



THE MORRIS EIGHT

A DIGEST OF
IMPORTANT
INFORMATION

In your own interests you are invited to read this booklet carefully before using the car. Only fifteen minutes of your time are required.





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General Data

Engine oil capacity	...	...	$\frac{1}{2}$ gallon
Gearbox oil capacity	...	...	$\frac{3}{4}$ pint
Back axle oil capacity	...	...	1 $\frac{1}{4}$ pints
Petrol tank capacity	...	...	5 $\frac{1}{2}$ gallons
Radiator and cylinder jackets capacity	...	...	15 $\frac{1}{2}$ pints
Sparking plug pattern	...	...	Champion L10 14 mm.
Sparking plug gap	...	...	.022 in.—.025 in.
Contact breaker gap	...	...	.016 in.—.012 in.
Tyre size	...	...	4.50 x 17
Tyre pressure	...	...	Front : 26—28 lb. per sq. in. Rear : 26—28 lb. per sq. in.
Wheel size	...	...	2.5 x 17
Track	...	...	3 ft. 9 in.
Wheelbase	...	...	7 ft. 6 in.
Tax	...	...	£6
Gear ratios	...	...	First ... 17.13 Second ... 9.729 Third ... 5.375 Reverse ... 22.84
Number of cylinders	...	...	4
Firing order	...	...	1, 3, 4, 2
Bore	...	...	57 mm.
Stroke	...	...	90 mm.
Cubic capacity	...	...	918 c.c.
Average weight of complete car	...	...	14 cwt. 1 qr. (according to type of body fitted)



THE MORRIS EIGHT

General

Whilst the car *Operation Manual* contains a wealth of useful information and *will repay careful study*, it is recognised that there are many motorists to-day who have neither the time nor the inclination to study the mechanism of their cars in detail. For all such this booklet has been prepared to place before the car user *the minimum amount* of information necessary to ensure reliability and longevity.

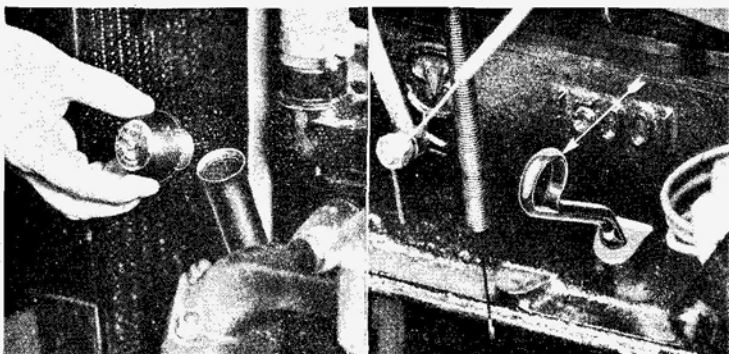
Oil

It is inadvisable to experiment with cheap oils and to mix different brands of oils. We recommend—for the engine, Morrisol "Sirrom" (Regd.) Brand for Summer and Winter; for the gearbox Morrisol "Sirrom" (Regd.) Brand Synchro Gear Oil; for the back axle Morrisol "Sirrom" (Regd.) Brand XS-Press Oil. For chassis lubrication, i.e. for use in the oilgun, Morrisol "Sirrom" (Regd.) Brand Transmission Oil is recommended.

We approve oils of similar grades by Shell, Adcol, Mobiloil, Castrol, Filtrate, Motorine, Sternol, Essolube.

It pays to drain off the oil from the engine sump every 1000—1500 miles, and replenish with new oil. Since this attention is so important, the wise motorist will keep a "log" to ensure that regular oil changing is not overlooked.

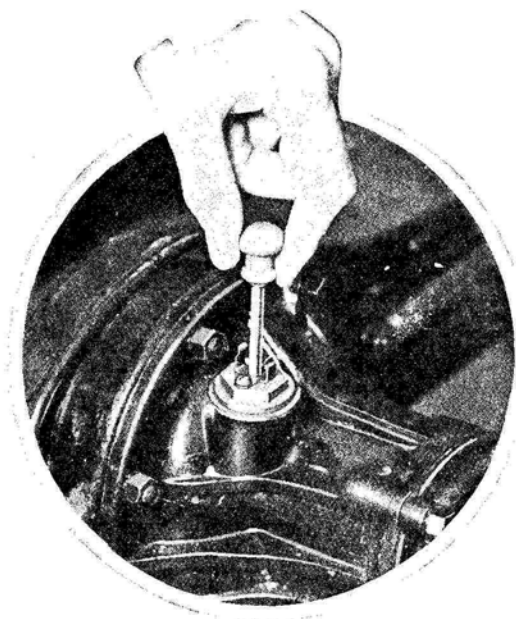
The amount of oil necessary to raise the level from "Low" to "High" (on the dipstick) is $2\frac{1}{2}$ pints. Half-way between these two marks is about the normal level to use. Overfilling may cause excessive use of oil and is therefore wasteful. Underfilling is fatal.



