

OWNERS MANUAL of the



TROJAN

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TROJAN LIMITED, TROJAN WORKS,  
PURLEY WAY, CROYDON, SURREY, ENGLAND.

Telephone: *MUNicipal 2499 (30 lines)*

## **Models**

<b>601</b>	<b>3 Wheeler</b>	<b>Right Hand Drive</b>
<b>602</b>	<b>4 -</b>	<b>- - -</b>
<b>603</b>	<b>3 -</b>	<b>Left Hand Drive</b>
<b>604</b>	<b>4 -</b>	<b>- - -</b>

# FOREWORD

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Having taken delivery of your new Trojan car, you are, naturally, looking forward to enjoyable and economic travel. Every effort has been made to ensure that the car is in first-class order, but like all machinery, it needs regular attention to keep it so. However, such maintenance is not extensive or arduous, and this book is designed to help you in giving it such attention.

The most important duty towards any machinery is to **keep** it lubricated, and this implies **regular** attention. Follow the instructions accurately and do not be tempted to try experiments—they are usually expensive. Certain parts will need adjustment as time goes on, but this will not be frequent if the car is properly used, and an occasional check

as recommended will advise when such adjustments should be made.

Paintwork and upholstery will suffer if allowed to remain very dirty, so regular washing and cleaning will pay handsome dividends. The occasional “birthday” is just not good enough.

When needed, you will find that your Trojan Dealer will be most helpful in all respects. He is equipped, both technically and mechanically, to be at your service, and we strongly recommend that you entrust your requirements to an Authorised Trojan Dealer.

We hope you will be well satisfied with your car, and we wish you many miles of happy and carefree motoring.

## BRIEF SPECIFICATION

### General

Chassis and body of unit construction, carried on three wheels, with drive on single rear-wheel and steering by the two front wheels. Entrance from front of vehicle through wide door. The sunshine-roof is hinged and can be opened as desired. Independent suspension of front wheels by coil springs and Hydraulic shock absorbers. Rear-wheel carried on swing-arm, with suspension by coil spring and hydraulic shock absorber.

### Model, Chassis and Engine Numbers

On plate on right-hand wheel arch (inside body).

### Dimension and Weights (Approx.).

Wheelbase—5ft. 9¼ins. (1760 m.m.)

Track (front)—4ft. 0¼ins. (1225 m.m.)

Overall width—4ft. 6ins. (1370 m.m.)

Overall length—8ft. 10ins. (2692 m.m.)

Height (Unladen)—4ft. 4ins. (1320 m.m.)

Ground clearance (Laden)—4ins. (102 m.m.)

approx.

Ground clearance (Unladen)—5ins. (127 m.m.)

approx.

Kerb weight—602lbs. (273 kg.)

Gross loaded weight—1047lbs. (475 kg.)

### Capacities

Petrol tank—3¼ gals. (14.9 litres) of which approx. ¼ gall. in reserve.

Engine oil—2½ pints (1.41 litres).

Swing arm (oil)—⅓ pint (0.21 litres).

### Engine Details

Single cylinder, overhead valve, four stroke. Air cooled with directed fan draught.

Piston displacement—198 c.c. (12.08 cu.ins.).

Bore—64 m.m. (2.520ins.).

Stroke—61.5 m.m. (2.421ins.)

Compression ratio—6.8 to 1. B.H.P. (gross) 10 h.p. at 5500 r.p.m.

Valve clearance—Inlet .006ins. (0.15 m.m.). Exhaust .008ins. (0.20 m.m.) (engine cold)

### Carburettor

Pallas needle type 22/17/P. Air filter-Micronic paper.

Main jet—85. Idling jet—25.  
or Bing Type 1/22/116.

Main jet 85. Idling jet—35.

### Clutch

Multi-plate type, running in oil.

## **BRIEF SPECIFICATIONS (contd.)**

### **Gear Box**

Four speeds and reverse. Quadrant change.

Ratios (overall)—1st gear 23.14 to 1. 2nd gear 12.07 to 1. 3rd gear 8.08 to 1. 4th gear 5.83 to 1. Reverse 20.37 to 1.

### **Final Drive**

Roller chain, running in oil. Ratio (overall)—5.83 to 1.

### **Steering Gear**

Rack and pinion type.

### **Brakes**

Foot brakes—internal expanding shoes on both front wheels, operated by hydraulic fluid. Hand brake—internal expanding shoes on rear wheel, mechanically operated.

### **Wheels**

Steel disc, four bolt fixing. Interchangeable.

