

NSU LUBE TIPS



***Bikes-scooters-mopeds!
Mike Marriott describes
the method of lubricating
this range of machines...***

THE current range of NSU machines comprises the Super Max, the Prima Scooters, the Quickly Moped, and the new 50 c.c. Quick 50. All except the Max are two-strokes and lubrication is very straightforward. Even on the solitary motorcycle of the range, lubrication points have been cut to a minimum in order to provide a model needing little maintenance. . . .

The Super Max 250

This sporting 250 c.c. overhead camshaft machine is lubricated by the dry sump system. From the $3\frac{1}{2}$ pint reservoir tank located beneath the dualseat, on the nearside of the bike, oil first flows through a cartridge type filter located in the base of the tank. It is then channelled through to a gear-type oil pump situated inside the crankcase on the offside and driven by the primary gear. Delivery side of the pump is naturally smaller than the scavenge side.

From the pump, oil is fed via oilways cast in the crankcase to the cam-shaft and the eccentric disc which operates the valves. At the same time it is pressure-fed through the crankcase on to the big-end via a copper pipe inserted in the crankcase. Oil from the main reservoir also lubricates the gearbox, gear clusters being splash-fed.

After the oil is pressure-fed on to the big-end, the residue splash feeds the walls of the cylinder and the piston and it is then drawn through the return side of the pump, and so back to the main tank. On the sump drain plug of earlier models there is a magnetic filter, although it is not fitted to current machines, as swarf particles are negligible.

The only possibility of any failure on the engine and gearbox lubrication system may be caused by a faulty oil ring on the pump itself. This can only happen if the pump is disturbed. Should the unit be removed for cleaning or replacement, these two rubber sealing rings must be renewed to effect a completely oil-tight seal.

The system is such that it locates its own level of oil in the gearbox. Should the main tank be overfilled, the surplus oil will be pumped through the breather and out from the rear of the crankcase. If, however, the level in the gearbox is correct, and oil still escapes through the breather, then this is a sure indication that the rubber seal rings on the pump or the crankshaft cover-plate are faulty and in need of replacement.

Consequently, no gearbox oil level indicator is needed or provided. The only dipstick on the machine is on the oil tank reservoir and oil should on no account be allowed to fall below the minimum level mark. It is always advisable to allow the engine to cool off for 3 to 4 minutes before checking oil level, as this time factor will allow the oil to seek its own level.

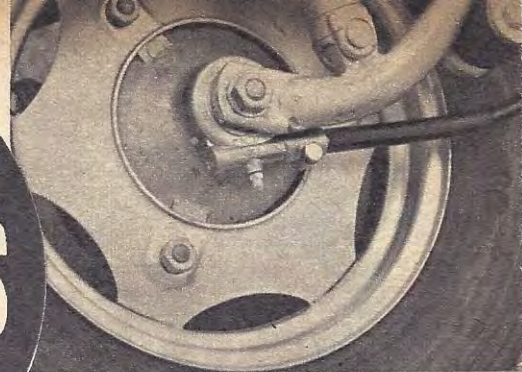
Should a machine be parked unused for a week or two, then it is advisable to start the engine and let it run up for about five minutes. Only then should the level be checked after stopping the engine. For during any lay-up, the oil supply may have drained almost completely into the gearbox. Normal running temperature of the SAE 20 grade oil recommended, is 90 degrees centigrade.

When the time comes eventually for replacement of the big-end, it is imperative that owners consult their dealer before proceeding with the work! There are four types of crankshafts for the NSU Supermax and all have different oilway lay-outs! For obvious reasons, the original crankshaft must be replaced with the same type.

