HINTS & TIPS

Blackburne ENGINES

SINGLE-CYLINDER ENGINES, 1924-25-26-27.

C.C	TYPE.	BORE m/m	STROKE m/m
248	Side Valve Air Cooled	60	88
248	Overhead Valve Air Cooled	60	88
348	Side Valve Air Cooled	71	88
348	Overhead Valve Air Cooled	71	88
500	Side Valve Air Cooled	81	96·8
549	Side Valve Air Cooled	85	96·8

BURNEY & BLACKBURNE, Ltd.,

ATLAS WORKS, BOOKHAM,
SURREY.

Codes { BENTLEYS. A B C 6TH.

Telephone: BOOKHAM 109 and 110.

Telegrams: "ENGINES, BOOKHAM."

L·U·B·R·I·C·A·T·I·O·N

Owing to the number of unsatisfactory oils on the market, we recommend:

For Blackburne Side Valve Engines

Wakefield Castrol 'XL'

For Blackburne O.H.V. Engines

Wakefield Castrol 'XXL'

For Blackburne Racing Engines

Wakefield Castrol 'R'

BURNEY & BLACKBURNE, LTD.

ATLAS WORKS ◆ BOOKHAM ◆ SURREY

INTRODUCTION.

The "BLACKBURNE" Engine is well known for its simplicity of construction and remarkable accessibility, the special features of design combining to make it the nearest approach to the ideal motor cycle engine.

The following important points should be considered when comparing the "Blackburne" Engine with other types at present on the market :—

Cylinder and Head.—The design of the Cylinder Head has resulted in very high efficiency. Special care has been bestowed upon the disposition and size of the cooling fins, with the result that distortion has been almost entirely eliminated. That the design of the Cylinder and Head is correct, is amply proved by the high power out-put and world-wide superiority of "Blackburne" engines.

Flywheel and Crankshaft.—The Crankshaft is of the built-up type, the two main shafts and crankpin being assembled on tapers into discs (inner flywheels). These discs, in conjunction with the outside flywheel, combine to render the balance of the engines as near perfect as possible.

Bearings.—It is well-known that the long life of the "Blackburne" engine is very largely due to the ample dimensions of the bearings. A roller in a specially designed race carries the main shaft on the driving side of the engine. The camwheel bushes and small end bearings are manufactured from specially selected and treated bronze.

Valves and Valve Gear.—Special attention has been paid to the design of the Valves and Valve Gear, the valves being manufactured from the finest steel. Profiting by our long experience in the manufacture and use of O.H.V. engines, and as a result of diligent research and test, we claim that valve trouble has been eliminated, excepting in cases of gross abuse, and that in reliability the O.H.V. "Blackburne" engine is second to none. The excellent construction and light weight of the moving parts of the valve gear are calculated to ensure a long life for the engine without the trouble and cost of frequent adjustments and replacements.

Interchangeability of Parts.—All parts are machined and inspected to very fine limits, consequently, "Selective Assembly" is not, as in some makes of engines, necessary, and all parts are readily interchangeable without the expensive necessity of "fitting." In connection with the supply of spare parts, deposit accounts may be opened or parts may be obtained from our appointed stockists. (Apply for List).

Absolute reliance can be placed on the "Blackburne" Engine to maintain the high degree of efficiency even under adverse conditions, due to the soundness of design and construction. Only the highest quality materials are used in manufacture, and each part is subject to a searching examination by experts before assembly. Thus it is assured that each engine is as perfect as it is possible to make it.

INSTRUCTIONS.

The performance of the engine is dependent upon the efficient co-operation of three important factors, namely, carburation, ignition, and lubrication.

In order that the excellent qualities possessed by "Blackburne" engines may be fully appreciated, it is very important that the conditions controlled by these three factors should be satisfactory.

Carburation. Note the make of Carburetter fitted to your machine and write to the Carburetter manufacturers for their instruction booklet. The proportion of air to petrol drawn into the engine through the carburetter is extremely important, and is governed by the size of jet nozzle in the carburetter. If the mixture is too rich, *i.e.*, the proportion of petrol is too great to that of air, misfiring will occur at slow engine speeds, and black smoke will issue from the exhaust pipe. If, on the other hand, the mixture is too weak, *i.e.*, the proportion of petrol is too small to that of air "popping back" will take place in the carburetter and the engine will misfire or stop altogether. Too rich a mixture will be caused either by the use of too large a jet in the carburetter or by flooding of the carburetter, which in turn may be due to any one of the following causes:

1. Dirt between float needle and its seating.
2. Bent needle.
3. Punctured float.
4. Float needle binding in lid of float chamber.

Too rich a mixture will not cause serious damage to the engine, but on the other hand, too weak a mixture may cause overheating and consequential damage. It is desirable to keep the mixture on the rich side rather than on the weak. This is due to the fact that the richer the mixture the cooler will the engine run. A weak mixture can be due to any of the following causes:

1. Dirt or water in petrol.
2. Insufficient head or supply of petrol.
3. Air lock in the petrol tank.
4. Air leaks in the induction system or at Inlet Valve Guide.
5. Low petrol level in float chamber due to the level being incorrectly adjusted or to the carburetter not being fitted vertically.

Ignition. Though trouble is not often experienced with the magneto, it is advisable to have a copy of the maker's instruction booklet available. It is important that the setting of the magneto should be correct in accordance with the instructions given on page 7 of this booklet. If the magneto is timed such that the contact breaker points break too early the engine will knock and overheat. If, on the other hand, the timing is too late, the engine will lose power and overheat also.

In the event of the magneto appearing to be at fault, attention is directed to the following parts:—

The rocker arm of the contact breaker must work quite freely, and the platinum points must be clean and free from pitting. If pitted they should be trimmed with fine emery cloth or a small file. The contact breaker points should show a gap of about the thickness of a postcard (or half millimetre). The carbon brush at the high tension terminal must be quite free in its guide, and the spring be sufficient for it to form good contact with the collector ring. The latter should be kept free from oil. The high-tension wire must not be chafed or nipped tightly, as this is likely to cause a "short circuit."

Lubrication. It is of paramount importance that the engine be correctly lubricated. An insufficiency of oil ruins the engine; too much oil fouls it; it is better to give too much than too little. The regulator should be set so that the engine is given 30 to 40 drops per minute or one pumpful every five to seven miles according to the capacity and load of the engine. Prior to a long climb or speed burst an extra supply may be given. Blue smoke showing at the exhaust outlet is an indication that the engine is getting too much oil, and the supply should be reduced as an excess is likely to foul the sparking plug points, and necessitate decarbonising at frequent intervals. The plug in the bottom of the crankcase should be removed and all surplus oil drawn off every five or six hundred miles. The plug should then be replaced and three pumpsful of oil should be pumped into the engine. It is important that only suitable grades of good quality oil should be used in the engine. We recommend Wakefield's Castrol "XL" which we have found suited to our engines.

For racing purposes Wakefield's Castrol "R" is recommended. Grades suitable for racing do not mix with grades for touring. In consequence, it is of vital importance that both the oil tank, oil pipes and crankcase be thoroughly cleaned whenever a change is made from racing grade to touring, and *vice versa.*

Sparking Plugs. The Sparking Plug can greatly influence the performance of the engine either for good or evil. Especially on high efficiency OHV engines is it necessary that best quality sparking plugs should be used. As a general rule, we do not recommend the use of multi-point sparking plugs. For SV engines the KLG type HS3 or the Lodge Model "H" are types among others that can be recommended. For OHV models for touring the KLG type HS3, 268 or Lodge Model "H" are suitable.

For racing the KLG type 396, 180, 221 or Lodge BR4 and BR29 can be recommended. The points of the sparking plug should be set such that the gap does not exceed 1/32 in. It is well to remember the following points in connection with trouble experienced with sparking plugs and which are often not really the fault of the sparking plugs at all, namely, ***over-oiling and fusing of the sparking plug.*** Apparent over-oiling is often really due to the mixture being much too rich (see paragraph on Carburation). Fusing of the sparking plug is often due to the engine being run on too weak a mixture or to the ignition being set too far advanced. See previous remarks on this subject.

THE ENGINE.

An engine, as sent out, with fair treatment, should run for at least 3,000 miles without requiring attention. In the event of loss in efficiency and power output or poor compression after running for a season, it may be assumed that an overhaul is required.

DECARBONIZATION AND OVERHAUL OF ENGINE.

This operation will take between two to four hours, varying with the experience of the operator; detachable head engines may be dealt with in an even shorter space of time.

Removal of Cylinder and Head. First remove the carburetter, and disconnect the exhaust pipe union at the exhaust port and remove the sparking plug. On engines fitted with a detachable cylinder head the head holding down bolts should be removed and the head lifted clear. If necessary, a little paraffin applied to the threads will facilitate these

operations. On engines where the head and cylinder are all in one piece, it will be necessary to slacken off the four nuts on the cylinder flanges and to pull the cylinder and head off complete. The top of the piston should be scraped with a blunt knife or chisel until it is free from all carbon deposit.

The valves should then be removed and all carbon deposit should be chipped from the heads of the cylinders and ports, no projection being left, as these are likely to cause pre-ignition. Care must be taken that the valve seats are not damaged, and in the event of their being pitted they should be re-ground. All parts should be thoroughly cleansed in paraffin and the engine may be washed out with paraffin. If the cylinder barrel is removed, the piston rings may be examined, and if they are not quite free in their grooves they should be carefully removed, and any carbon that may be present should be removed from both rings and grooves. The rings should be bright and polished, and if either of the rings is discoloured it indicates that gases are escaping past it, and a new ring should then be fitted. The rings should be a good fit in their grooves and there should be a gap between the ends of the rings when the rings are in the cylinder of not less than ·003 in. nor greater than ·014 in.

If the piston is removed care must be taken to see that it is replaced the same way round in the cylinder as it had been running previously.

On re-assembling the engine it must be seen that all parts are perfectly clean and free from the slightest trace of grit. Before replacing the cylinder the sides of the piston and cylinder wall should be smeared with a thin film of engine oil, and it should be seen that the joints of the piston rings are not opposite. The paper washer on the top face of the crankcase should be renewed if broken or damaged, and great care should be taken to see that the cylinder flange nuts are evenly tightened.

REPLACEMENT OF DETACHABLE CYLINDER HEAD

(All O.H.V. Engines; Side Valve Engines prior to 1925).

The copper washer forming the joint between the cylinder head and cylinder barrel should be carefully cleaned and examined, and if damaged should at once be replaced. The faces of the joint between the cylinder and head must also be carefully cleaned. Great care should be taken that the cylinder head holding down nuts are tightened evenly, and after the engine has been run for a little while, they should again be tightened to take up any shrinkage that may have occurred. This point should receive special care when the old gasket washers are replaced by new ones.

If the springs on the exhaust valve become appreciably weaker than those on the inlet valve they must at once be renewed.

Should the flywheel be removed, extreme care must be taken when re-fitting, as it is essential that the flywheel be properly secured and fastened very tightly (see instructions for removal and replacement of flywheel).

Before starting up the engine three pumpsful of oil should be injected into the crankcase. The engine should not require overhaul more than once in every 3,000 miles. If the supply of oil is carefully regulated it is possible to run the engine a far greater distance before overhaul is necessary.

GENERAL NOTES ON RUNNING AND ADJUSTMENT.

Grinding in Valves. Remove the valves from the cylinder head and thoroughly clean the heads and stems. Smear a small quantity of grinding compound on the valve seats and rotate the valve on its seating with a semi-rotary motion, lifting occasionally to ensure even distribution of the grinding compound. Care should be taken not to give complete turns as this tends to make grooves in the seating. Continue this operation until the valve faces are quite bright all round. The valves and valve seats should be washed clean of emery with paraffin or petrol and replaced in position. Inlet and exhaust valves are not interchangeable.

Piston Rings. When the engine has run about 3,000 miles it is probable that the grooves in which the piston rings work are carbonized. The rings should be removed and the grooves and the back of the rings should be thoroughly cleaned and all traces of carbon removed.

Care should be taken that the joints of the two rings are not opposite. In time the piston rings may lose their spring and the gap at the ends of the ring become too wide. Replacement should then be made.

If the compression is weak and all other possible sources of leakage have been tested, it may be assumed that new piston rings are required.

Gudgeon Pin Assembly. The Gudgeon Pin is of the fully floating type, free to rotate in the small end bush of the connecting rod, and in the bosses of the aluminium piston. The ends of the Gudgeon Pin are protected from scoring the cylinder wall by end caps, and when removing or replacing the Gudgeon Pin in the piston, special attention must be paid to the following points:

1. The end cap must be a very tight fit in the Gudgeon Pin.
2. In pushing the Gudgeon Pin in or out of the piston, great care must be taken not to damage the surface of the cap or to crack the cap.
3. The end of the cap is shaped to conform with the contour of the cylinder wall and should be polished smooth.
4. It should be noted that the Gudgeon Pin will automatically be a tighter fit in the piston when the latter is cold than when hot, therefore, to facilitate the removal or replacement of the Gudgeon Pin in the piston, the piston may, if necessary, be warmed.

Removal of the Flywheel. Should it become necessary to detach the flywheel from crankshaft, proceed as follows:—

1. Remove extractor cap on flywheel boss, using spanner supplied with engine.
2. Unscrew flywheel nut.
3. Insert extractor disc in cap (where no extractor screw is provided).
4. Replace extractor on flywheel and screw up until contact is made with end of crankshaft, afterwards tightening by giving it one or two turns, until flywheel is withdrawn.

   The flywheel should now be readily removed, but in case of difficulty, a blow with a hammer on head of the cap is of assistance.

When replacing the flywheel, attention should be given to the following points:

1. The taper on crankshaft and in flywheel must be quite clean and dry. In the event of a new key being used, great care must be taken that it does not prevent the flywheel fitting true on shaft.
2. The nut on crankshaft securing flywheel must be dead tight, necessitating the use of a very long spanner.
3. Remove extractor disc or slacken set screw and replace extractor cap.

Tappets. To vary the tappet clearance, the head should be held while the locknut is loosened, when the desired alteration can be made, a hexagon is provided on the tappet in case it should be necessary to hold the tappet stem while adjusting the tappet clearance. When the adjustment has been corrected, carefully secure locknut.

Tappet Clearances (with Engine Cold).

	Inlet Valve.	Exhaust Valve.
Side Valve Engines ...	·002 in. ...	·005 in.
For continuous full throttle work increase clearance to ·007—·008 in.		
O.H.V. Engines	·001 in. ...	·002 in.

Valve Timing. It is generally assumed that this is a particularly difficult operation. If the following instructions, however, are carefully followed out, the operation should present no difficulty to a person possessing a very limited knowledge of the principles of the internal combustion engine.

The two following points should be remembered:

1. The Inlet Valve starts to open slightly before the commencement of the induction stroke.
2. The Exhaust Valve finally closes slightly after the commencement of the induction stroke, and it will thus be seen that both valves are open at the same time for a short period. This period is called the period of overlap.

To obtain the correct valve setting the final closing of the exhaust valve should occur three parts of the overlap after the completion of the exhaust stroke, and the inlet valve should start to open two parts of the overlap before the completion of the exhaust stroke.

In order to measure the exact period of overlap:

Put the camwheel into the engine and measure how many degrees of angle or millimetres of stroke the engine has to be rotated through from the commencement of the Inlet opening to the completion of the Exhaust closing. Divide this measurement in the ratios of 3 to 2, and time the engine such that the Inlet opens two-fifths of the overlap before top, and the Exhaust closes three-fifths after top.

Timing in Degrees. Suppose that there are 40° overlap, the timing should be set such that the Inlet valve opens 16° before Top Dead Centre and Exhaust valve closes 24° after Top Dead Centre. The other actions of opening and closing will be then automatically correct.

