubricate rear chain	Page 30
5	Lubricate contact breaker cam	Page 21
5	Lubricate auto-advance mechanism	Page 21
16	Lubricate brake pedal pivot	-
6	Oil exposed cables and control rod. -	-
7	Grease clutch cable Joints	Page 9
8	Grease speedometer drive	Page 33
EVERY 4,000 MILES		
3	Drain and refill transmission case (gearbox)	Page 32
2	Drain and refill primary chaincase	Page 29
9,1	Drain and refill the oil reservoir	Page 16
10	Clean oil filters.	Page 17
11	Clean external oil filter.(250 cm ³ only)	Page 17
12	Examine pump ball valve	Page 18
17	Grease rear brake cam spindle.	Page 33
EVERY 10,000 MILES		
13	Drain and refill front forks.	Page 37
14	Clean and repack wheel bearings with grease.	Page 33

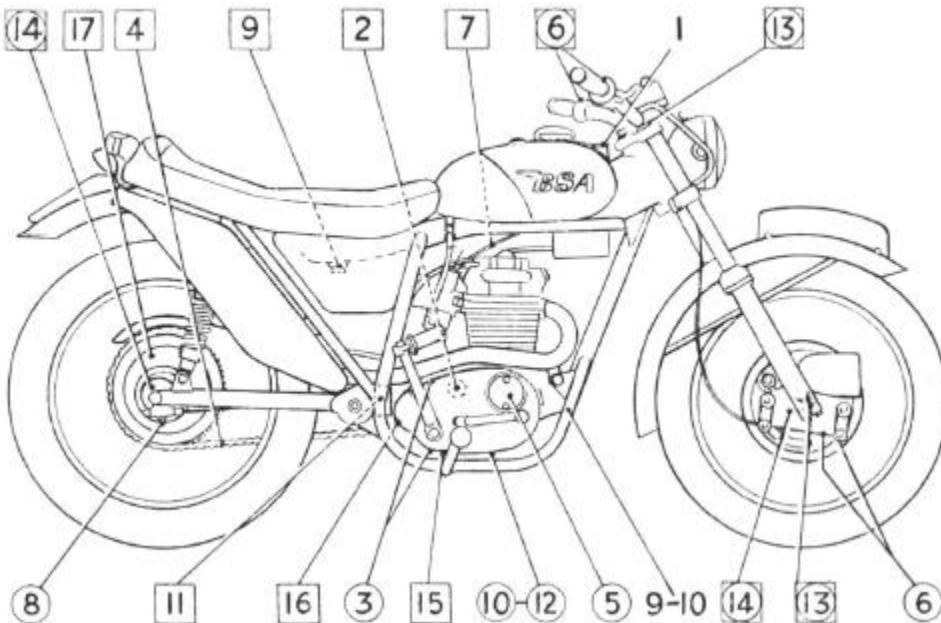


Figure 19. General lubrication diagram for all models.
(The numbers in circles refer to the right side of the machine and numbers in squares refer to the left side).

LUBRICANTS

Recommended Motor Oils

U.S.A. ONLY

B.S.A. motor oil is specially blended in U.S.A. for B.S.A. motor-cycles, and wherever this oil is available its use is preferred.

ALL OTHER COUNTRIES

Other recommended brands of lubricants for use both in Summer and Winter, are given below (also for U.S.A. where B.S.A. oil is unobtainable).

Suitable lubricants are also given for other parts of the machine.

Brand	Motor and Chaincase	OILS			GREASE
		Trans-mission (gearbox)	Chaincase (250 cm ³ eng. only)	Forks	
Castrol	GTX or XL	Hypoy	Castrolite	TQS	Castrol LM
Mobil	Super	Mobilube GX90	Super	ATS 210	Mobilgrease MP or Super
Shell	Super Motor Oil	Spirax 90EP	Super Motor Oil	Donax T7	Retinax A
B.P.	Super Visco-Static	Gear Oil 90EP	Super Visco-Static	Autron B	Energrease L2
Texaco	Havoline 20W/50	Multi-gear 90EP	Havoline 10W/30	Texo-matic F	Marfak all-purpose
Esso	Uniflo	Gear Oil GX90/140	Uniflo	Esso Glide	Multi-Purpose H

The above lubricants are recommended for all operating temperatures above -18°C.