### **Tyres**

Size—4.40 × 10. Tyre pressures—front 20 lbs. and rear 24 lbs.

### **Electrical**

12 volt, single pole wiring. Charging and starting by combined generator and starter unit, mounted on flywheel.

Ignition—battery and coil, with contact breaker operated by cam on engine crankshaft, giving a spark

on every revolution. Contact breaker gap—.014ins. (0.35 m.m.) to .018ins. (0.45 m.m.).

Coil—mounted on bulkhead, right-hand side of engine.

Battery—12 volt. Exide type 6 AF7.

Lighting—Single pole wiring. Headlamps on full beam indicated by light on dash. Dipped headlamp beams by twin filament bulbs. Side-lights by pilot bulbs in headlamps. Twin tail and stop lamps by twin filament bulbs. Combined direction indicator lights and parking lights on sides of body.

Lamp Bulbs: Headlamps 12v 35/35 w Bosch DC. Pilot Lights 12v 2w MCC. Parking Lights 12v 2w MCC. Indicators 12v 15w Festoon. Tail Lights 12v 3w Festoon. Number Plate Light 12v 5w SCC. Dash Lights 12v 2w Lug BA7S.

Fuses—Five-way fuse board, in recess on front of instrument panel. Protected by removable cover.

No 1 fuse (at top) controls indicator lights and horn.

No. 2 fuse controls left-hand side and tail lamps.

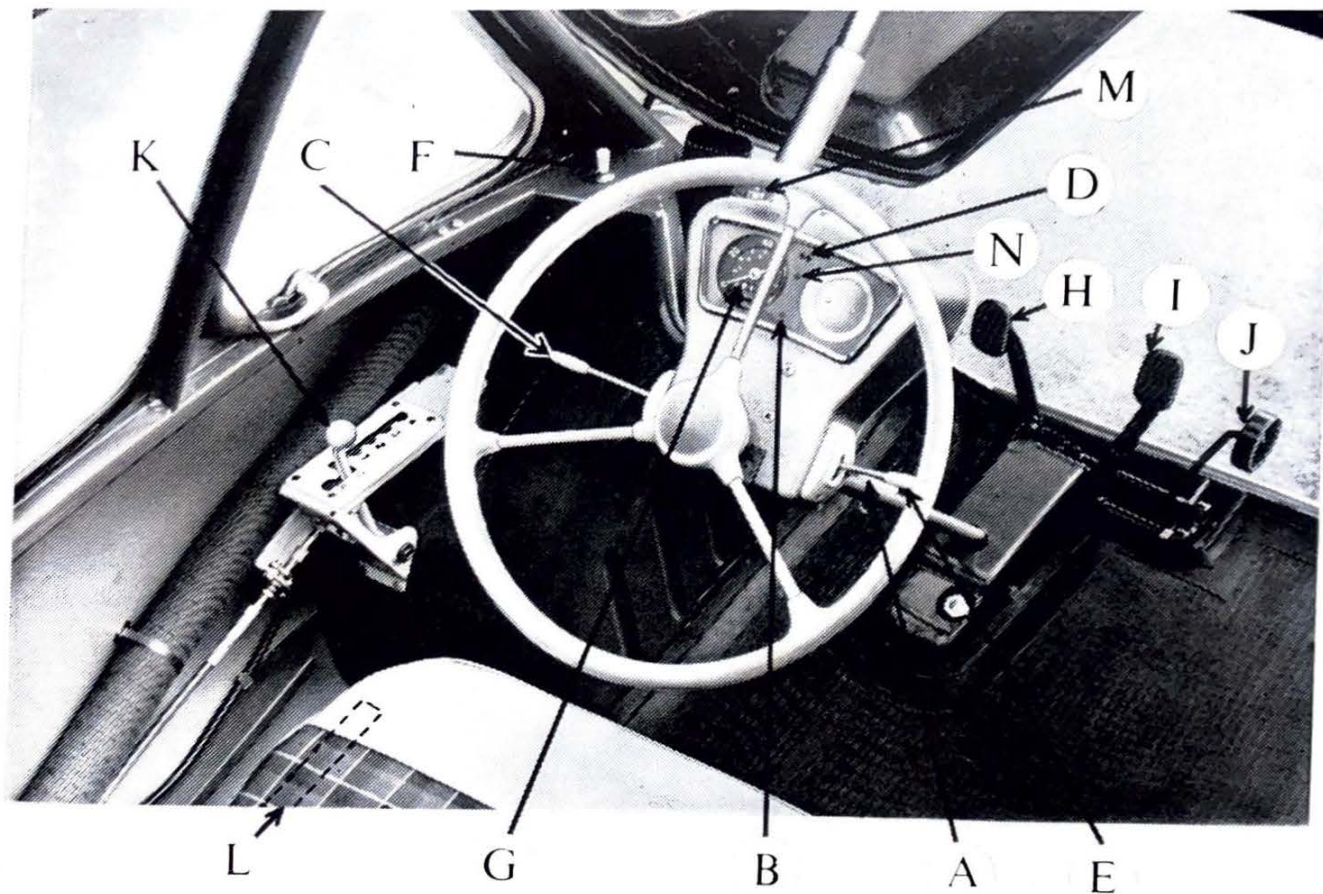
No. 3 fuse controls right-hand side and stop lamps.

