

**Practical hints  
for the maintenance  
of the**

**Triumph**

**T.R.3**

# INSTRUCTION BOOK

Part No. 501528/2

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# TRIUMPH SPORTS CAR TR 3

**THIRD EDITION**  
FIRST PRINTING

*Manufactured by*

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THE STANDARD MOTOR COMPANY LTD.**

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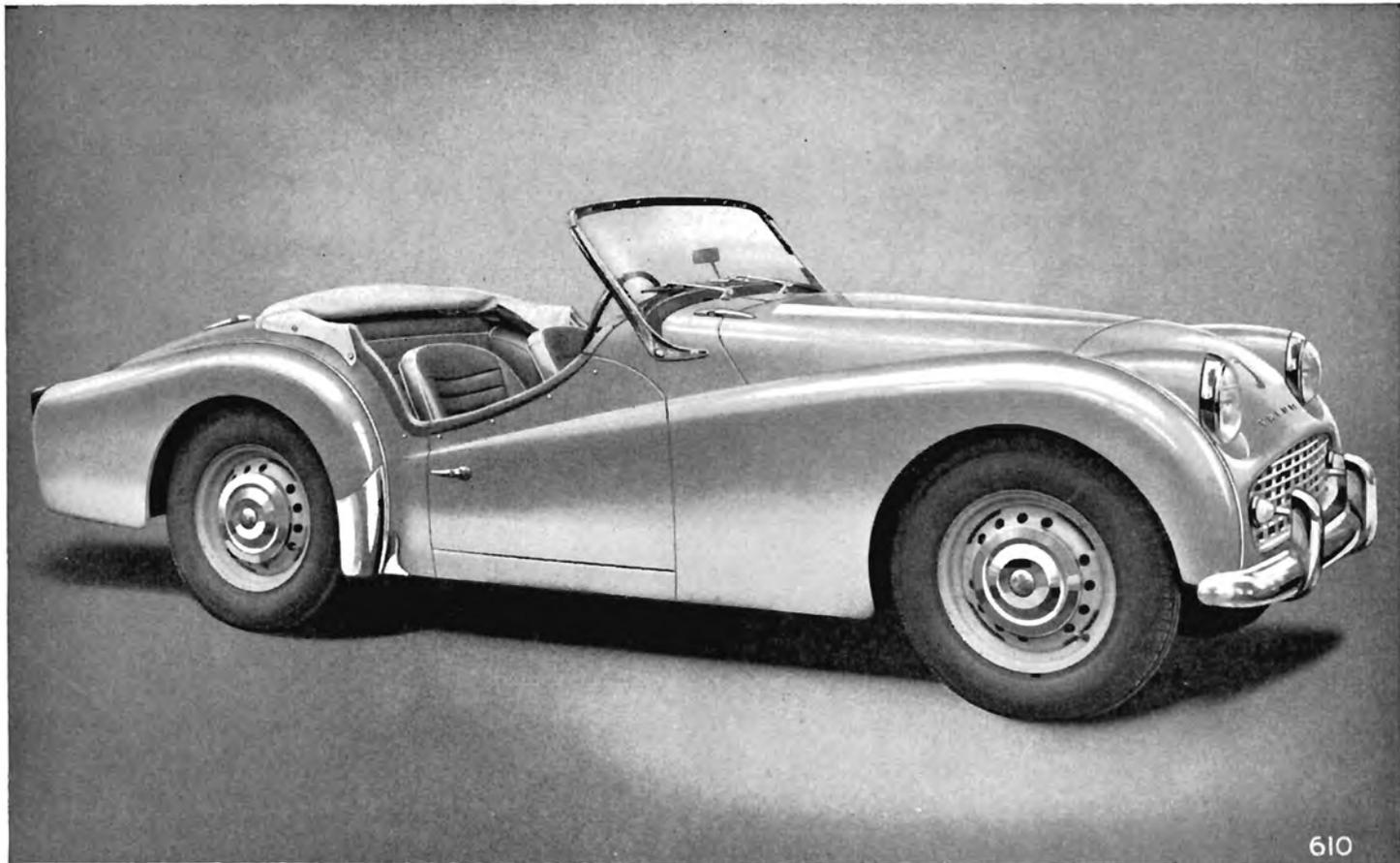
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THE TRIUMPH TR3 SPORTS CAR

## FOREWORD

The vehicle has been designed so that a minimum of attention is required to keep it in satisfactory running order. There are, however, certain maintenance operations which must be undertaken regularly, and the object of this instruction book is to assist even the non-technical owner to understand the various operations required, and so ensure that the vehicle receives regular and correct attention.

If in any doubt about the vehicle's performance the owner should at once consult a Triumph dealer, preferably the one from whom the car was purchased. Triumph dealers are very carefully selected and are suitably equipped to give satisfactory and expert after sales service.

There is a Service School at the factory at which our dealers' representatives acquire a first hand knowledge of up-to-date service procedure. Valuable information is given regarding special methods and equipment which greatly assists in getting the various operations performed more expeditiously.

**THE STANDARD CAR REVIEW** is a journal published monthly which gives authentic information regarding the activities and products of The Standard & Triumph Motor Co. Ltd. It is obtainable from most Triumph dealers. Please write to the Publicity Department **for a free specimen copy.**

The Company reserves the right, on the sale of any vehicle, to make before delivery, without notice, alterations to or departures from the specification, design or equipment, detailed, described or illustrated in this or other Company publications.

## LICENCE DATA

Car number (Commission number)	Plate on dash
Engine number	On cylinder block
(Both numbers are to be seen by lifting the bonnet).	
Cubic capacity	121.5 cu. in. (1991 c.c.)

## GENERAL SPECIFICATION

Number of cylinders	4
Bore of cylinders	3.268 in. (83 mm.)
Stroke of crank	3.622 in. (92 mm.)
Compression ratio	8.5
Firing order	1, 3, 4, 2
Brake H.P. (Road Setting)	100 at 5,000 r.p.m.

		Imperial Pints	U.S. Pints	
<b>Oil Capacity</b>	Engine			
	From Dry (see page 13)	11	13.2	(6.25 litres)
	Drain and Refill	10	12	(5.7 litres)
Gearbox		1½	1.8	(0.8 litres)
	„ with overdrive—From dry	3½	4.2	(2.0 litres)
	Drain and Refill	2¾	3.3	(1.6 litres)
Rear Axle		1½	1.8	(0.8 litres)

<b>Water Capacity</b> of cooling system	14	16.8	(8.0 litres)
with heater fitted	14½	17.4	(8.3 litres)

	12	14.4	(54.5 litres)
<b>Fuel Capacity</b>	Gallons		

### Dimensions:

Wheelbase	7' 4"	(224 cm.)
Track—Front	3' 9"	(114 cm.)
Rear	3' 9½"	(116 cm.)
Ground clearance (under axle)	6"	(15.2 cm.)
Turning circle (between kerbs)	35' 0"	(10.6 metres)
Tyre size		5.50"—15"

### Overall Dimensions:

Length	12' 7"	(384 cm.)
Width	4' 7½"	(141 cm.)
Height (unladen)—Hood erect	4' 2"	(127 cm.)
Top of screen	3' 10"	(117 cm.)
Hood down and screen removed	3' 4"	(102 cm.)

### Weights (excluding extra equipment)

Complete, tank full of petrol	19 cwts. 0 qrs. 7 lbs. (2135 lb.) (970 kg.)
Shipping weight	17 cwts. 3 qrs. 21 lbs. (2009 lb.) (910 kg.)

## GENERAL SPECIFICATION

**VALVE TIMING.** [With valve-rocker clearance set at 0.015" (0.38 mm.)].

Inlet valve opens 15° before top dead centre.

Exhaust valve closes 15° after top dead centre.

(15° before or after T.D.C. is equivalent to 0.081" piston travel or 1.5" (3.81 cm.) measured round the flywheel adjacent to the starter teeth).

**VALVE-ROCKER CLEARANCES** (see page 25).

**IGNITION TIMING** (see page 26).

Set to fire at 4° before top dead centre (distributor contact points just opening). As the advance is fully automatic, the setting is at full retard.

Contact breaker gap should be set at 0.015" (0.4 mm.).

## ROAD SPEED DATA

	O.D. Top	Top	O.D. 3rd	3rd	O.D. 2nd	2nd	1st	Re- verse
Gearbox Ratios	0.82	1.00	1.09	1.325	1.64	2.00	3.38	4.35
Overall Ratios :								
3.7 Axle	3.03	3.7	4.02	4.9	6.07	7.4	12.5	16.1
4.1 Axle	3.28	4.1	4.35	5.3	6.57	8.0	13.5	17.8
Engine Speeds (3.7 axle)								
Using Dunlop Tyres :								
at 10 m.p.h.	410	500	540	660	820	1000	1630	2180
at 10 km./hr.	250	310	340	410	510	620	1050	1350
Using Michelin X Tyres :								
at 10 m.p.h.	420	515	560	680	850	1020	1720	2240
at 10 km./hr.	250	320	350	420	530	630	1070	1390
Engine Speeds (4.1 axle)								
Using Dunlop Tyres :								
at 10 m.p.h.	440	550	580	710	890	1080	1830	2400
at 10 km./hr.	270	340	360	440	550	670	1140	1480
Using Michelin X Tyres :								
at 10 m.p.h.	450	565	600	730	910	1100	1860	2460
at 10 km./hr.	290	360	380	460	510	690	1160	1570

# MANAGEMENT OF CAR

## CONTROLS, SWITCHES AND INSTRUMENTS

The position of the controls, switches and instruments will readily be understood by reference to Fig. 1.

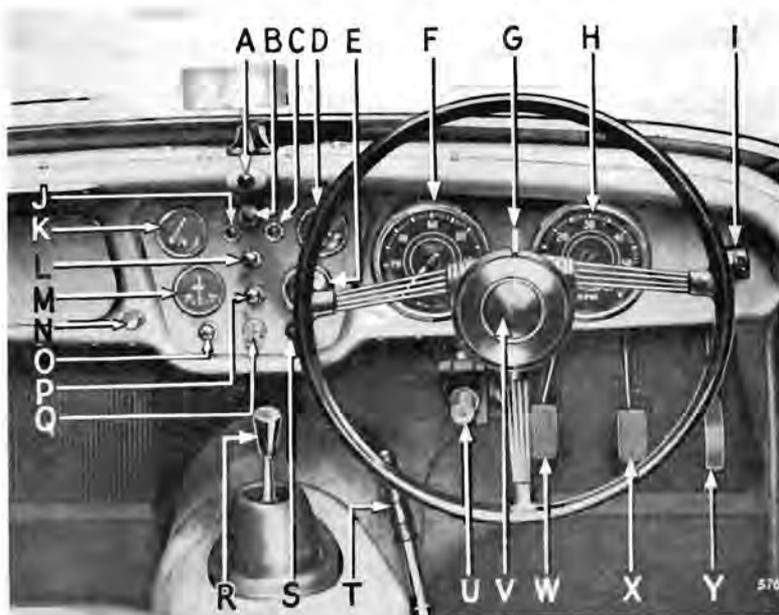


Fig. 1. Controls, switches and instruments (R.H. Drive).

A Scuttle Ventilator Control.	H Tachometer.	P Side-head Lamp Switch.
B Instrument Panel Light Switch.	I Overdrive Control Switch.	Q Ignition Lock.
C Direction Indicator Warning Light.	J Ignition Warning Light.	R Gear Change Lever.
D Oil Pressure Gauge.	K Fuel Contents Gauge.	S Choke Control.
E Water Temperature Gauge.	L Windscreen Wiper Switch.	T Handbrake Lever.
F Speedometer.	M Ammeter.	U Headlamp Dipper Switch.
G Direction Indicator Switch.	N Screen Wash Control.	V Horn Button.
	O Starter Switch.	W Clutch Pedal.
		X Brake Pedal.
		Y Accelerator Pedal.

**Note :-** In left-hand drive cars D changes with K and E with M. F and H remain in the same relationship to the steering wheel.

### CONTROLS

- (W) **Clutch.** Press pedal to disengage drive from engine to gearbox. **Do not rest your foot on the pedal when driving, or hold clutch out to free wheel.**

**Bonnet Locks.** Insert the end of the carriage key in the two patented fasteners at either side of the front of the bonnet and twist to release. The safety catch in both cases is situated under the front of the bonnet and can be released by the fingers.

## MANAGEMENT OF CAR—Controls, Switches and Instruments

- (S) **Choke Control.** See page 9 for full instructions.
- (R) **Gear Lever.** See Fig. 2 for gear positions.
- (T) **Handbrake.** Pull to operate rear wheel brakes. The lever will be held in any position by pressing the button on top of the lever and releasing the lever. To release ratchet, first pull lever when the pawl will automatically spring out of engagement with the ratchet and the lever is free to release the brakes.

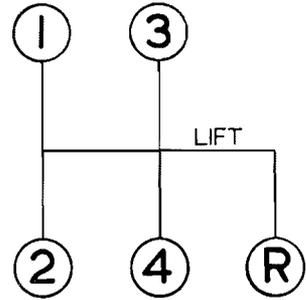


Fig. 2. Gear positions.

**Radio Controls.** See page 40.

- (I) **Overdrive Control.** See page 40.

**Petrol Tap.** This is situated on the left-hand side of the frame adjacent to the front wheel panel. To turn on the supply, pull the tap upwards (see Fig. 30, lubrication chart), twist to lock in the open position.

**Seat Adjustment.** The seats are adjustable for “leg length” after operating the lever which is situated at the side of the seat.

- (N) **Screen Washer** (where fitted). To operate, push the control knob.
- (A) **Scuttle Ventilator.** To open ventilator pull control knob.

### SWITCHES

**Brake Light.** The switch is connected to the brake pedal mechanism, but will operate the red rear light only with the ignition switched on.

- (G) **Direction Indicators.** These self-cancelling indicators will only operate with the ignition switched on, and a warning light (C) will flash on the dash panel when the switch is operated.
- (P) **Head, Tail and Parking Lamps.** Pull knob to switch on parking lights. Turn slightly clockwise and pull again to switch on the head lights. Press foot operated switch (U) to dip head lights, press again for “full on” position, in which position a small red light appears at the bottom of the speedometer dial.
- (V) **Horn.** Press button in centre of steering wheel to operate horns.
- (Q) **Ignition.** Insert key and turn clockwise to switch on. Do not leave the switch “on” when engine is stationary.
- (B) **Panel Lights.** Pull knob to switch on panel lights. These lights will only operate when the parking lights are switched on.
- (O) **Starter Motor.** Press to operate engine starter (see page 9 for full instructions).

