

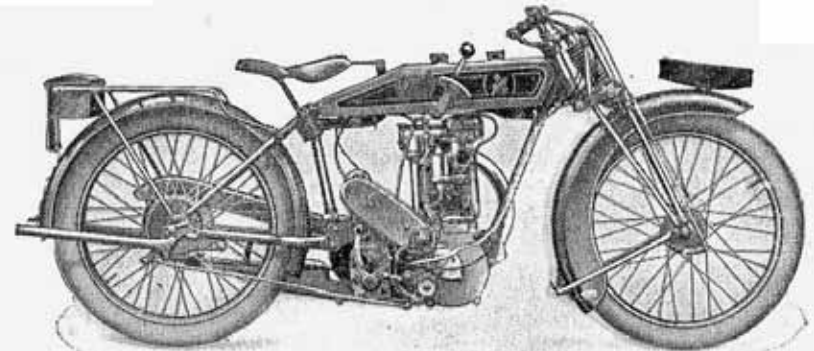
Matchless
IN NAME & REPUTATION

**INSTRUCTION BOOK
AND
SPARE PARTS LIST**

**MODEL
L/S**



DRIVING AND ADJUSTMENT INSTRUCTIONS



"Matchless" Model "L/S."

H. COLLIER & SONS, LIMITED,
Manufacturers,

Registered Offices :

44-45, PLUMSTEAD ROAD, PLUMSTEAD
LONDON, S.E. 18, ENGLAND.

Nearest Station :
WOOLWICH ARSENAL, S.E.C.R.

Factory :
BURRAGE GROVE & MAXEY ROAD
PLUMSTEAD, S.E.

Telegrams & Cables — "Matchless, Woolwich."

Telephone — Woolwich 1010 (4 lines)

Code { A.B.C. 5th Edition
Bentleys,
& Private Code

General Description.

INTRODUCTION

Following our previous practice of endeavouring to obtain good service by making every purchaser thoroughly acquainted with the working of his mount, we issue herewith detailed description and adjustment advice on all important units, together with useful illustrations. A careful study of the contents will enable the possessor of a Model "L/S" to carry out ~~any small~~ adjustments that may be necessary from time to time, and so obtain the best service from his mount, which result is our earnest desire.

The Spares Section has been compiled to enable customers to correctly specify their requirements when renewals of any part are necessary (See Pages 17 and 18) for Instructions re Ordering Parts and particulars of Deposit Account System).

H. COLLIER & SONS, LIMITED.

The Model L/S described below has been introduced to meet the requirements of the enthusiast and represents the latest developments in Motor Cycle design, while retaining essential reliability. As will be seen from the sectional illustration overleaf, the engine is robust in construction, and its capability for extraordinary power output has not been obtained at the sacrifice of strength. Special alloy metals are used where an enormous factor of safety is desirable, an instance being the valves which are made from the very latest discovery in alloy steels K.E. 965, a metal which possesses a tensile strength three times greater at working temperature than any valve steel used or known hitherto. The overhead rockers are mounted in an aluminium alloy case bolted over the cylinder head, which case contains also the overhead Camshaft. The whole oil supply is led into this case thereby ensuring ideal working conditions for the rapidly moving parts contained therein. The Camshaft is driven by means of a vertical shaft suitably encased behind the cylinder, the system of drive being bevel gears top and bottom. These bevel gears are adjustable as regards mesh. The engagement of the top pair may be seen and tested by removing the end plate of Camshaft housing, while the bottom pair may be tested for back lash whenever the Camshaft case is removed such as for decarbonizing. The externally threaded sleeves which screw into Camshaft case and the casting bolted on to Crankcase respectively, control the adjustment and when any alteration is made the lock nut must be carefully tightened to overcome any tendency to slacken in use. The arrangement described above can be readily understood by referring to the sectional illustration of engine (page 7).

The big end of connecting rod, flywheel axle bearings, and also various parts of timing gear are mounted upon roller bearings while the overhead Camshaft and vertical bevel shaft run on ball bearings. The only plain bearings employed being the gudgeon pin and overhead valve rockers. This ideal arrangement provides a remarkably free running engine, and revs upward of 6000 p.m. have been obtained during bench tests. The cylinder head, it will be observed, is of unique design, but here again latest port design has been incorporated with the object of obtaining maximum turbulence, and more important still the centre of the head is perfectly finned, and free of any undesirable mass of metal. As will be found described later accessibility has been carefully thought out, and in spite of difficulties which will be obvious, the cylinder head may be removed in a few moments only, and without disturbing valve timing or adjustment in any way. The remainder of the cycle has been designed in keeping with the power unit, and here again special alloys utilized where necessary. Unless specially ordered all machines are sent out with standard pistons. For racing a special high compression piston can be supplied. This, however, is not recommended for touring and when so used a 50-50 mixture of Benzole and Petrol is desirable to avoid unnecessary pinking. At all times high grade sparking plugs must be used and the type fitted as standard is recommended for all round purposes K.L.G. type H.S.I.

To turn now to the general handling of the L.S Model, it is perhaps advisable before describing the actual method of starting to explain the various controls and lever positions. Neutral or free engine position of the gear is at a point where the extension on gear quadrant engages slot in gear lever (about one-third) forward from rearmost position, and at this position engine should always be started.

Ignition is advanced or retarded by means of a lever on the left side of handlebar; To advance spark this lever should be drawn inwards; for starting it should be about three-quarters advanced.

The throttle and air levers for Carburettor both open inwards, the top lever operating the air and the lower and longer one the throttle. For starting, throttle should be about one-sixth open, and air completely closed.

The petrol is turned on when the lever on the tap to which the petrol pipe is attached is parallel to the body of the tap. Assuming that the tank has been filled with petrol and oil of the brand recommended elsewhere, and that all levers and taps have been set as above, to start engine first flood the carburettor by depressing the button on the float chamber until the petrol overflows, then raise the valve by lifting the left side handlebar lever, and at the same time, with the right foot give the kick-starter pedal a sharp and vigorous push downwards, releasing the valve lifter lever when the starter crank is about half-way down. This operation should not require at the most more than three or four attempts.

When the engine is started close the throttle slightly to check the engine speed, and seated on the cycle, disengage clutch by drawing inward the lever which is situated on the left side of handlebar. Then shift gear lever backward into first gear position, after which gently engage the clutch by releasing slowly the lever which has already been drawn inward.

When fairly under way, smartly declutch and simultaneously shift gear lever forward into second gear position, which is in middle of quadrant, at the same time releasing clutch lever gently but smartly as engine takes up the drive, after which repeat the operation to obtain top gear. In all changes of gear it is advisable to make certain that the gear lever is fairly in engagement with the notches in gear quadrant.

NOTE.—Any difficulty in starting will most probably be caused either by insufficient flooding too liberal throttle opening or ignition not sufficiently advanced.

DRIVING.

In general driving it is always advisable to advance the ignition as far as possible without causing knocking. When ascending a steep hill as the engine slows, care should be taken to retard the ignition just sufficiently to prevent knocking, and if a change of gear then be made the ignition should be again advanced, as the speed of the engine is increased by the use of the lower gear. For descending exceptionally steep and dangerous inclines the middle gear should be engaged enabling the frictional resistance of the engine to assist in retarding the descent. We do not, however, under any circumstances, recommend using the bottom gear for this purpose owing to the strain imposed upon the rear

driving chain. It is advisable to change down to 2nd speed when rounding acute corners, as owing to the high compression ratio employed the engine is somewhat harsh at very low revs. In addition or as an alternative in such cases, the clutch should be slightly eased. Much unnecessary strain on the transmission may be easily avoided by such considerations.

"DON'TS" IN DRIVING.

- DO NOT allow engine to labour on high gear on a steep gradient and remember that an easier, faster, and better ascent can be made on the next lower gear.
- DO NOT make a practice of starting on second speed.
- DO NOT under any circumstances, allow the chains to run very slack or very dry. Either will soon cause trouble, and adjustments are easy. Slack chains will inevitably cause harshness of transmission.
- DO NOT force engine for the first 500 miles. Mention is made of this warning on account of the natural desire of a new owner to ascertain his mount's maximum capabilities. However, until all bearings are well run in, etc., it is advisable to refrain from speed bursts and the accompanying possibility of seized bearing, piston rings, etc. The first 500 miles of an engine's existence is far more important than the next 5,000.
- DO NOT ignore these instructions or think them too elaborate. They have been compiled at a great amount of trouble, and are the outcome of practical experience extending over many thousand miles riding.

LUBRICATION

The mechanical oil pump is set at the Works to deliver a generous supply of oil and unless found to be troublesome this supply should not be reduced for the first 500 miles after which it may be possible to cut down the supply. The final adjustment must necessarily be left more or less to the rider's judgment. At all times when starting up from the cold a thin film of oily smoke should be apparent in the exhaust, and if at any time this should not be observed although the tell tale indicates that oil is passing, the two screws holding down the top plate on oil pump should be loosened and the centre barrel (the part with handle extension) turned one division of the indicator in a left hand or contra clockwise direction. The tell tale referred to above consists of a small plunger extension to the oil pump on the delivery side which must lift before oil can pass. Therefore, when oil is passing, this small plunger must necessarily be somewhat extended and at low speeds it will be seen to fluctuate with the action of the plunger of oil pump. It may be explained that at high engine speeds the deliveries of oil from pump are too rapid to allow of the tell tale plunger returning to its normal position between each impulse and therefore it constantly remains in an extended position. The movement of this tell tale must be noticed before and

LUBRICATION—*contd.*

occasionally during each run as this is the only means by which driver can readily observe that the pump is functioning properly. At night time the position of the plunger can be felt quite easily, even though gloves are worn, and it must always be remembered that oil cannot pass into the engine until this tell tale plunger is extended thereby uncovering the oil passage.

The oil recommended for touring with perhaps occasional speed bursts of short duration is WAKEFIELD *CONTROL* X.L., while the brand advised for general speed work is WAKEFIELD R or SPEEDWELL "WHITE IDEAL."

Of equal importance to the engine is the lubrication of such parts as chains, fork spindles, hub bearings, etc., which should be dealt with systematically as follows:—

CHAINS.