The oil filler and graduated dipper rod on the Morris Eight.



The rear end of the gearbox, showing the oil filler and some adjacent components.



The oil filling plug of the Morris Eight rear axle, which also serves to indicate the oil level by means of a dip-stick.

Petrol

The best results cannot be expected from inferior and cheap petrols. For easy starting, for free-acting valves, for absence of pinking, for sweet running and maximum m.p.g., No. 1 grade petrols are the cheapest in the long run.

Keep the Engine Warm

At all times keep your engine running as hot as possible. This applies particularly in the Winter. When the car is standing always protect the radiator by rug or by using a muff. Cold running is a prolific cause of cylinder wear and poor petrol consumption, and infinitely more harmful than occasional overheating.

Don't Warm-up Slowly

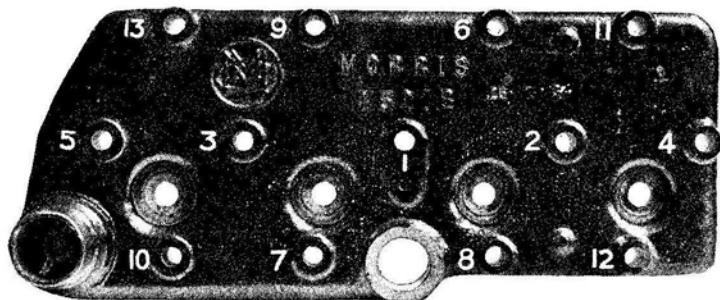
Never leave an engine "idling" to warm it up. It is far better to get straight into the car and drive off—with, of course, moderation in speed for the first few miles.

Importance of 500 miles' Adjustments and Oil Changing

Oil changing in all units on completion of the first 500 miles' running and the adjustments which accompany the "500 miles' Service" *are absolutely essential*, and should not be overlooked under any consideration. Any Morris Distributor or Dealer will do it for you. The vendor Dealer will do it free of charge under his contract with Morris Motors Limited, charging only for the cost of new oil.

Tighten Cylinder Head and Wheel Studs after first 250 miles

Cylinder head stud nuts and the wheel stud nuts should be tightened after the first 250 miles' running.



Indicating the sequence in which the cylinder head stud nuts should gradually be tightened.

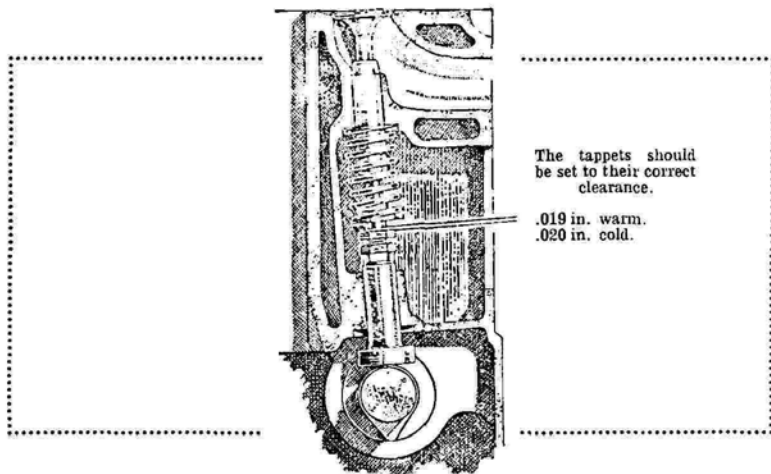
When to Decarbonise

Carbon formation, apart from a tendency to cause pinking, does not matter radically, but valve gas-tightness is important. If in doubt, try the compression of the cylinders by the starting handle. If all compressions are even and good, and the engine is performing satisfactorily, the period of running without decarbonisation may be

further extended. On the other hand, if compression is weak on one or more cylinders, attention is indicated, quite irrespective of mileage. Decarbonisation and valve-grinding under 10,000 miles are not usually necessary.