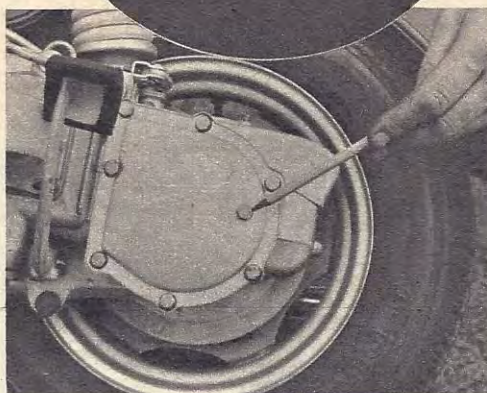
The Supermax is the ideal machine for the man who dislikes a lot of maintenance, for there is no primary chaincase as such.

Continued on page 44

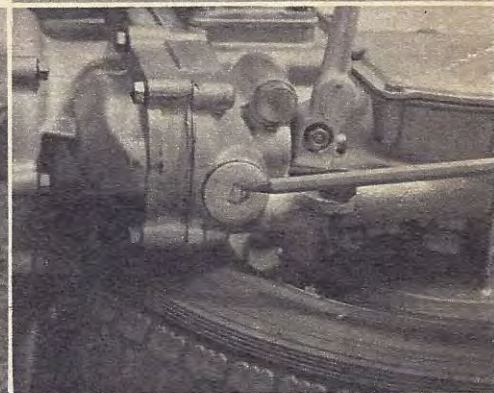
SCOOTERS



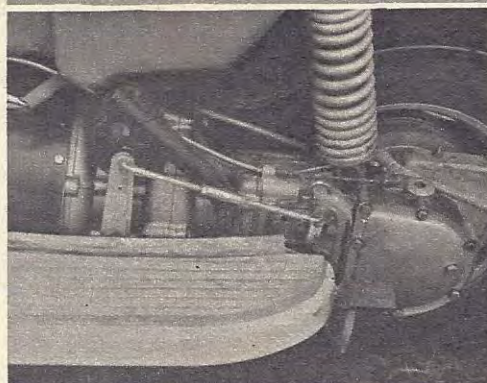
SPEEDOMETER drive for the Prima 3KL is located on front wheel and is the only point which needs greasing on the unit



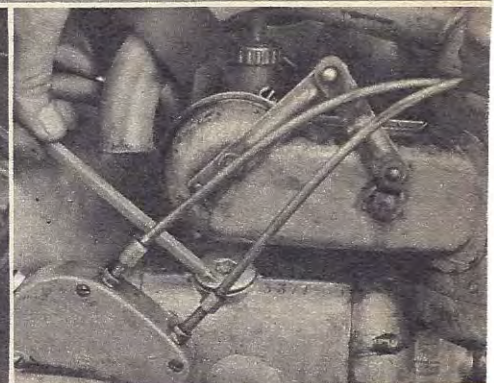
GEARBOX oil level plug is indicated. Do not exceed this level or oil may penetrate to the clutch, ruining it



DRAIN PLUG for the gearbox indicated. Oil should be changed at mileage recommended by the manufacturer's handbook



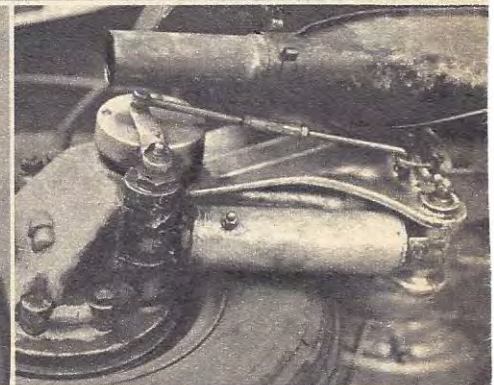
GEARCHANGE and **BRAKE** points must be lubricated where they pivot to avoid unnecessary wear and stiff controls



OIL FILLER plug on the Prima 'D' is indicated. Level plug is just above clutch arm. Fill with recommended oil



FRONT SUSPENSION should be greased at least every 1,000 miles or so, according to conditions, through this nipple



REAR SUSPENSION on the 'D' has grease nipples which are out of sight. Check clean and grease yours regularly

