Matchless

IN NAME & REPUTATION

INSTRUCTION BOOK

AND

SPARE PARTS LIST

MODELS

V/3 and V/6

4/1950 #V

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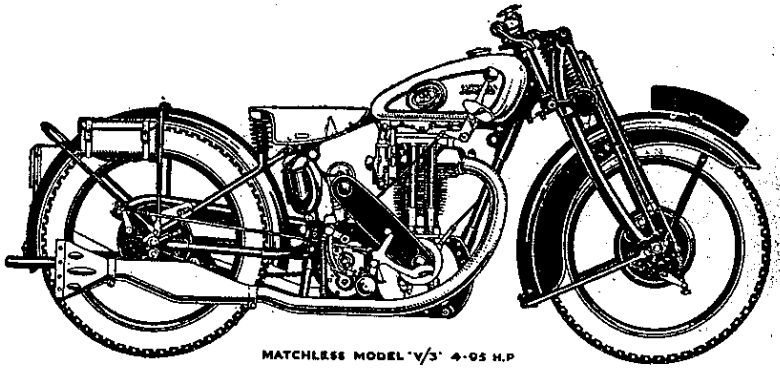
DRIVING & ADJUSTMENT INSTRUCTIONS.



MATCHLESS MODEL 'V/3' 4·95 H.P

MATCHLESS MOTOR CYCLES

(COLLIERS) LIMITED,

Manufacturers,

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GENERAL DESCRIPTION.

TAKING OVER A NEW MACHINE.

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 lever (about one third forward from rearmost position in quadrant) is at a point where the small extension in gear quadrant engages with a slot in the gear lever. The engine must always be started with the gear lever in this neutral position.

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

NOTE.—When cycle is provided with twist grip control for throttle, both air and ignition levers are fixed on right handlebar, the lower and longer lever operating the ignition.

The throttle and air levers for carburettor both open inwards, the top lever operating the air and the lower and longer one the throttle (see note above). For starting, throttle should be about one-sixth open, and air completely closed. A small milled edge screw at the bottom of mixing chamber controls the air supply to pilot jet. This screw is accurately set at the works, but on account of variation in fuel or temperature, it may be found desirable to alter the adjustment occasionally. It should be explained, therefore, that by unscrewing, more air is admitted thereby weakening the mixture or vice versa, screwing in enriches the mixture by decreasing the air supply. This adjustment only affects carburation on very small throttle openings, and dead slow running. The taper needle attached to the throttle piston controls the petrol supply on large throttle openings. To weaken the mixture this needle must be lowered or alternatively, to enrich it is necessary to raise same. These remarks are intended only to roughly convey some idea of the carburettor working and owners are advised to refrain from making any adjustments without good cause.

The petrol is turned on when the hexagonal end of the tap plunger is pushed in to the fullest extent possible. 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 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 kickstarter pedal a sharp and vigorous push downwards, releasing the valve lifter when the starter crank is about half-way down. This operation should not require at the most more than three or four attempts.

Taking over a New Machine.—contd.

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, at the same time opening the throttle sufficiently only to provide a smooth "getaway."

When fairly under way, smartly declutch and simultaneously shift gear lever forward into second gear position, 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.

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 hills the middle gear may 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, as by so doing, an abnormal and unfair strain would be imposed upon the rear driving chain under certain circumstances.

It is advisable to ease the clutch slightly when rounding acute corners or when travelling slowly on top gear. If this practice is adopted from the first, much unnecessary gear changing will be avoided.

"DON'TS" IN DRIVING.

DO NOT race the engine unnecessarily or let the clutch in sufficiently suddenly to cause the wheel to spin. Take a pride in a silent, smooth, getaway.

DO NOT use the brakes with violence. Brake early and drive on the throttle instead of the brakes.

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 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 bearings, piston rings, etc. The first 500 miles of an engine's existence is far more important than the next 5,000.

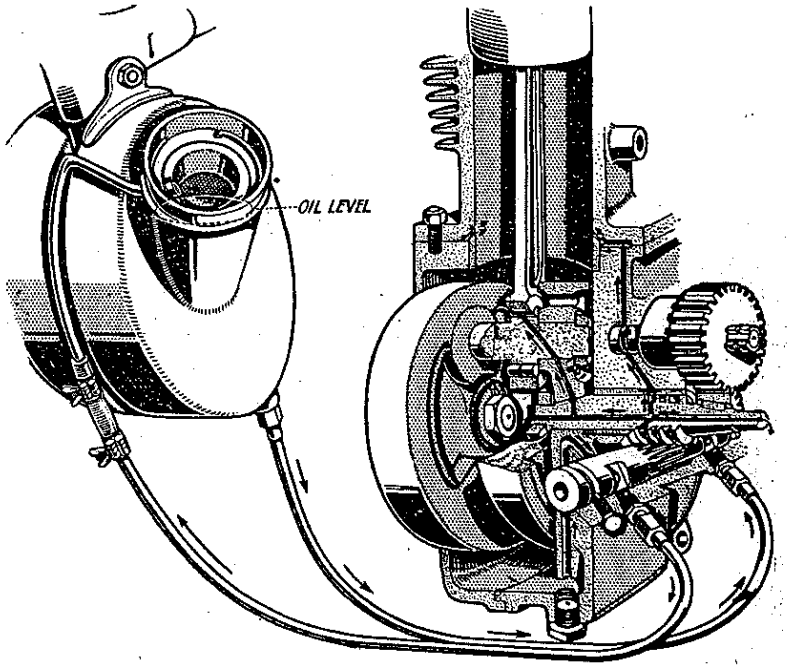
DO NOT race the engine in neutral gear position, violently accelerate from a standstill, or drive at full speed on full throttle, etc. when in a residential district. Any motor cycle, or for that matter, any motor vehicle when so driven creates abnormal noise, and in the interests of all motorists we earnestly implore every "Matchless" owner to studiously refrain from any of the practices enumerated, or any calculated to cause annoyance to the public in general. Recollect that the degree of silence of your cycle is judged not by the actual noise it is making but by comparison with other noises present. For example, in a busy street your cycle might be inaudible, while in a quiet narrow street of high buildings, it might be heard for several hundred yards, although in each case being driven in exactly the same manner.

LUBRICATION.

ENGINE.

Proper lubrication is of vital importance and the use of only the best lubricant will be repaid many times over by long wear and good service. After extensive tests we have decided to recommend Wakefield Castrol X.L. (or Castrol R. for V/3 Model if cycle is to be used for competition purposes) as the most suitable oil, and advise all owners to use this and no other. Oil is carried in the tank underneath saddle and in use the level of oil in the tank should never be allowed to fall below the ½ full mark. The integral oil pump is of the single plunger double diameter type, the larger diameter being used for exhausting the crankcase sump and the smaller end for delivering oil to all the essential parts of the engine interior, from whence it drains in to the sump to be returned to the tank. By removing the oil tank filler cap the oil can be observed returning via the small spout immediately underneath the cap, and it is only by this that the owner can determine at a glance that the oiling system is functioning correctly. Therefore, upon starting the engine prior to each run it is desirable to raise the oil tank filler cap in order to

SECTIONAL VIEW OF ENGINE INTERIOR SHOWING OILING ARRANGEMENT.



observe the return flow of oil. No provision is made for external adjustment of the oil supply, the correct delivery to each part of engine being arranged internally by suitable diameter passages. It might here be explained that oil is forced direct to the timing gear chamber, which after filling same to a pre-determined level, overflows into the flywheel chamber and so drains away to the sump. Oil is also forced into the timing gear side flywheel axle bearing, and thence through a drilled passage in the flywheel to the big end bearing, the splash from which passes up into the cylinder interior. In addition to this splash the cylinder is provided with a direct oil passage ensuring an adequate supply under all conditions for this, the most vital part of the engine. No attention to this oiling system is required other than observing the return of oil to the tank prior to a run, and the continual replenishment of the supply tank, the level of oil in which, as mentioned above, must be above the ½ full mark and must not be filled when engine is cold to a level higher than 1in. below the return pipe outlet.

The identifying letters used by most oil firms denoting the different grades in which that oil is supplied are imitated, so that is is essential, when ordering oil, to specify the brand as well as the grade. Say "Castrol X.L." not just "X.L." As an additional precaution it is advisable to buy from the branded cabinets or from sealed packages. See from where your oil is drawn.

NOTES ON THE OILING SYSTEM.

If the engine is for any reason dismantled, the crankcase must not on any account be separated until the pump plunger has been withdrawn. To withdraw this plunger, first remove both end caps and also the guide screw, when the plunger can be pushed out large end first. When re-assembling, this plunger must be inserted after crankcase sections have been bolted together, and before refitting the end caps the guide screw must be replaced with its relieved tip engaging the profiled cam groove in the plunger. By moving the plunger to and fro while this screw is being introduced, the correct location of the groove can be easily felt, and the screw in question must be finally firmly screwed home. As will be seen from the illustration overleaf, the entire oiling system is simplicity itself, only one moving part being employed, viz., the double diameter plunger. This plunger is rotated by the engine shaft, and moves backward and forward while rotating, under the influence of the small guide screw which engages with the profiled annular groove cut in the plunger end. As the plunger moves in its housing in one direction, the large end draws oil from the sump, while at the same time the smaller end is delivering fresh oil to the various channels provided. Upon the reverse movement of the plunger the large end returns to the tank the oil already drawn from the sump, while the smaller end draws a fresh charge of oil from the tank in readiness for delivery to the engine upon the following movement of the plunger. This action of course goes on all the while the engine is revolving, and

since the exhausting plunger is the larger one, the engine sump is always kept clear of oil, hence the term "dry sump," while at the same time a large quantity of clean, cool, oil is being forced under pressure to all working parts. A filter for the oil is provided in the supply tank immediately under the filler cap. This filter should be removed and cleaned in petrol at least once every 500 miles, while once each season or not less frequently than once every 5,000 miles, the entire tank should be removed, thoroughly washed out with petrol, and after refitting, filled to correct level with fresh clean oil. To avoid undue waste it is quite permissible to arrange for this clean out when the oil is at the lowest recommended level, athough it must be pointed out that normally it is highly desirable to add fresh oil frequently in small quantities in preference to allowing the supply to become almost exhausted before refilling, the reason for this being that the more oil there is in the tank the cooler it will keep in circulation.

CHAINS.

The primary chain is normally lubricated by oil mist from the crankcase release valve and for all ordinary purposes this method of lubrication is entirely satisfactory. It is desirable however to inspect occasionally and once each 3,000 miles the chain should be removed and thoroughly washed in paraffin to remove all traces of grit. It should then be allowed to thoroughly soak in a bath of engine oil (preferably overnight to ensure penetration to all joints). Then hang up and allow the surplus oil to drain off, when the chain is ready for re-fitting. The rear chain must be similarly treated, but at more frequent intervals, say every 1,500 to 2,000 miles in summer and every 1,000 miles during the winter months. If carefully treated in this manner, and kept constantly in correct adjustment, at least 10,000 miles and 15,000 miles of satisfactory service should be obtained from the primary and rear chains respectively.

GEAR BOX.

Once every 500 miles a grease gun full of Wakefield Castrolease (Light) should be injected into the gear box via the small grease nipple provided on the filling plug. Occasionally this filling plug should be removed in order to verify the level of lubricant in the box. The correct level is just above the top of the boss into which the filling plug screws. Therefore, when this plug is removed the grease should overflow, and if the above mentioned injections do not maintain this correct level, the interval between each should be reduced accordingly.

FORK SPINDLES.

Every 500 miles the fork spindle bearings should be flooded with a good quality grease, preferably Tecalemit Grease or Wakefield Castrolease. This flooding process is one of a few seconds only by means of the special grease gun provided. This requires merely holding the nozzle end against the rounded nipples on fork spindles and given a few sharp strokes.

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 small quantity of grease forced through them. (Wakefield Castrolease suitable).

NOTE.—Castrolease can be obtained in special push-down lid canisters for easily filling the grease gun in ½lb., 1lb., and 2lb. sizes.

GEAR ROD JOINTS, ETC.

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 AND MAINTENANCE.

DECARBONISATION.

The period for which an engine will run satisfactorily, without being decarbonised depends to a great extent upon driving conditions. Generally, however, this process should be carried out every 1,500 to 2,000 miles. The need for decarbonising will be indicated by a tendency to pink or knock when ascending hills, or upon accelerating after rounding a corner, and particularly so when the engine is hot. Although to remove carbon deposit it is only necessary to take off the cylinder head, it is advisable to remove the cylinders each 5,000 miles in order to also inspect the piston rings and remove any deposit from the grooves in which they operate.

TO DECARBONISE MODEL V/6.

First remove sparking plug to avoid damage, and unscrew all the cylinder head fixing bolts, when the head may be lifted clear. The carbon deposit should then be scraped off the piston top and also from the interior of the head, after which, all traces of the deposit should be carefully wiped off with a clean calico rag, and the head replaced. When fixing cylinder head, care must be taken to see that the gasket is quite clean, and after introducing all the bolts they should each be tightened down in turn finger tight only. Then going round each in turn, slightly increase the pressure to each until all are firmly and evenly tightened right home. Lastly, before leaving the job, start up engine and when warm, go over each bolt again, when it will be found that a slight extra turn will be possible.

TO DECARBONISE MODEL V/3 O.H.V.

First remove both silencers and exhaust pipes, also sparking plug and petrol pipe. Then unscrew the top cap of carburettor mixing chamber and withdraw air and throttle valves. Next remove the small tie tube attached to the foremost bolt which secures the aluminium over-head rocker housing. Next raise the lower portion of each tappet rod cover tube sufficiently to permit of the small spring plunger on the top half engaging with the hole in the lower half, which engagement will retain the tubes in this telescoped position. Next unscrew the three bolts by which the aluminium rocker housing is held and withdraw this housing together with the tappet rods and covering tubes. Next remove all cylinder head fixing bolts, when, after detaching the top of the gear operating rod, the head with carburettor body attached may be lifted clear. It may be necessary to give the head a sharp jolt upwards to release the spigoted joint, which occasionally tends to become somewhat firmly fixed with carbon deposit. During the removal and re-fixing process, care must be taken to avoid losing the small hardened end caps for the valve stems, and should the valves be removed for grinding-in purposes they must on no account be mixed. In re-assembling, as in the case of the Model V/6, all cylinder head bolts must be uniformly tightened (see Instructions) and the joint faces must be scrupulously clean. Should the head joint when dismantled show any sign of leakage, it should be ground-in in exactly the same manner prescribed for grinding-in valves, great care, of course, being necessary to prevent the admission of any grinding mixture into the cylinder interior, and to remove all traces of the grinding mixture from the joint faces prior to finally placing the head in position.