Timing in Millimetres of Stroke. Suppose there are five millimetres of overlap, the timing should be set such that the Inlet valve opens two millimetres before Top Dead Centre and Exhaust valve closes three millimetres after Top Dead Centre. The other actions of opening and closing will be then automatically correct.

Magneto Timing. Remove compression tap or sparking plug on O.H.V. models and rotate flywheel until piston is at Top Dead Centre, both valves closed. Set ignition control to "fully advanced" position and rotate flywheel backwards until piston is eleven millimetres from Top Dead Centre. Move contact breaker in direction of rotation until points are just separating and tighten up chain sprocket, taking care that this operation does not alter setting.

Loss of Power and Overheating. May be due to the following causes:

A. Inadequate lubrication will readily cause trouble. See previous remarks on this subject.

B. Leakage at the joints between valve cap and cylinder head, and between cylinder head and cylinder barrel on detachable head engines. If leaking, the copper washer should be renewed. They can be readily tested by smearing them over with engine oil and trying the compression with the kick starter, when if the joints are leaking the oil will bubble up at the defective part.

C. Gases escaping past valves. If the valve seatings become pitted or dirty, they should be ground in. See instructions under "Grinding in Valves."

D. Leakage past piston rings. See paragraph on piston rings.

E. Unsuitable or faulty type of sparking plug. See paragraph on Sparking Plugs.

F. Weak or broken valve spring. If the springs have lost their temper and become too weak, new springs should at once be fitted. It will be noted that the ends of the valve spring that lie nearest to the engine are weaker than the other ends on account of the heat which they have to withstand. When replacing springs, therefore, after removal at any time, care should be taken to place the compressed or weaker end next to the cylinder face, otherwise both ends will be affected by the heat to the detriment of the springs.

G. Tappet clearances and valve and ignition timing should be checked.

Possible Causes of Erratic Running:

1. Stopped petrol pipe or water in petrol. Petrol not turned on or tank empty.
2. Choked jet or stopped fuel passages in carburetter. These can be cleared with a piece of fine wire, such as strands of Bowden cable. When the petrol supply is at fault or the jet is choked the trouble may be readily diagnosed as the engine suddenly develops mis-firing or blowing back through the carburetter and can only be run with the air supply reduced.
3. Sparking plug points out of adjustment or dirty. Clean the plug with petrol and check the gap at the points. This should be about the thickness of a postcard and under no circumstances should exceed 1/32 in.
4. Magneto contact breaker points pitted or incorrectly adjusted. See instructions under "Ignition" for cleaning and adjustment.

Points to Remember—

1. Over-oiling can cause no real damage.
   Under-oiling may result in a wrecked engine.
2. Use suitable and good quality grades of lubricating oil only.

3. Sprockets have **Left Hand** threads when fitted between flywheel and crankcase, and a **Right Hand** thread when fitted outside the flywheel. The crankshaft pinion wheel locking screw has a **Right Hand** thread.
4. Do not overlook the lubrication of the overhead rockers on O.H.V. engines. We recommend thick oil or a mixture of engine oil and graphite for this purpose.
5. A little graphite grease smeared occasionally on the valve stems will minimise wear and eliminate a tendency to squeak.
6. Do not habitually use the Exhaust lifter for governing the speed of a machine. Such a practice leads to burning of the Exhaust valve seating and causes serious increase in petrol consumption.
7. It is better to change down into second gear early and to allow the engine to "rev" rather than to hang on to top gear until the last possible moment.
8. If you decide to fit a sidecar or discontinue its use, remember that a different set of gear ratios will be needed. The necessary reduction or increase may be obtained by the use of different engine sprockets.
9. Always obtain your spares direct from us or from one of our recognised agents. We accept no responsibility whatever for breakage or consequential damage resulting from the use of spare parts which are not of our manufacture.
10. If in doubt, or desiring information on any point relating to "Blackburne" engines, we shall always be happy to assist you to the best of our ability. Such communications will at all times receive our most careful attention.

Care of Transmission Chain from Engine to Countershaft. The engine chain must be kept properly lubricated and adjusted. If no provision is made for a continuous oil feed to the chain, we recommend that the chain should be occasionally treated with a semi-solid lubricant such as graphite grease or other similar compound. The chain should be removed and washed free from dirt and grit in paraffin, and dried. It should then be immersed in the lubricant which should be warmed until liquid and then left to cool, excess lubricant being finally removed. This process should be repeated every six or seven hundred miles.

Flywheel Ring. Excessive chain noise and flywheel ring are nearly always due to the engine chain being worn out or in bad condition. The chief causes of chain trouble are :

1. Insufficient lubrication.
2. Chain out of adjustment, either too tight or too slack.
3. Engine and crankshaft sprocket out of line resulting in seizure of side links and chain.
4. Teeth of engine sprocket badly worn.

RACING.

Notes on Tuning and Adjustment of O.H.V. Engines for Competition Work.

All standard O.H.V. engines as delivered are intended to be used as fast touring models. If it is desired to use them for competition work or hill climbs, the high compression piston and racing cam should be obtained from the manufacturers. For price, refer to spare parts list at end of book.

Specially tuned racing engines are supplied at an extra cost to order. Particulars should be obtained from the manufacturers of machines fitting "Blackburne" engines or from us direct. The racing engine differs from the standard engine in regard to the following points :—

1. A light high compression piston is fitted.
2. A racing cam is fitted.
3. The inlet and exhaust ports are filed and fettled out and finally polished.
4. The valve seatings are rounded off and specially finished.
5. All clearances are increased suitably for racing.
6. The connecting rod is slightly lightened and polished.
7. The copper washer between cylinder and head is dispensed with and the cylinder head is ground direct on to the cylinder barrel.
8. All adjustments and clearances are very carefully checked and the engine is subjected to a special test.

On no account should the piston or connecting rod be drilled, and we will accept no responsibility for trouble that may arise in consequence of any such alterations being made.

Valve Timing. The standard cam is essentially suitable for touring. For racing, long or short distances, a special cam is obtainable. For the correct setting of either cam, see Valve Timing, page 6. If the directions given are carefully followed out, the best setting is automatically obtained.

Magneto Timing. With the contact breaker fully advanced, the points should commence to break 45° or 13 m/m before Top Dead Centre.

Valve Adjustment:

1. SEATINGS. The valve should be ground in with fine grinding paste and finally finished off with metal polish. The width of the seatings both on valve and in the cylinder head may be adjusted to a width not exceeding 1/16 in.
2. Attention should be paid to the fit of the valve stems in their guides. The stem should be polished and should work freely in the guide. If the valve stem is too tight a fit in the guide a considerable drop in power will be experienced.

Piston Rings. These should be lapped into the cylinder with metal polish and must show good contact all round. The gap at the joint should be from ·006 in.—·010 in.

Tappet Adjustment.—Engine cold. Both tappets should be adjusted such that the clearance is approximately ·001 in.

Sparking Plugs. For racing we recommend K.L.G. Model 396, 221 or 180, or Lodge Model B.R. 4 or B.R. 29.

Cylinder Head Joint. We recommend that the copper washer between the cylinder and head should be discarded. It is possible to obtain a good gastight joint between the cylinder and head without the use of the copper washer, and its omission will further slightly raise the compression ratio. The following instructions, however, should be carefully carried out :

Grind the cylinder head direct on to the cylinder with fine grinding paste until the two surfaces of the joint fit together perfectly all over. In connection with this operation it will probably be found necessary to file back the spigot on the cylinder head, in order that it may clear the inner flange on the cylinder barrel by not less than ·006 in. The head may then be re-assembled on the cylinder, omitting the copper washer and using instead some heat resisting jointing compound such as Firmantite, which may be obtained from us.

Lubrication. For racing we recommend Wakefield's Castrol Grade "R," or failing the above, pure Castor Oil. The above oils are from a vegetable basis; the majority of other oils used for lubrication of combustion engines are manufactured from a mineral basis. Mineral and vegetable oils ***will not mix***, and should both types ever be present in an engine at the same time, there is grave risk of engine seizure. If, therefore, it is ever desired to change over either from a vegetable to mineral oil or vice versa, it is of the utmost importance that the whole engine and oil tank and lubrication system should be thoroughly washed out with Benzol.

Lubrication of O.H.V. Rockers. We recommend the use of either very thick oil such as Castrol "S," or a mixture of thick oil and graphite. The ends of the push rods should be occasionally smeared with graphite also.

Exhaust Lifter. The exhaust lifter should only be used for starting. It should not be used for changing gear or for stopping the machine after running, as under such conditions there would be risk of the valves touching the piston.

Gear Ratios. The 350 c.c. engine gives off its maximum power at about 4,800 r.p.m.; the 250 c.c. at about 5,200 r.p.m. For flat racing a top gear ratio of about 4·9 or 5·1 may be used on the 350 model and on the 250 top ratio between 5·8 and 6·1. For hill climbs and standing start sprint races on the flat, lower gear ratios will of course be required having regard to the maximum speed the engine is likely to attain on the course.

Carburetter Setting.—It must be remembered that a weak mixture will tend to cause serious overheating and burning of sparking plugs and exhaust valves, and thereby further serious damage to the engine. On the other hand a mixture slightly on the rich side will keep the engine cool and cause very much less wear. The setting of the carburetter has a great bearing upon the running temperature of the engine and is therefore of very great importance.

If further information or any assistance is required in connection with the tuning of these engines, we are always ready to do our best to supply the necessary particulars immediately upon the receipt of enquiries.

Roller Bearing Rocker Gear. The design of the rocker gear for O.H.V. Blackburne engines has recently been improved by mounting the rockers upon caged roller bearings. The ends of the valves are fitted with hardened steel caps and the top of the push rod is cup shaped to receive the ball end of the rocker.

The bearings of the rocker gear should be kept well lubricated with a mixture of graphite grease and engine oil. The plugs fitted in the ends of the rocker standards should be removed and the lubricant injected by means of a grease gun.

The cupped ends of the push rods and of the tappets should be occasionally filled with graphite grease.

Assembly of the Rocker Gear. In the course of general overhaul of the engine it would be desirable to dismantle the rocker gear in order to thoroughly clean it. The rocker gear should be assembled in the following manner :—

The roller cages should be smeared with thick grease and the rollers should then be assembled into the roller cages. It will be found that the grease will keep the rollers approximately in their correct position.

A piece of round steel should then be obtained, length just under $1\frac{3}{4}$ ins., diameter just under $\frac{3}{8}$ in. The cages complete with rollers should then be threaded on to this piece of round steel together with two washers and distance piece, the two washers being outside each cage, the cage slots facing the washers and the distance piece in the middle between the two cages. The piece of steel complete with washers, cages, distance piece and rollers should then be inserted in the barrel of the rocker. Place the rocker in position between the arms of the standard and push the rocker pin through the standard and rocker barrel, thereby displacing the piece of steel bar. Having pushed the rocker pin right home, the locking plate for holding the two standards together may be attached followed by the two lock nuts and lubricators, the latter being fitted at the opposite end of the rocker pin. Before actually fitting the lubricating plugs, the rockers should be filled with lubricant.

REPAIRS.

Repairs are undertaken in a department specially organised and equipped for such work at the lowest cost consistent with good material and expert workmanship and every possible care is taken to ensure satisfaction. All repairs should be sent to us carriage paid and with fullest instructions concerning the repairs. The repairs will then be carefully examined and a detailed estimate of the cost of these repairs will be sent for the approval of the owner.

If an engine is sent to us for repairs or adjustment it should be placed in a very strong wooden box with ample packing round it. The label accompanying the repairs must distinctly state the name and address of the sender of the engine.

NOTE.

Carriage on all spares is extra.

Any excess will be credited or returned.

When ordering spare parts always quote the engine number in full, or send old part as pattern. The engine number will be found stamped on the crankcase bolt lug, just behind the cylinder at rear of engine.

To save unnecessary delay please send remittance with order as we make it an invariable rule to despatch a pro-forma invoice which may result in loss of time.

Prices subject to alteration without notice.