No. 4 fuse controls headlamps (dipped beam).

No. 5 fuse controls headlamps (full beam).

Sparking Plug—Type, Champion L.7 or Lodge H.14.S. Gap—.020ins. (0.5 m.m.) to .024ins. (0.6 m.m.).

## CONTROLS AND INSTRUMENTS



### KEY

- A Combined Ignition and Starter Switch.
- B Ignition Warning Light.
- C Combined Direction-indicator and Horn-switch.
- D Direction-indicator Tell-tale Light.
- E Lighting Switch.
- F Parking Light Switch.
- G The Speedometer.
- H Clutch.
- I Foot Brake.
- J Accelerator Pedal.
- K Gear-box Control.
- L Hand Brake (at side of seat).
- M Panel light switch.
- N Main beam Warning light

## CONTROLS AND INSTRUMENTS

### **Combined Ignition and Starter Switch (A)**

The switch is located on the right-hand side of the instrument panel, just below the steering wheel. Operated by inserting the ignition key fully to switch on the ignition, and then by pressing it downwards to operate the starter.

### **Ignition Warning Light (B)**

A small red light, at the right of the speedometer, glows as soon as the ignition is switched on, and goes out when the dynamo cuts in to charge the battery.

### **Combined Direction-Indicator and Horn-Switch (C)**

This is operated by a lever on the left-hand side of the instrument panel below the steering wheel. Pushing the lever forward indicates a right turn and pulling it backwards a left turn. Raising the lever operates the horn.

### **Direction-Indicator Tell-Tale Light (D)**

A double-headed arrow at the top right of the speedometer shows a flashing light when the direction-indicator is used, and serves as a reminder to switch off the indicator when the turn is completed.

### **Lighting Switch (E)**

This is located on the right-hand side of the instrument panel below the steering wheel, and is operated by a lever. Pushed forward from the "off" position the lever operates the side and tail lamps; pulled back to the first notch beyond the "off" position gives full headlights, and a further rearward move provides the dipped beam of the headlamps. A small blue light, on the right of the speedometer, glows when the headlamps are on "main beam."

The instrument panel is illuminated whenever the lights are switched on, but the panel can be switched off, if desired, by a switch on the top of the instrument panel.

### **Parking Light Switch (F)**

The parking lights are controlled by a two-way switch mounted on the left-hand front end of the body, and can be used independently. Moving the switch to the left controls the left-hand parking light, while moving it to the right switches on the light on the right-hand side.

## CONTROLS AND INSTRUMENTS

### **Windscreen Wiper Switch**

A switch on the windscreen wiper body controls the operation of the wiper.

### **The Speedometer (G)**

This is located on the left-hand side of the instrument panel, and includes a distance recorder which repeats at 100,000 miles.

### **Clutch (H), Brake (I) and Accelerator Pedals (J)**

These are positioned in the conventional manner, and are mounted on a bracket ahead of the steering column. The left-hand pedal operates the clutch, the next one the foot-brake, while the one on the right is the accelerator pedal.

### **Gear-Box Control (K)**

The gear-change is operated by a lever mounted on a bracket on the left-hand side of the body and working in a quadrant. Progressive forward moves of the gear lever from neutral engage the four gears from first to fourth speeds. Similarly, when changing down, it is necessary to pass successively from top through third and second gear to reach first speed. Reverse gear is obtained by pulling the lever backwards and to the right from neutral.

### **The Hand-Brake Lever**

A lever, mounted on the floor on the left of the driver's seat, operates the brake on the rear wheel, and is retained in the "on" position by a rack and locking pawl. The pawl is released by a press button on top of the lever.

Important Note. Whenever the hand-brake is used, make certain that the lever is in the "full-off" position before moving the car.

