

B.S.A.

Motor Cycle Instruction Book

1940 Models

250 c.c. S.V.	C10
250 c.c. O.H.V.	C11
350 c.c. S.V.	C12



Price 2/6

RIDER'S INSTRUCTIONS FOR 1940 B.S.A. MOTOR CYCLES.

250 c.c. S.V.	Model C10.
250 c.c. O.H.V.	Model C11.
350 c.c. S.V.	Model C12.

FILLING UP.

The saddle tank holds both petrol and oil. The petrol capacity is two gallons and the filler cap is on the right-hand side of the tank. The oil capacity is four pints and is contained in the left-hand side.

To obtain the most satisfactory service from your machine it is essential to use only high-quality lubricants. This point cannot be over-emphasized. It is most important also that one of the recommended grades of oil is used. For correct lubrication we strongly recommend the high-quality oils tabulated on page 24. It is not sufficient to specify the grade, the actual brand required should be stated.

The use of an upper-cylinder lubricant is particularly advisable during the first 1,000 miles of a machine's life.

Check the oil in the gearbox (see page 9) and make certain that all other parts are adequately lubricated (page 8).

It is advisable before starting up a new machine to give the engine a small supply of extra oil. This is done by removing the sparking plug, and, after setting the piston at the bottom of its stroke, putting in about two teaspoonsful of oil.

Inflate tyres to the correct pressures (see chart on page 41).

CONTROLS.

The ignition switch is incorporated in the centre of the lighting switch in the back of the head lamp. To switch on, push the key in and turn clockwise. **It is imperative to switch off when the engine is stopped for any length of time otherwise the battery will become discharged.** The red light serves as a reminder that the ignition is switched on, but it should disappear when the engine is started up.

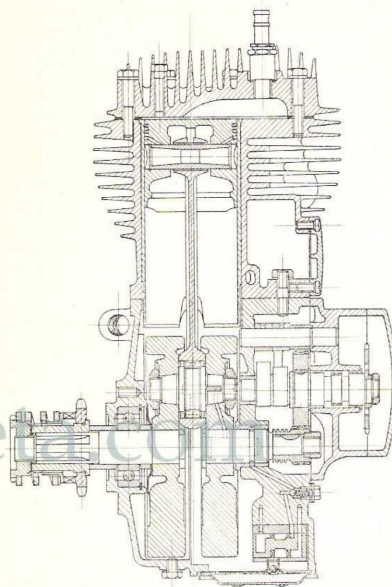
The carburettor throttle control is the small lever on the right handlebar and opens when turned towards the rider. On Models C11 and C12 the throttle is operated by a twist grip on the right handlebar. The large lever on the right handlebar operates the front brake. On the left handlebar is mounted the clutch-lever and dipper switch. No ignition lever is provided since the machine is fitted with automatic advance mechanism.

The rear brake is operated by the left toe pedal. The positions of the gear control lever are marked "1" for first, "N" for neutral, "2" for second, and "3" for third or top gear. These numbers will be found on the gearbox cover casting, adjacent to the foot change lever indicator.

RUNNING-IN.

Do not overdrive the engine during the first 500 to 1,000 miles. Careful attention during this period will improve the machine considerably and greatly

2



Cross-section of the B.S.A. 350 c.c. S.V. engine.

Fig. 1.

3

affect the subsequent performance during the rest of its life. The addition of a little engine oil to the fuel is to be advised if an upper cylinder lubricant is not used.

STARTING.

Switch on the ignition as explained on page 2 and make certain that the gear lever is in the neutral position. After a little experience the rider will be able to determine for himself the best position for the throttle in order to give easy starting, but as a guide it may be suggested that the throttle should be set about one-eighth open. Close the air lever (Model C12 only). Push the kickstarter down as smartly as possible with the foot, when the engine should start.

Do not kick half-heartedly, or stop before the pedal is quite down, but make full use of the whole movement of the kick starter.

In very cold weather it may be necessary to flood the carburettor. Do not depress the tickler for too long, as excessive flooding will make starting even more difficult. After depressing the tickler for a few seconds, open the throttle about one-eighth, and then depress the kickstarter two or three times, when the engine will be heard to draw in rich mixture. If the starting procedure given above is followed, a certain start should be made under the coldest conditions.

RIDING.

To obtain first or bottom gear, raise the clutch lever (on the left handlebar) fully, and move the gear lever into the position marked "1". If this is not directly obtainable, do not exert excessive force,

4

but gently press the lever while moving the machine a little backwards and forwards, with the clutch disengaged, of course. Engage the clutch gently, and at the same time gradually open the throttle.

To change gear perfectly it is necessary to accelerate the engine when changing down, and to slow it down when changing up. This is due to the relative speeds of the engine and road wheels in the different gears. To change up, raise the clutch lever to its fullest extent. Then, as rapidly as possible, close the throttle, move the gear lever to the next higher gear, and re-open the throttle, at the same time slowly releasing the clutch lever. Changes can be effected, of course, by declutching and putting the lever into the required position. Nevertheless a little time spent in learning the correct method is distinctly advantageous. If the clutch does not free itself properly (due to push rod wear, etc.) gear changing will become difficult. In this event adjust the clutch mechanism according to instructions on page 12.

Do not use an excessive opening of the throttle when starting, and do not allow the engine to "rev" unduly when stationary. Use the throttle control to govern the speed of the machine. Quite definite deceleration is obtained by merely closing the throttle. To lift the clutch and use the brakes, when sufficient retardation can be obtained with a closed throttle, is wasteful. On very greasy roads, the use of the engine as a brake is to be advocated, particularly in conjunction with a change to a lower gear. **It is never advisable, except in cases of emergency, either to accelerate or brake fiercely: both are signs of an inconsiderate driver, and, when the roads are greasy, both are extremely dangerous.**

A good driver is the most unobtrusive.

5

LUBRICATION.

ENGINE. The lubrication system (see Fig. 2) is of the dry sump type, operated by a double gear pump, situated in the bottom of the crankcase on

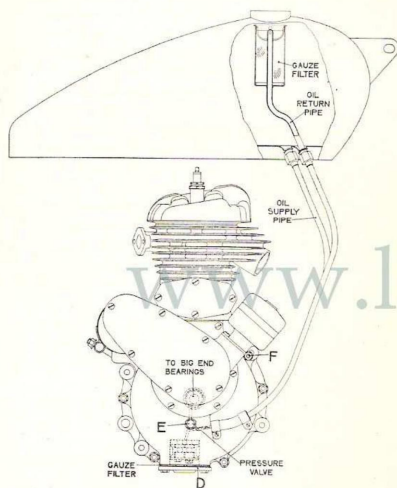


Fig. 2

the right-hand side, and the oilways are internal, except for the supply and return pipes from the tank.

The oil flows from the tank to the supply pump, and thence past a pressure valve to the big-end bearing. Partial failure of the oil supply may be due to the presence of a particle of foreign matter on the spring loaded ball in the pressure valve, and this should be cleared by removing screw E, when the spring and ball can be removed.

Incorrect seating of the spring loaded ball will also cause oil transfer from the tank to engine whilst the machine is stationary. To overcome this, clean the ball and seating, replace the ball on its seating and deal it a sharp blow with a light hammer and punch to ensure that the ball is bedding on the seating in a satisfactory manner. Replace the spring and retaining screw.

After lubricating the big-end, and circulating through the engine in the form of mist, the oil drains down through a filter into the bottom of the crankcase from which it is drawn by the return pump and delivered to the tank through a fine mesh filter in the tank itself.

The two filters should be cleaned periodically (see centre pages), the pump filter being withdrawn for the purpose by the removal of cover plate D. (Note.—The pump is independently mounted and should not be disturbed.)

To remove the filter in the oil tank, unscrew the filler cap, and lift the filter out. (Note.—When refilling with oil do not remove the filter.)

The rubber sleeves on the supply and return pipes should be oil-tight and they should be replaced if they show any signs of leakage. This would be indicated in the case of the supply pipe, by partial failure of the oil supply to the engine, while leakage at the return pipe would be shown by the presence of oil at this point.

To check the flow of oil in the lubrication system remove the oil tank filler cap whilst the engine is running, when oil should be seen issuing from the return pipe from the crankcase.

The oil tank and crankcase should be drained periodically (see centre pages). **Do not use paraffin in the tank or crankcase**, but if necessary use a flushing oil or thin machine oil. The filters may be washed in petrol or paraffin but care must be taken to ensure that no liquid remains in them when they are replaced.