## MANAGEMENT OF CAR—Controls, Switches and Instruments

- (L) **Windscreen Wipers.** Pull knob to operate ; they will only function when the ignition is switched on. They will return automatically to the parked position when switched off.

**Heater Switch** See page 40.

### INSTRUMENTS

- (M) **Ammeter.** Indicates the flow of current into or out of the battery.
- (K) **Fuel Gauge.** Registers the amount of fuel in the tank. It operates automatically when the ignition is switched on.
- (D) **Oil Pressure Gauge.** Indicates pressure of oil being pumped to the bearings.  
The gauge should read 70 lb./sq. in. minimum when the car is travelling at normal speeds and the oil is hot. Low pressure may be registered when the engine is idling or running at low speeds ; this is quite normal.
- (F) **Speedometer.** Registers vehicle's speed and total distance covered, and is fitted with a trip which is cancelled by pushing up the serrated knob (situated under the instrument) and turning anti-clockwise.
- (H) **Tachometer.** Indicates the speed of engine rotation in revolutions per minute. (See page 10).
- (J) **Ignition Warning Light.** Glows red when the ignition is switched on with the engine idling or stopped. It is an indication that current is being drawn from the battery for the ignition circuit, or other purposes that are controlled by the ignition switch.
- (E) **Water Temperature Gauge.** The gauge shows the temperature of the cooling water at the thermostat. Under normal motoring conditions the water temperature should not exceed 185°F.

## MANAGEMENT OF CAR.

### DRIVING THE CAR

#### TO START THE ENGINE

##### **IMPORTANT—When starting the engine at any time :**

If the engine does not start when the starter is first operated, **do not re-operate until both starter motor and engine have come to rest.** This will avoid damage to the starter pinion.

##### **Starting when Engine is Cold**

Place the gear lever in the neutral position and apply the handbrake. Pull the carburettor choke control out to its stop, switch on the ignition and press the starter switch button. When the engine has warmed up, turn the choke control and allow it to return to the **half-out** position and turn to lock in this position. When the engine is sufficiently hot to run without undue hesitation, push the control fully home. If the battery is low use the starting handle. Should difficulty be experienced when starting the engine, do not keep the choke control out for too long or the sparking plugs will become wet with petrol. This will necessitate removing and drying them. When the car has been left standing for some time, the fuel in the carburettor float chambers may have evaporated. Under such circumstances, operate the hand primer on the fuel pump before the starter is operated. (See page 28).

When operating the starter in very cold conditions, depress the clutch pedal to relieve the motor of the considerable drag in the gearbox.

##### **Starting with Engine Warm or Hot**

When restarting a hot engine, depress the accelerator pedal to about one-third of its travel before pressing the starter button, the choke control should not be used.

##### **Warming up**

In order to minimise cylinder wear when starting from cold in winter, the engine should be warmed up quickly. Idle the engine until the oil circulates and then speed it up. It should not be allowed to idle for long periods and must not be raced up to high speeds when cold. An engine speed of approximately 1,500 r.p.m. may be regarded as a desirable warming up speed.

## DRIVING THE CAR—The Engine

### DRIVING

#### Gear Changing

Use a slow and deliberate movement to change into a synchronised gear (4th, 3rd and 2nd). Always move the gear lever fully home. First and reverse gears are not synchromesh. Do not engage first gear whilst the car is stationary and the engine revving at a greater speed than 800 r.p.m., or when travelling in excess of 15 m.p.h. Reverse gear must not be engaged whilst the car is travelling forward.

#### Desirable Speed Limits (Particularly in gears lower than top)

Avoid over-revving, particularly in the lower gears. **The driver is advised not to drive the car continuously at engine speeds above 4,500 r.p.m. in any gear. However, whilst accelerating through the gears it is permissible to attain 5,000 r.p.m. for short periods, this speed being indicated by a red mark on the tachometer.**

#### NEW ENGINES (see “Running Adjustments”)

For at least the first 500 miles, the working surfaces of the engine will be bedding down. The power and performance will improve only if the vehicle is carefully driven at moderate speeds during the running-in period.

The engine should not be driven at speeds exceeding 3,500 r.p.m. during this period, and the “running-in” should be progressive. The engine may “rev.” fairly fast so long as it is thoroughly warm and provided it is not **pulling hard**. Do not let the engine pull hard at low speeds, always select a lower gear.

## GENERAL UPKEEP

### REGULAR INSPECTION

**Every 250 miles** check the oil level when the engine is cold, and top up if necessary. Withdraw dipstick (F) (Fig. 3) and wipe clean, then insert and push fully home before withdrawing for reading. The lower mark on the dipstick indicates that 4 pints of oil will be required for topping up. The regular addition of oil not only maintains the correct level, but also tends to keep up the quality of the lubricant. Replenishment is via the cap (D) which must be lifted straight off.

#### Weekly,

**Check :** The water level in the radiator and replenish if necessary. Use clean rain water and keep the neck of the filler at least half full of water. Re-check after the engine has been warmed. The use of hard water results in a deposit on the inner side of the cooling surfaces, thus reducing efficiency.

**Tyre pressures.** The correct pressures are given on page 21. Keep the spare tyre inflated to a slightly higher pressure than that recommended, and reduce its pressure when the tyre is required for use.

Maintain the acid level in the battery at (A) and level with the top of the the separators. **Overfilling will cause acid spillage which will subsequently attack the surrounding metal panels.** Use only distilled water when replenishing. Keep the filler plugs screwed tight to prevent leakage. **Never use a naked light when checking the acid level.**

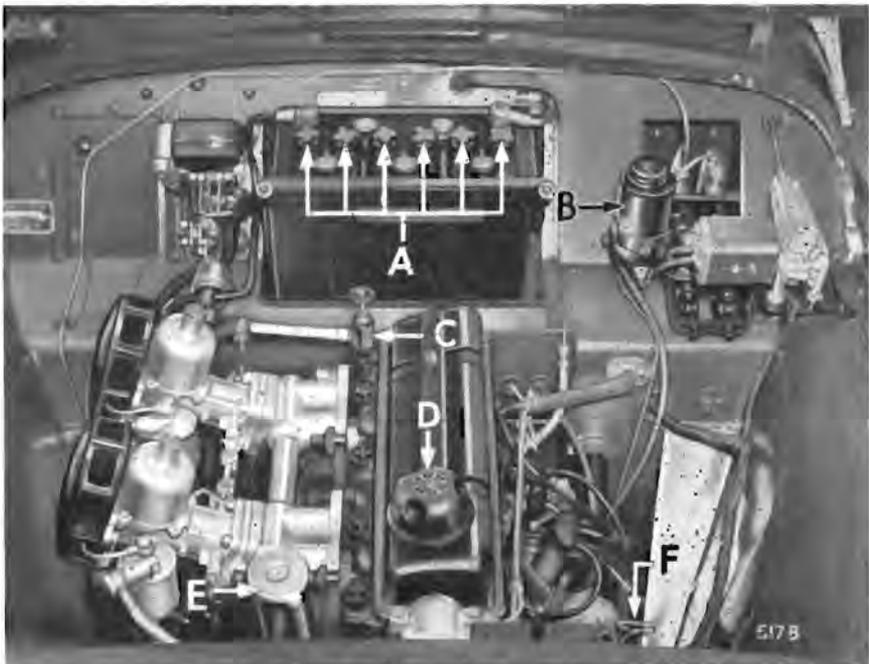


Fig. 3. View under bonnet.

## COOLING SYSTEM

**Filling** (see page 11).

### **Draining**

Taps are provided in the bottom tank of the radiator and at the rear of the cylinder block on the right-hand side. As the cooling system is pressurised it will be necessary, when draining, to remove the radiator cap (E) (Fig. 3.)

If a heater is fitted, ensure that the tap is open before draining.

### **Anti-Freeze Mixtures**

In order to protect the cooling system during frosty weather and reduce corrosion to a minimum, the use of Smith's "Bluecol", Duckham's Anti-freeze, Esso Anti-freeze, Shell "Snowflake" and Mobil Permazone Anti-freeze (inhibited Glycol base compound) is advised. The cooling system is fitted with a thermostat and there is a risk of the radiator block freezing while the engine is running during the warming up period when the thermostat is shut, even though the car has been left in a warm garage and water is not frozen at the start of the run.

Provide ample protection for the cooling system against a sudden fall in temperature down to 0° F. (-18°C.) during frosty weather by using 3 pints of anti-freeze.

In countries where sub-zero temperatures prevail, consult your Triumph dealer regarding the quantity of anti-freeze required.

**Do not use the same anti-freeze for more than one season since the inhibitor becomes exhausted and the components in contact with the cooling water may corrode.**

## LUBRICATION

This is one of the most important subjects in connection with the upkeep of a car, and careful attention to the following instructions will be amply repaid by the results obtained.

**For the recommended periods of lubrication, see the lubrication chart folded inside the rear cover of this book. The correct lubricants to be used are given on pages 50 and 51.**

## GENERAL UPKEEP—Lubrication

### Draining

To drain the engine, gearbox and rear axle, remove the plug provided beneath each unit. This process is assisted by opening the filler to allow ingress of air and by draining when the oil is hot, *i.e.*, immediately after a run.

## ENGINE

Only first quality oils are recommended for use in the engine sump. These are of correct viscosity and character to afford complete lubrication protection for normal driving. When the vehicle is used for severe competition work, it is advisable to use oils of high viscosity because of the increased oil temperature. Additives which dilute the oil or otherwise impair this protection must **not** be used. After many thousands of miles running the rate of oil consumption will increase. When this rate exceeds 1 gallon per 1,000 miles, it will be desirable to use the next heavier grade of the oil you normally employ.

### Engine Oil Drain Period

The frequency of the drain period should be related to the driving conditions to which the vehicle is subjected. 3,000 mile intervals are recommended for average driving conditions as defined below. This should be reduced for unfavourable conditions and may be extended for those more favourable.

#### Favourable

Long distance journeys, with little or no engine idling, on well surfaced roads, reasonably free from dust.

#### Average

Medium length journeys on well surfaced roads with a small proportion of stop/start operation.

#### Unfavourable

Any of the following :

- (a) Frequent stop/start driving.
- (b) Operation during cold weather, especially when appreciable engine idling is involved.
- (c) Where much driving is done under dusty conditions.

The use of an upper cylinder lubricant has been found to be an advantage, during the running-in period of a new engine. The lubricant should be mixed with the fuel in the proportions given on the container. Such lubricants may be used with advantage throughout the life of the vehicle, particularly during wintry weather.

### Carburettors

Every 6,000 miles, unscrew the brass hexagon plug from the top of each carburettor and top up with engine oil to the level of the hollow inner shaft. A button is provided on the forward side of the carburettor body, which when pressed upwards, lifts the piston. Resistance can be felt when there is sufficient oil in the hollow shaft. Apply oil also to the throttle linkages but do not oil the bearings of the transverse rod attached to the scuttle as this will seriously deteriorate the sealing composition.



Fig. 4. Oil Cleaner "full-flow" type.

### The Oil Cleaner

The oil cleaner is designed to filter the oil to a very fine degree. It will continue to do this provided that the old cartridge (B) is removed and a new replacement cartridge is fitted at periods not exceeding 6,000 miles. Should this operation be neglected, the filter will become choked and unfiltered oil will then be passed to the engine via the balance valve in the cleaner. To renew the cartridge, unscrew the securing bolt, remove the container and withdraw the cartridge. On some models it is necessary to unclip and swing the crankcase breather tube rearwards to provide sufficient room for removal of the container.

Wash out the container to remove foreign matter trapped by the filter, and discard the old container washer (A), replacing it with a new one each time the cartridge is renewed. When re-assembling the container, ensure that the washer is correctly positioned in the groove in the filter body. Do not tighten the bolt (C) more than is necessary to obtain an oil-tight joint. Drain the engine oil and refill with fresh oil before re-starting the engine.

### Ignition Distributor (see Fig. 5)

Every 6,000 miles smear the cam (B) lightly with engine oil. A pronounced squeak occurs when the cam is quite dry. Withdraw the moulded rotor arm

## GENERAL UPKEEP -Lubrication

from the top of the spindle and apply a few drops of thin machine oil around the edge of the screw (A) to lubricate the cam bearings and distributor spindle. At the same time, place a single drop of clean engine oil on the pivots (C) and (D).

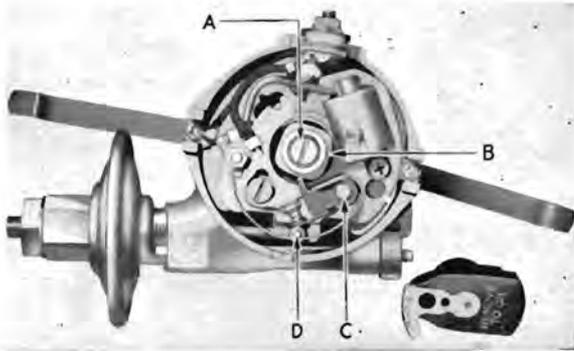


Fig. 5. Ignition distributor.

### Water Pump

One nipple is provided (see arrow, Fig. 6) to which the grease gun should be applied every 6,000 miles. **Give five strokes with the gun.**

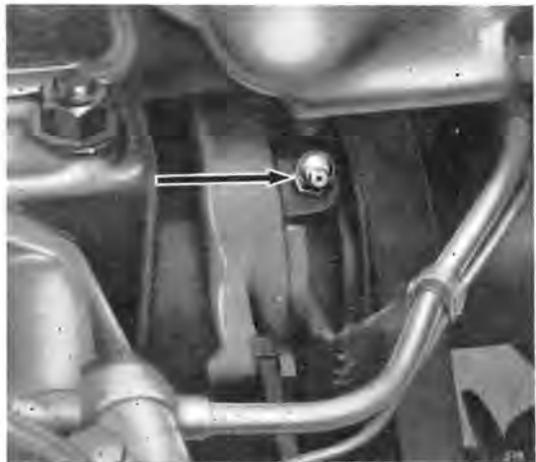


Fig. 6. Water pump lubrication.

### Dynamo and Starter

After completing 20,000—30,000 miles, remove the dynamo for cleaning, adjustment and repacking the front bearing with grease. This should be done preferably by the nearest Triumph or Lucas Service Depot.

## GENERAL UPKEEP—Lubrication

Every 12,000 miles pour a few drops of engine oil through the hole in the centre of the rear end cap. The hole is sealed from dust with a small rubber plug.