### When the Car is New

Careful running-in when the car is new will pay handsome dividends. The whole car, and not only the engine, benefits by allowing the moving parts to settle together smoothly, and we recommend that the following maximum speeds should not be exceeded during the first 600 miles (1,000 km.).

*In 1st gear* : 12 miles (20 km.) per hour.

*In 2nd gear* : 18 miles (30 km.) per hour.

*In 3rd gear* : 31 miles (50 km.) per hour.

*In 4th gear* : 42 miles (70 km.) per hour.

**Note.** The above maximum speeds should not be consistently maintained, because varying road speeds helps the “settling in” process.

### Starting the Engine

1. Open the petrol tap to position marked “A” or “ON”—the normal running position. Position “R” or “RESERVE” draws from the reserve, and position “Z” or “OFF” is the closed position of the tap.
2. Ensure that the gear lever is in “neutral.”
3. If the engine is cold, depress the accelerator pedal three or four times. (This provides a rich start-

### HINTS ON DRIVING

ing mixture by operating the carburettor acceleration pump).

4. Switch on the ignition, and operate the starter switch. As the engine fires, open the throttle slightly to keep it running, but if the engine falters depress the accelerator pedal sharply to give an extra spurt of petrol.

**Note.** When the engine is warm, it is only necessary to depress the accelerator about a quarter of its travel before using the starter.

### Using the Gearbox

As soon as the engine is warm enough to run evenly, depress the clutch pedal and move the gear lever into 1st gear position. (If the gears do not engage easily, depress the clutch pedal and try again.) Release the hand-brake—making certain that it is “*right off*”—gently engage the clutch and open the throttle. Changing into the higher gears will be quite easy, but when changing down the clutch should be depressed and the throttle held open sufficiently to match the higher engine speed required with the lower gear. As a guide, the following are the best speeds to change gear.

## **HINTS ON DRIVING (contd.)**

*From 1st to 2nd gear:* about 12 m.p.h. (20 km/h.).

*From 2nd to 3rd gear:* about 22 m.p.h. (35 km/h.).

*From 3rd to 4th gear:* about 34 m.p.h. (55 km/h.).

### **Using the Brakes**

Harsh application of the brakes should always be avoided, as apart from the unnecessary wear of brake linings and tyres, danger from skidding on slippery surfaces is possible. Remember that the foot-brakes operate on the front wheels, and the hand-brake on the rear wheel, so for an emergency stop both should be applied, but this practice should only be used in a definite emergency.

When descending steep hills it is good driving to engage such a lower gear as is suitable, and thus reserve the brakes in their fullest efficiency for use if required.

### **General Remarks**

The good acceleration of the car, as well as its manœuvrability, will be found very useful especially in heavy traffic. But its good road-holding may tend to induce over-confidence, particularly if in early use the roads are dry and good. Therefore, it

is recommended that when wet or slippery roads are met, speed should be conservative until experience is gained under these conditions.

In some places, tram lines still exist, and as this is a three-wheel vehicle, care should be taken not to allow the rear wheel to be caught in them. Crossing the tracks should be at a wide angle, and when travelling along the lines keep the rear wheel clear of any rail.

Handle all the controls gently so that the car travels smoothly at all times, especially while changing gear. Although, as the driver, you may not notice a certain amount of jerky progress, your passengers will certainly be more comfortable and enjoy the journey if the driving is smooth and even.

## AFTER THE FIRST 300 MILES

The car should be returned to the Trojan Dealer from whom it was purchased. He will carry out the following service, free-of-charge for labour, but, of course, the cost of the lubricants used will be chargeable.