Tappet Clearance and Valve Condition

To ensure the maintenance of good valve condition, occasional attention to tappet clearance is usually all that is necessary. The correct clearance—on back of cam—is .019 in. Any Distributor will do this for 4s.



High Speed Driving

High road speeds are sometimes a convenience, but a car which is habitually driven to its maximum will not last as long as one which is treated with moderation. Tyres, brakes, springs, and indeed the whole fabric of the car, suffer out of all proportion to the time saved. Petrol and oil consumption, too, are considerably increased.

Carburettor Control (See page "To Obtain Maximum Engine Efficiency")

The carburettor mixture regulator or jet control is for use **only when starting up with a cold engine**. It will make for maximum economy if the "normal" or running position is regained as soon as possible.

Care of the Battery and How to Use the Charging Switch

The red coil light—when glowing—shows that the coil is drawing current from the battery, which is not being replaced by the dynamo. This is a further argument against prolonged "ticking over."

When the coil light glows at all speeds the dynamo is not charging the battery, and the reason should be investigated at once.

The battery is the heart of the electrical installation and compels respect when it is remembered that it supplies electrical energy to start the engine, to ignite the mixture in the engine cylinders, to afford light for night driving, to sound the horn, to work the trafficators, and to operate the petrol pump and the petrol gauge. And yet this long-suffering and very useful accessory is probably the most neglected unit on the car, although its requirements are simple enough. The battery should be inspected at least once per fortnight and replenished with distilled water (tap water must not be used), so that the plates are submerged by at least $\frac{1}{8}$ in. This is called "topping-up." In hot weather inspect once a week. Never allow a battery to remain discharged even if charging up from an outside source is necessary. Keep the battery terminals clean and smeared with vaseline to prevent corrosion.

Battery charge is maintained by the current generated in the dynamo, and the latter has three rates of charge. "Summer" charge (see lighting switch on instrument panel) is for use during the Summer months. In this position the dynamo gives about one-third of its output, which will ordinarily suffice when the lights are not often used. "Winter" charge gives about two-thirds of the dynamo output, because in the Winter more current is used for lighting, whilst a colder engine obviously requires more starting. Full charge is afforded automatically when the lights are switched on.

It is quite impossible for a car manufacturer to provide switch positions to cope with every set of circumstances under which a car may be used, and it is therefore necessary for the actual driver to use discretion. Generally speaking, batteries tend to be overcharged, and the results are damaged plates and blown lamp bulbs.

Two examples of the use of discretion will suffice :—

A car which is used for continuous running during daylight only, even in the Winter months, will not require the "Winter" charge output.

Conversely, a doctor's car, which probably makes a large number of starts during a day's visits, but still does not cover a big aggregate mileage, will probably require "Winter" charge even during the Summer.

Rapid evaporation of the electrolyte (the fluid in the battery) and a tendency to blow bulbs indicate a state of overcharging, while sluggish starter action and lights which "bob up" when the engine speed is increased, indicate a state of undercharge.

The Purpose of the Oil Pressure Gauge

The oil pressure gauge is provided for the sole purpose of demonstrating that oil is circulating to the bearings of the engine. If no pressure is shown, stop the car at once and have the cause ascertained.

The Petrol Gauge and "Miles Per Gallon"

The petrol gauge is provided as a convenient method of ascertaining the approximate contents of the petrol tank. It should not be used as a means of calculating the "miles per gallon" average. For a petrol consumption test it is necessary to run as far as possible on a carefully measured quantity of petrol, and a special "test tank" should be employed for the purpose.

Using the Self-starter

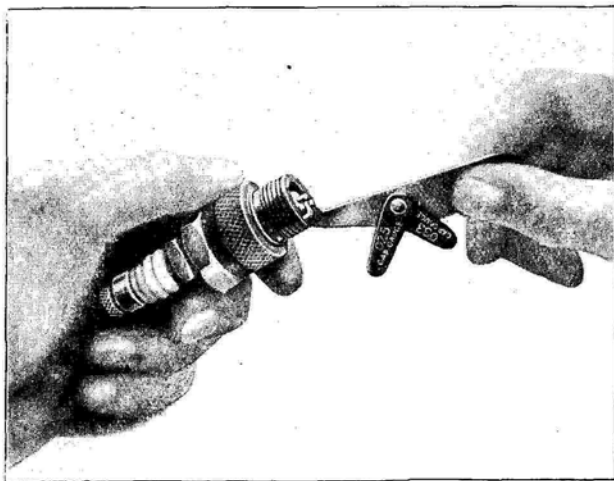
If an engine does not start reasonably easily it indicates that an adjustment, somewhere, is required. Never keep on "jabbing" at the self-starter, and always allow the engine to come to rest between each starter application. It will assist the starter if the clutch pedal is depressed when starting up—especially in cold weather.