**The Starter** is fitted with special bearings which require no lubrication.

### Air Cleaners

Every 6,000 miles, remove the air cleaners and wash them in petrol, particularly the gauzes, which must then be soaked in oil and allowed to drain before finally wiping them over and refitting. It is very important when refitting the air cleaners that the holes immediately above the setscrew holes in the carburettor are aligned with similarly positioned holes in the cleaner.

### Oil Filler Cap

Every 6,000 miles remove and swill the cap in fuel, dry off and re-fit.

## GEARBOX

Every 6,000 miles, check the oil level and top-up if necessary.

Check the oil level by removing a rubber plug from the gearbox domed cover, thus exposing the dipstick (see Fig. 7). Withdraw dipstick, wipe clean, then insert stick and push it fully home before withdrawing for reading. Correct level is indicated by the top mark. The dipstick orifice is also the gearbox oil filler.

If a radio is fitted unplug the lead, unscrew the securing screws on the gearbox tunnel and remove the radio complete with loudspeaker. If an overdrive is fitted, see also page 40.

Every 12,000 miles, drain the gearbox and refill with new oil.



Fig. 7. Gearbox oil filler and dipstick.

## REAR AXLE

To ensure efficient operation and long life of the hypoid bevel gears, use only those special lubricants recommended on pages 50 and 51. Drain the axle and replenish with new "Hypoid" oil every 6,000 miles. DO NOT EXCEED 12,000 miles.

## GENERAL UPKEEP—Lubrication

Check the oil level during this period, especially after the first 1,000 miles, and replenish if necessary to level with bottom of the threads in the filler orifice. Should a top-up be necessary, investigate the cause of oil loss. The filler plug fitted to the rear axle cover is accessible from underneath the car, (see arrow A, Fig. 8). Clean away mud before unscrewing the filler plug to avoid grit falling into the axle.

### BRAKE AND CLUTCH OPERATION

The hydraulic fluid for clutch and brake operation is contained in a single reservoir which has an inner and outer chamber. The inner chamber is connected to the clutch withdrawal mechanism and the outer chamber to the brakes.

Check the fluid level every 6,000 miles. The fluid must be maintained level with the top of the inner chamber. When filling, or topping up the reservoir, use only the special fluid recommended. **Any other fluid may be dangerous.**

#### Clutch Shaft Bearings

Apply the grease gun to the clutch shaft bearing grease nipples (one at each side of the clutch housing) every 6,000 miles. One shot is sufficient. The nipples are accessible from underneath the car. (See arrow (C), Fig. 19, page 30).

#### Clutch and Brake Pedal Bearings

Apply the oil can to the various pivots, etc., of the pedal linkages, both under the bonnet and in the driving compartment.

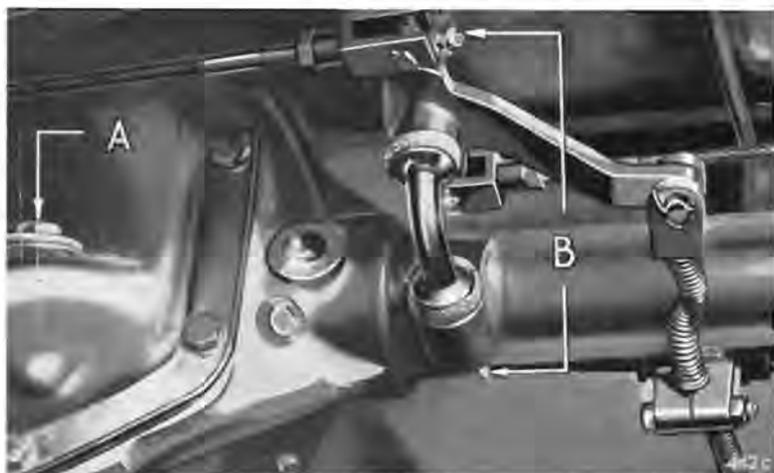


Fig. 8. Rear axle oil filler and handbrake compensator

### Handbrake Cable Conduit

Every 6,000 miles, apply the grease gun to a grease nipple fitted in the conduit, as shown in the lubrication chart.

During the winter months it is important to keep the cable regularly lubricated. This will prevent the entry of water and the possibility of freezing which would lock the brake cable.

When lubricating the cable, pump the gun until grease exudes from the end of the conduit.

### Handbrake Compensator

Two grease nipples are provided on the compensator which is situated on the rear axle casing (see arrow (B), Fig. 8).

## ROAD WHEEL HUBS

### Front

Every 12,000 miles, repack the hubs with grease. This involves removing the hubs and washing the bearings to remove all traces of the old grease before packing the rollers and races with new grease. Do not disturb the pipe unions but unbolt and move the complete caliper to allow the hub and disc to be removed. Take care not to lose shims which may be fitted between the caliper and the vertical link.

When replacing, ensure that the inner race is tight against its shoulder. Tighten the hub nut until resistance is felt to hub rotation, then slacken off the nut by one half flat and insert the split pin through one of the two holes provided.

### Rear

Every 6,000 miles, give five strokes of the grease gun to a nipple (Fig. 9), situated behind the rear backing plate and facing downwards.



Fig. 9. Rear hub lubricator.

## FRONT SUSPENSION AND STEERING

Nipples are provided for lubricating the steering swivels (A), outer tie rod, ball joints, outer bushes of the lower wish-bones (see (B) Fig. 10), and the steering slave drop arm pivot. Do not lubricate the joints attached to the drop arms as they contain rubber. Lubricate the inner nylon wish-bone bushes with oil occasionally. A pronounced squeak develops when these bushes become dry. When greasing the lower suspension swivels it is an advantage to jack up under the road spring frame until the front wheel is free of the ground. This allows grease to cover the thrust faces. Grease these points every 1,000 miles.

After greasing the steering swivels, wipe away all surplus grease. This will prevent it from contaminating the disc brakes.

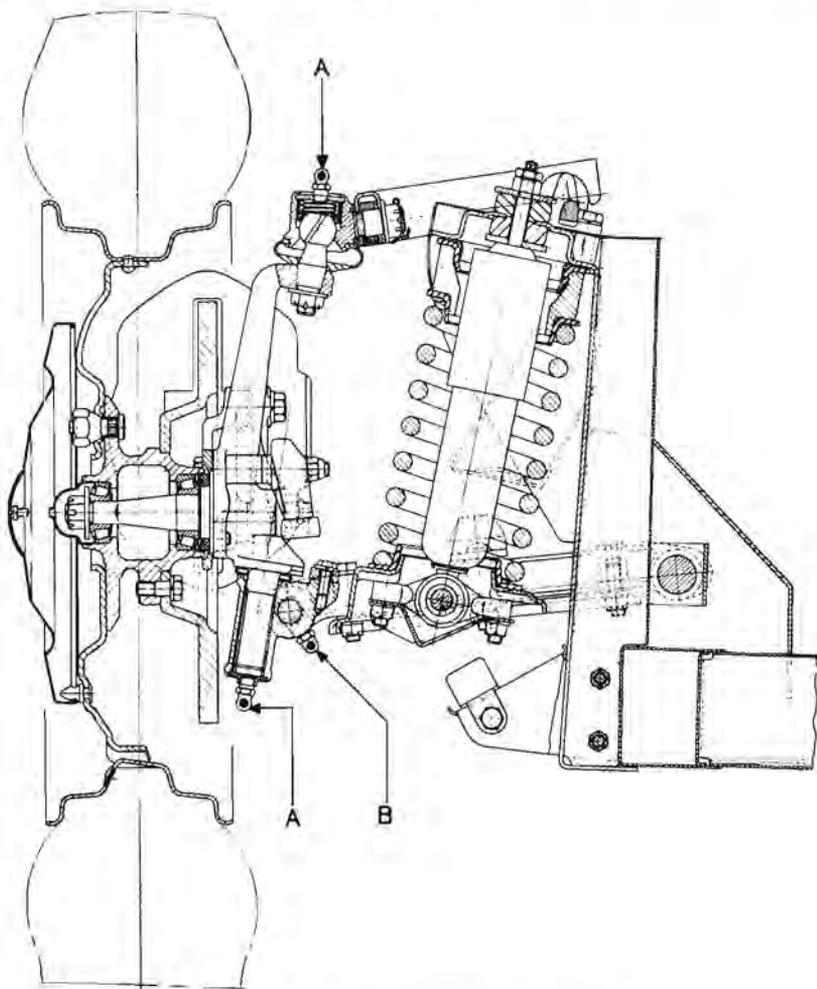


Fig. 10. Front suspension lubrication.

## GENERAL UPKEEP—Lubrication

Every 6,000 miles, lubricate the steering box by removing the rubber plug situated on the steering column and top up with oil to the level of the orifice.

### PROPELLER SHAFT

Every 6,000 miles, lubricate the needle roller bearings and splines. Supply the nipple (B) at each end of the shaft with oil for the bearings, and the nipple (A) with grease for the splines.

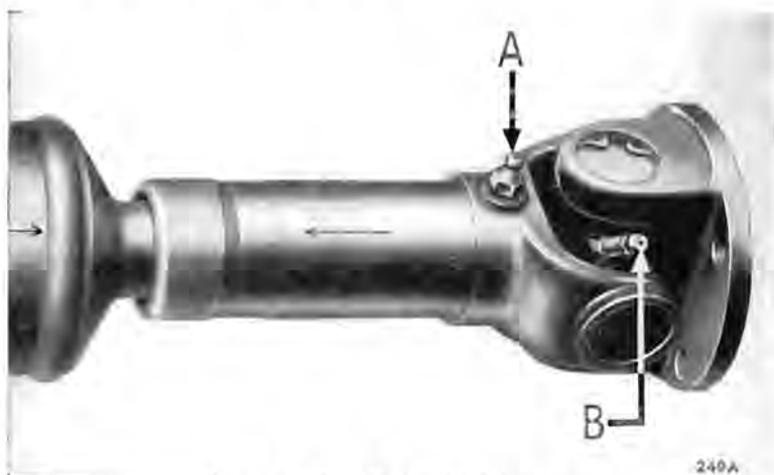


Fig. 11. Propeller shaft lubrication.

### REAR ROAD SPRINGS

Paint over the spring blades with old rear axle or engine oil, particularly around the blade tips and clips. Avoid lubricating the rubber bushes which are fitted in all the rear spring eyes.

### HYDRAULIC DAMPERS

The front telescopic dampers do not require "topping up."

Top-up the rear dampers with **Armstrong Shock Absorber Fluid (Crimson)** to the level of the bottom of the plug hole every 12,000 miles. When topping-up, it is essential that dirt is prevented from finding its way into the interior. Faulty dampers can only be serviced by the manufacturers.

### HINGES, CONTROLS, DOOR LOCKS, ETC.

Give occasional attention with an oil can to the bonnet catches, hinges and several small control joints. Door locks should receive a drop of oil every month to ensure easy operation and to prevent corrosion. Attention given to the connections on the handbrake and ratchet mechanism, etc., will enable the controls to work freely and prevent unnecessary wear.

**TYRES**

The maintenance of correct tyre pressure is important to the life of the tyres and behaviour of the steering and suspension.

Examine the tyres occasionally for flints or other road matter which may have become embedded in the tread. By using fuel sparingly, clean off any oil which may have got on the tyres. Driving into or over sharp edged kerbs is liable to fracture the walls of the tyres and should be avoided where possible.

**Tyre Pressures**

**Dunlop :** **Front** ..... 22 lb./sq. in. (1.55 kg./sq. cm.).  
**Rear** ..... 24 lb./sq. in. (1.7 kg./sq. cm.).

The recommendations listed below apply to cars used under ordinary road conditions either in the U.K. or Overseas. Where cars are to be used for racing or special high speed testing and sustained speeds of more than 110 miles per hour are anticipated, consult the Dunlop Rubber Company as to the need for tyres of full racing construction.

OPERATING CONDITIONS	MAXIMUM ROAD SPEED	
	Up to 100/105 m.p.h.	Over 100/105 m.p.h.
(a) Normal motoring in G.B. and under similar road and traffic conditions elsewhere.	N.E.	R.S.
(b) Continental type touring with lengthy periods at sustained speeds in excess of 85/90 m.p.h.	N.E. + 6 lb./sq.in. (0.42kg./sq.cm.)	R.S. + 6 lb./sq. in. (0.42kg./sq.cm.)
(c) Motoring which is predominantly and regularly of the high speed Continental touring type.	R.S.	R.S. + 8 lb./sq. in. (0.56 kg./sq.cm.)

Key:—

**N.E.** Normal equipment, *i.e.* Dunlop or Dunlop Fort, as case may be, at regular inflation pressures.

**R.S.** Road Speed tyres at regular inflation pressures.

**Michelin X Tyres :** **Front** ..... 24 lb./sq. in. (1.7 kg./sq. cm.).  
**Rear** ..... 28 lb./sq. in. (1.97 kg./sq. cm.).

These pressures should be increased by 5 lb./sq. in. (0.35 kg./sq. cm.) if the car is driven consistently hard and fast.

### Changing Position of Tyres

Every 3,000 miles interchange the front tyres with rear tyres. Diagonal interchanging between left front and right rear and between right front and left rear provides the most satisfactory first change. This reverses the direction of rotation and keeps the wear of the tyres even and uniform.

### FRONT WHEEL ALIGNMENT

Alignment of the front wheels is most important in its effect on tyre wear and good steering. Excessive toe-in will lead to severe tyre wear, particularly on the "kerb side" front tyre.

**Correct Wheel Alignment.** The wheels should **Toe-in**  $\frac{1}{8}$ ".

When using Michelin X tyres set **Parallel to Toe-in**  $\frac{1}{16}$ ".

### To Check and Adjust Wheel Alignment

If adjustment is found necessary it should be carried out equally on the two outer tie-rods. When adjustment is complete ensure that the ball joints are in the centre of "swing" before securely tightening the tie-rod locking nuts.

### THE JACK

A screw jack is provided which is adapted to lift either side of the car as required.

To fit the jack in position shown, turn up the carpet and remove the small cover plate situated just in front of the seat.

Engage the lower lip of the boss with the bottom edge of the square hole, then swing the jack into a vertical position and lift to ensure correct engagement, making sure that it is right home in its socket. Apply the handbrake or chock the wheels which will remain on the ground before operating the jack handle.

If a jack is used under the rear axle case, **take care** to ensure that the jack pad does not touch the rear cover plate when lifting, otherwise there is a risk of damage and consequent oil leak.



Fig. 12. Jacking the car.