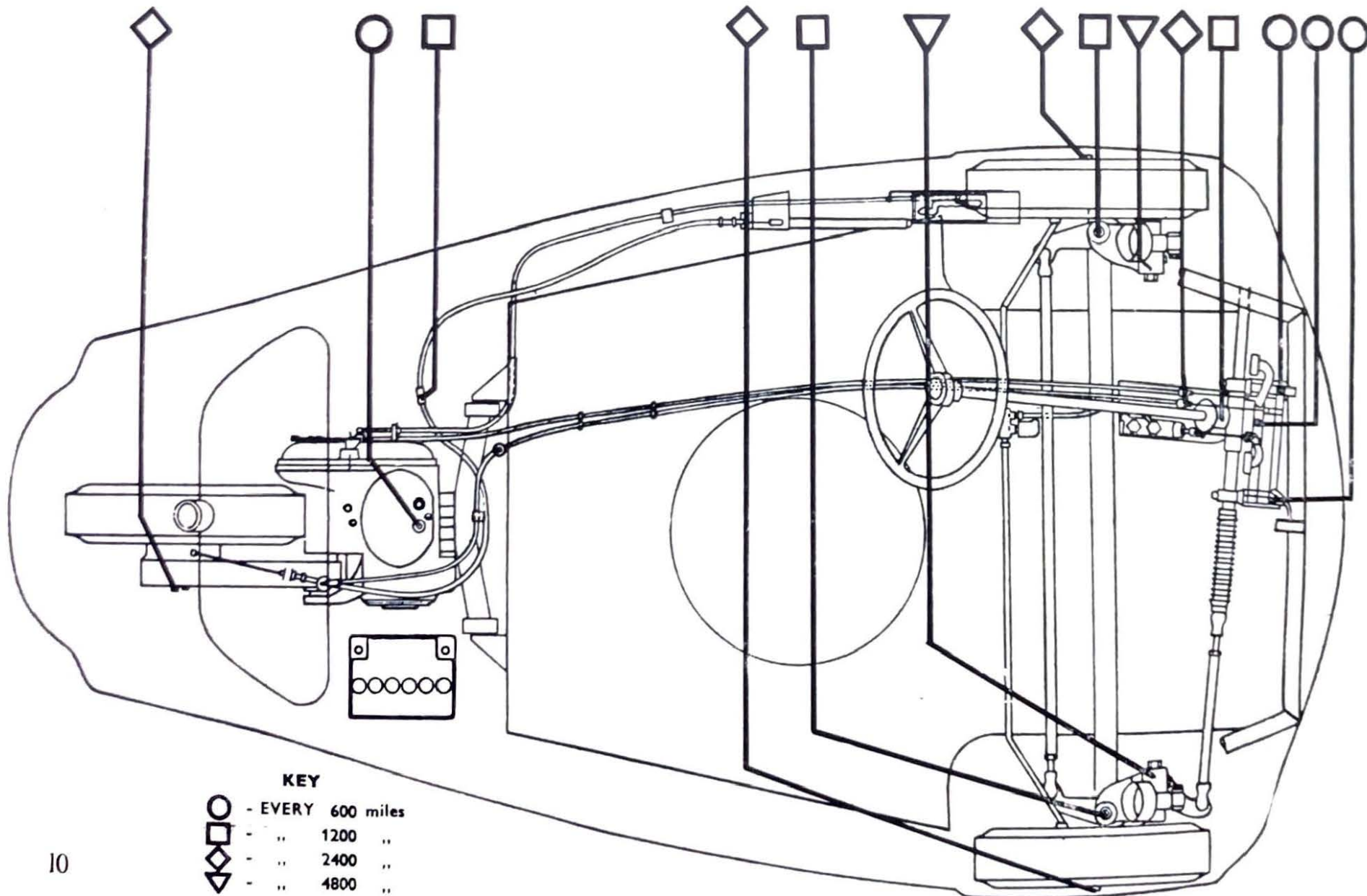
Check tyre pressures.	Check cylinder head nuts for tightness.
Check the battery.	Check valve tappet clearances.
Lubricate the car throughout.	Check foot and hand brakes for adjustment.
Change oil in engine.	Check all electrical circuits.
Change oil in swing-arm.	Check all nuts and bolts for tightness.
Check level of fluid in hydraulic master cylinder.	Check carburettor settings.
Check contact breaker points and ignition timing.	Road test the car.
Check spark plug.	

Your visit to the Dealer at this time will provide an opportunity of mentioning any point of criticism you may have. If it is something that is not quite right with the car he will correct it, but in any case your opinion will be forwarded to the Works for their information.

## Recommended Lubricants

	CASTROL	MOBIL	ESSO	B.P.	SHELL
Engine/ Gear Unit (Winter)	Castrol XL	Mobiloil Special	Essolube 30	Energol SAE 30	Shell X100.30
Engine/ Gear Unit (Summer)	Castrol XXL	Mobiloil Special	Essolube 40	Energol SAE 40	Shell X100.40
Swinging Arm	Castrol XL	Mobiloil Special	Essolube 30	Energol SAE 30	Shell X100.30
Cables, front wheel bearings, Axle Crank bearings, King Pins, Steering Gear	Castrol L.M.	Mobilgrease M.P.	Multipurpose grease H.	Energol L2	Retinex A.
Brake fluid	Castrol Girling Brake fluid Crimson, Lockheed clear. Mobil hydraulic fluid				
We do not recommend the use of additives to lubricants.					

