



Owners' Handbook

for 1975

TRIDENT

MODEL T160

Norton Triumph Corporation

P.O. Box 275
2745 Huntingdon Drive
Duarte
California 91010.
U.S.A.

P.O. Box 400
2034 Greenspring Road
Timonium
Maryland 21093
U.S.A.

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Norton Triumph International Ltd.
Mackadown Lane
Kitts Green
Birmingham B33 0LF
England



45 cu. in. Trident

INTRODUCTION

This handbook is intended to give the owner of a new TRIDENT details of the general maintenance which is required for the normal operation of his motorcycle. It should be studied carefully, together with the additional literature supplied by the manufacturers of proprietary components, to enable the owner to become fully conversant with all aspects of the adjustments, lubrication, etc., necessary to keep his motor cycle in first class condition.

The owner should remember that by taking pride in the maintenance of his machine, it will give increased pleasure, retain its original superlative finish and especially its performance.

The handbook does not contain information necessary to carry out major overhauls, but if any owner feels he has sufficient mechanical knowledge and facilities for this type of work, a comprehensive Workshop Manual covering every aspect of dismantling and reassembly of major components, an illustrated Spares Catalog and any of the special tools illustrated in the Service Tools Catalog, can be obtained from his local Triumph dealer.

The full engine/frame number should be quoted in all communications relating to Service/Spares matters, together with any information which may have a bearing on the subject, particularly with regard to additions or alterations to the standard equipment. This will enable the dealer to give prompt service.

Where a warranty claim is involved, the dealer or distributor should be consulted, but warranty claims in respect of proprietary components will be dealt with by the distributor. The terms of the U.S. warranty may be obtained from the rider's own dealer.

BREAKING-IN A NEW ENGINE

Remember that your TRIDENT is as new inside as it is outside and must be well “broken-in” before the engine can be given any really hard work. **This is a most important part in the whole life of the engine** because the handling it receives during the first 1,500 miles determines the service it will provide in return. During this time, ride the motor-cycle with restraint for the first 500 miles and do not exceed 3,500 r.p.m. in any gear. The throttle opening can then be increased progressively after the first 500 miles until, at 1,500 miles the breaking-in process is completed.

Remember also that your engine develops an enormous amount of power, runs at high speed, and handles a great deal of heat. Give it every opportunity to settle down.

As a further aid to the breaking-in process, shift gear frequently, so that the engine is always working easily, neither pulling hard in a high gear nor revolving fast in a low gear and make use of the transmission (gearbox) to reduce the engine load on gradients. Avoid violent acceleration. Make no attempt to ascertain the maximum speed of the motor-cycle, until the first 1,500 miles are completed. If the model is put through its paces too soon, there will be risk of damage which may have a lasting effect on the engine and in any case it will not give its best performance until it is properly broken-in.

Keep a careful check on the oil level. A new engine tends to run a little hotter than one which is well broken-in, and because the circulating oil not only lubricates but also cools, the additional heat absorbed by the oil may cause it to break down if the quantity is too small for safety. **It must never be allowed to fall below the minimum level on the dipstick.**

After the first 500 miles your dealer will drain and refill the oil tank, crankcase, and chaincase, with fresh oil and clean the filters. The oil in the transmission (gearbox) will also be checked after the first 500 miles. Thereafter carry out servicing as specified in “Routine Maintenance”, page 68.

A motor-cycle as good as the TRIDENT deserves only the finest lubricants and details of the correct grades and brands of oil are given in the table of recommended lubricants on page 66.

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ENGINE and FRAME NUMBERS

The engine number is stamped on a raised pad on the left side of the crankcase immediately below the cylinder barrel joint face, fig. 1.

The frame number is stamped on the left side of the steering head, immediately in front of the fuel tank, fig. 2.

Both numbers comprise sections with symbols representing the date of manufacture and model number. It is therefore essential to quote ALL letters and figures when in communication with the dealer or distributor.

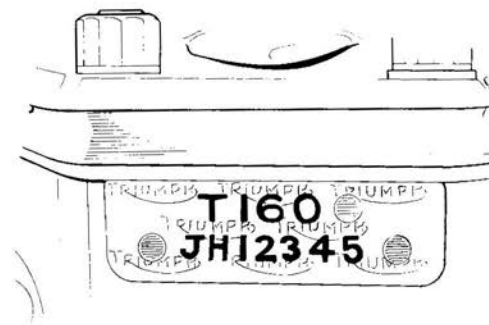


Fig. 1

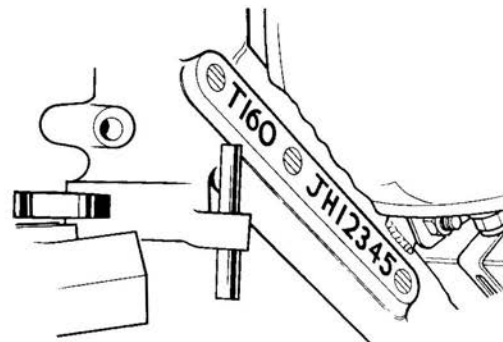


Fig. 2

THE CONTROLS

- 1 Clutch lever
- 2 Parking lock (below steering column).
- 3 Tachometer
- 4 Warning lites (See page 10).
- 5 Speedometer
- 6 Brake fluid reservoir (front)
- 7 Front brake lever
- 8 Throttle control (twist-grip)
- 9 Grouped switches R.H. (See page 11)
- 10 Ignition and liting switch
- 11 Rear brake lever
- 12 Kickstart lever
- 13 Oil filler
- 14 Brake fluid reservoir (rear)
- 15 Carburetor choke control lever
- 16 Gearshift
- 17 Gas taps
- 18 Grouped switches L.H. (See page 8).
- 19 Parking lite switch

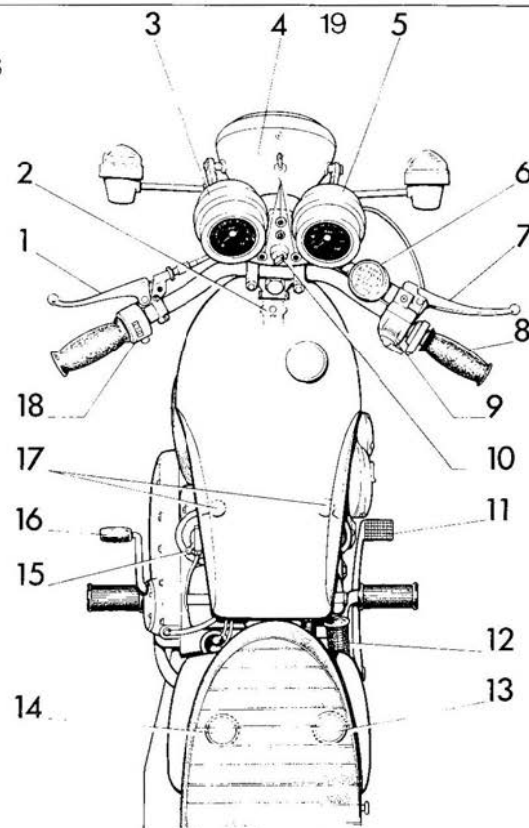


Fig. 3 The controls

THE CONTROLS

Clutch lever. (A). The clutch couples the drive from the engine to the rear wheel. Grip the lever to disconnect the drive. The control cable length can be varied slightly by means of the finger adjuster (E).

The cable casing is lined with antifriction material and does not require lubrication.

Note:-The main adjustment of the clutch mechanism is described on page 33.

Horn and Headlight Flasher. (B). Move upwards to flash headlight. Press to sound the horn.

Headlight dip-switch. (C). Changes the headlight main beam to dipped beam and the positions are marked HI and LO (See also "Warning lites", page 10).

Direction Indicator switch. (D). To operate the flashing indicator lites, slide the switch sideways from the central position to L for left turn and R for right turn. (See also "Warning lites", page 10).

Note:-The whole switch unit can be moved to a new position after slackening the clamping screws.

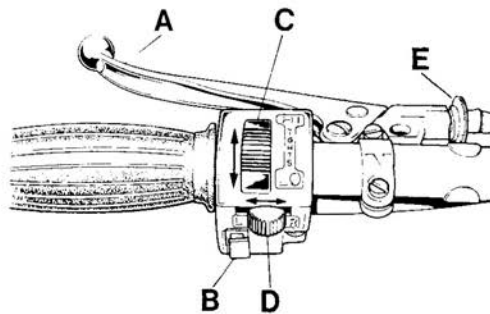


Fig. 4
The left handlebar controls.

Speedometer (G). Indicates speed and total and trip mileage. To set the trip to zero, turn the knob A. clockwise. Do not pull the knob, because it is a push fit only.

Tachometer (H). Registers the engine speed in revolutions per minute (r.p.m.)

Ignition and Lighting switch (F). A four position switch mounted in the lower centre of the panel between the instruments.

In the 'OFF' position (B), fig. 5, there are neither lights nor ignition. Turn the key counter clockwise to obtain the parking light and rear light (C).