NAME OF PART.	1924 ENGINES.														1925, 1926 and 1927 ENGINES.											
	250 C/C S.V.		250 C/C O.H.V.		350 C/C S.V.		350 C/C O.H.V.		550 C/C S.V.		250 C/C S.V.		250 C/C O.H.V.		350 C/C S.V.		350 C/C O.H.V.		550 C/C S.V.							
	Part No.	Price	Part No.	Price	Part No.	Price	Part No.	Price	Part No.	Price	Part No.	Price	Part No.	Price	Part No.	Price	Part No.	Price	Part No.	Price						
		£ s. d.		£ s. d.		£ s. d.		£ s. d.		£ s. d.		£ s. d.		£ s. d.		£ s. d.		£ s. d.		£ s. d.						
Crankcase Component not																										
Crankcase (Fly Side) { supplied	1925	3 15 0	2028	3 15 0	7531	3 17 6	2028	3 17 6	7521	3 18 6	2028	3 15 0	2028	3 15 0	2028	3 17 6	2028	3 17 6	7535	3 18 6						
Crankcase (Tim. Side) { separately	1926		7014		7021		7014		7522		7538		7541		7538 /A		7541 /A		7536							
Main Bearing Bush (long) ...	811	6 6	...	...	...	...	...	...	2073	7 6	...	...	...	...	...	...	...	...	...	...						
Main Bearing Bush (short) ...	1924	6 0	1924	6 0	1924	6 0	1924	6 0	1924	6 0	1924	6 0	1924	6 0	1924	6 0	1924	6 0	1924	6 0						
Camwheel Bush (C/case) ...	904	2 6	904	2 6	904	2 6	904	2 6	904	2 6	904	2 6	904	2 6	904	2 6	904	2 6	904	2 6						
Camwheel Bush (T. Cover) ...	899	2 6	899	2 6	899	2 6	899	2 6	899	2 6	899	2 6	899	2 6	899	2 6	899	2 6	899	2 6						
Exhaust Lift Bush	971	1 6	2055	1 6	2055	1 6	2055	1 6	971	1 6	...	...	...	...	...	...	...	...	...	...						
Dowel Pin (screwed end) ...	1028	6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...						
Nut for Dowel Pin (Hexagonal) ...	1029	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...						
Oil Pipe Union Complete ...	796	1 0	796	1 0	796	1 0	796	1 0	796	1 0	796	1 0	796	1 0	796	1 0	796	1 0	2355 / 2153 / 2154	1 6						
Nut for Crankcase Bolt	800	2	800	2	800	2	800	2	800	2	800	2	800	2	800	2	800	2	800	2						
Crankcase Bolt (or Stud) ...	2260	8	818	8	818	8	818	8	818	8	2260	8	2260	8	2260	8	2260	8	2260	8						
Drain Plug for Crankcase ...	801	4	801	4	801	4	801	4	801	4	801	4	801	4	801	4	801	4	801	4						
Spr. Washer for Crankcase Bolt ...	1415	2	1415	2	1415	2	1415	2	1415	2	1415	2	1415	2	1415	2	1415	2	1415	2						
Locknut for Rocker Pin	1928	4	...	...	...	...	...	...	1928	4	...	...	...	...	...	...	...	...	...	...						
Cylinder Stud	956	3	956	3	956	3	956	3	956	3	956	3	956	3	956	3	956	3	956	3						
Release Valve Body (disc type) ...	1078	1 6	...	...	...	...	...	...	1078	1 6	...	...	...	...	...	...	...	...	...	...						
Disc for Release Valve Body ...	1077	2	...	...	...	...	...	...	1077	2	...	...	...	...	...	...	...	...	...	...						
Screw for Release Valve Body ...	1093	2	...	...	...	...	...	...	1093	2	...	...	...	...	...	...	...	...	...	...						
Rocker Pin	1543	4 0	2054	4 0	2054	4 0	2054	4 0	1543	4 0	2356	4 0	2356	4 0	2356	4 0	2356	4 0	2356	4 0						
Tappet Guide	1668	3 6	1668	3 6	1668	3 6	1668	3 6	1668	3 6	2357	3 6	2357	3 6	2357	3 6	2357	3 6	2357	3 6						
Screw for Tim. Cover (C/sk.-long)	848	4	848	4	848	4	848	4	848	4	...	...	...	...	...	...	...	...	...	...						
Screw for Tim. Cover (C/sk.-short)	849	3	849	3	849	3	849	3	849	3	...	...	...	...	...	...	...	...	...	...						
Magneto Chain Cover { not suppld	907	1 10 0	907	1 10 0	907	1 10 0	907	1 10 0	907	1 10 0	6099	15 6	6099	15 6	6099	15 6	6099	15 6	6099	15 6						
Timing Cover (long) { separately	929		7525		7525		7525		7525		6100		6100		6100		6100		6100							
Nut for Dowel Pin (Round T.Cover)	1967	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...						
Release Valve Body Complete (screwed type)	1100 / 1101 / 1102 / 1077	3 0	1100 / 1101 / 1102 / 1077	3 0	1100 / 1101 / 1102 / 1077	3 0	1100 / 1101 / 1102 / 1077	3 0	...	...	1100 / 1101 / 1102 / 1077	3 0	1100 / 1101 / 1102 / 1077	3 0	1100 / 1101 / 1102 / 1077	3 0	1100 / 1101 / 1102 / 1077	3 0	1100 / 1101 / 1102 / 1077	3 0							
Washer for Release Valve (Fibre)	1096	1	1096	1	1096	1	1096	1	...	...	1096	1	1096	1	1096	1	1096	1	1096	1						
Tube and Swivel for Release Valve	1744 / 1097	3 0	1744 / 1097	3 0	1744 / 1097	3 0	1744 / 1097	3 0	...	...	1744 / 1097	3 0	1744 / 1097	3 0	1744 / 1097	3 0	1744 / 1097	3 0	1744 / 1097	3 0						
Nut for Release Valve Body ...	775	2	775	2	775	2	775	2	...	...	775	2	775	2	775	2	775	2	775	2						
Screw for Tim. Cover (Ch.hd.-long)	1969	4	...	...	...	...	...	...	...	...	2392	4	2392	4	2392	4	2392	4	2392	4						
Round Timing Cover	6033	1 0 0	6068	1 0 0	6068	1 0 0	6068	1 0 0	...	...	6090	1 0 0	6090	1 0 0	6090	1 0 0	6090	1 0 0	6090	1 0 0						
Pin for Exhaust Lift Cam (Round Tim. Cover)	1929	6	2074	6	2074	6	2074	6	...	...	2074	6	2074	6	2074	6	2074	6	2074	6						
Screw for Tim. Cover (Cheese head extra long)	1971	6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...						
Roller Race for Crankcase ...	...	...	2044	7 6	2044	7 6	2044	7 6	...	...	2044	7 6	2044	7 6	2044	7 6	2044	7 6	2044	7 6						
Crankcase Dowel Pin (plain) for long Tim. Cover	...	...	2072	3	2072	3	2072	3	2072	3	...	...	...	...	...	...	...	...	...	...						
Oil Retaining Bush	...	...	2045	3 6	2045	3 6	2045	3 6	...	...	2045	3 6	2045	3 6	2045	3 6	2045	3 6	2045	3 6						
Screw for Roller Race	...	...	2046	3	2046	3	2046	3	...	...	2046	3	2046	3	2046	3	2046	3	2046	3						
Washer for Roller Race Screw ...	...	...	2047	1	2047	1	2047	1	...	...	2047	1	2047	1	2047	1	2047	1	2047	1						
Crankcase Dowel Pin (plain) for short Tim. Cover	...	...	2149	3	2149	3	2149	3	...	...	2149	3	2149	3	2149	3	2149	3	2149	3						
Mag. Chain Cvr. (Rear drive, outer)	...	...	...	...	...	...	...	...	...	...	6103	15 6	6103	15 6	6103	15 6	6103	15 6	6103	15 6						
Mag. Chain Cvr. (Rear drive, inner)	...	...	...	...	...	...	...	...	...	...	6102		6102		6102		6102		6102							

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NAME OF PART.	1924 ENGINES.										1925, 1926 and 1927 ENGINES.									
	250 C/C S.V.		250 C/C O.H.V.		350 C/C S.V.		350 C/C O.H.V.		550 C/C S.V.		250 C/C S.V.		250 C/C O.H.V.		350 C/C S.V.		350 C/C O.H.V.		550 C/C S.V.	
	Part No.	Price	Part No.	Price	Part No.	Price	Part No.	Price	Part No.	Price	Part No.	Price	Part No.	Price	Part No.	Price	Part No.	Price	Part No.	Price
		£ s. d.		£ s. d.		£ s. d.		£ s. d.		£ s. d.		£ s. d.		£ s. d.		£ s. d.		£ s. d.		£ s. d.
Crankshaft Component																				
Crankshaft Disc	6034	1 2 6	6034	1 2 6	6034	1 2 6	6034	1 2 6	6059	1 5 0	6034	1 2 6	6034	1 2 6	6034	1 2 6	6034	1 2 6	6059	1 5 0
Crankpin	1930	6 6	1930	6 6	1930	6 6	1930	6 6	1930	6 6	1930	6 6	1930	6 6	1930	6 6	1930	6 6	1930	6 6
Disc Pin (Fly Side)	1931	9 6	2042	9 6	2148	9 6	2042	9 6	2071	9 6	2372	9 6	2372	9 6	2372	9 6	2372	9 6	2358	9 6
Disc Pin (Tim. Side)	1932	7 6	1932	7 6	1932	7 6	1932	7 6	1932	7 6	2359	7 6	2359	7 6	2359	7 6	2359	7 6	2359	7 6
Nut for Disc Pins	1953	8	1953	8	1953	8	1953	8	1953	8	1953	8	1953	8	1953	8	1953	8	1953	8
Grub Screw for Disc Pin Nut ...	856	1	856	1	856	1	856	1	856	1	856	1	856	1	856	1	856	1	856	1
Key for Disc Pin and Flywheel ...	1573	6	1573	6	1573	6	1573	6	1573	6	1573	6	1573	6	1573	6	1573	6	1573	6
Pinion Wheel	912	5 6	912	5 6	912	5 6	912	5 6	912	5 6	2362	5 6	2362	5 6	2362	5 6	2362	5 6	2362	5 6
Locking **Screw** for Pinion ...	969	1 0	969	1 0	969	1 0	969	1 0	969	1 0	...	...	...	...	...	...	...	...	...	...
Flywheel (drive **outside**)	6035	2 10 0	6035	2 10 0	6035	2 10 0	6035	2 10 0	6060	2 12 6	6035	2 10 0	6035	2 10 0	6035	2 10 0	6035	2 10 0	6106	2 12 6
Flywheel (drive **inside**)	6043	2 10 0	6043	2 10 0	6043	2 10 0	6043	2 10 0	...	...	6043	2 10 0	6043	2 10 0	6043	2 10 0	6043	2 10 0	...	2 10 0
Nut for Flywheel	857	9	857	9	857	9	857	9	857	9	2360	9	2360	9	2360	9	2360	9	2360	9
Extractor Cap	851	4 6	851	4 6	851	4 6	851	4 6	851	4 6	2361	4 6	2361	4 6	2361	4 6	2361	4 6	2361	4 6
Extractor Screw (or Disc) ...	954	6	954	6	954	6	954	6	954	6	1962	6	1962	6	1962	6	1962	6	1962	6
Spacing Washer for Rollers (Shaft)	...	...	2043	9	2043	9	2043	9	...	...	2043	9	2043	9	2043	9	2043	9	2043	9
5/16in. Dia. Rollers (15 per set) ...	...	...	...	ea. 4	...	ea. 4	...	ea. 4	...	...	...	ea. 4	...	ea. 4	...	ea. 4	...	ea. 4	...	ea. 4
Nut for Pinion Wheel	...	...	...	...	...	...	...	...	...	...	2363	1 3	2363	1 3	2363	1 3	2363	1 3	2363	1 3
Connecting Rod Component																				
Connecting Rod	6020	15 6	6020	15 6	6020	15 6	6020	15 6	6020	15 6	6089	15 6	6089	15 6	6089	15 6	6089	15 6	6089	15 6
Small End Bush	1937	3 0	1937	3 0	808	3 0	808	3 0	807	3 0	2366	3 0	2366	3 0	2369	3 0	2369	3 0	2343	3 0
Crankpin Spacing Washer ...	1764	9	1764	9	1764	9	1764	9	1764	9	1764	9	1764	9	1764	9	1764	9	1764	9
5/16in. Rollers (12 per set) ...	...	ea. 4	...	ea. 4	...	ea. 4	...	ea. 4	...	ea. 4	...	ea. 4	...	ea. 4	...	ea. 4	...	ea. 4	...	ea. 4
Piston and Cylinder Component																				
Piston (Standard)	1913	15 6	6058	16 6	6039	16 6	6056	17 6	6055	18 6	6094	15 6	6096	16 6	6095	16 6	6097	17 6	6086	18 6
Piston (High Compression) ...	...	...	...	...	...	...	6067	1 1 0	...	...	...	...	...	...	...	...	6109	1 1 0	...	...
Piston Ring	1915	1 3	1915	1 3	1965	1 6	1965	1 6	1577	1 9	1915	1 3	1915	1 3	1965	1 6	1965	1 6	1577	1 9
Gudgeon Pin with End Caps ...	1914	4 0	1914	4 0	1966	4 6	1966	4 6	2024	4 6	2367	4 0	2367	4 0	2368	4 6	2368	4 6	2344	4 6
End Cap for Gudgeon Pin ...	1916	6	1916	6	1916	6	1916	6	1916	6	2345	6	2345	6	2345	6	2345	6	2345	6
Clndr. with Vlve. Guides & Seats cut	7510	3 12 6	7016	2 0 0	898	2 0 0	7015	2 5 0	837	2 5 6	7539	3 12 6	7016	2 0 0	7511	4 0 0	7015	2 5 0	7540	4 10 0
Nut for Cylinder Stud (or Bolt) ...	1767	3	1767	3	806	3	1767	3	806	3	1767	3	1767	3	1767	3	1767	3	1767	3
Paper Joint Washer	809	1	1954	1	809	1	1954	1	953	1	1954	1	1954	1	1954	1	1954	1	2069	1
Induction Nipple (or Inlet Pipe) ...	1933	2 0	...	...	817	2 0	...	...	1779	2 0	...	...	...	...	...	...	...	...	1779	2 6
Inlet Valve Cap	1934	4 6	...	...	799	4 6	...	...	799	4 6	1934	4 6	...	...	1934	4 6	...	...	2088	4 6
Exhaust Valve Cap	1935	4 3	...	...	900	4 3	...	...	2108	4 3	1935	4 3	...	...	1935	4 3	...	...	2087	4 6
Valve Cap Washer	1936	2	...	...	853	2	...	...	853	2	1936	2	...	...	1936	2	...	...	853	2
Compression Tap (or Plug) ...	C.10	2 6	...	...	C.10	2 6	...	...	C.10	2 6	C.10	2 6	...	...	C.10	2 6	...	...	2086	1 0
Washer for Compression Tap ...	852	2	...	...	852	2	...	...	852	2	852	2	...	...	852	2	...	...	...	...
Inlet Valve Guide	773	2 0	2051	2 0	773	2 0	2051	2 0	773	2 0	773	2 0	2051	2 0	773	2 0	2051	2 0	773	2 0
Exhaust Valve Guide	773	2 0	1864	2 0	773	2 0	1864	2 0	773	2 0	773	2 0	1864	2 0	773	2 0	1864	2 0	773	2 0
Inlet Valve	845	6 0	2070	7 6	845	6 0	2036	7 6	845	6 0	845	6 0	2070	7 6	845	6 0	2036	7 6	2082	7 6
Exhaust Valve	1596	6 6	2050	10 6	1596	6 6	2050	10 6	1596	6 6	1596	6 6	2050	10 6	1596	6 6	2050	10 6	1596	6 6
Valve Spring (outer)	1923	6	2038	9	1923	6	2038	9	1923	6	1923	6	2038	9	1923	6	2038	9	2335 (IN)	9
																			2083 (EX)	9
Valve Spring (inner)	...	...	2037	6	...	...	2037	6	...	...	...	...	2037	6	...	...	2037	6	...	...
Valve Spring Collar (top) ...	...	...	1867	1 0	...	...	1867	1 0	...	...	...	...	1867	1 0	...	...	1867	1 0	...	...
Valve Spring Collar (bottom) ...	854	1 0	1868	1 0	854	1 0	1868	1 0	854	1 0	854	1 0	1868	1 0	854	1 0	1868	1 0	2084	1 0
Valve Cotter (or Split Collar) ...	855	3	2049	1 6	855	3	2049	1 6	855	3	855	3	2049	1 6	855	3	2049	1 6	2085	3
Bolt for Cylinder Head	...	...	1870	1 0	844	2 6	2029	1 0	844	2 6	...	...	2377	1 0	...	...	2029	1 0	...	...
Cylinder Head Joint Washer ...	...	...	1917	1 6	1092	4	2147	1 6	901	4	...	...	1917	1 6	...	...	2147	1 6	...	...
Packing Plate for Cylinder ...	...	...	...	...	...	...	...	...	2109	2 6	...	...	...	...	...	...	...	...	...	...

