-Sup- T. RILEY

THE

AUSTIN

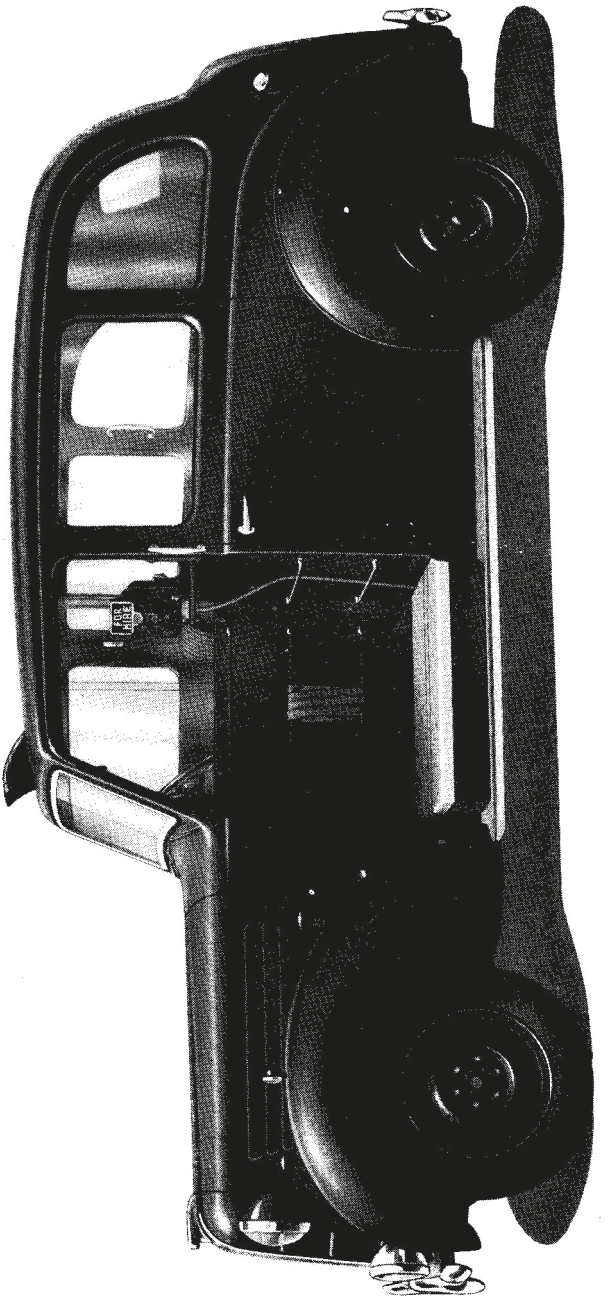
TAXI

AND

HIRE CAR

RUNNING AND MAINTENANCE INSTRUCTIONS

THE AUSTIN MOTOR CO. LTD.
LONGBRIDGE · BIRMINGHAM · ENGLAND



THE AUSTIN TAXI

INTRODUCTION

THIS handbook gives the running instructions necessary to ensure satisfactory operation of the Austin Taxi and Hire Car.

It does **not** include major maintenance attentions which should be entrusted to the local Austin dealer, who will use only genuine Austin parts as replacements.

The owner should bear in mind that the warranty does not cover any failure due to inadequate maintenance, nor is it extended or varied in any way by the recommendations in the following pages.

Accessories and equipment are subject to the warranties issued by their makers, a list of whom appears on page 32.

CONTENTS

SPECIFICATION

ENGINE

Four cylinders; bore 3⅛ in. (79.4 mm.); stroke 4⅜ in. (111.1 mm.); capacity 134.1 cu. in. (2,199 cc.); compression ratio 6.8 to 1; b.h.p. 68 at 3,800 r.p.m.; maximum torque 116 lb. ft. at 1,700 r.p.m.

Cylinders : Four cylinders cast integral with crankcase. Full length water jackets. Cast iron head carries the overhead valve gear.

Crankshaft : Forged steel and counter-balanced. Supported by three detachable "Thinwall" bearings.

Connecting Rods : Forged steel with detachable "Thinwall" bearings.

Pistons : Split skirt type in low expansion aluminium alloy with anodised finish. Two compression rings and one scraper ring.

Camshaft : Forged steel with cams formed with quietening ramps. Supported by three steel backed white metal liners and driven by duplex roller chain from crankshaft. The camshaft gear is fitted with a synthetic rubber chain tensioner ring.

Valves : Overhead and operated by tubular push rods and hollow dome-base tappets. The large inlet valves are of silicon chrome steel and the exhaust valves of special heat and corrosion resisting steel.

Lubrication : A pressure gear pump feeds oil to all main, big-end, camshaft and overhead valve rocker shaft bearings. Drillings in the connecting rod big-ends spray oil to the cylinder walls and the camshaft front bearing feeds a controlled supply of oil to the camshaft chain. A full-flow filter is incorporated in the lubrication circuit and the oil feed to the main and big-end bearings is of a special Austin design which ensures longer journal and crankpin life. Oil capacity 10 pints (5.6 litres), plus 2 pints (1.2 litres) for full-flow filter.

Cooling : Circulation is by a centrifugal type of pump mounted in the forward end of the cylinder block and driven by a belt from the crankshaft. Water is delivered to a gallery formed along the top right-hand face of the cylinder block and suitable holes from this gallery direct the water on to sparking plug bosses, valve seat and combustion chamber areas. A Smith's bellows type of thermostat aids rapid warming up and the fan-cooled radiator has a patent top tank expansion chamber to prevent the loss of coolant through expansion. System capacity 24 pints (13.6 litres)

Ignition : Coil with automatic advance and retard assisted by vacuum control.

Dynamo : 12 volt fan ventilated unit with compensated voltage control.

Starter : Lucas type with solenoid switch.

Fuel System : Fuel from a rear tank of 10 gallons (45 litres) capacity is fed by an AC mechanical pump to a Zenith downdraught carburetter fitted with an accelerating pump and an AC sphinx "L" type air cleaner. The fuel tank is equipped with a fireproof flooring, and the Burgess type exhaust silencer is of large capacity.

Mountings : The engine and gearbox unit is flexibly mounted front and rear by "V" type rubber mountings. Integral torque reaction stops are included.

CLUTCH

Borg and Beck dry single plate with spring cushion drive. Plate diameter 9 in. (22.86 cms.).

GEARBOX

Central control lever. Four speeds forward and reverse gear with synchromesh on 2nd, 3rd and top. Rear extension housing giving additional bearings for main shaft. Taximeter drive available. Oil capacity 3½ pints (1.96 litres).

TRANSMISSION

Open propeller shaft with Hardy-Spicer needle roller bearing universal joints.

REAR AXLE

The three-quarter floating rear axle has an underslung worm and wheel final drive. The worm is supported between a double row double purpose ball journal and a ball journal. Oil capacity 3 pints (1.68 litres).

OVERALL GEAR RATIOS

4.8, 6.65, 11.86 and 18.2 to 1, with 22.46 reverse.

ROAD SPEEDS AT 1,000 R.P.M.

Top, 16.45 m.p.h.; Third 11.85 m.p.h.; Second 6.66 m.p.h.; First 4.34 m.p.h.

STEERING

High efficiency Cam gear with a ratio of 20 to 1. The steering connections have special ball and socket joints built, with an extra wide lock, to conform with Scotland Yard requirements. Steering wheel has spring spokes, a cellulose acetate covering and a diameter of 17 inches (43.18 cms.). Turning circle within 25 ft. (11.63 m.) between curbs.

SUSPENSION

Front : Axle beam of "I" section with long semi-elliptic springs having zinc interleaves and rubber bushed bearings. Control by double-acting hydraulic shock absorbers and anti-roll torsion bar. **Rear :** long semi-elliptic springs controlled as for front suspension.

BRAKES

Girling mechanical front and rear with two leading shoe front brakes. The mechanical linkage is cross compensated on each axle, and spring mechanism increases braking pressure at the front when either the pedal or hand-brake is applied.

WHEELS AND TYRES

Disc type wheels with six exposed wheel nuts. 5.75 × 16 Dunlop super taxi tyres.

JACKING

Hand operated hydraulic jacks for raising both axles together or individually.

FRAME

Pressed steel with box section side and cross members, giving great torsional stiffness. Bumper bars front and rear.

ELECTRICAL

Two 6 volt batteries of 70 amp. hour capacity; separate head- and side-lamps; head-lamps have foot controlled dipping mechanism; rear- and stop-lamps with rear number plate illumination; twin blade windscreen wipers; direction indicators; provision for interior heating.

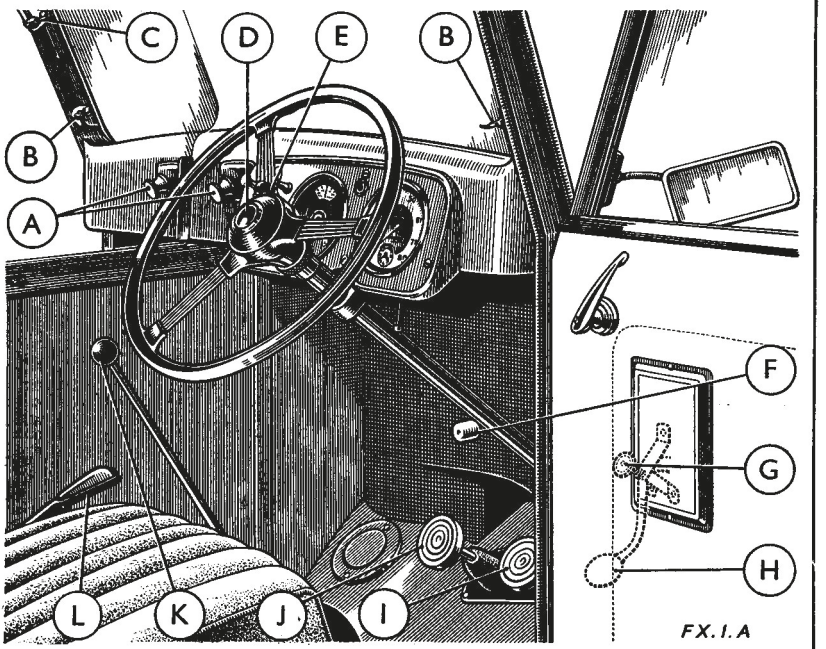
INSTRUMENTS

Oil, fuel and ammeter gauges; speedometer with trip and total readings; electric clock.

GENERAL DIMENSIONS

Wheelbase	9 ft. 2⅜ in. (2.81 m.)
Track (front and rear)	4 ft. 8 in. (14.22 m.)
Overall length	14 ft. 4 in. (43.7 m.)
Overall width	5 ft. 4 in. (16.25 m.)
Ground clearance (laden)	6 in. (15.2 cm.)
Dry weight of Taxicab	28 cwt.

INSTRUMENTS AND CONTROLS



A	Windscreen Wiper Controls.	**E**	Direction Indicator Control.	**I**	Brake Pedal.
B	Windscreen Securing Catch.	**F**	Dip Switch.	**J**	Clutch Pedal
C	Windscreen Opening Bracket	**G**	Accelerator Pedal Adjuster	**K**	Gear Lever.
D	Horn Button.	**H**	Accelerator Pedal.	**L**	Handbrake.

INSTRUMENTS

Speedometer : Registers the vehicle speed and total mileage. The trip figures at the top of the speedometer can be set to zero by pushing up the knob at the bottom of the speedometer and turning it to the left.

Oil Pressure Gauge : Indicates the oil pressure in the engine. It does not show the quantity of oil in the sump.

Ammeter : Indicates the flow of current into or out of the battery. With the automatic voltage control system only a trickle charge is shown when the battery is in a well charged condition.

Ignition Warning Lamp : Glows red when the ignition is switched "on" and fades out when the engine dynamo is charging the battery.

Fuel Gauge : Indicates the contents of the tank when the ignition switch is on. When the tank is being filled, switch off and stop the engine. Then switch on again and the needle will record the amount of fuel entering the tank.