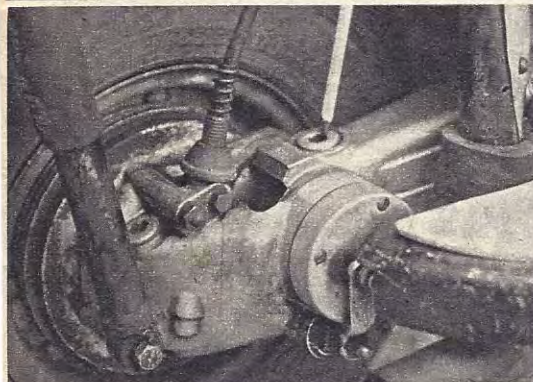
SUPERMAX



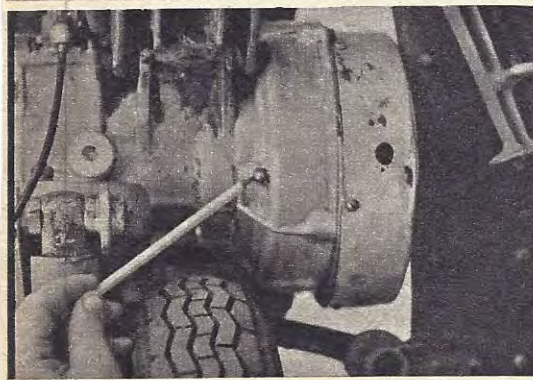
AIR FILTER is oil-soaked to trap dust entering engine. The flexible hose must be securely connected to the filter



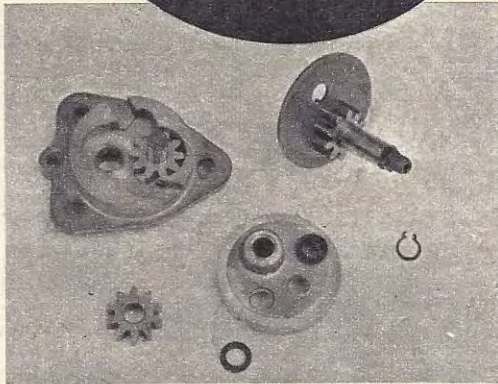
AIR FILTER removed from housing. Note rubber sealing ring. Filter must be fitted firmly to keep out all road dirt



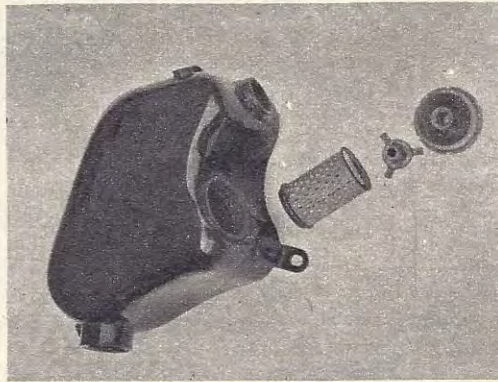
TRANSMISSION should be charged with fresh grease through plug indicated with engine running. (See main copy)



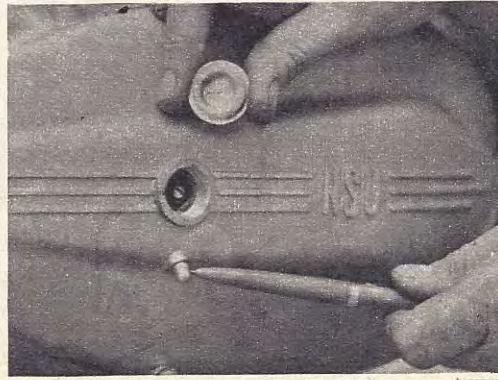
MAIN BEARING grease nipple situated below crankcase. Lubricate with one shot of grease every thousand miles