## **BODYWORK**

Dust may be removed from the exterior by using a soft cloth only, but if it has been wet at any time it is advisable to use a sponge and water. Always use water when removing mud and when the car is clean finally wipe over with an almost dry chamois leather. Washing alone will not keep up the brilliance of the paintwork over an indefinite period and it may become necessary to use a cleaner to remove all grease and dirt. It is advisable to acquire the cleaner from a reputable dealer who will be able to supply you with the best cleaner to suit the particular paintwork of your car, afterwards polishing with some suitable preparation.

Special cleaners are available for removing traffic film and tar. Chromium plated parts need cleaning with soap and water, and wax polishing is beneficial. If, due to neglect, the plate becomes spotted, it may be necessary to use a chromium plate cleaner.

Dust interior of the car occasionally and brush the carpets with a stiff brush. The upholstery may be cleaned by the application of a little soap and damp cloth, followed by a final wipe down with an almost dry sponge or wash leather. Never use detergents as these will affect the surface of the material. When a vacuum cleaner is available it can be used with advantage to help clean the interior.

## **DOOR ADJUSTMENT**

The doors are provided with special locks which, when correctly adjusted, prevent any movement of the closed door. Only the striking plate requires repositioning when adjustment becomes necessary.

This adjustment is best carried out by a coach fitter.

## **SOFT TOP STOWAGE**

When the soft top is completely removed, take care not to fold the material too sharply. The supports may then be hinged down flat behind the seats. When refitting the soft top, after erecting the supports, always fasten it to the body first and then pull it over the supports and fasten to the screen. When fastened down the rubber backed roll of material attached to the top and running along the top edge of the windscreen should be opened out and fitted over the top lip of the windscreen frame to complete the sealing.

## **SOFT TOP FASTENERS**

Two types of fasteners are used, "Lift the Dot" and "Tenax". When fitting either type it is only necessary to push the fasteners over the securing stud as shown in Fig. 13. With the "Tenax" type (as illustrated) do not press or pull the small knob before engagement as there will be risk of damage to the inner prongs. After fitting, the knob may be pressed to ensure correct engagement. To remove the fasteners, either pull the small knob or in the case of the "Lift the Dot," do as its title suggests, lift the outer edge.

## BODYWORK

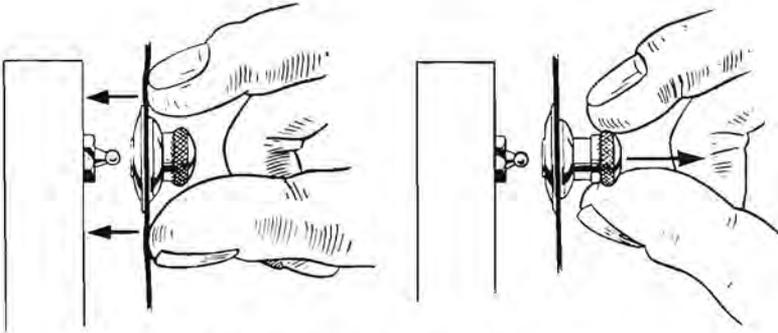


Fig. 13. "Tenax" soft top fasteners.

When removing the fasteners from the screen, relieve the tension on the fasteners by applying a slight hand pressure, in the forward direction, to the corner of the soft top where it passes over its supports.

### SPARE WHEEL AND TOOL STOWAGE

The spare wheel is housed in a compartment under the luggage locker. A key is provided for the panel locks. To open, insert the key and give a half turn towards the centre of the car to release each catch. The tools are stowed as shown in Fig. 14. To place them in position first withdraw the spare wheel about six inches.



Fig. 14. Tool stowage.

## RUNNING ADJUSTMENTS

Various adjustments are necessary from time to time in order to maintain the mechanism in good running order. No definite period can be stated for carrying out these adjustments since this is dependent upon the manner in which the vehicle is used. The most important adjustments and the recommended intervals between, are as follows.

### ENGINE

#### Decarbonising and Valve Grinding

Remove the cylinder head for valve grinding after the first 5,000 miles. This is chiefly to give attention to the valve seats, the metal of which becomes stabilised during this period. At the first and every successive 6,000 miles check the compression pressures. This is best carried out by an authorised Dealer who will be able to determine the condition of the engine. Providing that the engine is running satisfactorily after this period and the compression of each cylinder is normal, it is much better to leave it alone.

#### Cylinder Head Nuts

After the first 1,000 miles check the cylinder head for tightness whilst the engine is hot, in the order shown on Fig. 15.

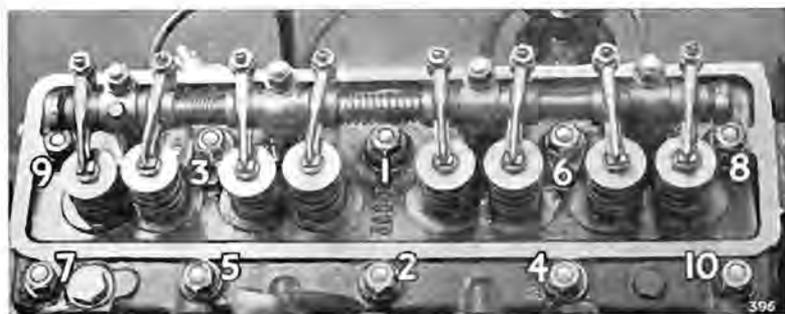


Fig. 15. Order of tightening cylinder head nuts.

#### Valve-Rocker Clearances (measured cold)

Set the inlet and exhaust valve-rocker clearances at 0.010". These settings are correct for both normal and high speed running.

## RUNNING ADJUSTMENTS—Engine

### Ignition Timing

On initial assembly the ignition is set as stated on page 5.



Fig. 16. Ignition leads.

Use only Premium grade fuels of 95 octane or higher and so long as the engine is free from carbon, it will not pink. A substantial carbon build-up may cause "pinking". This will necessitate retarding the ignition slightly so that "pinking" is just audible when pulling hard when the engine speed is in excess of 1,500 r.p.m.

To advance ignition, rotate the knurled screw as indicated. Each division on the distributor vernier scale represents  $2^\circ$  on the distributor, *i.e.*,  $4^\circ$  on the crankshaft.

The firing order is 1 3, 4, 2.

To obtain T.D.C. position, turn the crankshaft until the small hole in the belt pulley is in line with the pointer attached to the timing cover. Four degrees is equivalent to  $\frac{3}{16}$ " measured on the circumference of the crankshaft fan pulley.

### Valve Timing

See page 5 for correct valve timing.

### Sparking Plugs

It is important that the correct type of plug be fitted when making replacements, this is: Champion No. L.7— $\frac{1}{2}$ " reach.

In countries where the octane rating of the fuel is low, making it necessary to use the lower compression ratio, it may be desirable to use Champion L.10 plugs.

## RUNNING ADJUSTMENTS—Engine

For high speed touring, use Champion No. L.5— $\frac{1}{2}$ " reach. Maintain the gaps (*i.e.*, the width between the firing point of the centre electrode and earth point) at 0.025". Incorrect gap settings may cause misfiring or erratic slow running. Faulty plug leads or cracked porcelain insulation in the sparking plug will also cause faulty ignition.

Clean and adjust the sparking plugs at 3,000 miles intervals. Renew all sparking plugs at 12,000 miles.

### Carburettors (Twin S.U.)

Type H6, correct needle for normal and competition work **S.M.** When carburettors are fitted with oil bath air cleaners use CIW needles.

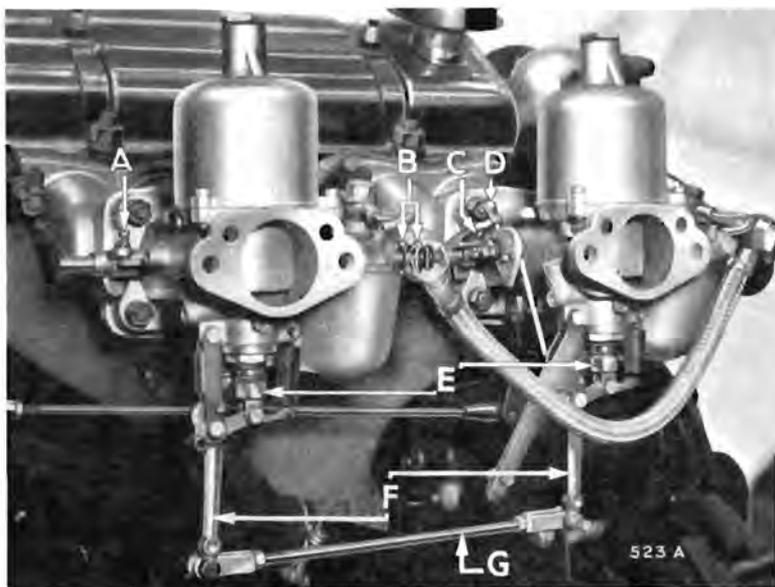


Fig. 17. Carburetors.

### Adjustment

As the needle size is determined during engine development, adjustment of the carburettors is confined to correct idling adjustment. Remove the air cleaners and run the engine until it has attained its normal running temperature. Slacken one of the clamping bolts (B) on the throttle spindle connection and disconnect the mixture control link (G) by removing one of the fork swivel pins. Adjust the idling speed to approximately 500 r.p.m. by moving each throttle adjusting screw (A) & (C) an equal amount. By listening to the hiss in the intakes, adjust the throttle adjusting screws until the intensity of the hiss is similar on both intakes. This will synchronise the throttles. When this is satisfactory, adjust the mixture by screwing both the jet adjusting nuts (E) up or down to exactly the same extent, at the same time keeping the jet levers (F) pressed forward to ensure that the jets are hard up against the nuts, until even running is obtained. As these are adjusted, the engine will probably run faster, and it may therefore be necessary to unscrew the throttle adjusting screws a little, each by the same amount, in order to reduce the speed. When the mixture is correct on both carburettors, lifting the piston of one of them should make the engine beat become irregular from excessive weakness. If lifting the piston about  $\frac{1}{8}$ " on one carburettor stops the engine and lifting the other about  $\frac{1}{8}$ " increases the engine speed, this indicates that the mixture on the first carburettor is set weak and the second is set rich. The first one should, therefore, be enriched by unscrewing the jet adjusting nut one flat at a time and the second should be weakened off by screwing up the jet adjusting nut in a similar manner. When the mixture is correct, the exhaust beat should be regular and even.

If it is irregular, with the splashy type of misfire and a colourless exhaust, the mixture is too weak. If there is a regular or rythmical type of misfire in the exhaust beat, together with a blackish exhaust, then the mixture is too rich. This should be noted when the air cleaners are again in position. When reconnecting the mixture control link, make sure that the jet levers are pressed forward and the control rod adjusted correctly for length so that the clevis pins may be inserted freely while the jets are in this position. The throttle spindle interconnection clamping bolts (B) should now be tightened.

The desired fast idle necessary when the choke is in operation is controlled by adjusting screw (D).

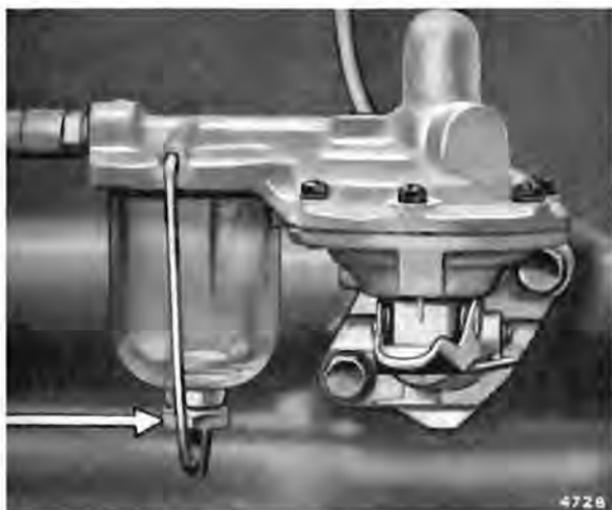
For further information on the tuning, adjustment and maintenance of S.U. carburettors, you are advised to get in touch with the S.U. Carburettor Co. Ltd., Wood Lane, Erdington, Birmingham 24, from whom the necessary literature may be obtained.

### Fuel Pump

The mechanically operated fuel pump, mounted on the left-hand side of the crankcase, provides a constant pressure of fuel to the carburettor. A

## RUNNING ADJUSTMENTS—Engine

hand primer is fitted, which can be used to pump fuel to the carburetors if the float chambers are not already full, under which condition a slight pumping resistance is felt before the lever reaches its stop. This resistance ceases when the chamber are full.



**Fig. 18.** Fuel pump.

The glass bowl acts as a sediment chamber for the petrol passing to the pump. The foreign matter collects on the underside of the gauze and, being washed off by petrol, sinks to the bottom of the bowl. To remove the sediment, detach the bowl by unscrewing the nut at its base and wash out the bowl with the fuel that will be in it. When refitting the bowl, tighten the nut sufficiently to ensure a fuel-tight joint. Over-tightening may result in damage.

## CLUTCH

The clutch hydraulic master cylinder is the same as that used for the brake system. (See arrow (B) Fig. 3, page 11.)

There is a partition in the container which separates the two systems and ensures that any defect in one system does not affect the other.

## RUNNING ADJUSTMENTS—Clutch

Adjustment of the mechanism is checked at the connecting rod between the operating cylinder and the shaft operating lever end (see Fig. 19). The correct setting is when there is .075" end float of the rod between operating cylinder and lever, in the "foot off" condition. To achieve this setting, measure the

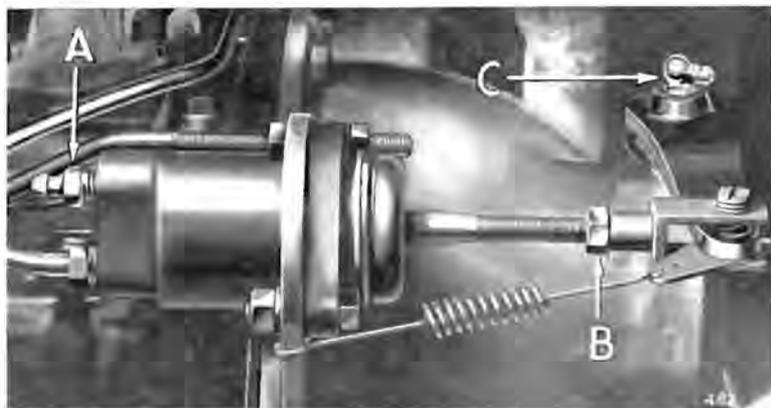


Fig. 19. Clutch adjustment.

total movement of the operating lever by hand and if different from the specified amount release the locknut (B, Fig. 19) and adjust the length of the connecting rod to the correct figure. The adjustable connection between pedal and master cylinder is set on initial assembly and **MUST NOT** be altered. If a pipe has been disconnected, it will be necessary to bleed the system. A bleeder nipple is shown by the arrow (A Fig. 19). For instruction on bleeding the system (see page 32).