TO GRIND IN VALVES, MODEL V/6.

During each alternate decarbonisation, it is desirable to remove the valves and grind in to restore the seatings, clean the stems and guides, etc. This must, of course, be done while the head is removed. Having removed the head and valve inspection cover, gently force the bottom valve spring cap up with a stout lever, at the same time holding the valve head down on its seating until it is possible to withdraw the valve cotter. Then smear a little grinding paste on the seating, and with a screwdriver in the slot in valve head gently move the valve to and fro (never rotate completely), raising the valve off its seating between each few movements. When the grinding paste ceases to bite, remove the valve and wipe the seating clean, and if necessary apply another coating of paste and repeat the process. Generally, one application only is sufficient to restore the seating of either inlet or exhaust valve, but it may happen that the latter will require a second application to remove all traces of pit marks. Having restored the valve faces, carefully clean off all traces of the grinding paste and thoroughly wipe both valve stems and valve guides, when the valves may be replaced, care being taken not to mix their respective positions. Before refitting the valve inspection cover, check the tappet

clearances, which should be .004 for the inlet and .006 for the exhaust. These clearances should be constantly and accurately maintained to obtain the best results as regards silence of valve gear, and a cheap set of engineers' feeler gauges will be found very useful for checking purposes.

TO GRIND IN VALVES, MODEL V/3.

In the case of the V/3 Model, valve grinding is advised upon each occasion when decarbonisation is undertaken. 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 the spring is being compressed to allow of the removal of the taper valve cap divided collar. It may be necessary to give the valve springs 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.

A special tool for compressing valve springs can be supplied at 6s. 6d. (see Tools Section) TTK 8.

TO ADJUST INLET OR EXHAUST TAPPETS, MODEL V/6.

Remove valve spring cover and with the spanner provided in tool kit hold the tappet head (large hexagon) and slack off lock nut securing tappet head. Then screw head down or up, as required, until correct clearance is obtained, after which securely lock in position with lock nut. The correct clearances as mentioned previously are .004 for the inlet and .006 for the exhaust.

TO ADJUST INLET OR EXHAUST TAPPETS, MODEL V/3.

First expose the tappet requiring adjustment by sliding up the lower portion of the tappet rod covering tube, which, it will be found, can be held in a raised position by resting the flanged bottom cap on one of the cylinder fins. Next, hold tappet body (bottom hexagonal portion) with spanner provided, and slack off nut securing the tappet head with the smaller spanner, also provided. Then screw the concave tappet head up or down as may be required, until the correct clearance is obtained, after which securely lock in position with lock nut.

NOTE.—Correct clearance between rocker end and exhaust valve stem when valve is down on its seating is .004 while that for the inlet is .002. To obtain the best results as regards silence of valve gear, these clearances should be accurately maintained, and a cheap set of engineers' feeler gauges will be found very useful for checking purposes. Tappet clearances should be tested when engine is warm (not hot).

VALVE TIMING.

The correct setting for the closing and opening of valves is as follows:—Inlet commences to open 25 degrees or 3-16ins. before top of exhaust scavenging stroke, and closes 50 degrees of ½in. up the compression stroke. Exhaust valve commences to open 68 degrees or 29-32ins. from bottom of firing stroke and closes 21 degrees or 9-64ins. down induction stroke. To test these settings the rockers should be set at their respective clearances, which are .002 for the inlet and .004 for the exhaust. A cheap set of engineers' feeler gauges will be found very useful for checking rocker clearances, which should be carefully maintained if best results are required.

IGNITION SETTING.

With ignition fully advanced, the contact points of magneto should break 40 degrees or approximately ¼in. 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 RE-TIME MAGNETO.

With sprocket on magneto armature shaft loose, revolve engine carefully until the piston has just passed the top dead centre of firing stroke (this is the top-most position of piston at which both valves are closed). Now fully retard the magneto, and taking care not to move the engine from slightly past top centre position (about 1-16in. down is the correct position of piston), gently turn the magneto armature in the normal direction of rotation until the contact points are just about to part, in which direction the sprocket fixing nut should be carefully and firmly tightened. It is advisable to check the setting after fixing sprocket by again placing the piston in the position of 1-16in. down firing stroke or past top dead centre and moving the ignition lever backward and forward from fully retard to about one-third advanced. During this small movement the contact points should be observed to definitely part.

TO ADJUST MAGNETO CHAIN.

It will be observed that the adjustment of magneto chain is obtained by sliding the magneto platform along the engine cradle plates by means of the adjuster bolt passing through a small lug on the left side plate. To adjust chain, slack off the four gear box fixing stud nuts and screw the special double-headed adjuster nut clockwise or right-hand to tighten chain and vice versa to slacken. After obtaining the correct adjustment, see note below, care must be exercised to securely tighten down the four gear box stud nuts.

NOTE.—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 FRONT CHAIN.

Adjustment of the front chain is arranged by sliding the gear box bodily forward or backward as the need may be upon the rear engine cradle plates under which it is mounted. A screwed draw bolt is provided forward of the gear box, operating through a bar fixed between the two cradle plates. To tighten the front chain firstly slack off the four gear box holding down nuts and also the bolt which passes through the cradle plates immediately above gear box. Then turn the adjuster bolt anti-clockwise or left-hand to tighten or vice versa to slacken the chain tension. When the correct adjustment has been obtained (see note below) all the gear box fixing bolts and nuts previously loosened must be very securely retightened.

NOTE.—Correct chain tension should allow a whip or movement of $\frac{3}{8}$in. to $\frac{1}{2}$in. as chain is pressed lightly up and down.

TO ADJUST REAR CHAIN.

Put down rear stand, then slack off rear wheel spindle nuts. Then adjust chain as required, by means of the bolts which pass through each of the fork ends, after which securely tighten spindle nuts. Tension of chain should be tried in a number of places, and the correct adjustment (which should allow a whip of $\frac{3}{8}$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.

IMPORTANT.—Care is necessary when tightening rear chain to leave the wheel in correct alignment. When correct, a piece of thin string stretched taut across both wheels, and about four inches from and parallel to the ground, should be observed to just touch each tyre at both sides of wheel centre simultaneously. Alternatively a straight wooden batten about five feet long is a very handy article to be used for the purpose of checking wheel alignment applied as in the case of string parallel to and about four inches from the ground.

CARBURETTOR ADJUSTMENT.

Although owners are advised to refrain from tampering with the setting of the carburettor without good cause, a rough idea how this unit functions and how adjustments may be effected is given below. The correct level of petrol is maintained by means of a float and needle valve operating in much the same manner as the ball float and valve of an ordinary domestic water cistern. The correct level is obtained by the carburettor manufacturers, and no alteration under any circumstances should be made. In the event of a leaky float or worn needle valve, the part in question should be replaced. Control over the main petrol supply to the engine is obtained firstly by the jet or orifice, and secondly by a taper needle passing through the jet and attached to the throttle valve. As the throttle valve is opened a smaller part of the taper needle comes into operation, thereby increasing the passage for the petrol. This needle being adjustable in length provides a fairly wide range of control without actual alteration to the jet size. A pilot or slow running jet is provided to take care of slow running or idling, and a throttle stop controls the actual speed at which the engine runs when the throttle is closed to the maximum extent possible in which position the engine should run or "tick over," to use an expression favoured by motor cyclists, slowly but positively. The correct setting of the main jet should permit of full air being used when running fast on full throttle. To test for correct setting, start up engine, and after allowing a few seconds to warm up, fully retard the ignition and fully open throttle. If it is now possible to open the air beyond the $\frac{1}{3}$ or $\frac{1}{2}$ open position it would indicate a too large jet, and the needle attached to throttle valve must be lowered or lengthened. This needle, it should be explained, is secured by a flat strip cotter engaging with a small notch in the needle. Several of these notches are provided to permit adjustment. When correct, the engine should commence to splutter immediately the air lever is opened more than about $\frac{1}{3}$, but should run satisfactorily on the fully closed air position. Under no circumstances should the engine be run for more than a few seconds in this fully retarded, fully opened throttle position. The only other adjustments are the air supply to the pilot jet and the throttle stop. The adjusting screw for the pilot jet air supply will be observed at the base of the mixing chamber. Screwing in enriches the mixture and, vice versa, unscrewing, weakens. It must be clearly understood that adjustment to this screw affects the mixture only on extremely small throttle openings. Having set the throttle stop screw to give the desired idling engine speed, the pilot jet air screw is turned in the required direction to give even firing. The adjustment is not particularly sensitive, and no difficulty should be experienced in finding the correct position, when the locking nut should be tightened down to prevent any movement by vibration. Adjustment, if any, should be made to this air screw while the engine is warm and the ignition fully or nearly fully advanced. We mention this in order to remove the possible impression that the pilot jet setting is not correct should the

Carburettor Adjustment.—contd.

engine stall when started up from cold. Once correctly set the pilot jet should not require attention except perhaps in extremes of temperature.

GEAR BOX.

The construction of the gear box is roughly as follows:—The body or shell consists of an aluminium casting secured by means of four bolts to the rear engine cradle plates and operating in slotted holes to permit of chain adjustment. This shell carries a main and also a secondary shaft, upon each of which are mounted three gear wheels providing three speeds. Two pairs of these wheels remain constantly in mesh. The remaining two gears are arranged to slide upon their respective shafts, to which they are fixed rotationally by means of keys or splines. Engagement with the constant mesh gears is arranged by means of dogs machined on the side of the various gear wheels and the position taken up by these sliding gears is governed by a gear lever operating in a suitably shaped gate or quadrant, to which lever is attached a rod connected to a lever on the gear box shell, which latter imparts the movement to the two sliding gears referred to above. The clutch consists of a number of cork and fibre faced plates kept in contact with smooth metal plates by means of a central spring, the pressure of which spring is released by means of a hand lever operating through the medium of the quick thread worm and a long push rod passing through the mainshaft. In driving it must always be remembered that the engine gives best results when running smoothly. It should not be driven at low speeds on full throttle as this causes snatch and harshness in the transmission, leading to excessive tyre wear, unevenly worn chains, etc. The gears should be freely used, and at the least sign of jerkiness when hill climbing or running slowly on the level, a change to a lower gear should be made. It is, of course, not possible to lay down any hard and fast rules on this matter, as conditions vary to such a large extent by load carried, wind velocity, etc., but generally it is desirable to change down to second speed on the level when the road speed falls below 18 to 20 m.p.h., and on a steep hill when the speed falls below 24 to 25 m.p.h. Similarly a change should be made to bottom gear if the speed on second falls below 12 to 15 m.p.h. In all circumstances recollect that the gear box is provided for use.

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) to and fro 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

Clutch Adjustment.—contd.

slightly backward to provide a slacker cable adjustment, or forward to tighten. Should the clutch on the other hand develop harshness even with correctly adjusted chains, the clutch plates should be carefully removed and smeared with a mixture of powdered graphite and water worked up into a paste. Oil should not be used under any circumstances.

ADJUSTMENT OF GEAR CONTROL.

After an adjustment has been made to the primary chain, the gear lever adjustment should be checked and corrected if necessary. To do this jack the back wheel up on the stand, and while gently rocking the rear wheel to and fro, move the gear lever in the gate sufficiently either side of the neutral notch to feel the dogs on gears grating, carefully noting at the same time the distance the gear lever travels past the neutral position. The movement either side should be exactly similar, and adjustment to the length of the rod should be made to correct if necessary. This adjustment is obtained by removing the yoke end pin which passes through the lever end, and after unscrewing the locking nut, screw the yoke end down or up the rod as may be required. It is important that this checking be carefully carried out, and in practice, the operation as described above will be found extremely simple.

TO ADJUST STEERING HEAD.

The steering head should be occasionally tested for adjustment by exerting pressure upwards from the extreme tips of the handlebars, while the steering damper is completely slacked off. Should any shake be apparent, the top lock nut on steering column should be slacked off and the lower nut screwed down until all trace of slackness has disappeared, when the top lock nut should be again tightened down.

IMPORTANT.—To guard against unconsciously over-tightening the head bearings, the effect of which is extremely difficult steering, it is advisable to jack up the front of the 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 free.

FRONT FORKS. SPINDLE ADJUSTMENT.

Provision is made for taking up side or end wear of the various fork spindle bearings. The need for adjustment will be made apparent by a click or creaking noise when the steering head is abruptly turned. By placing the fingers partly over the spindle link end and partly upon the lug through which the spindle passes, first ascertain which spindle or spindles require adjustment. Then after slacking off both end nuts, turn the spindle bodily by means of its hexagonal end left-hand or contra clockwise to take up slack or vice versa to slacken. Do not turn more than half a revolution before a re-trial, and care is essential to guard against over-tightening, when

Front Forks Spindle Adjustment.—contd.

the fork will become stiff in action or most probably refuse to function. The fibre washers which are fitted between the lug ends and the spindle side plates are not provided for frictional purposes, but to prevent actual seizure in the event of the spindle adjustment being too tight. The necessary friction damper effect is provided independently and is adjusted as follows:—

TO ADJUST FORK ACTION DAMPER.

The fork action damper can best be adjusted while cycle is actually in motion and a badly corrugated surface, such as may be found on many bus routes, provides the best conditions for the purpose. The ebonite damper hand nut should be screwed sufficiently tight to make the fork action sluggish under such circumstances as those described and will subsequently require very little variation for other conditions of road surface to provide the maximum degree of comfort.

TO ADJUST WHEEL BEARINGS.

To adjust either rear or front wheel bearings, slack off the left side spindle nut, and with the smaller thin cone spanner provided, slack off the thin adjusting cone lock nut, after which with the larger spanner, turn the adjusting cone in the required direction, i.e., clockwise to tighten, after which, lock the adjusting cone in position with the lock nut provided, and lastly carefully retighten the axle nut.