For ignition, turn the key clockwise from 'OFF' to the first position (D), and then clockwise again to the second position (E) for both ignition and all lights. The key is detachable in the OFF and parking positions, and should be removed when leaving the machine.

Note:-For certain North American models, the dipped headlight beam is automatically illuminated while the engine is running.

Parking light switch (J). When the switch F (fig. 5) is in position E (i.e. ignition and headlight), the headlight beam may be changed to parking light by operation of this switch.

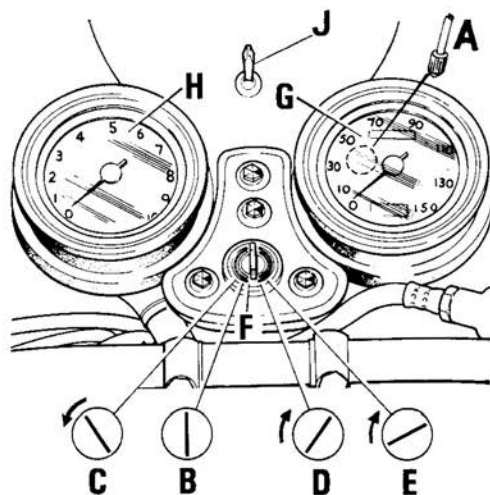


Fig. 5
Instruments and Switch
positions for Ignition and Lites.

THE CONTROLS

Hi-beam warning lite (A). The blue lite is illuminated when the main beam is in use.

Direction Indicator lite (B). The amber lite is illuminated when the indicators are in operation.

Oil Pressure Ignition warning lite (C). The red lite will be visible when first switching on the ignition, but should be automatically extinguished a few seconds after the engine starts and the oil pressure has built up. It should remain extinguished while the engine is running.

IF THE RED LITE BECOMES VISIBLE AT ANY TIME WHEN THE ENGINE IS RUNNING, KILL THE ENGINE IMMEDIATELY AND INVESTIGATE THE CAUSE. IF THIS IS IGNORED, SERIOUS DAMAGE MAY BE CAUSED TO THE ENGINE DUE TO INSUFFICIENT LUBRICATION.

The red lite therefore serves a dual purpose—to indicate that the ignition is switched on (stationary engine) or, that the oil pressure is not satisfactory (engine running).

Neutral Indicator lite (D). The green lite is illuminated when the gear selector is in the neutral position i.e. between first and second gears. It remains extinguished at all other times.

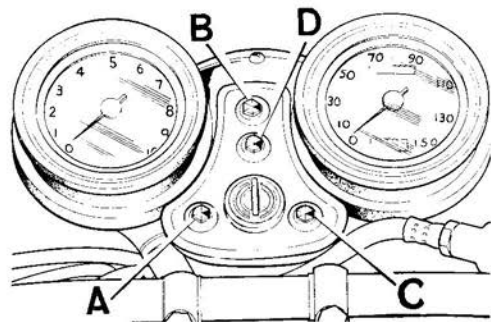


Fig. 6
The panel-mounted
warning lites.

Front Brake Lever (A). Grip the lever to apply the brake. The adjustment is automatically maintained. The adjustable screw H operates the stop-lite switch.

Kill-switch (C). This two-position switch is used for emergency purposes to kill the engine, when the switch must be moved upwards. **Restore the switch to its normal position (down) before starting.**

Switch B Not in use.

Starter Switch (D). Press the switch to engage the starter.

Throttle Control. To increase speed twist the grip towards the rider, in the direction of the arrow E.

A "stop-screw" F and locknut are provided to prevent overloading of the cable nipples at full throttle and should be locked in position when the throttle slides in the carburetors are fully open. This setting must not prevent the slides from opening fully, otherwise performance will be adversely effected.

The twist-grip rotary stiffness adjuster G is locked and sealed in the 'free' position, to comply with North American legislation which requires the throttle to close when the twist-grip is released. Elsewhere, if required, the sealing compound may be removed and the stiffness adjusted to suit requirements.

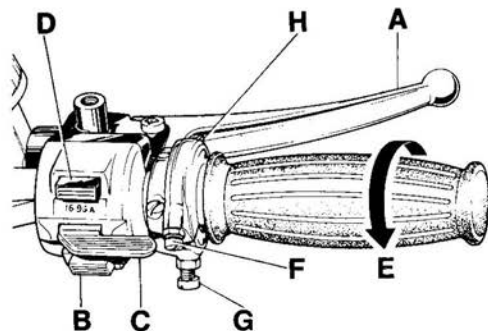


Fig. 7
The right handlebar controls

THE CONTROLS

Gear Shift (A) Press the lever downwards to shift to a lower gear and raise to shift to a higher gear. When released, the lever returns to a central position. Neutral lies between first and second gear (See "Neutral Indicator", page 10). The lever may be removed & fitted on a new serration, after removal of its locking bolt.

Choke Control (Carburetor) (B) For starting a cold engine, move the lever counter clockwise to the slack wire position to close the air slides in the carburetor and give a rich mixture. Open progressively (clockwise) as the engine warms up.

Gas taps (D). Turn *down* the lever on the right-side tap for normal running. When reserve is required, the lever on the left side tap is turned *upwards*. Always turn off both taps when parking to prevent any possibility of fuel flooding the engine.

Note:-When the machine is used at continual high speed or maximum acceleration, both taps should be opened to ensure that a sufficient quantity of fuel is available. Occasionally remove the taps and clean the fitters

Primer (or Tickler) (C). When depressed, the plunger prevents the float from rising, thus raising the level of fuel in the float chamber. Use very briefly before starting a cold engine. (see also page 49).

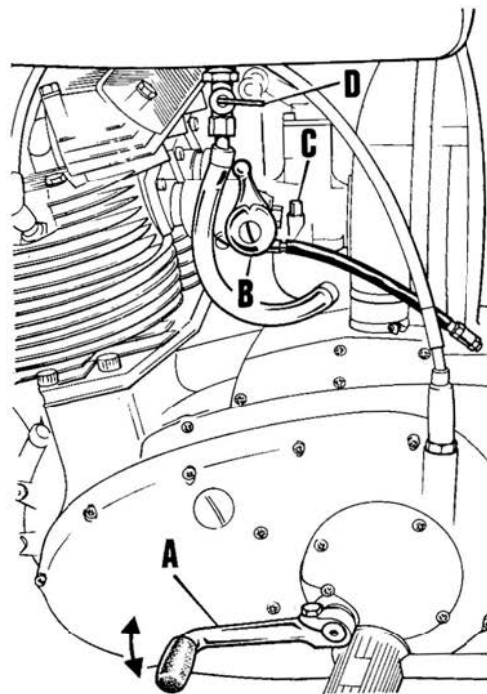


Fig. 8
Controls on the left side
of the machine.

Brake Pedal (C). The position of the pedal pad can be adjusted at the brake cylinder piston rod behind the engine by re-location of the locknuts A.

The pad should be situated just below the foot ready for immediate use.

Stop-Lite switch. Any adjustment of the brake pedal may require re-adjustment of the stop-lite operating screw. When the switch plunger B is fully depressed with the fingers, and the brake pedal is in its normal (released) position, there should be $\frac{1}{32}$ " (1mm) gap between the plunger & the operating screw on the pedal

Starter Pedal (D) Pivot the lever outwards to the operating position & press downwards with the foot to rotate the engine for starting. Return the lever to the folded position after use.

Gas filler cap (E). To remove, turn counter-clockwise, press down, and turn counter clockwise again. Lift off.

Parking lock (F). Rotate the handlebars to the extreme left, insert the key in the lock (at the lower end of the steering column), and turn to locate the plunger in the steering head. Remove the key and keep in a safe place.

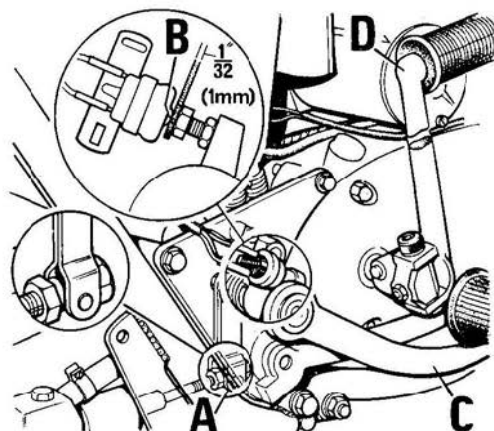


Fig. 9 Controls on the right side of the machine.

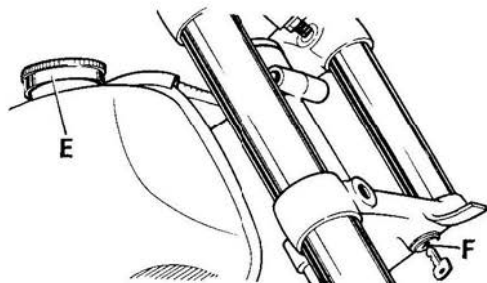


Fig. 10 Parking lock and filler cap.