Inspect the oil level in the tank before commencing every journey and replenish if necessary. Do not fill above the level of the return pipe from the crankcase. Recommended grades of oil will be found on the lubrication chart on page 24.

CYCLE PARTS. It is of the utmost importance that the machine is greased regularly. Correct lubrication not only lengthens the life of the working parts, but also ensures smooth operation of the controls at all times. It is a good plan to go over the greasing points after a long run on wet roads, as this will force out any water which may have found its way into the moving parts.

The steering head and front forks should be greased frequently, but the hubs and brake cams need only be lubricated at longer intervals. Handle-bar control levers, exposed cables, brake rod joints, etc., should be supplied with a few drops of oil regularly. The distributor should also receive regular attention. (See page 19.)

Suitable intervals at which the above components should be lubricated are tabulated in the centre pages of this booklet.

It is advisable to remove chains periodically and thoroughly lubricate them. Clean them in petrol or paraffin, and warm them gently in a mixture of grease and graphite. When cool, wipe off the excess lubricant and replace the chains after cleaning the sprockets.

GEARBOX. Remove the filler plug on the right-hand side by means of the sparking plug spanner and then remove the level plug at the rear of the box. Replenish with oil until it flows from the level plug hole.

The oil level should be inspected regularly, and the gearbox must be drained, flushed, and refilled with engine oil at intervals as specified on the lubrication chart on page 24.

RUNNING ADJUSTMENTS.

Check the tightness of the cylinder head bolts (S.V.) after the first 250 miles have been covered (see page 30).

TAPPET CLEARANCES. Particular attention should be paid to the tappet clearances, which should be checked periodically when the engine is cold.

The best method is to set the piston at the top of the compression stroke. Check this by removing the compression plug (S.V.) or the sparking plug (O.H.V.), and with a piece of wire feel the position of the piston while rotating the engine a little in either direction. This can be done when the machine is on the stand, by engaging any gear and turning the back wheel. Note that when the piston is at

the top, the valves are closed, and neither one nor the other is opened by movement of the engine backwards or forwards.

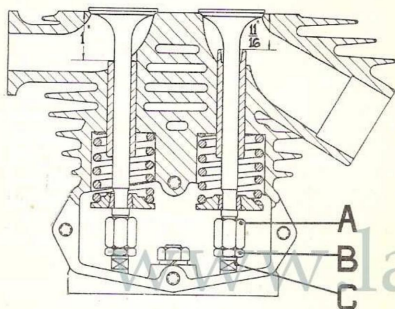


Fig. 3

S.V. Models. The clearance between the tappet and the valve should be checked when the engine is cold. The correct clearance is .004in. for the inlet valve and .006in. for the exhaust valve. Remove the tappet cover and with a spanner on *A* (Fig. 3) hold the tappet head and unlock *B* by turning with a spanner to the left. Screw tappet head *A* up or down to obtain the required clearance, at the same time holding *C* rigid with another spanner. Now lock *B* against *A* and finally check the clearance.

NOTE.—On Model C12, before making any adjustments, make sure that the eccentric peg on the exhaust valve lifter is clear of the underside of the collar formed on the exhaust tappet head.

O.H.V. Models. The clearance between the rocker and the valve stem should be checked when the engine is cold. The correct clearance is .003in. for the inlet valve, and .003in. for the exhaust valve. Remove the rocker cover by undoing the central screw and slacken the locknut *B*.

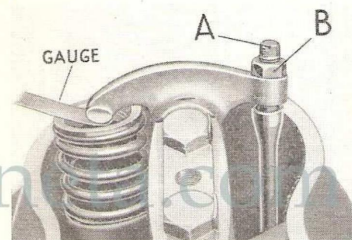
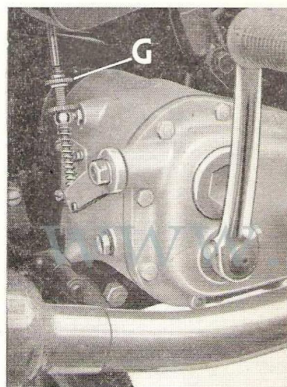


Fig. 4

The rocker adjusting pin should now be screwed up or down by means of a spanner on the flats at *A* until the thickness gauge of the correct dimensions just passes between the rocker and valve stem as indicated in Fig. 4. Now screw the locknut *B* against the face of the rocker and finally check the clearances.

BRAKES. A wing nut at the rear end of the brake rod effects the rear brake adjustment. The front brake is adjusted by a knurled thumb nut on the cable stop, fitted to the brake cover plate.

CLUTCH ADJUSTMENT. The clutch adjustment is totally enclosed in the gearbox outer cover. Remove the filler plug *V*, Fig. 6 (using the sparking plug spanner), and release the locknut *T*. Adjust the central grub screw *R*, so that there is a little clearance between it and the ball. Re-tighten the locknut.



Clutch Control Adjustment.

Fig. 5.

There must be no pressure on the clutch operation when the control lever is released. Further adjustment may be made if required by means of the knurled thumb nut *G* (Fig. 5).

FRONT FORKS. The adjustment of the fork links should be such that they are just tight enough to eliminate side play and yet free enough to move easily. To check, slacken the shock absorber, and place a finger on the joint formed by the fork link and the fork cross tube. If the machine is rocked gently from side to side, any end play will immediately be felt.

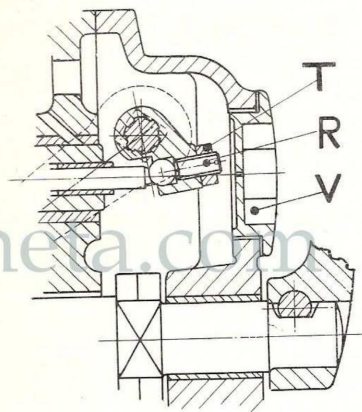


Fig. 6.

To adjust the links, slacken the locknuts at both ends of the bolts, when the latter may be screwed up by means of the small square on the one end. After tightening the locknuts, make sure that the fork links can still move freely.

The links should be lubricated regularly and grease should be pumped in until it makes its appearance at the ends of the links.

To adjust the steering head, first place a box underneath the engine. Loosen the clip bolt behind the handlebars, and then gently tighten the top adjusting nut until there is no perceptible shake in the head. **If over adjusted the ball races will be damaged.** Do not forget to tighten the clip nut.

Should it be necessary to remove or replace the fork spring, first place a box under the engine as above. Take off the nut on the top of the spring; remove the link bolts and the links. The spring will then be clear of the frame, and can be removed by unwinding from the bottom fixing.

To remove the top scroll, hold the bolt tightly in a vice, and punch the end of the spring to wind it off. When replacing, the spring can be wound on to the scroll by hand.

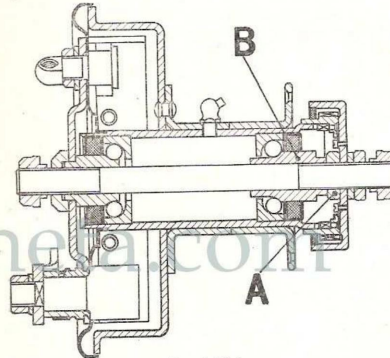
HUBS (Fig. 7). The hubs are fitted with cup and cone type ball bearings. It is most important that the bearings are not adjusted too tightly since otherwise the ball tracks will be damaged and it is therefore preferable to remove the wheel from the forks when making the adjustment.

Remove the wheel spindle nuts and in the case of the front wheel, uncouple the speedometer drive cable at its lower end and disconnect the front brake cable, thus allowing the wheel to be withdrawn from the forks. The speedometer drive unit may now be withdrawn from the spindle after unscrewing its locknut, exposing the adjusting cone.

Release locknut *A*, screw the cone *B* in or out as required, and re-tighten *A*. **It is most important that there is just perceptible side play**

at the rim when the adjustment is completed. When replacing the speedometer drive unit make sure that the tongues on the driving pinion engage with the driving slots on the hub centre.

The rear wheel is of similar construction, the adjusting cone being on the sprocket side of the hub. Before this wheel can be removed it is necessary to uncouple the rear chain, disconnect the rear brake rod and unscrew the brake cover plate anchorage pin.



Front Hub.

Fig. 7.

A portion of the rear guard is detachable to give easy removal of the rear wheel. To remove this portion, first disconnect the tail lamp wire and unscrew the two bolts in the mudguard, adjacent to the lifting handle, when, by removing the two remaining nuts at the lower rear stays, the tail may

be removed. Note that these nuts are shouldered and it is important that they should be located correctly in the slots in the rear stays when replacing the tail.