IMPORTANT NOTE.—It must be understood that taper roller bearings must not be adjusted tightly, and unless a trifling amount of slackness is observed it is possible quite unknowingly to impose an enormous crushing strain on the slightly tapered rollers without same being made apparent by undue friction. This slight slackness must therefore, always be maintained.

TYRES AND SERVICE.

To obtain satisfactory life and service from the tyres is largely within the user's control, and the first essential to obtain this is proper inflation. The correct amount of pressure is governed substantially by the load to be carried, and it is therefore difficult to lay down a hard and fast ruling. Assuming the weight of driver to be normal, the pressures recommended below may be regarded as satisfactory, and we urge all users to make a practice of checking the actual pressure by means of a low-pressure Schrader tyre gauge. This takes a few seconds only, and will amply repay the owner by reason of additional service and immunity from failures.

	Solo.	With Pillion Passenger.
Front wheel	15-16lbs. ...	15-16lbs.
Rear wheel	21-22lbs. ...	26-28lbs.
Side wheel	15-16lbs. ...	15-16lbs.

INCORRECT ADJUSTMENT OR MISUSE OF BRAKES.

With the highly efficient brakes fitted, harsh application is liable to result in heavy tyre wear. Particularly does this apply if the brake coupling is not correct, thereby allowing a large proportion of the braking effect to be taken by one wheel only. The instructions given hereafter regarding brake synchronisation should be carefully followed, and under no circumstances, other than emergency, should the brakes be applied sufficiently harshly as to cause either of the wheels to stop revolving or to cause a squeak of protest from the tyres.

BRAKE CONTROL ADJUSTMENT.

Owing to the fact that the foot operation of the front wheel brake is effected through a Bowden cable, it is necessary in order to obtain the correct and maximum braking effect to adjust the controls so that the front brake is applied slightly before the rear. To do this both wheels should be jacked up on the stands and during the process of setting the knurled adjusting nuts, the brake should be lightly applied and the controls so adjusted that when it becomes difficult to move the front wheel against the action of the brake, the effect is only just noticeable on the rear wheel. When correctly adjusted, both wheels must of course turn freely when the brake pedal is released, and upon applying a moderate pressure to the brake pedal it should be observed that application of the hand brake lever does not cause any additional movement of the front brake expander lever, thus indicating that the brake in question is in full engagement. Any tendency for the back wheel to squeak or skid upon a moderately strong application of the brake pedal indicates that the adjustment of the front brake foot operated cable is not sufficiently in advance of the rear, and in such a case the remedy is to either tighten up the front adjustment slightly or alternatively slacken the rear.

CORRECTIVE MEASURES.

No adjustment should be made nor any part tampered with until the cause of the trouble is known. Otherwise adjustments which are correct may be destroyed.

Engine Suddenly Stops:—

(1) Petrol shortage in tank.
(2) Choked petrol supply pipe or tap.
(3) Water in float chamber.
(4) Oiled up or fouled sparking plug.
(5) Water on magneto pick-up or sparking plug.

Engine Fails to Start:—

(1) Lack of fuel or insufficient flooding if cold.
(2) Oiled up sparking plug.
(3) Stuck up valve or valve stem sticky.
(4) Weak valve spring or valve not seating properly.
(5) Too liberal throttle opening.
(6) Contact breaker sticking.

Loss of Power:—

(1) Valve or valves not seating properly.
(2) Weak valve spring or springs.
(3) No tappet clearance or excessive clearance.
(4) Lack of oil in tank.
(5) Brakes too closely adjusted.
(6) Badly fitting or broken piston rings.
(7) Punctured carburettor float.
(8) Silencer choked with carbon deposit.

Engine Overheats:—

(1) Lack of proper lubrication.
(2) Weak valve springs.
(3) Pitted valve seats.
(4) Worn piston rings.
(5) Late ignition setting.
(6) Punctured float, causing rich mixture.
(7) Air control to carburettor out of order.
(8) Silencer choked with carbon deposit.

Engine Misses Fire:—

(1) Valve spring weak.
(2) Defective or oiled plug.
(3) Incorrectly adjusted contact breaker.
(4) Incorrectly adjusted tappets.
(5) Defective sparking plug cable.
(6) Contact breaker arm sticking.

LEGAL MATTERS.

NOTE.—In view of the growing public objection to noisy motorcycles, a word of warning on this subject may not be out of place here. Firstly, it has been noted, and freely commented upon, that much of the noise complained of is unnecessary, being due to injudicious driving as for instance, violently accelerating from a standstill, racing the engine when stationary, driving on full throttle when ascending hills in residential districts, etc. Any motor cycle, or for that matter, any motor vehicle driven in this manner creates abnormal noise, and in the interests of all, we earnestly implore every "Matchless" owner to studiously refrain from any of the practices enumerated.

To comply with the Law relating to motor cycles, the owner of a "Matchless" Model V/3 and V/6 must:—

1. Hold a driver's license, which can be obtained from the Chief Constable or Corporation of a County Borough, or from the County Council. The charge for this license is 5/- yearly, and must be renewed annually from the date of issue. A Motorcar driver's license 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 the requisite remittance which varies according to the date of registration and the term to be covered. For a full year, January 1st to December 31st, the fee is £3 (solo) or £4 with sidecar attached. In some districts evidence that the vehicle to be licenced is new and has not previously been registered may be demanded. A Manufacturers' or Agents' Invoice will serve.
4. See that his front plate is illuminated on both sides at night.
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 motor cycle.

For registration purposes the following particulars will be required:—

Weight of cycle unladen (with equipment required by Law), 330lbs.
Type or Model—"Matchless" Model V/3 or V/6.
Manufacturer's horse-power, 4.98 or 5.86.

NOTE.—The above weight applies only to machines without electrical equipment.

GUARANTEE.

We give the following guarantee with our motorcycles, motorcycle combinations and sidecars, which is given in place of any implied conditions, warranties or liabilities whatsoever, statutory or otherwise, all such implied conditions, warranties and liabilities being in all cases excluded. Any statement, description, condition, or representation contained in any Catalogue, advertisement, leaflet or other publication shall not be construed as enlarging, varying or over-riding this guarantee. In the case of machines which have been used for "hiring out" purposes, or racing, or from which the trade mark name 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 six months only from date of purchase, and damages for which we make ourselves responsible under this guarantee are limited to the free supply of a new part in exchange for the part of the motorcycle, motorcycle combination, or sidecar which may have proved defective. We do not undertake to replace or refix, or bear the cost of replacing or refixing, such new part in the motorcycle, motorcycle combination or sidecar. We undertake, subject to the conditions mentioned below, to make good at any time within six months any defects in these respects. As motorcycles, motor cycle combinations, and sidecars are liable to derangement by neglect or misuse, this guarantee does not apply to defects caused by wear and tear, misuse or neglect.

The term "misuse" shall include amongst others the following acts:—

1. The attaching of a sidecar to the motor cycle in such a manner as to cause damage or calculated to render the latter unsafe when ridden.

2. The use of a motor cycle or motor cycle and sidecar combined, when carrying more persons or a greater weight than for which the machine was designed by the manufacturers.

3. The attaching of a sidecar to a motorcycle by any form of attachment not provided or supplied by the manufacturers, or to a motorcycle which is not designed for such use.

Any motorcycle, motorcycle combination or sidecar sent to us to be plated, enamelled or repaired will be repaired upon the following conditions, i.e., we guarantee that all precautions which are usual and reasonable have been taken by us to secure excellence of materials and workmanship, such guarantee to extend and be in force for three months only from the time such work shall have been executed or until the expiration of the six months above referred to, and this guarantee is in lieu and in exclusion of any common law or statute warranty or condition 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.

CONDITIONS OF GUARANTEE.

If a defective part should be found in our motorcycles, motorcycle combinations or sidecars, or in any part supplied by way of exchange before referred to, it must be sent to us CARRIAGE PAID, and accompanied by an intimation from the owner that he desires to have it repaired or exchanged free of charge under our Guarantee, and he must also furnish us at the same time with the number of the machine, the date of the purchase, or the date which the alleged defective part was exchanged as the case may be.

Failing compliance with the above, such articles will lie here AT THE RISK OF THE OWNER, and this guarantee and any implied guarantee, warrantee or condition shall not be enforceable.

We do not guarantee specialities such as tyres, saddles, chains, lamps, etc., or any component parts supplied to the order of the purchaser differing from standard specifications supplied with our motorcycles, motorcycle combinations, sidecars or otherwise.

IMPORTANT NOTE.—Any part sent to us for any reason whatsoever must bear distinctly the sender's name and address and instructions or requests relative to parts must be sent separately by letter post.

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 base.

MATCHLESS MOTOR CYCLES (COLLIERS) LTD.

INTRODUCTION.

We have pleasure in presenting this Spares List for the "Matchless" Models V/3 and V/6.

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

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

Read carefully rules on Pages 25 and 26.

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.

MATCHLESS MOTOR CYCLES (COLLIERS) LTD.

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 Matchless Motor Cycles (Colliers) Ltd., and crossed. When making a 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 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 net cash before delivery.

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

Only goods to the value of 5s. and over are sent upon request, per C.O.D.

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 unless customers have a current account, there is the inevitable delay while a pro forma invoice is sent, and we have to await receipt of the 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 when required showing amount of deposit in hand. 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 cases 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, and all badly worn parts 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 quotations new parts and repairs that we consider essential to make the machine suitable and satisfactory for the road.

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 net cash before delivery.

RULES TO BE OBSERVED.

1. Parts sent to us for repair, replacement or as pattern must bear distinctly senders' 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 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.
8. Only goods to the value of 5/- and over can be sent upon request per C.O.D.

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. Any such damage should be immediately reported to the carriers.

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

Goods not unpacked at the time of receipt should always be signed for as "Unexamined."

NOTE.—*Unless specially mentioned all parts are common to both Models V/3 and V/6.*

ENGINE PARTS.

CRANKCASE, FLYWHEELS, MAIN BEARINGS, ETC.

			£	s.	d.
V3E	1108A	Crankcase with studs and bushes (Model V/3)	4	15	0
V6E	1608A	Crankcase with studs and bushes (Model V/6)	4	15	0
V2E	126	Cylinder stud only (each)			5
L3E	239	Crankcase drain plug			4
V3E	1027	Mainshaft bush (timing side)		3	9
V3E	1021	Mainshaft bush (hardened steel) transmission side		5	6
V3E	1022	Rollers and cage transmission side		7	6
V3E	1083	Tappet guide (see also timing gear), each		3	9
AE	49	Release valve body		1	0
L3E	240	Release valve diaphragm			2
L3E	108	Release valve diaphragm seating			9
H2E	179	Release valve spring			2
V3E	1035	Cam lever axle (see also timing gear) ...		1	6
V3E	1025	Flywheel only, timing gear side (Model V/3)		17	9
V6E	1525	Flywheel only, timing gear side (Model V/6)		18	9
V3E	1019	Flywheel only, transmission side (Model V/3)		17	9
V6E	1519	Flywheel only, transmission side (Model V/6)		18	9
V3E	1026	Flywheel axle, timing gear side		7	6
V3E	1020	Flywheel axle, transmission side		7	0
V3E	1017	Crankpin (Model V/3)		6	6
V6E	1517	Crankpin (Model V/6)		7	6
V2E	120	Crankpin or flywheel axle fixing nuts (each)			7
L3E	95	Axle key, transmission side (each)			5
STD	15	Axle nut lock screw (each)			2
V2E	306	Crankpin rollers, per set (Model V/3) ...		4	0
L3E	306	Crankpin rollers, per set (Model V/6) ...		7	0
LE	464R	Connecting rod with gudgeon pin bush and hardened steel big end liner (Model V/3)	1	1	3
LE	405	Connecting rod and liner (Model V/3) ...		18	0

Crankcase, Flywheels, Main Bearings, etc.—contd.

			£	s.	d.
V5E	544	Connecting rod with gudgeon pin bush (Model V/6)		19	3
ME	3	Connecting rod only (Model V/6)		15	3
L3E	312	Hardened steel big end liner only (Model V/3)		4	6
V2E	228	Steel spacing collars for big end (Model V/3)			9
L3E	89	Connecting rod small end bush only ...		3	3
T5E	1036	Bush for cam wheel (crankcase side) ...		1	6
V2E	223/19	Sprocket for transmission (19tth)		7	6
V2E	223/21	Sprocket for transmission (21tth)		7	6
L3E	95	Sprocket key for mainshaft			5
ME	120	Sprocket fixing nut			5
STD	15	Sprocket fixing nut lock screw			2
V2C	37	Chain case support stud (screws into crankcase) short			2
V2C	35	Chain case support stud (screws into crankcase) long			3
V6E	1003	Cylinder base paper washer (Model V/6) ...			2
V3E	503	Cylinder base paper washer (Model V/3) ...			2

TIMING GEAR, TAPPETS, VALVE LIFTER, ETC.