STARTING and RIDING

STARTING and RIDING

Before using the motor-cycle make sure that the oil tank, transmission (gearbox), primary chaincase, front forks, front and rear brake reservoirs, are topped up with the appropriate oils. Check also that the battery is filled and charged and that the tires are at the correct pressures. This work is normally carried out by the dealer, and the new owner has only to arrange the controls to his liking and the model is ready for the road. Most of the controls are adjustable and should be positioned so that they can be reached without moving the hands from the grips or the feet from the footpegs.

Fuel. The Trident is designed for fuels of not less than 97 octane rating.

Exhaust gases. Avoid inhaling exhaust gases because they are potentially lethal. The engine must not, therefore, be run in a garage with the doors closed.

STARTING

Stand astride the motor-cycle and make sure that the gears are in the neutral position, as verified by illumination of the green light on the panel. Check by gently pressing down the starter pedal when, if a gear is engaged, the machine will move forward.

Cold engine. Close the choke control lever to give a rich mixture—see page 12.

Turn on the right side gas tap and then hold down each of the carburetor primers in turn for a few seconds, see page 49, to ensure an ample supply of fuel at the jets.

Insert the key in the ignition switch and turn to the clockwise position.

Open the throttle **very slightly** and operate the starter switch, when the engine should start. With a new engine, or in exceptionally cold conditions, operate the starter pedal several times before using the starter switch. In the event of a discharged battery, use the starter pedal. Press down gently until some resistance is felt, then give a firm downward swing, which should set the engine in motion.

Open the choke control about half way as soon as the engine starts, and then open progressively until the engine reaches normal temperature, when the lever should remain in the fully open position.

Note:-The spark timing is fully retarded when starting and automatically advances as the engine speed increases.

Hot engine. The starting procedure is the same as for a cold engine but the air control lever **must not** be closed. The throttle may be up to half open, as required.

RIDING

Use the throttle to control the speed of the machine, since definite, but gentle, braking is obtained by merely closing the throttle. On wet roads or under icy conditions, the use of the engine as a brake is to be recommended. A shift to a lower gear increases the braking effect.

STARTING and RIDING

Endeavor always to apply the brakes when the motor-cycle is upright. Use both brakes together and apply them smoothly and progressively. Never accelerate or brake fiercely on wet roads or when cornering.

To obtain best results in all round performance, make good use of the transmission (gearbox), especially on gradients.

At all times, use the designed seating position and footpegs, otherwise control of the machine may be impaired.

Important. Before moving off, make sure that the side-stand is in its 'parked' position.

Engine r.p.m. It is advisable not to exceed engine speeds of over 7,500 r.p.m. as indicated by the tachometer and especially to avoid exceeding this figure in the lower gears.

Always use Genuine TRIUMPH Replacement Parts

REGULAR MAINTENANCE

REGULAR MAINTENANCE

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REGULAR MAINTENANCE

ATTENTION 250 MILES

Oil tank Before commencing a long journey or at a maximum interval of 250 miles, check the level of oil in the tank. If necessary, add engine oil (see "Recommended lubricants", page 66) until the level reaches the upper mark on the dipstick. To make a reading of the oil level, withdraw the filler cap, wipe the dipstick clean & re-fit the filler cap. Again remove the cap and note the oil level.

It is necessary to open the twinseat after releasing the locking plunger A, for access to the filler cap.

Oil flow. Oil can be seen flowing from the return pipe B, if the filler cap is removed while the engine is running. **If there is no flow from the pipe, stop the engine immediately and investigate the cause.**

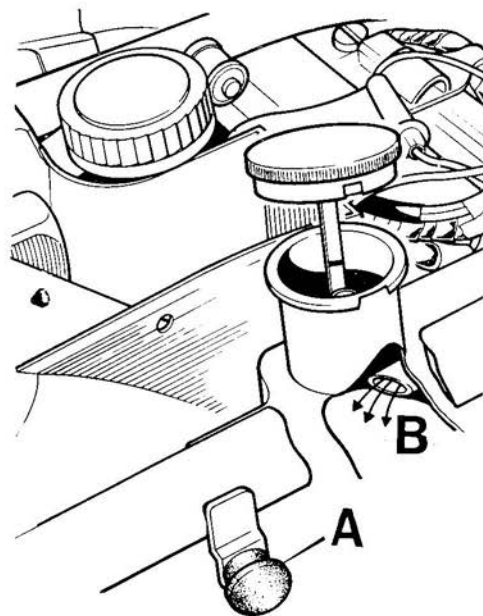


Fig. 11
The oil level.

ATTENTION 1-2 WEEKS

Battery. Check weekly. Open the twinseat and remove the left side panel. Uncouple the battery retaining strap and lift off the cell filler cover. The electrolyte level must be between the lines marked on the front of the case and, if necessary, **distilled water** must be added to each cell until this condition is obtained. Do not overfill the cells and wipe away any surplus liquid. See also "Electrical Equipment", page 54.

Control Cables. Every 1-2 weeks the exposed ends of the inner cables should be inspected and lubricated. Under exceptionally adverse conditions lubricate as necessary to give smooth action. (page 25).

Tires. Check pressure every 1-2 weeks. These should be 26 p.s.i. (front) and 28 p.s.i. (rear). See also page 41.

Brake fluid reservoirs. Front and rear brakes are self-adjusting and are independent of each other. Provided that the systems are in good order it will **NOT** be necessary to replenish the reservoir. The level A will fall very slowly as the brake pads wear, but a rapid fall in level indicates a fault in the system which must be rectified before using the motor cycle. Check every week.

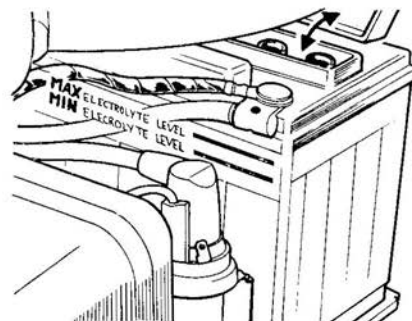


Fig. 12 The battery electrolyte levels.

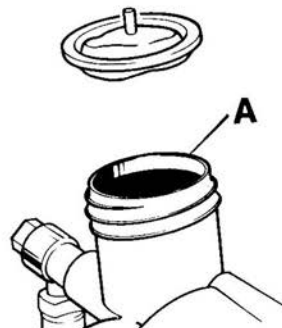


Fig. 13 The brake fluid reservoirs.

REGULAR MAINTENANCE

CHANGING THE ENGINE OIL

This operation should be carried out while the oil is warm when it will flow more freely than when cold. The filters should be cleaned at the same time, see "Cleaning the oil filters", page 22.

Oil tank. Remove the drain plug collecting the oil in a suitable receptacle. Open the hinged twinseat for access to the tank filler cap. Wash out the tank with clean kerosene (paraffin) to remove all traces of foreign matter and replace the drain plug using a new sealing washer if necessary. The tank capacity is 6 U.S. pints (see "Specification", page 69), the oil level being shown on the dip-stick. Use one of the recommended engine oils given in the chart on page 66. Run the motor for a few moments and check visually that oil is returning to the tank.

Primary chaincase. To drain, remove plug X and inspection cap S. Replace the drain plug and add $\frac{7}{8}$ U.S. pints (see "Specification", page 69) of the same engine oil as used in the oil tank. After replenishment, the level is automatically maintained from the engine. Replace the cap firmly.

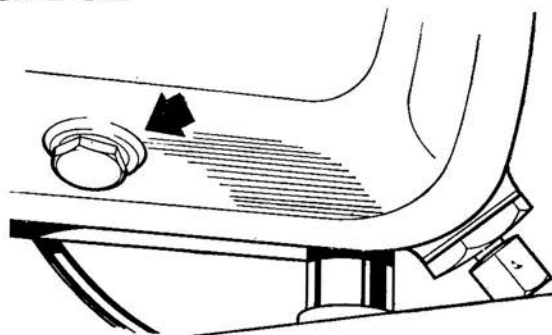


Fig. 14 The oil tank drain plug.

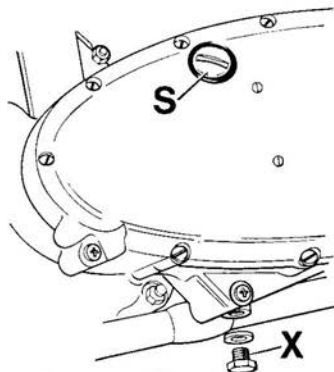


Fig. 15 Draining the chaincase.

CHANGING THE TRANSMISSION (GEARBOX) OIL

Transmission (Gearbox) Remove the drain plug S (do not confuse with the larger hexagon used for a different purpose) and the filler cap T, which incorporates a dip-stick.

Replace the drain plug and add $1\frac{3}{4}$ U.S. pints (see "Specification", page 69) of a gear oil selected from the table of recommended lubricants, page 66.

Wipe the dipstick clean, and screw down the filler cap. Remove the cap again and check that the oil level is correct to the mark.

Note:-The motor cycle must be standing on level ground and be on its wheels, if correct readings are to be obtained.