FRONT CHAIN. To adjust the tension of the chain, it is necessary to move the gearbox. This is accomplished by releasing the gearbox bolt nuts, both of which are situated beneath the gearbox and behind the chain case. The chain should have half-an-inch freedom up and down at the centre. Make

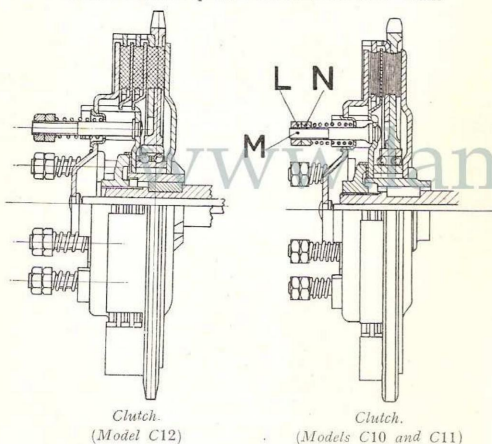


Fig. 8.

sure that this is correct for all positions of the sprockets and that the nuts are well tightened after completing the adjustment.

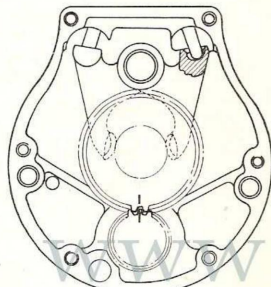
CLUTCH (Fig. 8). The spring pressure is variable and the normal adjustment is arranged so that the bolt *M* stands proud of the locknut *L* by about one thread. After considerable mileage has been covered it may be necessary to increase the spring pressure. To do this screw the two nuts *L* and *N* further along the bolts, but make sure that all nuts are adjusted the same amount to ensure that the plates slide evenly.

Occasionally check the oil in the primary chain case, drain off any surplus or replenish with new oil as required. When the machine is on level ground, the oil level should be up to the hexagon plug situated below the footrest on the outer half of the chaincase. Too much oil will cause the clutch to slip—too little oil will not lubricate the chain properly.

NOTE.—If it should be necessary at any time to remove the clutch centre from the main shaft, difficulty may be experienced owing to the fact that the shaft is tapered. A suitable extractor may be obtained on loan on application to the B.S.A. Service Department, enclosing 6d. to cover postage and packing, etc.

REAR CHAIN. The rear chain adjustment is by means of cams on the rear spindle. Release the spindle nuts and brake anchor plate bolt and turn the spindle on the left-hand side, by means of the small square, until the correct tension is obtained. The chain should have three-quarters of an inch total movement up and down at the centre. Make sure that this is correct for all positions of the sprockets and that the cams are against the stops. Tighten the left-hand nut first and then the right-hand nut, and finally see that the wheel is correctly aligned.

DYNAMO CHAIN. The dynamo is eccentrically mounted and to adjust the chain it is only necessary to slacken off the clip bolt and rotate the dynamo gently. It is important to keep the dynamo pressed against the timing case to ensure the proper oil seal.



Valve timing marks.

Fig. 9.

VALVE TIMING. If the cam spindle is to be withdrawn for any reason, it is essential that the contact breaker unit be removed previously, otherwise its driving pinion will suffer damage. To do this, release clip *F* (Fig. 2) and lift the distributor up about half-an-inch.

The engine shaft pinion and cam pinion are marked to facilitate correct assembly, and the timing is shown in Fig. 9.

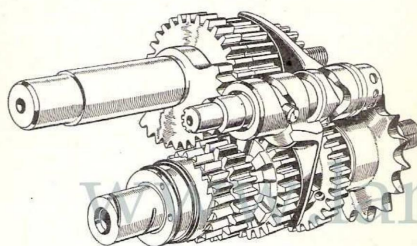
IGNITION TIMING. If the distributor has been removed for any reason, the following instructions will facilitate assembly.

Set the piston at top dead centre on the compression stroke (*i.e.*, both valves closed) as explained on page 9, and rotate the engine **backwards** until the piston has descended $\frac{1}{8}$ in. The engine may quite easily be turned backwards if the machine is mounted on its stand, a gear engaged, and the rear wheel rotated by hand.

Remove the contact breaker cover and turn the spindle in an anti-clockwise direction (looking at the contact breaker mechanism) until the contact breaker points are just about to separate. In this position the fibre heel and the peak of the cam are just in contact with each other. Now move the spindle in a clockwise direction until there is approximately one eighth of an inch between the fibre heel and the cam peak, and insert the unit in its housing in the timing case, with the flat side to the right-hand side of the machine and parallel to the tappet cover. Push the unit down on to its seating and note that as the spindle gear meshes with its driving pinion the contact breaker spindle turns slightly so that the cam takes up a new position. Rotate the body of the unit a little either backwards or forwards until the contact points are just open (not more than three thousandths of an inch) and then tighten the locking screw *F*, Fig. 2. With the points fully open the gap should be twelve thousandths of an inch. If this gap varies considerably from that given above slacken the two screws holding the contact plate and move it until the gap is as above. Do not forget to tighten the locking screws after making the adjustment.

The automatic timing control must be lubricated about every 3,000 miles. Remove the contact

breaker cover and lift off the contact breaker base after withdrawing its two securing screws. Lubricate the moving parts of the mechanism with engine oil and take care to re-fit contact breaker base in its original position. About every 1,000 miles lightly smear the surface of the steel cam with grease and place a **single drop** of oil on the pivot on which the contact breaker works. It is most important that these components are not excessively lubricated.



Three-speed Gearbox Interior.

Fig. 10.

GEARBOX.

This is of the constant mesh type, and the construction is shown in Fig. 10. The gear reductions are obtained by transmitting the drive through various trains of gears, and selecting these by means of dogs which are coupled to the main and lay shafts

respectively by splines on which they can be moved laterally. These dogs are moved by forks, which are actuated by the rotation of the control shaft.

The gear selector mechanism is located by means of a spring loaded plunger inside the gearbox.

FOOT GEAR CHANGE. In the ordinary course of events the only attention that the gear change mechanism is likely to require is the replacement of a broken pawl spring, and for this purpose it is necessary to remove the outer cover. **Set the gears in the neutral position**, disconnect the clutch cable and remove the kickstarter crank after withdrawing its cotter pin. Remove the spring loaded plunger which locates the selector mechanism, from the base of the inner cover near the front of the box. **Leave the gear change pedal in position**, and remove the retaining screws from the cover; carefully remove it complete with foot change mechanism.

Remove the broken spring and fix the new spring by pressing its eyes over the anchoring pegs with the aid of a pair of pliers.

When replacing the cover, make certain that the spring loaded plunger, screwed in from the base of the inner cover, registers with the neutral gear groove in the selector plate. This is most important and the gear change will not function correctly if it is not assembled as indicated. The groove is the third one as measured from the front end of the gearbox.

The gear change pedal may be placed on a different set of splines if required.

AIR CLEANER. The oil dip type air cleaner should be cleaned and re-oiled at intervals (see centre pages). To clean, dismantle the unit and

wash the filter element thoroughly in petrol. Allow the filter to dry and then submerge it bodily in a light engine oil. Allow the surplus oil to drain from the element and then re-assemble the complete air cleaner on to the carburetter.

DECARBONIZING THE ENGINE.

The need for this operation is a tendency to "pink" and a falling off in performance, and should be carried out periodically.

DECARBONIZING AND TOP OVERHAUL. Dismantling (S.V. Models). Decarbonisation and "top overhaul" is extremely simple. Detach the high tension lead to the sparking plug and remove the latter; by removing the cylinder head bolts, which should be slackened in the reverse order to that shown in Fig. 12, the head can be taken off exposing the piston and valves. To clear the piston of carbon, it should be set at top dead centre and scraped with an old pen-knife or similar tool, taking care not to damage the piston crown. The head can easily be cleared of carbon.

If the valve seats are suspected, these can be remedied, and for this purpose it will be advisable to remove the cylinder barrel from the crankcase. **Care must be taken to keep all grinding compound away from the piston, valve guides, and carburetter.** To remove the latter, first disconnect the petrol pipe and then undo the carburetter flange nuts. This will release the carburetter from the cylinder, and by unscrewing the knurled ring nut above the mixing chamber, the carburetter may be removed, leaving the slide still attached to the operating cable. The slide may now be tied up out of the way. Remove the exhaust pipe.