It will probably be found that the front chain will receive sufficient lubrication from the engine air release pipe, but, however, this should be inspected periodically and oil injected at rear of chain guard if necessary. The rear chain should be removed occasionally and well soaked in paraffin especially in bad weather, and after carefully wiping should then be soaked in molten tallow. A good soaking in engine oil will serve as a poorer substitute.

FORK SPINDLES.

Every 200 or 300 miles the grease for front fork spindles should be filled with a good quality light transmission grease, and the caps then screwed home. This will force the grease along the fork spindle bearings and maintain free and silent working.

GEAR BOX.

Every 500 miles the gear box filling plug should be removed, and the gear box filled to overflowing when the machine is standing level with (preferably) Speedwell Crimsangere which is specially recommended. If this is temporarily unobtainable, Mobiloil C Gear oil may be used.

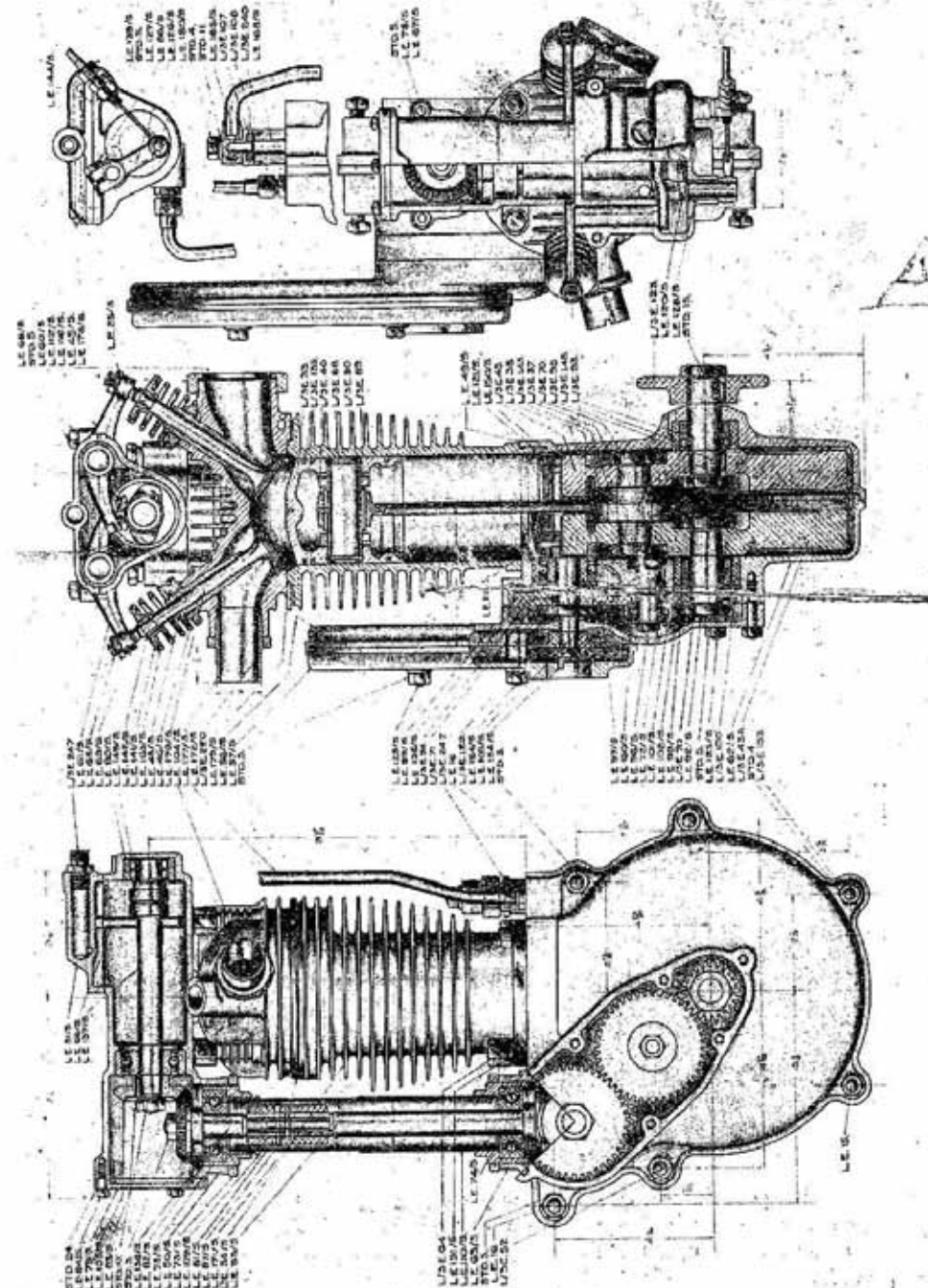
HUBS.

Every 500 miles (or more frequently in continuous bad weather) the lubricators in the centre of both front and rear hubs should have a few drops of oil forced through them. (Engine oil suitable)

In addition to the foregoing, all parts, such as brake and gear rod, joints, etc., should receive a few drops of oil occasionally, particularly in bad weather. Bicycle lubricating oil or engine oil

ADJUSTMENTS

Tappet or Rocker Clearance. To adjust, slack off the lock nut on overhead rocker end, and screw in or out as required the hardened steel adjusting screw, after which securely lock in position with the nut provided.

SECTIONAL ILLUSTRATION OF ENGINE

ADJUSTMENTS—*contd.*

NOTE.—The correct clearances for speed are .004 for the inlet and .010 for the exhaust. For ordinary touring the latter may be closed up to .006, but the larger clearance must be maintained for any extended speed bursts, to allow for the increased expansion or elongation of valve. This is most important, and a cheap set of engineers feeler gauges will be found useful for checking purposes.

To Remove Cylinder Head. First unscrew exhaust pipe union nut, and preferably remove Carburettor and petrol pipe entirely from inlet stump. Then unscrew the top portion of the telescopic tube covering the vertical drive shaft of timing gear, and slide this top portion down into the larger bottom half.

(NOTE—the smallest of the three nuts at the top end of covering tube is the only one to be disturbed. The middle and medium size hexagonal nut controls the mesh adjustment of bevel gears, while the octagonal nut immediately underneath is the lock nut for securing this adjustable sleeve.) ~~Next drive out gently the taper pin securing the sleeve connecting the bottom half of the vertical shaft to the top-half, and slide the sleeve down until the top shaft end is uncovered.~~ Then unscrew the four bolts securing the Cam case to the cylinder head fixing bolts, when after detaching oil pipe and valve lifter cable the entire Camshaft assembly may be taken away. Although the description of this operation is, necessarily, somewhat lengthy, it will be found quite simple, and it should be observed that the valve timing gears are not disturbed in any way. Upon removing the four cylinder head fixing bolts the head may now be lifted clear.

To Grind in Valves. After cylinder head has been removed as described, to remove valve springs it will be found convenient to rest the head of valve on a small block (wood preferably) while spring is being compressed to allow of the removal of the taper valve cap divided collar. It may be necessary to give the valve spring cap a sharp tap to release this taper collar. After removing all carbon deposit the face of each valve seating should be smeared with a good grinding paste (this may be obtained already mixed) and the valve revolved slightly backward and forward (never revolve completely) while light pressure is applied to the head. During this operation it is advisable to occasionally raise the valve off its seating and turn in the guide slightly afterwards repeating the backward and forward movement. Generally one application only of grinding paste will be ample for the inlet, but two or three applications may be necessary to entirely restore the exhaust valve seating. After this grinding in has been satisfactorily accomplished all traces of the grinding mixture should be carefully washed off with petrol, and both valve stems and guides cleaned thoroughly. Prior to refitting it is advisable to smear each valve stem with Graphite Grease.

NOTE.—Upon refixing the vertical bevel shaft coupling sleeve the marks upon upper and lower shaft ends must be set coincident with one another. To obtain best results the bevel gears must be kept in correct mesh, i.e., with the slightest possible amount of back lash.

VALVE TIMING

The correct setting for the closing and opening of valves is as follows: Inlet commences to open $10\frac{1}{2}$ degrees or approximately $1/32$ in. before top of exhaust scavenging stroke and closes 46 degrees or approximately $43/64$ up the compression stroke.

Exhaust valve commences to open 52 degrees or approximately $53/64$ from bottom of fixing stroke and closes $10\frac{1}{2}$ degrees or approximately $1/32$ down induction stroke.

To test these settings the rockers should be set to a clearance of .002 from valve stems.

To allow of expansion, however, before engine is run the clearances must be increased to .004 for the inlet and .010 for exhaust. This is of the utmost importance particularly in the case of the exhaust valve the clearance of which must be maintained and tested occasionally when cold. A cheap set of engineers feeler gauges will be found useful for checking purposes. It may be explained that the train of timing wheels from engine shaft to bottom bevel gear are marked for setting purposes. the bevel gears themselves are however, not marked. One tooth error on these bevels provides incorrect timing to such an extent that it is not possible with ordinary care to escape notice. To the expert who desires to experiment with slight variation in valve timing, we would point out that owing to the different tooth numbers employed for bevel and spur gears by shifting both such as one tooth back on bevels and one tooth forward on spur gears, etc., ~~never~~ fine variations can be obtained. This detail will not interest the ordinary user. The ends of the divided vertical bevel shaft are each marked and when refixing the connecting collar after removing head (see to Grind in Valves) it must be observed that these two marks coincide.

IGNITION SETTING.

With ignition fully advanced the contact points of magneto should break 40 degrees or approximately $\frac{1}{2}$ in. before the top of compression stroke. To obtain maximum power and speed this setting should be accurately obtained and preferably for ease any alteration made while cylinder head is removed when the exact position of piston may be checked instantly.

NOTE.—A greater amount of advance than described above is not recommended under any circumstances.

TO ADJUST MAGNETO CHAIN.

It will be observed that magneto chain adjustment is obtained by sliding the magneto platform back upon the engine cradle plates, by means of the adjuster situated on the down seat tube.

