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Matchless

THE PERFECT PASSENGER MOTORCYCLE

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INSTRUCTION BOOK

AND

SPARE PARTS LIST

Received with Thanks

3 DEC 1923

For KAYS, ENFIELD

MODEL J

Matchless

H. COLLIER & SONS LIMITED, PLUMSTEAD LONDON

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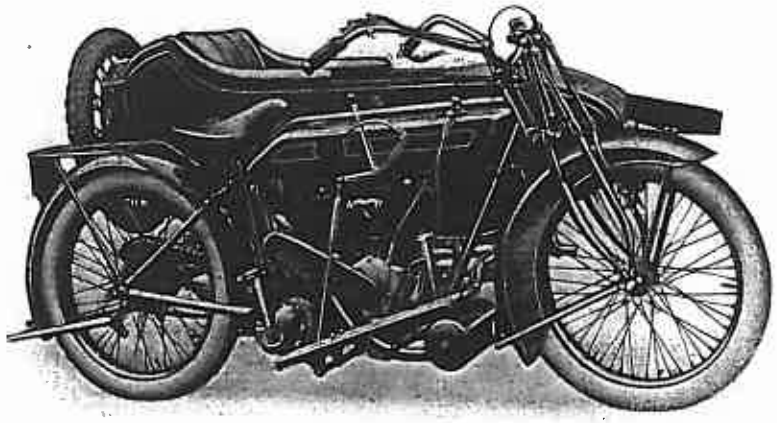
DRIVING AND ADJUSTMENT INSTRUCTIONS.



"Matchless" Model J.

H. COLLIER & SONS, LIMITED,

Manufacturers,

Registered Offices and Showrooms:
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 17 & 18.

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

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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 " J " 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 18 & 19 for Instructions re Ordering Parts and particulars of Deposit Account System).

H. COLLIER & SONS, LTD.

General Description.

STARTING.

Before describing the actual method of starting, it is perhaps advisable to explain the various lever positions. Neutral or free engine position of the gear is marked " N " on gear quadrant. Gear changing lever must be in the position marked, thus, for starting. Ignition is advanced or retarded by means of a lever fixed on left side of tank. To advance spark this lever is pushed backward; for starting it should be about two-thirds 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. With the right foot give the kickstarter a sharp and vigorous push downwards; should the engine fail to start at the first kick allow the crank to go right back against the rubber buffer stop and kick again until the engine starts. This operation should not require at the most more than three or four attempts. On account of the mechanically-operated valve lifter and long kickstarter crank with the small gear up, the starting of the engine of the Model " J " will be found a far more simple operation than on any previous model. When the engine is started close the throttle slightly to check the engine speed, and seated on the cycle, depress the clutch pedal by pressing forward with the toe—this disengages the clutch. Then shift the gear lever into first position, after which gently let in the clutch by releasing gently the clutch pedal. When fairly under way smartly depress clutch pedal again, and simultaneously shift gear lever into second gear position, releasing pedal gently but smartly as engine takes up the drive, after which repeat the operation to obtain top gear. When thoroughly accustomed to the gear changing it will be found beneficial to check the engine speed while changing up by closing the throttle slightly. This can quite easily be done by operating the gear lever with the left hand and the throttle with the right. It is possible by this latter method to change gear absolutely without a sound. 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.

DRIVING.

In driving it will be found that the " Matchless " clutch becomes almost indispensable, particularly for slow driving on top gear, rounding very acute corners, riding in traffic, etc., obviating much of the incessant gear changing necessary on most machines. The clutch surfaces being positively lubricated, it is quite safe to use same in such circumstances as suggested above, and, in fact, the clutch may be slipped whenever necessary for comfortable and easy driving without the slightest fear of harmful results, provided always that the lubricating

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instructions appertaining to same are carefully carried out. The whole machine, in fact, should be driven like a car. In general driving it is always advisable to advance the ignition as far as possible without 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 enormous strain imposed upon the rear driving chain.

"DON'TS" IN DRIVING.

DO NOT allow the gear dogs to knock when engaging the low gear for starting. Push the clutch farther out of engagement and all knocking will cease.

DO NOT allow the engine to labour on high gear on a steep gradient. 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.

DO NOT overlook signs of harshness in transmission or fierceness in clutch operation. Both point to need of lubricant.

DO NOT force engine or drive above a maximum speed of 25 m.p.h. 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.

LUBRICATION.

It is practically impossible to lay down rules for engine lubrication owing to the varying conditions under which different machines are driven. The amount of oil we recommend for a normal load and at an average speed of 20 m.p.h. is approximately one pumpful to every five miles. This amount must be increased proportionately to all conditions above normal. The quality of oil to be used, however, is of vital importance, and we particularly recommend our patrons to use only the very best brands, a good example being Wakefield's Castrol "C" Winter Grade, which will be found suitable for both winter and summer. Of equal importance to the engine is the lubrication of such parts as clutch, chains, fork spindles, etc., which should be dealt with systematically as follows:—

CLUTCH.

Lubricate with special Foliac Graphite grease and oil mixture every 200 miles of ordinary running i.e. more often if machine is driven mainly

in traffic where clutch is used frequently. Want of lubrication of the clutch surfaces will be made apparent by harsh or jerky transmission, and no such signs should be ignored. Should the oil which is injected into the reservoir on the end of the clutch pedal refuse to run away, a few strokes of special injector with nozzle held into the hole will drive the oil through the small tube passing into clutch interior. Under no circumstances must the lubrication of clutch surfaces be ignored. The self-filling oil injector provided renders this operation one of seconds only.

CHAINS.

It will probably be found that the chains will receive sufficient oil from the clutch and gear box if the respective lubricating instructions of these parts are carried out. They should, however, be inspected periodically and oiled if necessary. At least once each season the rear chain should be removed, and after cleaning thoroughly soaked in molten tallow. (Engine oil will serve as a poorer substitute.)

FORK SPINDLES.

Every 200 miles grease should be forced through the fork spindles by means of the grease pump provided until the grease can be observed exuding from either end of spindle bearings. (Special Foliac Graphite Grease recommended as a lubricant.)

GEAR BOX.

Every 500 miles the gear box filling plug should be removed, and the box filled to overflowing when the machine is standing level, if necessary, with heavy gear oil (**preferably**).

HUBS.

Every 500 miles (or more frequently in continuous bad weather) the hub grease caps should be removed and grease injected with the grease pump provided, until it is seen exuding from each side of the spindle. (Speedwell Medium Transmission Grease or Price's "Belmoline" Medium Grade, specially recommended as a lubricant.)

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.

TO LUBRICATE BRAKE DRUM BEARING.

On models prior to 1923 no provision (other than dismantling) has been made for the lubrication of the above, which is of the frictionless double roller type and being packed with grease during assembling, in the ordinary course of events no further lubricant should be required. It should be explained that the primary object of this grease is to prevent the formation of rust or the entry of water. However, cases having been brought to our notice of this becoming dried up by heat generated by frictional end thrust on the rollers caused by excessively loose adjustment of the rear wheel bearing, it has been considered advisable to provide some easy means of injecting fresh grease. A small hole is therefore drilled through the inner end of the roller sleeve

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or spindle (exposed by the removal of rear wheel) through which grease may be forced by means of the injector provided in tool kit. Owners are warned, however, against adding grease to this bearing unless some signs are evident that same is needed, such as squeaking, etc., as an excess of lubricant may find its way into the brake drum interior and render the rear brake inefficient in action. Injector 1/3 full is ample if and when required (Foliac Grease recommended).

ADJUSTMENTS.

ENGINE.

To Adjust Valve Tappets. Hold tappet head, Part No. HE.4794, with adjustable spanner, and slack off thin lock nut, Part No. H.E.4107, with special thin engine spanner, then using the small end of the same spanner on the tappet body. Part No. H.E.4090, screw up or down as desired. When the correct adjustment has been obtained the head must be securely locked with the thin locking nut.

NOTE.—The correct clearance between tappet head and valve stem when valve is on its seating is .005, approximately the thickness of an ordinary visiting card.

TO ADJUST VALVE LIFTER WIRE.

Slack off small lock nut securing valve lifter outer casing stop, and screw the stop out until correct adjustment is obtained.

NOTE.—This adjustment can be made at either end of the outer cable, and care must be taken when adjusting to see that the valve tappets are quite free when valves are down on their seatings.

TO REMOVE CYLINDERS.

Unscrew knurled-edge cap from top of carburettor and draw out valves and cables. Then unscrew the petrol pipe union nut at tank end, after which remove inlet pipe and carburettor entirely. Next remove oil pipe; then remove both nuts securing magneto chain case, and take off the outer half of same. Then remove the nut securing each magneto chain sprocket, after which, with a lever behind the chain case, at each end in turn, force off the sprocket. Then remove the four bolts securing magneto platform, and after detaching ignition rod and ignition cables then remove magneto entirely. Both exhaust pipe nuts should then be unscrewed, after which sparking plugs and valve caps (if it is desired to remove the valves) should be unscrewed. The cylinder nuts should then be taken off, and with the pistons at their lowest point, the cylinders can then be removed with ease.

The return should be made in the reverse order, care being taken when refitting cylinders to keep the faces quite clean and cylinder walls smeared with oil. We recommend coating the cylinder base when ready for assembling with Seccotine or quick-drying gold size. Too much care cannot be exercised to prevent the admission of any dust or foreign matter, and while on this subject we particularly warn owners against the usual practice of using the top of tank as a resting place for nuts and pins, etc., which can at the least jar fall into crankcase interior while cylinders are removed.

The base of cylinders, just prior to refitting, should be smeared with a little seccotine or quick-drying gold size as mentioned above.

It is advisable not to mix up the parts taken from each cylinder, and in fact, where convenient, we recommend removing and replacing one cylinder before disturbing the other.

After the whole job has been completed and tappets adjusted if necessary (see Instructions), it is advisable to go over all nuts, particularly cylinder nuts.

TO RE-TIME MAGNETO.

Revolve the engine by hand until the back piston is approximately 7/16ths of an inch from the top of the compression stroke (i.e. the stroke upwards immediately after inlet valve has closed). Then with ignition lever in fully advanced position, and magneto sprocket loose on shaft (the other sprocket having been previously tightened), turn the magneto armature backwards until the points are just about to break on the No. 1 cam. Holding carefully in this position tighten up the magneto sprocket nut.