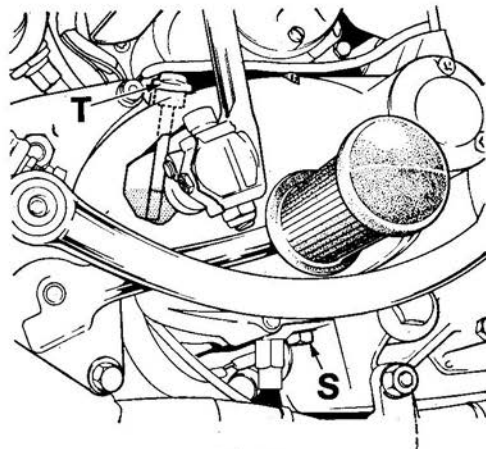


Fig. 16
Draining the transmission.

REGULAR MAINTENANCE

CLEANING THE OIL FILTERS

Three filters are incorporated in the lubricating system and should be cleaned or renewed, as the case may be, whenever the oil is changed.

Tank filter. The oil tank filter is of gauze. To remove, first disconnect the feed line at union nut A and unscrew the filter B. Wash thoroughly in clean kerosene. Replace the filter using a new sealing washer, if necessary.

Crankcase filter. The full-flow filter C is contained in the right side of the crankcase and can be withdrawn after unscrewing the cap D. **This filter must be renewed every 3000 miles (5000 km).** When fitting, make sure that the open end of the filter and the sealing washer are at the inner end of the filter chamber and that the spring is assembled with the cap. It is essential to add a small quantity of engine oil to the filter compartment before completing the re-assembly. Ensure that the end cap sealing ring is in good condition.

Crankcase sump filter, E. The crankcase filter is of gauze and is retained by the sump plate beneath the crankcase. It is first necessary to take off the exhaust pipes when removal of the six nuts allows the filter to be detached. Wash thoroughly in clean kerosene. When replacing, check that the gaskets are in good condition, renewing if necessary to make an oil-tight joint. It is important to replace the sump plate correctly i.e. with the deep portion beneath the pump scavenge pipe.

CLEANING THE OIL FILTERS

To ensure immediate lubrication of internal parts, following replacement of the filters, add half a pint of engine oil to the crankcase and operate the starter (or use the starter pedal twenty or thirty times) with the ignition switched off, until oil is seen issuing from the return pipe in the tank.

The oil can be inserted through the spark timing plug aperture on the front of the crankcase on the right side, or added to the rocker box, in which case ample time must be allowed for the oil to drain down into the crankcase. It will also be necessary to allow sufficient space in the oil tank to accommodate this oil.

The above procedure should also be followed when the motor-cycle has not been used for an appreciable time.

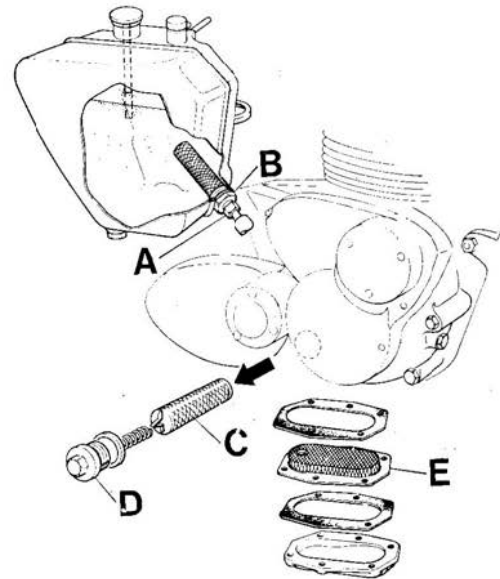


Fig. 17 The oil filters.

ROUTINE MAINTENANCE

GENERAL LUBRICATION

Rear chain. An adjustable supply of oil is fed from the tank to the lower run of the rear chain.

The screw adjuster is located inside the tank filler neck and should be turned clockwise to reduce the flow.

At intervals, according to conditions of use, it is advisable to remove the chain, wash thoroughly in kerosene, and soak in lubricant before replacing.

Important. Remember to replace the 'hairpin' spring clip with its closed end forward on the top run of the chain.

Speedometer Drive. The unit requires lubrication at intervals as specified in the "Routine Maintenance" Chart, page 68. Give two applications only, from a hand grease gun.

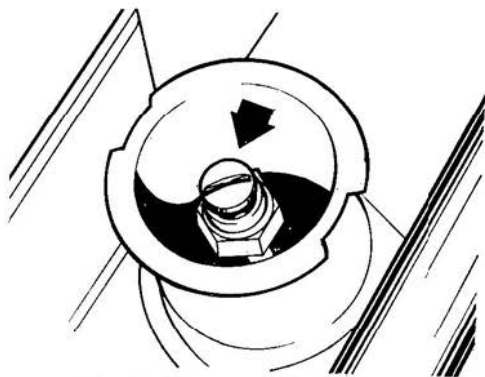


Fig. 18 The rear chain lubricator.

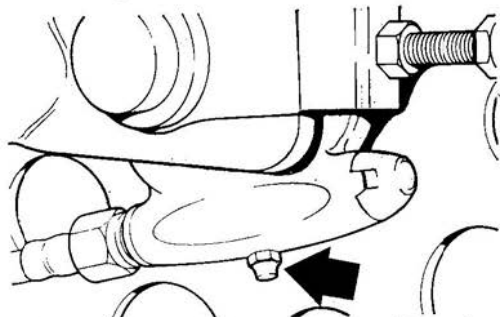


Fig. 19 Lubricating the speedometer drive unit.

GENERAL LUBRICATION

Speedometer and Tachometer Cables. Disconnect the cable from the instrument and withdraw the inner cable which should then be washed in kerosene. Smear the cable with grease, **except for 6in nearest to the instrument.**

When re-assembling, make sure that the 'squared' ends of the inner cable are located correctly in their 'squared' driving sockets, before tightening the outer cable unit nut.

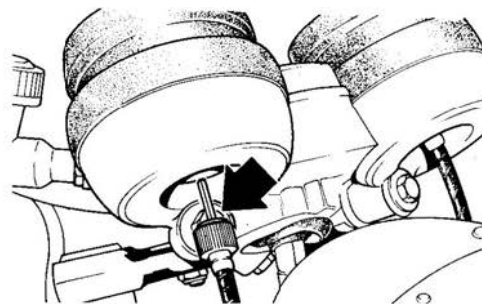


Fig. 20

Lubricating the instrument driving cables.

Control cables. These should be lubricated frequently at their exposed ends with a light lubricating oil. At intervals, or if the cable has become stiff to operate, remove it from the machine, hang vertically, and allow oil to drain through overnight, see illustration.

It is not necessary to lubricate the clutch cable internally since it is lined with anti-friction material.



Fig. 21

Lubricating the control cables.

REGULAR MAINTENANCE

ADJUSTING THE VALVE CLEARANCES

The rockers are accessible after removal of the inspection covers 'C', (which are not interchangeable). The clearances, which must always be checked or adjusted when the engine is cold, are:- .006 in. (0.15 mm) intake; .008 in. (0.20 mm) exhaust.

Put the motor-cycle on its centre stand, engage high gear, and remove the spark plugs when, by rotation of the rear wheel on either direction, the valves can be set in the correct position for checking the clearance.

Check the three intake valves first. A valve clearance must be checked when the two remaining valves are "on the rock," i.e. one valve must be just opening while the other is just closing.

To adjust the clearance, slacken locknut A and turn the adjuster B until the feeler gauge will just pass through. Hold the adjuster securely while the locknut is tightened, and check the clearance afterwards.

Now check the three exhaust valve clearances, using the same adjustment sequence as for the intake valves.

Replace the rocker covers in their respective positions, renewing the gaskets if necessary to make an oil tight joint.

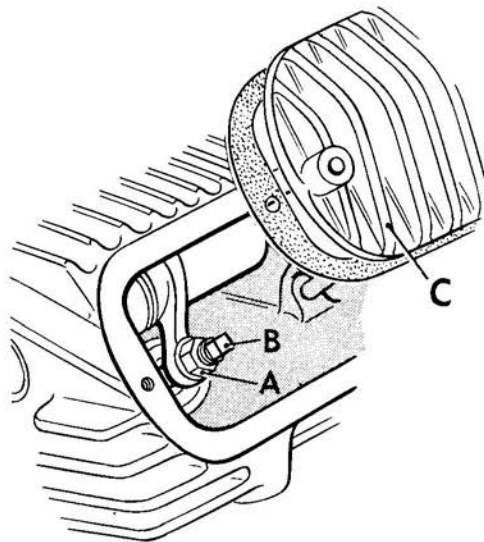


Fig. 22

Adjustment of the valve clearances.

SPARK PLUGS

The spark plugs recommended for the Trident are Champion type N3 and should not be altered without expert advice.

At intervals of 3,000 miles (5,000 km) remove the plugs and have them cleaned and tested on an abrasive blast machine. Restore the sparking surfaces with a fine file and re-set the gap A to .025 ins. (0.65 mm) by bending the side electrode B only. A fouled plug is shown at C and the correct condition at D.

The gaskets are designed to last for the life of the plugs, which should be renewed every 10,000 miles (16,000 km). When re-installing, smear a little graphite grease on the threads and screw in as far as possible by hand, using a tubular wrench for final tightening.