Correct chain adjustment is such that when the top of chain is lightly pressed up and down a whip of about $\frac{1}{8}$ in. to $\frac{1}{4}$ in. is obtained.

To adjust chain, slack off the two nuts on gear box studs and screw the chain adjuster referred to above in a clockwise direction to tighten or in the opposite direction to slacken, after which securely tighten down gear box stud nuts.

TO DISMANTLE WHEEL BEARINGS.

After wheels have been removed (see Removing Wheels) withdraw brake cover plate. Then unscrew adjusting cone and from the opposite side draw out spindle. Upon re-assembling each roller bearing cage should be packed with good quality medium transmission grease.

TO INSPECT GEAR BOX INTERIOR

To remove gear box end plate for examination of gears, disconnect the clutch control wire by slackening off the adjustment, when the nipple can be slipped out of the small operating arm. After removing the seven nuts securing cover plate, gently draw off the latter.

NOTE.—While the end plate is being removed, a pan or some receptacle must be placed underneath to catch the oil, the bulk of which will run out. When re-assembling, the faces of the end plate and gear box must be thoroughly cleaned, and a new paper washer used if the old one has been damaged. Preferably coat with quick-drying gold size.

GEAR ROD ADJUSTMENT.

To adjust gear rod, disconnect pin which passes through top yoke end of gear rod and slack off locking nut. Then screw yoke end up or down until correct adjustment is obtained after which replace yoke end pin and securely lock with locking nut.

When the gear rod is correctly adjusted the gear lever should move an equal amount on either side of the central notch without engaging either the middle or low gear.

CLUTCH ADJUSTMENT.

In the event of clutch slip being experienced the adjustment of clutch operating cable should be suspected. When correctly adjusted it should be possible to move the clutch actuating worm (part to which lower end of cable is attached) forward slightly with the fingers and if this free movement cannot be felt the cable stop should be adjusted accordingly. If necessary the bolt securing the clutch worm lever may be slackened and the worm portion revolved slightly backward to provide slacker cable adjustment or forward to tighten.

TO ADJUST FRONT CHAIN.

Slack off the two nuts securing gear box to aluminium bracket which rests on the engine cradle plates, also the bolts which pass through cradle plates immediately above gear box, and slide gear box in the required direction, by means of the adjuster which passes through the frame bracket at foot of saddle tube.

Correct adjustment of chain should allow a movement of $\frac{3}{16}$ in. to $\frac{1}{2}$ in., when chain is pressed up and down. Care must be taken after adjustment has been made to securely tighten the top gear box fixing nuts, and side bolts referred to above in the order mentioned.

WARNING.—The various nuts securing gear box must be carefully and thoroughly tightened after any adjustment has been made, otherwise the chain pull will show a tendency to tighten front chain and slacken rear.

TO ADJUST REAR CHAIN.

Put down rear stand, then slack off rear wheel spindle nuts and bolt which secures brake cover plate to special lug on frame tube. Then adjust chain as required, by means of the bolts which pass through each of the fork ends, after which securely tighten spindle nuts and bolt securing brake cover plate. Tension of chain should be tried in a number of places, and the correct adjustment (which should allow a whip of $\frac{3}{16}$ in. to $\frac{1}{2}$ in. when chain is pressed up and down), should be obtained for the tightest place.

NOTE.—Before tightening rear chain the adjustment of front chain should be inspected, and if attention to each is required the latter should be treated first.

TO ADJUST STEERING HEAD.

The steering head should be occasionally tested for adjustment by exerting pressure upwards from the extreme tips of the handlebars. Should any shake be apparent slack off handlebar clip bolt and tighten down the large nut which encircles the handlebar stem until all signs of slackness have disappeared, after which securely tighten clip bolt nut.

IMPORTANT.—To guard against unconsciously overtightening the head bearings, the effect of which is extremely difficult steering, it is advisable to jack up the front of machine (a box of suitable height under crankcase will serve) in order that all shake may be taken up satisfactorily and the steering head left perfectly

TO REMOVE REAR WHEEL

Put down rear stand. Then disconnect rear brake rod, and rear chain connecting link, after which release wheel axle nuts and remove the bolt securing brake cover plate. The wheel is then ready to be removed by drawing same backward until axle is free from fork ends.

TO REMOVE FRONT WHEEL.

Put down front stand. Then disconnect front brake rod at bottom end and remove the bolt which secures brake cover plate to lug on fork girder. Then slack off nuts and with a stout screwdriver or tyre lever gently spring each side of the fork out, at the same time pressing wheel down, when the wheel will drop out.

NOTE.—It is advisable to first put rear stand down as front stand is not wide enough to provide a safe balance.

TO ADJUST WHEEL BEARINGS.

To adjust either back or front wheel first loosen the left side axle nut. Then with the thin cone adjusting spanner, turn the cone slightly in a right hand direction, and when wheel is free from shake, tighten axle nut securely.

NOTE.—It is advisable to verify adjustment of bearing after axle nut has been retightened.

PERIODICAL INSPECTION OF NUTS (IMPORTANT).

It is advisable to periodically run over all important nuts. Much valuable time may be saved by a few minutes so spent at various intervals. The most likely parts to be requiring attention are given below in your own interests.

Wheel axle nuts, all mudguard nuts, nuts securing brake cover plate, engine bolt nuts, and stand bolts and nuts.

CLEANING.

If the machine is used to any extent in bad weather, for mud removing, a small hose is almost indispensable, but when using same care should be exercised not to direct water on to the engine and magneto or other such parts. If a hose is not available, soak dirt with paraffin before removing. Do not attempt to rub or brush mud off an enamel surface when dry, or the polish will soon be destroyed. For engine, magneto, etc., a good stiff paint brush and a pot of petrol is preferable.

Stoppages and the Likely Causes

ENGINE SUDDENLY STOPS. Probable cause:

Petrol low in tank.
Dirt in petrol pipe.
Choked jet.
Water in float chamber.
Choked petrol pipe or tap.
Air lock in tank.

ENGINE RUNS BADLY. Probable cause:

Valve sticking.
Weak valve spring.
Plug points too close.
Water on plug.
Plug oily or sooted.
Air leakage (due to carburettor).
Paraffin in petrol, or bad petrol.
Valve seating burnt.
Faulty magneto contacts.

ENGINE WILL NOT START. Probable cause:

Too liberal throttle opening.
Valve stuck up.
Water on plug.
Choked jet.
Valve or valves not seating properly.
Oiled up sparking plug.

LEGAL MATTER.

To comply with the law relating to motorcycles the owner of a "Matchless" Model 'L/S' must:—

1. Hold a driver's licence, which can be obtained from the Chief Constable or Corporation of a County Borough, or from the County Council. The charge for this licence is 5/- yearly, and must be renewed annually from the date of issue. A motor-car driver's licence covers the driving of a motorcycle.
2. Apply to the Taxation Department of the Local Authority of the district in which the vehicle is to be ordinarily kept, for Inland Revenue Licence and Registration Form RF 1/2 (Motorcycles only). The address of the above Taxation Department can be obtained by enquiry at a Post Office.
3. The form RF 1/2 when obtained must be filled in and returned, accompanied by a remittance of £3/0/0 if used solo, and £4/0/0 if desired for use with sidecar, and in some districts evidence that the vehicle to be licenced is new and has not previously been registered may be demanded. Manufacturers' or Agents' invoice will serve.
4. See that his front plate is illuminated at night on both sides. See that his machine, if used with sidecar, is provided with a lamp on the extreme near side of same showing a light forward, and is also provided with a lamp which shows a red light to the rear. The law regarding this matter does not state any particular place in which the rear lamp must be fixed.
5. Never drive at a speed which is dangerous to the public.
6. Wherever necessary, give audible and sufficient warning by horn or other instrument of the approach of his motorcycle.

For registration purposes, the following particulars will be required:—

Weight of cycle unladen	...	...	220-lbs.
Weight of sidecar (if requested only)	...	...	110-lbs.
If sidecar is detachable (if requested only)	...	...	Yes
Description or type of motorcycle	...	...	"Matchless" Motorcycle.
Position of front number plate	...	...	On front mudguard visible from either side.
Position of rear number plate	...	...	On back-end of carrier behind saddle and visible from the rear.

Guarantee Terms and Conditions.

We give the following Guarantee with our motorcycles instead of the Guarantee implied by statute or otherwise as to the quality of fitness of such machines for the purpose of motorcycling, and such implied Guarantee being in all cases excluded. In the case of machines which have been used for "Hiring out" or racing purposes, or in respect of which our trade mark or manufacturing number has been removed, no Guarantee of any kind is given or is to be implied.

GUARANTEE TERMS AND CONDITIONS—contd.

WE GUARANTEE, subject to the conditions mentioned below, that all precautions which are usual and reasonable have been taken by us to secure excellence of materials and workmanship: but this Guarantee is to extend and be in force for six months only from date of purchase, and the damages for which we make ourselves responsible under this guarantee are limited to the replacement of any part which may have proved defective.

WE UNDERTAKE, subject to the conditions mentioned below, to make good at any time within six months any defects in these respects. As motor-cycles are easily liable to derangements by neglect or misuse, this Guarantee does not apply to defects caused by wear and tear, misuse or neglect.

CONDITIONS.

Any motorcycle sent to us to be plated, enamelled or repaired will be repaired upon same conditions, i.e., we Guarantee that all precautions which are usual and reasonable, have been taken by us to secure excellence of material and workmanship, and this Guarantee is in lieu, and in exclusion, of any common law or statute warranty, and the damages recoverable are limited to the cost of any further work which may be necessary to amend and make good the work found to be defective.

If a defective part should be found in our motorcycles it must be sent to us, carriage paid, and accompanied by an intimation from the sender that he desires to have it repaired free of charge under our Guarantee and he must also furnish us at the same time with the number of the machine, the name of the Agent from whom he purchased, and the date of purchase.

Failing compliance with the above, no notice will be taken of anything which may arrive, but such articles will lie here at the risk of the senders: and this Guarantee, or any implied Guarantee shall not be enforceable.

We guarantee only those machines which are bought either direct from us or from one of our duly authorised agents, and under no other conditions.