# LUBRICATION CHART



**KEY**

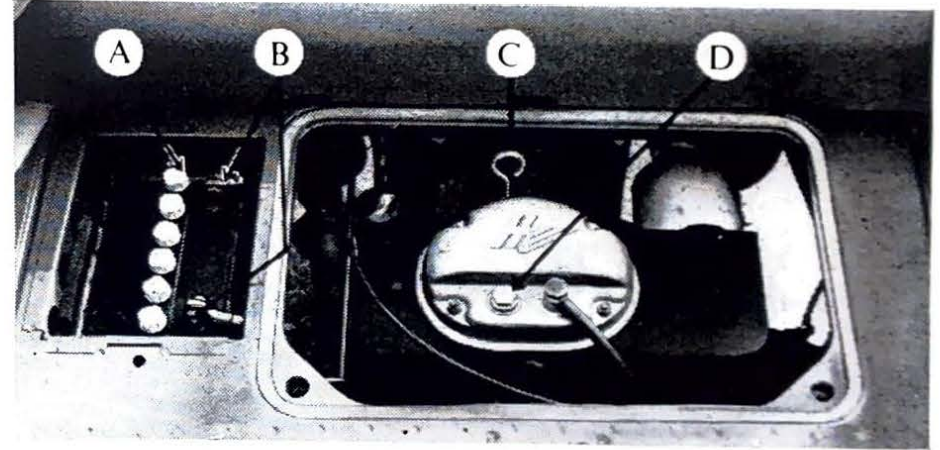
◇	- EVERY 600 miles
□	- " 1200 "
▽	- " 2400 "
○	- " 4800 "

## DAILY

### Check Engine Oil Level

The oil level is indicated on a dip-stick located at the rear of the engine, while a hexagon headed cap, on the cylinder head cover, can be removed to add oil as required. These are both reached when the rear seat is lifted and the large metal cover under it is removed. Lift out the dip-stick (c) and note the level of the oil on it, which, if the sump is correctly filled, will be found at the top mark on the dip-stick. However, if the oil shows between the top and bottom marks, add sufficient oil, **of the correct grade**, through the oil filler hole (d) to reach the top mark.

**Note.** The dip-stick has a spring-loaded clip to keep it firmly in place, and a positive push is required to seat it in place. Always press it down firmly before taking a reading of the oil level. It is advisable to check the oil level when the engine is cold, because then all the oil will have settled down into the sump and the dip-stick reading will be correct. Also, when adding oil, allow time for it to reach the sump before rechecking the dip-stick.



## WEEKLY

### Check Tyre Pressures

The pressure in each tyre—including the spare tyre—should be checked with a suitable gauge, and if necessary, more air added until the correct pressure is shown.

### **Check the Battery**

The battery is housed, under a removable cover, on the right-hand side of the car and under the rear seat. Remove the cover and unscrew the six plugs (A) on top of the battery and note the level of the electrolyte. This should **just cover the top of the plates**, but if the top edges of the plates are showing, **add distilled water** until they are covered. **Do not overfill, and add distilled water only; NEVER add acid.** Check that the two terminals (B) are tight and well covered with vaseline. Finally, wipe off any surplus liquid on top of the battery and leave it clean and dry.

### **EVERY 600 MILES**

#### **Lubrication**

With pressure grease-gun, inject suitable grease through nipples, one on each king-pin.

With oil-can and using engine-oil, lubricate the bearings on the pedals through the holes provided. The clevis pins and the exposed ends of the cables should be similarly lubricated. Also, the door hinges, the door latch and the rear cowl catches and hinges need a little oil.

**Note:** Do not over-oil; it is only the oil on the bearing surfaces that does any good, surplus oil only makes a mess.

### **Check Drive-Shaft Nut**

Remove the protecting cover on the left-hand side of the rear wheel and check the tightness of the drive-shaft nut. If not sure that it is tight, remove the cotter-pin and tighten the nut with a suitable box spanner. As the drive-shaft has two cotter-pin holes at 90 deg., the castle head nut will allow one-twelfth of a turn if that is all that is necessary and should be tightened to a tension of 120 ft. lbs.

### **Change Engine Oil**

Remove the drain plug at the bottom of the engine sump; if this is done when the engine is hot the oil will drain away properly. The drain plug is of the magnetic type to retain any metallic particles, and should be thoroughly cleaned before re-fitting. Replace the drain plug, and fill with the correct quantity of oil through the oil filler hole on the cylinder head cover. Allow time for the oil to settle and check the level in the sump by the dip-stick.