Note:-The leads to the spark plugs are numbered to ensure correct connections. (No 1 — Right side).

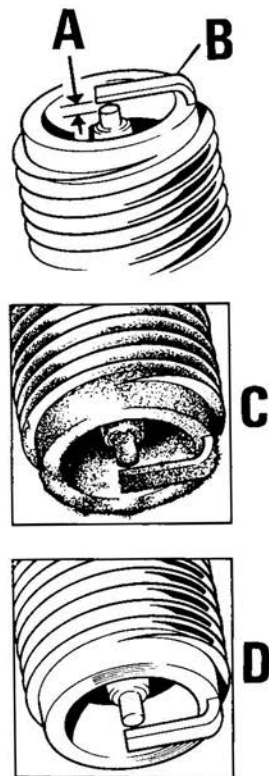


Fig. 23 The Spark Plugs.

REGULAR MAINTENANCE

ADJUSTING THE CONTACT BREAKER GAPS

The assembly comprises three sets of independently adjustable contact points and their gaps will be re-set, if necessary, by your dealer after the first 500 miles (800 km).

The spark plugs should be removed first. To check the gap between any pair of contacts, turn the engine gently by means of the starter pedal, until the marker line M on the cam face, aligns with the nylon "heel" on the movable contact, when the gap will be at its maximum and should be between .014—.016 ins. (0.35—0.40 mm).

If, for example, No. 1 contacts gap is incorrect, slacken the fixing screw D and adjust the position of the fixed contact by means of the eccentric pin E, until the gap is correct. Re-tighten screw D and re-check the clearance.

Repeat for gaps No. 2 and 3. If pitted, the contacts must be removed and cleaned with fine emery cloth, afterwards wiping with a cloth moistened in gasoline. When replacing, make sure that the insulating bushes and washers are correctly situated.

At regular intervals (see "Routine Maintenance", page 68), check the gaps and then apply a **very small amount** of thin grease to the three felt pads H, and add **one spot** of clean engine oil to the cam slot J (which must be set in the vertical position) to lubricate the spindle.

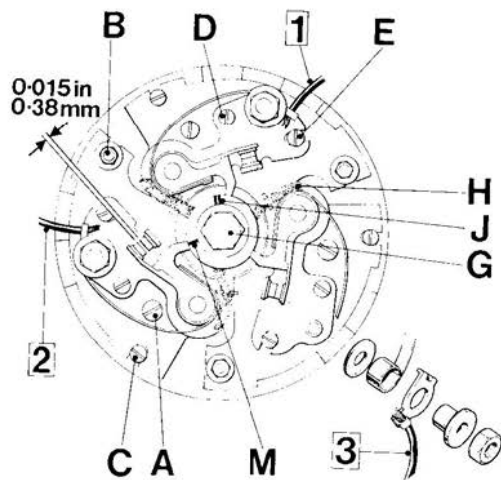


Fig. 24

The Contact Breaker Assembly.

AUTOMATIC SPARK ADVANCE MECHANISM

This mechanism, which automatically advances or retards the spark according to engine speed, is located behind the contact breaker mounting plate. Unscrew the 3 pillar bolts securing the plate and lift off, complete with the three sets of contacts.

Before removing the plate, scribe a line across the plate and its housing, so that it may be replaced in exactly the same position, otherwise the spark will have to be re-timed.

Check that the governor weights L move freely and that, if the cam K is turned by hand against the spring tension and then released, the weights are seen to open and close. Lubricate their pivots M with one spot of clean engine oil.

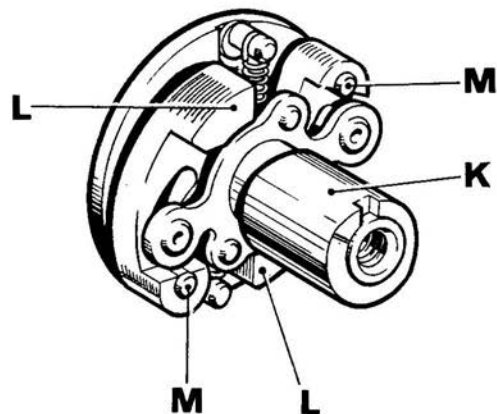


Fig. 25

The automatic spark advance mechanism.

TIMING THE SPARK

First check that each of the contact breaker gaps is correct when fully open, as described on page 28. Re-set if necessary.

The spark timing for each cylinder is checked and adjusted separately, the right side cylinder being controlled by assembly No. 1 (white/black leads) Fig. 26, the left side cylinder by assembly No. 3 (yellow/black lead) and the centre cylinder by assembly No. 2 (red/black lead).

Fix the auto-advance mechanism in the fully advanced position by first carefully removing the center bolt G, and replacing its washer by another, having a hole large enough to fit *over* the cam bearing. Replace the bolt but, before tightening, rotate the cam to its limit in a clockwise direction. Hold in position and tighten the bolt, when the mechanism will be locked in the fully advanced position.

Remove the three spark plugs and engage high gear to enable the engine to be turned backwards by hand movement of the rear wheel.

Remove the timing plug from the front of the crankcase (Fig. 27) and slowly rotate the engine until, say, the center piston is at the top of its compression stroke (i.e. with clearance at both of its valves/rockers).

Now rotate the engine **backwards** very slowly until a small hole in the crankshaft web is in line with the timing hole in the crankcase. Insert the special service tool (fig. 27) in to the crankcase and locate the plunger in the crankshaft hole (arrowed).

TIMING THE SPARK

Check that the contact points for No. 2 assembly are *just* opening. If incorrect, slacken screw A and pillar bolt B, and adjust eccentric pin C, thus moving the contact breaker *secondary* plate either way, until the correct condition is obtained. Firmly tighten A and B, and check the setting.

Repeat this procedure for the two remaining cylinders. When all adjustments are completed, restore the standard washer to the centre bolt G.

The precise instant of separation of the contact points is best obtained by connecting a small battery and bulb across the points.

Note:-Provision is made for an alternative method of spark timing by means of a 'Strobelite'. Most dealers possess such equipment, with which the timing can be checked quickly and efficiently.

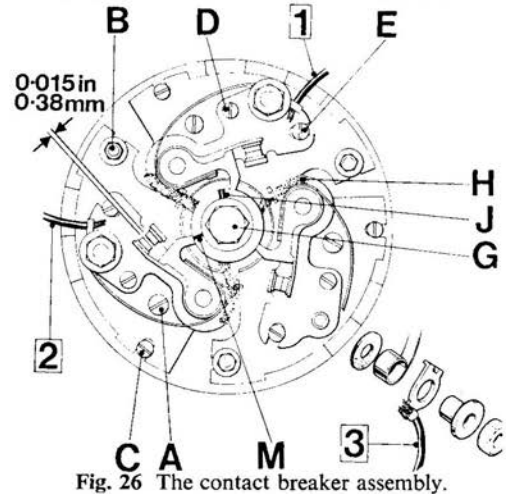


Fig. 26 The contact breaker assembly.

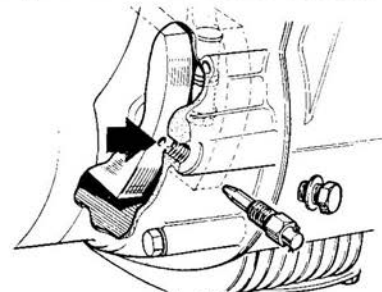


Fig. 27

Positioning the crankshaft for timing the spark.

REGULAR MAINTENANCE

PRIMARY CHAIN ADJUSTMENT

Remove the inspection cap S to check the chain slackness through the aperture. First, apply pressure to the starter pedal by hand, to remove all slackness from the bottom run of the chain, when there should be approximately $\frac{3}{16}$ in. (5 mm) movement in the top run of the chain. **It is most important that the chain should never be tight** (fig. 28).

To reduce excessive chain slackness, remove the sealing cover A, release the locknut B, and screw the adjuster C inwards until the correct chain slackness is obtained. Re-tighten the self-locking nut B. Note that the washer D incorporates a special oil seal and it should be renewed in the event of leakage (fig. 29).

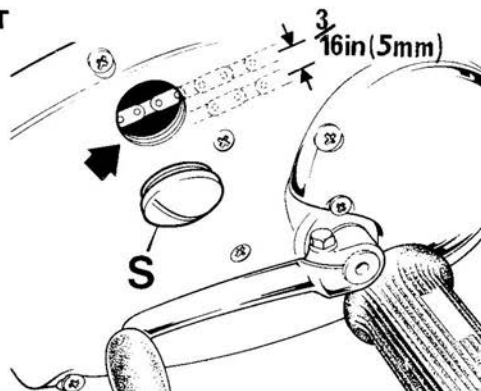


Fig. 28 Checking the primary chain.