Using the Starting Handle

If recourse has to be made to the use of the starting handle, no useful purpose is to be served by "swinging" an engine (i.e. turning the starting handle round and round). This only causes a great deal of physical exertion and is less effective than a sharp "pull-up" over compression. Easy starting is largely a question of becoming accustomed to a particular engine.

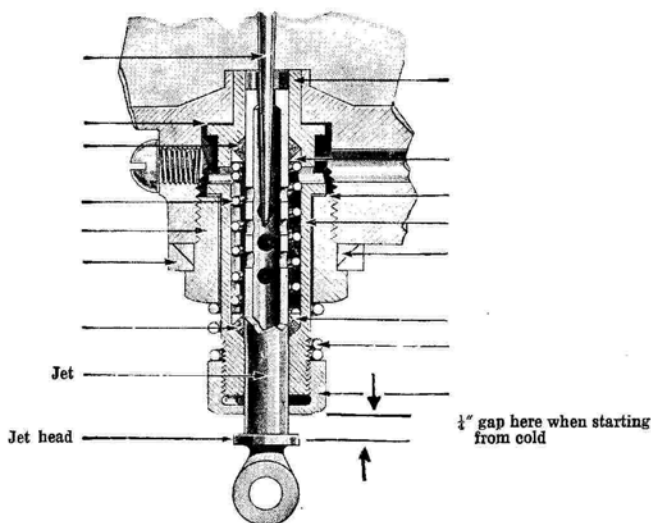
Difficult Starting

Difficult starting suggests wide plug gaps (the correct gap is .022 in.—.025 in.); incorrect opening of the contact breaker points (the correct opening is .010 in.—.012 in.); or a carburetter which is out of adjust-



Adjustments should be made only by the side wire, and the combined setting tool and gap gauge illustrated can be obtained from the Champion Sparking Plug Co. or your Morris Dealer for 4d.

ment. In the "rich" position, the carburetter jet head should move down at least $\frac{1}{4}$ in. The development of slackness and wear in the controls may gradually reduce this, and readjustment is then necessary.



Using the Synchromesh Gears

The synchromesh device incorporated in the top and second gears is not provided for the purpose of making "lightning" changes. Deliberate gear lever movement is necessary to ensure the best results. The synchromesh operates—when changing up—from first gear to second and from second to top. Changing down, it operates only when changing from top to second.

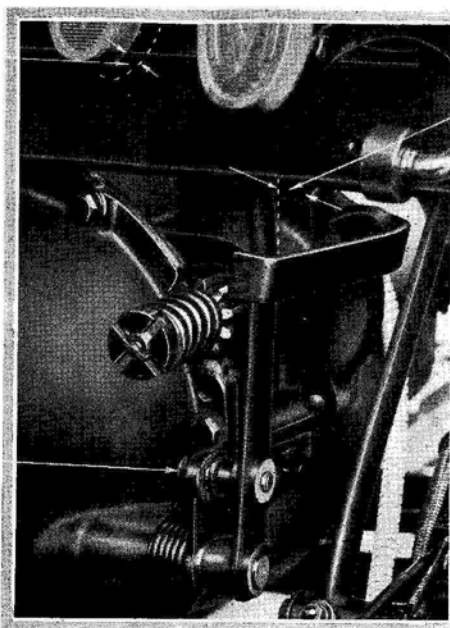
Descending Hills and Coasting

When descending steep hills, it is good practice to engage a lower gear, thus using the engine as a brake. But *do not switch off* the ignition. Coasting with the gear lever in neutral is the prerogative of the skilled driver only. Coasting with the gear still engaged, but with the clutch pedal depressed, is definitely harmful to the clutch mechanism.