We do not guarantee the specialities of other firms, such as tyres, saddles, chains, lamps, etc., or of any component part supplied to the order of the purchaser differing from our standard specification supplied with our motorcycles or otherwise.

THE TERM "AGENT."

is used in a complimentary sense only, and those firms whom we style our agents are not authorised to advertise, incur any debts or transact any business whatsoever on our account other than the sale of goods which they may have purchased from us; nor are they authorised to give warranty or make any representation on our behalf other than those contained in the above Guarantee.

MACHINE NUMBERS.

The frame number will be found stamped on the right hand side of lug under saddle.

The engine number is stamped on the aluminium crankcase, transmission side, immediately beneath cylinder case.

H. COLLIER & SONS, LIMITED

INTRODUCTION.

We have pleasure in presenting this Spares List for the " Matchless " L/S Model.

Every part likely to be required can readily be found by reference to illustrations contained therein.

Every part has a distinctive number, and care should be taken to order correct part, calling same by the name specified, and giving the part number.

Read carefully rules on pages 17 and 18.

We are at all times willing to give estimates for parts or repairs, and also give to all customers the benefit of our advice regarding any query.

H. COLLIER & SONS, LIMITED.

TERMS OF BUSINESS.

Our invariable rule in this department is net cash with order. Remittance to £1 in value may be sent by Postal Order, but over this amount it is advisable to remit by cheque. Cheques to be made payable to H. Collier & Sons, Ltd., and crossed. When making remittance by Telegraph Money Order, the name and address of sender should be included, as, unless this is done, the Post Office do not give this information in the telegram. We frequently receive Telegraph Money Orders without sender's name, with the result that we cannot trace by whom the amount is sent, and we have to wait until customer writes complaining about delay before the matter can receive any attention. If remittance is not sufficient to pay for postage or carriage, goods will be sent " carriage forward " (Goods train).

All repairs accounts are strictly cash before delivery.

The prices in this list are subject to alteration without notice.

DEPOSIT ACCOUNT.

We strongly advise all owners of " Matchless " motorcycles to take advantage of our " Deposit System." It often occurs that parts are required by return, but customers not having a current account, there is the inevitable delay of " pro forma " invoice being sent, and we have to wait receipt of his remittance before the goods can be despatched. This delay causes considerable inconvenience to the party concerned, and can be avoided by opening a Deposit Account.

A remittance of not less than £2 entitles a customer to this form of account, and when goods are ordered by 'phone, telegram or letter they will be despatched at the earliest possible moment by the quickest route. Invoices will be sent for all goods supplied, and a statement will be rendered showing amount of deposit in hand when required, and customers will be notified immediately their deposit becomes exhausted, so that they may renew same. We are at all times prepared to return balance of deposit upon request.

Kindly note, when ordering, to mention " Deposit " or quote reference as shown on monthly statements.

REPAIRS.

In case of extensive structural repairs being required, we strongly advise all owners to send machines to our works for attention. It is obvious that manufacturers can do this kind of work better than any repairer.

OVERHAULING.

When sending us a complete motorcycle, engine, gear box or other part with the request that we overhaul same, we understand by the term " overhaul " that it is to be entirely dismantled, thoroughly renovated, any worn part renewed and put in perfect working order. In case a customer desires only certain parts attended to, explicit instructions should be given us to that effect, otherwise cost may be far in excess of what is anticipated.

ESTIMATES

It is becoming a general practice for customers when sending their engines or complete motorcycles to us for repairs, to request a detailed estimate for the necessary repairs before proceeding with the work.

We are always pleased to furnish these estimates, but it must be distinctly understood that only approximate quotations can be given, as, when re-erecting, it is often found that other repairs or new parts are necessary, which it was impossible to locate when dismantling.

In some instances, when an estimate has been submitted, several of the items quoted for are questioned as being unnecessary or not required. We may say that we only include in our quotation new parts and repairs that we consider essential to make the machine suitable and satisfactory for the road.

We much prefer not to undertake a repair (neither do we accept any responsibility) when the estimate for same has been curtailed by the owner, as the parts he may delete are probably the most important to obtain good results.

If an estimate is not accepted, i.e., the parts returned to the owner in their original condition, a nominal charge is made for taking down and re-assembling.

All repair accounts are strictly cash before deliver

RULES TO BE OBSERVED.

1. Parts sent to us for repair, replacement, or as pattern must bear distinctly sender's full name and address. Instructions regarding same must be sent under separate cover, otherwise goods may lie at our works and not be unpacked until instructions regarding same are received.
2. All goods must be consigned to us carriage paid.
3. Do not enclose cash (whether in the form of coin or paper) with goods. Remittance should be sent by letter post for your own protection.
4. Customers having no account with us should not fail to remit at the time of order and also to include postage.
5. When customer has no account, a Telegraph Money Order will ensure immediate attention.
6. When making enquiries respecting any part on order or repair it is advisable to quote date of order.
7. In case of doubt regarding correct names of parts required it is advisable to send old part as pattern.

DAMAGE IN TRANSIT.

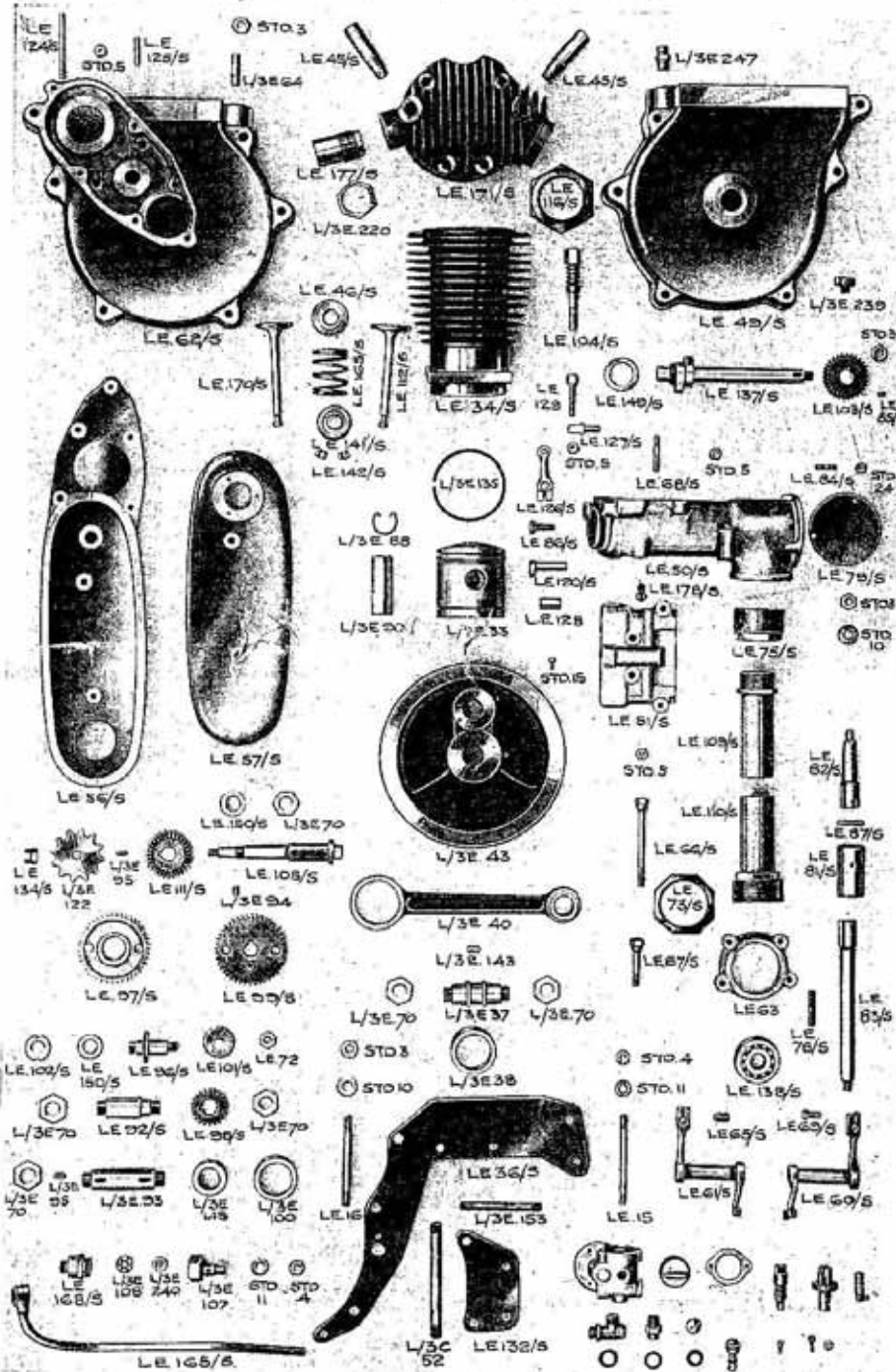
Our responsibility ceases when goods leave our works, and claims must be made on carriers in the event of damage occurring in transit. All goods easily damaged by rough handling are consigned (when by rail) at Railway Company's Risk, and all complete combinations consigned by rail, whether crated or otherwise, are until present conditions of transport improve, insured against damage in transit. Any such damage should be immediately reported.