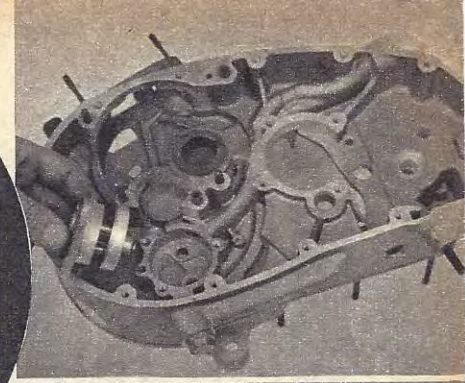
OIL PUMP dismantled. The only parts liable to wear are the small rubber sealing rings which must be a good fit



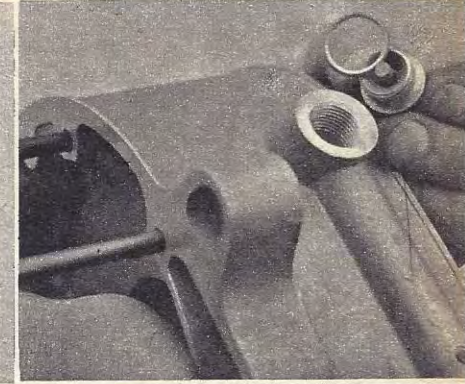
OIL TANKS on the Supermax models have cartridge type filters fitted. Clean every 3,000 miles and wash ball-valve



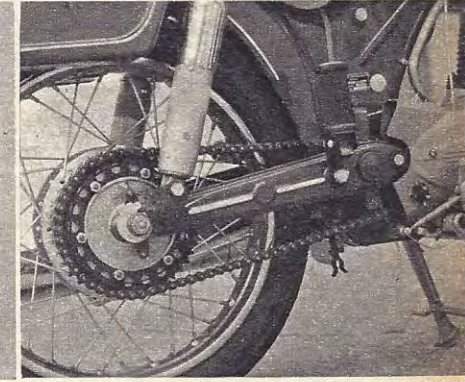
CLUTCH thrust rod lubrication is provided by the nipple indicated. This should receive one shot every 2,000 miles



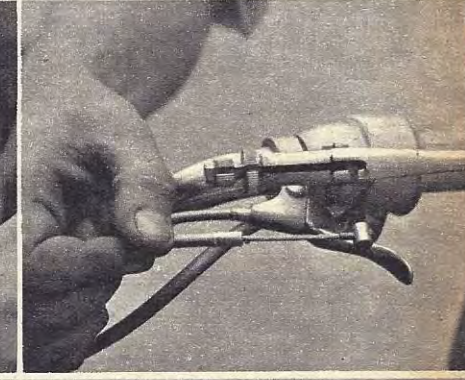
CRANKCASE showing location of oil pump. Note how feed and return channels are cast integral in the crankcase unit



MAGNETIC DRAIN PLUG for the sump. This is only fitted to the earlier models and should be checked and cleaned after



CHAIN cleaning and lubrication can only be carried out by removing guard. Note brake linkage grease nipple shown



CLUTCH and front brake cables on the Supermax and q.d. Just line up slots and release cables as shown for oiling

QUICK 50 & MOPED

*The Quick 50 can
be seen at this
year's Motorcycle
Show at Earls
Court...*

Helical gears replace the primary chain, while the front and rear suspension units are factory-sealed and need no attention, and the swinging-arm is nylon bushed.

Only greasing points are the control cables, speedo drive and rear chain which operates in a fully-enclosed guard.

Due to the amount of work that the main oil supply has to do, and the relatively thin viscosity of the recommended lubricant, this should be changed every 1,000 miles or thereabouts.

Scooter Lube

Basically, the range of Prima scooters—comprising the 150 c.c. "D," the 150 and 175 c.c. 3KL and V models—are identical so far as lubrication is concerned. A normal petrol mixture is employed, ratio 25 to 1, on all machines. The maker's recommendation is for cheap grade petrol and ordinary mineral oil.

On the "D" model, the gearbox is lubricated by SAE 50 oil from the filler plug at the top of the right hand crankcase. Beneath the domed nut on the front of the engine, a 14 mm level plug will be found. This should be removed before adding fresh oil. When oil starts to seep from the orifice the correct level has been reached. Quantity is approximately 1 pint.