## EVERY 1,200 MILES

### Check Level in Hydraulic Master Cylinder

Remove the filler plug—just behind the steering column—and note the level of the fluid. It should only reach the bottom thread of the hole, and unless leakage occurs this level will be maintained. However, if the level is found to be low, the cause of the leakage should be found and corrected before extra fluid is added.

### Lubrication

With pressure grease-gun, lubricate hand-brake cable through nipple on cable casing.

With pressure grease-gun, inject grease into steering box through nipple on box.

### Check Spark-Plug Gap

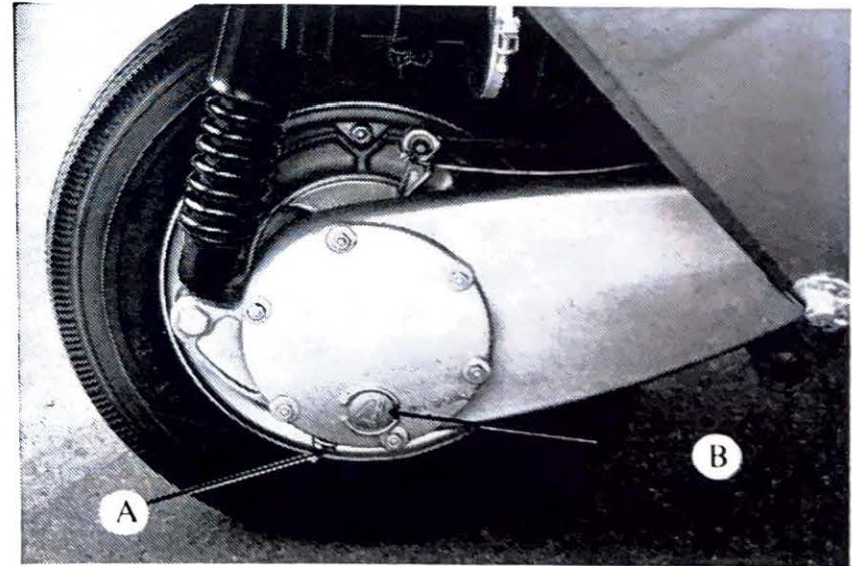
Remove spark-plug from cylinder head and clean thoroughly. Check that the gap between the points is .020in. to .024in. (0.5 to 0.6 m.m.), and if not correct, adjust the gap by setting the side electrode **only**. Any attempt to set over the central electrode is likely to crack the insulator and spoil the spark-plug

### Lubricate Front-Wheel Bearings

Remove the hub covers from the wheel centres and insert grease into hubs. Replace covers.

### Change Oil in Swinging-Arm

Drain oil from the swing-arm by removing the plug (A) at the bottom; oil will drain more freely if the unit is hot. Thoroughly clean the drain plug and re-



place. Remove the oil-level plug (B) on the right-hand side at rear of swing-arm—and refill with engine oil to the lower edge of the hole. Replace the level plug.

### **EVERY 2,400 MILES**

#### **Check Valve Clearances**

The engine must be cold if the valve clearances are to be correctly set, and this means that the whole of the engine, inside and out, must be cold. Therefore, it is advisable to do the check when the engine has been standing overnight. Slip the breather tube off the banjo connection on the cylinder head cover, and remove the cover. Remove the spark-plug and make sure the piston is at top dead centre on the compression stroke; this ensures that both valves are closed and both rocker arms free. With a .006in. (0.15 m.m.) feeler gauge check the gap between the rocker arm and the stem of the inlet valve. If the .006in. (0.15 m.m.) feeler passes freely, check with a .008in. (0.20 m.m.) feeler gauge, which should not go through the gap. When the gap is not correct, i.e., the .006in. (0.15 m.m.) feeler will not pass or the .008in. (0.20 m.m.) feeler goes through—adjust the gap by releasing the lock-nut on the rocker arm and turning the

tappet screw as required. When the gap is correct, re-tighten the lock-nut and make a final check with the .006in. (0.15 m.m.) and the .008in. (0.20 m.m.) feelers.

The exhaust valve clearance should then be dealt with in a similar manner, but using .008in. (0.20 m.m.) and .010in. (0.25 m.m.) feeler gauges to measure the gap.

**As the following operations require special equipment it is advisable to entrust the work to your Trojan Dealer.**

Check carbon brushes of Dynastart motor and lubricate felt. Clean cylinder fins.

### **EVERY 4,800 MILES**

#### **Fit New Air Filter Insert**

Lift tail cowl and secure with support stay. At the rear of the main air intake—on the right of the swing-arm—is a plate secured by a flat steel spring. Depress the spring, rotate and remove the plate and take out the filter insert from inside the pipe. Fit a new air filter insert—obtainable from your Trojan Dealer—making sure that the **open end** of the insert is towards the front of the car. Replace the locking plate and rotate it until it locks firmly.