Clock : To start the electric clock and set the hands, press in the knob at the bottom of the clock and rotate until engagement is felt. Should the clock not start, press in and release the knob until ticking is heard. The clock regulating screw is at the rear.

FOOT CONTROLS

Accelerator : The right-hand pedal.

Brake : The centre pedal which operates the brakes on all four wheels.

Clutch : The left-hand pedal. Do not rest your foot on this pedal when driving and do not hold the clutch out to " free wheel."

Dip Switch : The headlamp dipping switch dips the left-side headlamp beam and at the same time switches off the right headlamp. If the headlamps are on full, a touch of the foot on the switch alters the lights to the " dipped " position and they remain so until another touch returns them to the " ahead " position. Certain export models have twin-filament bulbs for double dipping.

HAND CONTROLS

Accelerator : Above the accelerator pedal is a small hand adjustment screw to enable the driver to adjust his engine slow running speed to suit prevailing traffic conditions.

Brake : Positioned alongside the driver's seat and operates all wheels.

Gear Lever : Should always be in neutral when starting the engine. Lift the lever before attempting to engage reverse gear.

Choke Control : For use when starting the engine from cold. Pull out to limit until the engine fires, and return it to the half way position for rapid warming up. The choke must be fully released at the earliest possible moment. To prevent an excessive supply of fuel reaching the cylinders the accelerator movement is automatically restricted when the choke control is operated.

Ignition Switch : To the left of the instruments. Turn clockwise to switch on. Do not leave switch " on " when the vehicle is stationary—the red warning lamp is a reminder. The ignition key may also be used for locking the driver's front door.

Lighting Switch : There are three positions :—

1. **Off.**
2. **S.** Side lamps and tail lamp.
3. **H.** All lamps.

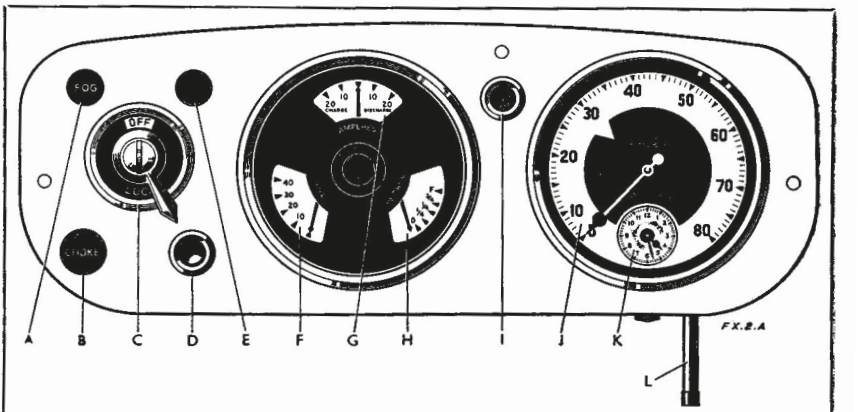
Fog Light : Controlled by a pull and push switch on the left of the instrument panel.

For Hire Light : The " For Hire " sign above the windscreen is switched on by a switch on the left of the driving seat. When the taximeter arm is lowered the " For Hire " sign is automatically switched off.

Master Lighting Switch: Alongside the " For Hire " sign switch.

Rear Compartment Ventilator: This is located on the top left-hand side of the passengers' partition and it can be operated by sliding the shutter.

Ash Trays : The rear door ash trays can be quickly emptied outside the vehicle by opening the door and raising and reversing the ash tray container.



A	Fog Light Switch.	**E**	Panel Light Switch.	**I**	Ignition Warning Light.
B	Choke Control.	**F**	Oil Gauge.	**J**	Speedometer.
C	Ignition and Lights Switch.	**G**	Ammeter.	**K**	Clock.
D	Starter Button.	**H**	Fuel Gauge.	**L**	Speedometer Trip Mileage Zero Control.

Door Windows : All door windows are spring loaded and can thus be moved easily to any desired position.

Starter Button : Press in to start, and release as soon as the engine fires. If the engine fails to start after a few revolutions, do not operate the starter again until the engine is stationary.

Direction Indicators : The indicators are controlled from the steering wheel. Normally after the vehicle has turned a corner they automatically return, but when only a slight turn has been made it may be necessary to return them by the switch to normal.

Screen Wipers : The windscreen wiper is started by pushing in the knob on the driver's side and turning it to the left. After this blade is in operation, the second blade may be started by pushing in its knob and turning to the right.

The second blade should be stopped first by pushing in its knob and turning to the left ; to stop the first blade, push in the knob and turn to the right. The wipers operate only when the ignition switch is " On."

Horn Button : Mounted at the centre of the steering wheel. Operates only when the ignition switch is "On."

Interior Lights : The two interior lights at the rear are controlled by a common switch mounted above the centre partition between the driver and the rear compartment. It is possible for the driver and passengers to operate the rear lights by this switch.

Screen Opening : The screen can be opened to the horizontal position and held in any of the intermediate openings by clamping screws. Two small clamping arms at the bottom secure the screen in the closed position.

Panel Lights : The concealed illumination for the instruments is controlled by a pull and push switch on the instrument panel.

Driver's Seat : Adjustable for height by withdrawing the forward locking bar beneath the seat cushion and then lifting or lowering the seat as required according to the adjustment range available. Secure the seat by inserting the locking bar which should never be oiled as this would damage the rubber bushes holding the bar in position.

Bonnet : To open the centre hinged bonnet sides press and turn the two external spring loaded catches. When closing the bonnet sides press down the catches until engagement is felt.

Hydraulic Jacks : The "Jackall" hydraulic jacks will lift either the front or the rear axle independently or both axles together. The control is under the bonnet on the left side. A lever is provided in the tool kit for fitting on the operating spindle.

Interior Heating : The engine cylinder head and water pump are designed for the fitting of an interior heating system if required.

Radiator Filler Cap : Screw type.

Crankcase Oil Filler Cap : Positioned on valve rocker cover, bayonet fitting, with anchor cable to prevent loss.

Fuel Filler Cap : On left rear mudwing. Bayonet fitting, with anchor cable to prevent loss.

Fuel Tap : A pull and push knob above the left-hand front wing can be pulled out to shut off the fuel supply from the tank to the pump.

Spare Wheel : Secured vertically in the rear luggage compartment. To open the rear panel use the square end key provided. A clamping bracket holds the spare wheel in position in the luggage compartment.

STARTING

(*a*) Before starting the engine check the oil level in the engine sump, by examining the dipstick located in the right-hand side of the crankcase. Also check that there is fuel in the tank and that the water in the engine cooling system is correctly maintained just below the level of the top of the radiator filler plug thread.

Note : Cars crated for overseas are without oil, fuel and water, and the batteries are empty and uncharged.

(*b*) See that the gear lever is in neutral. If the engine is cold pull out the choke control. In very cold weather, if the engine has not been kept warm overnight, it is advisable to turn the engine crankshaft with the starting

handle. This will partially free the engine bearings of oil drag and thereby ease the initial starter load.

Depressing the clutch pedal will also assist starting in cold weather by enabling the starter to turn the engine more quickly.

(*c*) Switch on the ignition and press the starter switch firmly. Release again if the engine fails to start promptly. Allow a short interval between each attempt to start, and if the engine does not fire in a reasonably short time look for the cause. Never press the starter switch unless the engine is stationary.

(*d*) When the car has been parked for some time, or if the carburetter float chamber has been dismantled for cleaning, fuel will have to be pumped to the carburetter before the engine can be started. In these circumstances, to avoid excessive strain on the starter the carburetter float chamber should be filled with fuel by operating the fuel pump hand priming lever by means of the looped wire control located on the left-hand side of the engine crankcase. Pull up the priming lever to operate. The pumping action should be distinctly felt until the carburetter bowl is full. If the pumping action cannot be felt, turn the engine crankshaft with the starting handle about one full turn, when the priming lever will be free to pump.

(*e*) As soon as the engine starts release the air choke to the half-way position for rapid warming-up. A special locking device restricts operation of the accelerator while the choke is out. Release the choke completely as soon as the engine will run without it.

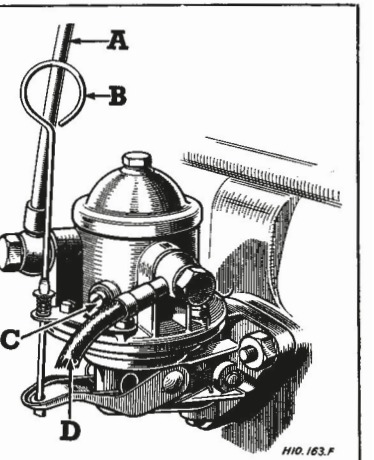
(*f*) Never race the engine until it is thoroughly warm, since time must be allowed for the oil to circulate properly. Blanking off the radiator will assist the engine to warm rapidly, but always uncover the radiator before driving off, and engage top gear as soon as possible.

DIFFICULT STARTING

Failure of the engine to start may be due to faults in the ignition or fuel systems which will necessitate expert servicing attention, but the driver should first ensure that the failure of the engine to start is not due to any of the following causes :—

(*a*) Ignition switched off.

(*b*) Fuel not reaching the carburetter. This can be quickly checked by slackening the fuel pipe union to the carburetter and operating the pump hand priming lever. Lack of fuel at the carburetter may be due to an empty fuel tank or to a choked fuel pump strainer gauze.



The Fuel Pump is mounted on the left-hand side of the Engine Crankcase.

A Pump to Carburetter Pipe.
B Hand Priming Lever.
C Pump Drain Plug.
D Fuel Pump Inlet Pipe.

(*c*) Using the carburetter choke in warm weather or excessive use of the choke in cold weather. The result in either case will be that the mixture will be too rich to fire. To remedy this, push in the choke, open the throttle wide and then operate the starter for a few revolutions. This will clear the cylinders of excess fuel and a fresh attempt to start can be made.

(*d*) Difficult starting in cold weather may be due to the driver's hand adjustment screw on the accelerator pedal being set to give a too wide throttle opening. On unscrewing this adjustment a better suction will obtain at the carburetter starting jets.

However, warm weather difficult starting, due to a too rich mixture can sometimes be overcome by opening the throttle on the driver's turn screw.

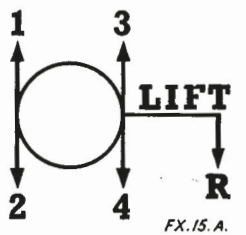
If the foregoing measures prove unsuccessful the difficult starting will probably be due to faulty ignition or carburation and as mentioned earlier the services of a skilled mechanic should be enlisted as soon as possible.

DRIVING

TO ensure that the engine bearings, pistons and cylinders are correctly run-in it is important that for the first 500 miles the following road speeds are not exceeded :—

Second, **16 m.p.h.** Third, **28 m.p.h.** Top, **40 m.p.h.**

(*a*) If the vehicle is fully laden or facing up an incline always start in first gear, which is engaged by declutching and moving the gear lever forward to the left.



The Gear Positions.

(*b*) If, when the clutch is let in, the car does not move, it will mean that there has been no proper engagement of the gear. Declutch again, when it will be found that the gear lever may be moved forward to give the correct engagement. Never use force, but always move the gear lever as far as it will go.

(*c*) When the vehicle is travelling at about 8 m.p.h. engage second gear. Engaging a higher gear is effected by declutching, moving the gear lever steadily through neutral to the next gear, and then letting in the clutch gently. The accelerator must be depressed gently as the clutch is let in to ensure the drive is taken up smoothly.

(*d*) Engage third gear at approximately 15 m.p.h.

(*e*) Engage top gear at approximately 25 m.p.h.

(*f*) When changing down a smoother gear change is made if the accelerator is kept depressed to provide the extra engine speed to suit the lower gear.

(*g*) Gear changing may be a little stiff with the new vehicle, but the moving parts will ease with use.

(*h*) Always change down early on a hill since the engine will not pick up speed if the vehicle has almost stopped. Third gear should be engaged before the car speed falls below 25 m.p.h. in top gear.

(*i*) Keep the foot off the clutch except in heavy traffic.