NOTE.—The operation of re-timing magneto, although requiring care, does not in any way justify the alarm with which many novices view it. A good test for correct timing after the foregoing instructions have been carried out is as follows:—

Start up the engine and fully retard ignition. With throttle fully open the engine should run at about 1,000 to 1,200 revolutions per minute, i.e. at about the same speed as at 20 to 25 miles per hour. If any considerable variation to this speed is obtained an alteration in the required direction should be made. When satisfied that magneto timing is correct, securely tighten the nuts which fix magneto sprockets, commencing first with the one on the cam shaft.

TO ADJUST MAGNETO CHAIN.

It will be observed that magento-chain adjustment is obtained by sliding the magneto back upon the engine cradle plates to which it is attached. Correct chain adjustment is such that when the top of chain is lightly pressed up and down a whip of ⅛ to ¼inch is obtained. After any adjustment has been made, the four small bolts which secure magneto platform bracket to engine cradle plates should be securely tightened.

TO REMOVE TIMING GEAR.

Remove magneto chain case and sprockets as previously described, and take off the remaining nuts securing timing gear cover. Then pull up valve lifter wire by hand, at the same time holding the covering tube stationary. Then holding in this position remove the slotted cap, Part No. H.E.4323, then push the tube up until the nipple is exposed, and detach wire by pushing through the slotted side of brass yoke end. Then unscrew the brass yoke end, after which remove hexagon screwed cap and spring, Part Nos. H.E.4678 and H.E.4290. Then pull upwards on valve lifter rod and at the same time gently tap off the timing gear cover until the lifter rod yields, and is free to move up and

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down. Care must be taken not to allow the cam wheel to come out with the cover plate, and owing to the tendency to do so, it is advisable to occasionally tap the end of cam shaft when withdrawing the cover plate to prevent this happening. The timing gear is now exposed, and valve lifter will remain in cover plate.

TO REMOVE CAM WHEEL.

Revolve the engine until the marks on timing gears coincide, then raise the back exhaust tappet with a screwdriver or some other suitable instrument and insert a distance piece (a penny or two-shilling piece will serve) between the crank case and lowest part of tappet head. The cam wheel is then free to be pulled out.

TO REPLACE CAM WHEEL AND GEAR COVER.

With back exhaust tappet raised as described above, hold all four cam levers up and gently insert cam wheel with mark at the bottom to coincide with mark on small pinion. See that exhaust valve lifter is in place in cover. After carefully cleaning the faces of cover and smearing with quick-drying gold size or Seccotine slide on to cam spindle as far as possible, then draw the lifter rod as high as possible and carefully tap the cover on until about ¼inch from the case, then push valve lifter rod down as far as possible and then push the cover home. No force is necessary in replacing this cover, and should any difficulty be experienced in pushing valve lifter rod down as described, carefully draw the cam wheel out a little. After the cover has been replaced the magneto chain, etc., should be fitted as described previously (see Magneto Timing).

TO INSPECT GEAR BOX INTERIOR.

To remove gear-box end plate for examination of gears remove the aluminium cap covering kickstarter ratchet pinion, then take off the small nut on the end of driving shaft and remove spring and ratchet pinion. Then unscrew the ratchet nut (screwed right hand thread). This, with constant use, may have become tightly fixed, and some force may be required to loosen. Then remove kickstarter crank and spring, and all nuts securing end plate. Then draw off valve lifter lever, and cable attachment, after which the end plate may be gently forced off, leaving the gears exposed.

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.

Should any tendency develop on the part of top or bottom gears to jump out of engagement, the adjustment of gear rod must be at once inspected. This rod must be adjusted each time an alteration is made to the position of gear box (see Front Chain Adjustment). To test for correct setting of gear rod proceed as follows:—

Put back stand down (see Instructions to Remove Rear Wheel) and remove the bolt from top of gear rod and gently pull the rod upwards, at the same time moving rear wheel to and fro until the top gear is engaged. Then holding the rod in this position move the gear lever into top gear position, and alter the length of rod by screwing same in or out of the cross head on gear-striker lever as the need may be, until the rod is of correct length to allow the bolt at the top end being introduced without any pull on rod being required. Before fixing this bolt, test in low gear in a similar manner and halve any inaccuracy, that is to say, if the rod is found to be long when offered up in low gear position, but correct in top gear, it should be shortened to make the inaccuracy equal in each. Mention is made of this owing to the fact that in order to provide for wear on the numerous joints, the gear lever is given slightly more movement than necessary when new. This excess of movement is taken up by the buffer spring box made integral with the gear rod, and primarily intended to facilitate noiseless gear changing.

TO DISMANTLE HUB BEARINGS.

After wheel has been removed (see Removing Wheels), slack off the large octagonal nut securing the right side screwed adjusting ball cap (using special spanner provided). Then using the hooked end of same spanner, turn this screwed cup in a left hand direction until no further outward movement is obtainable, indicating that the threaded cup is entirely clear of threaded hub flange. Then by means of a brass punch slightly smaller in diameter than the ends of hollow wheel spindle, drive the spindle from the left side clear of the metal gland cap washer which is merely a force fit on spindle end. When this washer is disengaged the entire spindle, etc., may be withdrawn, after which the spindle may be driven off the washer at the opposite end in like manner. Upon re-assembling, the balls (each side) may be secured in their respective cups by applying thick grease and the correct adjustment of bearing should be obtained before the gland cap washers mentioned above are again driven on the ends of spindle. It is of the greatest importance that the large octagonal locking nut be securely tightened. A few sharp hammer taps applied to the end of the special spanner being advisable. If the felt washers fitted underneath the metal gland washers show signs of dryness or hardness they should be thoroughly soaked in oil before being refitted, after which the metal washers should be lightly driven down until contact with the felt washer is obtained.

NOTE.—The friction set up by these washers will rapidly wear off, and under no circumstances should the adjustment of bearings once correctly obtained be slacked off in an endeavour to reduce this initial stiffness which is of no importance and which, as stated, will rapidly disappear.

TO DISMANTLE BRAKE DRUM BEARING.

Remove rear wheel (see Instructions). Then detach connecting link of rear chain. Slack off considerably the large nut securing brake drum centre sleeve with large single end box spanner provided and after disconnecting rear brake rod twist the whole assembly until the projection on rear fork end is clear of the slotted hole in brake cover

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plate in which it operates when the entire assembly can be withdrawn backwards clear of the slotted fork end. Then with a lever force the hooked end of brake pull off spring from the lever, when the cover plate (with brake bands, etc.,) may be lifted off. To expose the brake drum bearing the large screwed cap must be removed by means of a suitable punch, when the centre sleeve and rollers may be withdrawn. To re-assemble it will be found convenient to secure the rollers to the centre sleeve by applying grease, when the whole may be gently forced into position after which the covering cap should be screwed down tightly.

When fitting on the cover plate, care must be exercised to ensure proper engagement of the small dowell pin fitted near the centre with corresponding hole in centre sleeve. The object of this pin, it might be explained, is to prevent the sleeve turning upon tightening the large nut by which the entire assembly is secured to fork end.

NOTE.—It is of the utmost importance that this large nut is kept securely tightened. (See Reference on Page 13, Periodical Inspection of Nuts.)

CLUTCH ADJUSTMENT.

When delivered the clutch will be found to possess a comfortable margin of grip. Slight adjustment either way can be effected by tightening or slackening the spring pressure, as may be desired. Should the clutch develop a tendency to slip under full load, the adjustment of the clutch pedal ball thrust races must first be suspected (see Adjustment of Clutch Pedal Bearings). If this adjustment is found O.K. remove the top portion of front chain case, and with the special tubular box key and tommy provided tighten in turn each of the six clutch spring nuts about half of a turn only, after which give another trial. This may be repeated if found necessary, but under no circumstances should these nuts be screwed up sufficiently to prevent the clutch effectively disengaging. Should the clutch on the other hand, develop a tendency to become harsh in action, although properly lubricated (see Oiling Instructions), the clutch spring nuts should be carefully slacked off in turn not more than one complete turn between each re-trial.

NOTE.—It is important that care is exercised in each of these operations to adjust each of the six nuts a similar amount. To re-set after complete dismantling screw each nut up in turn until considerable resistance is felt, indicating that spring is completely compressed, after which slack out four complete revolutions each nut in turn.

CLUTCH PEDAL ADJUSTMENT.

When the clutch pedal thrust races are correctly adjusted there should be a distinct free movement of the pedal portion before the resistance of the spring pressure is felt. Should this free movement not be apparent, remove the screwed end cap (containing oil reservoir and tube), also remove, the outer left-hand threaded nut that the removal of the end cap will expose. Then remove the washer under this nut and carefully slack off the inside left-hand threaded nut not more than half-a-turn before re-trial. Then replace the special washer and outer nut, securely locking the latter in position. Repeat if found necessary, after which replace end cap, leaving oil hole uppermost.

POSITION OF CLUTCH PEDAL.

The clutch pedal should be set to allow the rider to control the movement of same in its entire range with both heel and toe. When delivered it is set suitable for a person of average height but if found inconvenient to operate as described, slack off the top nut on anchoring rod and revolve pedal to the desired position. A much easier and finer clutch manipulation will be obtainable with the clutch pedal set correctly. The anchor rod nut referred to does not need excessive tightening.

TO ADJUST FRONT CHAIN.

Slack off the nuts securing the top ends of gear box straps, and using the kickstarter crank as a lever, revolve the gear box in its housing in the required direction (viz., backwards as in starting the engine for tightening, and the reverse direction for slackening). Care must be taken after adjustment has been made to securely tighten the gear box strap nuts. Correct adjustment of the chain should allow a movement of $\frac{3}{8}$in. to $\frac{1}{2}$in. when chain is pressed up and down. This may be ascertained from inspection hole in chain case immediately opposite the top side of chain.

IMPORTANT NOTE.—Owing to the method of obtaining chain adjustment by revolving gear box, the gear operating rod must also at the same time be adjusted to correct length for each such adjustment. (For instructions see Gear Rod Adjustment.)

TO ADJUST REAR CHAIN.

Put down rear stand (see Instructions to Remove Rear Wheel) and slack off large nut only on the left side of rear wheel, and also the large nut on right side. Then screw up an equal amount each side chain adjuster nut (i.e. small nut at end of fork end) until a whip of $\frac{3}{8}$in. to $\frac{1}{2}$in. is obtained by pressing chain up and down. In making this test, tension of chain should be tried in a number of places, and the correct adjustment obtained for the tightest place. When correct adjustment has been obtained securely tighten each of the large nuts.

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.