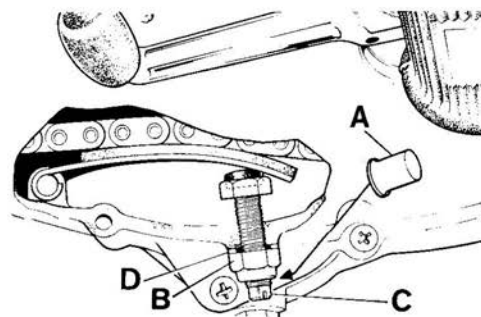


Fig. 29 The primary chain adjustment.

CLUTCH CONTROL ADJUSTMENT

Withdrawal of the footrest rubber simplifies removal of the inspection cover N, which provides access to the clutch operating mechanism.

Completely slacken off the cable adjuster at the handlebar and also at the chaincase at A. Extract the cable from the handlebar lever.

Hold the sleeve nut M and release the small locknut R. Still holding the nut M stationary, unscrew the operating rod P with a screw-driver until the clearance between the rear-face of the sleeve nut and the thrust bearing (behind the nut) is **only just taken up**, i.e. the rod P has no end-play.

Re-assemble the cable, which must then have all slackness removed by means of adjuster A. (Fine adjustment only, is provided at the handlebar).

Now screw-in the rod P just sufficiently to give a trace of end play ($\cdot 005$ ins. (0.012 mm) and tighten locknut R. **This end-play is essential** and will give the correct amount of cable slackness at the handlebar.

Adjustment of the clutch operation must **not** be made by means of the cable only. The above sequence of instructions must always be followed.

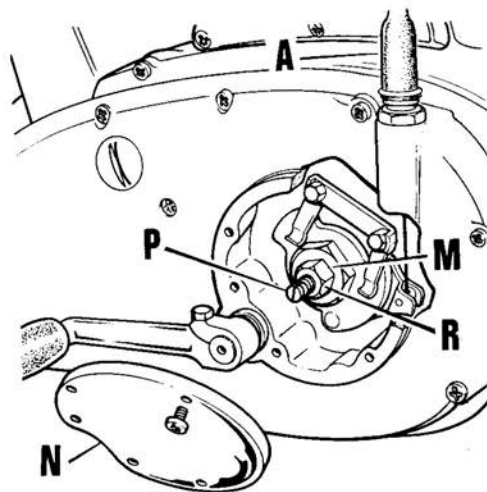


Fig. 30
Clutch control adjustment.

REGULAR MAINTENANCE

REAR CHAIN ADJUSTMENT

Any adjustment of the rear chain must be made with the motor cycle on its center stand. Movement of the wheel is controlled by adjuster A at each end of the spindle, which must first be released by slackening the nut on the right side.

The adjuster bolts C must be **tightened by the same amount**, after releasing locknut D, in order to preserve chain alignment, until the total free play at the center of the chain run is $1\frac{3}{4}$ ins. Be sure to tighten the spindle nut. Movement of the wheel does not effect the brake.

Note:-Before using the motor-cycle, apply the brake several times and check that it functions normally.

Wheel Alignment. If the wheel alignment was correct originally, and the adjuster nuts were tightened equally, the wheels should remain in alignment. If in doubt, check with a straight edge or a piece of string drawn taut against the tire sides, any correction being made, at the right-side adjuster.

For the wheels to be in line the straight-edge, or string, must touch both tire walls at two points. *Note.* If string is used, it must also be in a straight line from end to end.

Mis-alignment of the wheels will cause the steering to be adversely effected and the chain to wear rapidly.

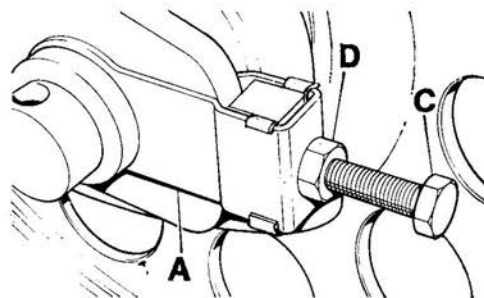


Fig. 31 The rear chain adjusters.

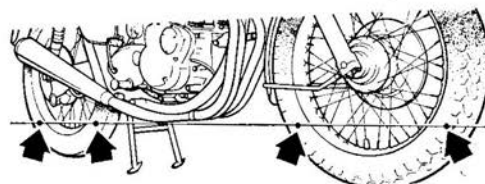


Fig. 32. Checking the wheel alignment.

REAR SUSPENSION ADJUSTMENT

The shock absorbers comprise compression springs controlled by hydraulic damping.

The damping system is completely sealed and does not require any attention. Static loading on the springs is adjustable and can be varied by the three-position ring cam, for which a "C" wrench is provided in the toolkit.

To increase the static loading (e.g. when a pillion rider is carried) place the motor cycle on its center stand and turn the cam ring in the direction of arrow A, Fig. 33. The cams on both units must be set in the same notches to ensure balanced loading, as can be seen from the rear of the machine, Fig. 33.

Swinging Fork Lubrication. The swinging fork pivots on plain bearings which must be lubricated every 1000 miles (1600 km). Apply grease until it is seen to issue at the end plates.

One greasing point only is provided, at the centre of the fork pivoting tube.

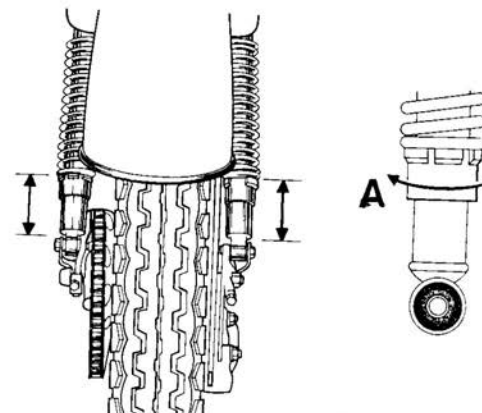


Fig. 33. Shock absorber adjustment.

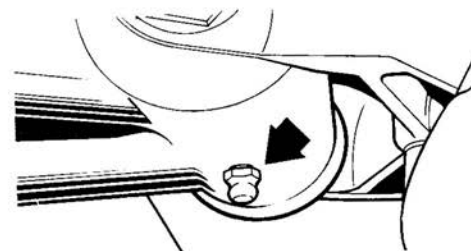


Fig. 34. Swinging fork lubrication.

REGULAR MAINTENANCE

STEERING COLUMN BEARING ADJUSTMENTS

Stand astride the motor cycle and place the finger tips of the left hand on the joint between the steering column and the top bearing cover. Apply the front brake and rock the machine backwards and forwards, when any play will be felt immediately by the left hand.

To adjust the bearings, support the crankcase on a box so that the front wheel is clear of the ground, and slacken the pinch bolt A, at the rear of the upper steering yoke. Tighten the adjusting nut B on the steering stem until **only a trace of play is present** on the bearings. The steering must be free and the forks should turn smoothly from lock to lock. If the movement is harsh, the adjustment is too tight or the bearings are damaged and must be renewed. When adjustment is correct, tighten the clamp bolt.

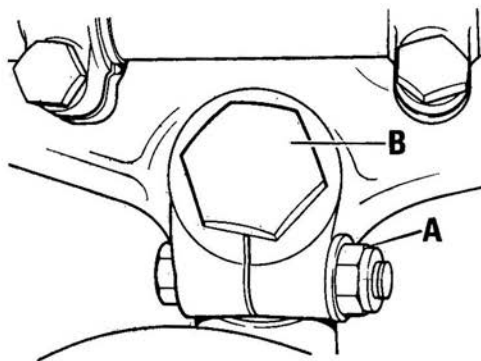


Fig. 35
Adjusting the steering head bearings.

CHANGING THE FRONT FORK OIL

Remove the cap nuts A at the top of the fork legs, and then the drain screw B from the bottom of the sliding member. Allow the oil to drain and then drive out any remaining fluid by “pumping” the forks up and down a few times.

Replace the drain screws, having checked that their sealing washers are in good condition, and add 210 cm³ of the special oil to each leg, see “Recommended Lubricants”, page 66.

The cap nut A must be tightened down firmly since it locks the fork leg into the upper steering yoke.

Note:-It will facilitate access to the cap nuts A if the handle-bars are removed at the commencement of the operation.

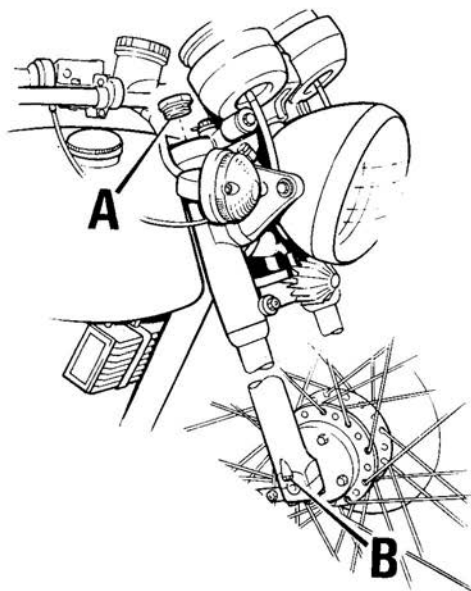


Fig. 36
Changing the fork oil.