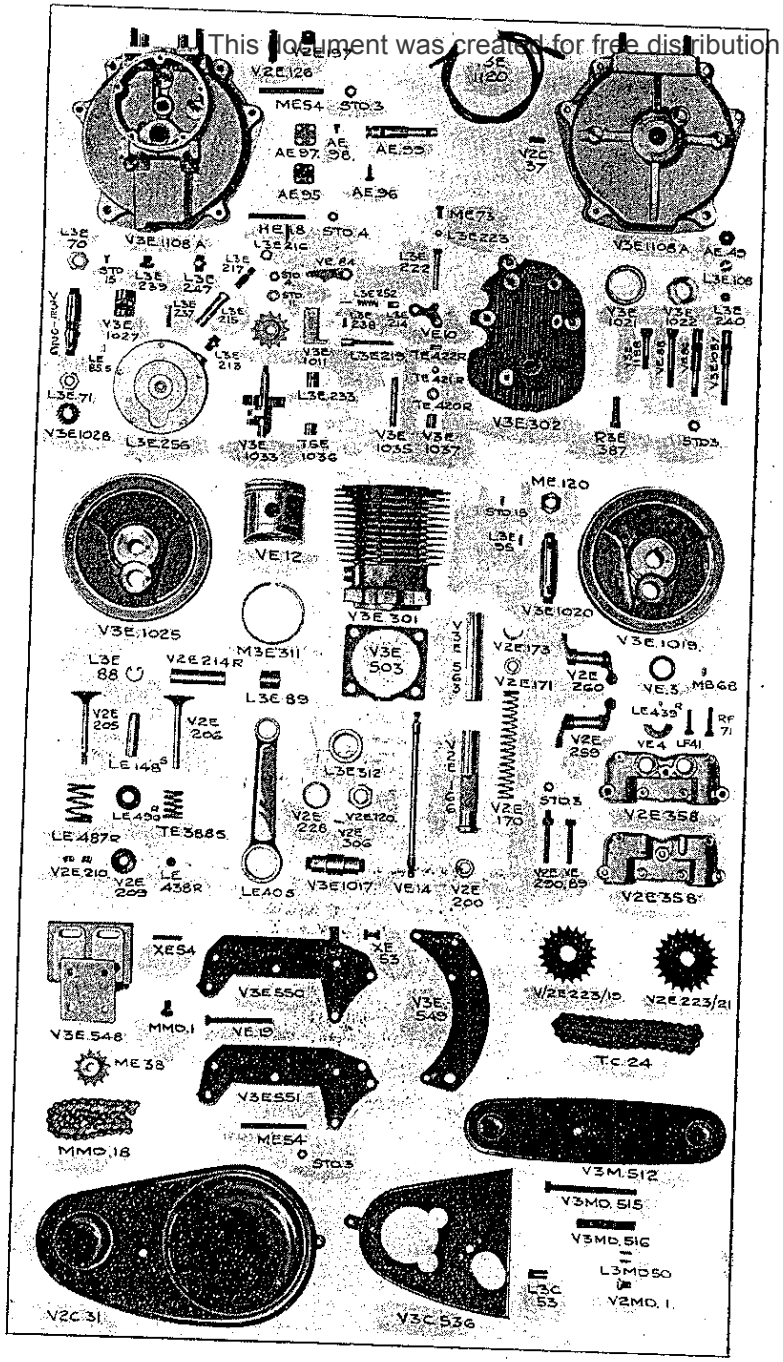
			£	s.	d.
V3E	1033	Cam wheel, standard type	1	3	6
V3E	1033R	Cam wheel, racing type (Model V/3 only)	1	12	0
L3E	233	Cam wheel bush (cover side)		2	0
L3E	256	Timing gear aluminium cover with bush ...		8	3
L3E	237	Timing gear cover fixing screw (each) ...			2
V3E	1035	Cam lever axle		1	6
V3E	1035	Axle for valve lifter cam block		1	6
V3E	1011	Valve lifter cam block		3	6
VE	84	Valve lifter lever (inside timing gear) ...			7
L3E	219	Valve lifter shackle rod		1	4
L3E	238	Pin securing shackle rod to cam block ...			6
STD	14	Split pins for above (per doz.)		1	0
L3E	213	Valve lifter guide for shackle rod		1	0
L3E	215	Valve lifter tubular sleeve		1	0
L3E	217	Valve lifter cable adjuster (screws in sleeve)			7
L3E	216	Lock nut for cable adjuster			4
L3E	252	Valve lifter springs, fit inside tubular sleeve			2
L3E	214	Shackle rod slotted head for cable nipple ...		1	0
L3E	218	Valve lifter cable nipple (fits in above) ...			3
LE	180S	Valve lifter cable nipple handlebar end ...			3
V3E	1120	Valve lifter cable (inner and outer) ...		2	10
LE	185S	Valve lifter cable (inner only)			9
LE	186S	Valve lifter cable (outer only)		2	1
MFF	48	Valve lifter lever (see handlebars)		8	6
V3E	1083	Tappet guide, inlet or exhaust		3	9
ME	93	Tappet complete (Model V/3)		2	11

Timing Gear, Tappets, Valve Lifter, etc.—contd.

			£	s.	d.
L4E	321	Tappet complete (Model V/6)		2	10
L3E	222	Tappet body only		2	0
ME	73	Tappet head screw (Model V/3)			7
L3E	210	Tappet head screw (Model V/6)			6
L3E	223	Tappet head screw lock nut			4
VE	14	Tubular tappet rod complete (Model V/3) ...		4	3
VE	79	Hardened steel ball end only (each) ...		1	0
V3E	566A	Tappet rod cover tube complete (Model V/3)		2	9
V3E	563	Tappet rod cover tube, top portion only ...		1	0
V2E	166	Tappet rod cover tube, bottom portion only		1	9
V2E	170	Tappet rod cover tube internal spring ...			3
V2E	171	Special washer for internal spring			4
V2E	173	Spring circlip for tappet rod cover tube ...			4
V2E	200	Leather washer for bottom of cover tube ...			1
VE	10	Cam lever, inlet or exhaust (Model V/3) ...		7	6
L3E	207	Cam lever, inlet or exhaust (Model V/6) ...		4	9
TE	420R	Cam lever roller only (Model V/3)			6
TE	422R	Axle for cam lever roller (Model V/3) ...			9
TE	421R	Steel bush for roller (Model V/3)			3
V3E	1037	Cam lever spacing collar			7
V3E	1028	Timing gear small pinion		5	0
L3E	71	Nut for fixing pinion to mainshaft			5
LE	85S	Key for small timing gear pinion			4
STD	4	Nut for camshaft securing magneto chain sprocket			2
STD	11	Washer for nut securing magneto chain sprocket			1

CYLINDER, HEAD, VALVES, PISTON, ETC.

			£	s.	d.
V6E	1001	Cylinder only (Model V/6)	2	17	6
V6E	1003	Cylinder base joint washer (Model V/6) ...			2
V5E	502	Cylinder head (Model V/6)	1	0	0
V3E	1088	Cylinder head fixing bolts (each) Model V/6			6
V5E	515	Cylinder head C. & A. gasket (Model V/6)		1	3
V6E	1585	Valve inspection cover (Model V/6) ...		3	0
V6E	1685	Jointing washer for cover			4
AE	86	Knurled nut securing inspection cover ...			9
R4E	1082	Stud for above fixing nut (screws in cylinder)			4
STD	4	Locking nut for inspection cover stud ...			2
L3E	245	Compression tap for cylinder head (Model V/6)		2	6
L3E	246	C. & A. washer for above or sparking plug			2
L3E	158	Sparking plug with C. & A. washer (Model V/6)		5	0
LE	158S	Sparking plug with C. & A. washer (Model V/3)		6	0



Engine Parts.

Cylinder, Head, Valves, Piston, etc.—contd.

			£	s.	d.
V3E	301	Cylinder head only (Model V/3)	1	17	6
V2E	197	Cylinder fixing nuts (each)			5
V3E	302	Cylinder head (Model V/3)	2	10	0
R3E	387	Cylinder head fixing bolt (short inverted) Model V/3			5
V3E	1188	Cylinder head fixing bolt (medium) Model V/3			8
VE	88	Cylinder head fixing bolt, long (Model V/3)			10
V3E	1087	Cylinder head fixing bolt with tapped extension (Model V/3)			10
V2F	110	Tubular stay, cylinder head to frame (Model V/3)		1	0
STD	4	Nut securing above to cylinder head bolt			2
M3E	342	Exhaust valve only (Model V/6)		6	6
M3E	341	Inlet valve only (Model V/6)		5	0
XE	119	Valve spring only (Model V/6)		1	0
M3E	426S	Valve spring top cap (Model V/6)			3
XE	9	Valve spring bottom cap (Model V/6) ...			5
L3E	250	Valve cotter (Model V/6)			3
M3E	343	Valve guide, inlet or exhaust (Model V/6)		3	9
LE	148S	Valve guide, inlet or exhaust (Model V/3)		4	0
V2E	206	Exhaust valve only, standard type (Model V/3)		11	6
V2E	306	Exhaust valve only, special racing (Model V/3)		13	6
V2E	205	Inlet valve only, standard (Model V/3) ...		7	6
V2E	305	Inlet valve only, special racing (Model V/3)		15	0
LE	487R	Outer valve spring (Model V/3)		1	0
TE	388S	Inner valve spring (Model V/3)			6
V2E	209	Valve spring top cap (Model V/3)		1	2
LE	490R	Valve spring bottom cap (Model V/3) ...			10
V2E	210	Taper split valve collar (two pieces) ...		1	0
LE	438R	Hardened steel end cap for valve (Model V/3)			6
VE	12A	Piston complete with gudgeon pin and rings (Model V/3) standard	1	0	2
VE	12AA	Piston complete with gudgeon pin and rings (Model V/6) standard		17	8
VE	112A	Piston complete with gudgeon pin and rings (Model V/3) h.c. type	1	9	8
VE	12	Piston, standard type (V/3 and V/6) ...		11	6
VE	112	Piston, h.c. type (Model V/3 only)	1	0	0
M3E	311	Piston rings (each), standard		1	0
V2E	311	Piston rings for V/3 high compression piston		1	6
V2E	214R	Gudgeon pin (Model V/3)		6	6
M3E	308	Gudgeon pin (Model V/6)		4	0
L3E	88	Gudgeon pin securing rings (each)			1

OVERHEAD ROCKERS, ETC., MODEL V/3.

			£	s.	d.
V2E	259	Overhead inlet rocker		11	6
V2E	260	Overhead exhaust rocker		11	6
V2E	358	Overhead rocker housing (aluminium), supplied complete only)	1	0	0
VE	3	Roller race for overhead rockers (each) ...		2	6
LE	439R	Rollers for overhead rockers (per dozen) ...		2	0
VE	4	Split washers for overhead rockers (2 pieces)			6
LF	41	Clamping bolt for rocker housing, ¼in. diam. (short)			3
RF	71	Clamping bolt for rocker housing, ¼in. diam. (long)			4
VE	89	Bolt securing rocker housing (plain type) ...			10
VE	86	Bolt supporting rocker housing with tapped extension			10
STD	3	Nut securing above to cylinder head ...			3
V2E	290	Bolt securing rocker housing with screwed extension		1	0
STD	3	Nut for above (secures tubular stay) ...			3
MB	68	Grease nipple for rocker housing			2

OIL PUMP PARTS, OIL PIPES, ETC.

AE	99	Oil pump plunger	5	0	
AE	96	Oil pump plunger guide screw		3	
AE	97	Oil pump end cap (each)		6	
AE	95	Oil pump end cap joint washer		1	
AE	98	Oil pump end cap screws (each)		2	
L3E	247	Screwed union for oil pipe		4	
V3T	554	Oil pipe (supply side)	5	6	
R6T	120	Oil pipe (return side)	4	6	
R6T	121	Rubber tube connector for return pipe complete with metal caps		9	
L3E	284	Oil pipe nipple only		3	
L3E	290	Oil pipe union nut only		4	

ENGINE CRADLE PLATES, BOLTS AND SPACERS, ETC.

V3E	550	Rear engine plate (left side)	4	0	
V3E	551	Rear engine plate (right side)	3	9	
V3E	549	Front engine cradle plate (left or right) ...	2	6	
ME	54	Crankcase bolt ⅜in. diam. x 3 11-16in. long		8	
HE	18	Crankcase bolt 5-16in. diam. x 3 3-16in. long		6	
V3FR	509	Crankcase bolt ½in. diam. x 6⅛in. long (supports footrest rails)		10	
V3FR	512	Distance collars for above (right side), each		4	
V3FR	511	Distance collars for above (left side), each		4	

Engine Cradle Plates, Bolts and Spacers, etc.—contd.

			£	s.	d.
VE	19	Rear engine plate special headed bolt (supports rear chain guard)			5
V3MD	515	Rear engine plate bolt ⅜in. diam. x 5in. long, supports magneto chain case (see also chains and guards)			9
MB	52	Rear engine plate bolt ⅜in. diam. x 3⅞in. long (supports brake pedal fulcrum post) ...			7
STD	4	Nut for 5-16in. diam. bolt (each)			2
STD	3	Nut for ⅜in. diam. bolt (each)			3
STD	1	Nut for ½in. diam. bolt (each)			4

SILENCERS, EXHAUST PIPES, ETC.