22

The cylinder is attached to the crankcase by means of five nuts, four of which are situated on the cylinder base flange, while the fifth will be found inside the tappet chest between the tappets. Remove these nuts and gently ease the cylinder off the crankcase. If the cylinder base washer is damaged, it is essential to fit a new one when re-assembling.

Lift the cylinder up and forwards into the front angle of the frame and then rotate the engine forward by means of the kickstarter until the piston comes out of the bottom of the cylinder, steadying the piston as it emerges so that it does not fall over and get damaged when it comes clear of the cylinder. Cover the top of the crankcase carefully with a rag to prevent dust and grit falling in.

To remove the valves lay the cylinder on a bench, the valve heads downwards, and compress the valve springs by applying pressure to the spring retaining collar with the aid of a screwdriver or similar instrument. The split cotters can then be removed, thus releasing the valve and spring. If any difficulty is experienced in removing the valves, a special tool may be purchased from the local B.S.A. dealer or the B.S.A. Spares Department, which will considerably facilitate this operation.

Carefully chip out all carbon from the valve pockets with a long handled screwdriver. Check the valve guides for wear, replacing them if necessary (see "Valve Guides," page 28). After all the carbon has been removed, wipe the cylinder thoroughly with a clean and oily rag, so as to remove all traces of carbon from the walls, then swill out with paraffin and finally wipe clean.

O.H.V. Models. With these machines it is advisable to remove the petrol tank. The latter is attached at the front to the steering head lug, and

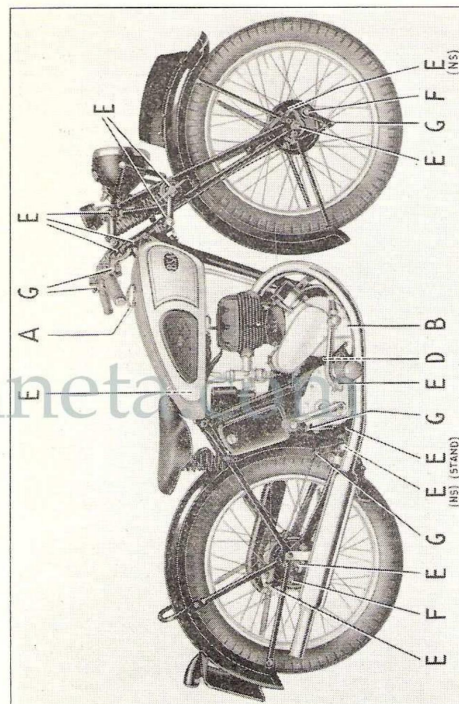
23

LUBRICATION CHART.

See Page	Component	See d'gram	Attention required	Esso	Shell	Vacuum	Wakefield	Price's
8	Engine Oil Tank	A	Inspect level every 200 miles. Drain and filter every 2,000 miles	Esso-lube Racer	Galdea Shell (extra heavy)	Mobilol Clearol D	Patent Castrol-aero	Motocine B de luxe
8	Engine Crankcase	B	Drain and clean pump filter every 2,000 miles	Esso-lube Racer	Triple Shell	Mobilol Clearol D	Patent Castrol-aero	Motocine C de luxe
9	Gearbox	D	Inspect every 500 miles. Drain and refill every 2,000 miles. Replenish every 2,000 miles					
17	Primary Chain Oilbath							
8	Hubs Front Forks Steering Head Bearings Rear Hub Saddle Nose Bolt Speedometer Gearbox	E	Several strokes of gun every 800 miles	Esso Grease	Shell Retinax	Mobil-grease No. 2	Castrol-lease Heavy	Belacoline D
8	Brake Cams	F	A few drops of oil every 1,000 miles					
8	Control Rod Joints Brake Operation Clutch Operation Handgear Controls	G	A few drops of oil every 500 miles					

NOTE I.—The air cleaner should be dismantled and cleaned every 1,000 miles if the machine is used in city areas; in country districts every 500 miles, and in the open country every 250 miles. The brand of oil with which the engine was tested is indicated on the filter cap.

24



25

at the rear to the frame top tube, and is mounted on rubber pads, which should be replaced in the same order as removed.

Detach the high tension lead from the sparking plug and unscrew the latter. To remove the carburetter, first disconnect the petrol pipe and then undo the carburetter flange nuts. This will release the carburetter from the cylinder, and by unscrewing the knurled ring nut above the mixing chamber the carburetter may be removed, leaving the slide still attached to the operating cable. The slide may now be tied up out of the way. Remove the exhaust pipe.

Next remove the rocker box cover by undoing the central screw. Remove the nuts which bolt the head to the barrel, the former being situated between the cylinder barrel fins, and gently prise the head off the barrel. By lifting the head a small amount the push rods may be freed from the rocker ball pins and may then be withdrawn. Now remove the head. Lift the cylinder up and forwards into the front angle of the frame and then turn the engine forward by means of the kickstarter until the piston comes out of the bottom of the cylinder, steadying the piston as it emerges so that it does not fall over and get damaged when it comes clear of the cylinder. Cover the top of the crankcase with a rag to prevent dust and grit falling in.

The valves should now be removed by applying pressure to the spring retaining collars, when the split cotters can be removed.

Scrape the carbon off the piston with an old pen-knife or similar tool, taking care not to damage the piston crown. Clear the cylinder head of carbon, and at the same time clean the ports. The head may be cleaned and polished with varying grades of emery cloth, but it is necessary to take great care not to damage the valve seats.

26

GRINDING-IN VALVES. If either of the valves is slightly pitted on its seat it may be ground in by the following method:—

Valve grinding compound (obtainable at any garage or accessory shop) is smeared lightly on the face of the valve, which is then returned to its seating.

On the O.H.V. Model hold the end of the valve stem by means of the special tool supplied in the tool kit and rotate the valve backwards and forwards by a turn of the wrist, at the same time applying pressure to the valve seat. A screwdriver can be used to grind the valves on the S.V. engine.

Every few strokes the valve should be lifted slightly off its seat and moved to a different position. This operation should be continued until an inspection of the valve face shows a smooth surface all the way round.

If it is badly pitted, however, it should be sent to the B.S.A. works at Small Heath to be refaced. On its return a very slight amount of grinding-in will be sufficient to make a good face. Never attempt to grind in a badly pitted valve, as excessive valve grinding wears away the valve seat in the cylinder and causes the valve to become pocketed, with consequent loss of power. After grinding-in be careful to wipe away all traces of the grinding material both on the valve and in the cylinder head. Before replacing the valves smear their stems with a little oil.

PISTON AND RINGS. The gudgeon pin holding the piston, is located by means of wire circlips, one of which must be removed with a very small screwdriver or similar tool. Take particular care when replacing the circlip that it fits firmly into its groove and that the butt end of the circlip corresponds

27

with the small slot milled in the piston, since the sole purpose of this slot is to facilitate removal of the circlip. If it should be loose, expand it slightly so that it springs into position when fitted.

Mark the piston on the inside of the skirt to enable it to be re-assembled in the original position. Scrape all carbon off the top of the piston by means of a short screwdriver or old pocket knife. Finish by polishing the top of the piston lightly with fine emery paper.

Now examine the piston rings. If they are bright and quite free in their grooves it is better to leave them alone, as they are brittle and there is a considerable risk of breaking them during removal. If the rings are stuck in their grooves prise them out very carefully and clean them. Scrape any carbon from the grooves and from the inside and edges of the rings and then replace, providing they are otherwise in order.

After several thousand miles have been covered the gap between the ends of the rings should be checked with the ring in the cylinder. The ring may be positioned correctly by first inserting the piston and then sliding the ring up to the piston skirt. If the gap is excessive a new ring should be fitted (see chart on page 41).

Any ring showing brown patches should be replaced by a new one.

After cleaning the piston make sure that the slots in the piston rings are on the opposite sides of the piston and then smear the sides of the piston generously with engine oil to obviate any risk of damage when first running after assembly.

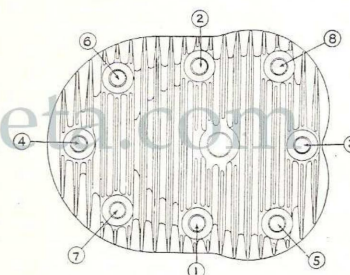
VALVE GUIDES. To remove the valve guides, drive them out with the aid of a hammer and a drift.

28

To fit new guides drive them in from above using a soft copper drift. In the case of the S.V. engine insert the guides to the depths shown in Fig. 3. (Note.—The exhaust valve guide differs from the inlet valve guide in having its upper end counter-bored, and a plain guide must not be fitted in this position.) On the O.H.V. engines make certain that the collar formed on the guide is in contact with the cylinder head.