APPROVED LUBRICANTS

The following lubricants are also approved for use in B.S.A. motor-cycles:

Duckham's : Motor and chaincase oil, Q20-50; transmission (gearbox), Hypoid 90; forks, Q-Matic; chaincase (250 cm³ only), Q5500; grease, LB10.

Filtrate : Motor and chaincase oil, Super 20~50; transmission (gearbox), EP90; forks, AQ-ATF; chaincase (250 cm³ only), Super 10W/30; grease, SuperLithium.

Approval is also given to lubricants marketed by companies other than those listed above, provided that they have similar multi-grade characteristics and meet the A.P.I Service M.S. performance level.

The table gives recommendations for conditions in temperate climates. In countries where the climatic conditions are extreme, some alteration may be necessary, bearing in mind that the higher the temperature, the higher is the S.A.E. rating required, and vice versa.

It is always advisable to make sure that the oil in the lubricating system is warm before driving at high speeds.

When taking part in competitive events, advantage should be taken of any warming-up period to get the motor warm and the oil circulated.

THE CHAINS, CLUTCH, AND TRANSMISSION (GEARBOX)

PRIMARY CHAIN

Unit construction allows the use of fixed centers between clutch and motor sprockets so that a pre-stretched endless chain of the duplex-type is fitted, A spring link connection is not provided.

The only maintenance required is to ensure a satisfactory oil level in the chaincase (see following section).

Adjustment

An adjustable slipper-type tensioner is provided for the chain and its slackness can be tested after removal of the filler cap (J) Fig. 22. The chain is in correct adjustment when there is a minimum of 1/8" and a maximum of 1/4" of free play at the midway position between the sprockets.

NOTE :-THE MOTOR MUST BE STATIONARY WHEN MAKING THIS CHECK.

When the two lower generator retaining nuts (E) Fig. 20 are slackened, the position of the slipper can be altered to give the correct tension.

After the adjustment is completed it is essential to make sure that the clearance between the alternator rotor (mounted on the motor shaft) and the stator poles is not less than .008".

Lubrication

On all models there is a small oil supply from the primary chaincase through the non-adjustable metered feed on to the rear chain, so that on the 250 cm³ engines, the oil level can be expected to fall very slowly. The screw (M) Fig. 22, determines the oil level. To replenish with oil, first remove this screw and then the filler cap (J) at the top of the chaincase. Add oil of the correct grade (see "Recommended Lubricants" page 28) and allow to stand until any surplus oil has drained away. Replace the level screw and inspection cap. The machine should be on horizontal ground when this operation is carried out. A drain plug is provided at (N) for draining the case at regular intervals (see page 27).

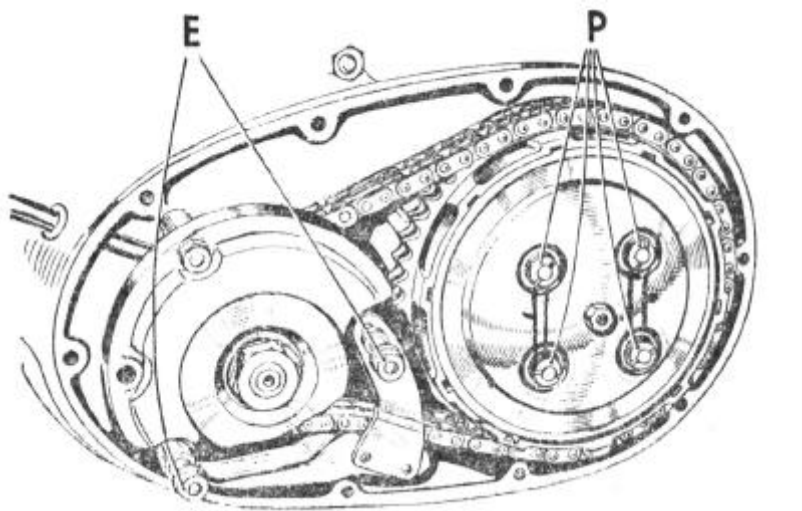


FIGURE 20. The primary chain and clutch

500 cm³ engines only. The chaincase oil level is automatically maintained from the engine, but the case should be drained and replenished as above at regular intervals (see page 27).