NOTE.—Want of adjustment will also make itself felt by a distinct tendency of the front wheel to wobble when the hands are removed from handlebar.

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TO REMOVE REAR WHEEL.

Put down stand. (The easiest method of lifting rear of cycle on to stand is to hold the cross bar of stand with the left foot and raise the weight of cycle from the luggage carrier.) Entirely remove the small nut on left hand end of spindle and slack off only the right hand side large nut. Then turn the spindle until the handle on same is in line with the slot in fork end, in which position it can be easily withdrawn and the wheel removed without disturbing transmission in any way.

To replace, hold the wheel up until the spindle can be inserted to carry the weight, then turn the wheel slowly, and at the same time force over towards the transmission side until the driving dogs engage, then holding the handle of spindle in line with the slot in fork end, push right home. Then give the spindle a quarter of a turn, when the handle will be across the slotted fork end, and holding in this position replace small nut on left hand side and securely tighten large nut on right hand side.

NOTE.—It will be found advisable to hold the right hand side chain adjuster tight against the inside of fork end while the flattened collar on spindle is being passed through.

TO REMOVE FRONT WHEEL.

Put down front stand. Slack off nuts on front brake pad holder clips and turn the pads outwards. Then remove spindle nut and washer, when spindle can be withdrawn and wheel removed. When replacing care must be exercised when setting and fixing the brake pad holders. These should each be set an equal distance from wheel rim and in line with same, and in addition the clip nut must be securely tightened.

NOTE.—Wheel must be replaced with the driving dogs on left side as seen when seated.

TO REMOVE SIDE WHEEL.

Put down side stand only. Remove nut and washer from spindle end and withdraw, when wheel is free to be removed.

NOTE.—When replacing fix wheel with driving dogs on left side as seen when seated.

TO ADJUST WHEEL BEARINGS.

A periodical examination of wheel bearing adjustment should be made when machine is on stands, and any wheel requiring attention should be removed (see Removing Wheels). The large octagonal lock nut should then be slacked off with the special spanner provided, and the threaded cup turned with the hooked end of spanner in a right-hand direction, until all shake is taken up, after which the locking nut must be securely tightened after which the adjustment of bearing should be verified.

NOTE.—It is advisable to tap the spanner with a small hammer when tightening this large nut to guard against any possibility of same slacking off in use.

STANDS AND MUDGUARDS.

To obviate any mudguard breakages, exceptionally robust guards are fitted, each of which is rigidly fixed to an important frame member. As a further precaution all the stands are fixed both to frame members and mudguards in such a manner as to help support the latter instead of remaining a dead weight on them as is usual. It is, therefore, of great importance that the stand and mudguard fixing bolts should be kept tight, and also that the front and sidecar stand clip screws are carefully tightened down after use (but not excessively). In each case the stand fixing bolt is provided with a locking nut, and we particularly recommend that these bolts and nuts be inspected occasionally, and if necessary screwed in until the stand is quite stiff to operate. This care, in addition to having the desired effect as regards mudguard support, will prevent any stand rattle which is common to many machines.

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.

All wheel axle nuts, large nuts securing brake drum centre sleeve, all mudguard nuts, engine bolt nuts, large nuts securing screwed yoke ends on sidecar stays and connections, all 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. Care should be taken with the sidecar body, which should be treated in the same manner as a carriage. The dirt, whether mud or dust, should be washed off gently with a soft sponge, and when clean wiped off with a wash leather. To improve the polish a little linseed oil should be used occasionally, afterwards polishing with a soft cloth.

EXHAUST VALVE STICKING OR SLUGGISH IN ACTION.

Owing to the common tendency to over oil, it occasionally happens that one or other of the exhaust valve stems will collect sufficient deposit of congealed oil to cause sticking or sluggish action when engine is cold. Generally after a few seconds' running this deposit softens sufficiently owing to the heat, to allow the valve to operate normally. This trouble, although not of much importance, should not be ignored. A simple remedy is to obtain a stiff brush, and while the engine is running, hold the brush soaked in paraffin against valve spring. The paraffin will be carried up the valve guide, and will rapidly soften the congealed deposit. If necessary, this operation should be repeated until no valve sticking is noticeable when starting engine from cold. Any accumulation of oil or deposit on valve springs or valve stems should be washed off occasionally with a stiff brush and a little petrol.

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INFLATION OF TYRES—(IMPORTANT).

The front and sidecar tyres should not be blown up too hard, but should be soft enough for the load of machine and passengers to make quite an appreciable flattening of that part of the tyre which bears the load. The back tyres should be harder to prevent the possibility of the tyre creeping, and should be sufficiently hard for the load to make hardly any discernible flattening. Care should be taken to keep the security bolts in all tyres tightened up.

STOPPAGES AND THEIR CAUSES.

ENGINE SUDDENLY STOPS. Probable cause:—

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

ENGINE RUNS BADLY. Probable cause:—

Valve sticking.
Weak valve springs.
Plug points too close.
Water on plugs.
Air leakage (due to nuts of inlet pipe or carburettor being loose).
Paraffin in petrol or bad petrol.
Valve seating badly burnt.
Sooty plugs.
Faulty magneto contacts.

ENGINE WILL NOT START. Probable cause:—

Valve or valves stuck up.
Contact breaker arm stuck.
Water on plugs.
Choked jet.
Valves stretched and not seated properly.

LEGAL MATTERS.

To comply with the law relating to motorcycles the owner of a "Matchless" Model "J" 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 License 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 £4/0/0, and in some districts evidence that the vehicle to be licensed 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 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 latter 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. Whenever 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	3-cwt.
Weight of sidecar (if requested only) ...	1-cwt. 1-qr.
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.

(As agreed by the Cycle and Motorcycle Manufacturers & Traders Union.)

We give the following guarantee with our motorcycles instead of the Guarantee implied by statute or otherwise as to the quality or 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" 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.

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 three months only from the 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 GUARANTEE, subject to the conditions mentioned below, to make good at any time within three months any defects in these respects. As motorcycles are easily liable to derangement by neglect or misuse, this Guarantee does not apply to defects caused by wear and tear, misuse or neglect.

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Any motorcycle sent to us to be plated, enamelled or repaired will be repaired upon the same conditions as if it were a new motorcycle, i.e. We Guarantee that all precautions which are usual and reasonable, have been taken by us to secure excellence of material and workmanship, such Guarantee to extend and be in force for three months only from the time such work shall have been executed, 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.
(As agreed by the Cycle and Motorcycle Manufacturers & Traders Union.)

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 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 any warranty or make any representation on our behalf other than those contained in the above Guarantee.

MACHINE NUMBERS.

The frame number will be found on the right hand side of the seat lug of the frame.

The engine number is stamped on the top of the right hand side of crank case near the valve lifter mechanism.

The sidecar frame number will be found on the left hand front spring pad lug.

H. COLLIER & SONS, LTD.

INTRODUCTION.

We have pleasure in presenting this Spares List for the "Matchless" "J" Combination.

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

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 18 and 19.

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

When ordering spare parts, type of machine and frame or engine number should be mentioned in addition to the distinctive number of the part or parts required.

H. COLLIER & SONS, LIMITED.

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TERMS OF BUSINESS.

Our invariable rule in this department is nett 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, 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 from 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—(IMPORTANT).

We strongly advise all owners of " Matchless " motorcycles to take advantage of our " Deposit Account System." It often occurs that parts are required by return, but customer 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 £4, 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 all 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.

SPARE AND REPLACEMENT PARTS.

A special department of our factory deals with the supplying of spare parts and replacements for all the models which we have manufactured.

An expert staff is retained whose records of our old models is so extensive that owners can rely upon the correct part being supplied if same is available. We cannot guarantee to supply every part for machines manufactured prior to 1912, but every effort possible is made to supply parts which may be found necessary.

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 general repairer.

OVERHAULING.

When sending 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 repairs accounts are strictly cash before delivery.

RULES TO BE OBSERVED.

1. Parts sent to us for repair, replacement, or as pattern must bear distinctly sender's 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 name of part required it is advisable to send old part as pattern.

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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 three days from receipt of goods, no claim can be entertained.

ENGINE PARTS.

B.

			£	s.	d.
H.E.	5064	Ball bearing for flywheel spindle (transmission side)		15	0
,,	209	Bush for flywheel spindle (timing side)		5	7
,,	3980	Bush for Camwheel spindle (crankcase side)		1	6
,,	4693	Bush for camwheel spindle (timing gear cover side)		2	0
,,	3979	Bush for exhaust lifter cam spindle		1	11
,,	206	Bush for gudgeon pin		3	3
,,	5096	Steel washer for big end			4

C.

			£	s.	d.
H.E.	4528	Cylinder only (front)	3	15	0
,,	4529	Cylinder only (back)	3	15	0
,,	260	Cylinder holding down stud			4
,,	303	Cylinder holding down nut for same			4
,,	4950	Cylinder valve cap (exhaust)		3	8
,,	881	Cylinder valve cap (inlet)		3	8
,,	5057	Copper and asbestos washer for same			4
,,	56	Front cylinder oil pipe connection		2	6
,,	3453	Union nut for above only			7
,,	5052	Compression or priming tap		2	6
,,	5053	Washer for priming washer tap			2
,,	873	Crankcase half (transmission side) with bush and studs complete	3	3	0
,,	3918	Crankcase half (time gear side) with bushes and studs complete	4	12	0
,,	5760	Oil box cap only for above		4	8
,,	4106	Screws for securing same			4
,,	3919	Timing gear cover (see Valve gear)	1	4	8
,,	4034	Crankcase (bottom bolt)			11
,,	18	Crankcase 5/16in. bolt (short)			11
,,	17	Crankcase 5/16in. bolt (long)			11
,,	4	Crankcase ⅜in. bolt (long)			8
,,	3	Crankcase ⅜in. bolt (short)			7

			£	s.	d.
H.E.	20	Spacing collar for same (long)			7
,,	19	Spacing collar for same (short) ⅜in.			7
S.T.D.	4	Nut for 5/16in. crankcase bolt			2
,,	3	Nut for ⅜in. crankcase bolt			3
H.E.	4948	Crankcase apex bolt			11
,,	3574	Crankcase apex bolt nut			4
,,	6089	Connecting rod middle (supplied only with roller race)	1	8	0
,,	6090	Connecting rod forked (supplied only with roller race)	2	0	0
,,	57	Pair of rods complete with bushes and big end roller bearing with crank pin	4	19	8
,,	40	Camwheel complete (assembled)	1	0	0
,,	4082	Nut for securing magneto sprocket			4
,,	3922	Cam lever (front inlet)		6	0
,,	3923	Cam lever (back inlet)		6	0
,,	3924	Cam lever (front exhaust)		6	0
,,	3925	Cam lever (back exhaust)		6	0
,,	3928	Cam lever pivot pins		1	9
		Cable for sparking plugs (see Magneto P. No. 22)			
,,	5885	Crankcase oil box cap paper washer			1

D.