The rear hub on the Prima "D" should be lubricated with Shell Retinex G or its equivalent at regular intervals. Provision is made by one filler plug and one drain plug. The following procedure should be adopted—remove both plugs, raise the machine on its centre stand, start the engine and engage first gear. Fresh grease should then be pumped in whilst the engine is running.

By this method you will find that the dirty grease is pushed out of the rear plug hole and when clean grease appears you know the entire amount has been changed. Only other lubrication points are the front suspension units (provided with grease nipples), and a grease nipple under the crankcase for lubrication of the main bearings. A shot should be injected every 1,000 miles or so.

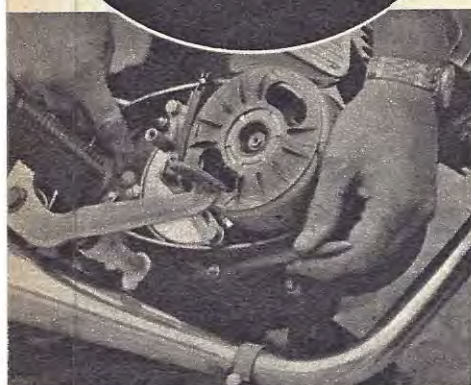
Gearbox lubrication on the 3KL and the V model is carried out by filling in the orthodox manner. On the 3KL, the quantity is 1 pint of SAE 50 and the V, ½ pint, same grade. Oil should be changed at 2,000 mile intervals. Only other lubrication point is the speedo drive (grease nipple provided), which should receive a shot at 700 mile intervals.

Front and rear suspension, gear-change pivots, brake pivots, etc., are nylon-bushed and need no attention.

A very important point to watch on both these machines is that the air-filter hose from the side panel to the filter should be at all times connected securely to the rubber grommet in the side panel. Failure to ensure this will cause premature wear to the cylinder and bearings for dust entry will negative lubrication.

Mopeds and Quick 50

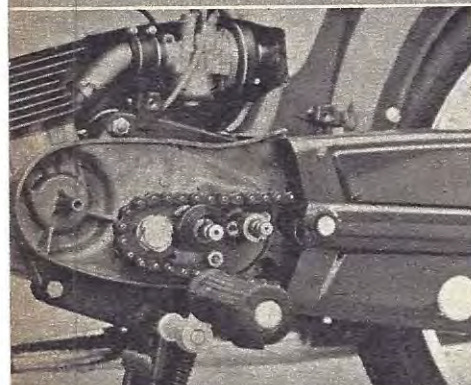
The current moped range consists of three models, the N, the S, and the S223. Lubrication on all of them is identical, by petrol—ratio 25 to 1. The gearbox is equipped with a filler and level plug, the former being situated on the right hand side of the machine by the pedal shaft. This should be removed, the level plug



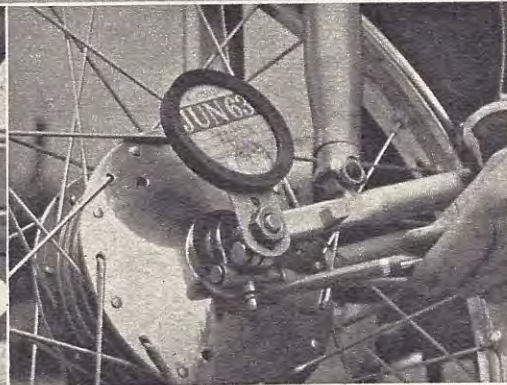
GEARBOX oil filler/level plug and the drain plug indicated by pencil are on the off-side of the new NSU Quick 50