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	250 C/C S.V.		250 C/C O.H.V.		350 C/C S.V.		350 C/C O.H.V.		550 C/C S.V.		250 C/C S.V.		250 C/C O.H.V.		350 C/C S.V.		350 C/C O.H.V.		550 C/C S.V.	
	Part No.	Price	Part No.	Price	Part No.	Price	Part No.	Price	Part No.	Price	Part No	Price	Part No.	Price	Part No.	Price	Part No.	Price	Part No.	Price
Piston & Cylinder Component *contd.*		£ s. d.		£ s. d.		£ s. d.		£ s. d.		£ s. d.		£ s. d.		£ s. d.		£ s. d.		£ s. d.		£ s. d.
Nut for Inlet Pipe	...	...	...	...	...	...	...	...	804	3 3	...	...	...	...	...	...	...	...	804	3 3
Washer for Inlet Pipe	...	...	...	...	...	...	...	...	1765	2	...	...	...	...	...	...	...	...	1765	2
Cylinder Head Component																				
Cylinder Head (detachable) .. (Valve Guides fitted, Seatings cut)	...	...	7517	2 15 0	896	2 10 6	7515	3 0 0	7501	2 12 6	...	...	7517	2 15 0	...	...	7515	3 0 0	..	...
Exhaust Port Union Nut ...	...	...	...	...	804	3 3	...	...	1773	3 6	...	...	...	..	1959	3 3	...	..	1773	3 6
Rocker Standard (O.H.V. only) ...	...	...	1769	15 6	...	...	1769	15 6	...	...	...	...	2374	15 6	...	...	2374	15 6	...	...
Cap for Rocker Standard ...	...	...	1856		...	...	1856		...	...	...	...	2375		...	...	2375		...	...
Bolt for Rocker Standard ...	...	...	2032	9	...	...	2032	9	...	...	...	...	2032	9	...	...	2032	9	...	...
Nut for Rocker Standard Bolt ...	...	...	2048	3	...	...	2048	3	...	...	...	...	2048	3	...	...	2048	3	...	...
Locknut for Rocker Standard ...	...	...	2033	1 6	...	...	2033	1 6	...	...	...	...	2033	1 6	...	...	2033	1 6	...	...
Lubricator Body...	...	...	2034	2 3	...	...	2034	2 3	..	...	...	...	2034	2 3	...	...	2034	2 3	...	...
Lubricator Cap	...	...	2035	9	...	...	2035	9	...	...	...	...	2035	9	...	...	2035	9	...	...
Top Rocker (exhaust)	...	...	6027	7 6	...	...	6027	7 6	...	...	...	...	6027	7 6	...	...	6027	7 6	...	...
Top Rocker (inlet)	...	...	6028	7 6	...	...	6028	7 6	...	...	...	...	6028	7 6	...	...	6028	7 6	...	...
Locking Plate for Rocker St'nd'ds	...	...	2039	1 6	...	...	2039	1 6	...	...	...	...	2373	1 6	...	..	2373	1 6	...	...
Washer for Locking Plate ...	...	...	2041	1	...	...	2041	1	...	...	...	...	2041	1	...	...	2041	1	...	...
Valve Gear Component																				
Tappet Head	772	1 0	1872	1 6	772	1 0	1872	1 6	1630	1 6	2350	1 6	1872	1 6	2350	1 6	1872	1 6	2350	1 6
Tappet Locknut	775	2	775	2	775	2	775	2	775	2	2351	2	2351	2	2351	2	2351	2	2351	2
Tappet	820	1 6	820	1 6	820	1 6	820	1 6	820	1 6	2412	1 6	2412	1 6	2412	1 6	2412	1 6	2412	1 6
Push Rod (O.H.V. only)	...	...	2023 / 2030	3 0	...	...	2023 / 2030	3 0	...	...	...	...	2023 / 2030	3 0	...	...	2023 / 2423	3 0	...	...
Collar for Rocker Pin	793	6	793	6	793	6	793	6	793	6	2365	6	2365	6	2365	6	2365	6	2365	6
Inlet Rocker	6057	5 6	6057	5 6	6057	5 6	6057	5 6	822	5 6	6091	5 6	6091	5 6	6091	5 6	6091	5 6	6091	5 6
Exhaust Rocker	6047	5 6	6047	5 6	6047	5 6	6047	5 6	6047	5 6	6092	5 6	6092	5 6	6092	5 6	6092	5 6	6092	5 6
Camwheel Spr'ket (long Tim. cvr.)	1539	5 0	1539	5 0	1539	5 0	1539	5 0	1539	5 0	2383	5 0	2383	5 0	2383	5 0	2383	5 0	2383	5 0
Camwheel **Setscrew**	1599	6	1599	6	1599	6	1599	6	1599	6	...	...	...	...	...	...	...	...	...	...
Nut for Camwheel Sprocket ...	...	...	...	...	...	...	...	...	...	...	2376	4	2376	4	2376	4	2376	4	2376	4
Camwheel (Standard)	6046	15 6	6046	15 6	6046	15 6	6046	15 6	6046	15 6	6093	15 6	6093	15 6	6093	15 6	6093	15 6	6093	15 6
Camwheel (Special—Sports) ...	...	...	2379	1 5 0	...	...	2379	1 5 0	...	...	...	...	6110	1 5 0	...	...	6110	1 5 0	...	...
Nut for Exhaust Lift Lever ...	795	3	795	3	795	3	795	3	795	3	...	...	...	...	...	...	...	...	...	...
Exhaust Lift Adjusting Screw ...	798	4	798	4	798	4	798	4	798	4	...	...	...	...	...	...	...	...	...	...
Stop for Exh. Lift Adjust. Screw...	972	6	972	6	972	6	972	6	972	6	2391	6	2391	6	2391	6	2391	6	2391	6
Nut for Exh. Lift Adjust. Screw ...	795	3	795	3	795	3	795	3	795	3	2430	3	2430	3	2430	3	2430	3	2430	3
Exhaust Lift Lever Shackle ...	829	1 0	829	1 0	829	1 0	829	1 0	829	1 0	...	...	...	...	...	...	...	...	...	...
Exhaust Lift Lever (outside) ...	833	2 6	2056	1 6	2056	1 6	2056	1 6	2056	1 6	...	...	...	...	...	...	...	...	...	...
Exhaust Lift Cam	959	6 6	2057	6 6	2057	6 6	2057	6 6	2057	6 6	2384	6 6	2384	6 6	2384	6 6	2384	6 6	2384	6 6
Washer for Exhaust Lift Lever ...	1030	2	1030	2	1030	2	1030	2	1030	2	...	...	...	...	...	...	...	...	...	...
Exh. Lift Adj.Screw (Rnd Tim.Cvr)	1950	1 9	1950	1 9	1950	1 9	1950	1 9	...	...	...	...	...	...	...	...	...	...	...	...
Barrel for Adj. Screw (,, ,, ,,)	1951	2 6	1951	2 6	1951	2 6	1951	2 6	...	...	2389	2 6	2389	2 6	2389	2 6	2389	2 6	2389	2 6
L'knut for Adj. Screw (,, ,, ,,)	1952	6	1952	6	1952	6	1952	6	...	...	2390	6	2390	6	2390	6	2390	6	2390	6
Guide for Shackle Rod(,, ,, ,,)	1939	9	1939	9	1939	9	1939	9	...	...	2386	9	2386	9	2386	9	2386	9	2386	9
Exhaust Lift Cam (,, ,, ,,)	1940	6 6	2075	6 6	2075	6 6	2075	6 6	...	...	2384	6 6	2384	6 6	2384	6 6	2384	6 6	2384	6 6
Exhaust Lift Lever (,, ,, ,,)	1941	1 6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Exhaust Lift Shackle (,, ,, ,,)	1942	1 0	1942	1 0	1942	1 0	1942	1 0	...	...	...	...	...	...	...	...	...	...	...	...
Pin for Shackle (,, ,, ,,)	1943	6	1943	6	1943	6	1943	6	...	...	...	...	...	...	...	...	...	...	...	...
Shackle Rod (,, ,, ,,)	1944	9	1944	9	1944	9	1944	9	...	...	2387	9	2387	9	2387	9	2387	9	2387	9
Dist. Piece for Spring (,, ,, ,,)	2141	6	2141	6	2141	6	2144	6	...	...	...	...	...	...	...	...	...	...	...	...
Exhaust Lift Spring (,, ,, ,,)	2137	8	2137	8	2137	8	2137	8	...	...	2137	8	2137	8	2137	8	2137	8	2137	8

IMPORTANT—Give Engine Number and Type Letter from Top Rear Lug on Crankcase when ordering Spares.

NAME OF PART.	1924 ENGINES.										1925, 1926 and 1927 ENGINES.									
	250 C/C S.V.		250 C/C O.H.V.		350 C/C S.V.		350 C/C O.H.V.		550 C/C S.V.		250 C/C S.V.		250 C/C O.H.V.		350 C/C S.V.		350 C/C O.H.V.		550 C/C S.V.	
	Part No.	Price	Part No.	Price	Part No.	Price	Part No.	Price	Part No.	Price	Part No.	Price	Part No.	Price	Part No.	Price	Part No.	Price	Part No.	Price
Valve Gear Component *contd.*		£ s. d.		£ s. d.		£ s. d.		£ s. d.		£ s. d.		£ s. d.		£ s. d.		£ s. d.		£ s. d.		£ s. d.
Exh. Lift Spring (Long Tim. Cvr.)	1627	6	2137	6	1627	6	2137	6	1627	6	...	...	...	...	...	...	...	...	...	...
Felt Washer (Rnd. Tim. Cvr.)	1946	2	1946	2	1946	2	1946	2	...	...	...	...	...	...	...	...	...	...	...	...
Collar for Felt Wshr (,, ,, ,,)	1947	3	1947	3	1947	3	1947	3	...	...	...	...	...	...	...	...	...	...	...	...
Nipple for Sh'k'l Rod (,, ,, ,,)	1948	2	1948	2	1948	2	1948	2	...	...	...	...	...	...	...	...	...	...	...	...
Nipple for Bowden Wire ,, ,,)	1949	2	1949	2	1949	2	1949	2	...	...	1949	2	1949	2	1949	2	1949	2	1949	2
Camwheel Sprocket (,, ,, ,,)	803	5 0	803	5 0	803	5 0	803	5 0	...	...	2383	5 0	2383	5 0	2383	5 0	2383	5 0	2383	5 0
Exhaust Lift Jaw (,, ,, ,,)	...	...	...	...	...	...	...	...	...	...	2385	1 0	2385	1 0	2385	1 0	2385	1 0	2385	1 0
Exhaust Lift Eye (,, ,, ,,)	...	...	...	...	...	...	...	...	...	...	2388	6	2388	6	2388	6	2388	6	2388	6
Tool Kit Component																				
Valve Cap *or* Ext'ct'r Cap Spanner	1626	2 0	1626	2 0	1626	2 0	1626	2 0	1626	2 0	1626	2 0	1626	2 0	1626	2 0	1626	2 0	1626	2 0
Tappet **Stem** Spanner	1721	9	1721	9	1721	9	1721	9	1721	9	2353	9	2353	9	2353	9	2353	9	2253	9
Box Spanner for Cyl. Head Bolts...	...	...	1876	1 6	1625	1 6	...	...	1625	1 6	...	...	1876	1 6	...	...	...	...	...	...
Spanner for Cylinder Head Bolt ...	...	...	...	...	...	...	2040	1 6	...	...	...	...	...	...	...	...	2040	1 6	...	...
Tappet **Head** Spanner	1875	1 0	1875	1 0	1875	1 0	1875	1 0	1875	1 0	2163	1 0	1875	1 0	2163	1 0	1875	1 0	2163	1 0
Spring Compresser (O.H.V. **only**)...	...	...	...	7 6	...	...	...	7 6	...	...	...	...	...	7 6	...	...	...	7 6	...	...
Extras																				
Flywheel Sprocket	**GIVE NUMBER OF TEETH AND SIZE OF CHAIN: ALSO MAKE OF MACHINE AND ENGINE NUMBER**																			
Magneto Chain	...	3 0	...	3 0	...	3 0	...	3 0	...	3 0	...	3 0	...	3 0	...	3 0	...	3 0	...	3 0
Magneto Sprocket	1095	5 0	1095	5 0	1095	5 0	1095	5 0	803	5 0	2382	5 0	2382	5 0	2382	5 0	2382	5 0	2383	5 0
Magneto Platform	1027	8 0	1027	8 0	1027	8 0	1027	8 0	842	8 0	6101	8 0	6101	8 0	6101	8 0	6101	8 0	...	...
Mag. Adjusting Screw	823	3	823	3	823	3	823	3	823	3	823	3	823	3	823	3	823	3	823	3
Mag. Fixing Screw	..	...	...	...	...	...	...	...	805	6	...	...	...	...	...	...	...	...	...	...
Mag. Platform Stud	1094	3	1094	3	1094	3	1094	3	...	...	1094	3	1094	3	1094	3	1094	3	...	...
Nut for Platform Stud	1618	1	1618	1	1618	1	1618	1	...	...	1618	1	1618	1	1618	1	1618	1	...	...
Spring Washer for Stud... ...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Engine Plates (per pair)... ...	1223	7 6	1223	7 6	1223	7 6	1223	7 6	1223	7 6	1223	7 6	1223	7 6	1223	7 6	1223	7 6	1223	7 6
Crankcase Bolt or Stud *(long)* ...	2258	8	2258	8	2258	8	2258	8	2258	8	2258	8	2258	8	2258	8	2258	8	2258	8

IMPORTANT—Give Engine Number and Type Letter from Top Rear Lug on Crankcase when ordering Spares.

PRICE OF ROLLER ROCKER GEAR—Suitable for 250 c.c. and 350 c.c. O.H.V. Engines, 1923 - 24 - 25 - 26 - 27.

Item	Part No.	Price
Forked Rocker Standard ...	2459	15 6
Locknut for Rocker Standard...	2033	1 6
Top Rocker (Ex.)	2457 } assembled	10 0
Top Rocker (Inl.)	2458 }	
Ball End for Rockers	2023 }	
Top Rocker Pin	2464	4 6

Item	Part No.	Price
Plug for Rocker Pin	2462	6
Roller Cage	2465	1 6
Distance Piece for Cage ...	2463	6
Washer for Rocker Pin ...	2467	1
Fork Locking Link	2460	1 6
Nut for Locking Link... ...	1098	3

Item	Part No.	Price
Rollers $\frac{1}{8}$in. dia. x $\frac{1}{4}$in. long ...	—	2
Push Rod Tube	2468 } assembled	3 6
Ball Cup for Push Rod	2469 }	
Ball End for Push Rod	2023 }	
End Cap for Valves	2466	6

Price for Complete Set £4. 6s. 8d.

SPARES LIST for 350 c.c. O.H.V. Double Port, 1927.

Name of Part.	Part No.	Price
CRANKCASE COMPONENT.		£ s. d.
Crankcase (flyside) } not supplied }	2028	
Crankcase (tim. side) } separately }	7541 ...	3 17 6
Main Bearing Bush (long) ...	2342 ...	6 0
Main Bearing Bush (short) ...	2045 ...	3 6
Camwheel Bush (C/case)... ...	904 ...	2 6
Camwheel Bush (T. cover) ...	899 ...	2 6
Oil Pipe Union Complete	2355/2153/2154	1 6
Nut for Crankcase Bolt	800 ...	2
Crankcase Bolt (or Stud)	2260 ...	8
Drain Plug for Crankcase... ...	801 ...	4
Spr. Washer for Crankcase Bolt ...	1415 ...	2
Cylinder Stud	956 ...	3
Rocker Pin	2356 ...	4 0
Tappet Guide	2357 ...	3 6
Magneto Chain Cover with Pump Boss	6138 }	
Magneto Chain Cover without Pump Boss	6099 } ...	15 6
Magneto Chain Cover, inner half ...	6100 }	
Release Valve Body Complete (screwed type)	1100/1101/1102	3 0
Washer for Release Valve (fibre)	1096 ...	1
Tube and Swivel for Release Valve	1744/1096 ...	3 0
Nut for Release Valve Body ...	775 ...	2
Screw for Tim. Cover (Ch.hd. long)	2392 ...	4
Round Timing Cover	6090 ...	1 0 0
Pin for Exhaust Lift Cam (round tim. cover)	2074 ...	6
Roller Race for Crankcase ...	2044 ...	7 6
Screw for Roller Race	2046 ...	3
Washer for Roller Race Screw ...	2047 ...	1
Crankcase Dowel Pin (plain) for short tim. cover	2149 ...	3
Mag. Chain Cvr. (Rear drive outer)	6103 }	
Mag. Chain Cvr. (Rear drive inner)	6102 } ...	15 6
CRANKSHAFT COMPONENT.		
Crankshaft Disc	6161 ...	1 2 6
Crankpin	2859 ...	8 6
Disc Pin (fly side)	2372 ...	9 6
Disc Pin (tim. side)	2359 ...	7 6
Nut for Disc Pins	1953 ...	8
Grub Screw for Disc Pin Nut ...	856 ...	1
Key for Disc Pin and Flywheel ...	1573 ...	6
Pinion Wheel	2362 ...	5 6
Roller Cage Complete	2860/2896/2917	10 6
Flywheel (drive outside)	6035 ...	2 10 0
Nut for Flywheel	2360 ...	9
Extractor Cap	2361 ...	4 6