(*j*) Engage low gear when descending a steep hill and leave the clutch engaged. The engine will then serve as a brake. Remember that the braking efficiency of the vehicle decreases as the brakes heat, and for this reason it is inadvisable to coast down long winding hills.

(*k*) When braking the clutch should only be disengaged at the last moment prior to stopping.

The handbrake should only be used when parking the vehicle, negotiating traffic or when starting away on a hill.

(*l*) Always apply the footbrake progressively to secure the required retardation. Avoid fierce braking, which wastes fuel, wears out the tyres, and in wet or frosty weather may even send the vehicle into a skid.

(*m*) After the vehicle has been washed or driven through water, ensure that the brakes are dry by gently applying them for some distance. Keep the handbrake hard on while the vehicle is being washed.

DO NOT

Forget *to switch on the ignition when starting, or leave the ignition on when the engine is not running.*

Forget *to push in the choke when the engine has started and is thoroughly warm.*

Run *the vehicle with the radiator completely masked.*

Continue *to operate the starter if the engine will not fire.*

Leave *the vehicle in gear with the handbrake off.*

Coast *with the clutch pedal depressed.*

Fill *the radiator with cold water when the engine is hot.*

Fill *a cold, empty radiator with very hot water.*

Rest *the foot on the clutch pedal while driving.*

Run *the engine at high speeds or allow it to pull heavily during the first* 500 *miles.*

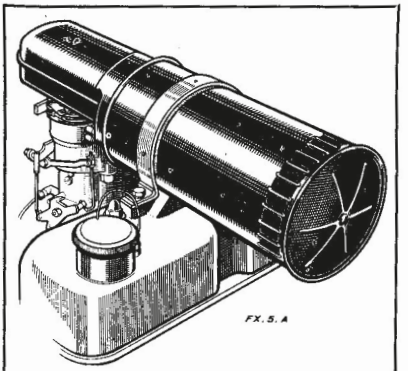
Run *the engine in a closed garage. The exhaust fumes are highly poisonous and if inhaled may produce fatal results.*

REGULAR ATTENTIONS

THE following is a convenient list of those maintenance attentions which are necessary to keep the vehicle in perfect running order. These instructions should be closely followed, whether the attentions are undertaken by the driver or by the local garage.

The attentions under the daily and weekly headings are based on the assumption that the maximum mileage per week does not exceed 500, but under more arduous conditions, as for instance very dusty or very muddy roads, long distances at high speeds or with heavy loads, it will be advisable to attend to chassis lubrication more frequently.

During the first 1,000 miles, Austin Dealers are under agreement to give " After Sales Service," and a list of those maintenance attentions covered by this service are listed on page 31.



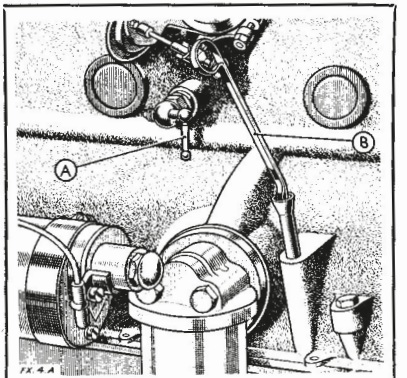
The Engine Oil Filler Cap and Carburetter Air Cleaner

DAILY

Engine : Check the level of oil in the sump and top-up if necessary to the full mark on the dipstick. Do not over-fill. The oil filler is on the valve rocker cover and the dipstick is on the right-hand side of the engine crankcase. After adding the oil allow a few seconds to elapse for the oil to reach the sump from the valve rocker cover before checking the level.

Radiator : Check the level of water in the radiator and top up if necessary. Fill to just below the top of the filler plug thread when the engine is cold.

Fuel Tank : Check the quantity of fuel in the tank and add upper cylinder lubricant when necessary. (See page 34.)



A The Cylinder Block Drain Tap.
B The Engine Dip Stick.

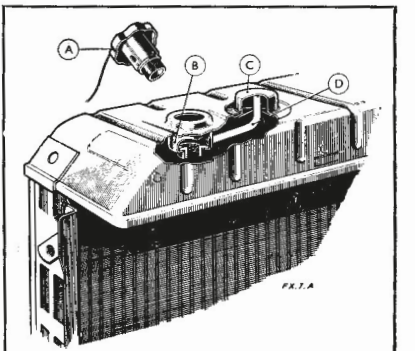
WEEKLY

OIL GUN ATTENTIONS

Swivel Axles : Use the oil gun on the two nipples on each swivel. This is best done with the axle jacked up as the oil is then able to penetrate to the thrust side of the bearing. (4 nipples.)

Steering Connections : Use the oil gun on the steering cross tube nipples and the steering side rod nipples. (4 nipples.)

Wheels and Tyres : Check the tightness of wheel nuts and also tyre pressures, including the spare,



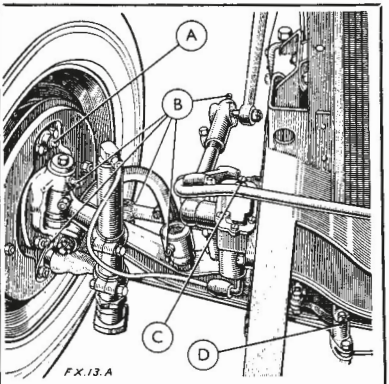
A Radiator Filler Cap.
B Radiator Filler Plug.
C Top Tank Expansion Chamber.
D Overflow Pipe.

using a tyre gauge, and inflate if necessary. See that all valves are fitted with valve caps. Inspect the tyres for injury and remove any flints or nails from the treads. Ensure that there is no oil or grease on the tyre, since these substances are harmful to rubber.

The recommended pressures are :—

Tyre Size	Front and Rear
5.75—16	28

A tyre that loses more than three to four pounds per square inch in a week should be suspected of a puncture, but first make sure that the valve is not leaking.

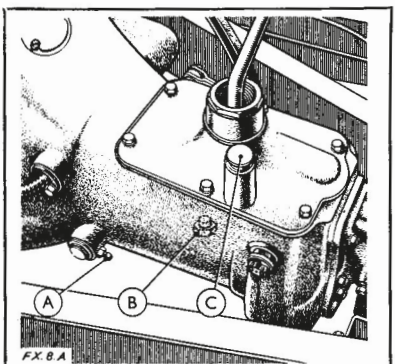


A Front Brake Adjuster
B Swivel Pin and Steering Connecter Nipples.
C Front Shock Absorber Filler Plug.
D Overflow Pipe.

FIRST 500 AND 2,000 MILES

OIL CHANGING ★

Engine : On new and reconditioned engines the sump and full-flow oil filter should be drained and refilled with new oil after the first 500 and 2,000 miles. There is one drain plug on the sump and one near the base of the oil filter reservoir. The capacity of the engine lubrication system is 10 pints (5.6 litres) plus 2 pints (1.13 litres) for full-flow Tecalemit filter.



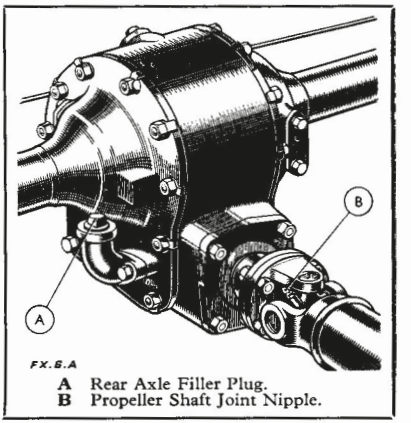
A Clutch Cross Shaft Nipple.
B Gearbox Drain Plug.
C Gearbox Dipstick.

Gearbox : Drain the gearbox and refill with new oil to the level of the dipstick after the first 2,000 miles. The dipstick and oil filler are combined and access to them is gained by lifting the rubber cap on the left-hand side of the gearbox in the driver's compartment. The capacity of the gearbox is 3½ pints (1.96 litres).

Rear Axle : Drain the rear axle and refill with new oil to the level of the combined oil filler and level plug, after the first 2,000 miles. The axle oil capacity is 3 pints (1.68 litres).

EXAMINE

Cylinder Head Nuts : With a new engine, the cylinder head nuts should be tested and tightened, if necessary, after the first 500 and 2,000 miles of running. Always check the centre cylinder head nuts first and work gradually to the outside, tightening each nut a little at a time. This ensures that the pressure on the cylinder head joint is equalised.



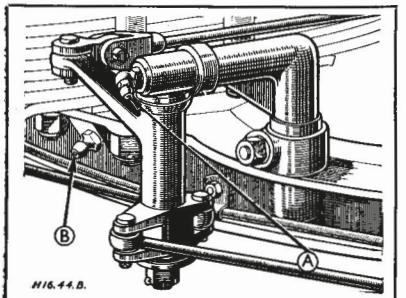
A Rear Axle Filler Plug.
B Propeller Shaft Joint Nipple.

EVERY 2,000 MILES OR MONTHLY

OIL CHANGING

Engine : Drain the engine sump oil and the oil in the Tecalemit full-flow filter and fill the engine with new recommended oil. The old sump oil should be drained after a run, when it

** Draining the oil is best done after a run, when the oil is warm and able to flow freely. Always take care to prevent any dirt entering the unit when the filler plug is removed, and when refilling, use recommended lubricants as listed on page* 34.



A Brake Balance Lever Nipple.
B Front Spring Leaf Nipple.

is warm and able to flow easily, thus carrying away any impurities.

OIL LEVELS

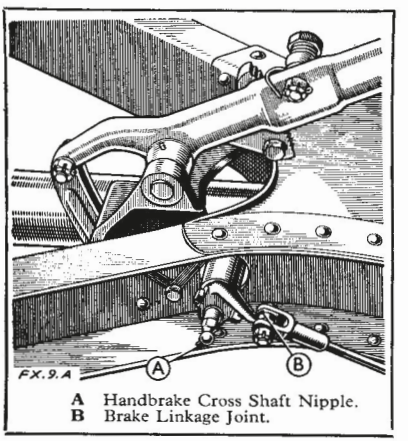
Gearbox : Check the level of oil in the gearbox by removing the dipstick, and top-up if necessary.

Rear Axle : Remove the combined filler and level plug on the rear axle and check the oil level. Top-up if necessary with recommended oil.

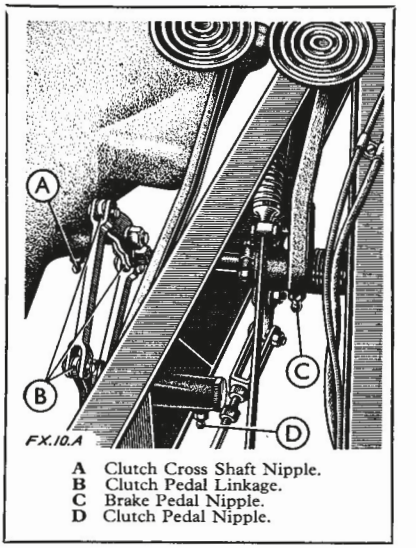
OIL CAN ATTENTIONS

Brake Rod Linkages : The various felt washers on the joints in the hand and pedal brake linkage should be given a few drops of oil from the oil can.

Clutch Pedal Linkages : The felt washers on the joints of the compensating mechanism between the clutch pedal and the clutch operating cross shaft should be given a few drops of oil with the can (4 *joints*).



A Handbrake Cross Shaft Nipple.
B Brake Linkage Joint.



A Clutch Cross Shaft Nipple.
B Clutch Pedal Linkage.
C Brake Pedal Nipple.
D Clutch Pedal Nipple.

Carburetter Throttle Control : Apply a little oil to the various ball joints and pivots in the throttle linkage between the accelerator pedal and the carburetter.

Steering Column : Lubricate the bearing at the top of the steering column, by adding a few drops of oil through the lower oil hole in the steering wheel hub. The upper hole in the wheel hub is for drainage purposes only.

OIL GUN ATTENTIONS

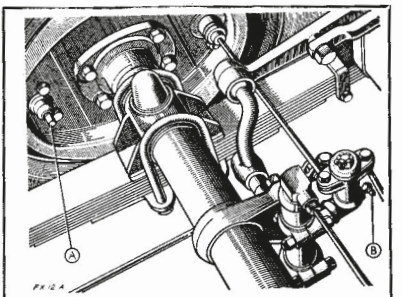
Propeller Shaft Sliding Spline : Oil the nipple on the propeller shaft which feeds the sliding spline joint.