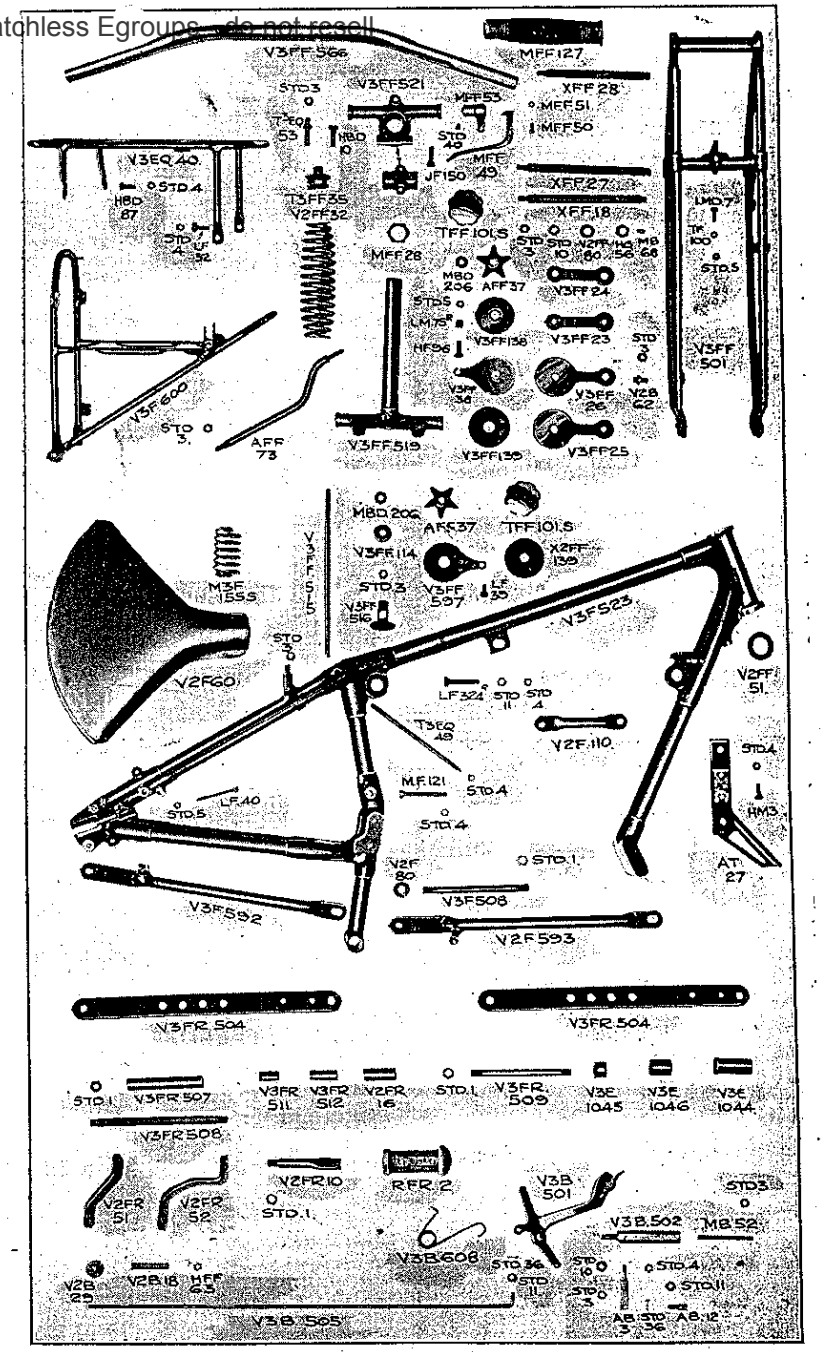
V6E	1604A	Exhaust pipe only (Model V/6)	1	2	6
TS2E	662	Silencer only (Model V/6)		15	0
TE	475	Silencer fish tail only (Model V/6)		8	6
TE	463	Clip for silencer or fish tail only		1	0
TF	41	Clip pinch bolt			2
TE	465	Clip pinch bolt collar (plain bore) ...			2
TE	464	Clip pinch bolt collar (screwed bore) ...			3
V3E	604A	Exhaust pipe only, right side (Model V/3)	1	5	0
V3E	603A	Exhaust pipe only, left side (Model V/3) ...	1	5	0
TS2E	662	Silencer only, right side (Model V/3) ...		15	0
TS2E	661	Silencer only, left side (Model V/3) ...		15	0
TE	475	Silencer fish tail, left or right (Model V/3)		8	6
RE	52	Exhaust pipe tie bar (Model V/3)			6
STD	4	Nuts for tie bar (Model V/3), each ...			2
STD	4	Nut securing silencer to torque tube ...			2

FRAME AND FORK PARTS.

V3F	523	Frame only	5	10	0
AT	27	Front support plate for tank and gear quadrant		3	0
HM	3	Tank support plate fixing bolts (each) ...			4
STD	4	Fixing bolt nut (each)			2
LF	40	Rear chain adjuster bolt			9
STD	5	Rear chain adjuster bolt lock nut			2
T3EQ	49	Seat lug bolt (supports oil tank)			9
STD	4	Seat lug bolt nuts (each)			2
V2F	594	Left side torque tube (Model V/6)		2	3
V3F	592	Left side torque tube (Model V/3)		2	6
V3F	593	Right side torque tube		2	6
V3F	508	Long bolt securing front of torque tubes ...			9
STD	1	Nuts for above (each)			4
V2F	80	Cap washer for king post (each)			3
V3FR	504	Footrest rails (see footrests)		3	6
T3EQ	110	Spring cable clip for frame tubes (each) ...			3

Frame and Fork Parts—contd.

			£	s.	d.
V2FF	51	Steering head frame ball race (each) ...		2	5
V2FF	52	Steering head crown ball race (nickelled) ...		3	2
T3FF	59	Set of steering head balls (50 x 3-16 diam.)			8
V3FF	501A	Front forks complete less stand and mud-guard, but including fork and steering dampers and ball races	6	17	6
V3FF	501	Front fork girder portion only	3	5	0
V3FF	32	Front fork spring		3	0
V3FF	519	Steering head crown and stem (for acetylene lighting)		15	0
V3FF	619	Steering head crown and stem (for electric lighting)		15	6
V3FF	521	Handlebar clip lug with bolts (for acetylene)		10	6
V3FF	621	Handlebar clip lug with bolts (for electric)		11	6
JF	150	Handlebar clip lug bolt only			3
XFF	28	Top fork spindle, front or rear		1	9
XFF	18	Bottom fork spindle (rear)		1	9
XFF	27	Bottom fork spindle (front)		1	11
HG	56	Fork spindle left side lock nut			5
STD	3	Fork spindle nut (right side)			3
STD	10	Washer for spindle nut (right side) ...			1
MB	68	Grease nipple for fork spindle			2
V3FF	24	Left side top fork link		1	6
V3FF	23	Right side top fork link		1	5
V3FF	26	Left side bottom fork link		1	10
V3FF	25	Right side bottom fork link		1	9
V3FF	139	Fork damper friction disc			3
V3FF	138	Fork damper spherical disc			10
V3FF	38	Fork damper side plate			5
HF	96	Fork damper side plate fixing bolt			5
LM	75R	Collar for side plate fixing bolt			3
STD	5	Nut for side plate fixing bolt			2
TFF	101S	Fork damper hand adjusting nut		1	6
AFF	37	Fork damper star washer			6
MBD	206	Fork damper spring washer			3
V2FF	80	Fibre washer for fork spindle ends (each) ...			2
X2FF	139	Steering damper friction washers (each) ...			3
V3FF	597	Steering damper stationary plates (each) ...			5
LF	39	Steering damper stationary plate fixing bolt			2
STD	11	Washer for above			1
V3FF	516	Steering damper sleeve	4	0	
V3FF	515	Steering damper rod (acetylene)		9	
V3FF	615	Steering damper rod (electric)		10	
TFF	101S	Steering damper hand adjusting nut ...	1	6	
MBD	206	Steering damper spring washer		3	
V3FF	114	Steering damper cap washer (fits on head stem)		4	



Frame and Fork Parts.

Frame and Fork Parts—contd.

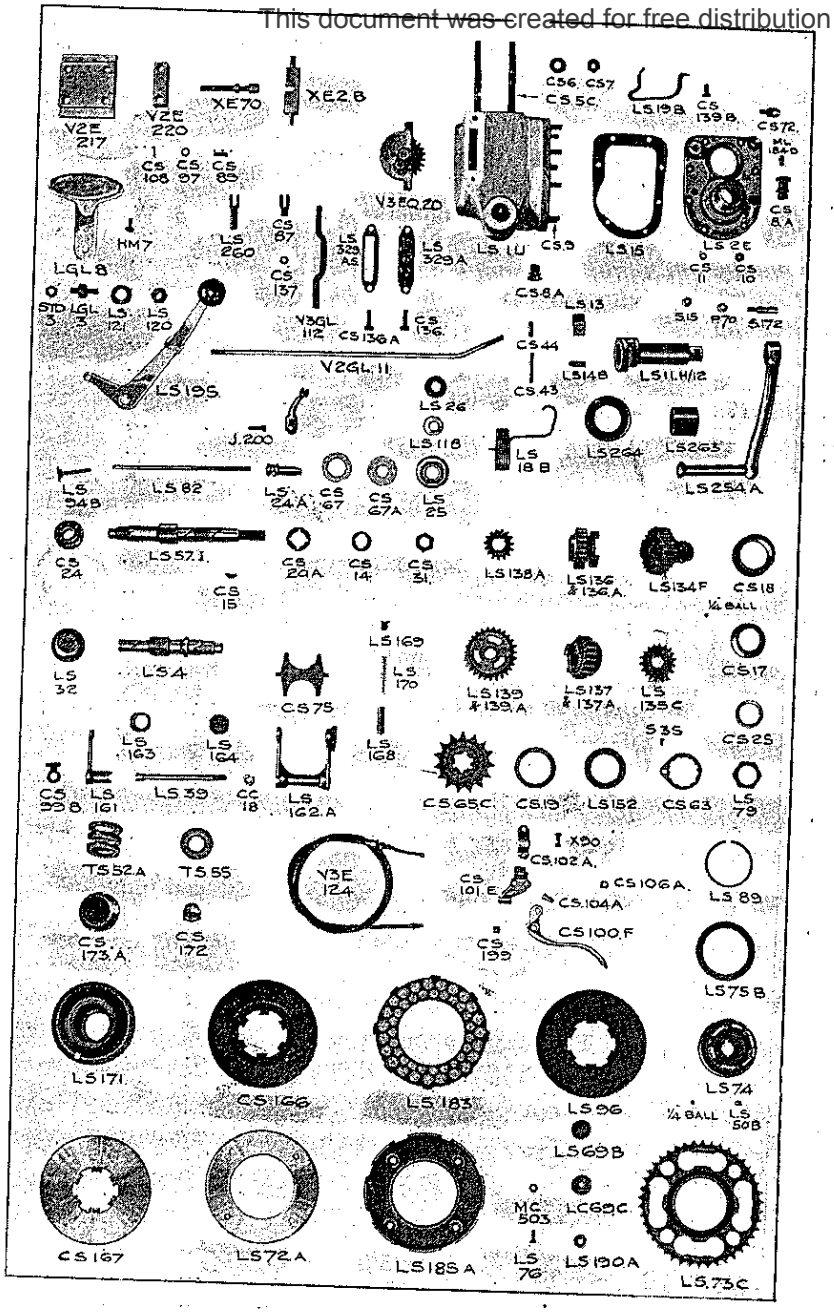
			£	s.	d.
T3FF	35	Fork spring top anchor lug		1	3
HBD	10	Fork spring top anchor lug bolt (plain) ...			6
T3EQ	53	Fork spring top anchor lug bolt with extension for electric horn attachment ...			10
STD	3	Nut for above			3
MFF	28	Steering head adjusting nut and lock nut (each)			8
AFF	73	Lamp bracket (left or right)		1	6
STD	3	Nut for above			3

GEAR BOX PARTS, ETC.

			£	s.	d.
LS	1U	Gear box shell (only), 4 stud fixing ...	1	16	0
CS	5C	Gear box fixing studs (each)			5
CS	7	Gear box fixing stud nuts (each)			2
CS	6	Gear box fixing stud spring washer ...			2
V/2E	217	Gear box top guide plate		4	0
V/2E	220	Gear box adjuster block (fits over 2 studs)			6
XE	70	Gear box adjuster bolt (screws in above) ...			7
XE	2B	Gear box adjuster cross bar (fits between rear engine plates)			8
STD	4	Nuts for fixing adjuster cross bar (each) ...			2
LS	2E	Gear box end plate		15	0
LS	15	Gear box end plate paper washer			2
CS	9	Gear box end plate stud (each)			3
CS	10	Gear box end plate stud nut (each) ...			2
CS	11	Spring washer for end plate stud nut (each)			1
LS	571	Gear box main axle or shaft		13	0
LS	4	Gear box layshaft		12	6
LS	134F	High gear sleeve pinion (less cones) ...		16	0
CS	17A	Left or right hand cone for above ...		2	6
CS	25	Adjusting shims or washers for cones ...			1
LS	136	Middle gear pinion for mainshaft (Model V/3)		8	6
LS	137	Middle gear pinion for layshaft (Model V/3)		10	0
LS	135C	Layshaft pinion (Model V/3 or V/6) ...		5	0
LS	138A	Mainshaft pinion (Model V/3)		4	0
LS	139A	Low gear and K.S. pinion (Model V/3) ...		10	0
LS	11H/12	Kickstarter axle with bush (supplied complete only)		12	6
LS	13	Kickstarter pawl		1	3
LS	14B	Kickstarter pawl pin			3
CS	43	Kickstarter pawl spring			1
CS	44	Kickstarter pawl spring plunger			3
LS	254A	Kickstarter crank		11	0
LS	18B	Kickstarter crank return spring		1	0
LS	19B	Kickstarter crank stop spring			7

Gear Box Parts, etc.—contd.

			£	s.	d.
CS	139A	Bolt securing crank stop spring			2
LS	264	Kickstarter return spring cover			9
LS	263	Tubular sleeve for kickstarter axle ...			3
CS	65C	Sprocket for rear chain (15 teeth) ...		7	6
CS	65A	Sprocket for rear chain (17 teeth)		7	6
LS	79	Sprocket fixing nut			8
CS	63	Sprocket fixing nut locking plate			4
S	35	Screw for fixing nut locking plate			1
CS	18	Ball bearing cup for high gear pinion ...		5	0
LS	262	Steel bush for K.S. axle		2	0
S	172	Kickstarter crank cotter pin			1
S	15	Nut for crank cottor pin			1
P	70	Washer for crank cotter pin			1
CS	24	Ball bearing for mainshaft or layshaft ...		4	7
CS	8D	Gear box filling plug with grease nipple ...			11
CS	8A	Gear box drain plug			8
CS	20A	Bronze thrust washer for mainshaft ...		1	6
LS	162A	Gear striker fork		8	0
LS	161	Gear striker lever		3	6
LS	165	Gear striker fork long centre bolt ...		1	3
CC	18	Nut for striker fork long centre bolt ...			1
CS	99B	Locking plate for nut			2
LS	163	Steel bush for gear striker lever		1	6
LS	164	End bush for gear striker centre bolt ...		1	3
CS	75	Sliding gear plate or slipper		2	6
LS	168	Gear indexing plunger			8
LS	170	Gear indexing plunger spring			2
LS	169	Gear indexing plunger spring screw ...			3
LS	329A	Cover speedometer drive aperture (used only when no speedometer drive is fitted)			3
LS	329AS	Speedometer gear box adjusting shim ...			3
CS	136	Cover fixing bolt			4
CS	136S	Speedometer gear box fixing bolt			4
LS	410	Speedometer drive aluminium casing ...		2	6
MC	255	Speedometer drive fixing screw			1
LS	331	Washer for drive fixing screw			1
LS	412	Speedometer drive main spindle		1	3
LS	416	Speedometer drive main pinion (21 teeth) ...		2	6
LS	413	Speedometer drive intermediate pinion ...		2	0
LS	414	Speedometer drive final pinion		2	0
LS	415	Speedometer drive final pinion spindle ...		1	3
LS	323	Speedometer drive connection bush		1	6
LS	328	Speedometer drive coupling pin			1
LS	326	Grub screw for L.S. 323			1
CS	19	Dust cap for ball cup C.S. 18			3



Gear Box Parts.