Name of Part.	Part No.	Price
CRANKSHAFT COMPONENT—*continued*		£ s. d.
Extractor Screw (or Disc) ...	1962 ...	6
Spacing Washer for Rollers (shaft)	2043 ...	9
5/16in. dia. Rollers (15 per set) ...	...	(each) 4
Nut for Pinion Wheel	2363 ...	1 3
CONNECTING ROD COMPONENT.		
Connecting Rod (lightened and polished)	6155 ...	1 10 0
Small End Bush	2369 ...	3 0
Crankpin Spacing Washer ...	1764 ...	9
5/16in. Rollers (8 per set) ...	...	(each) 4
PISTON AND CYLINDER COMPONENT.		
Piston	6109 ...	1 5 0
Piston Ring	1965 ...	1 6
Gudgeon Pin with end caps ...	2368 ...	4 6
End Cap for Gudgeon Pin ...	2345 ...	6
Cylinder	7039 ...	2 15 0
Nut for Cylinder Stud (or Bolt) ...	1767 ...	3
Paper Joint Washer	1954 ...	1
Induction Nipple (or Inlet Pipe)...	2918 ...	2 0
Inlet Valve Guide	2051 ...	2 0
Exhaust Valve Guide	1864 ...	2 0
Inlet Valve	2036 ...	7 6
Exhaust Valve	2050 ...	10 6
Valve Spring Outer	2915 ...	1 0
Valve Spring Inner	2912 ...	8
Valve Spring Collar (top)	1867 ...	1 0
Valve Spring Collar (bottom) ...	1868 ...	1 0
Valve Cotter (or Split Collar) ...	2049 ...	1 6
Bolt for Cylinder Head	2029 ...	1 6
Cylinder Head Joint Washer ...	2147 ...	1 6
Nut for Inlet Pipe	1958 ...	6
CYLINDER HEAD COMPONENT.		
Cylinder Head (detachable) (valve guides fitted, seatings cut and fettled)	7564 ...	4 0 0
VALVE GEAR COMPONENT.		
Tappet Head	1872 ...	1 6
Tappet Locknut	2351 ...	2
Tappet	2412 ...	1 6
Push Rod (O.H.V. only) Duralumin	2861/2914/2911	5 0
Rocker Pin Washer	2365 ...	6
Inlet Rocker	6091 ...	5 6
Exhaust Rocker	6092 ...	5 6
Camwheel Sprocket	2383 ...	5 0
Nut for Camwheel Sprocket ...	2376 ...	6
Camwheel	6110 ...	1 5 0
Stop for Exh. Lift Adjust. Screw	2391 ...	6

Name of Part.	Part No.	Price
VALVE GEAR COMPONENT—*continued*		£ s. d.
Nut for Exh. Lift Adjust. Screw...	2340 ...	3
Exhaust Lift Cam	2384 ...	6 6
Barrel for Adj. Screw (Rnd. Tim. Cvr.)	2389 ...	2 6
L'knut for Adj. Screw (Rnd. Tim. Cvr.)	2390 ...	6
Guide for Shackle Rod (Rnd. Tim. Cvr.)	2386 ...	9
Shackle Rod (Rnd. Tim. Cvr.) ...	2387 ...	9
Exhaust Lift Spring	2137 ...	8
Nipple for Bowden Wire (Rnd. Tim. Cvr.)	1949 ...	2
Exhaust Lift Jaw (Rnd. Tim. Cvr.)	2385 ...	1 0
Exhaust Lift Eye (Rnd. Tim. Cvr.)	2388 ...	6
TOOL KIT COMPONENT.		
Extractor Cap Spanner	1626 ...	2 0
Tappet Stem Spanner	2353 ...	9
Spanner for Cylinder Head Bolt ...	2040 ...	1 6
Spring Compressor (O.H.V. only)		7 6
EXTRAS.		
Magneto Chain		3 0
Magneto Sprocket	2382 ...	5 0
Magneto Platform	6101 ...	8 0
Magneto Adjusting Screw ...	823 ...	3
Magneto Platform Stud	1094 ...	3
Nut for Platform Stud	1618 ...	1
Spring Washer for Stud	...	1
Engine Plates (per pair)	1223 ...	7 6
Crankcase Bolt or Stud (long) ...	2258 ...	8
ROLLER BEARING ROCKER GEAR.		
Forked Rocker Standard	2459 ...	15 6
Locknut for Rocker Standard ...	2033 ...	1 6
Top Rocker (Exhaust)	2457 } assem-	
Top Rocker (Inlet)	2458 } bled	10 0
Ball End for Rockers	2023	
Top Rocker Pin	2464 ...	4 6
Plug for Rocker Pin	2462 ...	6
Roller Cage	2465 ...	1 6
Distance Piece for Cage	2463 ...	6
Washer for Rocker Pin	2467 ...	1
Fork Locking Link	2460 ...	1 6
Nut for Locking Link	1098 ...	3
Rollers 1/8in. dia. x ¼in. long ...	...	2
Push Rod Tube	2468 } assem-	
Ball Cup for Push Rod	2469 } bled.	3 6
Ball End for Push Rod	2023 }	
End Cap for Valves	2466 ...	6
Price of Roller Bearing Rocker Gear Complete		4 6 8

SPARES LIST for 500 c.c. Engines, 1927.

Name of Part.	Part No.	Price
CRANKCASE COMPONENT.		£ s. d.
Crankshaft Disc	6059	1 5 0
Crankpin	1930	6 6
Disc Pin (Fly-side)	2358	9 6
Disc Pin (Tim. side)	2359	7 6
Nut for Disc Pin	1953	8
Grub Screw for Disc Pin Nut	856	1
Key for Disc Pin and Flywheel	1573	6
Pinion Wheel	2362	5 6
Flywheel	6106	2 12 6
Nut for Flywheel	2360	9
Extractor Cap	2361	4 6
Extractor Cap Disc	1962	6
Spacing Washer for Rollers (Shaft)	2043	9
15 per set 5/16in. dia. Rollers		(each) 4
Nut for Pinion Wheel	2363	1 3
CONNECTING ROD COMPONENT.		
Connecting Rod	6089	15 6
S. E. Bush	2343	3 0
Crankpin Spacing Washer	1764	9
5/16in. Rollers (12 per set)		(each) 4
PISTON AND CYLINDER COMPONENT.		
Piston	6153	18 6
Piston Ring	2854	1 9
Gudgeon Pin with End Caps	2855/2345	4 6
End Cap for Gudgeon Pin	2345	6
Cylinder with Valve Guides & Seats	7563	4 10 0
Nut for Cyl. Stud or Bolt (cut)	1767	3
Paper Joint Washer	2069	1
Inlet Valve Cap	2088	4 6
Exhaust Valve Cap	2087	4 6
Valve Cap Washer	853	2
Compression Tap or Plug	2086	1 6
Inlet Valve Guide	773	2 0
Exhaust Valve Guide	773	2 0
Inlet Valve	2082	7 6
Exhaust Valve	1596	6 6
Valve Spring	2083	9
Valve Spring Collar	2084	1 0
Valve Cotter	2085	3
Exhaust Union Nut	1773	3 6

Name of Part.	Part No.	Price
VALVE GEAR COMPONENT.		£ s. d.
Tappet Head	2350	1 6
Tappet Lock Nut	2351	2
Tappet	2412	1 6
Washer for Rocker Pin	2365	6
Inlet Rocker	6091	5 6
Exhaust Rocker	6092	5 6
Camwheel Sprocket	2383	5 0
Nut for Camwheel	2376	8
Camwheel	6093	15 6
Stop for Exh. Lift Adjust. Screw	2391	6
Nut for Exh. Lift Adjust. Screw	2340	3
Exhaust Lift Cam	2384	6 6
Barrel for Adjust Screw	2389	2 6
Lock Nut for Adjust. Screw	2390	6
Guide for Shackle Rod	2386	9
Shackle Rod	2387	9
Exhaust Lift Spring	2137	8
Nipple for Bowden Wire	1949	2
Exhaust Lift Jaw	2385	1 0
Exhaust Lift Eye	2388	6
CRANKCASE COMPONENT.		
Crankcase (Flyside) not supplied separately	7535	3 18 6
Crankcase (Timing Side)	7536	
Main Bearing Bush (Tim. Side)	2342	6 0
Oil Retaining Bush	2045	3 6
Camwheel Bush C/case	904	2 6
Camwheel Bush Timing Cover	899	2 6
Oil Pipe Union Complete	2355/2153/54	1 6
Nut for Crankcase Bolt	800	2
Crankcase Bolt or Stud	2260	8
Drain Plug for Crankcase	801	4
Spring Washer	1415	2
Cylinder Stud	956	3
Rocker Pin	2356	4 0
Tappet Guide	2357	3 6
Magneto Chain Cover Outer, with Pump Boss	6138	15 6
Magneto Chain Cover without Pump Boss	6099	
Magneto Chain Cover Inner	6100	

Name of Part.	Part No.	Price
CRANKCASE COMPONENT—*continued*		£ s. d.
Release Valve Body Comp.	1100/1/2/1077	3 0
Washer for Release Valve Fibre	1096	1
Tube & Swivel for Release Valve	1097/1744	3 0
Nut for Release Valve Body	775	2
Screw for Timing Cover & Chain Case	2393	3
Screw for Timing Cover & Chain Case	2394	3
Screw for Timing Cover &Chain Case	2395	4
Screw for Timing Cover & Chain Case	2396	4
Round Cover	6090	1 0 0
Pin for Exhaust Lift Cam	2074	6
Roller Race for Crankcase	2044	7 6
Screw for Roller Race	2046	3
Washer for Roller Race Screw	2047	1
Crankcase Dowel Pin	2149	3
Mag. Chain Cover Rear Drive Outer / Mag. Chain Cover Rear Drive Inner	6103 / 6102	15 6
TOOL KIT COMPONENT.		
Valve Cap or Extractor Cap Spanner	1626	2 0
Tappet Spanner	2353	9
Tappet Head Spanner	2163	1 0
EXTRAS.		
Flywheel Sprocket. Give No. of teeth, width, pitch and width of flange, if any.		
Magneto Chain		3 0
Magneto Sprocket	2382	5 0
Magneto Platform	6101	8 0
Magneto Adjusting Screw	823	3
Magneto Platform Stud	1094	3
Nut for Platform Stud	1618	1
Engine Plates	1223	7 6
Crankcase Bolt & Stud	2258	8

SPARES LIST for 500 c.c. Sports Engines, 1927.

Name of Part.	Part No.	Price
CRANKSHAFT COMPONENT.		
Crankshaft Disc	6059	£ 1 5 0
Crankpin	1930	6 6
Disc Pin, Flyside	2358	9 6
Disc Pin, Timing side	2359	7 6
Nuts for Disc Pins	1953	8
Grub Screw for Disc Pin Nuts	856	1
Key for Disc Pin and Flywheel	1573	6
Pinion Wheel	2362	5 6
Flywheel	6106	2 12 6
Nut for Flywheel	2360	9
Extractor Cap	2361	4 6
Extractor Cap Disc	1962	6
Spacing Washer for Roller Shaft	2043	9
5/16in. dia. Rollers (15 per set)		(each) 4
Nut for Pinion Wheel	2363	1 3
CONNECTING ROD COMPONENT.		
Connecting Rod	6089	15 6
Small End Bush	2343	3 0
Crankpin Spacing Washer	1764	9
5/16in. Rollers (12 per set)		(each) 4
PISTON AND CYLINDER COMPONENT.		
Piston	6154	1 1 0
Piston Ring	2854	1 9
Gudgeon Pin and End Caps	2855/2345	4 6
End Caps for Gudgeon Pin	2345	6
Cyl. with Valve Guides and seats cut	7569	4 17 6
Nut for Cylinder Stud (or Bolt)	1767	3
Paper Joint Washer	2069	1
Inlet Valve Cap	2083	4 6
Exhaust Valve Cap	2087	4 6
Valve Cap Washer	853	2
Compression Plug	2086	1 6
Inlet Valve Guide	773	2 0
Exhaust Valve Guide	773	2 0
Inlet Valve	2082	7 6
Exhaust Valve	1596	6 6
Valve Spring	2083	9
Valve Spring Collar	2084	1 0
Valve Cotter	2085	3

Name of Part.	Part No.	Price
CYLINDER HEAD COMPONENT.		
Exhaust Port Union Nut	1773	£ 3 6
VALVE GEAR COMPONENT.		
Tappet Head	2350	1 6
Tappet Locknut	2351	2
Tappet	2412	1 6
Washer for Rocker Pin	2365	6
Inlet Rocker	6091	5 6
Exhaust Rocker	6092	5 6
Camwheel Sprocket	2383	5 0
Nut for Camwheel Sprocket	2376	8
Camwheel	6110	1 5 0
Stop for Exhaust Lift. Adjusting Screw	2391	6
Barrel for Adj. Screw (Rnd. Tim. Cover)	2389	2 6
L'nut for Adj. Screw (Rnd. Tim. Cover)	2390	6
Guide for Shackle Rod (Rnd. Tim. Cover)	2386	9
Exhaust Lift Cam (Rnd. Tim. Cover)	2384	6 6
Shackle Rod (Rnd. Tim. Cover)	2387	9
Exhaust Lift Spring (Rnd. Tim. Cover)	2137	8
Nipple for Bowden Wire	1949	2
Exhaust Lift Jaw	2385	1 0
Exhaust Lift Eye	2388	6
CRANKCASE COMPONENT.		
Crankcase Flyside (not supplied separately)	7535	3 18 6
Crankcase Timing Side (not supplied separately)	7536	
Main Bearing Bush	2342	6 0
Oil Retaining Bush, F.S.	2045	3 6
Camwheel Bush (Crankcase)	904	2 6
Camwheel Bush (T. cover)	899	2 6
Oil Pipe Union Complete	2355/2153/54	1 6
Nut for Crankcase Bolt	800	2
Crankcase Bolt (or Stud)	2260	10
Drain Plug for Crankcase	801	4
Spr. Washer for Crankcase Bolt	1415	2
Cylinder Stud	956	3
Rocker Pin	2356	4 0
Tappet Guide	2357	3 6
Screw for Tim. Cover and Chain Cover	2393	3

Name of Part.	Part No.	Price
CRANKCASE COMPONENT—*continued*		
Screw for Tim. Cover and Chain Cover	2394	£ 3
Screw for Tim. Cover and Chain Cover	2395	4
Screw for Tim. Cover and Chain Cover	2396	4
Magneto Chain Cover less Pump Boss	6099	
Magneto Chain Cover less Pump Boss	6100	15 6
Magneto Chain Cover Outer, w/Pump Boss	6138	
Release Valve Body Complete (screwed type)	1100/1/2/1077	3 0
Washer for Release Valve (fibre)	1096	1
Tube and Swivel for Release Valve	1744/1097	3 0
Nut for Release Valve Body	775	2
Round Timing Cover	6090	1 0 0
Pin for Exhaust Lift Cam (Rnd. Tim. Cover)	2074	6
Roller Race for Crankcase	2044	7 6
Screw for Roller Race	2046	3
Washer for Roller Race Screw	2047	1
Crankcase Dowel Pin (plain) for Short Tim. Cover	2149	3
Magneto Chain Cover (Rear Driver outer)	6103	
Magneto Chain Cover (Rear Driver inner)	6102	15 6
TOOL KIT COMPONENT.		
Valve Cap or Extractor Cap Spanner	1626	2 6
Tappet Stem Spanner	2253	6
EXTRAS.		
Flywheel Sprocket. Give width, Pitch, No. of Teeth, Width of Flange.		
Magneto Chain		3 0
Magneto Sprocket	2382	3 0
Magneto Platform	6101	8 0
Magneto Adjusting Screw	823	3
Magneto Platform Stud	1094	3
Nut for Platform Stud	1618	1
Spring Washer for Stud		1
Engine Plates (per pair)	1223 (pair)	7 6
Crankcase Bolt or Stud (long)	2258	8

REPAIRS AND GUARANTEE.

TERMS. Repairs are charged at net cash prices. Engines or assembly sets forwarded for repair must be consigned **" carriage paid "** with **sender's name and address attached.** When ordering spare parts it is desirable to mention the **index letter and number of the engine** or to send the old part as pattern. Remittances or instructions to deliver C.O.D. must accompany orders. **Carriage in all cases is payable by the customer.** Consignments should be examined on delivery, and all claims for loss or damage must be addressed to the carriers. Packing cases are charged and allowed for if returned in good condition carriage paid.