Brake Pedal and Balance Levers : Oil the nipples on the front and rear axle brake balance levers, the nipple which lubricates the brake pedal cross shaft and the nipple which lubricates the handbrake lever pivot.

Clutch Pedal : Oil the nipple on the clutch pedal cross shaft.

EXAMINE

Brakes : Check the efficiency of the



A Rear Brake Adjuster.
B Rear Brake Balance Lever Nipple.

front and rear brakes and adjust if necessary as described on page 25.

Batteries : Ascertain the state of charge of the battery electrolyte with a hydrometer. Specific gravity readings are as follows :—

Battery fully charged	1.285 to 1.300
Battery half charged	approx. 1.210
Battery discharged	1.150

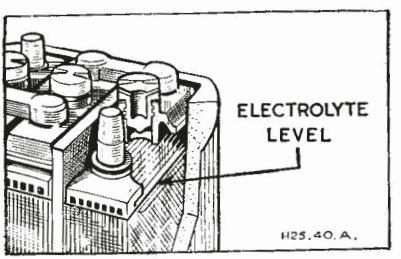
These figures are correct for an electrolyte temperature of 60° F.

Access to the two six volt batteries is obtained by lifting the driving seat cushion.

After taking specific gravity readings, check that the electrolyte in the cells is just level with the top of the plate separators. Top-up as required with a few drops of distilled water. Never use tap water, which may contain impurities detrimental to the battery.

The batteries must never be left in a discharged condition. If the vehicle is to be out of use for any length of time the batteries should be removed and then charged about once a fortnight.

Hydraulic Jacking System. Inspect the reservoir which is under the bonnet on the left side of the vehicle and, if necessary, top-up with " Red " Jackall Fluid. It is highly important that dirt is prevented from entering the tank during this operation.



Operate the jacks occasionally to ensure that they are maintained in a working condition. While the vehicle is jacked up check for leaks from any of the hydraulic pipe unions. When releasing the jacks, lower the vehicle gently to the ground by careful operation of the release valve. Finally make certain that the control unit is turned to the " All " position and that the release valve is fully open. This will ensure that all the jacks are fully returned to the closed position. (See page 26 for operating instructions.)

EVERY 3,000 MILES

CLEAN

Oil Bath Air Cleaner : On certain export models an oil bath type of air cleaner is fitted and this should be inspected, cleaned and filled with clean engine oil. Lift off the top cover and remove the filter assembly which should be thoroughly washed in paraffin and allowed to drain. Withdraw the oil container, remove accumulated deposits of sludge, rinse in paraffin and refill with clean oil to the level indicated on the container. Replace the filter element but do not re-oil, as this is automatically done when the engine is started. On assembling always ensure that the cork gaskets are in perfect condition, and renew them if they show any signs of damage or wear.

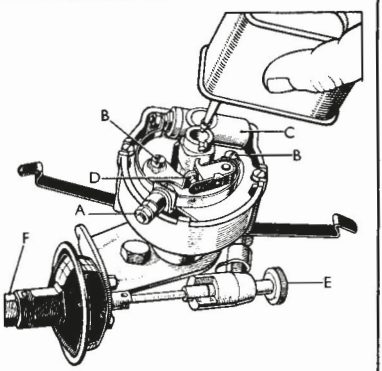
If the car is operating in conditions of heavily dust laden atmosphere the air cleaner should be inspected more frequently.

OIL CAN ATTENTIONS

Distributor Drive Shaft and Cam Bearings : Remove the distributor cover and lift the rotor arm off the top of the distributor spindle. Add a few drops of thin machine oil round the screw exposed to view in the distributor spindle, but do not remove this screw. Take care to refit the rotor arm correctly by locating it in its keyway and pushing it as far down the shaft as is possible.

Automatic Timing Control : Carefully add a few drops of thin engine oil through the hole in the contact breaker base through which the cam passes.

Distributor Cam : Apply a trace of clean engine oil to the distributor cam.



A Low Tension Terminal.
B Contact Breaker Point Securing Screw.
C Condenser.
D Contact Breaker Points.
E Knurled Knob for Micrometer Adjustment.
F Vacuum Ignition Pipe.

EVERY 5,000 MILES

OIL CHANGING

Gearbox : Drain the oil in the gearbox and fill with new recommended oil to the level shown by the dipstick.

Rear Axle : Drain the oil in the axle and fill with new recommended oil to the level indicated by the combined filler and level plug.

OIL LEVELS

Steering : Remove the filler plug on the steering box and top-up if necessary to just below the filler plug opening with recommended oil. To avoid the possibility of air locks in the steering box giving a false oil level, the vehicle should be jacked and the steering turned from lock to lock before final topping-up.

OIL CAN ATTENTIONS

Speedometer Drive Cable : The inner member of the speedometer drive should be lubricated by smearing or dipping it in clean engine oil. This drive cable is easily removed by disconnecting the cable casing at the speedometer end and pulling the inner drive member clear.

To re-assemble, thread the cable with a twisting movement into the casing, since this will help the cable to engage easily with its union at the gearbox end. When this engagement is felt the cable can be pushed home so that the square end stands out approximately ⅜ inch from the casing.

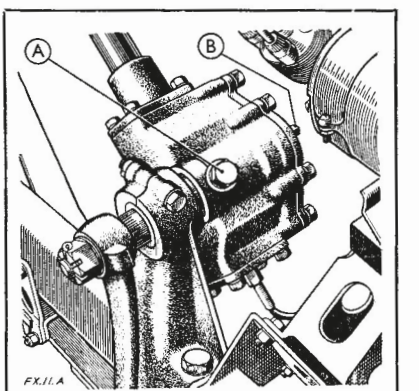
Direction Indicators : Apply a drop of thin machine oil to the catch pin between the direction indicator arm and the operating mechanism, and to the felt lubricating pad at the top of the arm.

To gain access to the operating mechanism switch on the indicator, hold it in the out position and then switch off. To lubricate the felt pad it will first be necessary to withdraw the screw on the underside of the direction indicator arm and slide off the metal cover. When replacing the cover slide it on in an upwards direction so that the side plates engage with the slots on the underside of the spindle bearings. Finally secure the cover with the screw. (*See illustration on page* 29.)

OIL GUN ATTENTIONS

Water Pump Bearings : Remove the oiling plug on the water pump casing and add a small quantity of oil with the gun. The oiling of the pump must be done very sparingly, otherwise oil will flow past the bearings on to the face of the carbon sealing ring and impair its efficiency.

Road Springs : Oil the spring leaves with the pressure end of the gun through the nipple provided. On the rear springs the nipple is positioned



A Steering Box Filler Plug.
B Steering Box Adjuster.

on an extension of the spring centre bolt, and on the front springs the nipple is positioned at the front of the axle, directly under the spring.

Clutch Thrust Bearing : The ball bearing clutch thrust race should be lightly oiled. The extension for the nipple is located on the left-hand side of the engine rear mounting plate. Do not over lubricate the bearing or oil may find its way through to the clutch linings.

GREASE

Front Road Wheel Hubs : Remove the front hub grease cap and if necessary repack the front hub bearings with grease. It is important that the hubs are not given too much grease, otherwise it will penetrate to the brakes.

CLEAN

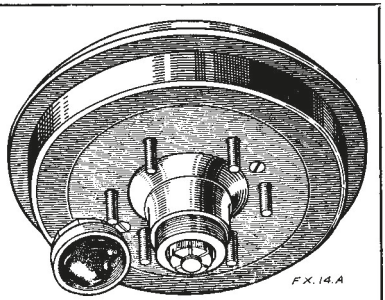
Gauze Air Cleaner : The air cleaner should be removed, cleaned and the gauze re-oiled with clean engine oil.

To remove the air cleaner, slacken the hose connection to the carburetter and remove the two securing bolts holding the body of the air cleaner to the valve rocker cover. Pull the air cleaner off the carburetter and then thoroughly rinse the louvred end in a shallow dish of fuel.

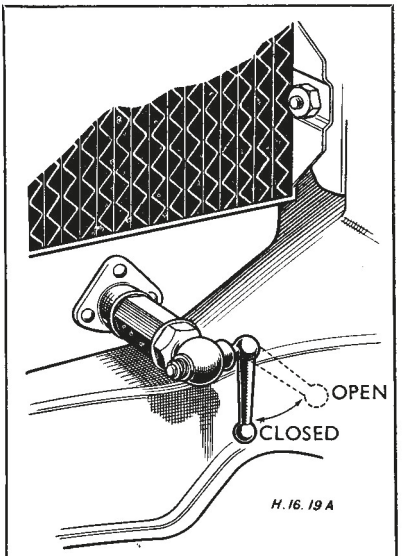
After drying, the metal gauze mesh should be re-oiled with clean engine oil and the surplus allowed to drain off before the cleaner is re-fitted to the engine.

In countries where dust is constantly experienced, it is advisable to attend to the air cleaner more frequently.

Fuel System : The flow of fuel at the carburetter float chamber union should be checked and, if necessary, the



Remove the Front Hub Caps for greasing.



The Radiator Drain Tap.

filters in the pump and in the carburetter inlet union should be cleaned as described on pages 23 and 25.

It may also be advisable at this mileage for the carburetter jets to be inspected and cleaned. This attention is briefly described on page 25.

Radiator : Open the two drain taps, one at the bottom of the radiator and one on the right-hand side of the engine crankcase and flush the system with clean water. Carefully check that the water runs freely from the two drain taps. If a stoppage is suspected, clear the tap with a strong piece of wire, and if this is not successful the tap should be unscrewed and any sediment in the crankcase outlet or radiator tap opening should be completely removed. When re-filling never use very hot water and if the engine is being filled with cold water allow a few minutes to elapse for air to escape past the thermostat valve before finally topping-up.

In winter, when flushing the cooling system, take care to preserve the cooling mixture if anti-freeze has been added. Do not mix soluble oil, which is a rust inhibitor, with anti-freeze.

EXAMINE

Fan Belt : The fan belt must be sufficiently tight to prevent slip, yet it should be possible to move the centre

of the belt sideways for approximately one inch.

To make any necessary adjustment, slacken the dynamo mounting bolts and raise or lower the dynamo until the desired tension of the belt is obtained. Then securely lock the dynamo in position again.

General : Examine and, if necessary, tighten, especially when the car is new, the cylinder head nuts, the inlet and exhaust manifold securing nuts and the engine mounting bolts.

Also check such parts as the spring securing bolts to the axles, propeller shaft flange bolts, steering connections, and the linkage joints and connections of the mechanical brake system.

EVERY 10,000 MILES

LUBRICATE

Dynamo : Unscrew the wick lubricator for the dynamo bearings, re-pack with petroleum jelly or H.M.P. grease and replace.

OIL GUN ATTENTIONS

Propeller Shaft Universal Joints : The oil nipples on the two universal joints of the propeller shaft should be charged with oil from the gun (2 *nipples*).

Clutch Operating Cross Shaft : The oil nipples on each end of the housing for the clutch operating cross shaft should be lightly charged with oil from the gun. This attention must be done sparingly or oil may reach the clutch linings (2 *nipples*).

RENEW

Sparking Plugs : The sparking plugs should be renewed. Use Champion N8.

SERVICE ATTENTIONS

AT the mileage indicated, the following inspections and adjustments should be entrusted to an Austin Dealer, who will have been advised with the necessary technical information.

EVERY 5,000 MILES

Sparking Plugs : The sparking plugs should be removed and cleaned in a special plug cleaning machine. After cleaning the points should be checked and reset, if necessary, to the correct gap of .017 to .018 inches.

Decarbonising and Tappet Adjustment : On a vehicle used frequently for short runs, the decarbonising of the engine may be advisable after 5,000 miles, but when the vehicle is used chiefly for long runs the attention should not be required until a greater mileage has been covered. It can be taken as a general guide that falling off of engine power with pinking and a tendency towards overheating indicates when decarbonising is overdue. The tappets, inlet and exhaust, are set at .012 in. with the engine cold. Before checking a tappet clearance always press the adjusting screw down hard to dispel any oil cushion that there may be in the push rod assembly.