			£	s.	d.
H.E.	4472	Drain plug and filter (crankcase)		4	8

E.

			£	s.	d.
H.E.	1A	Engine plate (front left)		4	8
,,	1	Engine plate (front right)		4	8
,,	2A	Engine plate (back left)		10	4
,,	2	Engine plate (back right)		10	4
,,	16	Engine lug bolt back			8
S.T.D.	1	Nut for same			5
		Engine plate fixing bolts (see crankcase bolts P. No. 20)			
		Exhaust lifter (see valve lifter P. No. 25)			
		Exhaust valves (see valves)		4	8
H.E.	15	Engine lug bolt (front)			8
S.T.D.	1	Nut			5
H.E.	10	Exhaust pipe (front)		3	11
,,	11	Exhaust pipe (back)		8	1
,,	12	Exhaust pipe (tail)		5	10
,,	4012	Exhaust pipe union nut		2	10
,,	37	Exhaust pipe union nut collar			3
H.F.B.	4	Spacing tube between silencer supports		1	9
H.E.	13	Exhaust tail pipe clip lug		2	8
,,	21	Tail pipe support bolt			10
,,	22	Tail pipe support bolt, long distance piece			10
,,	23	Tail pipe support bolt short distance piece			7

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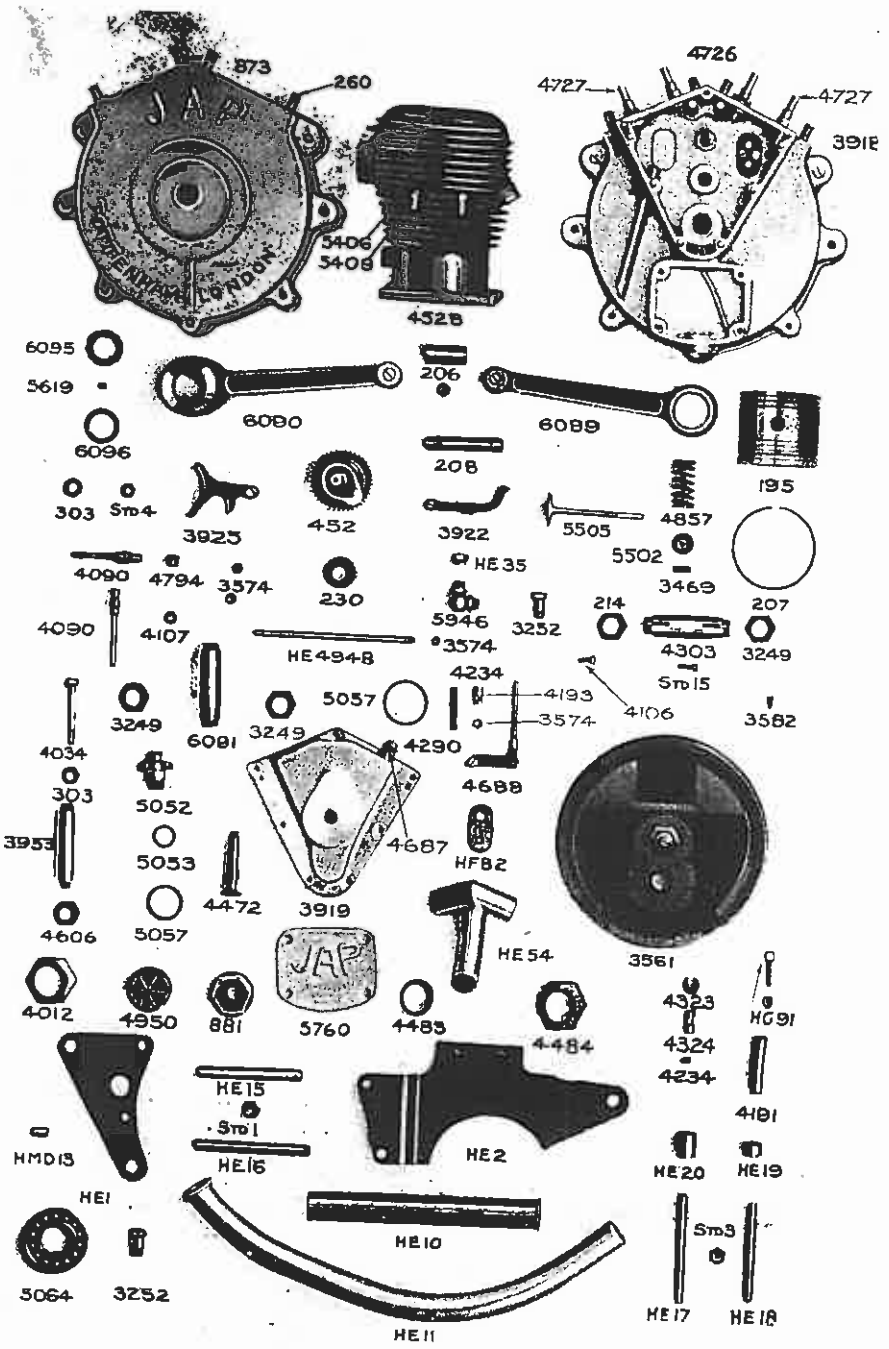
			£	s.	d.
		F.			
H.E.	3561	Flywheel (transmission side)	1	5	0
,,	3709	Flywheel (timing gear side)	1	5	0
		Flywheel spindles (see Spindles P. No. 24)			
		G.			
H.E.	5536	Gudgeon pin only		2	9
,,	5537	Gudgeon pin cap (each)			5
,,5536/5537		Gudgeon pin with caps		3	7
,,	5408	Guides for valves (see valves)		2	9
,,4726/4727		Guides for tappets (see tappets)		2	7
		I.			
H.E.	5	Inlet pipe (only)		7	9
,,	4484	Inlet pipe union nut		2	10
,,	4483	Inlet pipe taper collar		1	3
		K.			
H.E.	4102	Key for flywheel shafts			6
		M.			
H.M.D.	5	Magneto sprocket (each)		3	4
H.E.	4082	Nut for securing to cam wheel shaft			3
H.M.D.	8	Magneto chain		9	8
,,	12	Magneto chain case (back only)...		8	2
,,	4	Magneto chain case (front only)		5	9
,,	19	Magneto chain case complete		13	11
,,	13	Magneto chain case spacing collars			2
,,	1	Magneto platform bracket (short side) ...		3	7
,,	2	Magneto platform bracket (long side)		3	11
,,	14	Bolt for securing to engine plate			2
S.T.D.	12	Washer for securing to engine plate			1
H.M.D.	6	Magneto base bolt			9
,,	26	Magdyno (unit only)	16	7	6
,,	16	Sparking plug cable terminal only			2
,,	17	Sparking plug cable (rear cylinder)		1	0
,,	18	Sparking plug cable (front cylinder)		1	4
,,	15	Magneto (unit only) M.L.	6	10	0
,,	5	Magneto sprocket (see also magneto parts) ...		3	4
,,	20	Magneto nut (see also magneto parts)			4
		O.			
H.E.	3626	Oil union (non-return valve seating) ...			9
,,	3993	Oil union (non-return valve disc.)			2
,,	3252	Oil plug top (behind rear cylinder)		1	4
,,	29	Oil pipe only		4	5
,,	35	Oil pipe top union nut			7
,,	3453	Oil pipe bottom union nut			7
,,	3451	Oil pipe union for front cylinder with lock nut...		5	2



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			£	s.	d.
		P.			
H.E.	195	Piston only		15	0
,,	41	Piston complete with rings and gudgeon	1	3	7
,,	42	Piston with gudgeon pin		18	7
,,	207	Piston ring		1	8
,,	230	Pinion wheel (small timing gear)		4	0
,,	33	Petrol pipe (see Carburettor)		5	4
		S.			
H.E.	4303	Shaft for flywheel (transmission side) (ball bearing		5	6
,,	3953	Shaft for flywheel (valve gear side)		5	6
,,	4078	Shaft for flywheel (crank pin)		5	6
,,	3249	Nut for fixing crank pin			7
,,	214	Nut for drive side shaft (flywheel end)			7
,,	3249	Nut for drive shaft (sprocket end)			7
,,	4606	Nut for gear side shaft			7
,,	3582	Locking screw for shaft fixing nuts			2
,,	26	Sparking plug		5	0
,,	38	Sparking plug washer			2
,,	260	Stud for holding down cylinder (see cylinder)			4
,,	4083	Stud for holding down valve gear cover (short)			4
,,	30	Stud for holding down valve gear cover (medium)			5
,,	31	Stud for holding down valve gear cover (long)			5
,,	3574	¼in. nut for above			4
,,	4857	Spring for valve, etc., (see valves)			7
,,	24	Silencer complete		10	0
,,	6	Silencer case and straps only		5	4
,,	7	Silencer end cap		2	0
,,	8	Silencer rod		1	1
S.T.D.	4	Nut for same			2
H.E.	14	Sprocket for transmission		8	9
,,	3249	Nut for fixing same			7
,,	4102	Key for fixing same (see keys P. No. 22)			6
S.T.D.	15	Lock screw for nut			1
		T.			
H.E.	4090	Tappet body (short or long)		2	0
,,	4794	Tappet head		1	10
,,	4107	Tappet head-lock nut			7
,,	43	Tappet complete (short)		4	5
,,	44	Tappet complete (long)		4	5
,,	4726	Tappet guide (inlet)		2	7
,,	4727	Tappet guide (exhaust)		2	7
		V.			
H.E.	3919	Valve gear aluminium cover	1	4	8
,,	4083	Studs for fixing (see studs)			4
,,	5505	Valve stem only (inlet or exhaust)		4	8

			£	s.	d.
H.E.	45	Valve complete with spring, cap and cotter (Inlet or exhaust)		6	0
,,	4857	Valse spring			7
,,	5406	Valve spring washer			8
,,	5502	Valve spring collar			7
,,	3469	Valve cotter			2
,,	5408	Valve guide (inlet or exhaust)		2	9
,,	4688	Valve lifter cam and rod attached		12	2
,,	4290	Valve lifter spring			6
,,	4687	Valve lifter rod guide		2	5
,,	4191	Valve lifter tubular spacing sleeve		1	3
,,	4323	Collar or cap for same			11
,,	4954	Valve lifter wire adjuster and nut		1	3
,,	4324	Collar or support for same		1	3
,,	4193	Valve lifter rod brass yoke end		1	3
,,	4294	Valve lifter wire brass nipple			4
,,	4950/881	Valve cap (see cylinder)		3	8
		Vacuum valve (see non-return valve P. No. 22)			
,,	230	Valve gear small pinion (see pinion P. No. 24)		4	0
H.G.	92	Valve lifter cable (inner)			10
,,	93	Valve lifter cable (outer)		3	10
		Valve lifter cable nipple (gear box end)			1
,,	91	Valve lifter adjuster and nut			9
,,	88	Valve lifter adjuster support		1	8
,,	86	Valve lifter cable yoke			9
,,	87	Pin for same			5
,,	79	Valve lifter lever with stop pin only		3	4
,,	82	Valve lifter lever pawl			9
,,	85	Valve lifter lever pawl spring			1
,,	83	Valve lifter lever pawl stud or bolt			9
S.T.D.	4	Nut for same			2
H.G.	80	Spigot washer for bearing of valve lifter lever			2
,,	81	Thick washer for bearing of valve lifter lever			4
,,	35	Stud for mounting bearing of valve (see gear box)			5

GEAR BOX.