The Importance of Correct Clutch Pedal Adjustment

Clutch pedal adjustment should be checked periodically. Too little travel will cause "clutch spin" and difficulty in engaging gears. Too much travel imposes an undue thrust on the clutch withdrawal bearing and will cause the engine to stop when attempting to start away from rest. The correct clearance between the clutch pedal and the pedal stop on the cylinder block is between $1\frac{1}{8}$ in. and $1\frac{1}{4}$ in., measured from the position in which resistance is first felt. This is quite a short job for a Morris Distributor or Dealer.

There should be approximately $\frac{1}{2}$ " backlash here before resistance is felt.



When the pedal is depressed so that resistance is felt there should be at least $1\frac{1}{2}$ " between the pedal arm and its stop.

Adjusting nut

The clutch pedal adjustment on the Morris Eight consists of a slotted lever with serrated face and locating washer.

Running-in a New Engine. Pistons the Vital Components

Moderation in speed when "running-in" a new car is repaid many times over by increased longevity. The pistons are the parts most susceptible to damage by over-speeding and overloading, and a piston "seizure" may cause untold damage.

Remember that pulling hard on top gear at—say—20 m.p.h. is just as harmful as indulging in high speeds. For the first thousand miles a car should be driven "lightly"—i.e. well within its powers—and full use should be made of the gearbox to avoid overstrain. "Running-in" is a gradual process and is not really completed before 3000—5000 miles have been covered.

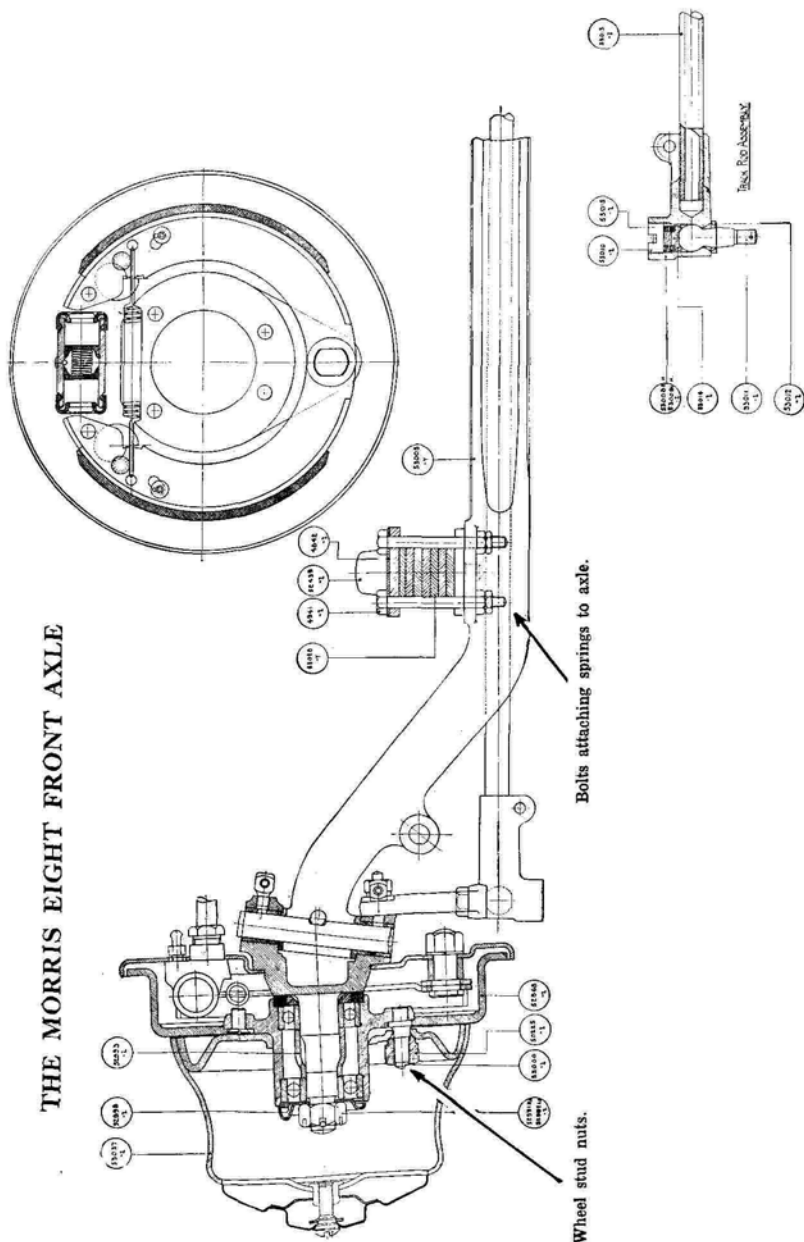
Important Nuts to Keep Tight

The most important nuts to keep tight are those by which the road springs are attached to the axles—particularly on the front axle—and the wheels to the hubs (wheel stud nuts). These should be checked regularly.