NOTE.—By Railway Companies special regulations, unless damage in transit is reported within 3 days from receipt of goods, no claim can be entertained

ENGINE PARTS

		A.		
		£	s.	d.
L/3 E. 93	Axle for flywheel (transmission side) ...	6	9	
L.E. 92/S	Axle for flywheel (timing gear side) ...	5	6	
L/4 314	Axle for flywheel (crankpin) supplied complete only ...	1	3	0
L.E. 96/S	Axle for intermediate timing gear wheel ...	4	3	6
L.E. 102/S	Nut securing same ...			
	See timing gear for other parts ...			
		B.		
L/3 E. 100	Bush (hardened steel for crankcase) timing side ...	4	6	
L/3 E. 100	Bush (hardened steel for crankcase) transmission side ...	4	6	
L/3 89	Bush for gudgeon pin ...	3	3	
L.E. 128/S	Bush for valve lifter ...	1	0	
	Breather for crankcase (see release valve)			
L.E. 103/S	Bevel pinion for camshaft drive (taper hole)	9	0	
L.E. 111/S	Bevel pinion for camshaft drive (parallel hole) see timing gear ...	9	0	
		C.		
L.E. 34/S	Cylinder (bare) ...	1	15	0
L/3 E. 64	Cylinder holding down stud (each) ...			6
L.E. 191/S	Cylinder holding down stud nuts (long) (each)			5
L.E. 171/S	Cylinder head (bare) ...	2	2	0
L.E. 104/S	Cylinder head holding down bolts ...			9
L.E. 179/S	Cylinder head copper gasket ...	1	9	
L.E. 177/S	Cylinder head induction nipple for carburettor	2	0	
L/3 E. 220	Locking nut for above ...			10
L.E. 167/S	Crankcase with bush and studs (timing side) ...			
	Crankcase with bush and studs (transmission) ...	4	10	0
L/3 E. 239	Crankcase drain plug ...			4
L.E. 16	Crankcase bolt 3/8 diameter ...			7
S.T.D. 3	Nuts for above (each) ...			3
L.E. 15	Crankcase bolt 5/16 diameter (long) ...			6
L/3 E. 153	Crankcase bolt 5/16 diameter (short) ...			6
S.T.D. 4	Nuts for above (each) ...			2
	Crankcase timing gear cover (see Timing Gear)			
L.E. 125/S	Studs for fixing above (each) ...			4
S.T.D. 5	Nuts only for studs (each) ...			2

ENGINE PARTS



C.—contd.

L.E. 57/S	Crankcase magneto chain cover	...	...	10	0
L.E. 124/S	Studs for fixing above (each)	...	...		3
S.T.D. 5	Nuts for studs (each)	...	...		2
L/3 E. 40	Connecting rod only	...	...	9	6
L/3 E. 289	Connecting rod with big end assembly and small end bush	...	...	2	1 0
L/4 E. 314	Crankpin assembly only (pin, rollers and outer race)	...	...	1	3 0
	Camshaft (see Timing Gear)	...	...
	Cam lever (inlet) see Timing Gear	...	...
	Cam lever (exhaust) see Timing Gear	...	...
L.E. 65/S	Cam lever hardened screw		1 0
L.E. 25/S	Locking nut for above		3

D.

L/3 E. 239	Drain plug for crankcase		4
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E.

	Engine bolts (see engine plates)		
	Exhaust valve (see valves)		
	Exhaust pipe (see silencer)		

FLYWHEELS AND AXLES, ETC.

F.

L/3 E. 43a	Flywheel (timing side)	...	...	13	0
L/3 E. 43	Flywheel (transmission side)	...	...	13	0
L/4 E. 314	Flywheel crankpin (supplied complete only)	...	...	1	3 0 6
L/3 E. 70	Fixing nuts for above (each)	...	...		2
S.T.D. 15	Lock screw	...	...		5 6
L.E. 92/S	Flywheel axle timing side	...	...		5 6
L/3 E. 70	Nut for above inside	...	...		2
S.T.D. 15	Lock screw	...	...		5 5
L/3 E. 71	Nut securing small timing pinion	...	...	6	0 6
L/3 E. 93	Flywheel axle transmission side	...	...		2
L/3 E. 70	Nuts for above (each)	...	...		5
S.T.D. 15	Lock screw	...	...
L/3 E. 95	Key for flywheel axle (each)	...	...

G.

L/3 E. 90	Gudgeon pin	...	...	3	9
L/3 E. 88	Gudgeon pin securing spring ring	...	...		3 3
L/3 E. 89	Gudgeon pin bush	...	...	2	0
L.E. 45/S	Guide for inlet valve	...	...		4 0
L.E. 148/S	Guide for exhaust valve	...	...

I.

	Inlet valve (see valves)		
L.E. 45/S	Inlet valve guide	2	0
L.E. 177/S	Inlet tubular nipple or union	2	0
L/3 E. 220	Locking nut for above		10

M.

Magneto and parts (see page)

O.

L/3 E. 239	Oil drain plug for crankcase	4	
L/3 E. 174/S	Oil delivery pipe (pump to camshaft case)	4	6
L/3 E. 173/S	Oil feed pipe (tank to pump)	5	3
L/3 E. 172/S	Oil return pipe (camshaft case to crankcase)	3	6
5061/5475	Oil pump complete	19	0
5475/1	Oil pump body only	3	0
5475/5	Oil pump centre worm spindle	1	0
5475/3	Oil pump worm sleeve	1	6
5475/2	Oil pump regulating block (with handle extension)	1	6
5475/9	Locking plate for above	6	
	Screws for plate (per doz.)	6	
5475/4	Oil pump plunger	1	6
5475	Oil pump tell tale complete	2	6
5475/2 & 9	Oil pump tell tale plunger and cap only		9
	Oil pump union for oil pipe	3	
	Oil pipe fixing screw (each)	1	
	Nut for same	1	
L/3 E. 290	Oil pipe nipple only (each)	3	
L/3 E. 284	Oil pipe union nut only (each)	4	
	Special nut for oil pump drive (see timing gear)		
L/3 E. 247	Oil pipe union for crankcase	3	
L/3 E. 287	Oil pipe union and filter for tank	2	3

P.

L/3 33	Piston only (standard type)	10	0
L/3 33/S	Piston only (high compression type)	12	6
L/3 288	Piston complete with gudgeon pin and rings, standard type	16	6
L.E. 406/S	Ditto high compression type	19	0
L/3 E. 135	Piston ring (each)	1	0
L.E. 98/S	Pinion (small timing) see timing gear	4	6
	Pin or axle for intermediate timing pinion (see timing gear)		
	Petrol pipe (see carburettor)		

R.

L.E. 169/S	Release valve complete with pipe	5	9
L.E. 165/S	Release valve pipe and top only	2	9
L.E. 168/S	Release valve screwed body	1	0
L/3 E. 107	Release valve screwed cap	1	4
S.T.D. 4	Nut for securing pipe		3
S.T.D. 11	Washer only		1
L/3 E. 240	Release valve diaphragm		2
L/3 E. 108	Release valve diaphragm seating		9
L/3 E. 145	Rollers and cage for flywheel axles	7	0
L/3 E. 100	Hardened outer race for same (either side)	4	0
L.E. 150/S	Rollers and cage for cross-shaft and intermediate pinion	5	0
	Hardened outer race for cross-shaft	4	6
L.E. 149/S	Rollers and cage for camshaft	6	6
L.E. 80/S	Hardened outer race for camshaft rollers	3	9
L.E. 61/S	Rocker or cam lever inlet	12	6
L.E. 60/S	Rocker or cam lever exhaust	12	6
L.E. 65/S	Hardened adjusting screw	1	0
L.E. 25/S	Locking nut for above		3

S.

L.E. 158/S	Sparking plug K.L.C. with washer	6	0
L/3 E. 246	Sparking plug C. and A. washer only		2
L.E. 163/S	Spring for valves inlet or exhaust (outer)		6
L.E. 401/S	Spring for valves (inner anti-periodicity)		5
L.E. 144/S	Spring (helical) for exhaust lift cable		7
L/3 E. 123	Sprocket for transmission	6	6
L/3 E. 70	Nut for fixing same		6
S.T.D. 15	Lock screw		2
L/3 E. 95	Key for sprocket		5
L.E. 125/S	Stud for timing gear cover (long)		4
L.E. 124/S	Stud for timing gear cover (short) each		3
L.E. 125/S	Stud for magneto chain case		4
S.T.D. 5	Nuts for above		2
L.E. 96/S	Stud or axle for timing gear intermediate pinion	4	3
	Nut for same (inside crankcase)		6
L.E. 102/S	Nut for outside end		2
L.E. 72/S	Large steel washer for outside end		3
L.E. 101/S	Sprocket for magneto chain (engine end)	2	6
L/3 E. 122	Special L/H nut for same		11
L.E. 134/S	Sprocket for magneto (see also magneto)	3	0
L.M.D. 11	Silencer aluminium	12	9
L.E. 154/S	Silencer clip bolts (each)		5
L/3 E. 263	Nuts for above each		2
S.T.D. 4	Strap for silencer support		6
L.E. 164/S	Bolt for above		3
L.F. 32			

S.—contd.

S.T.D. 4	Nut	2
L/3 E. 262	Silencer fish tail extension pipe	2 6
L.E. 182/S	Exhaust pipe	I 3 6
L.E. 116/S	Exhaust pipe union nut	3 0
L.E. 105/S	Shaft (horizontal bevel) only	9 0
L.E. 111/S	Bevel pinion for above	9 0
L.E. 138/S	Ball Bearing	9 6
L.E. 150/S	Rollers and cage for shaft	5 0
L.E. 121/S	Hardened steel roller race	4 6
L.E. 83/S	Shaft vertical (long bottom portion)	12 0
L.E. 82/S	Shaft vertical (top short portion)	9 0
L.E. 81/S	Connecting sleeve	6 6
L.E. 87/S	Taper pin for sleeve	2
L.E. 103/S	Vertical shaft bevel pinion (each)	9 0
L.E. 138/S	Ball bearing for vertical shaft (each)	9 6
S.T.D. 3	End nut for vertical shaft (each)	3
L.E. 404/S	Locking washer for bevel pinion nuts (each)	3
L.E. 85/S	Keys for vertical shaft (each)	4
L.E. 110/S	Shaft vertical covering tube bottom portion	6 3
L.E. 73/S	Large locking nut for above	3 2
L.E. 109/S	Shaft vertical covering tube top portion	3 6
L.E. 147/S	Sleeve (screwed) for vertical shaft top bearing	5 0
L.E. 73/S	Locking nut for above	3 2
L.E. 63/S	Washer for bottom portion of covering tube	4 6
L.E. 78/S	Studs securing above to crankcase (each)	3
S.T.D. 5	Nuts for above (each)	2
T.		
L.E. 56/S	Timing gear cover	12 6
L.E. 124/S	Stud for fixing above (short)	3
L.E. 125/S	Stud for fixing above (long)	4
S.T.D. 5	Nuts for fixing (each)	2
L.E. 57/S	Magneto chain case front	10 0
L.E. 124/S	Stud for fixing	3
S.T.D. 5	Nut for above (each)	2
L.E. 98/S	Timing gear small pinion	4 6
L/3 E. 71	Nut for fixing same	5
L.E. 97/S	Timing gear intermediate pinion	8 6
L.E. 96/S	Stud for mounting above	4 3
L.E. 150/S	Roller cage and rollers	5 0
L.E. 101/S	Large steel washer for above	3
L.E. 72/S	Outside nut for stud	2
L.E. 102/S	Inside nut for same	6
L.E. 99/S	Timing gear pinion for horizontal bevel shaft	8 0
L/3 E. 71	Nut for same	5
S.T.D. 15	Locking screw for nut	2
L.E. 111/S	Timing gear bevel pinion (parallel bore)	9 0
L.E. 103/S	Timing gear bevel pinion taper bore	9 0

T.—contd.