WE GUARANTEE, subject to the conditions mentioned below, that all usual and reasonable precautions have been taken by us to secure excellence of material and workmanship. This guarantee is to be in force **for three months only from date of despatch from our works** and the damages for which we make ourselves responsible in this guarantee are limited to the replacement of any part which may have proved defective and not for any consequential damage.

WE UNDERTAKE, subject to the conditions mentioned below, to make good at any time **within three months** from date of despatch from our works any defects in this respect. As engines are easily liable to derangement by neglect or misuse, this guarantee does not apply to defects caused by wear and tear, misuse or neglect. Any " Blackburne " Engine sent to us for overhaul or repair will be repaired upon the same conditions as if it were a new engine, *i.e.*, we guarantee that all usual and reasonable precautions will be taken by us to secure excellence of material and workmanship, such guarantee to extend and be in force for three months only from the time such work shall have been executed, and this guarantee is in lieu and in exclusion of any common law or statute warranty and the damages recoverable are limited to replacing the defective parts or making good the work proved to be defective.

CONDITIONS OF GUARANTEE. If a defective part should be found in our engines, it must be sent to us **carriage paid** and accompanied by an intimation from the sender that he desires it repaired free of charge under our guarantee, stating at the same time the **index letter and number of the engine, the name of the Agent from whom he purchased and the date of purchase.** Failing compliance with the above no responsibility will be taken by us for any article that may arrive, but such article will lie here at the risk of the sender, and this guarantee or implied guarantee shall not be enforceable.

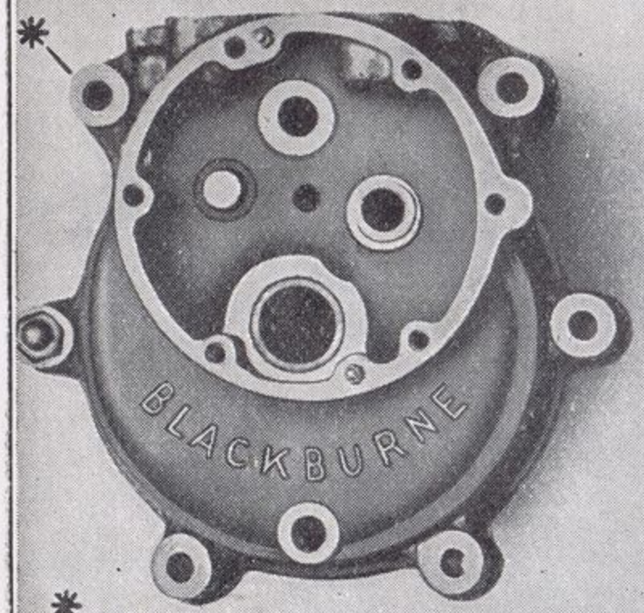
No guarantee of any kind is given or is to be implied, in the case of Engines used as follows—

(*a*) In machines used for " Hiring out " purposes.

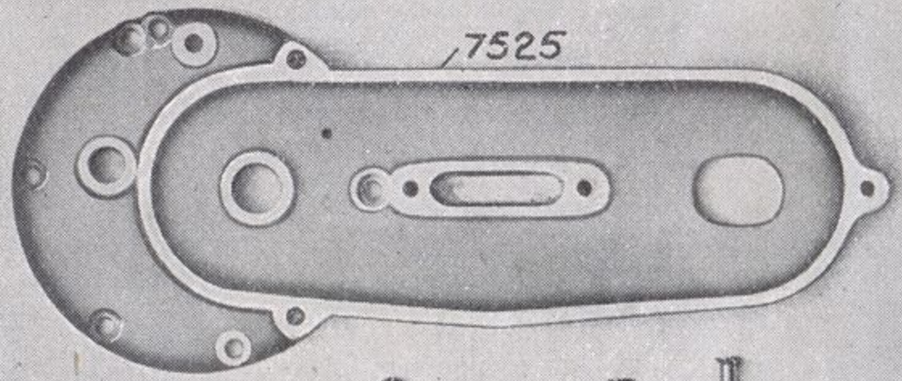
(*b*) In any Motor Cycle and/or Sidecar Combination used for any Dirt-Track, Cinder-Track, or Grass Track Racing or Competitions (or any Competition of any kind within an enclosure for which a charge is made for admission to take part in, or view the Competition).

(*c*) Engines from which the Trade Mark, Name or Manufacturing Number has been removed.

The term " Agent " is used in the complimentary sense only and those firms whom we style as Agents are not authorised to advertise, incur any debts or transact any business whatever on our account other than the sale of goods which they may purchase from us, nor are they authorised to give any guarantee or make any representation on our behalf other than those contained in the above guarantee.



*GIVE TYPE LETTER & Nº. OF ENGINE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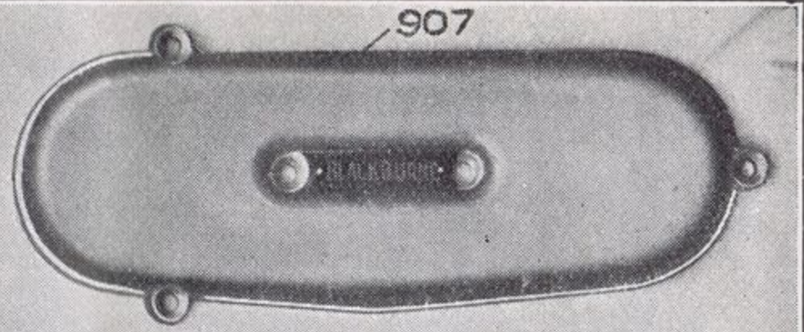
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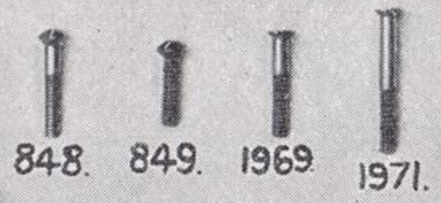
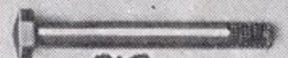

848. 849. 1969. 1971.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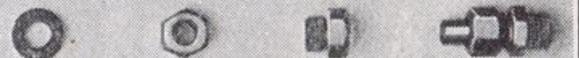
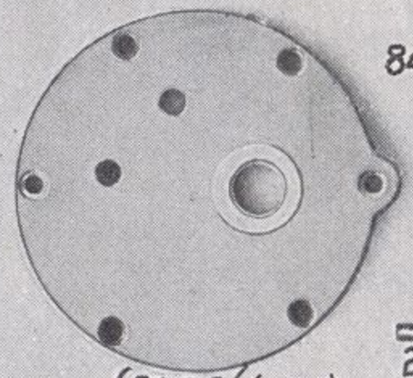
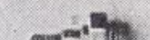
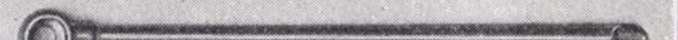

1415. 800. 801. 796.


6068. (1924.)
6090. (1925.)

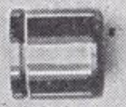

775.


1100.


1096.


1097 - 1744.


2046.


1924.


2044.


2047.


811

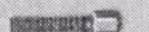

971


2045.


2072.


972.


795.


798


833.

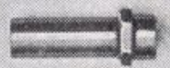

1030.


829.


2074.


1950.


1952.


1951.


1939.


2137.


964.

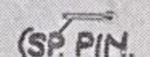

899.


797.


846.

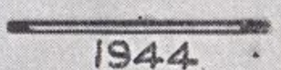

1543.


793.


SP. PIN. 1/16" x 1/2".


1943.


1942.

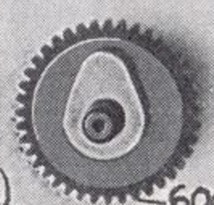

1944.


1948.


1949.


(IN.)
6057. (1924.)
6091. (1925.)


(EXH.)
6047. (1924.)
6092. (1925.)


6046. (1924.) 40. TEETH.
6093. (1925.) 50. TEETH.


1599


2376.


12. TEETH.
1539. (CAM.)


10. TEETH.
2383. (CAM.)
2382. (MAG.)


959.


1945.


1947.


1946. (FELT.)

C.10.

852.

2086.

{250. & 350 c/c. 1934. 550. c/c. 2088.

{250 & 350 c/c 1935.

2087.

250 & 350 c.c. 1936. 550. c/c. 853.

{ c/c (1924.) (1925.)
250- 1937. 2366.
350- 808. 2369
550- 807. 2343.

{250. & 350. c/c IN. DRIVE. 6043.

847.

2083.

2335.

900.

(1924) 6020.

(1925.) 6089.

1923.

1764.

1930.

(12. PER SET.)

5" 16 ROLLERS.

{250. & 350. c.c. OUT. DRIVE. 6035.

550. c/c 6106.

845. (IN.)
1596. (EX.)

854.

773.

855.

1924. { 250 c/c. 7510. 350 c/c. 7511

1925 { 250. c/c. 7539. 350. c/c. 7511. 550. c/c. 7540.

{250 & 350. c/c. 1959. 550. c/c. 1773.

{2042. {2148 - DEL.

1573.

2043.

857.

1962.

{851. (1924.) {2361. (1925.)

1916 (1924.) 2345 (1925.)

1932. (1924.) 2359. (1925.)

1953.

969.

2363. (1925.)

912 - 20 T. 2362 - 25 T.

954.

956.

1767.

c/c. (1924.) (1925.)
250. - 1914. - 2367.
350. - 1966. - 2368.
550. - 2024. - 2344.

1931.

856.

250 & 350. c/c. 1954.

550. c/c. 2069.

c/c. (1924.) (1925.)
250. - 1913. - 6094
350. - 6039. - 6095
550. - 768. - 6086.

250. c/c. 1915.

350. c/c. 1965.

550. c/c. 1677.

772.

1630.

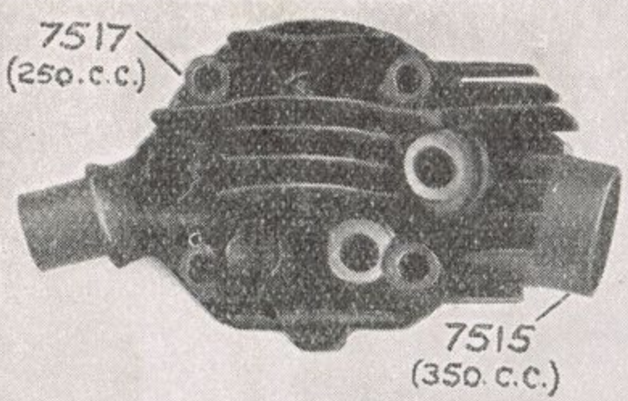
775.

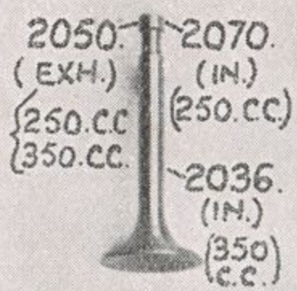
820.

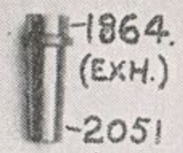
1668.

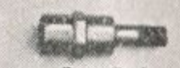
{6034. 250. & 350. c.c.

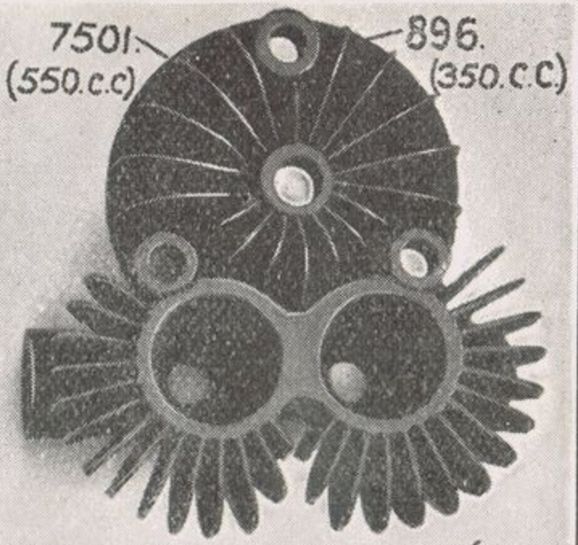
6059. 550. c.c.

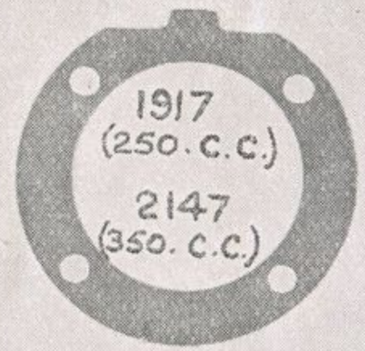


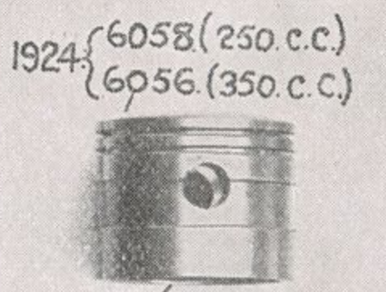


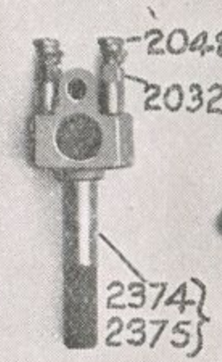


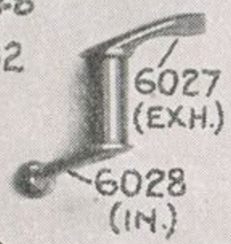


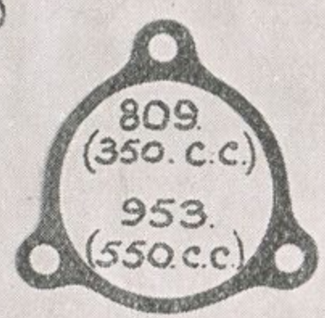


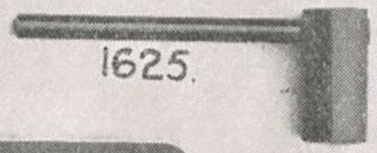


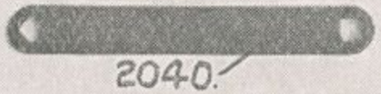


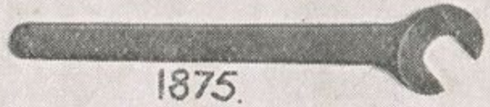


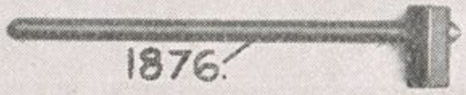


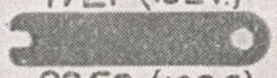


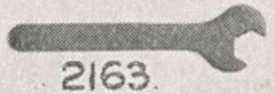


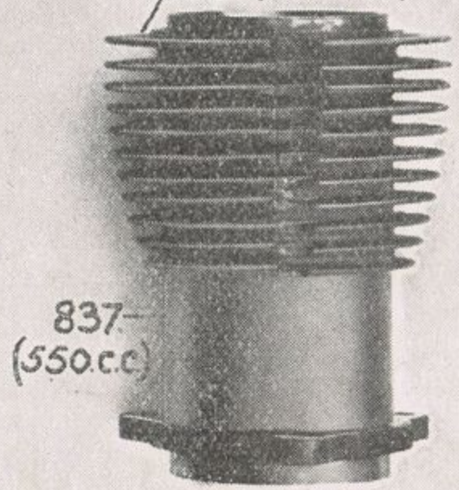


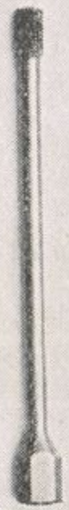


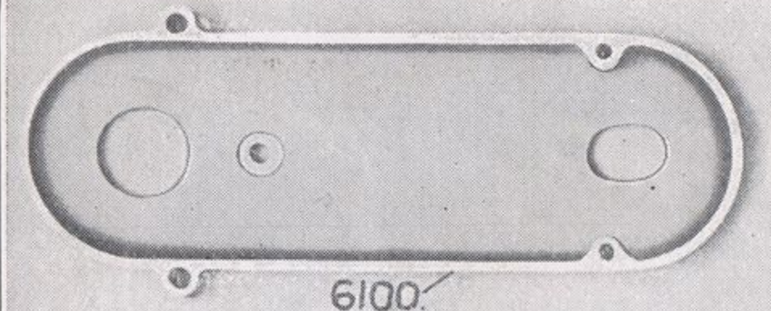








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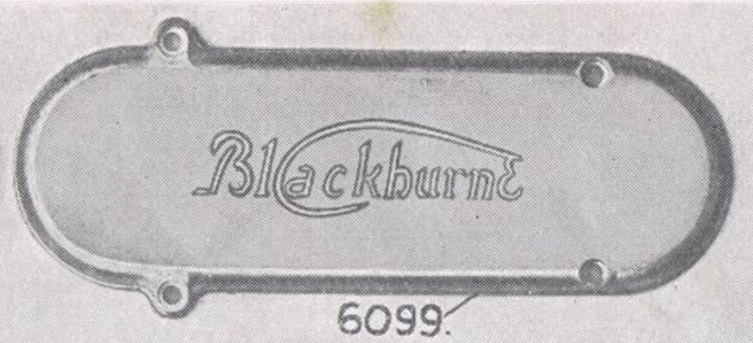