SECTION H.G.

			£	s.	d.
H.G.	58	Gear box shell	1	10	10
,,	59	Gear box end plate		18	9
,,	34	Gear box end plate stud (short)			5
,,	35	Gear box end plate stud (long)			5
,,	37	Gear box paper joint washer			1
S.T.D.	5	Gear box end plate nuts			2
H.G.	43	Special end plate nut for K.S. spring			8
,,	40	Filling oil plug			11
,,	41	Drain oil plug			8
,,	47	Gear striker		5	4
,,	53	Gear striker lever		3	9
,,	48	Gear striker key			3
S.T.D.	3	Gear striker end nut			3

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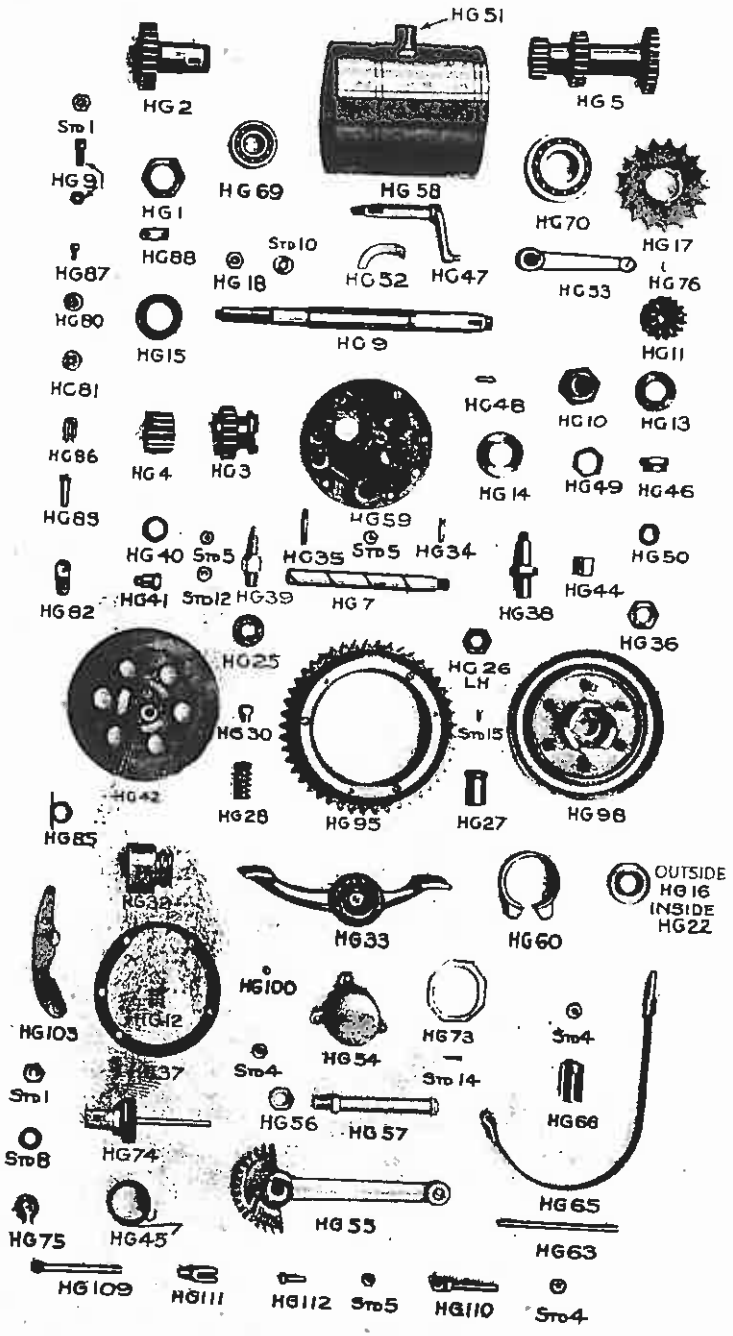
			£	s.	d.
H.G.	51	Gear striker sleeve or bush		1	11
,,	46	Gear striker gland nut		1	11
,,	49	Gear striker gland nut lock nut			9
,,	50	Gear striker felt washer			1
,,	52	Gear striker shoe		2	11
,,	5	Layshaft (complete with bushes) ...	1	9	2
,,	6	Layshaft bush		2	11
,,	7	Layshaft spindle		5	3
S.T.D.	1	Layshaft spindle nut			5
H.G.	9	Main driving shaft	1	1	6
,,	2	Sleeve pinion		15	0
,,	70	Large sleeve pinion bearing		15	0
,,	17	Sleeve pinion sprocket 17 teeth (or 15 teeth) ...		9	5
,,	1	Sleeve pinion sprocket nut			10
S.T.D.	15	Sleeve pinion sprocket nut lock screw			1
H.G.	76	Sleeve pinion sprocket key			3
H.G.	15	Sleeve pinion felt washer			6
,,	69	Driving shaft bearing K.S. end		13	3
,,	3	Sliding pinion		12	5
,,	4	Low speed loose pinion		7	8
,,	48	Driving shaft key			3

CLUTCH PARTS.

H.G.	95	Clutch driving sprocket (with rings)	1	19	8
,,	42	Clutch plate front (assembled)		18	3
,,	98	Clutch plate back (assembled)		16	8
,,	23	Clutch rings (renewed at works only 2 rings) ...	1	8	6
,,	28	Clutch spring			5
,,	27	Clutch spring thimble			9
,,	29	Clutch spring stud			5
,,	30	Clutch spring stud nut			4
,,	36	Nut for securing back clutch plate			5
S.T.D.	15	Lock screw			1
H.G.	26	Clutch drawpin nuts (L.H. thread)			5
,,	25	Clutch drawpin peg washer			3
,,	24	Clutch drawpin (with rivets)		3	0
,,	99	Clutch pedal complete	1	15	6
,,	33	Clutch pedal portion only		11	5
,,	23	Clutch pedal opening sleeve only		6	6
,,	60	Clutch pedal opening sleeve clip		2	9
,,	61	Clutch pedal anchoring rod		4	9
S.T.D.	4	Clutch pedal anchoring rod nuts			2
H.G.	74	Clutch pedal end cap (with oil tube)		6	10
,,	73	Clutch pedal end cap lock nut		3	4
,,	75	Clutch pedal end cap oil hole cover			2
,,	22	Clutch pedal ball thrust race		2	4
,,	100	Sets of balls (26 in all)		2	4

KICKSTARTER.

H.G.	55	Kickstarter crank		17	0
,,	57	Kickstarter crank pedal pin		3	8
,,	56	Kickstarter crank pedal pin nut			7



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			£	s.	d.
S.T.D.	38	Kickstarter crank fulcrum pin		2	1
,,	3	Kickstarter crank fulcrum pin nut			3
,,	10	Kickstarter crank fulcrum pin washer			1
H.G.	45	Kickstarter crank return spring			5
,,	39	Kickstarter crank stop stud			10
,,	44	Kickstarter crank stop stud rubber buffer ...			8
S.T.D.	5	Kickstarter crank stop stud nut			2
,,	12	Kickstarter crank stop stud washer			1
H.G.	11	Kickstarter ratchet pinion		6	4
,,	12	Kickstarter ratchet pinion spring			1
,,	18	Kickstarter ratchet pinion spring nut			5
,,	10	Kickstarter ratchet nut		4	5
,,	13	Kickstarter ratchet nut felt washer			5
,,	14	Kickstarter ratchet gland nut		1	2
,,	54	Kickstarter aluminium cap		2	9
S.T.D.	16	Kickstarter aluminium cap screws			2

FIXING STRAPS.

H.G.	65	Gear box strap only		3	8
,,	66	Gear box strap cap		2	5
S.T.D.	4	Gear box strap nut			2
H.G.	63	Gear box strap securing pin			8
S.T.D.	14	Gear box strap securing pin split pin			1

For engine plates, etc., see Section H.E. Engine.

GEAR LEVER QUADRANT AND ROD.

SECTION H.G.L.

H.G.L.	1	Top portion gear quadrant (gate)		4	0
,,	2	Bottom portion gear quadrant		4	0
,,	3	Gear lever		9	3
,,	4	Gear lever ball screw			3
,,	5	Gear lever ball		1	3
,,	6	Gear lever spring washer...			1
,,	7	Gear lever spring washer cap			5
,,	8	Gear lever bush			11
,,	13	Gear quadrant bolt			6
S.T.D.	5	Gear quadrant bolt nut			2
H.G.L.	14	Gear quadrant fixing stud			4
,,	15	Gear quadrant fixing stud nut			6
,,	23	Gear rod complete		11	10
,,	10	Gear rod top portion			9
,,	18	Gear rod top yoke end		1	10
,,	19	Gear rod top yoke end bolt			4
S.T.D.	5	Gear rod top yoke end bolt nut			2
H.G.L.	11	Gear rod spring box or thimble		1	8
,,	12	Gear rod spring box cap			9
,,	20	Gear rod springs			2
,,	21	Gear rod bottom portion		3	10
,,	16	Gear rod bottom portion cross head			9
S.T.D.	5	Gear rod bottom portion cross head nut ...			2
,,	12	Gear rod bottom portion cross head washer ...			1

			£	s.	d.
H.G.L.	17	Gear rod bottom portion joint link			
,,	19	Gear rod bottom portion joint link yoke end bolt		1	0
S.T.D.	5	Gear rod bottom portion joint link yoke end nut			4
,,	4	Nut for securing both portions of rod			2
					2

FRAME AND PARTS.