## BRAKES

The pedal operates the brakes on all four wheels hydraulically, whilst the handbrake control operates the brakes on the rear wheels by means of cables. See page 17 for checking level of fluid in reservoir. If the level of fluid is particularly low, this indicates that a leak has developed in the system. This must be traced and rectified without delay.

It must be remembered that the presence of oil, grease or similar foreign matter on a drum brake shoe will seriously affect retarding effect of that particular brake, in spite of the fact that it is being applied with the same force as the others. In such cases thoroughly clean the brake drum with fuel and fit new replacement shoes. Cleaning the brake shoes is not satisfactory.

Do not re-line the shoes but fit genuine Girling replacement shoes. These have the right type of lining machined to the correct radii.

Should the shoes be removed, exercise care when replacing them to ensure that the pull-off springs are located behind the shoes and hooked through the correct holes, as shown.

## RUNNING ADJUSTMENTS—Brakes

### Front Brakes

The disc brakes, fitted to the front axles, are self-adjusting and should only need replacing when the shoe pads are reduced to approximately  $\frac{1}{8}$ " thickness.



Fig. 20A Front Assembly.



Fig. 20B Rear Assembly.

### Girling Brakes.

### Rear Brakes

The rear brakes are provided with a small adjuster which is positioned on the backing plate, above the axle case, and easily accessible with the road wheel removed. To correctly adjust the shoes, turn the adjuster clockwise until the shoes are hard against the drum, then slacken off adjuster by one notch.

### Handbrake Adjustment

Adjustment of the rear brake shoes as previously described automatically readjusts the handbrake mechanism. The cables are correctly set before leaving the works, and only maladjustment will result from tampering with the mechanism.

### **Bleeding the Brake and Clutch Hydraulic System**

If a pipe joint is uncoupled, the wheel cylinder cups or clutch operating cylinder are inspected or replaced, the system must be bled in order to expel any air which may have been admitted.

Air is compressible, and its presence in the system will affect the working of the brakes and clutch.

Whilst the majority of owners will prefer to have these operations carried out by a Triumph Agent, for the benefit of those desiring to carry out their own running adjustments, the procedure is as follows :

1. Clean the bleeder nipple and fit a piece of rubber tube over it, allowing the tube to hang in a clean container partially filled with fluid, so that the end of the pipe is below the level of the fluid.
2. Unscrew the bleeder nipple one complete turn. There is only one bleeder nipple to each wheel and one nipple on the clutch operating cylinder.
3. The fluid reservoir should be filled before commencing the bleeding operation, and must be kept at least half-filled during the whole operation, otherwise air will be drawn into the system via the master cylinder. Do not use fluid that has been expelled from the system for maintaining the level. Always clean the area around the plug before removing it; this will lessen the risk of grit falling into the chamber after removal of the plug.
4. Depress the pedal quickly and allow it to return without assistance. Repeat this pumping operation with a slight pause between each depression of the pedal. Observe the flow of fluid being discharged into the glass jar and when all air bubbles cease to appear, hold the pedal firmly down and securely tighten the bleeder nipple.

NOTE.—Depending upon the position at which a pipe joint in the brake system has been uncoupled, it will be necessary to bleed the system at either both front or both rear wheels. If the pipe was uncoupled at the master cylinder, then the system must be bled at all four wheels.

### **PROPELLER SHAFT**

If the propeller shaft has been taken apart it is essential to ensure that the arrows on the universal joint and propeller shaft are aligned during re-assembly (see Fig. 11, page 20.)

## **RUNNING ADJUSTMENTS**

### **HYDRAULIC DAMPERS**

The front telescopic dampers cannot be adjusted or topped-up. If they have been removed, hold them the right way up and pump the pistons to each end of the stroke before refitting them.

Check the level of the fluid in the rear dampers and replenish if necessary, then pump the pistons to each end of the stroke. This pumping action dispels any air which may have entered the chambers. After this operation, keep the dampers the right way up until they are fitted into place.

### **LOOSE BOLTS AND NUTS**

All the vital nuts are locked in position by split pins, locking wire, or by an additional lock nut or lock washer. It is, however, desirable that the car should be examined every 6,000 miles so that if any nut is found to be loose it may be tightened. The wheel nuts can periodically be checked by the owner himself and occasionally removed, oiled and refitted.

The general examination of the chassis is a mechanic's job.

## ELECTRICAL SYSTEM

A 12 volt earth return (or one wire) lighting and starting set is fitted. **One cable should be disconnected from the battery terminal before removing any electrical unit, otherwise there is a risk of a serious "short."**

A list of the maker's numbers and descriptions of all electrical equipment will be found on page 39.

### IGNITION

Failure of the red warning light will not affect the ignition system, but the bulb should be replaced at the earliest opportunity. The high tension leads should be examined occasionally and if they are perished or worn through, replace with the correct ignition cable, which should be obtained only from your dealer, and should be of the correct length.

The moulded distributor cover should be removed occasionally and wiped all over with a soft cloth. See that the carbon brush on the inside of the moulding works freely in its holder. Clean away any trace of dirt or dust around the contact breaker points. The points should be adjusted to the setting recommended on page 5. The distributor has the radio suppressor built into the distributor head. This, of course, means that an outward inspection of the ignition and coil leads a suppressor will not be apparent. **If a replacement or spare distributor head is required, take care to ensure that it is of the correct type with the long carbon pick-up, which is, in fact, the suppressor.**

### THE BATTERY

Keep the terminals clean and well covered with petroleum jelly. If they are corroded, scrape them clean, assemble and cover with petroleum jelly. Wipe away all dirt and moisture from the top of the battery, and make sure that the connections are clean. Do not over-tighten the wing nuts securing the battery as this may result in the case becoming cracked.

### THE DYNAMO

The dynamo is of the compensated voltage type and operates in conjunction with the regulator unit which is housed alongside the cut-out in the control box. The regulator unit ensures that the dynamo charges the battery at the rate best suited to its condition. It automatically provides a large charging

current for a discharged battery and a low trickle charge for a battery in the fully charged state. The cut-out, operated by dynamo voltage, prevents discharge of the battery through the dynamo when the dynamo is not charging, in which condition the ignition warning light will be glowing.

### Belt Tightness

It is important that the belt is sufficiently tight to drive the dynamo but not too tight as would put undue load on the dynamo and water pump bearings. The correct tension is achieved when the belt can be pressed inwards  $\frac{1}{2}$ "— $\frac{3}{4}$ " on the longest run, *i.e.*, from the dynamo pulley to the crank pulley. **It is essential after adjustment has been made to securely tighten the fixing bolts.**

## THE STARTER MOTOR

### Cleaning and Lubrication

The starter brush gear and commutator will not normally require attention. After 48,000 miles however, it is advisable to have the unit serviced at a Triumph or Lucas Service Depot.

Should the starter pinion become jammed in mesh with the flywheel, then it can be released by turning the crankshaft with the starting handle in the normal manner, or select top gear and rock the car backwards and forwards until the pinion releases itself. Do not forget to switch off the ignition before carrying out this operation.

## CONTROL BOX

The control box, mounted on the scuttle, houses the voltage regulator and cut-out. These units are carefully and accurately set before leaving the works and must not be tampered with.

## FUSES

The fuse carrier is located forward of the control box and houses two operating and two spare fuses. The top fuse (50 amp.) protects the horn, while the other fuse (35 amp.) protects those items which can only operate when the ignition is switched on, *i.e.*, direction indicators, windscreen wipers, brake light, petrol gauge and heater (if fitted). When replacing a fuse, it is important to use the correct replacement; the fusing value is marked on a coloured paper slip inside the tube.

A blown fuse will be indicated by the failure of all the units protected by it and is confirmed by examination of the fuse. If it is not possible to locate the cause of the trouble and the new fuse blows immediately, the equipment should be examined by a Triumph or Lucas Agent or Service Depot.

Note that these fuse ratings are given in a different system than used with modern fuses!

If you want to use modern equivalents, use AGC 25 for the horn fuse and AGC 20 for the "ignition" fuse.

Or, you can buy reproduction Lucas fuses (which are also slightly different sizes) from the usual suspects.

## LAMPS

**Head Lamps**

The lamps have the reflector and glass sealed as a unit. The bulb has a "pre-focus" cap accurately located and correctly positioned relative to the reflector, thus no adjustment to focusing is required when a replacement bulb is fitted.

It is not possible with these types of lamps to alter the direction of dip entirely by fitting bulbs of the opposite dipping characteristics, as some of the dip effect is produced by the shape of the glass in the lens.



**Fig. 21.** Head lamp light unit with back shell removed.

**BULB REPLACEMENT**

Remove the Snap-on rim by inserting the end of the special tool (provided in the kit) behind the lower edge of the rim and levering sideways as shown on Fig. 23. Press in the lamp unit against the tension of the three adjusting screw springs and turn in an anti-clockwise direction until the key-slot holes in the rim line up with the screw heads. The lamp unit can then be drawn off. Do not rotate any of the screws, as this will affect the alignment of the reflector when assembled.

Rotate the back shell anti-clockwise and pull off, then the head lamp bulb can be removed. (See Fig. 21). Care should be taken to see that the bulb does not drop out.

**LAMP ALIGNMENT**

The lamp must be set to ensure that the beam is projected below the horizontal, taking into account that the lamp must be dipped slightly more to compensate for road inequalities and the normal loading of the car.

## ELECTRICAL SYSTEM—Lamps

### TO CHECK AND ADJUST ALIGNMENT

Park the car in front of a garage door or wall and square to it. The car must stand on level ground and the front of the lamps should be approximately 25 ft. from the "screen." The car should be unladen and the tyres at the correct pressures.

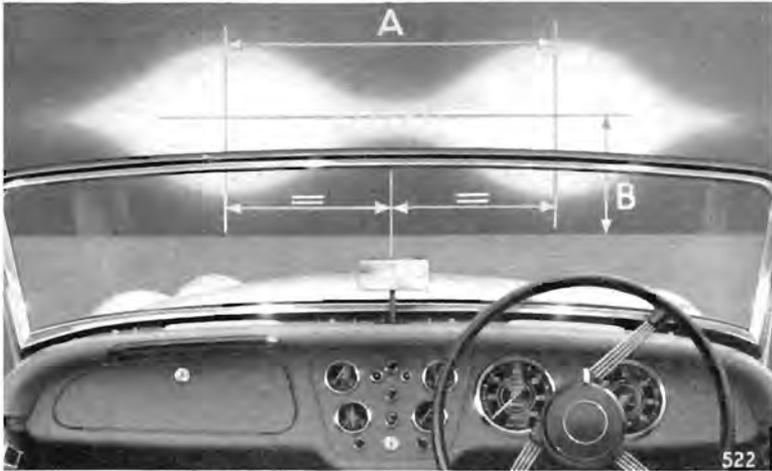


Fig. 22. Head lamps correctly aligned.

A point should be marked on the screen in line with the centre of the bonnet. Two crosses should be drawn on the "screen" 27" above the ground level as indicated by (B), and 35½" apart (A), measured equally about the centre point (see Fig. 22). Switch



Fig. 23. Removing the rim.

on the head lamps and adjust the lamps, if necessary, until the centre of each circle of light coincides with the centre of its respective cross.

If adjustment is necessary, proceed as follows :

Withdraw the front rim as shown on Fig. 23. Remove the dust-excluding rubber. This will reveal three screws (see arrows, Fig. 24), which can be adjusted to align the reflector correctly. When the correct alignment has been obtained, replace the rubber and rim.

It is advisable to start adjustment with each screw screwed out half-way ; this will ensure correct fitting of the rim when assembled.



Fig. 24. Adjusting head lamp alignment.

### **Parking Lamps (Front) and Direction Indicator Flashing Lamps (front and rear)**

To remove bulb, peel back the rubber ring and remove rim, then the bulb can be withdrawn. When replacing rim, first slip the edge over the two small lugs, then peel back rubber as rim is fitted. Ensure that the rubber is located correctly over the rim edge, otherwise vibration may cause the rim to become detached.

### **Tail and Stop Lamps**

To gain access to the bulb, remove the cover, which is secured by two screws.

### **Number Plate Lamp**

To gain access to the bulb, remove the securing screw and withdraw the cover.

## ELECTRICAL SYSTEM—Specification

Ignition Warning Light  
 Direction Indicator Warning Light  
 High Beam Warning Light  
 Instrument Panel Lights

Each bulb holder can easily be withdrawn from the rear of the panel for bulb renewal.

Replacing these bulbs is best left to the safe hands of a Service Station.

### WINDSCREEN WIPER

For operation, see page 8.

### DIRECTION INDICATORS

These are of the flashing type operating in the dual filament bulbs in the parking lamps at the front and the tail lights at the rear. The flasher unit is situated close to the control box underneath the bonnet.

### WINDTONE HORNS

Each electric horn, before being passed out of the works, is adjusted to give its best performance and will give long periods of service without any attention. No adjustment is required in service.

## ELECTRICAL COMPONENT SPECIFICATION

SPECIFICATION OF EQUIPMENT			BULBS			
	Model	Service No.		Lucas No.	Voltage	Watt.
Battery	BT9A	4016417	Head Lamps			
Control Box	RB106/2	37182	Left-hand dip, both lamps (home model)	404	12	60/36
Coil	B12 type L	45054	Left-hand dip, both lamps (export model)	354	12	50/40
Dynamo	C39PV2		Right-hand dip " "	301	12	36/36
Distributor	DM2 type V167	40480	" Vertical dip " "	350	12	5/35
Starter	M418G type V164	25541F	Front Parking Lamps	380	12	6/21
Fuse Box	S.F.6	033240	Number plate Illumina- tion Lamps	989	12	6
Flasher Unit	F.L.5	35010A	Direction Indicator Lamps (rear)	382	12	21
Horns	WT618LN HN	69046E 69047E	Tail/stop Lamps	380	12	6/21
Windscreen Wiper Motor	DR 2	073105	Ignition and High Beam Warning Lights, Panel Lights and Direction Indicator Warning Lights	987	12	2.2
Petrol Gauge	Jaeger No. M3331/02					
Tank Unit	/MM2/12		Fuses	50 amp.		Service No. 188219
				35 amp.		188218

## **OPTIONAL EXTRAS**

### **RADIO**

For operating instructions, see the radio leaflet provided with the set. The set is protected against possible electrical damage due to a short by a 5 amp. fuse housed in the main lead union. The aerial mast should always be lowered when the set is not operating.