Gear Box Parts, etc.—contd.

			£	s.	d.
LS	152	Oil retaining felt washer			2
CS	67	Adjusting washers for main axle (large bore)			1
CS	67A	Adjusting washer, small bore (next to bearing)			1
LS	32	Metal cup for layshaft ball bearing			3
LS	136A	Middle gear pinion for mainshaft (Model V/6)		8	6
LS	137A	Middle gear pinion for layshaft (Model V/6)		10	0
LS	138	Mainshaft pinion (Model V/6)		4	0
LS	139	Layshaft pinion (Model V/6)		5	0
ML	184D	Grease nipple only for filling plug			3

CLUTCH PARTS.

			£	s.	d.
LS	185A	Clutch driver (8 slots)		8	0
CS	15	Clutch hub key for mainshaft			3
LS	74	Clutch centre or hub		12	0
CS	31	Axle nut securing clutch centre			5
CS	14	Axle nut lock washer			1
LS	96	Clutch back plate		2	3
LS	183	Clutch friction plate with fibre plugs ...		5	0
LS	183A	Clutch friction plate with cork plugs ...		2	6
LS	73C	Clutch sprocket	1	0	0
LS	75B	Clutch sprocket securing ring			5
LS	89	Clutch sprocket split ring			4
LS	72A	Clutch sprocket back plate		2	3
LS	190A	Clutch sprocket friction rubber (each) ...			2
LS	69B	Clutch sprocket rubber buffer (solid) ...			2
LS	69C	Clutch sprocket rubber buffer ($\frac{1}{4}$in. hole) ...			2
LS	76	Clutch backplate fixing screw (each) ...			1
CS	166	Clutch centre plate (dished)		2	3
CS	167	Clutch centre plate (flat)		2	3
CS	168A	Clutch outer plate		2	3
LS	71	Clutch spring cup		3	0
TS	52A	Clutch spring		1	8
CS	172	Clutch spring adjuster nut			8
TS	55	Clutch spring collar (fits over above) ...			6
CS	173A	Clutch end cap		1	6
LS	50B	Clutch sprocket rollers (per set of 16) ...		2	8
LS	50BB	Clutch sprocket balls (per set of 16) ...			6
LS	116	Clutch inserts, $\frac{5}{8}$in. (each), fibre			1
LS	116A	Clutch inserts, $\frac{1}{2}$in. (each), fibre			1
TS	56	Clutch inserts, $\frac{5}{8}$in., cork (per doz.) ...			4
TS	57	Clutch inserts, $\frac{1}{2}$in., cork (per doz.) ...			4
LS	94B	Clutch thrust pin ($1\frac{3}{8}$in. long)			9
LS	82	Clutch rod ($7\frac{1}{2}$in. long)			10
LS	24A	Clutch worm		1	9

Clutch Parts—contd.

			£	s.	d.
LS	25	Clutch worm nut		4	0
LS	26	Clutch worm nut dust cap			9
LS	118	Clutch worm nut gland washer			1
LS	112A	Clutch worm lever		2	6
J	200	Clutch worm lever pinch bolt			1
CS	72	Clutch cable adjuster T piece			9
V3E	124	Clutch cable assembled (inner and outer) ...		5	6
V3E	124A	Clutch cable (inner only)		1	6
V3E	124B	Cltuch cable (outer only)		3	6
CS	37	Clutch cable nipple (worm lever end) ...			1
CS	73B	Clutch cable nipple (handlebar end) ...			1
CS	199	Swivel for clutch nipple (handlebar end) ...			4
CS	43	Spring for clutch cable			1
CS	106	Adjusting stop for clutch cable			6
CS	100	Clutch handlebar lever complete		8	0
CS	100F	Lever portion only		4	0
CS	101E	Clip portion only (no screws)		2	6
CS	102A	Clip bottom half only		1	0
X	90	Clip screw			1
X	111	Nut for clip screw			2
CS	104A	Fulcrum screw for lever			1
CS	106A	Nut for fulcrum screw			1
MC	503	Nut for clutch back plate fixing screw L.S. 76			1

GEAR CONTROL PARTS.

V3GL	112	Short cranked gear rod	1	0	
V2GL	11	Long gear rod	1	0	
CS	87	Gear rod yoke end		10	
CS	89	Gear rod yoke end pin		2	
CS	97	Gear rod yoke end pin washer		1	
CS	108	Gear rod yoke end pin split pin (per doz.)		6	
CS	137	Gear rod yoke end pin lock nut		1	
LS	195	Gear lever with knob	5	0	
LGL	8	Gear quadrant (with back plate)	6	6	
HM	7	Bolt securing above		3	
AT	27	Support for gear quadrant (also supports tank)	3	0	
LGL	3	Gear lever fulcrum stud	1	0	
STD	3	Nut securing fulcrum stud to quadrant back plate		3	
LS	121	Spring washer for fulcrum stud		4	
LS	120	Spigot nut for fulcrum stud		5	
TGL	6	Gear rod bell crank lever	1	0	
V2GL	4	Fulcrum stud for crank lever	1	0	
ME	54	Bolt securing fulcrum stud (⅜in.x?) ...		8	

REAR WHEEL AND BRAKE PARTS.

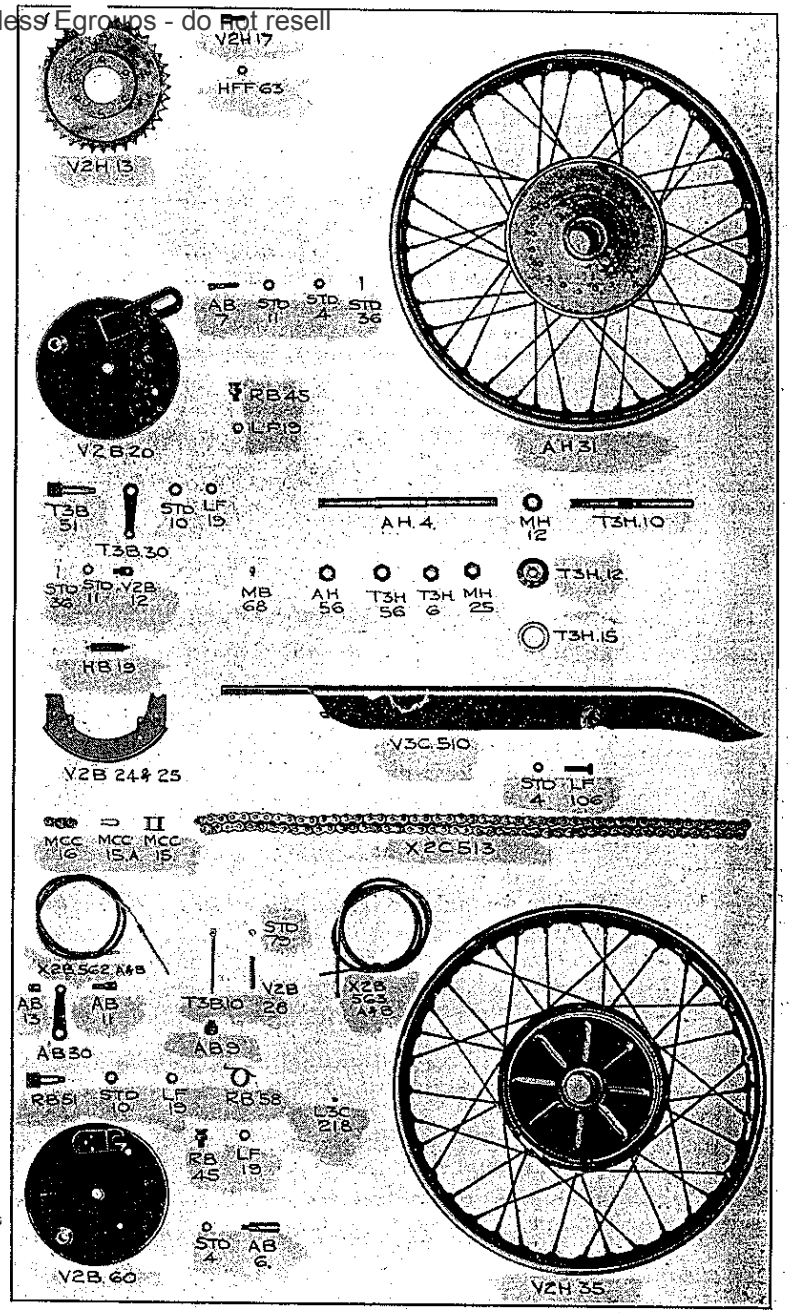
			£	s.	d.
AH	26	Rear wheel complete less tyre	4	12	6
AH	31	Rear wheel only less all hub and brake fittings	1	14	3
V2H	13	Rear wheel chain sprocket (37 teethx⅝in.x⅜in.		8	0
V2H	17	Fixing bolts for sprocket (each)			3
HFF	63	Fixing bolt lock nuts (each)			2
V2B	20A	Rear brake cover plate complete with shoes, expander and lever, etc.		15	0
V2B	20	Rear brake cover plate only		4	6
V2B	24/25	Rear brake shoes with linings (per pair) ...		7	0
V2B	50	Rear brake shoe linings with rivets (per pair)		2	0
HB	19	Internal brake shoe springs (each) ...			3
T3B	51	Rear brake shoe expander		2	6
T3B	30	Rear brake shoe expander lever			10
LF	19	Nut securing expander lever			2
STD	10	Washer for shoe expander lever			1
V3B	505	Rear brake rod		1	9
V2B	12	Rear brake rod cross head (fits in expander lever)			8
STD	36	Split pins securing cross head and brake rod (per doz.)			6
STD	11	Washer for cross head			1
V2B	29	Rear brake rod knurled adjusting nut ...		1	0
V2B	18	Rear brake rod spring			3
HFF	63	Rear brake rod spring tensioning nuts (each)			2
V3B	501	Rear brake foot pedal		5	6
V3B	502	Rear brake foot pedal fulcrum stud ...		2	6
AB	3	Vertical support for front brake cable ...			10
STD	4	Nut for above			2
MB	52	Long bolt securing fulcrum stud			8
STD	3	End nut for bolt or fulcrum stud			3
STD	10	Washer for fulcrum stud			1
AB	7	Anchoring bolt for rear brake cover plate ...			3
STD	4	Nut securing bolt to rear fork end ...			2
STD	36	Split pins for nut (per doz.)			6
AH	4	Rear wheel axle		2	9
T3H	12	Rear wheel taper roller bearing (supplied complete only)		8	3
T3H	6	Lock nuts for right side taper cone (inside hub) each			3
AH	56	Lock nut for left side taper cone (outside hub)			4
T3H	56	Lock nut for brake cover plate			4
MH	25	Axle end nuts (each)			4
MH	12	Axle end washers (each)			1

Rear Wheel and Brake Parts—contd.

			£	s.	d.
T3H	15	Metal dust cap for hub end			3
MB	68	Hub grease nipple			2
RB	45	Fulcrum stud for rear brake shoes			4
LF	19	Nut securing stud to brake cover plate ...			2
STD	10	Washer for nut securing stud to brake cover plate			1
V3B	608	Rear brake pedal pull off spring			4
V2MD	1	Special nut for brake pedal stop (also secures magneto chain cover)			5
TH	43	Rear wheel spoke (left side)			2
TH	43	Rear wheel spoke (right side)			2
RH	34	Spoke nipples (each)			2
V2H	21	Rear wheel rim, drilled and enamelled ...		10	0
AH	18A	Rear hub only, complete with brake ...	2	1	6
AH	18	Rear hub shell only		10	9
T3H	29/30	Rear wheel tyre (Dunlop 26x3.25)... ...	1	18	6
T3H	30	Inner tube only (Dunlop 26x3.25)		6	9
T3H	29	Outer cover only (Dunlop 26x3.25)... ...	1	11	9

FRONT WHEEL AND BRAKE PARTS.

AH	25	Front wheel complete, less tyre	4	13	6
AH	35	Front wheel only, less all hub and brake fittings	1	7	6
V2B	60A	Front brake cover plate complete with shoes, expander and lever, etc.		14	6
V2B	60	Front brake cover plate only		4	3
V2B	24/25	Front brake shoes with linings (per pair)		7	0
V2B	50	Front brake shoe linings with rivets (per pair)		2	0
HB	19	Internal brake shoe springs			3
RB	45	Brake shoe fulcrum stud			4
LF	19	Nut securing fulcrum stud to cover plate			2
STD	10	Washer for nut fulcrum stud to cover plate			1
RB	51	Front brake shoe expander		2	6
AB	30	Front brake shoe expander lever			10
RB	58	Front brake shoe expander lever pull-off spring			4
X2B	563A/B	Front brake cable complete (foot operation)		5	6
X2B	563A	Inner cable only (with nipple and rod extension)		2	0
X2B	563B	Outer casing only		3	0
AB	12	Slotted stop for casing (pedal end) ...			9
STD	11	Slotted stop washer			1
STD	36	Slotted stop split pin (per dozen)			6
AB	6	Slotted stop (hub end)			10
STD	4	Nut securing above			2



Wheels and Parts.

Front Wheel and Brake Parts—contd.