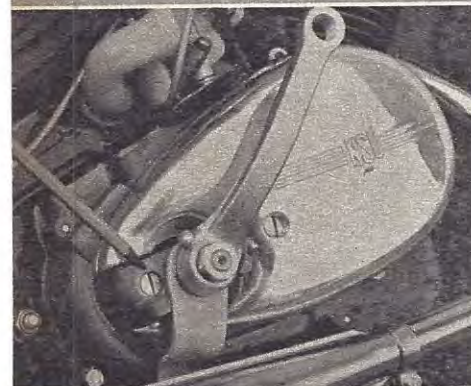
AIR-FILTER cartridge situated below the dual-seat should be impregnated with SAE 20 oil. Clean every 1,000 miles



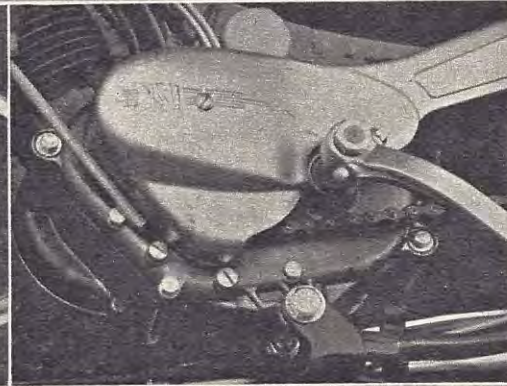
REAR CHAIN and kick-start mechanism are lubricated by removing the front engine cowl from the engine unit



SPEEDOMETER DRIVE unit is the only lubrication point at the front of the Quick 50. All other points are 'dry'



QUICKLY GEARBOX is the most important point of lubrication—filler plug is indicated. Use only recommended oil



OIL LEVEL plug is indicated by pencil. The slot-headed screw just below it is the oil drain plug to the gearbox

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10 Minute Tips

OIL SAVER I found that the easiest way to put fresh oil in the front forks of my Tiger Cub was to use an old bicycle pump. I cut the end off an old valve and used this in the end of the pump. This method avoids any waste or mess. — W. PURDY, ASHINGTON, NORTHUMBERLAND.

PETROL SAVER To prevent petrol evaporation during one of our rare heatwaves, I put a damp cloth over the tank. As the moisture in the cloth evaporates it draws heat from the tank and so saves you money. — S. HARRISON, WATERLOOVILLE, HANTS.

EASY POLISHING Carbon always seems to stick more easily to rough patches in a cylinder head, so I decided to remove them once and for all. I found that the easiest way to do this was to use emery cloth wrapped round an old tennis ball. I used progressively finer grades of cloth and finished off with a rag soaked in metal polish. This gave a mirror-like finish. — L. BOYDEN, PETERBOROUGH, NORTHANTS.

THIEF-PROOF Having had my road tax disc stolen recently, I was determined not to lose the replacement. I therefore stuck it to a piece of cardboard, and the cardboard to the licence holder. I don't think it will be stolen again! — E. H. BARNETT, NUNEATON, WARWICKS.

NON-FIDDLE TOOL BOX I found it very tricky to replace the tool box cover on my B 40 B.S.A., and in particular to locate the retaining screws. I removed the wire retaining rings from the ends of the screws and can now take the latter right out of the cover. This makes replacing much simpler. — N. J. CAREY, CHATHAM, KENT.

HOME MADE BRACKETS It is often difficult to find the right brackets when fitting accessories to a machine, but you can easily make your own. Squash a length of copper tube in a vice and then twist it for a quarter of a turn along its length. You can bend this to any angle and be sure of a good fit, if it is going round the handlebars for instance. — J. HUTCHINSON, LONGNIDDRY, EAST LOTHIAN.

DUAL SEAT REPAIRS Even a small nick in a dual seat can easily spread into a long tear. After several attempts at repairing one in my own dual seat, I found that the slit just kept getting longer. I finally made a permanent repair by ironing on a strip of carpet edging. This works well and costs 8d. a yard from Woolworths. — R. COX, KETTERING, NORTHANTS.

NSU LUBE TIPS

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unscrewed from the left hand side of the engine and an oil-can inserted in the filler hole. Pump oil until it flows from the level plug hole. The grade is SAE 50. Front suspension is grease nipple lubricated, two are provided on the swinging fork, and there is a speedo-drive grease nipple provided on the front wheel hub.