It is advisable, when new valve guides have been fitted, to re-cut the valve seats by means of a pilot cutter. This will ensure concentricity of valve seats and stems.

VALVE SPRINGS. These have a tendency to lose their efficiency after a period of use, due to heat, etc. It is advisable, therefore, to replace them periodically, e.g., when the engine is dismantled for decarbonizing.



Cylinder Head Bolts.

Fig. 12.

29

ASSEMBLING AFTER DECARBONIZATION. Replace the valves and springs in the cylinder barrel or head as the case may be, and make sure each valve is replaced on the same seat from which it was removed. Replace the piston and gudgeon pin on the connecting rod, having previously oiled the various parts, and verify that the piston is the correct way round (see "Piston and Rings," page 27).

Before replacing the cylinder, pour a small quantity of engine oil into the crankcase and smear the piston and cylinder walls generously with oil.

Turn the engine until the crank is slightly past bottom dead centre. The piston ring should now be compressed by the fingers, while the cylinder barrel, held in the front angle of the frame, is slid on to the piston. The lower rings should be compressed in turn until they enter the barrel, which may then be slid home. Make sure that both the tappets are in the lowest position before bolting the cylinder to the crankcase, otherwise the former may not seat properly on the crankcase due to the pressure exerted by the valve springs.

S.V. Models. Screw up the nuts, lightly at first, and then finally tighten them, **but not more than a quarter of a turn at a time.** It is advisable first to tighten two nuts diagonally opposite each other, and then the remaining two, followed by the nut inside the tappet chest. Replace the cylinder head gasket and then the cylinder head. If the gasket is damaged in any way, or shews signs of leakage (indicated by black patches), a new one should be fitted. The cylinder head bolts should be tightened down in the proper order as shewn in the diagram (Fig. 12), and the tightness of these bolts should be checked after about 250 miles have been covered. Replace the exhaust pipe.

30

The carburettor should now be fitted, and care must be taken not to damage the needle when replacing the slide. Re-fit the petrol pipe line. Before replacing the sparking plug, it should be dismantled and cleaned in accordance with the instructions given on page 33. It will be necessary finally to adjust the tappet clearances, the latter being given on page 9.

O.H.V. Models. The cylinder barrel is fitted on to the piston as described above. Make certain that the barrel is positioned correctly and then tighten the cylinder base nuts, lightly at first and then firmly. It is advisable first to tighten two nuts diagonally opposite each other and then the remaining two. Check the tightness of these nuts after about 250 miles have been covered. Replace the cylinder head gasket and fit the cylinder head loosely in position. If the gasket is damaged in any way or shows signs of leakage (indicated by black patches), a new one should be fitted. Before fastening the cylinder head to the barrel replace the push rods making certain that the cup in the top end fits correctly with the rocker ball pins, and that the lower end rests in the cup formed in the cam rocker. **Note that these push rods are crossed and they must not be fitted in a parallel position.** Now tighten the head firmly in position. Before replacing the rocker cover, check the tappet clearances and adjust in accordance with the instructions given on page 9.

The carburettor should now be replaced and care should be taken not to damage the needle when replacing the slide. Re-fit the petrol pipe line. Before replacing the sparking plug, it should be dismantled and cleaned in accordance with the instructions given on page 33. Finally replace the exhaust pipe.

31

CLEANING.

The life of a machine is increased, and its appearance and value greatly improved by regular and careful attention to cleaning. Special care should be taken to prevent grit working into the moving parts and causing undue wear and other troubles. Particularly is this the case round the front and rear hubs, carburettor, dynamo, brakes, and gear-box.

Never rub dry and caked mud from the frame, mudguards, etc. To do so means that the enamel will be subjected to the abrasive action of the grit and the polish will soon be destroyed. Thoroughly soak the dirt first, then wash it off and wipe the parts dry. If a hose is available this will be found the most satisfactory way of removing dirt. Direct the stream of water on the portion being cleaned, taking care to avoid playing direct on to the hub bearings, etc. Afterwards brush lightly with a soft brush, finally drying and polishing with a smooth cloth. To remove dirt from the engine soak it well with paraffin, cleanse with a fresh supply, then wipe

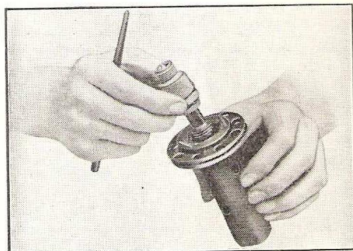


Fig. 13.

32

dry. An occasional coating of a cylinder paint should be given to prevent rusting of the cylinder, or a solution of lampblack in paraffin to which a small quantity of gold size has been added may be used. This will also be found to assist the radiation of heat.

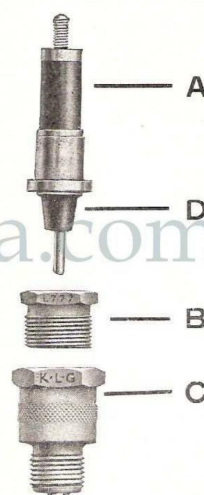


Fig. 14.

33

SPARKING PLUG.

The plug with which this engine was originally equipped was selected only after the most protracted and stringent tests. It will be observed it is K.L.G. type L777, and any replacements must be of this make and type to secure the best performance and reliability of the engine.

Gap-setting. The gaps of these plugs are set at fifteen to eighteen thousandths of an inch (.015in.—.018in.) and they should be maintained at this distance to ensure even running.

Cleaning. After the first thousand miles, including the "running-in" period, it may be necessary to clean the sparking plug because when an excess of oil is used it causes a deposit of carbon on the internal insulation of the plug. After the initial cleaning and re-adjustment of the gap setting it should then be only necessary for periodic inspection and cleaning to be undertaken.

Method of cleaning. To clean the plug it must first be removed from the engine and then dismantled.

All K.L.G. plugs are detachable and on this type the gland nut is a separate unit which is immediately apparent as the plug is loosened.

The procedure for cleaning is as follows:—

The insulated centre electrode *A* must be removed from the plug body *C* by unscrewing the gland nut *B*. This is best accomplished with the K.L.G. combined detach and plug box spanner as illustrated (Fig. 13), or, alternatively, the plug should be inverted and held in a vice by the gland nut hexagon *B*. This will permit a box spanner of a suitable size to be used on the hexagon of the plug body *C*.

34

When *B* is unscrewed the centre electrode may then be withdrawn. The lower mica insulation *D* should now be carefully wiped with a rag soaked in petrol. If any carbon deposit is caked so hard on to the insulation that the application of the rag soaked in petrol will not remove it, the centre electrode should be left steeped in petrol when after an hour or so it will be found that the carbon deposit can be easily dispersed.

The mica insulation *D* should then be polished with a dry rag until the mica attains a high polish, in which condition it offers the greatest resistance to any accumulation of soot, oil or carbon.

Whilst it is permissible to scrape the actual firing point (*i.e.*, the extremity of the centre electrode) with a knife or small file, **an abrasive must not be used on the mica insulation in any circumstances whatever.** The body *C* should now receive attention. The inside of the body should be well scraped out with either a penknife or small file and the earth points cleaned with a wire brush, finally washing out the body in petrol and then drying it.

To re-assemble, verify that the internal washer is in place before inserting the electrode. Having tightened the gland nut *B* to secure gas tightness, the earth points should then be re-set to fifteen to eighteen thousandths of an inch (.015in.—.018in.). This will probably necessitate bending each earth point towards the firing point of the centre electrode, or if the gap is too narrow, prising the earth points outwards. The centre electrode **must not be levered towards the earth points.** If the external washer has been completely flattened or is cracked or broken it is advisable to replace it with a new one.

35

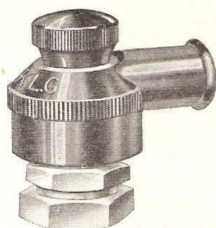


Fig. 15.

The K.L.G. waterproof terminal (Fig. 15) is indispensable for motor cycle engines. It is made of finest Bakelite. There are no loose pieces and the screw down fixing makes it impossible to fall off. Size 3BA to fit K.L.G. type L777.

Symptoms of minor plug troubles. Misfiring especially at high speeds and under heavy pulling at lower speeds, invariably indicates that the gap setting of the plug is too wide, whilst erratic slow running can be accounted for by too narrow a gap setting.

Excessive flooding of the carburettor or an over-rich mixture will have a detrimental effect on the plug, resulting in, or ultimately leading to, trouble in the form of an excess deposit of soot on the internal insulation and a consequent "short" inside the plug.