J.F.	6	Cycle main frame (front portion)	5	5	0
,,	20	Cycle frame rear portion	2	8	3
,,	122s	Large bolt for bottom forks		1	4
S.T.D.	1	Nut for same			5
8B.	116	Smaller bolt for top end			6
S.T.D.	9	Nuts for same (each)			3
H.F.F.	31	Steering head race for frame (see also forks) ...		2	5
J.F.	14	Back wheel stand	1	5	0
H.F.	59	Fixing bolt for same (each)			8
S.T.D.	3	Nut for above			3

(For stand clip parts see mudguards.)

SIDECAR FRAME AND PARTS.

J.F.	29	Sidecar frame (less fittings)	6	14	0
S.C.M.	8	Sidecar frame rear connection concave stud ...		2	4
,,	9	Locking nut for same			7
S.C.	131	Sidecar rear connection frame ball end stud ...		2	6
H.F.F.	45	Lock nut for same			9
H.F.	104	Sidecar main front connection nut			11
,,	105	Spring washer for same			2
J.F.	60B	Sidecar front auxiliary stay complete		8	9
,,	60A	Sidecar front auxiliary stay with yoke end and lock nut only		6	9
,,	60	Sidecar front auxiliary stay bare		4	3
H.F.	62	Screwed yoke end only for same		3	3
,,	61	Lock nut for above			9
,,	64	Sidecar stay eye bolt		1	7
S.T.D.	2	Nut for same			5
H.F.	63	Sidecar stay yoke end bolts (each)			8
S.T.D.	1	Nut for above			5
J.F.	61B	Sidecar rear auxiliary stay complete		9	0
,,	61A	Sidecar rear auxiliary stay with yoke end and lock nut only		7	0
,,	61	Sidecar rear auxiliary stay bare		4	7
		Other parts as for front stay			
,,	56	Sidecar wheel stand		11	0
H.F.	96	Bolt for same (each)			4
S.T.D.	4	Nut for stand bolt			2

SIDECAR BODY AND FITTINGS.

J.B.D.	1	Sidecar body (bare)	10	10	0
,,	2	Sidecar body complete with screen and bearer bars	13	5	9
J.F.	59	Sidecar body rear bearer bar		3	0

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			£	s.	d.
H.B.D.	9	Sidecar body rear bearer bar coach bolt (each)			2
,,	24	Nut for same			1
,,	13	Large washer for above			4
,,	12	Sidecar body front bearer bar		3	5
,,	25	Coach bolts for same (each)			2
,,	24	Nut for above			1
S.T.D.	3	Sidecar body front bearer bar and nut			3
H.B.D.	14	Spring washer for same			3
S.T.D.	10	Plain washer for same			1
,,	14	Split pin for same...			1
H.B.D.	7	Sidecar body front spring (each)		5	9
H.F.	87	Bolt for securing (each)			5
S.T.D.	4	Nut for securing (each)			2
H.F.	85	Spring pad plate		1	1
H.B.D.	8	Rear sidecar body spring		3	3
,,	10	Top fixing bolt for same			9
S.T.D.	3	Nut for bolt			3
,,	3	Bottom fixing nut only			3
J.B.D.	16	Sidecar body luggage grid	1	8	6
H.B.D.	26	Top luggage grid fixing link (R.H.)		1	9
,,	18	Top luggage grid fixing link (L.H.)		1	9
,,	28	Top luggage grid fixing link fly nut		1	5
,,	1	Luggage grid body stud only (top)		1	3
,,	2	Luggage grid body stud only (bottom)		1	0
S.T.D.	4	Nut for same (inside body)			2
H.B.D.	4	Washer for same (inside body)			2
S.T.D.	5	Nut for same (outside)			2
,,	12	Washer for same (outside)			1
H.B.D.	15	Luggage grid spare wheel straps (each)... ...		1	1
S.T.D.	3	Luggage grid spare wheel fixing nut			3
,,	10	Washer for same			1
H.B.D.	48A	Windscreen complete (with dash and all fittings including side wing right side)	3	4	0
,,	48	Windscreen complete (with dash but less side wing)	2	10	0
,,	141	Side wing with all fittings right side		14	0
,,	141	Left side wing (if required) with all fittings ...		14	0
,,	118	Wing only less fittings		10	0
,,	142	Top side wing hinge left or right with fly nut ...		2	0
,,	128	Fly nut only			6
,,	39	Windscreen frame and glass only		17	6
,,	43	Left side windscreen hinge with fly nut ...		4	8
,,	42	Right side windscreen hinge with fly nut ...		4	8
,,	40	Fly nut only			9
,,	63	Windscreen dash and hinge	1	2	6
,,	115	Windscreen folding stay		1	3
,,	145	Windscreen dash clips (per set)		2	0
,,	29	Hood complete with all fittings)...	3	18	6
,,	38	Hood back rest (each)		2	6
,,	53	Hood support bracket (each)		4	0
,,	55	Cap nut for same			4
,,	56	Washer for above			2

			£	s.	d.
H.B.D.	57	Sidecar body door handle		3	6
,,	58	Hood turn button			5
,,	143	Eyelet for hood curtain			2
,,	144	Press fastener complete			6

LUGGAGE CARRIER (CYCLE).

J.F.	8	Luggage carrier only		10	0
8B.	75	Fixing bolts for frame			4
H.M.	7	Bolt for fixing to mudguard top			3
S.T.D.	5	Nut for same			2
H.M.	7	Bolt for fixing to rear number plate			3
S.T.D.	5	Nut for above			2

FRONT FORK.

J.F.F.	5	Front fork girder (right side) standard	1	16	6
,,	6	Front fork girder (left side) standard	1	17	0
,,	5A	Front fork girder (right side) for front band brake	1	17	0
,,	6A	Front brake girder (left side) for front band brake	2	2	6
H.F.F.	32	Fork crown and steering column		16	11
,,	30	Fork crown ball race		3	2
,,	31	Ball race for frame		2	5
,,	17	Complete set of steering head balls		1	3
,,	42	Fork head clip		11	2
,,	8	Pinch bolt for same			10
S.T.D.	3	Nut for above			3
H.F.F.	16	Fork head clip with sleeve (with race) ...		5	11
,,	7	Fork head clip sleeve (less race)		3	6
,,	31	Fork head clip sleeve (race only)		2	5
J.F.F.	55	Fork spring box completely assembled ...	1	14	8
,,	33	Fork spring box only		15	0
H.F.F.	18	Fork spring box bottom cap		3	4
,,	27	Fork spring box top cap		3	4
,,	20	Fork spring box plunger rod		4	2
S.T.D.	2	Fork spring box plunger rod nuts (each) ...			4
H.F.F.	21	Fork spring box plunger rod washer			2
,,	25	Fork main spring		3	3
,,	26	Fork auxiliary spring (fits inside above) ...		1	5
,,	28	Fork recoil spring			8
,,	13	Fork spring box plunger rod bottom bolt ...			6
S.T.D.	3	Nut for above			3
H.F.F.	34	Fork bottom link or rocker (right side)		3	0
,,	34A	Fork bottom link or rocker (left side)		3	2
,,	22	Fork bottom link or rocker (right side)		3	2
,,	22A	Fork top link or rocker (left side)		3	5
,,	19	Long rocking spindle		7	2
,,	36	Short rocking spindle		6	1
,,	15	Left side spindle locking nut			5
S.T.D.	3	Right side nut			3
,,	10	Washer for above			1

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			£	s.	d.
H.F.F.	14	Spindle grease cap			5
,,	44	Fork link or spindle sleeve		4	9
,,	45	Fork link or spindle sleeve nuts (each)			9
S.T.D.	14	Split pin for securing above			1
H.F.F.	4	Head adjusting nut (encircles handlebar stem)		2	6
J.F.F.	35	Fork complete (including stand and mudguard, etc.)	12	9	6
,,	35A	Fork complete (less stand and mudguard, etc.)	10	5	6
,,	2	Front stand only		11	6
H.F.	96	Bolt for fixing same (each)			4
S.T.D.	4	Nut for bolt			2
H.M.	15	Stand fixing wing screw		1	8

MUDGUARDS AND MUDSHIELDS.

J.M.	4	Front mudguard only	1	8	0
,,	3	Back mudguard only		13	6
,,	9	Sidecar mudguard only		14	0
,,	6	Front mudguard stay			9
H.M.	7	Front mudguard stay bolt (top)			3
S.T.D.	5	Nut for same			2
H.M.	3	Front mudguard stay bolt (bottom)			4
S.T.D.	11	Washer for above			1
S.C.	62	Rear mudguard fixing bolt (to rear fork bridges			6
S.T.D.	5	Nut for above			2
H.M.	7	Rear mudguard fixing bolt (to top of luggage carrier)			3
S.T.D.	5	Nut for above			2
H.M.	7	Rear mudguard fixing bolt (to rear of luggage carrier)			3
S.T.D.	5	Nut for same			2
8B.	175	Rear mudguard stand clip stud			4
,,	173	Rear mudguard stand clip spring			1
,,	171	Recessed nut for above			3
S.T.D.	5	Locking nut for above			2
,,	5	Nut for stand clip stud (inside mudguard) ...			2
S.C.M.	6	Fixing bolts for sidecar mudguard			8
J.F.	58	Special washer for above			6
S.T.D.	5	Nut for bolt			2
H.M.	15	Stand fixing wing screw (for front and side stand)		1	8
,,	6	Front number plate only (unlettered)		1	2
S.T.D.	16	Front number plate fixing screw			2
,,	24	Nut for fixing screw			2
H.M.	25	Mudshields (complete with all fittings)... ...		12	6
,,	22	Mudshield (left side) only		5	3
,,	22A	Mudshield (right side) only		5	3
,,	26	Mudshield rod		1	4
S.T.D.	4	Mudshield rod end nuts (each)			2
,,	11	Mudshield rod end washer			1
H.M.	7	Mudshield fixing bolts (each)			3
S.T.D.	5	Mudshield fixing bolt nuts (each)			2

TANK AND FITTINGS.