EVERY 6,000 MILES

Engine Oil Filter : The full-flow oil filter element should be renewed and the vehicle mileage should be indicated on the filter casing for reference purposes. This will help ensure that the filter element is renewed again at the correct milage.

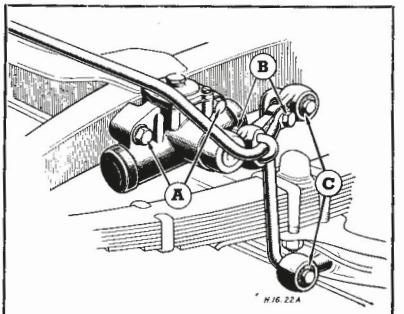
Contact Breaker Points : Clean the contact breaker points. Cleaning of the contacts is made easier if the spring arm carrying the moving contact is removed. To do this slacken the nuts on the terminal post and lift off the spring, which is slotted to facilitate removal. Before replacing, smear the pivot on which the contact breaker works with clean engine oil.

Check and reset the contact breaker points if necessary. The correct gap is .010—.012 inches.

EVERY 10,000 MILES

Dynamo : Clean the dynamo commutator and check the condition of the brushes.

Starter : Clean the starter commutator and check the condition of the brushes.



This illustration shows a Front Shock Absorber with its Filler Plug.

A Securing Bolts.
B Torsion Bar Securing Bolts.
C Rubber Bush Bearings.

Front Wheel Track : The front wheels should be checked to ensure that they have a toe-in of 0 to $\frac{1}{16}$ inch measured at the wheel rims.

Steering Box : The steering should be checked for lost motion between the steering wheel and the front wheels. It should be noted that the setting is very carefully made when the steering box is first assembled and normally little adjustment should be required.

Clutch Pedal : Wear of the clutch friction surfaces should be allowed for by adjustment of the free movement in the clutch pedal. This free movement should be approximately half-an-inch and adjustment is effected by a bolt and locknut on the clutch pedal cross shaft.

Engine Oil Sump : The engine oil sump and the oil pump strainer gauze should be removed, cleaned and refitted and the engine filled with new recommended oil.

Front and Rear Hub Bearings : These should be checked for signs of wear.

Ignition Timing : The ignition timing should be checked and reset if necessary.

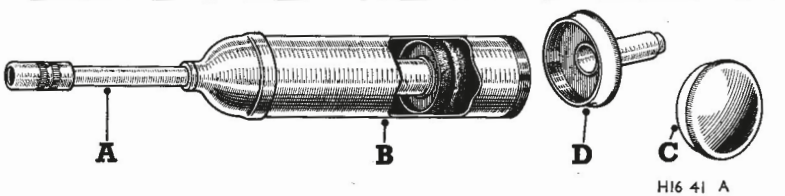
Shock Absorbers : The fluid level of the front and rear shock absorbers should be checked and topped-up if necessary. It is best to remove the shock absorbers for topping-up as this minimises the risk of air locks, but take care to always keep the shock absorber upright.

The official recommended fluid is " Armstrong " shock absorber oil.

THE OIL GUN

The oil gun supplied may be either a " Tecalemit Gun " or a " Uni-Gun Automatic Hand Gun." Either can be used for charging the various chassis nipples with oil or for topping-up the rear axle and steering gear with recommended oil.

THE TECALEMIT GUN



A The Telescopic Ram.
B Gun Body, cut away to show the Plunger.
C Pressure Cap.
D Adaptor.

The gun is charged with oil by unscrewing the end cap. To prevent the risk of air locks preventing the gun from working properly, always fill up the gun barrel completely before replacing the end cap.

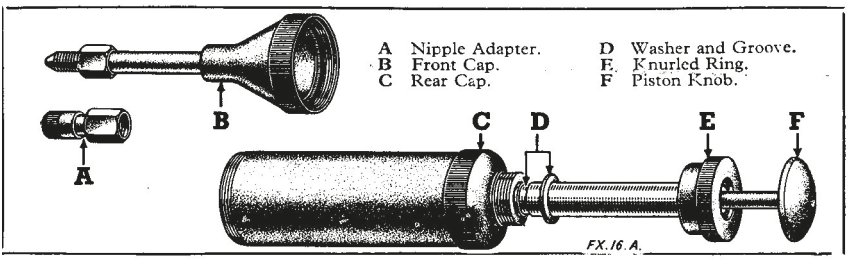
When using the gun for topping-up the rear axle or steering gear, replace the end cap with the adaptor. The pressure end of the oil gun must always be used when lubricating the chassis nipples.

Oiling Technique : Always make sure that the nipple on the chassis component about to be lubricated is clean before applying the gun. Push the gun body hard and repeat the strokes according to the amount of lubricant required in the component. Wherever possible, watch for old oil exuding from the component concerned, since this is proof that the new is being forced in. A nipple which refuses to pass oil should be removed and cleaned. This is best achieved by leaving the nipple to soak for a short time in paraffin.

Should difficulty be experienced in the operation of the gun it is probably due to air locks. This can be easily overcome by carrying out the following procedure :— Extend the steel ram as far as possible, fill the gun with the correct oil and replace the cap. Hold the gun firmly in the left hand, unscrew the cap approximately two turns and then force the steel ram into the gun. This will force the oil to the top of the barrel and displace any air that may have been included in the filling process. The air can be heard distinctly coming out of the threads of the cap and when oil begins to emerge, the cap should be tightened.

After lubricating a nipple, it is most essential that the disconnecting process should be made with a sideway breaking movement and not pulled directly away. Any attempt to disconnect by pulling away direct will have a tendency to break the spring clip in the nozzle of the gun and at the same time to extend the ram, thereby sucking in air.

THE UNI-GUN



The automatic gun can be used for topping-up the rear axle and steering box, and an adapter is also supplied to enable the gun to be used for charging the various chassis lubrication nipples with oil.

Filling the Gun :

1. Unscrew and remove the front cap.
2. Unscrew the knurled ring adjoining the rear cap.
3. Withdraw the knurled ring to its full extent and then insert the loose washer into the recess on the piston tube.
4. Add oil, as recommended for chassis lubrication, or grease into the barrel.
5. Replace the front cap.
6. Release the loose washer from its recess and tighten the knurled ring in its original position.

Using the Gun : When using the gun for chassis lubrication first ensure that the nipple adapter is in position on the gun. Then place the nozzle of the gun on the nipple to be lubricated and operate the high pressure piston knob with the palm of the hand. Always make sure that the chassis nipple is clean before applying the gun. Push hard and repeat the strokes according to the amount of lubricant required in the bearing.

Topping-up with the Gun : With the nipple adapter removed the oil gun can also be used for topping-up the rear axle and the steering box. When it is to be used for this purpose the oil gun should be filled with recommended oil as already described, except that in this instance the knurled ring should not be screwed back to its original position on the gun barrel. Instead, the nozzle of the gun should be inserted into the filler plug hole and oil can then be fed into the unit by releasing the loose washer and moving the knurled ring in and out till all the oil from the gun has been discharged.

GENERAL MAINTENANCE

IN the following pages will be found details of those attentions, not already mentioned in " Regular Attentions," which are essential for the satisfactory operation and maintenance of the vehicle.

ENGINE LUBRICATION

Correct lubrication is of the utmost importance for the engine, which has to operate at sustained high temperatures and speeds, and it is essential that only oils of the highest quality and correct grade are used. Inferior or unsuitable oils will cause excessive wear.

Additives which dilute the oil or otherwise impair its efficiency must *not* be used, neither should graphite compounds be mixed with the oil, as they may interfere with the efficient working of the system, which employs very fine jets for the lubrication of certain parts of the engine.

Choice of Lubricants : The colour or appearance of an oil at atmospheric temperatures gives no indication as to its efficiency under operating conditions, and owners are advised to use only officially recommended lubricants. (See page 34.)

Upper Cylinder Lubrication : The use of an upper cylinder lubricant is beneficial to the running of the engine, and it should be added to the fuel when the tank is replenished. Carefully follow the manufacturer's instructions.

Impurities : Even the best oils in the engine become contaminated during use with unburnt fuel, carbon, metallic particles and moisture, and it is therefore most important that the oil is changed at the recommended mileage. (See Regular Attentions.)

Drain the crankcase when the oil is warm and thoroughly fluid, since it will then carry away as much of the contamination as possible. Afterwards, if necessary, the crankcase may be flushed with a thin oil, but never with paraffin.

Oil Level : The oil level should be maintained close to the maximum mark on the dipstick and it should never be allowed to fall below the minimum mark. Before taking a reading switch off the engine, ensure the vehicle is on level ground and wipe the dipstick free of superfluous oil.

Oil Pressure Gauge : The oil pressure gauge indicates whether the oiling system is working properly, and it should be looked at occasionally while the engine is running.

The normal working pressure is 55 lbs. per square inch and the idling pressure 26 lbs. per square inch. Should the normal oil pressure appear low, then it is possible the full-flow oil filter is choked and in need of renewal as described in the following paragraphs. Never run the engine if the oil gauge does not register pressure, or serious damage to the engine might result.

THE FULL-FLOW FILTER

Before reaching the engine bearings the oil is passed through the filter at a controlled pressure of approximately 55 lbs. per square inch. Some pressure is lost in passing the oil through the filter element and this pressure loss will become more pronounced as the element becomes coated by foreign matter removed from the oil.

A balance valve is provided in the filter unit to guard against the possibility of the filter becoming completely choked and thereby preventing the oil from reaching the bearings. This balance valve is set to open when there is a pressure difference between the oil on the inside and the oil on the outside of the filter element of 15 lbs. per square inch. When the valve is open, unfiltered oil by-passes the filter element and reaches the bearings at reduced pressure of approximately 35 lbs. per square inch. Therefore, to ensure only filtered oil is supplied to the bearings it is necessary to renew the filter element at 6,000 miles or when the oil pressure gauge indicates the change is necessary by a fall in normal pressure.

To Renew Filter Element : Stop the engine and drain the filter by removing the drain plug (B) from the base of the container adjacent to the centre fixing bolt (A).

Draining can be speeded up by slackening off the centre fixing bolt slightly. This permits air to enter the filter at the rubber joint between the container and head casting.

(2) Unscrew the centre fixing bolt when the container, complete with the filter element (C), can be removed.

(3) Withdraw the filter element and wipe out the container to remove foreign matter. Use a non-fluffy cloth.

(4) Place the new element in the container and refit to the head casting on the engine crankcase. Tighten the centre securing bolt sufficiently to ensure an oil-tight joint, but take care not to overtighten.

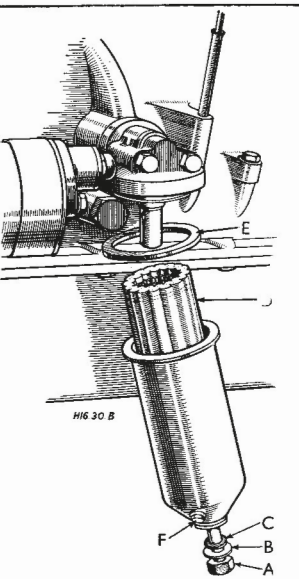
(5) Top up the engine with 2 pints of clean oil to allow for that lost when the filter was drained.

This is the only attention likely to be required. Once a new element has been fitted, the filter container should not be removed or disturbed until renewal of the element is necessary. If the container is disturbed, accumulated dirt on the outside of the element may reach the inside and it would then be carried direct to the bearings the next time the engine was started.

Replacement Oil Filter Elements : When replacing the oil filter element, use only genuine elements of the type already fitted to the engine.

Where Tecalemit filters are fitted specify Tecalemit Filter Element No. F.G. 2313 and filter element No. M.F. 26 where Purolator Micronic Filters are used.

Changing the Oil : The engine and oil filter should be drained and fresh oil put into the engine after the first 500, and again after the next 2,000 miles running. Use the sump drain plug and the drain plug at the base of the filter.