Faulty high tension cables from the distributor to the sparking plug terminal and the distributor points being out of adjustment can also account for the plug misfiring. Sparking plug trouble frequently reflects some other fault or failure of the ignition

36

or carburation system. The booklet, "The care and maintenance of K.L.G. Plugs," issued with this Instruction Manual, should be retained for reference.

Any information concerning K.L.G.'s is readily available on request to the Technical Department of K.L.G. Sparking Plugs Limited, Putney Vale, London, S.W.15.

GENERAL MAINTENANCE AND RUNNING HINTS.

A good rider will occasionally go over all the nuts on his motor cycle with a spanner, to see that they are kept tight, and will carefully look round his machine to ensure that everything is in order.

There are so many factors governing the satisfactory running of an engine that the importance of giving attention to all the following points must be emphasized if the best all-round results are to be obtained.

Poor compression may be due either to the need for valve grinding, tappet adjustment not in accordance with the instructions given earlier in this book, or, in the case of an engine which has covered a considerable mileage, piston ring wear and consequent leakage. Choking of the exhaust system, due to carbon, may cause overheating and consequent loss of power.

The actual timing of the ignition should be verified, and it may be possible in certain cases, dependent upon local conditions (including the type of fuel used) to make an advance on the standard setting (see page 19). This can be accomplished by slackening the clip bolt *F* (Fig. 2), and rotating the distributor body the required amount. Do not forget to tighten the clip bolt after completing the adjustment.

37

It must be stressed that a dirty engine—i.e., one that is carbonized up badly by the use of unsuitable fuel (we recommend for normal purposes either a good brand of No. 1 spirit or one of the petrol-benzole or Ethyl mixtures) or sparking plugs out of order—will adversely effect the running of the machine, particularly on hills.

Under certain conditions the carburettor jet may be reduced by one size, but, generally, this is not desirable, and an endeavour should be made to obtain the required petrol consumption without this alteration by following out the suggestions above and below. The adjustable screw controlling the starting and slow-running setting should be kept out—i.e., unscrewed—as far as may be without prejudicing starting. Although it is claimed that this setting has little effect upon the petrol consumption, this is not necessarily the case under conditions where there may be a fair amount of engine idling or running, say downhill, against the engine with the throttle closed. The weaker the mixture under these conditions the less will be the waste of petrol.

All joints in the carburation system and the petrol pipe line should be kept tight, and to avoid waste the petrol tap should be turned off whenever the vehicle is left standing for more than a few hours. There may be no definite leak, but the rate of evaporation in the float chamber is, under certain conditions, relatively high, and the amount of petrol wasted in this way over a period may be quite appreciable. Excessive flooding when starting is productive of petrol waste and should be avoided at all times, since it prejudices easy starting and tends to wash away the oil from the cylinder walls of a cold engine.

38

The air holes in the filler cap of the petrol tank should be cleaned out from time to time. Occasionally these get choked and float chamber starvation at high speeds will result.

Also, the petrol tap in the tank should be removed periodically. The tap screws into a plug, to which is attached a filter; this should be cleaned occasionally when the tank is empty or nearly so, and any collection of dirt or water at the bottom of the tank carefully removed by washing out with petrol. The tap itself should be blown through. Occasionally dirt or water may lodge in the body of the tap, causing a restriction in the petrol supply.

What are called "floating" obstructions in the carburettor jet are sometimes difficult to locate, and indicate their presence by causing partial choking at irregular intervals. Any restriction of the petrol supply due to the foregoing can obviously be remedied by cleaning the jet.

DRIVING.

Violent acceleration, either on the top or lower gears, should be avoided, as should an undue amount of running on the latter.

The petrol consumption on the lower gears is, for obvious reasons, very much heavier than on top gear, and experience with the vehicle will show that it is possible to use top gear to a greater extent than would perhaps be realised during the early period of running.

TROUBLE AND HOW TO LOCATE IT.

To meet any emergency likely to arise through trouble on the road it is advisable to carry the following spares: Spare valve, complete with springs, cup and cotter; sparking plug, spare links and

39

fasteners for chain, chain rivet extractor, and tyre repair outfit, together with the kit of tools supplied with the machine. The points most likely to cause trouble are the petrol supply and the sparking plug.

Should the engine develop misfiring or stop firing altogether first ascertain that there is petrol in the tank and that the petrol tap is turned on to carburettor. Depress the tickler on the float chamber to see that petrol is reaching the jet. If not see whether the petrol pipe is clear, detaching it by unscrewing the union nuts from the petrol tap and underside of the carburettor float chamber. Then examine the jet, which is removed by unscrewing the hexagon-headed nut at the base of the carburettor body. The jet will then be exposed and can readily be screwed out. If the machine still refuses to fire after correcting these faults examine the sparking plug to see whether the points are fouled with charred oil; if so, clean the plug in accordance with the instructions given on page 34. Having cleaned the plug connect it to high-tension cable, lay plug on top of cylinder, noting that only the metal body of plug makes contact with the head. Rotate engine a few times by means of kickstarter. A spark should occur at intervals at the plug points unless the plug is defective. If so fit in a spare plug. Of course if the engine stops and over-oiling is suspected—in this case the exhaust will have previously had a bluish tinge—remove the plug and clean in the first place; then, if engine still refuses to run, examine the other points likely to cause trouble.

B.S.A. CYCLES LTD., Birmingham, 11.

Directors: SIR BERNARD DOCKER, K.B.E., J.F. (Chairman), J. LEEK, C.B.E. W. F. JAMES.

B.S.A. Cycles Limited reserve the right to alter the designs or any constructional details of their manufactures at any time without giving notice.

40

USEFUL DATA.

	C10	C11	C12
Petrol tank capacity (galls.)	2 ...	2 ...	2
Oil tank capacity (pints)	4 ...	4 ...	4
Bore (mm.)	63 ...	63 ...	71
Stroke (mm.)	80 ...	80 ...	88
Capacity (c.c.)	249 ...	249 ...	348
Tappet clearances (when cold)—Inlet			
Exhaust	.004in. ...	.003in. ...	.004in.
Compression ratio	5/1 ...	6.5/1 ...	5/1
Tyre sizes—			
Front	3.00-19 ...	3.00-20 ...	3.00-20
Rear	3.00-19 ...	3.00-20 ...	3.00-20
Tyre pressures—			
Front (per square inch)	20 lbs. ...	20 lbs. ...	20 lbs.
Rear (per square inch)	28 lbs. ...	28 lbs. ...	28 lbs.
Piston ring gap—			
Minimum	.006in. ...	.006in. ...	.010in.
Maximum	.010in. ...	.010in. ...	.014in.
Engine sprocket	16T ...	16T ...	17T
Gear ratio			
Third	6.6 ...	6.6 ...	6.25
Second	9.8 ...	9.8 ...	9.2
First	14.5 ...	14.5 ...	13.6
Ignition setting (piston distance from T.D.C. with C.B. points just opening)			
Standard jet	$\frac{1}{32}$ in. ...	$\frac{1}{32}$ in. ...	$\frac{1}{32}$ in.
Needle position	90 ...	80 ...	150
Valve	2 ...	3 ...	3
Valve	4/4 ...	4/4 ...	6/3
Chain sizes—			
Front	$\frac{1}{2}$ in. x .305 ...	$\frac{1}{2}$ in. x .305 ...	$\frac{1}{2}$ in. x .305
Rear	$\frac{1}{2}$ in. x .305 ...	$\frac{1}{2}$ in. x .305 ...	$\frac{1}{2}$ in. x .305

41

PROPRIETARY INSTRUMENTS, FITTINGS, AND ACCESSORIES.

No expense is spared to secure as standard equipment the most suitable and highest quality instruments and accessories. Nevertheless, the Company's guarantee does not cover such parts, and in the event of trouble being experienced the parts in question should be returned to and claims made direct on the actual manufacturers, who will deal with them on the terms of their respective guarantees, as follows:—

Tyres and Saddles: Messrs. Dunlop Rubber Co. Ltd., Fort Dunlop, Birmingham.

Electrical Equipment: Messrs. Joseph Lucas Ltd., Birmingham.

Electric Horns: Messrs. Joseph Lucas Ltd., Birmingham.

Speedometers: Messrs. Smith's Motor Accessories Ltd., Cricklewood, London.

Carburettors: Messrs. Amalgamated Carburettors Ltd., Perry Barr, Birmingham.