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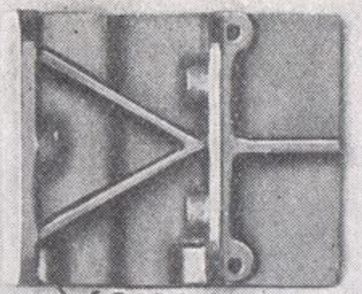
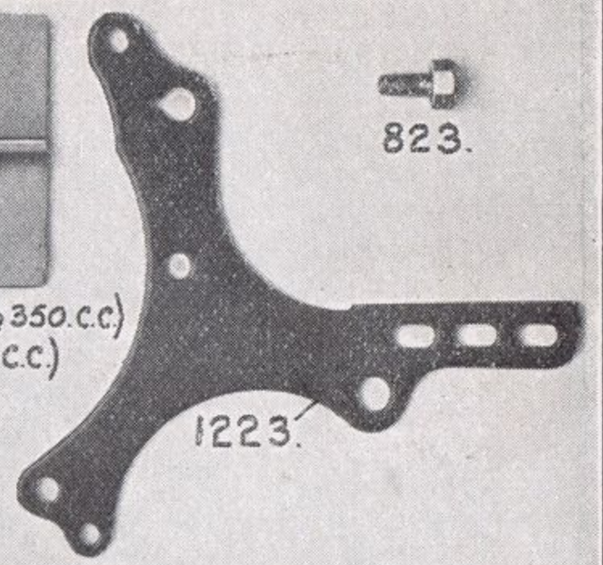

6101. (250. & 350. c.c.)
6122 (550. c.c.)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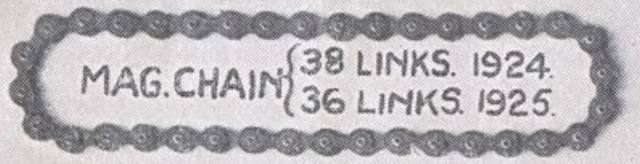
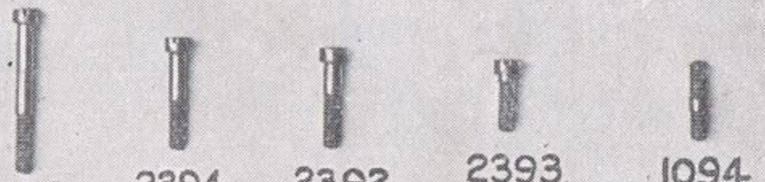
823.




2395. 2394. 2392. 2393. 1094.


1618.


804.


1779.


1765.

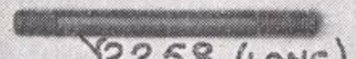

1940


1941


1940.


G.S.
22-4

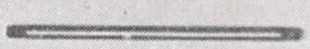

800.


2258. (LONG.)
2260. (SHORT.)


1415


2384.


2137.

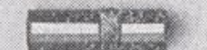

2387.


2385.


1949.


2388.

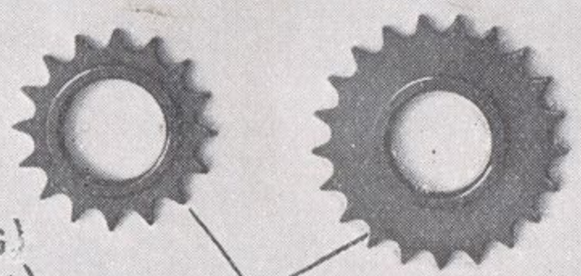

2391.


2389.


2386.


2390.


2430.

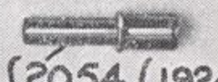



2055.


2056.


2057.


1916.


2054. (1924.)
2356. (1925.)


1967.


1029.


1028.

1093.


1077.


1078.


1678.

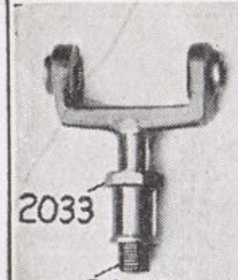

2084.


2417


Ex. 2067.


1743.


2075.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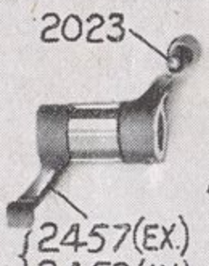
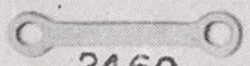

2023

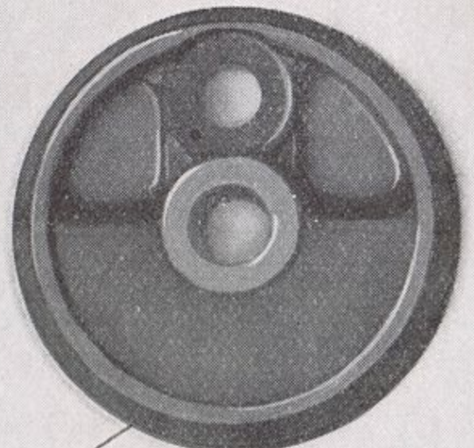
2457(EX.)
2458(IN.)


2460

CAGE
2465

1/8" x 1/4" ROLLERS.
8 PER CAGE.


2463


6131 - FLY. SIDE.
6132 - TIM. SIDE.


2496.

2493

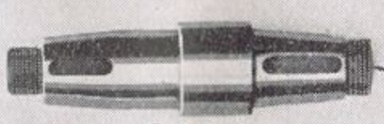

2499


2488

PLUG.

2500


2081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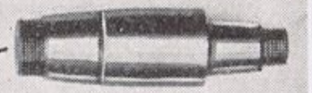
2496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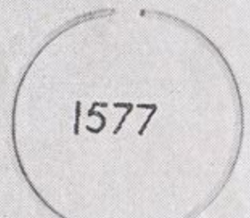
2508

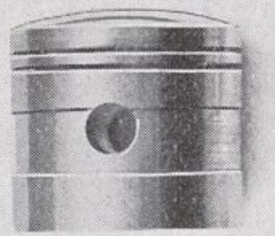

2491


2492


2490


2489


1577


6130


2424.

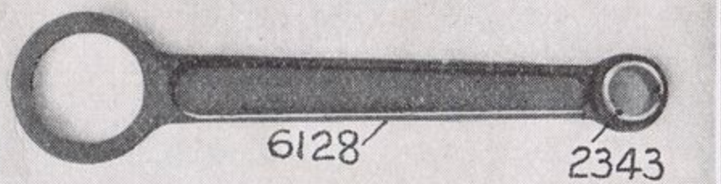

2425

34 PER SET

5/16" ROLLERS.

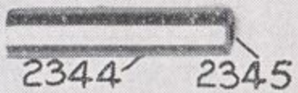
68 PER SET.

1/4" ROLLERS.


6128

2343

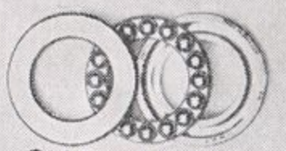

2483

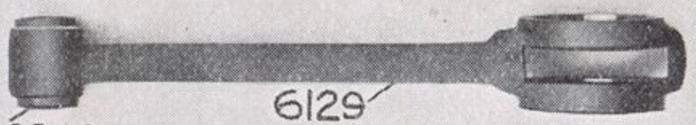

2344

2345


2426


2427

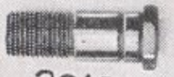

S.K.F. - 2906.


2343.

6129

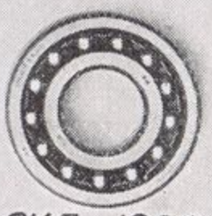

2485

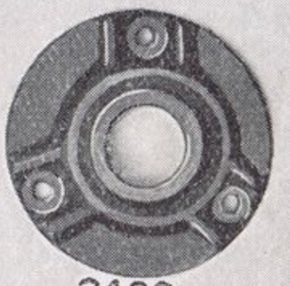

2487


2010

2504

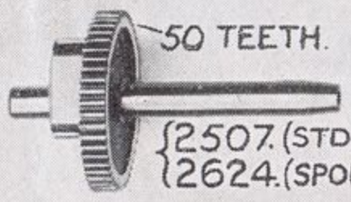

2502 - R.H.
2503 - L.H.

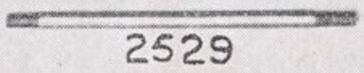

S.K.F. - 1306.


2482

50 TEETH.

2506 (STD.)
2625-6 (SPORTS.)

50 TEETH.

2507 (STD.)
2624 (SPORTS.)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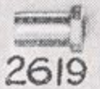
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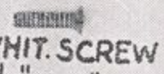
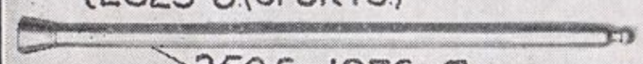
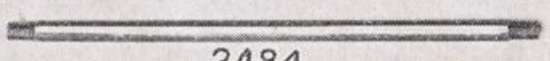

WHIT. SCREW
1/4" x 1"


2505-1976-7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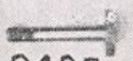
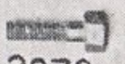
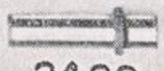

2486


2378.


2428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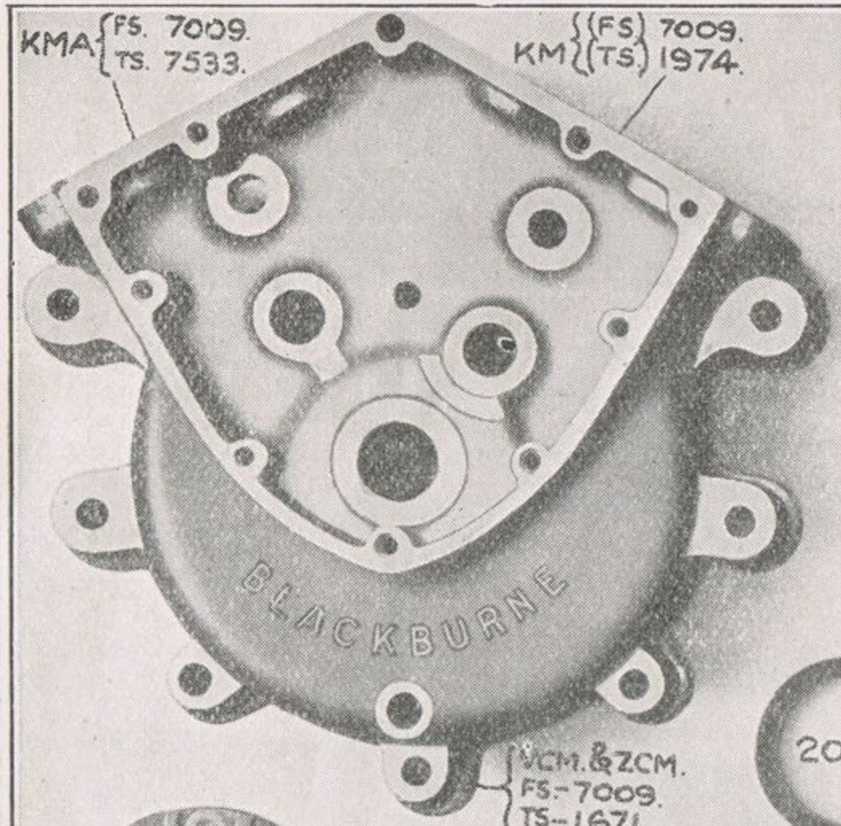
2501

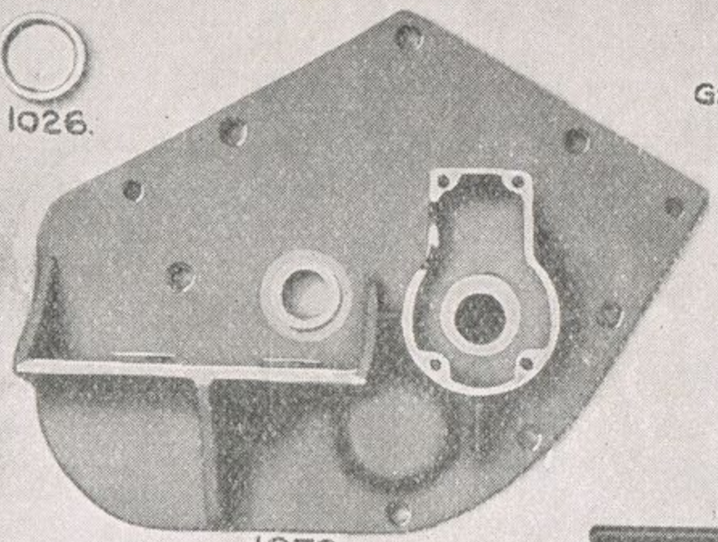
KMA {FS. 7009. TS. 7533.

KM {(FS) 7009. (TS) 1974.



VCM. & ZCM. FS-7009. TS-1671.

1026.

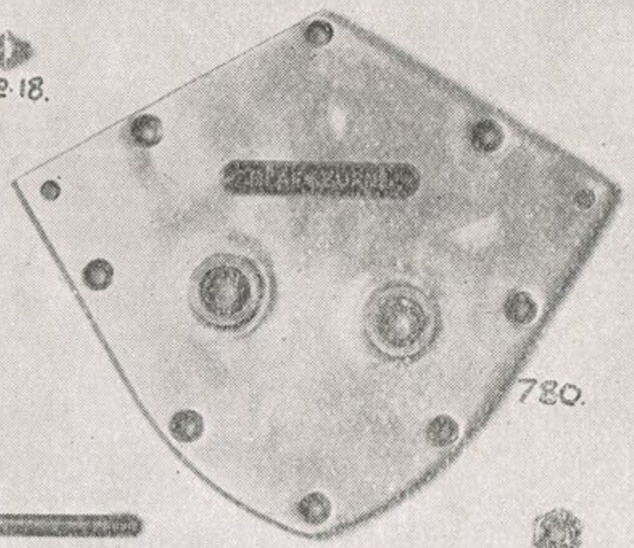


1972.

GS. 12-12.

No. 18.

1675.