A Centre Fixing Bolt.
B Fixing Bolt Flat Washer.
C Fixing Bolt Joint Washer.
D Filter Element.
E Rubber Joint Ring.
F Filter Drain Plug.

Every 2,000 miles the engine oil sump and the filter should be completely drained and refilled with new oil to provide the best possible running conditions. Every 10,000 miles the engine sump and oil pump strainer gauze should be removed and cleaned in paraffin.

COOLING SYSTEM

THE cooling of the engine is maintained by a water pump and fan, with thermostat control to give rapid warming from cold. An expansion chamber is incorporated in the radiator to prevent the loss of cooling water through splash or expansion, and the thermostat by-pass is connected direct with the tank at the bottom of the radiator to circulate warm water at this point and thereby minimise the risk of local freezing of the radiator. A radiator muff may be used with advantage to assist rapid warming-up, or to reduce the risk of local freezing at the bottom of the radiator, but never run the car with the muff fully closed, or boiling will result.

Topping-up : This is only necessary very occasionally to replace water lost through evaporation. Use only rain water, if available, or clean soft water, and fill to just below the top of the filler plug thread when engine is cold.

Winter Precautions : In winter an anti-freezing mixture should be added to the cooling water as a safeguard against freezing and damage to the cylinder block or the radiator. Carefully follow the maker's instructions when preparing the mixture, and once the anti-freeze has been added avoid excessive topping-up. Before adding the anti-freeze solution it is always advisable to check the security of the hose connections between the engine and the radiator and other water joints. Anti-freeze has a very searching action and soon finds out any joint weakness which, unless remedied, would give rise to a serious loss of cooling fluid. Never mix anti-freeze with soluble oil, which is sometimes used as a rust inhibitor.

When anti-freeze has been added it is a good plan to tie an anti-freeze label to the radiator drain tap to prevent a garage from inadvertently draining the solution.

If anti-freeze is not used, care must be taken to see that the water is drained off completely when garaging the car at night while frost prevails. *There are two drain taps.* One is at the bottom of the radiator and one on the crankcase to the front of the distributor.

When all the water has drained the engine should be run for not more than one minute at a tick-over speed to ensure complete elimination of water from the cylinder block.

It is advisable occasionally to clean out the tap apertures with a strong piece of wire, since the drain taps may become choked with sediment which will prevent effective draining.

When the system has been drained leave the radiator filler plug on the driving seat as a reminder to refill the cooling system before using the vehicle again.

Flushing : To ensure efficient circulation of the cooling water and to reduce the formation of chemical deposits within the cooling passages the cooling system should be thoroughly flushed with clean running water every 5,000 miles as detailed in Regular Attentions.

FUEL PUMP

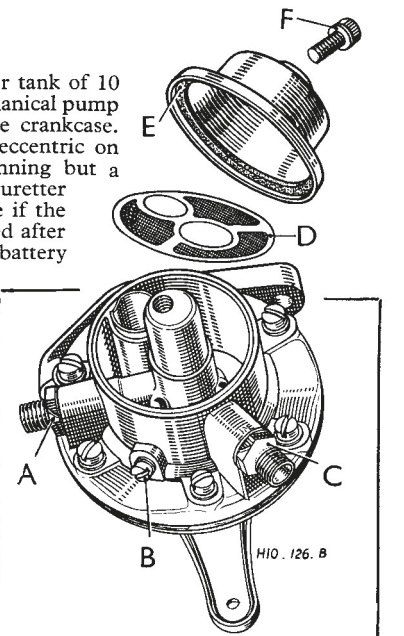
FUEL is fed to the carburetter from a rear tank of 10 gallons (45 litres) capacity, by an AC mechanical pump mounted on the left-hand side of the engine crankcase.

The pump rocker arm is operated by an eccentric on the engine camshaft when the engine is running but a priming lever is also fitted to enable the carburetter to be primed by hand. This may be advisable if the carburetter float chamber has just been replaced after cleaning, to save an excessive strain on the battery through using the starter to pump fuel through the system.

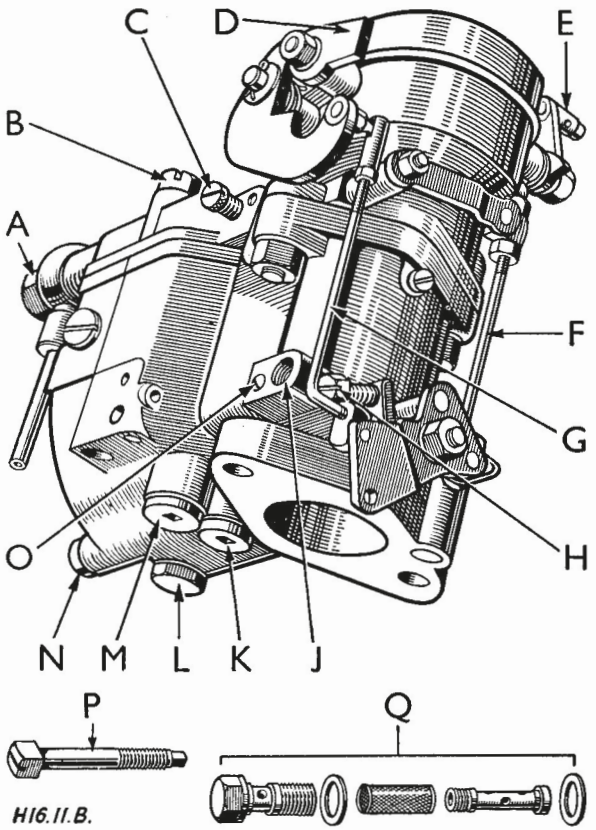
Maintenance : Approximately every 5,000 miles the strainer gauze in the fuel pump should be removed and cleaned.

Access to the strainer is gained by removing the pump top cover and at the same time that the strainer gauze is removed the pump drain plug should be unscrewed and all sediment removed from the body of the pump chamber. Use fuel and a non-fluffy rag for cleaning the chamber and for the strainer gauze use fuel only.

When refitting the pump top cover ensure that the cork gasket is in a good condition. A poor gasket would not permit of an air-tight joint and the operation of the pump would be impaired.



A Pump Outlet Pipe.
B Pump Drain Plug.
C Pump Inlet Pipe.
D Gauze Filter.
E Cork Sealing Ring.
F Cover Securing Bolt.



A Inlet Union.
B Float Chamber Securing Bolt.
C Slow Running Air Screw.
D Choke to Throttle Locking Device.
E Choke Arm.
F Economy Jet Connecter.
G Choke and Throttle Connection.
H Throttle Stop Adjusting Screw.
J Ignition Vacuum Union.
K Main Jet Plug.
L Economy Device Fixing Plug.
M Compensating Jet Plug.
N Economy Jet Plug.
O Progression Jet Plug.
P Float Chamber Securing Plug.
Q Inlet Union Assembly.

H16.11.B.

CARBURETTER

THE carburetter is the Zenith down-draught type, embodying an economy device and also the well-known principles of main and compensating jets.

The float chamber contains the main jet, the compensating jet, the capacity well, the economy jet and the slow running jet. Fuel flows through the main and compensating jets and also rises in the capacity well. From the jet it flows along two separate channels into a common channel in the emulsion block attached to the float chamber.

Fuel in the capacity well is in direct communication with the air and with the emulsion block, and the main channel in the emulsion block leads to a nozzle which projects into the choke tube.

A restriction, in the form of an economy jet, is placed on the main jet. The full effect of the main jet is only required during the last part of the throttle movement. Consequently, the main is restricted until the economy device is brought into action. By means of an interconnection with the throttle lever, an arm connects with the top of the economy jet piston and depresses it during the last part of the throttle movement. This forces the valve off its seating and fuel will enter immediately from the float chamber, flow past the valve and so into the main jet channel. Thus, the economy jet is by-passed and the full effect of the main jet is obtained as fuel is now flowing direct to this part.

MAINTENANCE

Filter : The strainer gauze in the union to the float chamber should be removed and cleaned approximately every 5,000 miles. When replacing make certain that the two fibre washers are correctly positioned each side of the union and tighten very carefully.

Jets : To clean the jets first remove the carburetter float chamber by unscrewing the two retaining bolts.

The jets are beneath the bowl. Access to them is gained by first taking off their cover plugs by using the squared end of one of the retaining bolts.

Similarly access may be obtained to the economy jet, by removing the jet cover at the bottom front of the float chamber.

A small screwdriver will remove the slow running jet, which is located in the top flange of the float chamber.

Clean the jets by blowing through them either with a tyre pump or orally, in the reverse direction to the fuel flow. Never use wire to clear a jet. When replacing the jets take care that the fibre washers under them and the jet covers are in position.

GENERAL ADJUSTMENTS

Difficult Starting : If the engine is difficult to start ascertain that the strangler flap is closing the air intake completely and if necessary adjust the wire. Also ensure that the air cleaner clip is not fouling the strangler lever when the control knob is operated.

Slow Running : The slow running of the engine may need adjusting from time to time and is controlled by the air mixture screw (C) and the throttle stop adjusting screw (F). The screw (C) is normally set one-and-half turns from the fully closed position and the throttle stop adjusting screw (F) is set to give the smoothest idling speed consistent with a quick response from the engine to a sudden opening of the throttle, when the engine is warm.

A weak mixture may cause uncertain slow-running and this may be corrected by turning the air regulating screw (C) clockwise to enrich the mixture. Do not make the mixture too rich or the engine will tend to choke when running slowly while warm.

No adjustments should be carried out unless absolutely necessary.

Lack of Power : If there is a lack of power and speed, this may be due to the main jet being partially choked.

Also make sure that the strangler flap opens fully, for if this sticks in a partially closed position it will restrict the speed of the vehicle and increase fuel consumption.

BRAKES

THE adjustment for taking up wear in the brake shoe linings is effected at each brake back-plate, and the brake rods and linkage system should in no circumstances be altered. When this latter attention becomes necessary, as it will do at infrequent intervals, the adjustment should be entrusted to an Austin Dealer.

The handbrake operates on all wheels, and it is important that no attempt should be made to adjust the brakes with the handbrake on.

Adjustment : The brakes may require adjustment approximately every 2,000 miles to maintain them at maximum efficiency.

On the opposite side of the drum whence the operating rod protrudes will be seen the square-ended brake shoe adjuster. The adjuster can be turned a notch at a time and the engagement, which can be heard and felt, is caused by the four flat-sides of the cone on the inner end of the adjuster engaging with the plungers supporting the ends of the brake shoes.

Turn the adjuster in a clockwise direction as far as it will go. The brake shoes are then hard on and the adjuster should now be turned back one full

notch to give the shoes the necessary clearance from the drum.

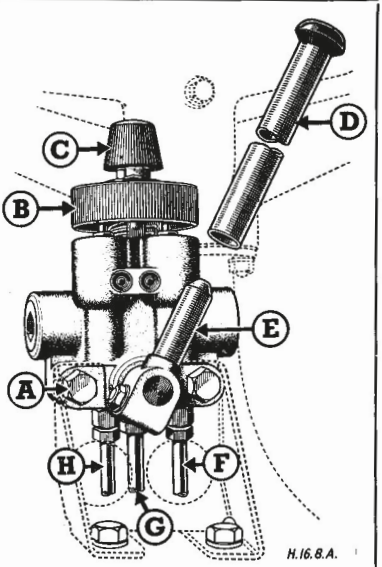
Each drum must be treated similarly, and it is not necessary to jack up the wheels.

After the adjustment is completed for all four wheels, press the brake pedal down hard once or twice, in order to centralise the brake shoes.

When new brake shoes have been fitted to either the front or rear brakes or to both it is advisable to slack the adjusters two notches to allow for the possible expansion of the shoe linings. When the new linings have " bedded " down the brakes should be re-adjusted as described earlier.

JACKING SYSTEM

THE hydraulic jacking system, which is operated from a control unit on the left of the engine under the bonnet, enables either the front or rear axles to be lifted independently or together.



H.16.8.A.