### **HEATER**

The heater is of the re-circulating type, with a combined rheostat and ON/OFF switch on the dash panel to regulate the speed of the fan. At the right-hand rear end of the cylinder head, under the bonnet, a screwed cock can be turned to vary the amount of hot water which is to be fed to the heater unit from nil to maximum flow. Shutters on the underside of the heater unit control the downward flow of air from the heater into the car. Closing the shutters will not affect the air flow to the demister slots.

### **OVERDRIVE**

#### **Operation**

The Laycock de Normanville overdrive unit effects a reduction in overall gear ratio by means of a train of epicyclic gears which are brought into action by a hydraulically operated cone clutch. Movement of the electrical switch mounted on the outside of the dash panel will bring the overdrive into operation. To take the overdrive out of operation, return the switch to its original position. The electrical circuit is only complete when the gear lever is in the position of top, 3rd or 2nd gears. It should be remembered that if the overdrive switch is made, returning the gear lever from third to top gear will automatically re-engage the overdrive unit.

#### **Lubrication**

The oil used for both lubrication and for the hydraulic pump is the same as and connected with that of the gearbox. The two units also having a common filler orifice in the gearbox top cover.

#### **Draining**

There is a drain plug fitted to the overdrive unit, and when draining the gearbox it is necessary to remove both the drain plug on the gearbox and the drain plug on the overdrive unit.

### **WIRE WHEELS**

Cars fitted with wire wheels have detachable hub extensions each secured by four nuts. These should be checked occasionally for tightness and especially after the first 500 miles from new or when replacement parts are fitted. The correct tightness is 60-65 ft. lb.

## SPARE PARTS SERVICE

To ensure the best possible service on replacement parts it is important to note the following points :—

- (a) The policy of the Triumph Motor Company is not to supply spare parts direct to the general public, but all supplies are directed through Distributors who, in turn, will supply their Dealers. The name and address of the Distributors and Dealers can be obtained from the Service and Spares Directory included with each motor vehicle.
- (b) It is recommended that only “**Stanparts**” (*i.e.*, genuine Standard/Triumph spare parts) are used, only these carry a guarantee. Experience gained by the manufacturers ensures that only highest quality material is used and the strictest accuracy maintained in manufacture.
- (c) If in doubt about a particular part required, it is always advisable to give the vehicle commission number and engine number, in addition to the fullest description possible.

Owners of this model who wish to be kept informed of modifications and competition tuning hints should register as a member of the Triumph Sports Owners' Association ; details are given in the booklet enclosed with this literature, or apply to the Publicity Dept., Triumph Motor Co. (1945) Ltd., Canley, Coventry, for a copy of the book, together with enrolment form.

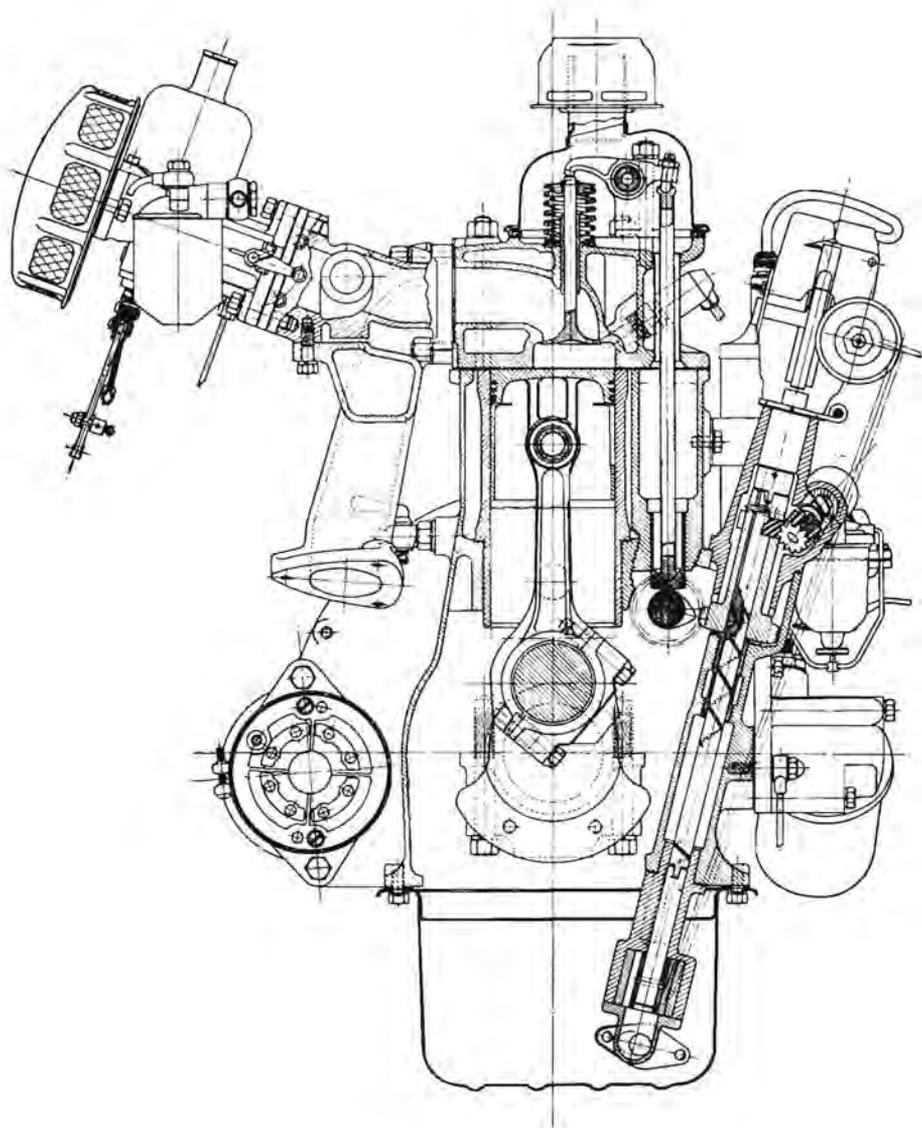


Fig. 25. Engine cross section.

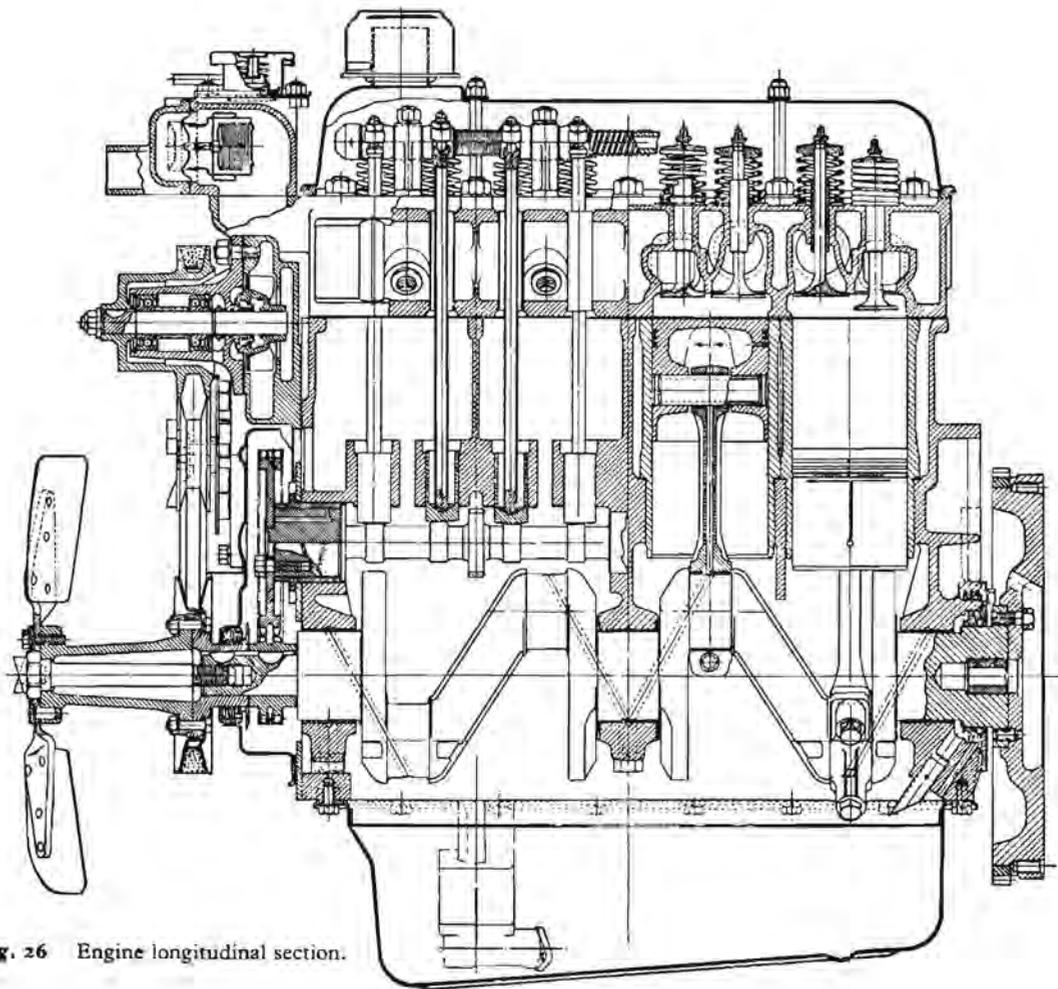


Fig. 26 Engine longitudinal section.

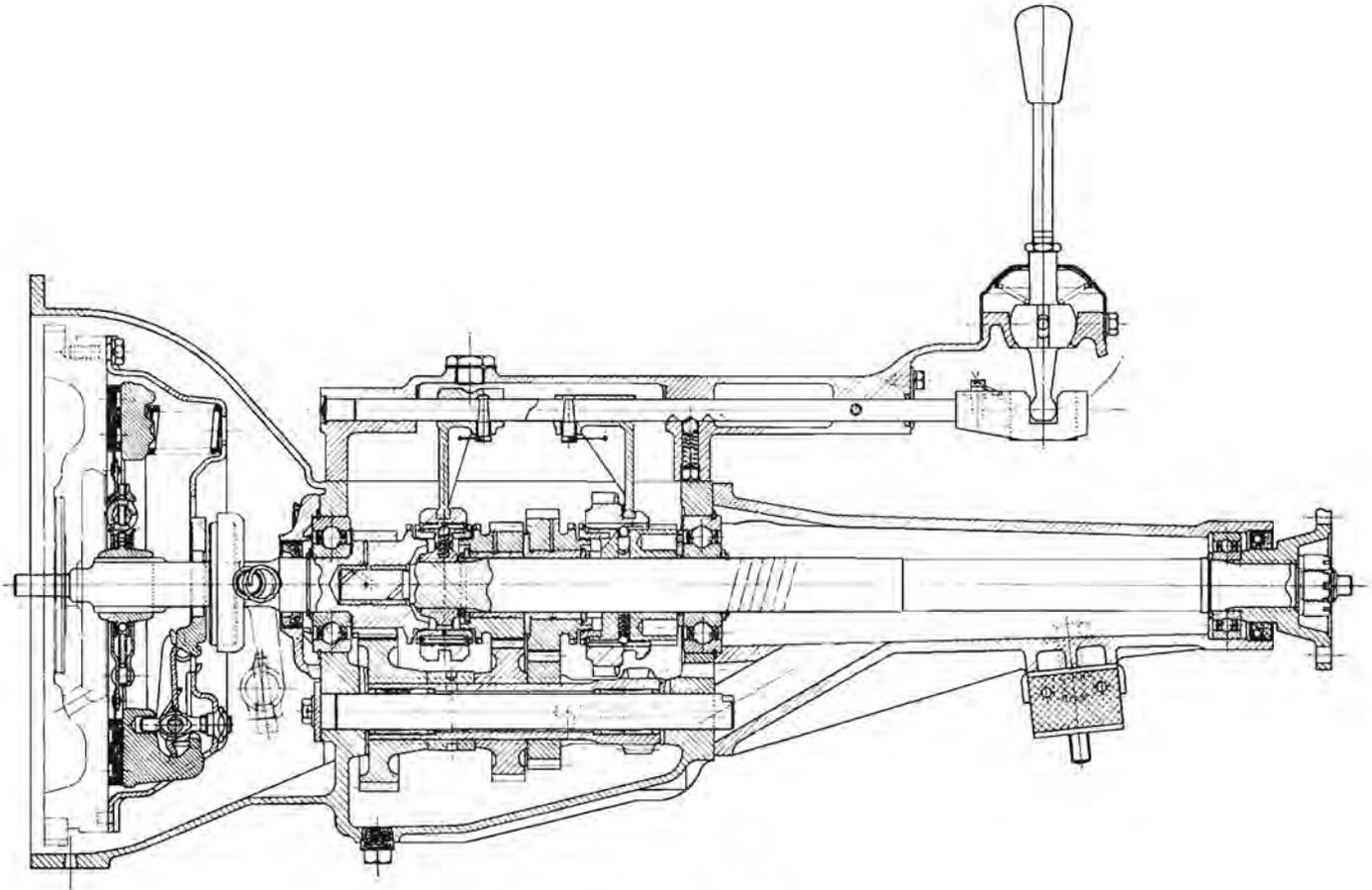


Fig. 27. Gearbox Section.