## Check and Adjust Contact Breaker Points

To gain access to contact breaker remove air duct from right-hand side of engine casing, remove circular plate retained by three screws from centre of engine casing. Correct gap with points FULLY open—.014/.018in. (0.35/0.45 m.m.).

## AS AND WHEN NECESSARY

### Adjust Foot-Brakes for Wear

Jack up the left-hand front wheel until it is well clear of the ground. Remove the two nylon plugs in the brake anchor plate, and in each opening will be seen a serrated nut. With a screwdriver—through the upper hole—turn the serrated nut towards the wheel centre until the brake shoe makes the wheel difficult to turn. Then back-off the serrated nut until the brake drum is just free.

Then working through the lower hole, turn the other serrated nut away from the wheel centre until the brake is on as before, and back off until the brake drum is just free again. Replace the nylon plugs.

The brake on the right-hand wheel should then be adjusted in the same manner.

## Adjusting the Hand-Brake for Wear

The hand-brake is correctly set when the brake lever pulls on 4 to 6 notches to the “brake full on” position. When the hand-brake lever is nearing the end of the rack, the setting should be restored as follows:—

Remove the clevis-pin from the lever on the rear wheel brake anchor plate. Slacken the lock-nut on the clevis on the brake cable, and screw the clevis two or three threads further along the cable. Refit the clevis to the lever by inserting the clevis pin, and check that the hand-brake lever pulls on to 4 or 6 notches on the rack. When correct, tighten the lock-nut on the clevis and replace the cotter-pin.

## Adjusting the Carburettor

When the car is delivered, the carburettor is correctly set to provide the best performance allied to the utmost economy. Therefore, altering the settings to get more power will adversely affect the petrol consumption, while to alter the carburettor to save more fuel will result in running on too weak a mixture, with all the bad consequences that this will cause.

However, there are two adjustments which affect the idling speed of the engine, and if there is a tendency for the engine to “stall” proceed as follows:—

At the bottom of the carburettor and pointing upwards is a small screw—the slow running **stop** screw—while on the right-hand side of the carburettor, and in a horizontal position is the slow running **mixture** screw. These two screws must be adjusted in conjunction with each other, and while making such adjustments only small movements should be made. With the engine thoroughly warmed up, rotate the **stop** screw in a clockwise direction, increasing the idling speed—until the engine runs evenly and at a reasonable speed. Then, turn the **mixture** screw in one direction or the other until the maximum speed is obtained by such adjustment. If the idling speed is then too high, turn the stop screw in an anti-clockwise direction to obtain a satisfactory speed.

Again adjust the mixture screw as before, and continue with both adjustments until the idling speed will persist after depressing and releasing the accelerating pedal.

### Change Tyres Around

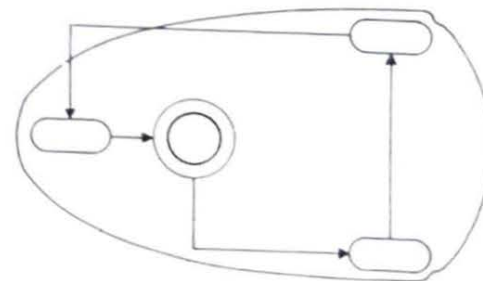
A periodic change of the position of the tyres on the

vehicle will equalise the wear on the tyres, and will tend to lengthen their life. The accompanying illustration will indicate the correct rotation of the tyres. Be careful to ensure that all the wheel nuts are properly tightened, and clean the final wheel before fitting it into the car as the spare.

**Note.** Jacking up the front wheels is achieved by placing the jack under the front axle at each side in turn. The jacking position for the rear wheel is under the engine casing, where holes are provided to receive a peg supplied with the jack. Insert the peg from the right-hand side of the car and engage the jack with it. It is advisable to scotch the front wheels when jacking up the rear.

While the wheels are off the car, it will be well worth while to remove all flints from the tyres, and so prevent them working through to provide future punctures.

THE WHEEL  
CHANGE  
ROTATION



### **Addendum**

For Trojan owners requiring a more comprehensive technical publication, the Trojan Workshop Manual is available from any Trojan Dealer or from Trojan Ltd., Accessories Dept., Trojan Works, Purley Way, Croydon, Surrey, at a cost of 21/-.

The Workshop Manual gives detailed instructions for the dismantling, repair and reassembly of the TROJAN 200 Car.