Keeping the Foot Brake in Correct Adjustment

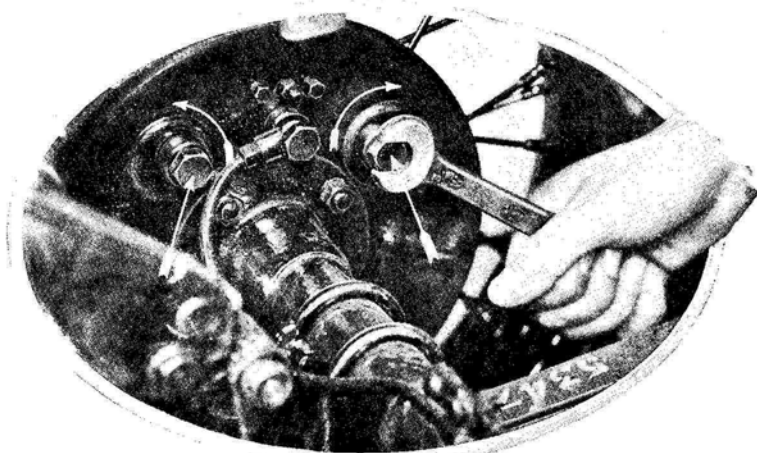
Undue travel of the foot brake pedal does not ordinarily indicate the necessity for "bleeding" the system. The brake shoes merely require adjustment to compensate for wear of the linings. Snail cams are provided for the purpose, and the operation is quickly and

THE MORRIS EIGHT FRONT AXLE

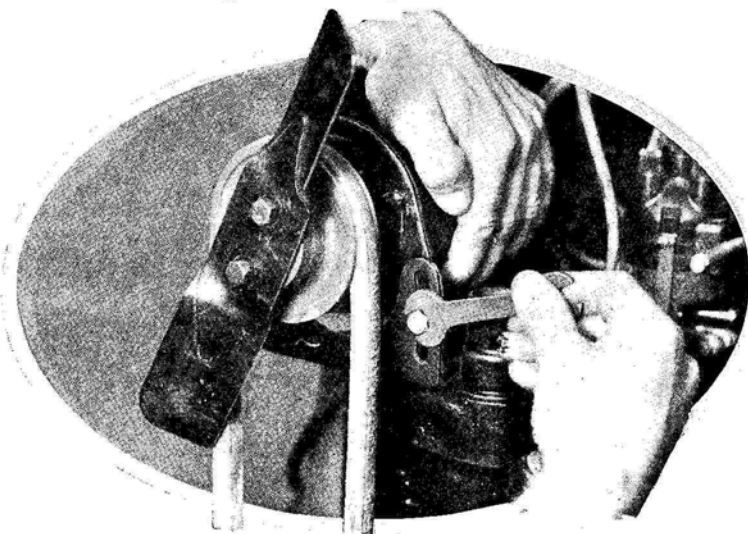


conveniently carried out by a Morris Distributor or Dealer for the sum of 3s. Try an "emergency" application occasionally to make sure that all is well.

The level of the brake fluid in the supply tank (immediately to the rear of the foot brake pedal) should be checked regularly and maintained at two-thirds full. Never permit the use of anything excepting genuine Lockheed fluid.



Here are shown the brake adjusting bolts, which when rotated away from the centre of the wheel, as indicated by the arrows, bring the shoes closer to the drum, and when rotated in the opposite direction bring the shoes farther from the drum.



The fan belt tension is adjusted by slackening the dynamo fixing nuts while supporting the dynamo with the other hand.

Tensioning the Dynamo and Fan Drive Belt

Check periodically the tension of the dynamo and fan drive belt. The dynamo is fitted in a special cradle which is made adjustable for the purpose of tensioning the belt correctly.