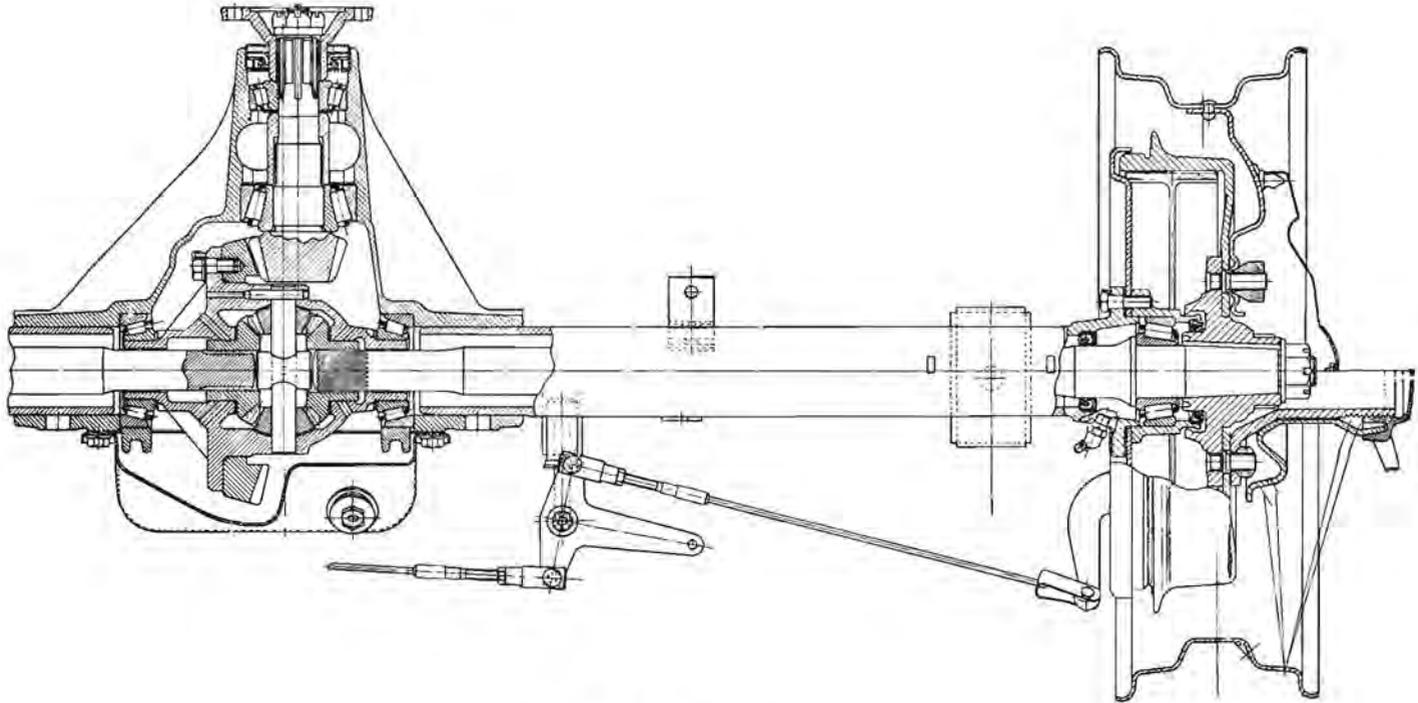


Fig. 28. Rear axle section.

# INDEX

	Page
Air cleaner lubrication .....	16
Anti-freeze mixtures .....	12
Battery .....	34
Belt tightness .....	35
Bleeding the brake and clutch hydraulic system .....	32
Bodywork .....	23
Bolts and nuts (loose) .....	33
Bonnet locks .....	6
Brakes .....	30
Brake adjustment .....	31
Brake cable lubrication .....	18
Brake reservoir fluid level .....	17
Brake shoe replacements .....	31
Bulb replacements	
Brake light and number plate illuminator .....	38
Ignition warning light, direction indicator warning light .....	38
Head light .....	36
High beam warning light .....	38
Number plate illuminator and brake lamp .....	38
Panel light .....	38
Parking and direction indicator flashing lamps .....	38
Tail and direction indicator flashing lamps .....	38
Carburettors .....	27
Choke control .....	7
Clutch .....	29
Clutch adjustment .....	30
Clutch shaft lubrication .....	17
Cooling system .....	12
Controls .....	6
Control box .....	35
Cut-out .....	35
Cylinder head nut tightening .....	25
Decarbonising and valve grinding .....	25
Dimensions of car .....	4
Direction indicators switch .....	7
Door adjustment .....	23
Don'ts for beginners .....	Back of Lubrication Chart
Draining the cooling system .....	12
Draining the engine, gearbox and rear axle oil .....	13
Driving the car .....	9
Dynamo .....	34
Dynamo lubrication .....	15
Electrical component specification .....	39
Electrical system .....	34
Battery .....	34
Control box and fuses .....	35
Direction Indicators .....	38
Dynamo and cut-out .....	34
Horns .....	38
Ignition and distributor .....	34
Lamps .....	36
Misfiring .....	26
Starter motor .....	35
Wiring diagram .....	back of Oiling Chart
Engine lubrication .....	13
Engines—new .....	10

	Page
Engine oil pressure .....	8
Engine oil level .....	11
Engine, desirable speed limits .....	10
Filling the cooling system .....	12
Firing order .....	26
Foreword .....	3
Fuel capacity .....	4
Fuel pump .....	28
Fuses .....	35
Gearbox oil level .....	16
Gear changing .....	10
Gear positions .....	7
General upkeep .....	11
Handbrake compensator lubrication .....	18
Handbrake operation .....	7
Head lamps .....	36
Aligning .....	36
Bulb replacement .....	36
Heater .....	40
High tension cables .....	27
Horns .....	38
Hydraulic dampers, lubrication .....	20
Hydraulic dampers, fitting .....	33
Ignition .....	34
Ignition distributor .....	34
Ignition timing .....	26
Instruments .....	8
Instrument panel lights .....	38
Jack .....	22
Licence data .....	4
Lubrication .....	12
Accelerator controls (see Carburettors) .....	14
Air cleaners .....	16
Brake cables (hand) .....	18
Brake compensator .....	18
Brake and clutch reservoir .....	17
Carburettors .....	14
Chart .....	51, 52 & insert
Clutchshaft bearings .....	17
Controls .....	20
Door locks .....	20
Draining .....	12
Dynamo .....	15
Engine .....	13
Front suspension .....	19
Gearbox .....	16
Hinges .....	20
Hydraulic dampers .....	20
Ignition distributor .....	14
Oil cleaner .....	14
Oil filler cap .....	16
Pedal bearing .....	17
Propeller shaft .....	20
Rear axle .....	16
Rear road springs .....	20
Starter motor .....	16
Steering .....	19

INDEX—*continued*

	Page
Lubrication— <i>cont.</i>	
Water pump .....	15
Wheel hubs .....	18
Management of car .....	6
Oil capacities .....	4
Oil cleaner .....	14
Overdrive—optional extras .....	40
Optional extras .....	40
Parking lights (front) and direction indicator flashing lamps .....	38
Pedal bearing lubrication .....	17
Petrol tap .....	7
Propeller shaft lubrication .....	20
Propeller shaft dismantling .....	32
Radio .....	40
Rear axle lubrication .....	16
Recommended lubricants—British Isles .....	51
Overseas .....	50
Regular inspection .....	11
Road speed data .....	5
Running in .....	10
Running adjustments .....	25
Brakes .....	30
Clutch .....	29
Engine .....	25
Hydraulic dampers .....	33
Loose bolts and nuts .....	33
Propeller shaft .....	32
Seat adjustment .....	7
Soft top fasteners .....	23
Soft top stowage .....	23
Spare parts service .....	41
Spare wheel .....	24
Sparking plugs .....	26
Specification .....	4
Springs—road, rear, lubrication .....	20
Starter motor .....	35
Starter motor lubrication .....	16
Starting the engine .....	9
Steering lubrication .....	19
Suspension lubrication, front .....	19
Switches .....	7
Tachometer .....	8
Tail and direction indicator flashing lamps .....	38
Tool stowage .....	24
Tyres .....	21
Tyres, changing positions .....	22
Tyre pressures .....	21
Valve grinding .....	25
Valve-rocker clearances .....	25
Valve timing .....	5
Water pump lubrication .....	15
Water capacity of cooling system .....	4
Weight of car .....	4
Wheel alignment (track) .....	22
Wheel hub lubrication .....	18
Wheels wire .....	40
Windscreen wiper switch .....	8

## INDEX TO ILLUSTRATIONS

	Fig.	Page
Bonnet, view under .....	3	11
Carburettors .....	17	27
Chassis .....	29 end of book	
Clutch adjustment .....	19	30
Controls, switches and instruments .....	1	6
Cylinder head nut tightening .....	15	25
Engine—cross section .....	26	43
Longitudinal section .....	27	44
Front suspension lubrication .....	10	19
Fuel pump .....	18	29
Gearbox oil filler .....	7	16
Gearbox section .....	27	44
Gear positions .....	2	7
Girling Brake Shoe assembly—front .....	20A	31
rear .....	20B	31
Head lamps—Adjusting alignment .....	24	38
Correctly aligned .....	22	37
Light unit .....	21	36
Removing the rim .....	23	37
Hub lubrication—rear .....	9	18
Ignition distributor .....	5	15
Ignition leads .....	16	26
Jacking the car .....	12	22
Lubrication chart .....	28 end of book	
Oil cleaner .....	4	14
Propeller shaft lubrication .....	11	20
Rear axle section .....	28	45
Rear axle oil filler and handbrake compensator .....	8	17
“Tenax” soft top fasteners .....	13	24
Tool stowage .....	14	24
Triumph Sports Car .....	Frontispiece 2	
Water pump lubrication .....	6	15
Wiring diagram .....	30 back of Oiling Chart	

## RECOMMENDED LUBRICANTS—OVERSEAS

COMPONENT	WAKEFIELD	B.P.	SHELL	ESSO	DUCKHAM'S	MOBIL	S.A.E. & A.P.I. DESIGNATION			
<b>ENGINE</b> Air Temperature °F. Over 70°  See also page 13 40° to 70° 10° to 40° —10° to 10° Below—10°  <b>Upper Cylinder Lubricant</b>	Castrol XXL	Visco Static	Energol Motor Oil 40	X-100 Multigrade 20W/40 or X-100/40	Esso Extra Motor Oil 20W/40 or Esso Motor Oil 40	Q 20-50	Duckham's NOL "Forty"	Mobiloil AF	S.A.E. 40 MM.	
	Castrol XL		Energol Motor Oil 30	X-100 Multi-grade 10W/30	Shell X-100 30		Esso Motor Oil 30	Q 5500	Duckham's NOL "Thirty"	Mobiloil A
	Castrolite		Energol Motor Oil 20W		Shell X-100 20/20W	Esso Motor Oil 20	Duckham's NOL "Twenty"		Mobiloil Arctic	S.A.E. 20 MM.
	Castrol Z		Energol Motor Oil 10W		Shell X-100 10W	Esso Motor Oil 10W	Duckham's NOL "Ten"		Mobiloil 10W	S.A.E. 10 MM.
	Castrol ZZ		Energol Motor Oil 5W	Shell X-100 Multigrade 5W/20	Esso Extra Motor Oil 5W/20	Duckham's NOL "Five"	Mobiloil 5W	S.A.E. 5 MM.		
	Castrollo	Energol U.C.L.	Shell Donax U	Esso Upper Motor Lubricant	Duckham's Adcoids	Mobil Upperlube				
<b>GEARBOX STEERING BOX AND REAR AXLE</b> Over 30° Below 30°	Castrol Hypoy	Energol EP 90	Shell Spirax 90 EP	Esso XP Compound 90 E.P.	Duckham's Hypoid 90	Mobilube GX 90	GL4 Hypoid 90			
	Castrol Hypoy Light	Energol EP 80	Shell Spirax 80 EP	Esso XP Compound 80 E.P.	Duckham's Hypoid 80	Mobilube GX 80	GL4 Hypoid 80			
<b>PROPELLER SHAFT Universal Joints</b>	Castrol Hi-Press	Energol EP 140	Shell Spirax 140 EP	Esso XP Compound 140 E.P.	Duckham's NOL EP 140	Mobilube GX 140				
<b>GREASE GUN</b>	Castrollease LM	Energol L2	Shell Retinax A	Esso Multi-purpose Grease H	Duckham's LB 10	Mobilgrease MP				
<b>OIL CAN</b>	Wakefield Everyman Oil	Energol Motor Oil 20W	Shell X-100 20/20W	Esso Handy Oil	Duckham's General Purpose Oil	Mobil Handy Oil				
<b>REAR ROAD SPRINGS</b>		OLD REAR AXLE OR ENGINE OIL								
<b>BRAKE CABLES</b>	Castrollease Brake Cable Grease	Energol L2	Shell Retinax A	Esso Spring Grease	Duckham's Keenol KG16	Mobilgrease MP				
<b>CLUTCH AND BRAKE RESERVOIR</b>		WAKEFIELD GIRLING BRAKE AND CLUTCH FLUID (CRIMSON)								