		£	s.	d.
L.E. 85/S	Keys for above (each)			4
S.T.D. 3	Nuts for fixing (each)			3
L.E. 404/S	Washer for nut (each)			1
L.E. 137/S	Timing gear camshaft	I	0	0
L.E. 149/S	Rollers and cage for same	6	6	
L.E. 80/S	Hardened steel race for rollers	3	9	
L.E. 138/S	Ball bearing for camshaft	9	6	
L.E. 113/S	Timing gear camshaft case with bush and bolts also with cap forming top half of rocker bearings, supplied complete only	2	2	0
L.E. 79/S	End cap for above	I	0	
L.E. 84/S	Stud for end cap (each)			3
S.T.D. 24	Nuts for above (each)			2
L.E. 68/S	Bolts for top cap or cover			3
L.E. 66/S	Bolts securing camshaft housing (each) long			6
L.E. 67/S	Bolts securing camshaft housing (each) short			3
L.E. 61/S	Timing gear cam lever or rocker (inlet)	12	6	
L.E. 60/S	Timing gear cam lever or rocker (exhaust)	12	6	
L.E. 65/S	Hardened adjusting screws for above (each)	I	0	
L.E. 25/S	Locking nut for screw (each)			3

U.

L.E. 116/S	Union nut for exhaust pipe	3	0	
L/3 E. 284	Union nut for oil pipe			4
L/3 E. 247	Union for oil pipe (screws into crankcase, etc.)			3
L/3 E. 287	Union for oil pipe (screws into tank)	2	3	
L/3 E. 290	Nipples for oil pipes (each)			3

V.

L.E. 170/S	Valve (only) inlet	12	6	
L.E. 112/S	Valve (only) exhaust	12	6	
L/E. 163/5	Valve spring outer			6
L/E. 401/S	Valve spring inner			5
L/E. 141/S	Valve spring cap (top)			8
L.E. 46/S	Valve spring cap (bottom)			5
L.E. 142/S	Valve split taper collar (two pieces)			9
L.E. 45/S	Valve guide inlet	2	0	
L.E. 148/S	Valve guide exhaust	4	0	
L.E. 120/S	Valve lifter shaft	3	6	
L.E. 126/S	Valve lifter lever for above	1	6	
L.E. 86/S	Pinch bolt for lever			3
L.E. 407/S	Valve lifter cable (inner and outer)	2	10	
L.E. 185	Valve lifter cable (inner only)			9
L.E. 186	Valve lifter cable outer	2	1	
L.E. 184	Valve lifter cable nipple handlebar end			3
L.E. 180/S	Valve lifter cable nipple engine end			3

V.—contd.

		£	s.	d.
L.E. 139/S	Valve lifter cable adjusting stop	...	...	9
S.T.D. 5	Lock nut for above	...	...	2
L.E. 144/S	Valve lifter involute spring	...	...	7
	Valve lifter lever (see handlebars)	...	...
L.E. 131/S	Valve lifter shaft retaining ring	...	...	1

FRAME AND FORK PARTS.

L.F. 132/S	Complete frame	5	7	6
L.F. 127/S	Steering head race for frame	2	5	
L.F. 123	Seat lug bolt (long saddle support)		8	
S.T.D. 4	Nuts for same (each)		2	
S.T.D. 11	Washer for same (each)		1	
L.F. 124	Distance tube for same (each)		4	
L.F. 40	Rear chain adjuster bolt (each)		9	
M. 275 BD	Front forks complete (less stand & mudguard)	5	6	0
M. C	Fork crown and stem only	12	9	
M. G	Fork girders (per pair)	3	8	0
M. TC	Fork head clip (bare)		9	0
1656/1658	Pinch bolt for above (with nut)		1	0
1658	Nut for bolt (only)			6
	Steering head adjusting nut (encircles H/Bar stem)	1	3	
1779/1677	Front fork spring (with top spring lug)	8	6	
1662	Bolt securing same top			6
1772	Top front fork spindle	1	3	
1646	L/H nut for same		6	
1646½	R/H nut for same		6	
1774/1775	Spindle washers (each) large or small		2	
1773	Bottom front fork spindle	1	6	
1649	L/H nut for same		6	
1648	R/H nut for same		6	
1697	Friction damper side plate	2	0	
1518	Star washer for same	1	3	
1653	Nut for friction adjustment	1	0	
1550	Friction disc	1	9	
1650	Bottom fork link, R.H.	3	3	
1659½	Bottom fork link, L.H.	3	3	
1777	Top fork link, E.H.	2	0	
1778	Top fork link, L.H.	2	0	
1577	Front fork lubricators (each)		6	
L.F. 126/S	Front Fork stem crown race	3	2	
L.F. 129/S	Set of steering head balls	1	3	
1779	Fork spring	6	9	
1677	Top spring lug	1	9	
1642	Washer for column top (1½ ins. bore)		3	
1359½	Spring washer for spring lug bolt		2	
1507	Mudguard bracket (halves)		6	

Frame and Fork Parts.—contd.

		£	s.	d.
1507½	Mudguard bracket plate washer	...	...	4
1660	Mudguard bracket plate bolt	...	...	4
1250	Mudguard bracket plate nut	...	...	3
1259/S	Mudguard bracket spring washer	...	...	2
L.F. 180/S	Pump clip assd.	...	...
S.T.D. 16	Screw for above...	...	...
S.T.D. 24	Nut for same	...	...

ENGINE PLATES AND BOLTS.

L.E. 36/S	Rear engine plates (left or right)	5	6	
L.E. 132/S	Front engine plates (left or right)		10	
L.E. 16	Engine plate bolt ¾ diameter (short)		7	
S.T.D. 3	Nuts for same (each)		3	
L/3 C. 52	Engine plate bolt ¾ diameter (long)		6	
L/3 C. 59	Tubular distance piece for chain guard		5	
S.T.D. 3	Nuts for above (each)		3	
L.E. 15	Engine plate bolt 5/16 diameter		5	
S.T.D. 4	Nuts for above		2	
L.F. 61	Clamping bolt for rear engine plates (over gear box)		5	

GEAR BOX (Special close ratio type)

L.S. 1	Gear box shell only	2	0	0
L.S. 2	Gear box end plate		16	0
L.S. 3	Gear box main driving shaft		13	6
L.S. 4	Layshaft only		13	6
L.S. 5	Main shaft high speed or sleeve pinion		16	0
L.S. 6	Middle gear sliding pinion for mainshaft		8	6
L.S. 7	Middle gear sliding pinion for layshaft		10	0
L.S. 8	Layshaft pinion...		5	0
L.S. 9	Main shaft pinion		4	0
L.S. 10	Low gear and kickstarter pinion		9	0
L.S. 11	Kickstarter shaft or axle } supplied only			
L.S. 12	Layshaft bush } assembled	12	6	
L.S. 13	Kickstarter pawl		1	3
L.S. 14a	Kickstarter pawl pin			3
L.S. 17	Kickstarter crank return spring cover		1	0
L.S. 18	Kickstarter crank return spring		1	0
L.S. 19	Kickstarter crank stop spring			7
L.S. 20a	Kickstarter crank relief cam			3
L.S. 31	Sprocket for rear chain	7	6	
L.S. 79	Sprocket fixing nut			9
C.S. 63	Chain sprocket locking plate			5
S. 35	Screw for same			1
C.S. 43	K.S. Pawl Spring			1
C.S. 44	K.S. Pawl Spring plunger			3
L.S. 32	Ball bearing cup			3

GEAR BOX—contd.

			£	s.	d.
L.S.	33	Kickstarter axle bush	1	6	
L.S.	34	Striking gear fork	6	6	
L.S.	35a	Striking gear lever	6	6	
L.S.	36	Oil retainer cap		2	
L.S.	37	Rocking shaft lever bush	2	0	
L.S.	38	Rocking shaft end bush or cap	1	6	
L.S.	39	Rocking shaft	1	3	
L.S.	40	Rocking shaft nut		6	
L.S.	45	Compensator spring for rocking shaft		5	
C.S.	75	Striking fork plate or slipper	2	6	
L.E.	17	Gear box top guide plate	6	9	
S.	172	Kickstarter crank cotter pin		2	
S.	15	Nut for same		3	
P.	70	Washer		1	
L.S.	2a	Gear box end plate paper washer		1	
L.S.	58	Kickstarter crank	12	6	
C.S.	24	Ball bearing for layshaft or main shaft	8	9	
C.S.	8a	Gear box filling or drain plug		9	
C.S.	67	Packing or adjusting washers (each)		1	
T.S.	6	Gear box fixing stud nut (each)		3	
T.S.	5	Spring washer for same (each)		2	
T.S.	4	Gear box stud (each)		5	
C.S.	10	Gear box end plate nuts (each)		2	
C.S.	9	Gear box end plate studs (each)		3	
C.S.	143	Bolt for securing kickstarter crank spring		3	
L/3 E.	265	Gear box adjuster (for front chain)	1	4	
L/3 E.	271	Special long bolt for same		7	
C.S.	20a	Main axle thrust washer	1	6	

CLUTCH PARTS.