The new NSU Quick 50, is an orthodox two-stroke machine using a re-designed cylinder and crankshaft assembly. However, the gearbox is based on the earlier 125 c.c. Fox model, thus giving an extremely robust four-speed unit. Engine lubrication is by petrol at a ratio of 25 to 1 and gearbox capacity is 300 c.c.'s. Speedo drive — grease nipple provided — is the only other lubrication

point on the machine, as nylon bushes are extensively employed.

There is one other lubrication feature on all NSU machines which should receive regular attention, namely the oil-wetted air-filter cartridge. As can be seen in the hand-book all the models are endowed with the patent air-quietening system. That is, all air which flows to the carburettor passes through the frame of the machine to remove all turbulence. On passing through the air filter, the oil in the unit removes any remaining dust particles and it is therefore essential that the oil be kept in a fresh condition in order to do this job efficiently. The filter cartridge itself should be washed in clean petrol every 1,000 miles or so, and then re-impregnated with SAE 20 oil. ●

VENOM CONVERSION

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As mentioned earlier, the fitting of the conversion is fairly straightforward. In fact, it may be carried out leaving the engine in the frame. All that is involved in dismantling is to completely strip the engine of valve gear, including pinions and cams.

Once the cylinder head is off, the valves are removed and guides checked for wear. The head is then decoked in the normal manner and the valves refitted minus valve springs. Valve caps and collets only are replaced, and held in place by a dab of thick grease.

With the piston at TDC, the cylinder head is replaced, minus the rocker-box. At this stage, the pushrod guide is discarded and the cover left down.

The next stage is to replace the standard rockers in the rocker-box, with the desmodromic gear. This is a straightforward swap, with a check to see that both the "double" rockers are moving freely after lubrication and complete tightening.

Refit Rocker-box

Now comes the fitting of rocker-box to the cylinder head and here the valves must be lifted one at a time and the rocker fork arms tucked under the valve caps. With this job completed the rocker-box may be securely bolted down ready for setting the torsion bar adjustment. This adjustment is critical, for the underside of the valve cap and the top of the cap must be gripped firmly between the fork arm and rocker respectively.

All measurements and method of operation are clearly given in the instructions supplied with the kit. These ensure that there is no unnecessary play between valve and operating arm, and a foolproof method of checking this adjustment is also given.

This completes the preparation of the cylinder head and the next stage in conversion involves the timing pinions. Here it is a matter of carefully following instructions and exchanging the standard cams for the specially shaped units

supplied with the conversion.

Also, once the valve lifter has been removed or made inoperative, the special cam followers are fitted, followed by the push/pull rods. These units are connected to the rockers in the cylinder head and after making all the necessary adjustments as described in the complete instructions, the valves and ignition are timed.

There are special notes to be followed and these are given by the voice of experience. If instructions as supplied by B.M.G. are not rigidly adhered to then some nasty things can happen to your valves and piston.

Full Sports Conversion

The price of £38, mentioned earlier, is the total cost of the valve conversion kit. This can, of course, be your only outlay which will give a far better performance in respect of m.p.g. and tractability on the standard engine. But if you wish to go in for out and out performance, the kit can be extended to racing GP or TT carburettor, sports magneto, tachometer, alloy rims, dropped bars and alloy mudguards—to cut down weight.

Naturally, this will mean that "about town" use is definitely out, for your Velo will become a super high-speed road-burner. The cost is fairly high, but for the enthusiast who wants performance without sparing the pence, B.M.G. Ltd. should be able to supply all the necessary equipment.