REAR CHAIN LUBRICATION

On all models lubrication is provided by a chain oiler from the rear of the primary chaincase, which provides a metered supply of lubricant, and should keep the chain in good condition. THIS SUPPLY IS DEPENDENT ON CORRECT MAINTENANCE OF THE OIL LEVEL IN THE PRIMARY CHAINCASE (see page 29). If maximum life is to be achieved, however, periodically remove the chain and wash it thoroughly in gasoline to remove all dirt and grease. Allow the chain to dry completely then immerse it in a tray containing warm graphited grease. When replacing the chain make sure that the spring clip of the connecting link has its closed end pointing in the direction of the chain travel (i.e., forwards on the top run).

REAR CHAIN ADJUSTMENT

With the motor-cycle on its center stand (or with a box below the crankcase to serve the same purpose) the total up and down play at the center of the chain run should not be less than 1 1/8" (2.9 cm.).

Before any adjustment is made, slacken the brake rod adjuster at the rear wheel to allow freedom of movement for the wheel and swinging arm assembly.

Chain adjusters are situated at the swinging arm pivot (Fig. 21), and comprise quadrants (A) - one on each side - pierced with holes positioned at different radii from the pivot. Slacken the securing nut (D), lift the quadrants off their retaining pegs (B) and draw the swinging arm rearwards, rotating the quadrant until a new hole is aligned with the peg in the frame. Corresponding holes must be selected for both sides of the machine. Now tighten the securing nut and readjust the brake.

When all the adjuster holes have been used in succession, a further range of adjustment is obtained if the quadrant is reversed and located on rearmost peg (C).

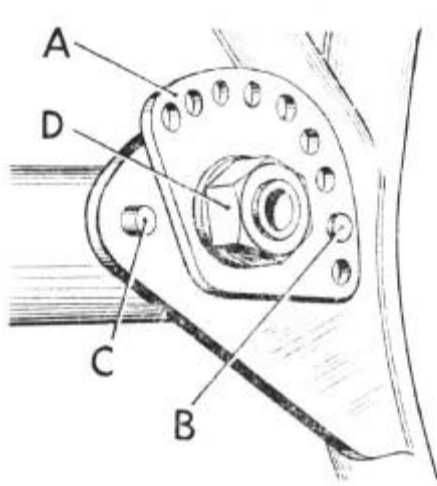


FIGURE 21.
Rear chain
adjustment.

The chain can be considered due for replacement when the wear exceeds 1 / 4" per foot of chain length, i.e., for a chain of 5/8" pitch, the limit for sixteen pitches would be 10-7/32" (10" when new).

NOTE :-One pitch is the distance between two roller centers.

CLUTCH CONTROL ADJUSTMENT

The main adjustment consists of a screw pin (F) and locknut (G) mounted on the clutch pressure plate. These are accessible after removal of the inspection cover (H) Fig.22

If adjustment is necessary, slacken off the handlebar cable adjuster (A) Fig. 23, and release the cable from the control lever above the timing cover on the right-hand side of the motor. Release locknut (G) Fig. 22, and adjust the pin (F) until the control lever is inclined outwards by a small amount. Add a short length of tubing to the lever to provide additional leverage and disengage the clutch, when the lever should take up a position approximately parallel with the timing cover joint face. If necessary the adjustment must be modified until this condition is obtained.

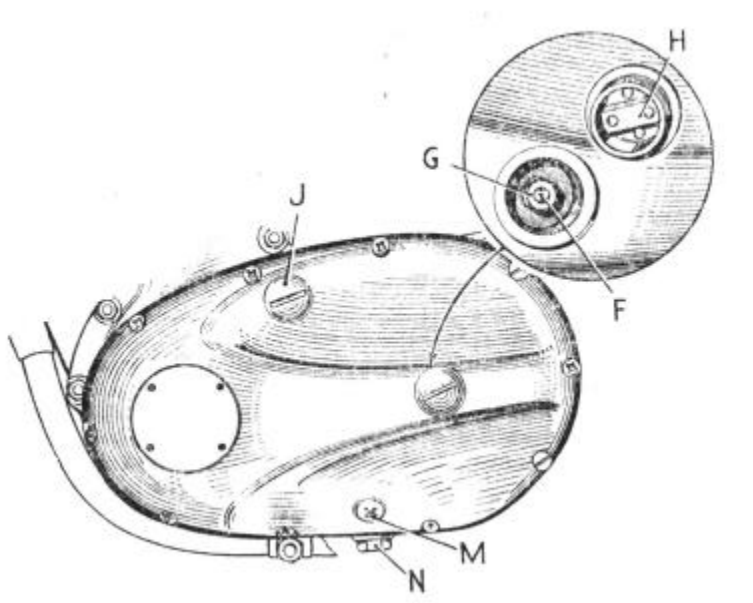


Figure 22. Clutch adjustment and chaincase oil level.