			£	s.	d.
X2B	562A/B	Front brake cable, hand operation		5	6
X2B	562A	Inner cable only		1	6
X2B	562B	Outer casing only		3	0
T3B	10	Rod extension for inner cable			9
V2B	28	Spring for rod extension			2
STD	79	Nuts for rod extension			1
AB	9	Knurled edge hand adjusting nut		1	0
AB	11	Cross head for expander lever			8
AB	13	Cross head sleeve			6
MFF	48	Front brake hand inverted hand lever ...		8	6
MFF	49	Lever portion only		4	3
MFF	50	Lever fulcrum screw			4
MFF	51	Nut for fulcrum screw			2
MFF	53	Body portion (fits in handlebar)		4	3
STD	40	Screw securing hand lever body			2
V2H	19A	Front hub, complete with all fittings ...	1	19	6
V2H	19	Front hub shell only		10	3
V2H	20	Front wheel rim drilled and enamelled ...		10	0
RH	54	Front wheel spoke (left side)			1
RH	52	Front wheel spoke (left side), butted ...			2
RH	34	Front wheel spoke nipple			2
T3H	10	Front wheel axle		2	6
T3H	15	Front hub end dust cap			3
T3H	12	Front wheel taper bearing complete (each)		8	3
T3H	6	Taper cone lock nuts inside hub (each) ...			3
T3H	6	Taper cone lock nut (left side) each ...			3
T3H	56	Lock nut for brake cover plate			4
V2B	62	Brake cover plate anchor stud			3
STD	3	Brake cover plate anchor stud nut ...			3
MH	25	Axle end nuts			4
MH	12	Washer for axle end			1
MB	68	Front hub grease nipple			2
T3H	29/30	Front wheel tyre, Dunlop 26x3.25 ...	1	18	6
T3H	29	Outer cover only, Dunlop 26x3.25 ...	1	11	9
T3H	30	Inner tube only, Dunlop 26x3.25		6	9

CHAIN GUARDS AND CHAINS.

V3C	510	Rear chain guard		7	6
LF	106	Rear chain guard fixing bolt (rear end)			4
STD	4	Nut for fixing bolt (rear end)			2
STD	11	Washer for fixing bolt (rear end)			1
VE	19	Rear chain guard fixing bolt, front end (see also engine bolts)			5
V3C	536	Front chain guard, back or inside portion	4	0	
V2C	37	Screwed stud, securing forward end (see also crankcase)			2

Chain Guards and Chains—contd.

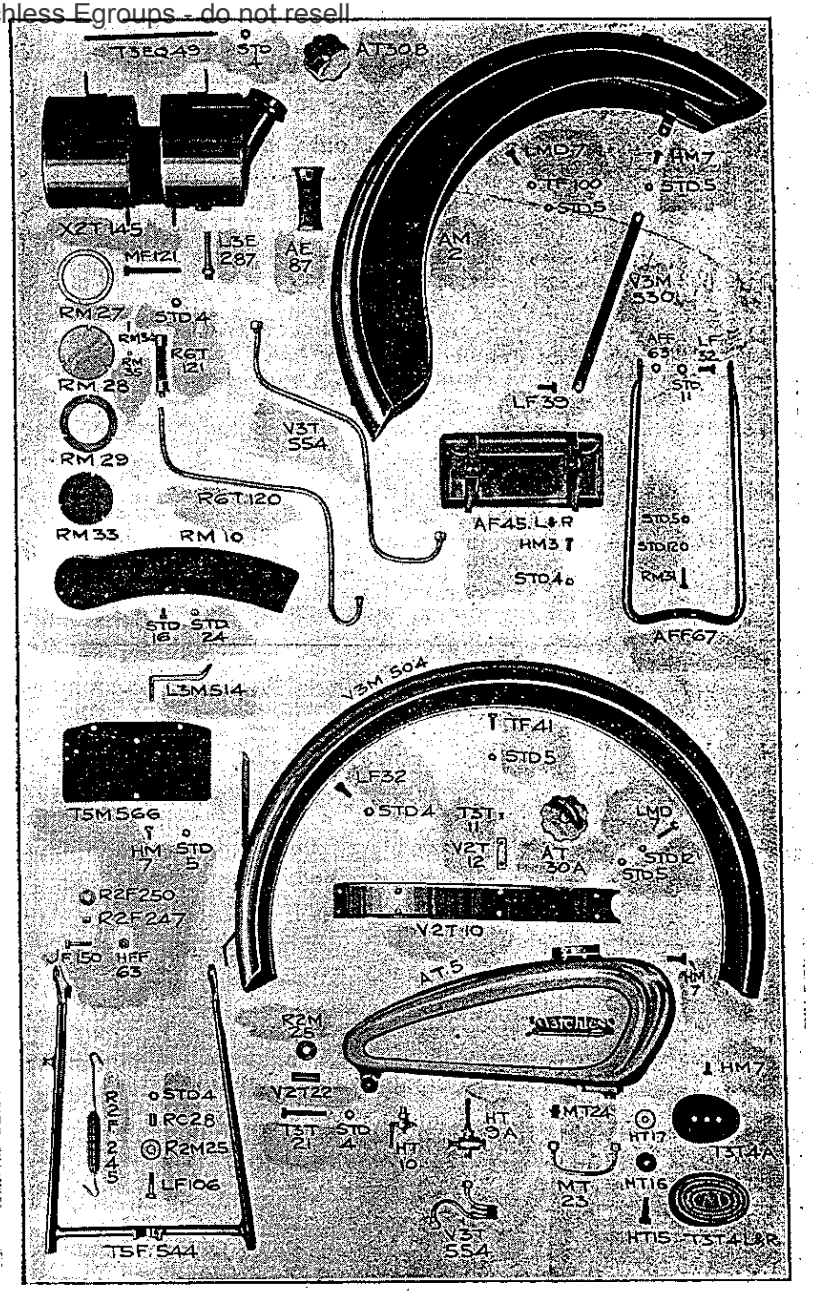
			£	s.	d.
V2C	35	Screw stud, securing centre (see also crankcase)			3
STD	4	Nuts for studs (each)			2
L3C	53	Distance tube for centre stud			4
V2C	31	Front chain guard, front or outer portion	15	0	
X2F	200	Stud securing rear end to frame lug ...			3
LM	15	Distance tube for stud frame lug			4
STD	4	Nut securing chain guard to frame lug ...			2
STD	11	Washer for nut			1
V3M	512	Magneto chain case (supplied complete only)	12	0	
V3MD	515	Long bolt supporting centre of chain case			8
V3MD	516	Distance tube for supporting centre of chain case			5
L3MD	50	Special spacer nut (inside chain case) ...			5
V2MD	1	Special outer nut (forms brake pedal stop)			5
V3MD	514	Screw securing front of case to engine ...			3
MMD	18	Magneto chain (endless)	2	6	
X2C	513	Rear driving chain complete	17	4	
MCC	15	Connecting link only for rear chain ...			5
MCC	15A	Spring clip only for rear chain			1
TC	24	Front driving chain complete	7	10	
LC	19	Connecting link only for front chain ...			5
LC	20	Spring clip only for front chain			1
MCC	16	Cranked or ½ link for rear chain			8
LC	21	Cranked or ½ link for front chain			5
LC	25	Chain rivet extractor	5	0	

MUDGUARDS, CARRIER, MUDSHIELDS, ETC.

AM	2	Front mudguard only	15	6	
V3M	530	Front mudguard stay, left or right ...			6
HM	7	Fixing bolt for stays, top end			3
STD	5	Nut for bolt for stays, top end			2
STD	12	Washer for bolt for stays, top end ...			1
LF	39	Fixing bolt for stays, bottom end			2
STD	11	Washer for bolt for stays, bottom end ...			1
HFF	63	Lock nut for bolt for stays, bottom end ...			2
LMD	7	Fixing bolt for sides of mudguard			4
STD	5	Nut for bolt for sides of mudguard ...			2
TF	100	Spring washer for sides of mudguard ...			2
RM	31	Front stand clip screwed stud			3
STD	5	Nuts for stand clip screwed stud (each) ...			2
STD	12	Washer for stand clip screwed stud ...			1
RM	9	Front number plate (solo type with license holder)	3	0	
RM	27	License holder rim only			4

Mudguards, Carrier, Mudshields, etc.—contd.

			£	s.	d.
RM	28	License holder transparent window ...			3
RM	33	License holder cardboard disc			2
RM	29	License holder rubber ring			3
RM	34	License holder rim fixing screws (each) ...			1
RM	35	Nuts for above (each)			1
RM	10	Front number plate only, solo type ...		1	6
TM	10	Front number plate only, sidecar type ...		1	2
STD	16	Front number plate fixing screws (each) ...			1
STD	24	Front number plate fixing screw nuts (each)			1
MEQ	60	License holder complete (sidecar type) ...		1	9
V3M	504	Rear mudguard only		14	6
HM	7	Bolt securing rear guard to chain stay bridge			3
LMD	7	Bolt securing rear guard to top stay bridge			4
STD	5	Nut securing rear guard to top stay bridge			2
V3F	600	Rear mudguard triangular stay assembly ...		18	6
TF	41	Bolt securing triangular stay to mudguard at top			2
STD	5	Nut securing triangular stay to mudguard at top			2
LF	32	Bolt securing triangular stay to mudguard at rear			3
STD	4	Nut securing triangular stay to mudguard at rear			2
HM	3	Bolt securing triangular stay to rear fork end			4
STD	4	Nut securing triangular stay to rear fork end			2
L3M	514	Rear number plate bracket			4
T5M	566	Rear number plate (for acetylene lighting)		1	1
T5M	570	Rear number plate (for electric lighting)		1	3
HM	7	Rear number plate fixing bolts (each) ...			3
STD	5	Rear number plate fixing nuts (each) ...			2
V3EQ	40	Detachable luggage carrier (less bolts and nuts)		13	6
HBD	87	Carrier rear fixing bolts (each)			5
LF	32	Carrier front fixing bolts (each)			3
STD	4	Carrier fixing bolt nuts (each)			2
V6M	6045	Legshields with all fittings, solo (Model V/6) only		15	0
V6M	6067	Legshields with all fittings, sidecar (Model V/6) only		15	0
V6M	604	Left side legshield only, solo (Model V/6 only		6	0
V6M	605	Right side legshield only, solo (Model V/6) only		6	0



Tanks and Mudguards, etc.

Mudguards, Carrier, Mudshields, etc.—contd.

			£	s.	d.
V6M	606	Left side leg shield only, sidecar (Model V/6) only		6	0
V6M	607	Right side legshield only, sidecar (Model V/6) only		6	0
V5M	102	Top legshield fixing rod (Model V/6) only		1	0
V5M	503	Bottom legshield fixing rod (Model V/6) only		1	2
STD	4	Legshield rod end nuts, each (Model V/6) only			2
STD	11	Legshield rod end washers, each (Model V/6) only			1
RM	37	Legshield top rod distance tubes, left or right (Model V/6) only			6
V5M	111	Bottom distance tube, left side (solo) V/6 only			4
V5M	112	Bottom distance tube, right side (solo) V/6 only			4
V6M	613	Bottom distance tube, left side inner (sidecar) V/6 only			4
MM	27	Bottom distance tube, left side outer (sidecar) V/6 only			4
V6M	614	Bottom distance tube, right side inner (sidecar) V/6 only			4
XM	104	Bottom distance tube, right side outer (sidecar) V/6 only			4

TANKS AND FITTINGS.

			£	s.	d.
AT	5	Petrol tank only, chromium plated ...	3	12	6
AT	30A	Petrol tank filler cap only, chromium plated		3	0
HT	9A	Petrol supply tap		2	6
HT	10	Petrol drain tap		1	9
MT	23	U connecting pipe		2	4
MT	24	Union for U pipe (screws into tank) ...			3
V3T	554	Petrol pipe		5	0
RT	27	Union nut for petrol pipe (tank end) and (U pipe)			4
TT	29	Union nut for petrol pipe (carburettor end)			4
RT	28	Union nipple for petrol pipe (tank end) and (U pipe)			3
TT	28	Union nipple for petrol pipe (carburettor end)			3
HT	15	Petrol tank fixing bolt (front end), each ...			6
HT	17	Washer for fixing bolt (front end), each ...			2
HT	16	Rubber buffer for front end of tank ...			5
T3T	21	Tank fixing bolt, rear end			5

Tanks and Fittings—contd.

			£	s.	d.
V2T	22	Tubular distance piece			3
R2M	25	Rubber washers for rear end of tank ...			5
STD	4	Nut for rear tank fixing bolt			2
X2T	145	Oil tank only	1	2	6
AT	30B	Oil tank filler cap only		3	0
T3EQ	49	Oil tank bolt (top)			9
MF	121	Oil tank bolt (bottom)			5
STD	4	Nuts for above			2
L3E	287	Screwed union and filter for oil supply pipe		2	3
V3T	554	Oil pipe (supply side)		5	6
R6T	120	Oil pipe (return side)		4	6
RE	53	Oil pipe union nut			4
RE	54	Oil pipe nipple			3
R6T	121	Return oil pipe rubber tube connector ...			9
AE	87	Filter for oil tank filler orifice			8
T3T	4L	Knee grip (left side)		2	6
T3T	4R	Knee grip (right side)		2	6
T3T	4A	Knee grip fixing plate			6
HM	7	Knee grip fixing bolt			3
V2T	10	Tank metal strip		2	9
V2T	12	Tank metal strip fixing plates			4
T3T	11	Tank metal strip fixing plate screws (each)			2

STANDS.

			£	s.	d.
T5F	544	Rear stand only		12	0
JF	150	Rear stand fixing bolts (each)			3
R2F	247	Rear stand fixing bolt sleeve			2
HT	6	Rear stand fixing bolt spring washer ...			2
R2F	250	Rear stand bolt plain washer			1
HFF	63	Rear stand bolt nut			2
R2F	245	Rear stand pull up spring			6
V2F	49	Special anchor bolt for spring			8
STD	4	Nut for above			2
R2M	25	Rubber buffer for rear stand			6
AFF	67	Front stand only		5	0
LF	32	Front stand fixing bolts (each)			3
HFF	63	Front stand fixing bolt lock nut			2
STD	11	Front stand fixing bolt washer			1
STD	5	Front stand clip nut (see also mudguard) ...			2
LF	106	Fixing bolt for rear stand rubber buffer ...			4
STD	4	Nut for above			2
STD	11	Washer for above			1
RC	28	Tubular sleeve for buffer			3

FOOTRESTS AND PARTS.