Grease Guns: Messrs. Tecalemit Ltd., Great West Road, Brentford, Middlesex.

SPECIAL NOTE.

Prompt attention to all claims under guarantee will be ensured if your covering letter gives:—

- (1) Make, year and model of motor cycle.
- (2) Date of purchase and name of dealer from whom obtained.

42

LUCAS SERVICE DEPOTS.

In the event of any difficulty with any part of the equipment, no matter how trivial, we shall be only too pleased to give every assistance possible. The best course to adopt is to call at the nearest Lucas Service Depot (the addresses of which are given below), when the equipment can be examined as a whole. The depots are not only at your disposal for repairs, overhauls and adjustments, but to give free advice. If it is necessary, however, to communicate, or when ordering spare parts, always give the type and number of the unit in question, the make, and if possible, the date of the Motor Cycle on which it is fitted.

BELFAST ... 51/55, Upper Library Street
Telephone: Belfast 25617 Telegrams: "Servdep, Belfast"

BIRMINGHAM, 18 ... Great Hampton Street
Telephone: Central 8401 Telegrams: "Lucas, Telex, Birmingham"

BRIGHTON, 4 ... 85, Old Shoreham Road, Hove
Telephone: Hove 1146 Telegrams: "Luserv, Brighton"

BRISTOL, 4 ... 345, Bath Road
Telephone: Bristol 76001 Telegrams: "Kingly, Bristol"

CARDIFF ... 54a, Penarth Road
Telephone: Cardiff 4603 Telegrams: "Lucas, Cardiff"

DUBLIN ... Portland Street North, North Circular Road
Telephone: Dublin 72801 Telegrams: "Luserv, Dublin"

EDINBURGH, 11 ... 60, Stevenson Road, Gorgie
Telephone: Edinburgh 62921 Telegrams: "Luserv, Edinburgh"

GLASGOW, C3 ... 4/24, Grant Street (St. George's Road)
Telephone: Douglas 3075 Telegrams: "Lucas, Glasgow"

LEEDS, 8 ... 64, Roseville Road
Telephone: Leeds 28591 Telegrams: "Luserdep, Leeds"

LIVERPOOL, 13 ... 450/456, Edge Lane
Telephone: Stoneycroft, 4721 Telegrams: "Luserv, Liverpool"

LONDON ... Dordrecht Road, Acton Vale, W.3
Telephone: Shepherds Bush 3160 Telegrams: "Dynamagna, Ealux, London"

LONDON ... 757/759, High Road, Leyton, E.10
Telephone: Leytonstone 3361 Telegrams: "Luserdep, Leystone, London"

MANCHESTER ... Talbot Road, Stretford
Telephone: Longford 1101 Telegrams: "Lucas, Stretford"

NEWCASTLE-ON-TYNE, 1 ... 64/68, St. Mary's Place
Telephone: Newcastle 25571 Telegrams: "Motolite, Newcastle-on-Tyne"

43

B.S.A. MOTOR CYCLE SPARES STOCKISTS.



SAVE TIME AND POSTAGE BY CONTACTING YOUR NEAREST B.S.A. STOCKIST FOR B.S.A. SPARE PARTS, SPARE PART CATALOGUES, INSTRUCTION BOOKS, TRANSFERS, ETC.

ALL B.S.A. DEALERS CARRY STOCKS OF B.S.A. SPARE PARTS BUT THE FOLLOWING APPOINTED STOCKISTS MAINTAIN A COMPREHENSIVE RANGE.

Town.	Name of Stockist.	Address.	Telephone No.	Telegraphic Address.
Aberdeen	J. Dawson	24-26, Thistle Street	1272	
"	George Cheyne (Motors)	147, Holburn Street	5464/5	
Aldershot	Phillips Bros. (Alder-Birchett Road)	1111/2 Phillips, Cycles, shot) Ltd.	2546	Aldershot.
Andover	Andover Motor & Cycle Weyhill Road		2991	
Banbury	Trinder Bros.	2 & 3, Broad Street	2546	
Bedford	The Imperial Cycle Co. 58, St. Lyes		2374	
Belfast	W. J. Chambers	106 & 108, Donegall Pass.	27253/4	Fastmote, Belfast.
Biggleswade	Bryants	25, 27, 72 & 74, Shortmead Street.	3108	
Birmingham	County Cycle & Motor 266, Broad Street		Mid. 2671	Comocyclo, Birmingham.
"	(Edgebaston C. E. Cope & Sons Ltd. 13-15, Upper Hagley Road.		2246/7	
"	(Sparkbrook Shovelbottom's	346/352, Ladypool Rd.	2212	
Birkenhead	Bob Simister Ltd.	540, New Chester Road, Rock Ferry.	1452	
Blackburn	Shuttleworth & Geldart	15, Gt. Bolton Street	6678	
Blackpool	J. Hall & Son	143, Church Street	785	
Boscombe				Boscombe
Bournemouth	Craze Bros.	475, Christchurch Road	63	
Bridgwater	Anderson & Wall	18, St. Mary Street	2416	Anderson & Wall, Bridgwater.
Brighton	Redhill Motors (Brighton) Ltd.	104, North Road	5281	

44

B.S.A. Motor Cycle Spares Stockists—continued.

Town.	Name of Stockist.	Address.	Telephone No.	Telegraphic Address.
Bristol	S. J. Fair Motors Ltd.	201/3, Cheltenham Rd.	46238	
Bury	Arthur Coyle (Prop. W. 30-32, Walmsley Rd. Hudson)		714	Coyle Motors, Bury.
Bradford	C. Sidney Ltd.	140-142, Manningham Lane.	3116	
Cambridge	King & Harper Ltd.	Bridge Street	3201	Motors, Cambridge.
Cardiff	Cardistributors (Cardiff) Ltd.	155, City Road	3422	
"	R. Bevan	31/35, Castle Street	1808	
Carlisle	W. T. Tiffin & Son	Irishgate Brow	314	Tiffin, Irishgate Carlisle.
Carmarthen	W. Edwards & Sons	Towry Garage	682	Edwards Garage Carmarthen.
Chatham	Russells Garages Ltd.	Medway Garage, Medway Street.	3863/4	
Chelmsford	Hadlers Garage	New Street	2227	Hadler, Chelmsford.
Cheltenham	Leslie Paynter	Bath Street	2887	Paynters, C. age, Bath St., Cheltenham.
Chester	Davies Bros.	34, Bridge Street	510	
Coventry	Coventry Motor Mart	London Road	2146/7/8	Coventry Motor Mart.
Croydon	Godfrey's Ltd.	228/234, London Road.	3641/2	Croydon Gofrahike, London.
Colwyn Bay	Gilbert Emery	Post Office Chambers, Penryn Road.	2813	
Darlington	The Duplex Motor and Cycle Co.	Grange Road	2071	D'ton Duplex, Darlington.
Derby	Ingles-Provincial Garages Ltd.	Walbrook Road	45289	
Doncaster	Edwards Motors (Doncaster) Ltd.	Station Garage	2431-2	Cars, D'caster.
Dorchester	Tilleys	31, South Street	367	Motors, Dorchester.
Dublin	Huet Bros. Ltd.	7/8, Bachelor's Walk	73144	Huet, Dublin.
Dudley	Chas. E. Cope & Sons	98 & 193, High Street.	2548/9	
"	James Park & Son	7, King Street	2889	Dudley
Dunstable	B. G. England	Half Moon Hill, London Road.	207	
Edinburgh	Alexander & Co.	10 & 14, Lothian Road	21176	Motorcycles, Edinburgh.
Enfield	D. J. Shepherd & Co. 434-6, Hertford Road, (Enfield) Ltd.	Howard Enfield Highway.	1631	
Evesham	Frank Morrall Ltd.	18-20, Port Street	6054	
Exeter	P. Pike & Co. Ltd.	Alphington Street	3081	Piko, Exeter.
Frome	P. Difazio	25, Catherine Street	212	

45

B.S.A. Motor Cycle Spares Stockists—continued.