Finally reconnect the cable to the control lever and readjust the cable length at the handlebar lever until there is about 1/16" of free play (see Fig. 23).

There must always be a small amount of play at the lever, otherwise the clutch will slip, with consequent rapid wear of the plates.

The clutch cable can readily be detached or replaced if the handlebar adjustment is first slackened off to its fullest extent and the control arm rotated inwards, when the cable ends can be removed from their sockets.

CLUTCH SPRING PRESSURE

Whenever the clutch has been dismantled, the spring pressure must be reset carefully. The four retaining nuts (P) Fig. 20, should be screwed in until the underside of the head of each nut is approximately 1/16" from the face of a spring cup. The figure is an arbitrary one and it is a simple matter to vary it according to circumstances. If the springs are compressed excessively the handlebar lever will be stiff to operate and tiring to the hand; alternatively, if the spring pressure is insufficient, the clutch will tend to slip.

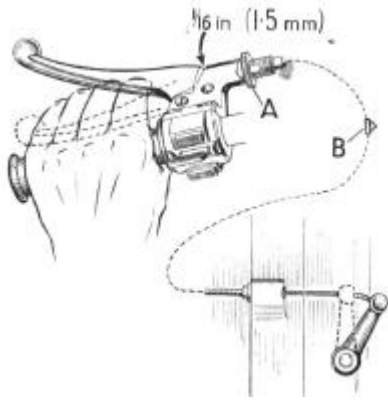


FIGURE 23.
Setting the clutch
operating lever,

Adjust for true running of the plates by declutching and then operating the starter pedal, when it will be seen whether the spring pressure plate rotates truly or not. If necessary, adjust the nuts individually until true running is obtained.

TRANSMISSION (GEARBOX)

Apart from topping-up at regular intervals, very little maintenance should be required. The filler plug carries a dipstick (D) Fig. 24, and the oil level should be maintained at the mark on the stick.

To drain the case, which should preferably be undertaken while the oil is warm after a run, unscrew the drain plug (E) Fig. 24, below the case. When replacing, make sure that the sealing ring is in good condition otherwise there may be a leakage of oil. The capacity of the gearbox is approximately 5/8 U.S. pint (1/2 British pint), and suitable oils are detailed on page 28.

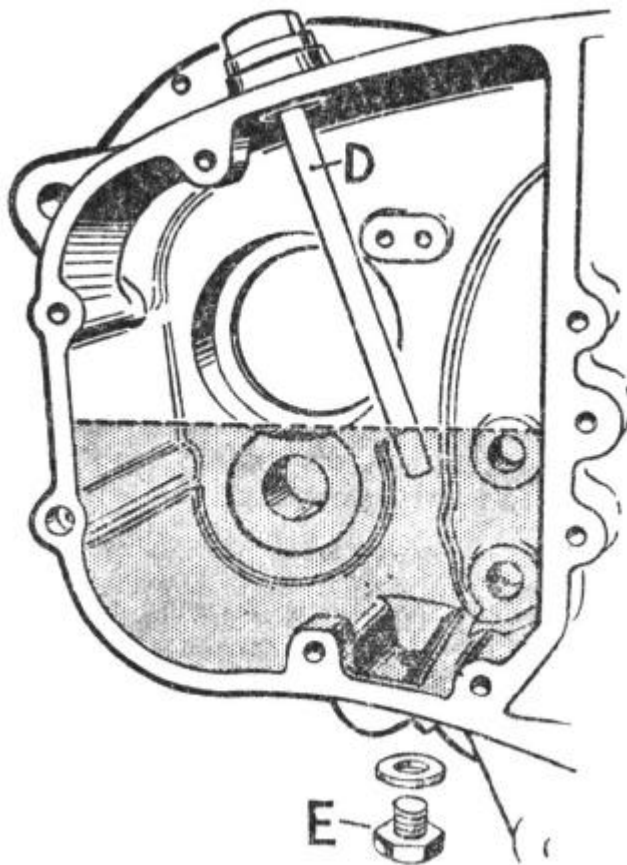


FIGURE 24.
The transmission
(gearbox) drain
plug and oil level.