			£	s.	d.
V3FR	8	Footrest rod only		1	9
STD	1	Footrest rod end nuts (each)			4
STD	8	Washer for above			1
V3FR	511	Footrest distance tube (left side), inside rail			4
V3FR	512	Footrest distance tube (right side)			4
V3FR	507	Footrest rail distance tube (centre) ...			10
V3FR	504	Footrest rails (left or right)		3	6
V3FR	509	Support bolt for rails, front end (see also engine bolts)			10
V3FR	509	Support bolt, rear (see also frame section)			10
STD	1	Support bolt end nuts (each)			4
V2FR	51	Footrest bracket (left side)		1	6
V2FR	52	Footrest bracket (right side)		1	6
V2FR	10	Footrest pad spindle		1	0
STD	1	Footrest pad spindle fixing nut			4
STD	8	Footrest pad spindle washer			1
RFR	2	Footrest rubber pad		1	6
V2FR	16	Footrest rod distance piece (left), outside rail			5

HANDLEBARS.

V6FF	666	Handlebar bare, standard type (not fitted to Model V/3 unless specially ordered)		17	6
V3FF	566	Handlebar bare (sports type)		17	6
MFF	127	Handlebar grips (standard) per pair ...		3	0
JF	150	Handlebar clip pinch bolt			6
MFF	48	Handlebar inverted lever, complete ...		8	6
MFF	49	Lever portion only		4	3
MFF	53	Body portion only		4	3
MFF	50	Fulcrum screw for lever			4
MFF	51	Nut for fulcrum screw			2
STD	40	Screw securing lever body to handlebar ...			2

SADDLE AND PARTS.

V2F	60	Saddle top only	1	0	10
M3F	155S	Saddle spring (each)			6
STD	3	Nut securing spring to saddle and frame ...			3
STD	10	Washer for nut			2
LF	324R	Shouldered bolt for saddle nose			8
STD	4	Nut for above			2

MAGNETO AND PARTS.

			£	s.	d.
MMD	10	Complete magneto	4	2	6
41b		Contact breaker, complete		13	0
4152/4122		Contact screws only with bell crank lever		3	9
7p		High tension pick-up complete		2	6
PMI		Rubber cap for high tension pick-up ...			3
1052		Carbon brush and spring only		1	0
VE	113	Sparking plug cable with terminal end ...		1	0
MMD	14	Magneto chain sprocket on magneto ...		2	3
MMD	10A	Nut fixing above to magneto			2
MMD	10B	Washer for nut			1
ME	38	Magneto chain sprocket on camshaft ...		2	0
L3E	269	Special nut securing sprocket to camshaft			11
VE	48	Magneto aluminium platform		7	6
XE	54	Magneto chain adjuster stud, screws in above			3
MMD	1	Bolt securing magneto to above (each) ...			4
XE	53	Special shouldered nut for magneto chain adjustment (fits on XE 54)			4
MMD	21	Magneto advance and retard cable (outer)		2	0
MMD	20	Magneto advance and retard cable (inner) ...			9
MMD	11	Handlebar lever for above complete ...		6	9
MMD	11A	Lever portion only		1	9
MMD	11B	Screw centre screw securing lever			4
MMD	11C	Large washer for centre screw			4

CARBURETTOR B. & B.

LE	402/S	Complete carburettor (special type B. & B.)	2	10	0
B. & B.	101	Float chamber body only		8	0
B. & B.	102	Float chamber cap and tickler		4	3
B. & B.	106	Float chamber needle valve		1	2
B. & B.	104	Float		2	6
B. & B.	118/134	Main jet complete (size 170), V/3 Model...		1	9
B. & B.	118/134	Main jet complete (size 150), V/6 Model...		1	9
B. & B.	158/1	Fibre washer for same			1
B. & B.	138	Pilot jet			10
B. & B.	139	Pilot jet air screw and spring			7
B. & B.	135	Jet taper needle			10
B. & B.	136/7	Needle holder and screw			6
B. & B.	120	Spraying chamber		8	6
B. & B.	128	Spraying chamber cap with brushes ...		1	8
B. & B.	129	Spraying chamber cap lock ring		1	0
B. & B.	130	Clip and bolt for inlet port		1	8
B. & B.	116	Bolt only			3
B. & B.	126A	Throttle valve		4	7
B. & B.	126B	Air valve		2	2
B. & B.	145	Valve springs (each)			7
M.E.	289	Control levers complete		7	0

Carburettor B. and B.—contd.

			£	s.	d.
M.E.	286	Air lever only		2	6
M.E.	287	Throttle lever only		2	6
V.E.	64	Control cables, assembled (each)		2	3
B. & B.	133	Venturi air intake (Model V/3)		2	1
B. & B.	4/038	Perforated air intake (Model V/6)		2	6
L4E	308	Carburettor lock nut			

EQUIPMENT.

For Proprietory Equipment see Manufacturer's Latest Price Lists.

P. & H.	125	Head lamp, acetylene (less brackets) ...			
SS		Head lamp, electric (less brackets) ...			
AFF	73A	Head lamp brackets (per pair) with nuts		3	6
P. & H.	135	Tail lamp (acetylene)			
MT	110	Tail lamp (electric)			
P. & H.	137	Sidecar lamp (acetylene)			
R	335/S	Sidecar lamp (electric)			
LEQ	18	Acetylene generator with bracket			
LEQ	19	Acetylene generator bracket only			
		Electric head lamp bulb			
LEQ	23	Electric side, tail, or instrument panel bulb			
LJW	7E	Accumulator only			
68L/52S		Accumulator carrier			
PH	125/A	Acetylene head lamp glass			
SS	47/A	Electric head lamp glass			
PH	137/A	Acetylene side lamp glass			
R	335/S/A	Electric side lamp glass			
LEQ	20/A	Acetylene generator rubber tube (per yard)			
PH	201	Bulb horn complete			
PEH	1	Electric horn complete			
PL	1	Electric head lamp clipping switch with cable			
PL	2	Cable harness complete			
AEQ	1/2	Instrument panel (top and bottom) ...		7	6
HM	7	Instrument panel fixing bolts (each) ...			3
PS	1	Speedometer complete with gear box drive, non trip			
PS	2	Speedometer complete with gear box drive, trip			
PS	3	Speedometer cable complete			
PS	4	Speedometer head complete, non trip ...			
PS	5	Speedometer head complete, trip			
PL	2	Electric switch box complete			
PL	3	Dash lamp or magneto switch			
PL	4	Ammeter complete			
AEQ	3	Electric horn bracket		1	0

TOOLS AND TOOLBOXES, ETC.

			£	s.	d.
LF	39	Tool box end fixing bolt			4
STD	4	Nut for above			2
AF	45L/R	Tool box, left or right		3	9
HM	7	Tool box bottom fixing bolt (each) ...			3
STD	5	Tool box fixing bolt nut			2
LTK	17	Tool roll only (each)		2	6
LTK	15	6in. combination pliers		1	6
LTK	13	6in. screwdriver			9
LTK	10	Double end forged spanner, $\frac{1}{4}$x5-16in. ...		1	3
LTK	11	Double end forged spanner, $\frac{3}{8}$x$\frac{1}{2}$		1	6
LTK	9	Tappet adjusting spanner			9
V/2TK	19	Thin cone adjusting spanner			6
LTK	14	Tyre lever			3
LTK	4	Carburettor lock nut spanner		1	3
L/3TK	20	Grease gun		6	0
L/3TK	21	Tyre pump		3	9
LTK	5	Magneto spanner			4
LTK	3	Spanner, three sizes, .920, 1.10 and 1.01 hexagons		1	0
LTK	1	Cone lock nut spanner			6
TTK	8	Folding valve spring compressor (Model V/3 only), not provided in standard tool kit		6	6
LC	25	Chain rivet extractor (not provided in standard tool kit)		5	0

SIDECAR AND PARTS (Single Seater).

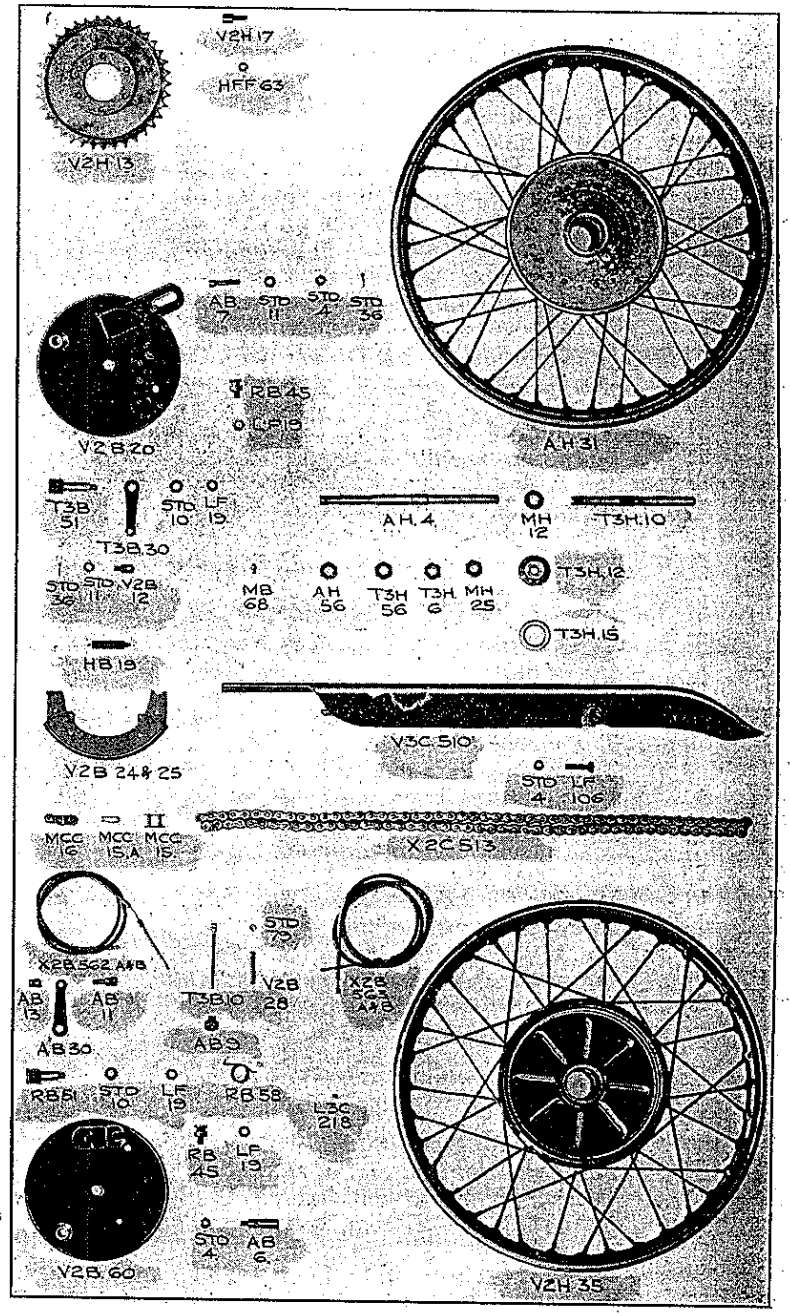
XF	221	Sidecar frame with three clip lugs attached	3	10	0
LF	138	Pinch bolt for clip lug (each)			7
STD	3	Nut for pinch bolt			3
T3F	226	Sidecar attachment bent arm, front (upper)		9	6
XF	224	Sidecar attachment bent arm, front (lower)		9	6
T3F	226	Sidecar attachment rear bent arm		9	6
LF	95	Nut securing arm to frame lug			3
LF	147	Washer for above			2
LF	88A	Clip lug for lower front arm attachment to frame tube complete		6	3
LF	101	Bolts only for clip lug (each)			4
LF	138	Packing sleeve for clip lug (two pieces) ...		1	2
LF	94	Large bolt for fixing sidecar frame to clip lug			6
STD	1	Nut for bolt			4
LF	91	Sidecar body rear springs (each) three leaves		10	6
LF	96	Sidecar body rear spring fixing bolts (long)			4
LF	106	Sidecar body rear spring fixing bolts (short)			4
STD	4	Nuts for above			2
LF	145	Rear spring pad lug plate		1	1

Rear Wheel and Brake Parts—contd.

			£	s.	d.
T3H	15	Metal dust cap for hub end			3
MB	68	Hub grease nipple			2
RB	45	Fulcrum stud for rear brake shoes			4
LF	19	Nut securing stud to brake cover plate ...			2
STD	10	Washer for nut securing stud to brake cover plate			1
V3B	608	Rear brake pedal pull off spring			4
V2MD	1	Special nut for brake pedal stop (also secures magneto chain cover)			5
TH	43	Rear wheel spoke (left side)			2
TH	43	Rear wheel spoke (right side)			2
RH	34	Spoke nipples (each)			2
V2H	21	Rear wheel rim, drilled and enamelled ...		10	0
AH	18A	Rear hub only, complete with brake ...	2	1	6
AH	18	Rear hub shell only		10	9
T3H	29/30	Rear wheel tyre (Dunlop 26x3.25)... ...	1	18	6
T3H	30	Inner tube only (Dunlop 26x3.25)		6	9
T3H	29	Outer cover only (Dunlop 26x3.25)... ...	1	11	9

FRONT WHEEL AND BRAKE PARTS.

			£	s.	d.
AH	25	Front wheel complete, less tyre	4	13	6
AH	35	Front wheel only, less all hub and brake fittings	1	7	6
V2B	60A	Front brake cover plate complete with shoes, expander and lever, etc.		14	6
V2B	60	Front brake cover plate only		4	3
V2B	24/25	Front brake shoes with linings (per pair)		7	0
V2B	50	Front brake shoe linings with rivets (per pair)		2	0
HB	19	Internal brake shoe springs			3
RB	45	Brake shoe fulcrum stud			4
LF	19	Nut securing fulcrum stud to cover plate			2
STD	10	Washer for nut fulcrum stud to cover plate			1
RB	51	Front brake shoe expander		2	6
AB	30	Front brake shoe expander lever			10
RB	58	Front brake shoe expander lever pull-off spring			4
X2B	563A/B	Front brake cable complete (foot operation)		5	6
X2B	563A	Inner cable only (with nipple and rod extension)		2	0
X2B	563B	Outer casing only		3	0
AB	12	Slotted stop for casing (pedal end) ...			9
STD	11	Slotted stop washer			1
STD	36	Slotted stop split pin (per dozen)			6
AB	6	Slotted stop (hub end)			10
STD	4	Nut securing above			2



Wheels and Parts.