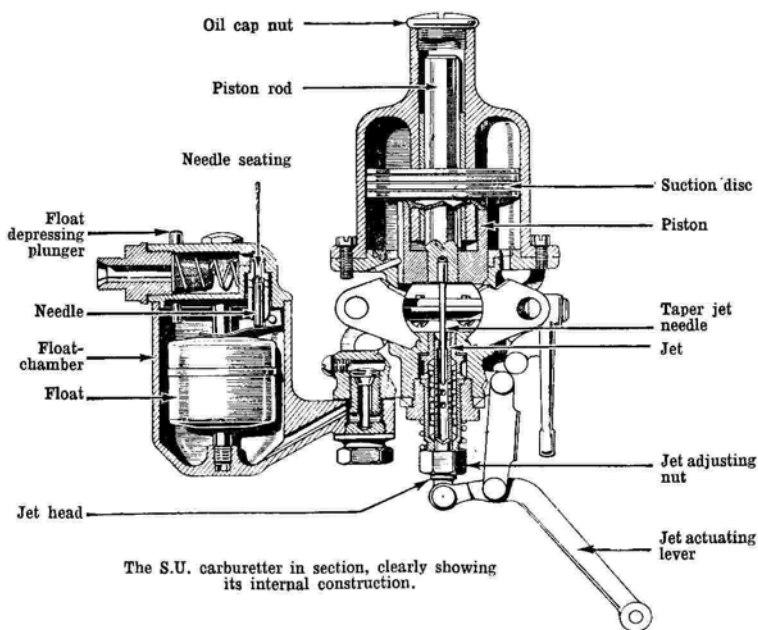
Front Tyre Wear

Watch the wear of the front tyres. "Lumpiness" indicates insufficient pressure (26—28 lb. is the correct inflation pressure). Abrasion and rapid tread wear indicate that the wheels are incorrectly aligned one to the other. They should "toe-in" $\frac{1}{8}$ in. at the front. This is a job for the Distributor or Dealer and costs 2s. 6d.

Carburettor (See paragraph "To Obtain Maximum Engine Efficiency")

The carburettor normally requires little attention and the sketch will serve to illustrate the three points which should be understood by the owner-driver :

- (a) Slow-running screw.
- (b) Freedom of piston operation.
- (c) Mixture regulator by means of jet adjusting nut.



Before Starting Up

Before every run make sure that the engine oil level is correct. The "dipper rod" will be found on the left-hand side of the engine.

Check the water level in the radiator. There is no need to keep this full to the brim, as room must be left for expansion.

Frost Protection

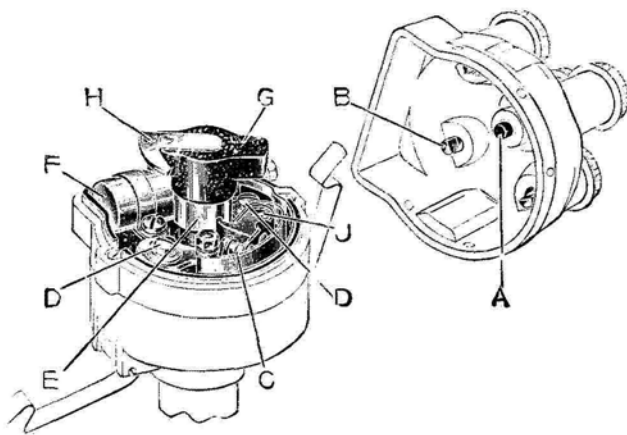
Through the Winter months, a reputable "anti-freeze" should be added to the cooling water as a safeguard against damage by frost. A cracked cylinder block or a burst radiator core are very expensive repairs.

The Shock Absorbers

The shock absorbers require little attention, but they will become inoperative if the fluid level is not maintained. If no leakages occur, a full charge of fluid will last for at least 10,000 miles. Check the level twice a year, and make sure that only genuine Armstrong Shock Absorber Fluid is used for replenishment purposes.

Electrical

The distributor main bearing requires two drops of thin oil every 1000 miles. The cam "E" (which operates the make and break) requires an occasional very light smear of engine oil on the working faces. The contact breaker pivot "J" requires a single drop of oil once every 5000 miles. After every 3000 miles withdraw the rotating arm "G" and add a few drops of thin oil to lubricate the cam bearing. Every 10,000 miles remove the contact breaker plate by releasing screws "D" and lubricate automatic advance mechanism with engine oil.



Distributor DK4A.

- A - Carbon brush.
- B - Electrodes.
- C - Contacts.
- D - Screws securing contact breaker plate.

- E - Rotating cam.
- F - Condenser.
- G - Rotating distributor arm.
- H - Distributor arm electrode.
- J - Contact breaker pivot.