L.S.	50b	1/2 rollers (each)		2	
L.S.	50	Roller cage	2	0	
L.S.	46	Clutch centre	13	6	
L.S.	47	Clutch sprocket	1	6	6
T.S.	49a	Clutch outer plate	2	6	
T.S.	50	Clutch back plate	2	6	
C.S.	166	Clutch centre plate	2	6	
C.S.	171	Clutch friction plate with inserts	5	0	
T.S.	77	Clutch spring cup	3	0	
T.S.	52a	Clutch spring	1	8	
C.S.	173	Clutch end cap	1	6	
L.S.	82a	Clutch rod		10	
L.S.	94	Clutch thrust pin		10	
C.S.	172	Clutch spring nut		9	
T.S.	55	Clutch spring collar (fits over above)		6	
C.S.	13	Axle nut (fixing clutch hub)		5	
C.S.	14	Axle nut lock washer		1	

Clutch Parts—contd.

			£	s.	d.
C.S.	15a	Axle key for clutch hub			3
C.S.	68	Clutch worm nut	5	0	
C.S.	69a	Clutch worm	1	9	
C.S.	70a	Clutch worm lever	2	6	
J.	200	Clutch worm lever pinch bolt			1
C.S.	72	Clutch cable adjuster support stud	1	0	
C.S.	106	Clutch cable stop with nut		9	
L.E.	52	Clutch cable (inner and outer) with nipples	5	6	
L.E.	53	Clutch cable (outer)	3	6	
L.E.	54	Clutch cable (inner)	1	6	
L.E.	55	Clutch cable spring			3
C.S.	100b	Clutch handlebar lever (see handlebars)	12	0	
C.S.	100	Lever portion only	4	0	
C.S.	104	Lever fulcrum bolt and nut			3
C.S.X.	90	Lever clip screw (each)			1

GEAR CHANGE PARTS

L.G.L.	10	Gear lever complete with gate	17	6	
L.G.L.	8	Gate with tank plate only	7	6	
L.G.L.	6	Gate fixing bolt			3
L.G.L.	3	Fulcrum stud for gear lever	1	0	
L.S.	120	Cap nut for same			5
L.S.	121	Spring washer			4
S.T.D.	5	Nut for gate fixing stud			2
L.S.	107	Gear lever with ball	5	0	
L.G.L.	12/S	Gear rod complete	5	0	
C.S.	87	Gear rod yoke end (each)			10
C.S.	37	Lock nut for same			2
C.S.	89	Yoke end pin			2
C.S.	108	Split pin for same (per dozen)			6

LUGGAGE CARRIER AND TOOL BOX.

L.F.	36	Luggage carrier complete	14	3	
L.F.	43	Bolt for fixing same (top)			4
S.T.D.	4	Nut for above			2
S.T.D.	11	Washer for above			1
L.F.	167	Bolt for fixing carrier to rear mudguard			3
S.T.D.	5	Nut for above			2
L.F.	39	Bolt for fixing carrier (bottom end) each			2
L.F.	151	Tool box for luggage carrier	15	0	
L.F.	167	Bolts for fixing same (each)			3
S.T.D.	5	Nut for above (each)			2
L.F.	166	Rear number plate (see also mudguards)			1
		Acetylene lamp type			1

MUDGUARDS.

		£	s.	d.
L.M. 46/S	Front mudguard	15	6	
	Front mudguard fixing bolt (each)		3	
S.T.D. 5	Nut for same		2	
L.M. 32	Front stand fixing screw		4	
L.M. 1	Rear mudguard	12	9	
L.F. 41	Rear mudguard fixing bolt for chain stay bridge		6	
L.F. 167	Rear mudguard fixing bolt for top stay bridge		6	
S.T.D. 5	Nut for above		2	
L.F. 167	Bolt for fixing rear mudguard to carrier		3	
S.T.D. 5	Nut for same		2	
L.F. 167	Bolt for fixing rear mudguard to tool box (each)		3	
S.T.D. 5	Nut for above		2	
L.M. 29	Rear mudguard stand clip stud		4	
S.T.D. 5	Nut for same inside mudguard		2	
L.M. 28	Stand clip spring		1	
L.M. 30	Stand clip spring cup nut		3	
S.T.D. 5	Lock nut for above		2	

TANK AND FITTINGS.

L.T. 64/S	Tank complete with all fittings	4	5	0
L.T. 65/S	Tank less all fittings	3	12	6
L.T. 31	Petrol tap and filter		4	2
L.T. 31a	Filter only			6
L.T. 32	Petrol drain tap		1	9
L.E. 47/S	Petrol pipe (for AMAC Carburettor)		4	3
L.E. 408/S	Petrol pipe (for B. & B. Carburettor)		4	0
L.T. 28	Petrol tank filler cap (glass top)		2	0
L.T. 28a	Glass top only for above			9
L.T. 30	Gauze strainer for petrol tank		1	9
L.T. 27	Oil tank filler cap		1	7
L.T. 55	Tank fixing bolts (each)			6
L.T. 53	Tank fixing bolt rubber pad			5
L.T. 56	Tank fixing bolt washer			2
L/3 E. 287	Oil pipe connection and filter combined		2	3

STANDS.

L.F. 31	Rear stand	10	9	
L.F. 38	Fixing bolts (each)		3	
L.F. 19	Nut for same (each)		4	
L.F. 22	Front stand	4	6	
L.F. 32	Fixing bolts (each)		3	
L.F. 159	Nut for above		2	
S.T.D. 11	Washer for above		1	
L.M. 32	Front stand fixing screw (see also mudguard)		4	

REAR WHEEL AND BRAKE PARTS.

		£	s.	d.
L.F. 183/S	Rear wheel complete with Dunlop Cord Tyre	6	1	3
L.F. 184/S	Rear wheel complete less tyre	3	18	6
L.F. 185/S	Rear wheel bare (less all fittings including hub interior)	2	17	6
L.C. 5	Rear wheel chain sprocket		8	0
L.C. 6	Fixing bolts for above (each)			2
S.T.D. 5	Lock nut for above (each)			2
1492	Rear wheel brake drum		9	0
1411	Fixing bolts (each)			4
1459	Nut for above			2
M.B. 27 S.P.	Rear brake cover plate assembled with bands, etc.	1	1	0
M.B. 27 A.P.	Cover plate only		7	6
M.B. 27 S.L.	Brake shoes per pair with linings (less spring)		9	9
M.B. 27 L.R.	Ferodo linings only with rivets (pair)		3	0
1453	Brake shoe internal spring (each)			6
1452	Brake shoe fulcrum stud			8
1459	Nut for same			3
1703	Brake shoe expander		2	6
1718	Brake shoe expander lever		1	3
1359	Nut for above			4
1252	Spring washer			2
L/3 B. 50	Rear brake rod		2	5
S.T.D. 4	Nuts for same (each)			2
L.B. 12	Brake rod toggle or crosshead			8
S.T.D. 4	Nut for same			2
S.T.D. 11	Washer			1
L/3 B. 51	Rear brake pedal		4	9
L.B. 39/S	Rear brake pedal pull off spring			4
L.B. 37/S	Rear brake pedal fulcrum stud		1	6
L.B. 5	Long bolt fixing above			6
S.T.D. 3	Nut for bolt			3
S.T.D. 10	Washer for same			1
L.B. 6	Distance tube for above (between plates)			4
1738	Rear wheel spindle		2	0
1239	Spindle nuts (each)			6
1238	Spindle washer (plain)			2
1247	Spindle washer (domed)			3
1767	{ Taper cone (fixed)	Supplied complete only	5	0
1768	{ Taper cone (adjusting)			
	{ Rollers and cage			
	{ Hardened steel outer roller race			
	Shouldered bolt for anchoring brake cover plate			6
	Nut for same			3
1233	Rear hub lubricator			4
L.F. 55	Rear wheel tyre complete (Dunlop Cord 650 x 65)	2	2	9
L.F. 55/B	Cover only (Dunlop Cord 650 x 65)	1	16	0
L.F. 55/A	Tube only		6	9

FRONT WHEEL AND BRAKE PARTS

		£	s.	d.
L.F. 186/S	Front wheel complete with Dunlop Cord Tyre	4	18	9
L.F. 187/S	Front wheel complete less tyre	2	16	0
L.F. 188/S	Front wheel only (less all fittings including hub interior)	2	1	0
M.A. 2½ S.P.	Front brake cover plate complete with shoes, etc.	15	0	
M.A. 2½ A.P.	Front brake cover plate only	6	9	
M.A. 2½ S.L.	Front brake shoes with linings (per pair) less spring	6	6	
M.A. 2½ L.R.	Ferodo linings only with rivets (per pair)	2	0	
I424	Fulcrum stud for shoes	6		
I459	Nut for same	4		
I429	Washer	2		
I427	Front brake shoe internal spring (each)	1	3	
I425	Front brake shoe expander	2	0	
I230	Front brake shoe expander lever	1	0	
I250	Nut securing above	3		
I249/S	Washer for nut	2		
I388	Front wheel spindle	1	9	
I758	Spindle nuts (each)	6		
I238	Spindle washer (plain)	2		
I247	Spindle washer (docted)	3		
I767	Taper cone (fixed)	Supplied complete only		
I768	Taper cone (adjusting)			
	Rollers and cage		5	0
	Hardened steel roller bearing outer race			
I233	Hub lubricator	4		
I256/S	Shouldered bolt for anchoring cover plate	6		
I250	Nut for above	3		
I264	Front brake rod only	9		
I261	Front brake rod adjusting yoke end	9		
I265	Lock nut for above	3		
I262	Fulcrum pin for above	3		
I262½	Split pin for above	1		
L.B. 32	Front brake cable (inner and outer assembled with spring box, etc.)	4	2	
L.B. 23	Front brake cable (inner only with nipples)	9		
L.B. 24	Front brake cable (outer with thimbles)	1	7	
L.B. 25	Front brake cable spring box	1	0	
L.B. 26	Front brake cable spring box spring	3		
L.B. 27	Front brake cable adjuster stop and lock nut	7		
L.F. 119	Front brake handlebar lever complete (see handlebar)	7	6	
L.F. 55	Front wheel tyre complete (650 × 65 Dunlop Cord)	2	2	9
L.F. 55/B	Cover only (650 × 65 Dunlop Cord)	1	16	0
L.F. 55/A	Tube only	6	9	