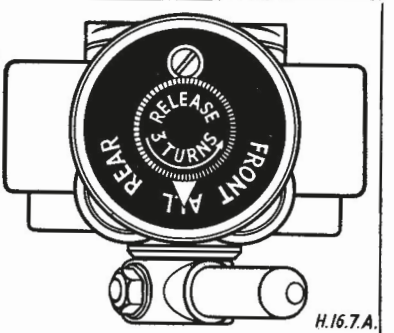
A Mounting Bolt.
B Selector Knob.
C Release Valve.
D Pump Handle.
E Pump Operating Spindle.
F and **H** Pressure Pipes.
G Supply pipe.

Operation : The indicator dial should first be turned to the appropriate position. In selecting " Front " or " Rear " the indicator dial should be turned as far as it will go without using undue force. The handbrake should be applied or chocks placed under the wheels of the axle not being jacked.

The release valve on top of the distributor box must now be screwed down fully. Place the jack handle over the lever at the side of the pump and work the lever to and fro. It is most important that the pump handle is moved through a full stroke in either direction, if the pump is to operate with full effectiveness. No damage can be caused by continued pumping, because a relief valve has been provided to release excessive pressure.

When jacking the vehicle on an uneven surface, packing blocks placed directly under the jacks will ensure that a full lift is obtained.

To lower the vehicle to the ground the release valve must be opened very slightly to allow the vehicle to settle down slowly. When the vehicle is on the ground the indicator dial must be turned to the " All " position and the release valve opened at **least** three



H.16.7.A.

The Jacking Control Unit.

turns. This is to ensure that all jacks return fully into their housings.

It is most important that the vehicle is not moved until the jacks have fully returned to the closed position, or serious damage to the jacks may occur.

Maintenance : Those attentions necessary to ensure that the jacking system is maintained in full working order have already been detailed under " Regular Attentions."

Given this regular attention the hydraulic jacking system will continue to give satisfactory service. Should any fault develop in the system due to dirt on the valve seatings, air locks or fluid leaks, the owner is advised to contact his local Austin dealer or service station.

Changing a Wheel : Before removing a wheel ensure that the vehicle is securely jacked with the handbrake on firmly, and if on a hill it may be advisable to scotch one or two of the wheels.

When refitting the wheel, tighten the nuts alternately and secure before removing the jack. Finally test the nuts again when the wheel is on the ground.

ELECTRICAL

THOSE attentions and replacements which the owner should be able to undertake in respect of the electrical equipment are briefly described in the following paragraphs. Should any serious electrical fault develop the owner is advised to obtain expert assistance from the nearest Austin Agent or Lucas Service Depot.

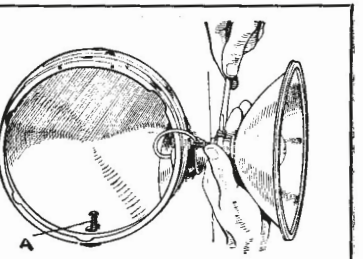
Battery : Keep the terminals clean and tight, and well smeared with petroleum jelly. This will protect the terminals from corrosion which if allowed to continue unchecked may result in a break in the battery circuit. Also ensure the security and good electrical contact of the battery earthing clip on the chassis frame. (For topping-up, see page 15.)

Headlamp Adjustment : It is important to have the headlamps properly focussed and set correctly in relation to the road.

The alignment of the lamps is very easily carried out, as they are fixed on an adjustable mounting which is locked by a single nut, accessible under the lamp mounting bracket. The headlamp beams must be set parallel to the road and to each other.

Headlamp Focussing : To focus a headlamp bulb first remove the lamp front by pulling the spring-loaded trigger from its location at the bottom of the lamp. The front can then be withdrawn. Next remove the rubber bead which surrounds the reflector and withdraw the reflector.

The headlamp bulb may now be moved, relative to the reflector, by slackening the clamping clip on the bulb holder at the back of the reflector.

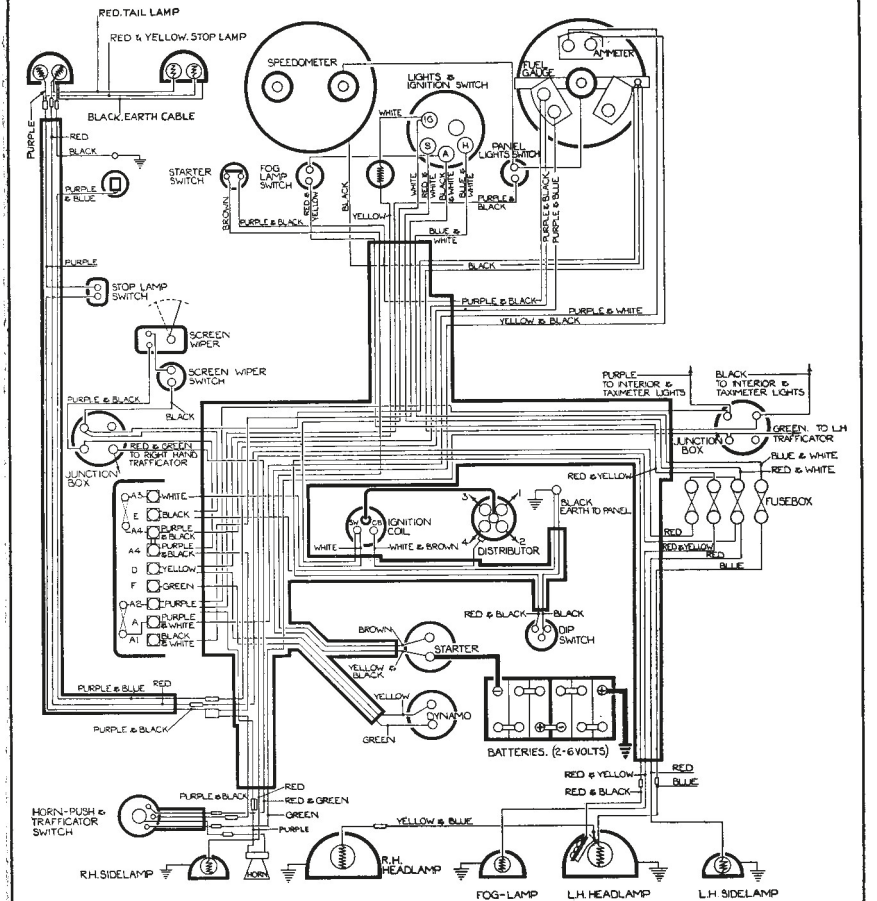


Headlamp Focussing Adjustment with (A) the Headlamp Front Securing Screw.

When correctly focussed the headlamp beam must have an even spread of light without any dark area in the centre of the beam, as may be tested by running the car up to within six yards of a wall or other vertical surface.

When replacing the reflector, the projection on the rim must fit into the left-hand location at the top of the lamp body. The rubber bead must be located with its thinner lip between the reflector rim and the edge of the lamp body.

When replacing the lamp front, locate the top of the rim first and then



WIRING DIAGRAM E993.

press the front into position and secure with the spring-loaded trigger.

Foglamp Alignment : The lamp mounting bracket securing nut can be easily released to permit alignment of the lamp.

Foglamp Focussing : Each foglamp bulb is secured by a clamping clip in the same manner as the headlamp bulb. To gain access to this clip for focussing slacken the foglamp rim securing screw and move it downwards, when the rim together with the reflector can be withdrawn.

The foglamp bulb must be adjusted relative to the reflector until all top light is removed and the semi-circular beam of light is of the greatest concentration when tested against a vertical surface as described for headlight focussing. When replacing the light front locate the top of the rim first.

The reflectors of the head and foglamps are covered with a protective coating and on no account must metal polish be used on this surface. Any marks may be easily removed with a soft cloth applied very lightly.

BULB FITTING

Headlamp : Remove the lamp front as described under " Headlamp Focussing " to gain access to the bulb.

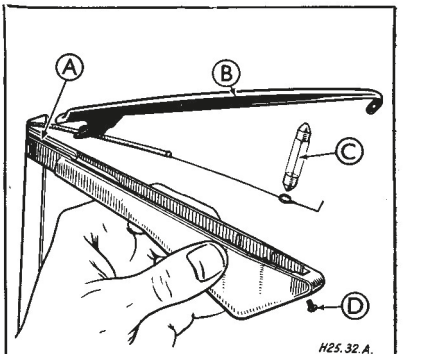
Foglamp : Remove the lamp front as described under " Foglamp Focussing " to gain access to the bulb.

Side Lamp : Remove the screw at the top of the lamp and then draw the lamp front and reflector forward from the lamp body. The bulb holder may now be pulled from the reflector and the bulb replaced.

Stop, Tail and Reversing Lamps : Access to the bulbs is obtained by releasing the screw at the side of the lamp and hinging the cover forward.

Ignition Warning Lamp : The bulb can be removed from its holder when the small cover plate holding the red glass is unscrewed from the instrument panel.

Direction Indicators : To remove the bulb, switch on the indicator, hold it in the out position, and then switch off. Withdraw the screw on the underside of the arm and slide off the metal plate, when the bulb can be renewed. When replacing the metal plate, slide it in an upward direction so that the plate engages with the slots on the underside of the spindle bearing.



A Nickel Plate Slot.
B Metal Plate.
C Festoon Bulb.
D Metal Plate Securing Screw.

Panel Lights : To renew a panel light bulb it is first necessary to remove the instrument panel. Take out two setscrews from the underside of the panel and then carefully ease the lower portion forward and downward to disengage locating clips at the top. Each lamp holder can be pulled out for bulb renewal.

Roof Lamp : The lamp cover can be removed to provide access to the bulb, when the clip on the right side of the lamp is sprung back.

Roof " For Hire " Lamp : Access to the three bulbs in this lamp is gained by releasing the knurled nuts holding the bulb plate in position in the roof of the car. These knurled nuts are accessible from inside the driver's compartment.

Taximeter Lamp : This bulb is accessible by unscrewing the cover over the bulb.

Fuses: The voltage regulator and cut-out unit contains two fuses and one spare. One fuse protects the accessories which are operative only when the ignition is switched on (*e.g.*, stop lamp, fuel gague, horn, heater, motor and direction indicators). The other fuse protects those accessories which can be operated independently of the ignition.

BULBS

	Voltage	Wattage	Lucas No.
Headlamps	12	36	57
Foglamps	12	36	162
Side, Rear and Stop Lamps	12	6	207
"For Hire" sign	12	6	209
Interior Lamps	12	6	209
Panel Lamps	12	2.2	987
Taximeter	12	6	209
Ignition	2.5	0.5	970

BODYWORK

DUST on the taxi may be lightly flicked off with a duster, but on all other occasions the taxi must be thoroughly washed and dried before a cellulose polish is used.

Any attempt to rub off dirt will result in a severe scratching of the smooth surface of the cellulose. Grease and tar splashes must be very carefully removed with a soft rag dipped in fuel.

Washing and Polishing : When washing the taxi, commence from the roof and work downwards, using a slow flood of water and then leather off all surplus moisture.

After washing and drying use a good quality cellulose polish which will not only impart a brilliant lustre to the surface of the cellulose but will help to preserve it from atmospheric corrosion. An occasional application of a good class wax polish will also help considerably in maintaining a smooth finish.

Seats : Both the front and rear seats are upholstered in best quality hide and will not require any attention other than an occasional clean down with a cloth moistened in water.

Matting : The rear compartment heavy coir floor mats should be periodically lifted out of the taxi and cleaned.

Chromium : Wash chromium plating with soap and warm water. On no account use metal polish.

Other Attentions : Door locks, hinges and other small working parts should be given a drop of oil occasionally and be checked for security.

THE TOOL KIT

THE tools are supplied in a cardboard carton. While this list is complete at the time of going to press, modifications may be made in the tool kit from time to time.