REGULAR MAINTENANCE

CLEANING AND MAINTAINING THE MOTOR-CYCLE

Do not attempt to remove dried mud from your motor-cycle, but wash it off with a copious supply of clean water, at the same time taking care not to introduce water or dirt into the electrical system, air filter, etc.

Do not use an abrasive cleaner on chromium plating, but wash clean as with enamel.

As soon as the machine is dry, apply a good quality polish to the enamelled parts.

Whenever any work is being carried out on the machine, attention to detail and great cleanliness must be observed. All joints must be clean and gaskets in good condition before re-assembly. Good fitting wrenches should be used at all times, but long wrenches should not be used since they may cause failure through over-tightening.

Always use Genuine TRIUMPH Replacement Parts

WHEELS AND BRAKES

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Brakes—renewing pads	46	Rear Wheel removal	43
Brake, rear—special note	45	Tires	41
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WHEELS and BRAKES

WHEELS

Balancing. Front wheels complete with tires and tubes, are balanced before the motor-cycle leaves the factory. As soon as the machine is broken-in and the initial stiffness eliminated, check that the wheel is still in balance when, if it is turned gently and released, it shows no tendency to stop in any particular position. The brake pads must be quite clear of the disc when checking.

If out of balance, add weights A to the appropriate spokes until balance is obtained.

When balancing the rear wheel, disconnect the chain and remove from the sprocket. Make sure that the "hairpin" clip is replaced correctly, see page 24.

Hubs. Both hubs are fitted with ball journals which do not require adjustment. The bearings are greased during assembly and no further greasing is required until the hubs are dismantled for overhaul at 12,000 miles (20,000 km). Under specially arduous conditions, such as cross-country use, it may be necessary to inspect the bearings at a lower mileage, at the riders discretion.

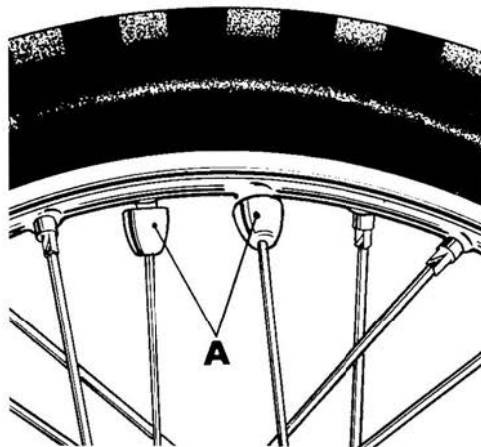


Fig. 37
Balancing the wheels.

TIRES

Under-inflation will not only seriously effect the life of the tire, but will also adversely effect the steering.

At intervals not exceeding two weeks, the inflation pressure should be checked in accordance with the data below. Always replace the valve cap; it prevents accidental deflation of the tire at high speed.

Tires are marked with one or more white spots B on the wall and if the tire is removed, it must be replaced with the spot(s) at the valve D. This also applies if a new tire is fitted, when the wheel must also be re-balanced, see page 40.

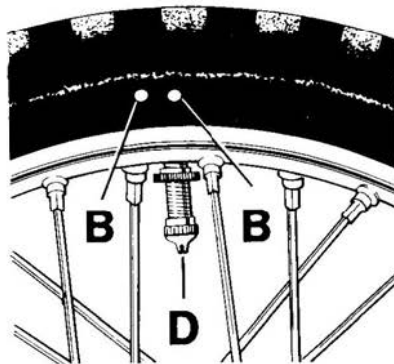


Fig. 38
Correct fitting of the tire.

Removing the tire is a straightforward task and is fully described in the booklet issued by the tire manufacturer.

Recommended tire pressures are shown below, and must be maintained to within ± 2 psi. (0.15 kg/cm²)

Inflation Pressures

	Solo	With Passenger	High Speed Solo (over 100 mph)
4.10 x 19 Front	26 psi (1.83 kg/cm ²)	32 psi (2.25 kg/cm ²)	32 psi (2.25 kg/cm ²)
4.10 x 19 Rear	28 psi (1.97 kg/cm ²)	34 psi (2.39 kg/cm ²)	33 psi (2.32 kg/cm ²)

WHEELS and BRAKES

REMOVING THE FRONT WHEEL

Raise the front wheel clear of the ground by means of a support about 8 ins. deep placed beneath the crankcase.

Disconnect the lower fender stay C at the forks, remove the wheel spindle clamps A and withdraw the wheel. Note that the clamps are not interchangeable.

Do not apply the brake while the wheel is out of the forks, otherwise the actuating plungers behind the brake pads may be forced out of position. To avoid this possibility, use a small wedge to maintain the gap between the brake pads B in the caliper. When replacing the wheel, first remove the wedge and then lift the wheel into position, engaging the brake disc between the pads, and replace the spindle clamps.

Tighten their securing nuts lightly, then tighten those on left side before finally tightening the right side nuts. This will ensure correct alignment of the spindle with the left fork leg

Note:-Before using the motor-cycle, apply the brake several times and check that it functions normally.

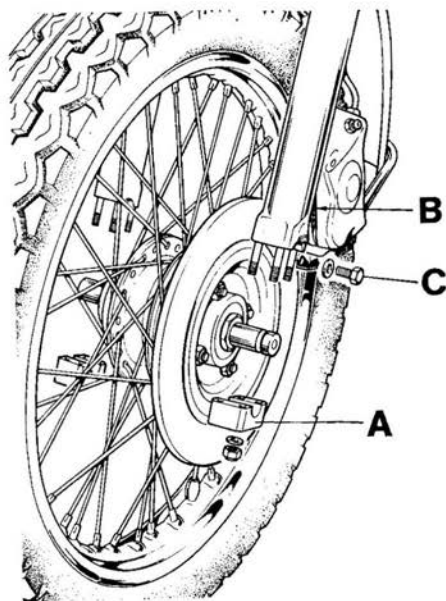


Fig. 39 Front wheel removal.

REMOVING THE REAR WHEEL

Place the machine on its center stand. With a gear engaged remove the chain connecting link, (but do not remove the chain from the transmission (gearbox) sprocket), and then disconnect the speedometer driving cable at the rear wheel.

Remove the spindle nut (R.H. side) and partly withdraw the spindle from the opposite side (until its end clears the swinging arm on the R.H. side), thus releasing the chain adjuster and the brake torque arm complete with brake caliper.

The wheel, complete with spindle and other components on the left side, can then be extracted and lowered to the ground.

Take care not to disturb the setting of the chain adjusters and **do not apply the brake while the wheel is out of the fork**, otherwise the actuating plungers behind the brake pads may be forced out of position. To avoid this, insert a packing piece between the brake pads.

Stand at the left side of the wheel, facing across the machine and incline it towards the rider; reach over the seat and take the wheel out rearwards and to the right of the machine.

After the wheel is replaced, check the chain adjustment (page 34) and wheel alignment (page 34). Make sure that the chain spring clip is correctly fitted (see page 24).

Note:-Before using the motor-cycle, apply the brake several times and check that it functions correctly.

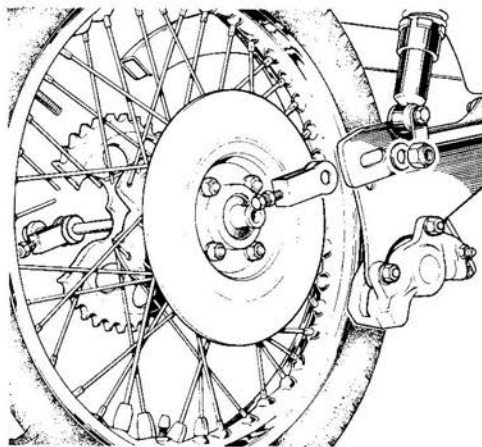


Fig. 40

Removal of the rear wheel.

WHEELS and BRAKES

BLEEDING THE BRAKES

The brakes are self adjusting, and there is no provision for mechanical adjustment.

If the hydraulic system has been even partially dismantled to effect repairs, it will be essential to “bleed” the system i.e. to remove any trapped air after replenishing the reservoir.

Remove the caliper cover, connect a tightly fitting rubber pipe C to the bleed nipple A and suspend it in a glass jar with the open end of the pipe completely immersed in hydraulic brake fluid (see “Hydraulic Fluid,” on facing page). With the pipe still attached, unscrew the bleed nipple one complete turn. Remove the screwed cap from the reservoir, and take out diaphragm E.

Fill the reservoir to its correct level before commencing ‘bleeding’ and maintain the level during the entire operation.

Now operate the handlebar lever (or brake pedal, as the case may be), when any air in the system will be expelled through the tube and will be observed in the form of bubbles rising in the fluid in the jar. Hold the lever or pedal in this position for a few seconds and then release. Repeat this sequence as many times as may be necessary, until air bubbles are no longer seen to escape.

To prevent any air being drawn back into the system when the lever, or pedal, is released, loop the bleed pipe as illustrated. This is to maintain a “head” of fluid between the bleed nipple and the top of the loop.

When bubbles cease to rise, hold the lever, or pedal, in the ‘ON’ position, and with the pipe still connected to the bleed nipple, re-tighten the nipple firmly.