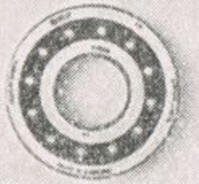
780.

2107.

1098.

2063.

2264.



SKF. 1305.

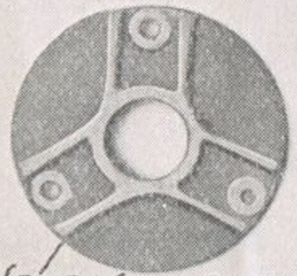
{1767(S) 1768(L)

956.

1019.

1415.

800.



{6084 (KMA. & VCM.) {2058. (KM.)

2061.

{AGS. 118. A.

2340.

14. PER SET.

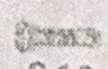
3/8. ROLLERS.

910.

899.

801.

{2152-3. {2266.



849.

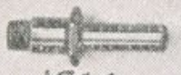
1100.

1096.

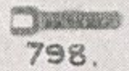
1677.

1676.

1928.

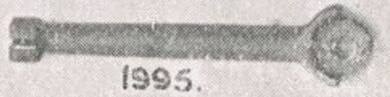


1544.

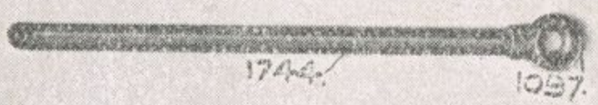


798.

795.



1995.

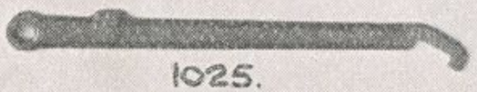


1744.

1097.

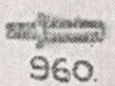
1679.

1678.

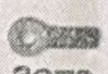


1025.

{908-(LH.) {909-(RH.)

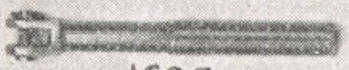


960.



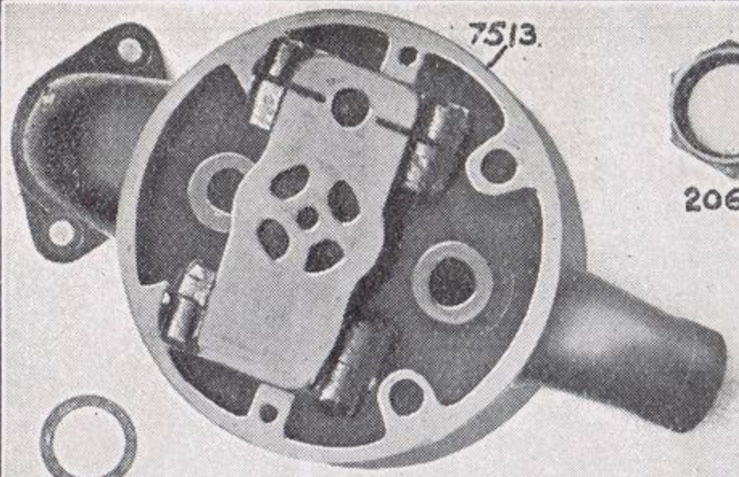
2079.

1021.



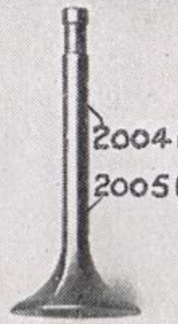
1695.

{1668 (SHORT.) {1669 (LONG.)

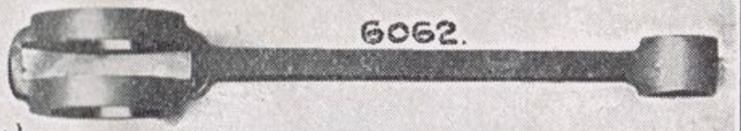



2066.


2076.



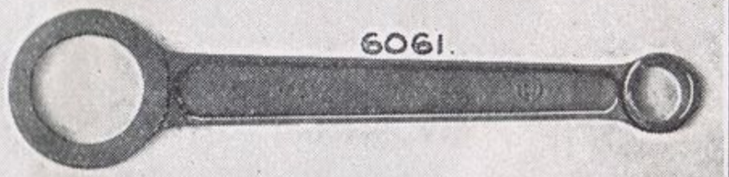

1997


6062.


2262.

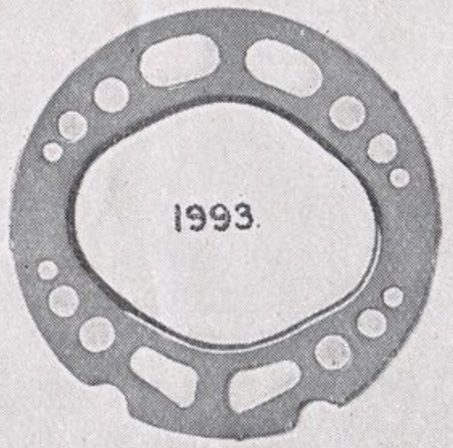

2001.

LD
2049.


6061.

2268.


R.2.

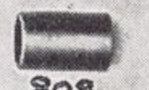

1993.

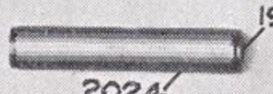

2010.


2000.


1999.


1980.


808.


2024.
1916.


1712.

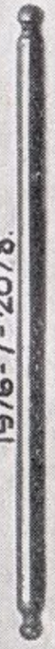

1710.

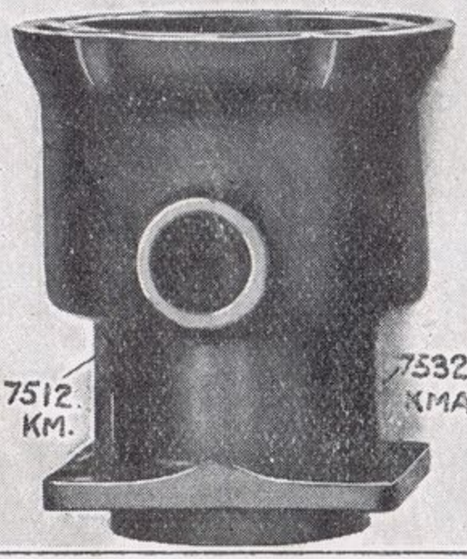

1920.


1994.


1705


2077.

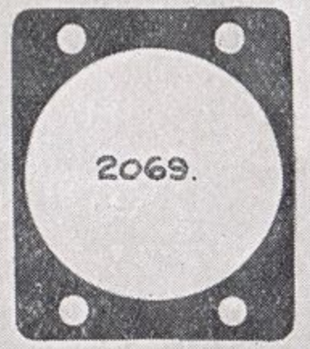

1976-7-2078.




1577.


2002.


6063.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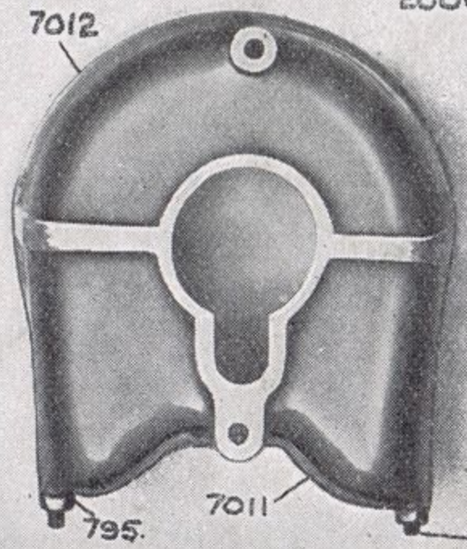
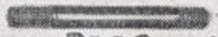
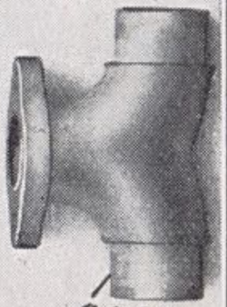



2006.


2018.

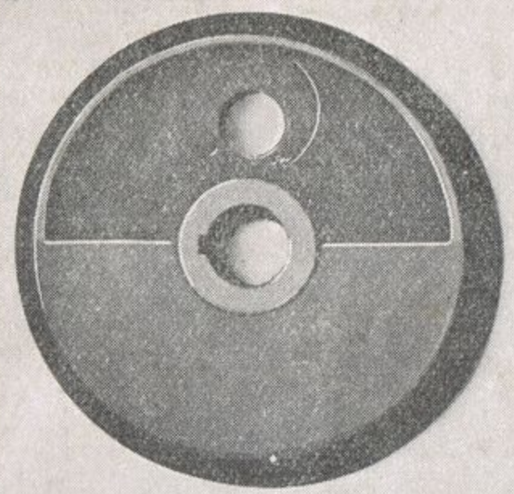

6040.

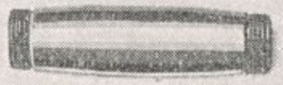

2014.


1099.


795.


2011.


7010.


1987.


1986.


6048.


6049.


2062.


2081.

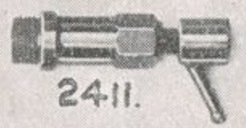

902.


786.


2263.


1985.


1894.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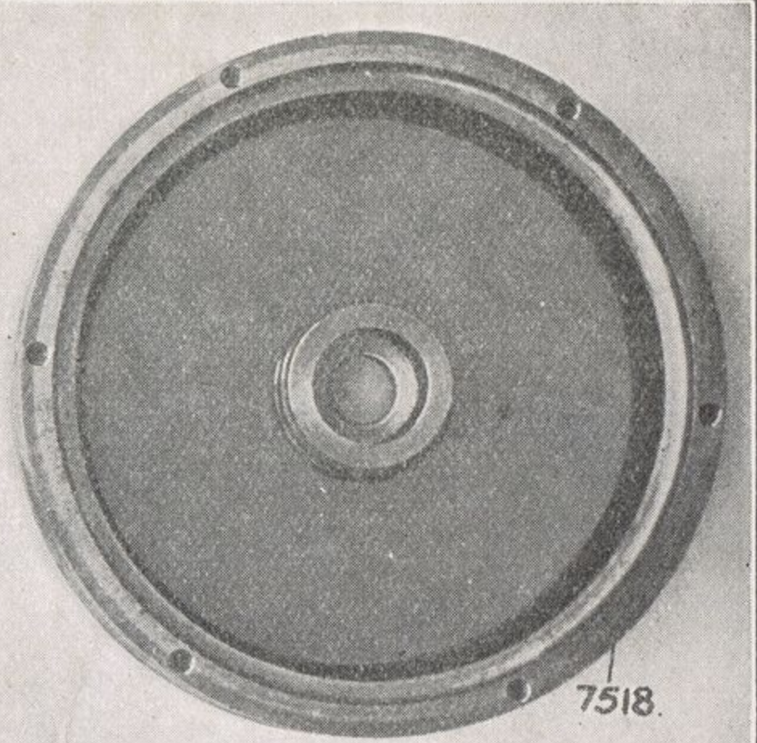

7518.

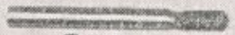

912.


969.


847.


1989.


856.


814.


787.

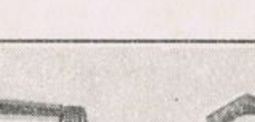

1872.


2060.


2059.

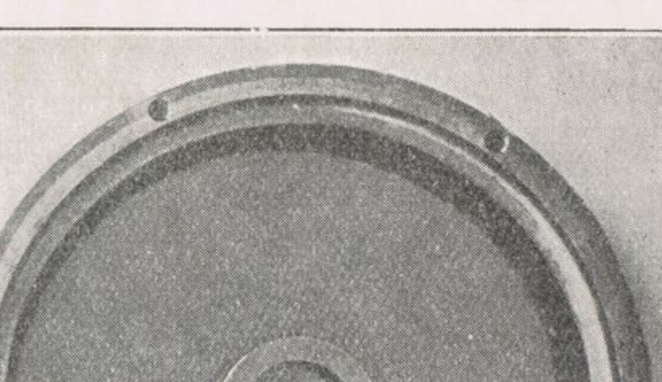
1023.

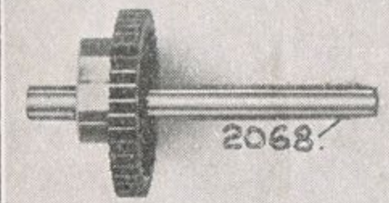

1690.


2131.


815.


775.


669.

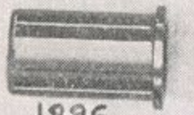

2068.


1599.


2067.


956.


1767.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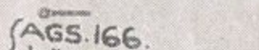
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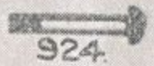
958.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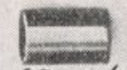
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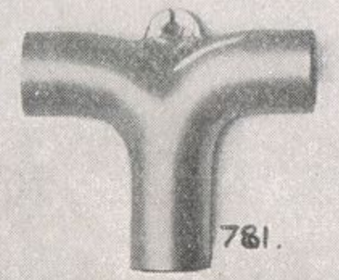
6054. (HB. ONLY.)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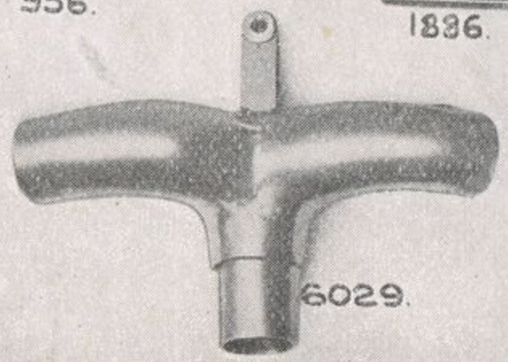
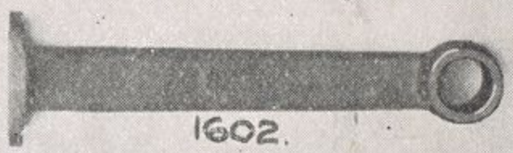

6029.


1607.


1605.


1602.

NOT SUPPLIED SEPARATELY.

Le fournit seulement en paires.

Blackburne

A FEW SUCCESSES, 1926

T.T. RACES

Lightweight T.T. Race - -	1st, 2nd, 3rd
Junior T.T. Race - - -	3rd
Senior T.T. Race - - -	2nd

• • •

Brooklands 200 Mile Race, Solo	2nd, 350 c.c. Class

BREAKING 14 WORLD'S RECORDS FROM 350 c.c. UP TO 1000 c.c.

Belgian Grand Prix - -	1st, 175 c.c. Class
	1st, 250 c.c. Class
25 Miles Irish Championship, Phoenix Park	1st, 250 c.c. Class
	3rd, 250 c.c. Class
	1st, 350 c.c. Class
Unlimited Handicap - -	2nd

FASTEST TIME OF DAY AND FASTEST LAP

Leinster "100" - - -	1st, 250 c.c. Scratch Race
	1st, 350 c.c. Class
Ulster Grand Prix - - -	1st, 350 c.c. Scratch Race
	2nd, 250 c.c. Scratch Race
French Grand Prix - -	1st, 175 c.c.
	1st, 250 c.c.

SOME 1927 SUCCESSES

LIGHTWEIGHT T.T. RACE - -	1st
BROOKLANDS 200 MILE RACE, Sidecar	1st, 350 c.c. Class
	2nd, 350 c.c. Class
AUSTRIAN T.T. - - - -	1st, 250 c.c. Class
ULSTER GRAND PRIX - - -	1st, 250 c.c. Class
	2nd, 250 c.c. Class
	3rd, 250 c.c. Class
FRENCH GRAND PRIX - - -	2nd, 350 c.c. Class
UNLIMITED HANDICAP, Athy, 75 MILES	1st, 350 c.c. Class

Burney & Blackburne, Ltd., Atlas Works, Bookham, Surrey