Double-ended spanners :—$\frac{3}{16}''$ × $\frac{1}{4}''$, $\frac{5}{16}''$ × $\frac{3}{8}''$, $\frac{7}{16}''$ × $\frac{1}{2}''$.
Box spanner :—$\frac{3}{16}''$ × $\frac{1}{4}''$, $\frac{5}{16}''$ × $\frac{1}{4}''$.
Tommy bar.
Adjustable spanner.
Tappet adjusting spanner.
Screwdriver.
Distributor screwdriver and gauge.
Tappet clearance and sparking plug gauge.
Starting handle.
Combination pliers.
Sparking plug spanner.
Wheel-brace.
Jack operating lever.
Tyre levers.
Tyre pump.
Dunlop tyre valve tool.
Oil gun complete with adapter.
Valve grinding tool.
Key for spare wheel compartment.
Envelope containing literature.
Tool wrap.

AFTER SALES SERVICE

AUSTIN dealers are under agreement to give " After Sales Service," and during the period of the first thousand miles running of Austin cars purchased from them they will, without charge except for materials used :—

Change the engine oil and check the oil levels in the gearbox, steering box and rear axle.

Lubricate all chassis points.

Check the tightness of cylinder head and manifold nuts. Tighten the fan belt if necessary.

Check tappet clearance and ignition timing.

Clean out the carburetter float chamber and check the slow running adjustment.

Examine and adjust if necessary, the sparking plug and distributor points and verify the working of the automatic ignition control.

Check the front wheel alignment and steering connections.

Check the clutch pedal clearance.

Examine and adjust the braking system.

Check the tightness of nuts and bolts, body and bonnet cowl to chassis, spring clips, etc.

Lubricate the door locks, bolts, dovetails, hinge pins and seat runners.

Test the lamps, check the charging rate, and wiring and terminals.

Examine the battery and bring up to the proper level with distilled water or diluted acid.

Check operation of hydraulic jacking units.

Test the tyres for correct pressure.

EQUIPMENT

THE Austin Motor Company Limited accept no liability under the terms of their Warranty for Tyres, Speedometers, or the Electrical Equipment, or other Goods, including Coachwork, not of their own manufacture. All claims relating to any of these parts or fittings or orders for repairs to them should be addressed to their manufacturers. For the owner's convenience, we give below the names and addresses of the manufacturers or suppliers of some of the goods in question. Further information may be obtained on application to them.

Important : When claims under guarantee are being made, it is absolutely essential to quote the type and number of car, and the commissioning date.

ELECTRICAL

Horn : Dynamo : Starter : Cut-out Regulator and Fuse Unit : Direction Indicators : Switchboard : Lamps : Battery : Windscreen Wipers : Ammeter.

Joseph Lucas Limited,
Great Hampton Street, Birmingham 18,
and
Dordrecht Road, Acton Vale,
London, W.3.,
and Branches.

INSTRUMENTS

Speedometer: Fuel Gauge : Oil Gauge: Clock.

S. Smith & Sons (M.A.) Ltd.,
Cricklewood Works,
London, N.W.2.

LIFTING JACKS

Smith's Jacking Systems Ltd.,
Jackall Works,
Edgware Road,
London, N.W.2.

TYRES AND TUBES

Dunlop Rubber Co. Ltd.,
Fort Dunlop, Birmingham 1,
and
1, Albany Street, London, N.W.1.

CARBURETTER

Zenith Carburetter Co. Ltd.,
Honeypot Lane,
Stanmore, Middlesex.

FUEL PUMP AND AIR CLEANER

A.C. Sphinx Sparking Plug Co. Ltd.,
Dunstable, Beds.

SPARKING PLUGS

Champion Sparking Plug Co. Ltd.,
Feltham, Middlesex.

SPARKING PLUGS

K.L.G. Sparking Plugs, Ltd.,
Putney Vale,
London, S.W.15.

Lodge Plugs Ltd.,
Rugby.

DRIVING MIRRORS

Desmo Limited,
31, Stafford Street,
Birmingham 4.

Pennant Manufacturing Co.,
Reddings Lane, Acocks Green,
Birmingham 11.

Joseph Lucas Ltd.,
Great Hampton Street,
Birmingham 18.

BRAKES AND SHOCK ABSORBERS

Girling Limited,
Tyseley, Birmingham 11.

OIL GUN AND NIPPLES

"Tecalemit,"
Great West Road,
Brentford, Middlesex.

OIL GUN

Uni-Gun Lubricating Equipment Ltd.,
2, South Audley Street,
London.

DOOR HANDLES, LOCKS AND KEYS, IGNITION KEY

Wilmot Breeden Ltd.,
Eastern Works,
Camden Street, Birmingham 1.

BUMPERS

Pyrene Ltd.,
Great West Road,
Brentford, Middlesex.

LUCAS SERVICE DEPOTS

THE following is a list of Service Depot addresses, local Telephone Numbers and Telegraphic Addresses.

BELFAST :

51-55, Upper Library Street.
Telephone : 25617.
Telegrams " Servdep."

BIRMINGHAM 18 :

Gt. Hampton Street.
Telephone : Central 7401.
Telegrams : " Lucas, Telex."

BRIGHTON 4 :

85, Old Shoreham Road, Hove.
Telephone : Hove 1146-49.
Telegrams : " Luserv, Brighton."

BRISTOL :

345, Bath Road.
Telephone : 76001.
Telegrams : " Kingly."

CARDIFF :

54a, Penarth Road.
Telephone : 4603.
Telegrams : " Lucas."

COVENTRY :

Priory Street.
Telephone : 3608.
Telegrams : " Lucas."

DUBLIN :

Portland Street North, North Circular Road.
Telephone : Dublin 72601.
Telegrams : " Luserv."

EDINBURGH 11 :

60, Stevenson Road, Gorgie.
Telephone : 62921.
Telegrams : " Luserv."

GLASGOW :

Corner of Grant Street and St. George's Road.
Telephone : Douglas 3075.
Telegrams : " Lucas."

LEEDS :

64, Roseville Road.
Telephone : 28591.
Telegrams : " Luserdep."

LIVERPOOL 13 :

450-456, Edge Lane.
Telephone : Old Swan 1408.
Telegrams : " Luserv."

LONDON :

Dordrecht Road, Acton Vale, W.3.
Telephone : Shepherd's Bush 3160.
Telegrams : " Dynomagna, Ealux, London."

757-759, High Road, Leyton, E.10.
Telephone : Leytonstone 3361.
Telegrams : " Luserdep, Leyston, London."

155, Merton Road, Wandsworth, S.W.18.
Telephone : Putney 5131.
Telegrams : " Luserv, Put. London."

MANCHESTER :

Talbot Road, Stretford.
Telephone : Longford 1101.
Telegrams : " Lucas, Stretford."

NEWCASTLE-ON-TYNE :

64-68, St. Mary's Place.
Telephone : 25571.
Telegrams : " Motolite."

RECOMMENDED LUBRICANTS

HOME MARKET

	"Essolube"	"Price's"	"Duckham's"	"Vacuum"	"Shell"	"Wakefield"	"Regent"
Engine	Essolube 30	Energol SAE 30	Duckham's N.P. "Thirty"	Mobiloil A	Double Shell	Castrol XL	Regent Motor Oil 30
Transmission	Essolube 40	Energol SAE 40	Duckham's N.P. "Forty"	Mobiloil BB	Triple Shell	Castrol XXL	Regent Motor Oil 40
Rear Axle	Esso Gear Oil 140 (Heavy)	Energol SAE 140	Duckham's N2	Mobilube C	Shell Spirax C SAE 140	Castrol D	Thuban 140
Steering Gear Oil Gun	Esso Expee Compound 140	Energol EP SAE 140	Duckham's XS-Press 140	Mobilube GX 140	Shell Spirax 140 EP	Castrol Hi-Press	Thuban 140 EP
Wheel Hubs	Esso Grease	Belmo-line C	Duckham's HBB Grease	Mobil-grease No. 4	Shell Retinax RB	Castrolease (Heavy)	Roller Bearing Grease
Distributor Oil Can	Esso Handy Oil	Energol SAE 20	Duckham's N.P. "Twenty"	Mobil Handy Oil	Single Shell	Wakefield Oilit	Regent "Home Lubricant"
Upper Cylinder Lubrication	Essomix	Energol U.C.L.	Duckham's Adcoids	Mobil Upper-lube	Shell Donax U	Wakefield Castrollo	Regent Upper Cyl. Lub.
Squeaks and Rusted Parts	Esso Penetrating Oil	Energol Penetrat-ing Oil	Duckham's Laminoid Liquid	Mobil Spring Oil	Shell Donax P	Castrol Penetrating Oil	Regent Penetrating Oil

Shock Absorbers : Use Armstrong's Super (Thin) Shock Absorber Oil.
Hydraulic Jacks : Use Smith's " Red Jackall " Fluid.

RECOMMENDED LUBRICANTS

EXPORT MARKET

		"Duckham's"	"Vacuum"	"Shell"	"Wakefield"	"Essolube"	"Energol"	"Caltex"
Engine *	From 90°F (32°C) to 32°F. (0°C)	Duckham's N.P. "Thirty"	Mobiloil A	Shell X100 S.A.E. 30 or Double Shell	Castrol XL	Essolube 30	Energol Motor Oil SAE 30	Caltex Motor Oil 30
	32°F. (0°C) to +10°F. (—12°C.)	Duckham's N.P. "Twenty"	Mobiloil Arctic	Shell X.100 S.A.E. 20 or Single Shell	Castrolite	Essolube 20	Energol Motor Oil SAE 20	Caltex Motor Oil 20
	Below +10°F. (—12°C.)	Duckham's N.P. "Ten"	Mobiloil Arctic Special	Shell X.100 S.A.E. 10 or Silver Shell	Castrol Z	Essolube 10	Energol Motor Oil SAE 10	Caltex Motor Oil 10
Transmission †	Summer	Duckham's CG 90	Mobilube CW	Shell Dentax 90	Castrol ST	Esso Gear Oil S.A.E. 90	Energol Transmission Oil SAE 90	Caltex Thuban 90
	Winter	Duckham's CG 90	Mobilube CW	Shell Dentax 90	Castrol ST	Esso Gear Oil S.A.E. 90	Energol Transmission Oil SAE 90	Caltex Thuban 90
Rear Axle ‡	Summer	Duckham's N.2	Mobilube C	Shell Dentax 140	Castrol D	Esso Gear Oil S.A.E. 140	Energol Transmission Oil SAE 140	Caltex Thuban 140
	Winter	Duckham's CG 90	Mobilube CW	Shell Dentax 90	Castrol ST	Esso Gear Oil S.A.E. 90	Energol Transmission Oil SAE 90	Caltex Thuban 90
Steering Box, Springs and Oil Nipples ‡		Duckham's XS-Press 140	Mobilube GX 140	Shell Spirax 140 EP	Castrol Hi-Press	Esso Expee Compound 140	Energol Transmission Oil EP SAE140	Caltex Thuban 140 EP
Wheel Hubs		Duckham's H.B.B. Grease	Mobilgrease No. 5	Shell Retinax RB	Castrolease Heavy	Esso Bearing Grease	—	Caltex Roller Bearing Grease
Distributor and Oil Can		Duckham's N.P. "Twenty"	Mobil Handy Oil	Shell X.100 S.A.E. 20 or Single Shell	Wakefield Oilit	Esso Handy Oil	Energol Motor Oil SAE 20	Caltex "Home Lubricant"
Upper Cylinder Lubrication		Duckham's Adcoids	Mobil Upperlube	Shell Donax U	Wakefield Castrollo	Esso Upper Motor Lubricant	Energol U.C.L.	Caltex Upper Cyl. Lub.
Rusted Parts or Squeaks		Duckham's Laminoid Liquid	Mobil Spring Oil	Shell Donax P	Castrol Penetrating Oil	Esso Penetrating Oil	Energol Penetrating Oil	Caltex Penetrating Oil

***Engine :** Above 90°F. or for high speed driving at high temperatures use next heavier grade of oil.
†**Transmission and Rear Axle :** For prevailing Sub-Zero (°F.) temperatures use S.A.E. 80 Lubricant
‡**Steering :** For prevailing Sub-Zero (°F.) temperatures use S.A.E. 80. E.P. Lubricant.

Use only the best standard fluids for the hydraulic shock absorbers and jacking systems.

Printed in England