J.T.	1	Tank (less all fittings)	3	4	0
,,	26	Tank (complete with all fittings)	4	16	6
,,	19	Tank (less all fittings, with switch housing) ...	3	7	0
H.T.	3	Iguition lever		3	2
,,	6	Iguition lever spring washer			1
,,	7	Ignition spring lever washer cap			4
,,	8	Ignition lever spring washer cap nut			5
,,	4	Ignition rod (standard)		1	4
,,	27	Ignition rod (for magdyno)		1	4
,,	9	Petrol tap and filter		4	2
,,	10	Drain tap		1	9
,,	11	Gauze strainer		1	9
,,	12	Glass top filler cap (petrol compartment) ...		2	0
,,	12A	Glass only for above			9
,,	13	Plain top filler cap (oil compartment)		1	7
,,	15	Tank fixing bolts (each)			6
,,	16	Tank fixing bolt rubber pad			5
,,	17	Tank fixing bolt rubber pad washer			2
,,	25	Semi-automatic oil pump complete	1	3	6
S.T.D.	15	Fixing screws for oil pump complete			2
H.T.	29	Oil pump glass barrel		1	0
1177		Regulating screw complete with gland nut and N.P.		2	0
H.T.	30	Oil pump plunger knob			9
1179		Spindle		1	3
L.T.	13	Oil pump leather cup washer			3

STANDS.

J.F.	14	Back wheel stand only	1	5	0
H.F.	59	Back wheel stand fixing bolt (each)			8
S.T.D.	3	Back wheel stand fixing bolt nut (each) ...			3
J.F.	56	Side wheel stand only		11	9
H.F.	96	Side wheel stand fixing bolt nut (each)			4
S.T.D.	4	Side wheel stand fixing bolt nut (each) ...			2
J.F.F.	2	Front wheel stand only		11	6
H.F.	96	Front wheel stand fixing bolt (each)			4
S.T.D.	4	Front wheel stand fixing bolt nut (each) ...			2
H.M.	15	Side and front stand fixing wing screw		1	8

REAR BRAKE.

H.B.	36	Brake drum (less sleeve)	1	18	3
,,	47	Brake drum assembled with bearing	2	14	6
,,	53	Brake drum cover plate (with shoes, etc.) ...	1	6	8
,,	48	Brake drum cover plate		8	6
,,	18/18A	Brake shoes (per pair)		15	3
,,	12	Brake shoe expander		5	9
,,	13	Brake shoe expander lever		5	0
S.T.D.	7	Brake shoe expander end nut			3

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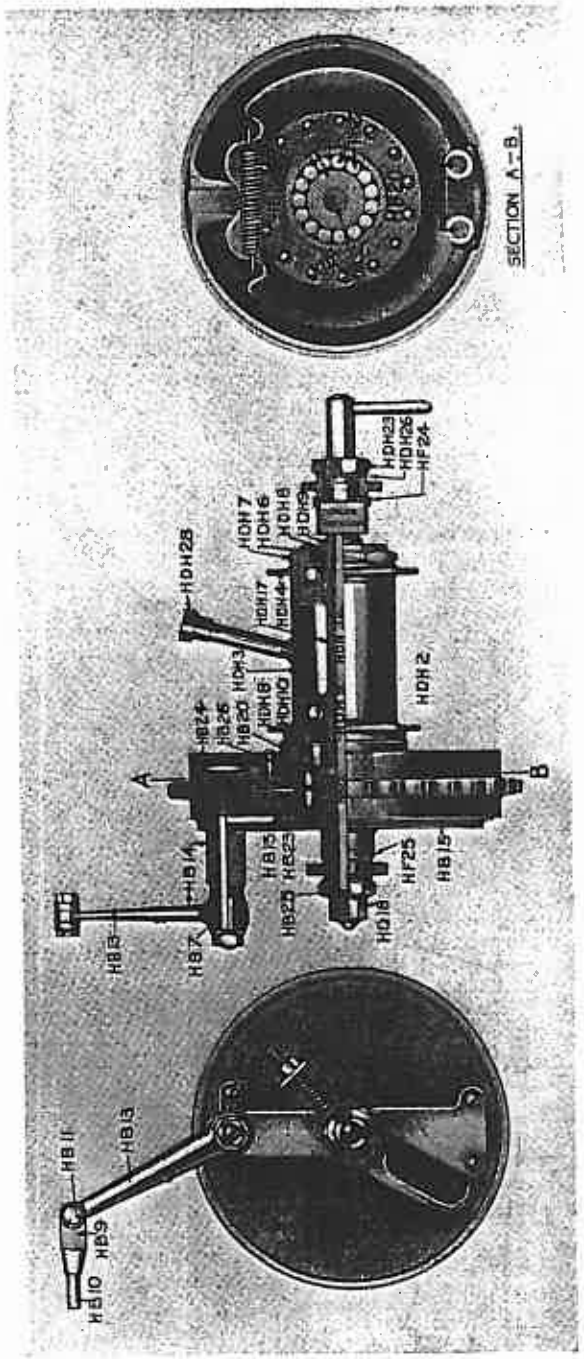

			£	s.	d.
H.B.	7	Brake shoe expander key			6
,,	52	Brake shoe expander grease cap only			5
,,	14	Brake lever pull-off spring			5
,,	19	Brake shoe internal spring			3
,,	17	Brake shoe stud connecting link			3
,,	21	Brake drum centre sleeve		8	11
,,	22	Brake drum rollers (each)			2
,,	23	Brake drum bearing cap		2	9
,,	25	Brake drum centre sleeve nut			9
,,	35	Brake drum centre sleeve washer			3
,,	4	Brake lever (right side)		7	0
,,	6	Brake lever (left side)		7	6
,,	5	Brake lever (left side) cross head		1	4
S.T.D.	4	Brake lever (left side) cross head nut			2
,,	11	Brake lever (left side) cross head washer ...			1
H.B.	3	Brake pedal shaft		4	4
S.T.D.	3	Brake pedal shaft end nut			3
H.B.	7	Brake pedal shaft key			6
,,	28	Brake pedal shaft sleeve, assembled with anchor plate		8	2
,,	1	Brake pedal shaft sleeve nut			9
,,	46	Brake rod complete		4	0
,,	10	Brake rod only		3	4
J.B.	1	Brake rod yoke end		1	5
H.B.	11	Brake rod yoke end bolt			4
S.T.D.	5	Brake rod yoke end bolt nut			2
,,	4	Brake rod nut			2
H.B.	24	Brake drum (less hub and all fittings)	1	0	9
,,	20	Brake drum hub (and rivets only)		17	6
		FRONT BRAKE STANDARD.			
H.B.	37	Complete front rim brake	1	10	6
,,	74	Front brake pad only			7
,,	75	Front brake pad and holder (left side)		3	0
,,	76	Front brake pad and holder (right side)... ...		3	0
,,	77	Front brake pad and clip		1	5
,,	78	Front brake pad nut			6
,,	79	Front brake arch		6	0
,,	80	Front brake adjusting rod pinch bolt			4
,,	81	Front brake adjusting rod pinch bolt nut ...			2
,,	82	Front brake adjusting rod pinch bolt washer ...			1
,,	83	Front brake adjusting rod only		1	2
,,	84	Front brake cable and spring box (assembled)		5	0
,,	85	Front brake cable only (inner and outer) ...		2	6
,,	50	Front brake handlebar lever		8	9
,,	86	Front brake handlebar lever fulcrum bolt ...			6
,,	87	Front brake handlebar lever fulcrum bolt nut ...			3
,,	88	Front brake handlebar lever body fixing screw...			1
		(Special contracting band type.)			
H.B.	59	Band with Ferodo lining		16	2
,,	61	Ferodo lining only...		11	1
S.T.D.	33	Aluminium rivets for fixing (per doz.)			6

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			£	s.	d.
H.B.	63	Bush for large end of band		4	1
,,	65	Pin for small end of band			4
S.T.D.	14	Split pin securing same			6
H.B.	66	Bolt securing brake band...			1
S.T.D.	3	Nut for same			6
,,	10	Washer for same			3
H.B.	64	Brake operation crank lever			1
,,	70	Brake lever pull-off spring		2	2
,,	72	Brake lever cable connecting U-piece		1	6
,,	73	Pin for same			9
S.T.D.	14	Split pin securing			5
H.B.	71	Brake band stay and mudguard stay combined			1
,,	69	Brake drum only		2	6
,,	89	Brake operating cable complete with nipples	1	17	6
,,	40	Inner wire only		5	2
,,	41	Outer casing only			10
,,	42	Nipples only		3	10
H.G.	91	Cable adjusting stop			6
S.T.D.	5	Lock nut for same...			8
					2

WHEELS AND HUB PARTS.

			£	s.	d.
J.D.H.	46	Wheel complete with tyre (Dunlop)	6	2	3
,,	46	Wheel complete with tyre (Hutchinson) ...	6	1	9
,,	49	Wheel complete (less tyre)	3	10	0
,,	48	Wheel only (less hub fittings)	2	5	0
H.D.H.	42	Wheel hollow spindle with cones		10	8
,,	36	Wheel hollow spindle cones only (each) ...		3	4
,,	41	Hub fixed ball cup		4	6
,,	35	Hub screwed adjusting cup		9	0
,,	40	Hub screwed adjusting cup lock nut		3	1
,,	8	Hub felt gland washer			2
,,	9	Hub metal gland cap washer			3
,,	47	Hub balls (per set)		4	6
J.D.H.	16	Cover and tube (Dunlop)	2	12	3
,,	14	Tube only (Dunlop)		8	0
,,	16A	Cover and tube (Hutchinson)	2	11	9
,,	14A	Tube only (Hutchinson)		7	6
H.D.H.	15	Tyre security bolt (each)			9
,,	31	Front wheel axle (less nut and washer) ...		3	5
,,	18	Nut for same			5
S.T.D.	8	Washer for same			1
H.D.H.	32	Rear wheel axle (with large nut and washer) ...		5	7
,,	18	Rear wheel axle small nut			5
S.T.D.	8	Washer for small nut			1
H.D.H.	31	Sidecar wheel axle (less nut and washer) ...		3	5
,,	18	Nut for same			5
S.T.D.	8	Washer for same			1
H.D.H.	28	Hub lubricator grease cap			5
J.D.H.	1	Wheel rim (enamelled only)		9	3
,,	29	Wheel spoke (each)			1
,,	30	Wheel spoke nipples (each)			2

CHAIN CASES AND CHAINS.