CHAIN GUARDS AND CHAINS

		£	s.	d.
L.C. 3	Rear chain guard	7	6	
L.F. 37	Bolt fixing same (rear end)	3		
S.T.D. 4	Nut for above	2		
L.F. 61	Bolt for front end (engine bolt)	5		
L.C. 46/S	Front chain guard	16	6	
L/3 C. 52	Long bolt securing centre (see also engine bolts)	6		
L/3 C. 59	Distance tube engine plate to chain case	5		
S.T.D. 3	Nuts for bolt (each)	3		
L/3 C. 53	Distance piece for rear end fixing stud	5		
S.T.D. 5	Nut for rear end fixing stud	2		
S.T.D. 12	Washer	1		
L.C. 13	Rear driving chain	1	0	0
L.C. 47/S	Front driving chain	11	0	
L.C. 19	Detachable connecting link only	5		
L.C. 21	Cranked chain link	7		
L.M.D. 32/S	Magneto chain (endless)	2	6	
L.C. 25	Chain rivet extractor (for drive chains only)	3	7	

FOOTRESTS AND PARTS

L.F.R. 14/S	Footrest rod only	9		
S.T.D. 3	End nuts for same (each)	3		
L.F.R. 12/S	Footrest distance tube R.H.	7		
L.F.R. 12/S	Footrest distance tube L.H.	7		
L/4 F.R. 63	Footrest distance tube centre	5		
L/4 F.R. 66	Footrest pad spindle L/S	1	0	
L.F.R. 13/S	Footrest pad spindle R.S	1	0	
L/4 F.R. 61	Footrest spindle link	1	2	
L/3 F.R. 54	Footrest pad and holder complete	2	2	
L/3 F.R. 51	Footrest pad only	10		
L/3 F.R. 52	Footrest pad centre tube	5		
L/3 F.R. 53	Footrest pad flanges (each)	3		
S.T.D. 3	Footrest spindle end nuts (each)	3		
L.F.R. 11	Footrest spindle spigot washer	3		

HANDLEBAR, ETC.

L.F. 189/S	Handlebar with rubber grips	17	0	
L.F. 149/S	Handlebar bare	13	9	
L.F. 119	Inverted lever (left or right) complete	7	6	
L.F. 120	Lever portion of above only	3	9	
L.F. 121	Fulcrum screw for same	4		
L.F. 122	Nut for screw	2		
S.T.D. 20	Screw securing lever body to handlebar	2		

SADDLE AND PARTS.

L.F. 60	Saddle complete with springs	18	6	
L.F. 170	Nose bush (hardened steel)	9		
L.F. 160	Saddle nose bolt	6		
S.T.D. 4	Nut for same	2		

Saddle and Parts—contd.

		£	s.	d.
L.F. 123	Long spring support bolt			9
L.F. 124	Distance tubes (each)			5
S.T.D. 4	Nuts for bolt (each)			2
S.T.D. 11	Washers for bolt (each)			1
L.F. 60a	Saddle spring only	2		6
L.F. 60b	Nuts for saddle spring post (each)			3

MAGNETO AND PARTS.

L.M.D. 12	Complete magneto	3	15	0
L.M.D. 41b	Contact breaker only complete	1	2	6
4152/4122	Contact screws only (pair)		12	6
L.M.D. 7p	High tension pick up		3	6
L.M.D. 1052	Carbon brush only }		1	0
	Spring for same }			
L.M.D. 23	Sparking plug cable with terminal end		1	0
L.M.D. 11	Magneto chain sprocket		3	0
L.M.D. 175	Bolt for same			2
L/3 E. 122	Sprocket for magneto drive (engine end)		2	6
L/3 E. 269	Special nut for fixing same			11
L.E. 3	Magneto platform or base		6	9
L.M.D. 33	Bolt for fixing magneto to same			2
S.T.D. 5	Nut for above			2
L.M.D. 9	Magneto chain adjuster stud			5
L.M.D. 8	Special double headed nut for same			9
L.M.D. 25	Magneto advance and retard cable (inner)			9
L.M.D. 26	Magneto advance and retard cable (outer)			2
L.M.D. 27	Handlebar lever for above complete		6	9

MECHANICAL OIL PUMP AND PARTS

5061/5475	Oil pump complete with tell-tale	19		0
5475	Tell tale only complete		2	6
	Tell tale plunger and cap			9
5475/1	Aluminium pump body		3	0
	Screwed plug with fibre washer (fits in side of above)			8
5475/5	Steel worm shaft		1	0
5475/3	Bronze worm sleeve		1	6
5475/2	Regulating block (with handle extension)		1	6
5475/9	Index plate for above			6
	Screws securing plate (per dozen)			6
5475/4	Steel pump plunger		1	6
	Screwed oil pipe connection with washer			4
L.E. 173/S	Oil pipe tank to pump		5	3
L.E. 174/S	Oil pipe pump to Camshaft housing		4	6
L.E. 172/S	Oil pipe camshaft housing to crankcase		3	6
L/3 E. 247	{ Crankcase oil pipe screwed connection }			3
	{ Camshaft housing pipe screwed connection }			3
L/3 E. 284	Oil pipe union nut only			4
L/3 E. 290	Oil pipe nipple only			3

CARBURETTOR B. & B.

		£	s.	d.
L.E. 402/S	Complete Carburettor (special type B. & B.)	2	10	0
B. & B. 101	Float chamber body only		8	6
B. & B. 102	Float chamber cap and tickler		7	8
B. & B. 106	Float chamber needle valve			10
B. & B. 104	Float		2	6
	Main jet complete		1	9
B. & B. 158/1	Fibre washer for same			1
B. & B. 138	Pilot jet			9
B. & B. 139/148	Pilot jet air screw and spring			7
B. & B. 135	Jet taper needle		1	9
B. & B. 136/7	Needle holder and screw			7
B. & B. 120/123	Spraying chamber		8	6
B. & B. 128	Spraying chamber cap with bushes		1	8
B. & B. 129	Spraying chamber cap lock ring		1	3
B. & B. 130	Clip and bolt for inlet port		1	8
B. & B. 116	Bolt only			3
B. & B. 126	Throttle Valve } per pair		6	9
	Air Valve }			
B. & B. 145	Valve springs (pair)		1	2
L.E. 59	Control levers complete		7	0
B. & B. 173	Air lever only		2	11
B. & B. 174	Throttle lever only		2	11
B. & B. 159/160	Control cables (inner and outer) complete		0	9

CARBURETTOR A.M.A.C.

A.M.A.C. 1	Complete Carburettor (special type)	3	6	0
A.M.A.C. 2	Float chamber complete	1	3	0
A.M.A.C. 3	Float chamber cap only		4	3
A.M.A.C. 4	Float only		2	6
A.M.A.C. 5	Float needle only		1	1
A.M.A.C. 6	Jet holder		1	9
A.M.A.C. 7	Jets (each)			5
A.M.A.C. 8	Spraying chamber only		17	0
A.M.A.C. 9	Spraying chamber cap (with bushes)		2	2
A.M.A.C. 10	Spraying chamber cap lock ring		2	2
A.M.A.C. 11	Sprayer		6	5
A.M.A.C. 12	Large nut for fixing same		1	11
A.M.A.C. 13	Throttle valve only		4	3
A.M.A.C. 14	Air valve only		3	5
A.M.A.C. 15	Valve springs (each)			3
A.M.A.C. 16	Control complete with levers and cables		17	10
A.M.A.C. 17	Control cables only (each) inner and outer		3	0
A.M.A.C. 18	Control levers complete		11	11
A.M.A.C. 19	Throttle lever only		3	5
A.M.A.C. 20	Air lever only		3	5
A.M.A.C. 21	Clip and bolt for inlet port		2	5
A.M.A.C. 22	Bolt only for above			3

EQUIPMENT.

		£	s.	d.
L.E.Q. 33	Acetylene lamp set complete (Lucas No. 462)	3	3	0
	Y piece, tubing, etc.		5	6
L.E.Q. 14	Head lamp only (No. 462 Lucas)	1	18	0
L.E.Q. 15	Tail lamp only		3	6
L.E.Q. 16	Head lamp burner		2	1
L.E.Q. 17	Tail lamp burner			6
L.E.Q. 18	Generator (No. 62 Lucas)	17		6
L.E.Q. 19	Generator and head lamp combined bracket		7	6
L.E.Q. 34	Cowey Speedometer gear box		15	0
L.E.Q. 33	Cowey Speedometer complete (special m.p.h. type) model 7A.	3	15	0
L.E.Q. 35	Cowey Speedometer driving wheel		3	0
L.E.Q. 36	Cowey Speedometer driving wheel screw and clamps		2	0
L.E.Q. 37	Cowey Speedometer driving wheel complete		5	0
L.E.Q. 38	Cowey Speedometer flexible drive complete	12		6
L.E.Q. 39	Cowey Speedometer sheath and coil (per ft.)		1	6
L.E.Q. 40	Cowey Speedometer cable (per ft.)		1	4

TOOLS.

L.T.K. 16	Oil injector	2		4
L.T.K. 15	4-inch combination pliers	4		10
L.T.K. 13	4-inch wire screw driver	1		7
L.T.K. 10	Double end forged spanner $\frac{1}{4} \times \frac{5}{16}$ ins.	1		10
L.T.K. 11	Double end forged spanner $\frac{3}{8} \times \frac{1}{2}$	1		10
L.T.K. 9	Tappet adjusting spanner			7
L.T.K. 1	Thin cone adjusting spanner			9
L.T.K. 12	Six-inch adjustable spanner	7		6
L.T.K. 14	Tyre lever	1		1
L.F. 58	Tyre pump	4		10
L.T.K. 8	Valve cap spanner	2		0
L.T.K. 5	Magneto spanner	1		0
L.T.K. 17	Tool roll only	3		4
L.T.K. 7	Tool roll complete with all tools (less pump)	1	10	9
L.F. 151	Tool box only (see also luggage carrier)	15		0

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