Chassis Lubrication

At every important "bearing" point on the chassis a nipple is provided for purpose of lubrication (using the oilgun). Nevertheless some of these nipples are more important than others, but all of them repay attention at least once a week, or after every 350 miles. If the steering becomes stiff - and this may happen particularly when the roads are wet and muddy - additional attention is indicated.

The position of the various nipples is shown in the chart at the back of the *Instruction Manual*. Nipples commonly overlooked are those at the front end of the propeller shaft (accessible from underneath the car) and on the foot brake pedal boss (accessible from under the bonnet on the right-hand side). "Squeaks" which coincide roughly with undulations in road surface suggest more frequent attention to nipples situated fore and aft of the road springs, and, perhaps, a deficiency of lubrication between the spring leaves. The latter is quickly and conveniently eliminated by applying penetrating oil, which can be sprayed on at small cost by the average garage. Dry spring leaves are also a cause of harsh riding.

Wheel Bearing Lubrication

Wheel bearings require to be lubricated sparsely, as there is danger of any excess lubricant finding its way on to the brake-shoes. One stroke of the oilgun every 1000 miles is ample.

Bodywork Lubrication

Because the bodywork is not normally associated with any requirements in the way of lubrication, such items as sliding seat runners, sliding roof guide channels, door locks, door catches, door slam plates and door hinges are often entirely overlooked.

Occasional and careful attention to each one of these is amply repaid by a roof and seats which slide noiselessly, by the effortless closing of doors, and by the elimination of wear which will set up annoying squeaks and rattles.

Clutch Action

A large number of motorists who, in most other respects, drive well "punish" their cars every day by failing to appreciate the finer points of controlling the clutch. Acceleration through the various gears should be perfectly smooth. Any "jerkiness" after changing gear imposes a far greater strain on the clutch, transmission and tyres than will ever occur in normal circumstances.

To Obtain Maximum Engine Efficiency

1. Test compression by starting handle, and, if poor or uneven, grind-in valves, after ensuring that tappet clearances are adequate at .019 in.

2. Set sparking plug gap carefully to .022 in.—.025 in.

3. Set contact breaker points to open .010 in.—.012 in.

If there is any roughness on contacts, "flat" these off with contact file before attempting to adjust.

4. Make rocker arm work freely (see electrical section of manual).

5. Check automatic advance ignition governor for free working and lubricate (see electrical section of manual).



6. Remove carburetter dome, clean the inside of the dome and piston, and lubricate piston rod with thin machine oil, making sure that the piston moves up and down perfectly freely.

7. Check that the needle collar is exactly flush with the face of the steel spindle in the base of the piston.

8. Refit piston and dome, making sure again that the piston works freely after the two securing screws are tightened.

9. Check all induction manifold joints for possible air leaks, and tighten if necessary.

10. Check all petrol joints for possible leakage.

11. Start engine and warm up on the road.

12. When warm, open throttle slightly and adjust jet position for best results, using the jet adjustment nut. The slow-running throttle control screw should then be used to obtain slow running. When correctly set, it should be possible to open the throttle quickly without causing "spitting back," and on releasing the accelerator sharply, the engine should return to a smooth tick-over without a tendency either to stall or to hunt, with the mixture control at "weak."

13. Now carefully check the position of the jet adjusting nut. It should not be more than eight flats down from the fully weak position—that is, when screwed up to the maximum.

If the nut is more than eight flats down, this will restrict the movement of the jet when starting up from cold, and a difficult start will result. To remedy, the carburetter dome should be removed and the needle withdrawn a matter of $\frac{1}{64}$ in., and the process of adjusting the jet control nut repeated. Final adjustment of the mixture strength in this way is very important, and amply repays the care which is necessary, since it has an important bearing upon petrol consumption.

If necessary, adjust the jet control wire for full travel (at least $\frac{1}{4}$ in.), and make sure that when the control button is pushed in, the jet collar abuts firmly against the nut.

Test the car on the road and very carefully advance the ignition until there becomes quite a marked tendency to pink. Then retard the ignition slightly until the tendency to pink, under all normal driving conditions, disappears.

Give a final check over to the carburetter adjustment, and ascertain that after test and resetting the ignition, the engine, when warm, idles quite evenly.

IMPORTANT TO THE NEW OWNER

In order to obtain the Certificate of Guarantee operative with your car, it is essential that you should fill in and post the special post card which will be found with this Manual.