			£	s.	d.
J.C.C.	1	Rear chain guard		9	0
H.F.	186	Rear chain guard fixing bolt			4
S.T.D.	4	Nut for fixing bolt			2
H/2C.C.	41	Front chain case (complete)	1	15	3
,,	41A	Top portion of case only		16	6
,,	41B	Bottom portion of case only	1	2	0
S.T.D.	16	Chain case screws (each)			2
H.C.C.	13	Slide for covering clutch pedal aperture ...			6
,,	9	Inspection hole cover with rivet			3
,,	7	Front silent driving chain		19	6
,,	14	Front silent driving chain connecting pin only...			3
,,	8	Rear driving chain	1	7	6
,,	15	Rear driving chain connecting link only ...			9
,,	19	Spring only for connecting link only			2
,,	16	Cranked or ½ link for rear chain			8
H.F.	207	Rear chain adjuster complete (left side) ...		2	3
,,	208	Rear chain adjuster complete (right side) ...		3	0
,,	25	Rear chain adjuster bare (left side)		1	3
,,	24	Rear chain adjuster bare (right side)		2	0
,,	26	Rear chain adjuster end plate			9
S.T.D.	5	Rear chain adjuster end nut			2
H.F.	27	Rear chain adjuster spring			1

FOOTBOARDS AND PARTS.

			£	s.	d.
H.F.B.	1	Footboard only		9	0
,,	3	Footboard rod		1	7
,,	8	Footboard cross tube			6
,,	2	Footboard rod (rear) link			11
,,	6	Footboard right front distance tube			11
,,	7	Footboard left front distance tube		1	1
,,	9	Footboard left rear (inside and outside) distance tube			9
,,	10	Footboard right rear distance tube			8
,,	4	Footboard centre front packing piece		1	9
,,	5	Footboard centre rear packing piece			9
S.T.D.	1	Footboard rod end nut			5
,,	8	Footboard rod end washer			2

TOOL KIT.

			£	s.	d.
H.T.K.	1	Oil injector		2	4
,,	2	6-in. combination pliers		4	10
,,	3	6-in. wire screwdriver		1	7
,,	4	Double-box spanner to suit ⅜-in. and ½-in. nuts		1	10
,,	5	Double-box spanner to suit ½-in. and 5/16-in. nuts		1	10
,,	6	Single-box spanner 1.101 hex.		2	1
,,	7	Tubular key and tommy for clutch nuts ...			9
,,	8	Grease gun		7	3
,,	9	Tyre lever		1	1
,,	10	Tyre pump		11	0
,,	11	6-in. adjustable spanner		7	6
,,	18	Hub adjusting spanner		3	0

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			£	s.	d.
H.T.K.	14	Tool roll		3	4
,,	15	Tool roll and kit complete	2	5	9
,,	20	Cylinder base nut spanner		1	11
,,	21	Double-end engine spanner for tappets		2	10
,,	22	Valve cap tubular key		2	6

A.M.A.C. CARBURETTOR AND PARTS.

H.E.	27A	Complete carburettor	3	1	0
,,	58	Carburettor float only		2	7
,,	59	Carburettor needle valve		1	9
,,	60	Carburettor needle valve cotter or clip			5
,,	61	Spare jets (each) standard			5
,,	62	Spare jets (specially calibrated) each		1	9
,,	63	Carburettor control complete	1	0	10
,,	64	Carburettor control lever only		10	3
,,	65	Carburettor control cable only		3	0
,,	66	Carburettor control throttle valve only		3	10
,,	67	Carburettor control throttle valve spring			5
,,	68	Carburettor control ebonite knob			5
,,	69	Carburettor jet holder		1	9
,,	70	Carburettor float chamber cap		4	3
,,	71	Carburettor float tickler only (plunger spring and cap)		1	9
,,	33	Petrol pipe complete		5	4

B. AND B. CARBURETTOR AND PARTS.

H.E.	27	Complete carburettor	3	1	0
B/B	1	Float chamber (body only)		10	3
,,	2	Float chamber cap and tickler		7	8
,,	3	Taper needle		1	9
,,	4	Needle holder with screw			7
,,	5/6	Float needle and collar		1	2
,,	9	Float		2	7
,,	11	Jet size 40, 45 or 50		1	1
,,	21/22A	Fibre washer for jet			1
,,	20	Small stop screw and fibre washer			3
,,	27	Ticklers only			4
,,	30	Spraying chamber only		8	6
,,	33/36	Spraying chamber cap with bushes		3	0
,,	49	Cap ring for securing		1	4
,,	50	Clip and bolt for inlet port		1	9
,,	48/49	Gauze screen and cap for air inlet		1	9
,,	38	Valves (per pair)		6	5
,,	41	Valve spring (per pair)		1	2
H.F.	185	Control levers complete		12	0
C.	4	Throttle lever only		3	0
,,	5	Air lever only		3	0
,,	23	Control cables (outer) per pair		3	5
,,	22	Control cables (inner) per pair		2	4
H.E.	33A	Petrol pipe complete		5	4

SADDLE AND PARTS.

L.	45	Saddle complete	1	2	6
		Saddle clip bolt			6
		Saddle clip bolt nut and washer			6

			£	s.	d.
		Saddle clip		2	6
		Saddle spring		2	6

HANDLEBAR.

H.F.	71	Handlebar bare	1	7	6
,,	183	Handlebar with grips only	1	11	2
,,	184	Handlebar with grips and brake lever, cable etc.	2	3	10
,,	131	Handlebar grip only (open end)		1	9
,,	132	Handlebar grip only (closed end)		1	10

MAGNETO AND PARTS.

H.M.D.	15	Complete magneto (M.L.)	6	10	0
,,	17	Rear cylinder cable		1	0
,,	18	Front cylinder cable		1	4
,,	22	Carbon brush holder complete with brush		4	11
,,	23	Carbon brush only			6
,,	24	Contact breaker complete	1	9	3
,,	25	Contact breaker screws, (each), (long)		8	8
,,	25A	Contact breaker screws, (each), (short)		8	5
,,	20	Sprocket fixing nut only			3
,,	20A	Sprocket fixing nut washer			1
,,	5	Sprocket (see Section H.M.D.)		3	4
,,	8	Driving chain (see Section H.M.D.)		9	8
H.E.	26	Sparking plug (Lodge type)		5	0
,,	38	Sparking plug washer			2

EQUIPMENT.

H.E.Q.	87	Sidecar step complete, new pattern aluminium		10	0
,,	88	Sidecar step clip only		2	3
,,	89	Sidecar step fixing bolts (each)			5
S.T.D.	4	Sidecar step fixing bolt nuts (each)			2
H.E.Q.	90	Sidecar stepboard packing piece, per two halves			4
,,	33	Speedometer complete	5	10	0
,,	34	Speedometer instrument only (with bracket 10/- extra).	2	17	0
,,	35	Speedometer shaft only (inner and outer)	1	4	0
,,	36	Speedometer drive box only (driving box and drive bracket)	1	4	0
,,	24	Speedometer crown wheel only		8	0
,,	1	Speedometer drive bracket (driving box and drive bracket)		1	6
,,	2	Speedometer drive bracket bolt			6
,,	37	Acetylene lamp set complete, comprising head, side and tail lamps and all fittings, brackets etc., (fitted)	6	6	0
,,	38	Head lamp only	2	2	6
,,	15	Head lamp bracket (right side)		6	0
,,	16	Head lamp bracket (left side)		6	0
,,	95	Head lamp bracket ear piece (each)			6
S.T.D.	1	Head lamp bracket nut (each)			5
H.E.Q.	39	Head lamp glass only		2	0
,,	40	Head lamp reflector only		11	6
,,	41	Head lamp burner only		2	1
,,	48	Head lamp moulded end tube		1	6

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			£	s	d
H.E.Q.	43	Head lamp generator only	1	0	0
,,	44	Head lamp generator bracket		5	0
,,	45	Side lamp		12	6
,,	46	Side lamp glass			6
,,	47	Side lamp burner		1	2
,,	96	Side lamp bracket with coach bolts, nuts and plate		2	6
,,	14	Side lamp bracket coach bolt			1
,,	48	Side lamp rubber tubing (per foot)			3
,,	49	Side and tail lamp generator	1	0	0
,,	50	Side and tail lamp generator bracket		5	0
,,	51	Tail lamp only		3	6
,,	52	Tail lamp burner only			6
,,	53	Tail lamp, burner dust cap			1
,,	54	Tail lamp rubber tubing (per foot)			3
,,	5	Tail lamp rubber tubing $\frac{1}{2}$-in. clip			3
,,	4	Tail lamp rubber tubing $\frac{7}{8}$-in. clip			3
,,	7	Brass tubing (side and tail lamp)		5	9
,,	6	Brass tubing saddle clip (each)			2
,,	20	Electric head lamp bracket (right)		7	0
,,	21	Electric head lamp bracket (left)		7	0
,,	56	Electric head lamp (with bulb)	2	2	6
,,	60	Electric head lamp bulb only (3 c.p. and 18 c.p.)		3	6
,,	57	Electric head lamp glass		3	0
,,	58	Electric head lamp reflector		17	6
,,	59	Electric side lamp		12	6
,,	63	Electric side lamp bulb		1	8
,,	61	Electric side lamp glass and frame		2	6
,,	62	Electric rear lamp		10	6
,,	63	Electric rear lamp bulb		1	8
,,	64	Spare bulbs in case (1 of each, head and side)...		9	6
,,	65	Head lamp cable		10	6
,,	66	Side lamp cable		9	0
,,	67	Rear lamp cable		9	0
,,	68	Cable (dynamo to switch box)		10	6
,,	69	Cable (sidecar junction box to switch box) ...		13	0
,,	70	Sidecar junction box only		5	6
,,	71	Battery in case	2	15	0
,,	72	Battery only	2	5	0
,,	73	Battery case only		10	0
,,	32	Cable clip $1\frac{1}{4}$-in.			3
,,	4	Cable clip $\frac{7}{8}$in.			3
,,	5	Cable clip $\frac{1}{2}$-in. (three parts)			5
,,	97	Magdyno outfit complete	24	0	0
,,	74	Switch box complete	1	15	0
,,	98	Switch box turn button and screw		2	10

HORN.

H.E.Q.	75	Lucas No. 60 bulb horn, ebony and N.P. finish		15	6
,,	76	Lucas electric horn for electrical equipment only	1	5	6
,,	99	Autokrat electric horn	1	0	0
,,	100	Horn reed only		1	6
,,	101	Horn bulb only		6	6