**RECOMMENDED LUBRICANTS - BRITISH ISLES**

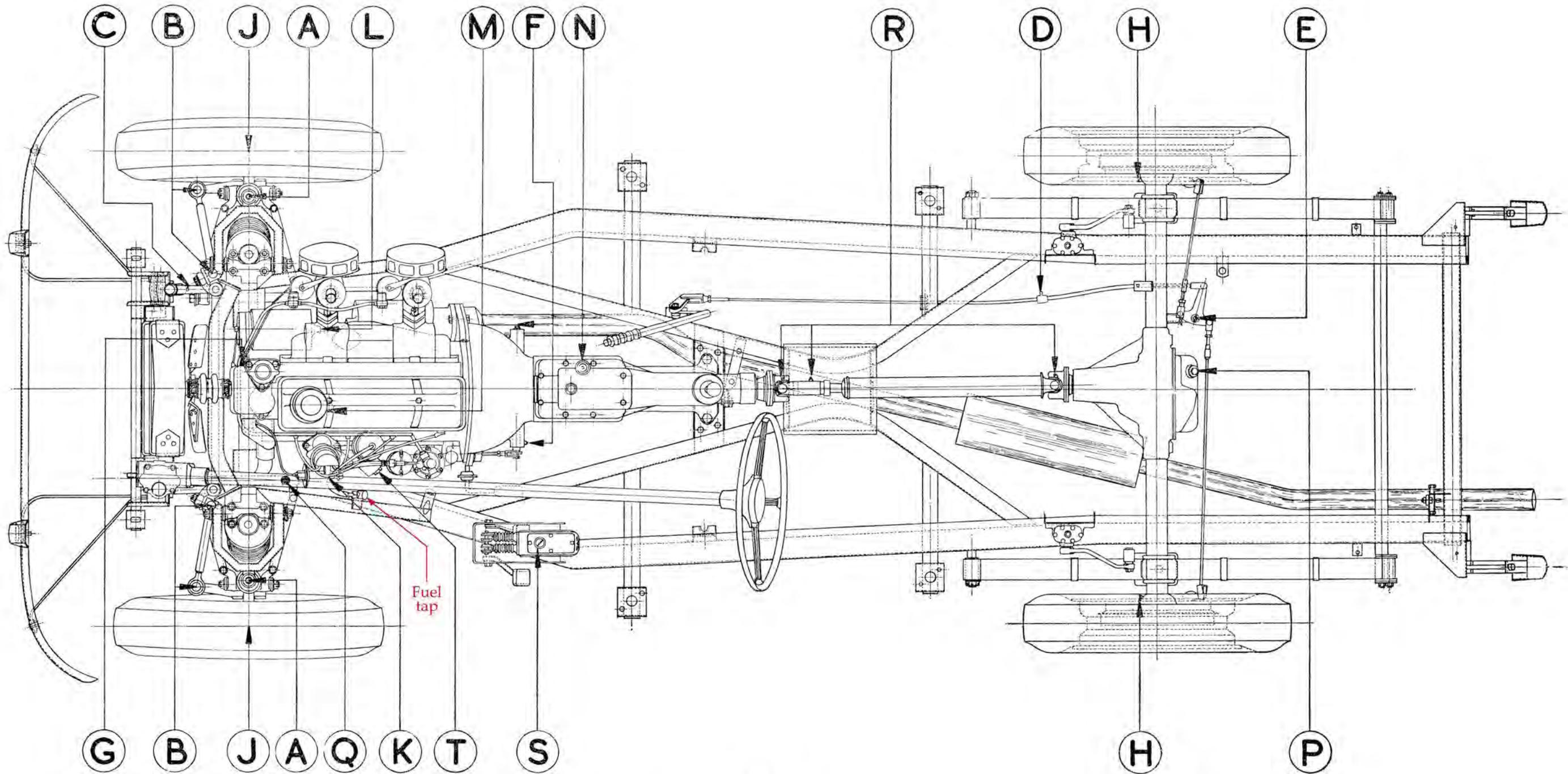
COMPONENT	DUCKHAM'S	MOBIL	WAKEFIELD	B.P.	SHELL	Esso
<b>ENGINE</b>  See also page 13  Summer  Winter  Upper Cylinder Lubricant	Duckham's Q 5500 Duckham's NOL "Thirty" Duckham's NOL "Twenty"	Mobiloil Special Mobiloil A Mobiloil Arctic	Castrol XL	Visco Static Energol Motor Oil 30 Energol Motor Oil 20W	X-100 Multi-grade 10W/30 Shell X-100 30 Shell X-100 20/20W	Esso Extra Motor Oil 20W/30
			Castrolite			
			Castrollo	Energol U.C.L.	Shell U.C.L.	
<b>GEARBOX REAR AXLE STEERING BOX</b>	Duckham's Hypoid 90	Mobilube GX 90	Castrol Hypoy	Energol EP 90	Shell Spirax 90 EP	Esso Expee Compound 90 EP
<b>PROPELLER SHAFT Universal Joints</b>	Duckham's NOL EP 140	Mobilube GX 140	Castrol Hi-Press	Energol EP 140	Shell Spirax 140 EP	Esso Expee Compound 140
<b>GREASE GUN</b>	Duckham's LB 10	Mobilgrease MP	Castrollease LM	Energrease L2	Shell Retinax A	Esso Multi-purpose Grease H
<b>OIL CAN</b> Body and Chassis	Duckham's General Purpose Oil	Mobil Handy Oil	Wakefield Everyman Oil	Energol Motor Oil 20W	Shell X-100 20/20W	Esso Handy Oil
<b>REAR ROAD SPRINGS</b>	PAINT WITH OLD REAR AXLE OR ENGINE OIL					
<b>BRAKE CABLES</b>	Duckham's Keenol KG 16	Mobilgrease MP	Castrollease Brake Cable Grease	Energrease L2	Shell Retinax A	Esso Graphite Grease
<b>CLUTCH AND BRAKE RESERVOIR</b>	WAKEFIELD GIRLING BRAKE AND CLUTCH FLUID (CRIMSON)					

## A FEW DON'TS FOR BEGINNERS

- DON'T** neglect to read this Handbook, and if any point is not clear, ask for further instructions from your Dealer.
- DON'T** run the engine for any considerable time whilst in an enclosed space, such as a garage with doors closed. The dangers of carbon-monoxide poisoning from the exhaust gases are very real under such circumstances.
- DON'T** neglect to pay regular attention to lubrication and always use a good lubrication as recommended.
- DON'T** rev. the engine immediately after starting up, but give the oil time to circulate, see page 9.
- DON'T** continue to run the engine if the oil pressure gauge indicates an abnormally low pressure or if the needle fluctuates unduly, but examine the engine to find the cause. This may be lack of oil.
- DON'T** run the engine with too little water in the radiator.
- DON'T** allow the engine to run too fast during the first 500 miles, see page 10.
- DON'T** forget to make full use of the gearbox when climbing hills. Don't change "up" too soon.
- DON'T** continue to run the car if it is felt that there is some slight defect or falling off in power. Investigate this and if it cannot be traced get in touch with the nearest Triumph Dealer.
- DON'T** neglect your tyre pressures and examine the covers for flints as well—this will save money (see page 21).
- DON'T** omit to readjust the alignment of the headlamps if they have become incorrectly adjusted. More pleasure will be obtained when driving at night and other road users will not be inconvenienced (see page 36).
- DON'T** forget to switch off the ignition and put on the hand brake when the car is at rest.
- DON'T** neglect the level of the acid in the battery—which is quite accessible by raising the bonnet.
- DON'T** forget to engage a lower gear when about to descend a very steep hill.
- DON'T** omit to read "The Highway Code," a copy of which can be obtained from the local licensing authority.

**Fig. 29. LUBRICATION CHART—Fold Out.**

Ref.	ITEMS	DETAILS	PAGE REF.	MILEAGE INTERVAL (Thousands of Miles)
<b>A</b>	Steering Swivels ..... (4 nipples)		19	1
<b>B</b>	Outer Tie Rod Ball Joints ..... (4 nipples)	THREE OR FOUR STROKES	19	1
<b>C</b>	Steering Slave Drop Arm Pivot (1 nipple)		19	1
	Lower Wishbone Outer Bushes (4 nipples)		19	1
<b>D</b>	Handbrake Cable ..... (1 nipple)		18	6
<b>E</b>	Compensator ..... (2 nipples)		18	6
<b>F</b>	Clutch Shaft Bearings ..... (2 nipples)		17	6
<b>G</b>	Engine Water Pump ..... (1 nipple)	FIVE STROKES	15	6
<b>H</b>	Rear Hubs ..... (2 nipples)		18	6
<b>J</b>	Front Hubs ..... (2 nipples)	REMOVE AND REPACK	18	6
<b>K</b>	Ignition Distributor		15	6
	Handbrake Lever		20	6
	Carburettor Dashpots and Control Linkages	OIL AS RECOMMENDED	14	6
	Door Locks, Hinges, Bonnet Safety Catch, Boot and Spare Wheel Locks		20	6
<b>L</b>	Dynamo ..... (2 nipples)		16	12
<b>M</b>	Engine Sump ..... <b>250 MILES</b>	TOP UP OIL LEVEL	11	
		DRAIN & REFILL WITH NEW OIL	13	3
	Oil Filler Cap ..... (2 nipples)	WASH	16	6
<b>N</b>	Gearbox ..... (2 nipples)	TOP UP OIL LEVEL	16	6
		DRAIN & REFILL WITH NEW OIL	16	12
<b>P</b>	Rear Axle ..... (2 nipples)		16	6
<b>Q</b>	Steering Gearbox ..... (2 nipples)	TOP UP OIL LEVEL	20	6
<b>R</b>	Propeller Shaft Splines ..... (1 nipple)	THREE OR FOUR STROKES	20	6
	Universal Joints (2 nipples)	GREASE GUN OIL GUN	20	6
	Road Springs ..... (2 nipples)	CLEAN AND OIL	20	6
	Air Cleaners ..... (2 nipples)	OIL AS RECOMMENDED	16	6
<b>S</b>	Hydraulic Brake and Clutch Reservoir	TOP UP FLUID LEVEL	17	6
<b>T</b>	Oil Cleaner ..... (2 nipples)	RENEW CARTRIDGE	14	6



CHASSIS

The chart is laid out to simplify lubrication. The encircled letters refer to the left hand column of the chart. For methods of lubrication, turn to the page referred to in the respective column.

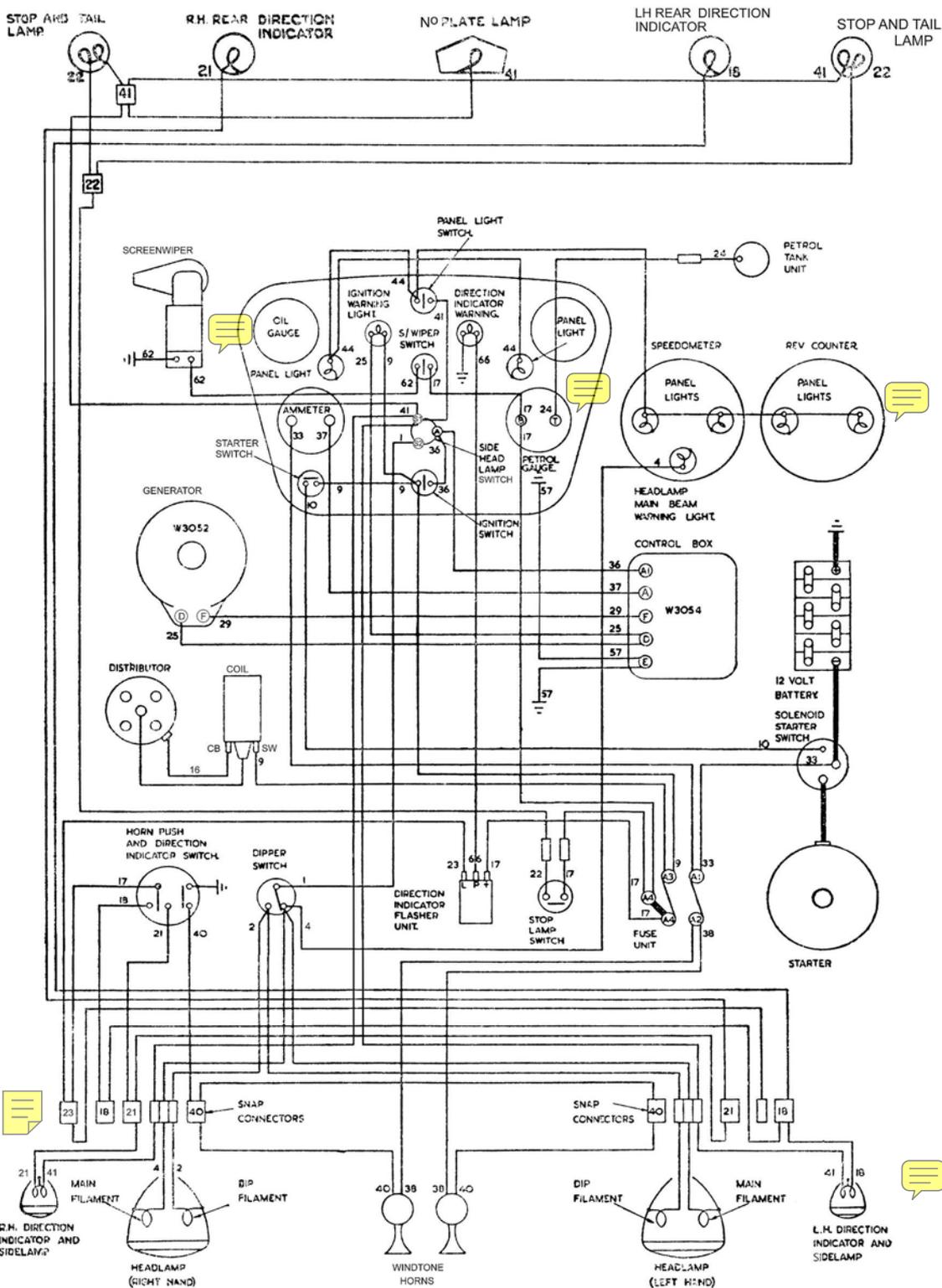
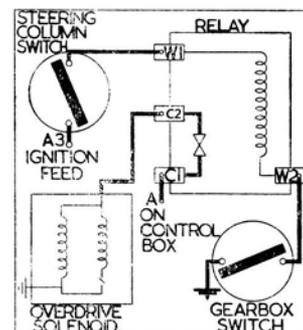


Fig. 30. Wiring Diagram.

### KEY TO CABLE COLOURS

- 1 BLUE
- 2 BLUE WITH RED
- 3 BLUE WITH YELLOW
- 4 BLUE WITH WHITE
- 5 BLUE WITH GREEN
- 6 BLUE WITH PURPLE
- 7 BLUE WITH BROWN
- 8 BLUE WITH BLACK
- 9 WHITE
- 10 WHITE WITH RED
- 11 WHITE WITH YELLOW
- 12 WHITE WITH BLUE
- 13 WHITE WITH GREEN
- 14 WHITE WITH PURPLE
- 15 WHITE WITH BROWN
- 16 WHITE WITH BLACK
- 17 GREEN
- 18 GREEN WITH RED
- 19 GREEN WITH YELLOW
- 20 GREEN WITH BLUE
- 21 GREEN WITH WHITE
- 22 GREEN WITH PURPLE
- 23 GREEN WITH BROWN
- 24 GREEN WITH BLACK
- 25 YELLOW
- 26 YELLOW WITH RED
- 27 YELLOW WITH BLUE
- 28 YELLOW WITH WHITE
- 29 YELLOW WITH GREEN
- 30 YELLOW WITH PURPLE
- 31 YELLOW WITH BROWN
- 32 YELLOW WITH BLACK
- 33 BROWN
- 34 BROWN WITH RED
- 35 BROWN WITH YELLOW
- 36 BROWN WITH BLUE
- 37 BROWN WITH WHITE
- 38 BROWN WITH GREEN
- 39 BROWN WITH PURPLE
- 40 BROWN WITH BLACK
- 41 RED
- 42 RED WITH YELLOW
- 43 RED WITH BLUE
- 44 RED WITH WHITE
- 45 RED WITH GREEN
- 46 RED WITH PURPLE
- 47 RED WITH BROWN
- 48 RED WITH BLACK
- 49 PURPLE
- 50 PURPLE WITH RED
- 51 PURPLE WITH YELLOW
- 52 PURPLE WITH BLUE
- 53 PURPLE WITH WHITE
- 54 PURPLE WITH GREEN
- 55 PURPLE WITH BROWN
- 56 PURPLE WITH BLACK
- 57 BLACK
- 58 BLACK WITH RED
- 59 BLACK WITH YELLOW
- 60 BLACK WITH BLUE
- 61 BLACK WITH WHITE
- 62 BLACK WITH GREEN
- 63 BLACK WITH PURPLE
- 64 BLACK WITH BROWN
- 65 DARK GREEN
- 66 LIGHT GREEN



Wiring Diagram for Overdrive Unit