Following B.M.G.'s instructions, the conversion is fairly simple to fit, but if you don't wish to carry out the work yourself, B.M.G. will do it for you. This will naturally include the tuning of the engine's carburation. Unfortunately, it isn't possible to give the cost for the work entailed, as each machine varies. It depends upon the condition of the engine to be converted and the number of components which have to be renewed before the conversion may be fitted. The conversion is good, but doesn't rejuvenate old, worn engines! ●

1 AEROSOL PAINT SPRAY takes much of the work out of painting. Yukon is easy to use, quick drying, and costs very little more than ordinary paint and brushes. Made in 13 colours and with the new trigger action snap-on handle. Price 18s. 6d., carriage free, from Cesar Products Ltd., 307a Edgware Road, London, W.2.

2 CLOTHING CATALOGUE Practically every piece of clothing worn by motorcyclists is featured in the new Lewis catalogue. There are coats and suits for all tastes and pockets, for both men and women, not to mention the vast array of accessories. You can get the catalogue free if you send 4d. in stamps for postage to D. Lewis Ltd., 124 Great Portland Street, London, W.1.

3 CLIP-ON LIGHT A very handy light by Bradex which can be used as an inspection lamp or simply to provide constant illumination in caravans or tents. Made in tough plastic insulating material, with 12 ft. of P.V.C. cable and crocodile clips, the Grippalite costs 16s. 9d., from dealers or Bradville Ltd., Bradex House, Boston Parade, W.7.

4 FIRST AID KIT Here is a really comprehensive first aid kit which could be carried by all two- and three-wheeler owners. It contains all the necessary bandages, etc., and also first aid instructions. Only 19s. 11d., from Bradville Ltd., Bradex House, Boston Parade, London, W.7.

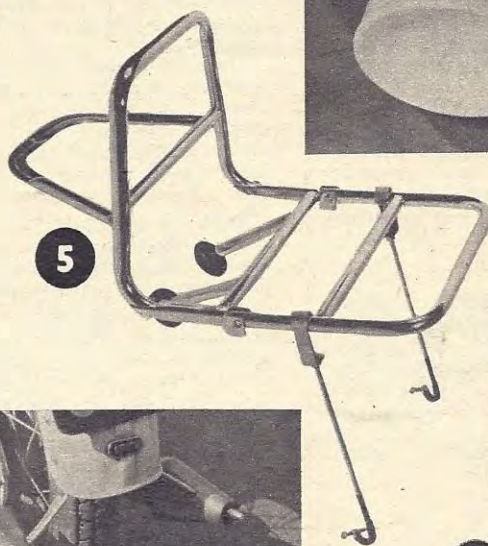
5 VESPA CARRIER recently introduced by Douglas can be fitted to the 160 c.c. G.S. without drilling. It comes in either fixed or folding type (shown here) and costs £3 15s. or £3 10s.

6 JOINTING COMPOUND Heldite jointing compound is ideal for using at joints on the cylinder head and base, exhaust pipes and timing covers. It is supplied to many large organisations, including some motorcycle manufacturers, because of its property of not hardening in use. Available at 6s. 9d. post free from the Held Glue and Compounds Co. Ltd., Brent Way, Brentford, Middx.

7 EXHAUST CONES are designed specially for the Ariel two-stroke models in order to keep down that oily mess at the rear of the machine. If you want to keep the rear of your Arrow clean, not to mention your girl's nylons, these cones are just the job. Named the C & L Target Cones, they cost 50s. a pair from C. & L. Developments Ltd., 47 Queens Road, Weybridge, Surrey.

8 WATERPROOF BOOTS Lotus Veldtschoen footwear hardly needs any introduction. Their window display of a boot completely submerged in water up to the top of the lace holes certainly proves the fact that their products are completely waterproof. Apart from the range of shoes there is also the boot which we show here, and this will certainly be of interest to motorcyclists who don't like overboots. Made in sizes 5 to 12 in different fittings. Guaranteed waterproof. 129s. 6d. from Lotus shops.

9 ANTI-DAZZLE VISOR by Charleson is a real safety aid to three-wheeler owners. You just clip it on to your rear-view mirror, and if a following vehicle dazzles you through the mirror, you flick the visor down. Price 5s., from dealers or Charleson Components Ltd., Osbourne House, Station Road, Radlett, Herts.



SHOP TALK