Town.	Name of Stockist.	Address.	Telephone No.	Telegraphic Address.
Gateshead	O. Carmichael & Son.	75, 83 and 87 High St.	71815	
Glasgow	Bell Bros. (H.P.) Ltd.	215-223, St. Georges Douglas Douglas	6414	Glasgow.
Glasgow	Alexander & Co.	272-280, Great Western Douglas Alex Moto.	3802/3/4	Glasgow.
Gloucester	Harpers	23a, Worcester Street	3187	Gloucester 3187
Grimsby	Harry Wardall Ltd.	13-15, Osborne Street.	2202	
Guernsey	Millard & Co. Ltd.	Victoria Road	777	Millard Motors, Guernsey.
Guildford	E. Pascall (Guildford) Ltd.	Central Building, North G'ford Street.	255	
Halifax	Halifax Motor Exchange	25, Horton Street	3400	Halifax 3400.
Hampton-in-Arden	J. Pearson	Barston		Hampton-in-Arden 30
Harrogate	H. Acland	11, Bower Road	5125	
Haywards H'th	Dinnages Garages Ltd.	81-83, South Road	294	
Hereford	A. Kear & Co.	52b, Commercial Street	2239	Kear, Hereford.
Hove	Bradshaws	6, Western Road	5252/3	Hove
Huddersfield	Earnshaw	Manchester Road	1232	
Hull	A. E. Brown	43-47-48, Witham	31417	
Ipswich	Revetts	Berners Street	2822	
Jersey	Colebrooks	1, New Street	642	
Kirkcaldy	The County Motors	Junction Road	2568	
Keighley	Dick Ratcliffe	Coldshaw Garage, Haworth.	3133	
Launceston	J. Wooldridge & Son.	Western Road	21	
Leeds	Watson-Cairns & Co.	Lower Brigate	23379	Watson-Cairns, Brigate, Leeds.
Leicester	E. W. Campion & Son	Welford Place	58054	
Lincoln	West's (Lincoln) Ltd.	116, High Street.	762	
Liverpool	Cundlies	41, Byrom Street		Central Cundlies, 6160 Central, 6160.
London, N.W.1	Godfreys Ltd.	Eden Street		Easton Gotha Bike, 4046/7 London.
"	N.W.1 J. Gross Ltd.	379-381, Euston Road	5231	
"	W.5, Kays of Ealing	8-10, Bond Street		Ealing Sparesokay, 2387 Ealux, London.
"	S.E.13 F. Parks & Son Ltd.	404 High Street Lewis-ham	0535	
"	S.E.18 Cleare & Co. Ltd.	1 and 125, High Street, Woolwich.	0174	
"	E.7, Lovett's Ltd.	418, Romford Road, Forest Gate.	1234	Grangewood Lovemoto, London.

46

B.S.A. Motor Cycle Spares Stockists—continued.

Town.	Name of Stockist.	Address.	Telephone No.	Telegraphic Address.
London, S.W.11	Owen Bros.	19, Battersea Rise, Clapham Junction.	1299	Battersea
"	S.W.6 Claude Rye Ltd.	897-921, Fulham Rd.		Renown Ryebikes, Wal-green, London.
"	W.12. Turners Stores	81-83, Goldhawk Road, Sh. Bush	2436	
"	W.3. Whitbys of Acton Ltd.	273, The Vale, Acton.	3355-6	Sh. Bush
Maidstone	Redhill Motors (Maidstone) Ltd.	The Broadway	3096	
Mansfield	W. Henstock	128, Chesterfield Road.	778	
Manchester	Colmore Depot	17-18, Watson Street.	3322	Blackfriars
"	Tom Davies (Motors) Ltd.	233, Deansgate	0681	
"	Fred Fearnley Ltd.	692-4, Ashton Old Road	1445/6	East East M'chester, 1445.
"	Webb & Waitt Ltd.	Chester Road, Stretford	2223/4	Longford
Middlesbrough	Pallister, Yare & Cobb	162, Linthorpe Road	2873	Payacob, Middlesbrough.
Newcastle-on-Tyne	Dens (Newcastle) Motors Ltd.	Haymarket	21837	Newcastle Ened, N'castle-on-Tyne.
Northampton	P. C. Spokes & Son	1, Henry Street	1160	
Norwich	Chapmans (Norwich) Ltd.	42, Duke Street	24727	
Nottingham	E. W. Campion & Son	Station Street	2961	
Oxford	H. F. Temple	69, High Street, St. Thomas	2485	
Perth	M. Shaw & Sons	143, High Street.	483	
Peterborough	Burrows Bros.	55-57, Westgate	2154	
Plymouth	P. Pike & Co. Ltd.	26-28, Union Place	3108	Piko, Plymouth.
Portsmouth	G. E. Minnell	19, Cuthbert Road, Kingston.		
Preston	Loxhams Garages Ltd.	Fishergate	4242 & 4247	
Pulborough	Gray & Rowsell	Bury Gate	4	
Reading	Fortescue Bros. Ltd.	1-2, West Street	4143	4143 Reading.
Redhill	The Redhill Motor and Cycle Works Ltd.	50, Brighton Road	327	
Romford	G. H. Wilson	George Street	2660	
St. Austell	S. H. Kellaway & Sons	South Street Garage	102	
Sheffield	Walter Wragg Ltd.	Stanley Works, Wellington Street.	26098	Sheffield 26098.
Shetland	Thomson's Garage	Esplanade, Lerwick	85	Thomson's Garage, Ler'ck.

47

B.S.A. Motor Cycle Spares Stockists—continued.

Town.	Name of Stockist.	Address.	Telephone No.	Telegraphic Address.
Sittingbourne	Scoones' Garage.	9, West Street	66	Scoones, Sittingbourne.
Southampton	Alec. Bennett Ltd.	Portwood Junction	74081/2	
Southport	H. F. Brockbank	62, King Street	5054	
Southsea	Percy Kiln Ltd.	61-67, Elm Grove	4793	P'mouth
Stockport	Theobald & Coppock	6, Chestergate	2843	Theobald, Coppock, Stockport.
Stockton-on-Tees	Stan Jones (Automobile) Engineers Ltd.	7a, Bridge Road	66179	
Stoke-on-Trent	J. & N. Bassett	Howards Place, Shelton	2890	
Sunderland	Dunns Garage Ltd.	53-4, North Bridge St.	4994	
Sutton-in-Ash	W. Henstock	Forest Street Garage.	90	Henstock, 90, Sutton-in-A'sh.
Swadlincote	T. H. Wroughton	High Street	7414	Wroughtons Garage, S'cote.
Taunton	W. P. Edwards (Motors) Ltd.	58, East Street	2943	Edwards, Motor Cycles, T'nton.
Thetford	W. & G. Lambert Ltd.	Castle Street	2217	
Tunbridge Wells	C. E. Tunbridge	2, Vale Road	416	ThbridgeMotor, Thbridge Wells.
Twickenham	C. A. Bly	192, Heath Road	2103 & 1435	
Wainfleet	C. S. Wilkinson	Market Place	2128	
Watford	Lloyd Cooper & Co.	61, Queens Road	235	
Warrington	Frodsham Jack Ltd.	37a, Winnick Street	471	
Westcliff-on-Sea	J. Costin & Sons	233-57, London Road	2215	Southend
Weybridge	W. L. Lewis & Sons	51, Church Street	210	
Weymouth	Tilleys	9, Frederick Place	72	
Winchester	Winchester Cycle and Motor Co.	Jewry Street	2728	
Worcester	W. J. Bladder & Son	52, Sidbury	243	Bladder, S'bury, Worcester.
Wolverhampton	C. E. Cope & Sons	168-9, Stafford Street	22850	
Worthing	Wheatlands	56, Broadwater Street (West).	1224	
Yeovil	The Yeovil Motor Mart	Hendford	267	Motor Mart, Yeovil.
York	C. S. Russell (York) Ltd.	Lawrence Street	3793	Russell, Lawrence Street, York.

C2472-2-3

Copyright B.S.A. Co. Ltd.
Reprinted September, 1946

Printed in England

48

INDEX

	Page		Page
Adjustments.		Filling up	1
Brakes	11	Gear-changing	5
Clutch	12 & 17	Lucas Service	43
Dynamo Chain	18	Lubrication:	
Front Chain	16	Chains	9
Front Fork	13	Diagram	25
Gear-change (Foot)	21	Engine	6
Hubs	14	Front Fork	8
Ignition Timing	19	Gearbox	9
Rear Chain	17	General Notes	8
Tappet Clearances—		Hubs	8
S.V.	10	New Engine	1
O.H.V.	11	Oil Recommendations	24
Valve Timing	18	Steering Head	8
Care of Machine	37	Maintenance	37
Controls	2	Piston Ring Gaps	41
Cleaning	32	Riding	4
Clutch	17	Running-in	2
Decarbonization	22	Sparkling Plug	34
Dismantling:		Starting	4
Cylinder (S.V.)	23	Trouble	39
" (O.H.V.)	26	Useful Data	41
Engine	22		
Front Fork	14		
Piston	27		
Valves	27		