BLEEDING THE BRAKES

Now remove the pipe. The correct fluid level F, when the brake pads are new, is given by the marker line, $\frac{1}{4}$ " below the rim. The diaphragm E must be manipulated into the folded condition, as shown in the illustration, before being replaced in the reservoir. Add the screw cap and tighten firmly.

Warning. Hydraulic fluid immediately attacks cellulose enamel and great care must be taken to prevent spillage, especially on to the gas tank.

Rear Brake. Special Requirements The method of bleeding this brake is the same as for the front brake but it is **ESSENTIAL** that, **BEFORE** proceeding with the operation, the rear wheel spindle is partly withdrawn and the caliper unit lowered to the ground. (still attached to its torque arm). This ensures that the bleed nipple is at the highest point of the hydraulic system in the caliper. At the same time, a metal packing piece of the same thickness as the brake disc, **MUST** be inserted between the brake pads.

Hydraulic fluid. In U.S.A. the fluid must conform to DOT 3 Federal Motor Vehicle Standards 116 but, elsewhere, Lockheed Brake fluid to Specification 329 must be used.

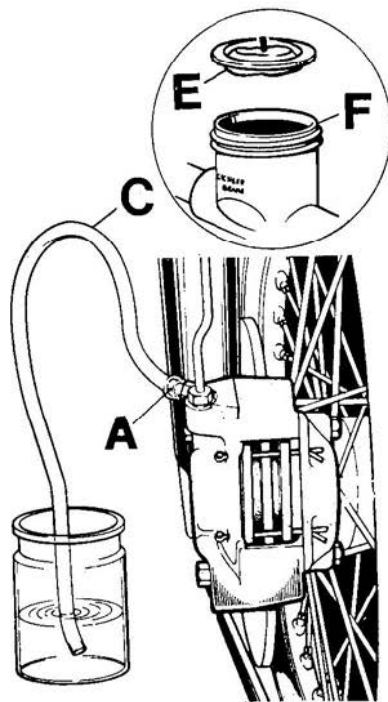


Fig. 41 Bleeding the brakes.

WHEELS and BRAKES

RENEWING THE BRAKE PADS

The pads D will require renewal when any part of the lining material is reduced to $\frac{1}{16}$ " (1.5 mm). Detach the caliper cover and then withdraw the split pins B. Pull out the pads.

To fit new pads, separate their actuating plungers to provide sufficient clearance for insertion of the new pads. If, during the life of the old pads, the fluid was replenished, the level in the reservoir will rise and may overflow, (see "Warning" page 45). It is advisable to fit new split pins.

It is essential to use the correct fluid otherwise brake operation may be seriously effected. Suitable fluids are detailed under "Hydraulic Fluid" page 45

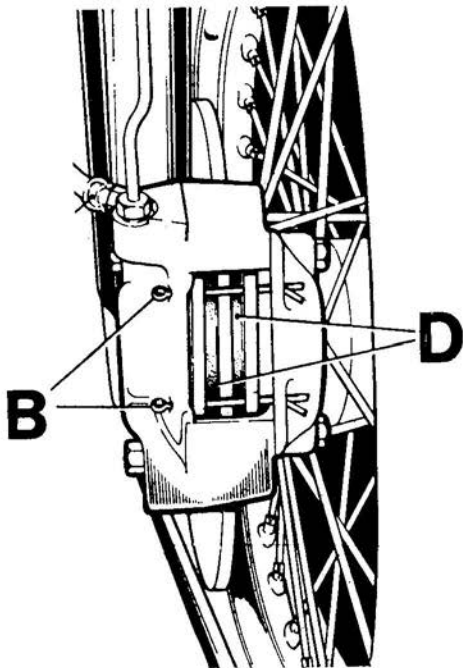


Fig. 42 Renewing the brake pads.

CARBURETOR ADJUSTMENTS

THE AMAL CARBURETOR

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CARBURETOR ADJUSTMENTS

MAIN JET REMOVAL, ALTITUDE SETTINGS

General. Removal of the drain plug S below the float chamber, makes the main jet M accessible for unscrewing with a tubular wrench. When replacing, do not tighten the jet assembly excessively since this may lead to the unscrewing of the jet holder at the next removal. The drain plug collects any foreign matter in the fuel and should be removed and cleaned occasionally.

The main jet, throttle valve, needle, and needle jet sizes are selected by the factory to give the best results and should not be altered without expert advice.

The air valves are for use only when starting a cold engine (page 12).

Altitude. The settings given on page 70 are those normally recommended and will be suitable for most atmospheric conditions. They are intended for altitudes up to 3000ft. (1000m). Above this height some reduction in main jet size is necessary to provide a balanced mixture. For altitudes between 3000ft. and 6000ft. (2000m) a reduction in main jet size by 5 per cent is usually necessary, and for every 3000ft. increase over 6000ft. a further 4 per cent is required.

If the float bowl is removed (screws N) take care not to damage the float and make sure the gasket R is in good condition before replacing.

PILOT MIXTURE AND PRIMING

Pilot Mixture. It may be necessary to make small adjustments to the pilot mixture to suit different climatic conditions and give good idling.

Screwing in the pilot air screw J, gives a richer mixture and vice-versa. Whenever adjustment is made to the pilot air screw on one carburettor, it must be accurately repeated on the others. Alternatively, the air screw should be gently screwed inwards as far as possible and then unscrewed by about $1\frac{1}{2}$ turns, the amount varying with requirements.

Primer (or "tickler"). Depression of the plunger P enriches the mixture for starting purposes by raising the fuel level in the float chamber and must be used only momentarily, since excessive "flooding" may cause difficult starting. In this event, switch off the ignition, open the throttle wide, and operate the starter pedal several times, to clear the fuel. Repeat the starting procedure without further priming.

Note:-The primer on the center carburetor is operated by means of a rocking lever.

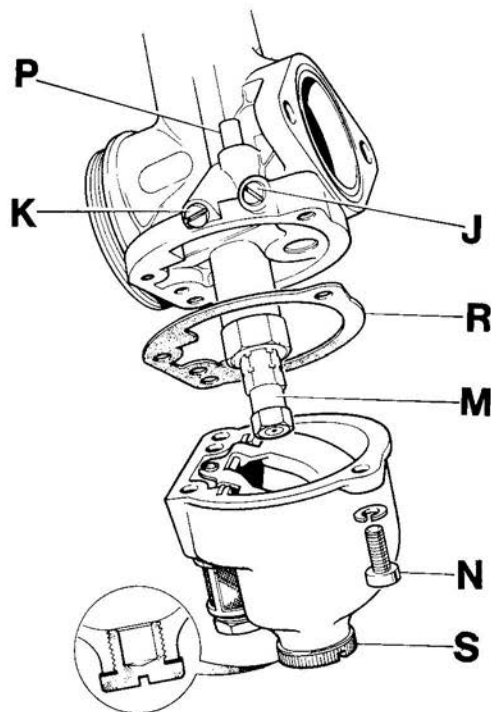


Fig. 43 The float chamber and jets.

CARBURETOR ADJUSTMENTS

CONTROL CABLES AND SLOW RUNNING

Slow running. Following adjustments to the pilot mixture, the engine idling speed may require re-adjustment. It can be increased or decreased by movement of the master screw H, which controls all the carburetors simultaneously.

Choke cables. Cable abutment B and locknut C allows individual cables to be adjusted for length to ensure equal opening of the air valves. The single cable between the control lever J and the triple cable junction box is fitted with a sleeve adjuster K which serves as a master adjustment for all the air valves.

Throttle Cable. Excessive slackness in the cable can be taken up by adjustment of the sleeve screw G and locknut F.

Individual setting of the throttle slides is by means of adjuster D and locknut A. They are correctly set at the factory but, if any adjustment is made, it must be identical on each carburetor.

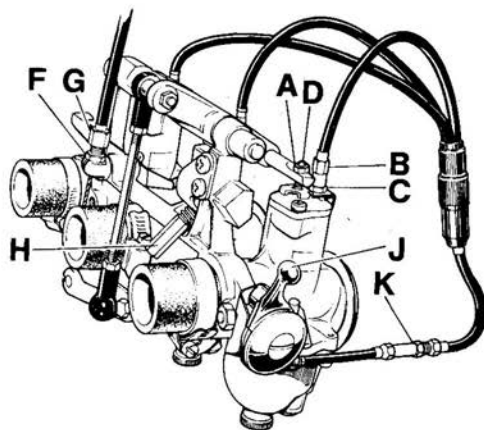


Fig. 44

The carburetors and their controls.

RENEWING THE AIR FILTER

The cover of the air filter housing (which supplies the three carburetors) is retained by the screw and clip A. When these are removed, the cover can be "unhooked" from its hinge at B and withdrawn.

This will release the filter unit C, which should be replaced at intervals not exceeding 6,000 miles (10,000 km.) and more frequently under dusty conditions.

It is not advisable to attempt to clean it in gasoline or other fluid because of the nature of the filter material.

When installing the new filter, the flange all round its periphery must be carefully seated in the housing to ensure that it makes an airtight joint. The filter is clamped in position by the cover when the clip A is replaced.

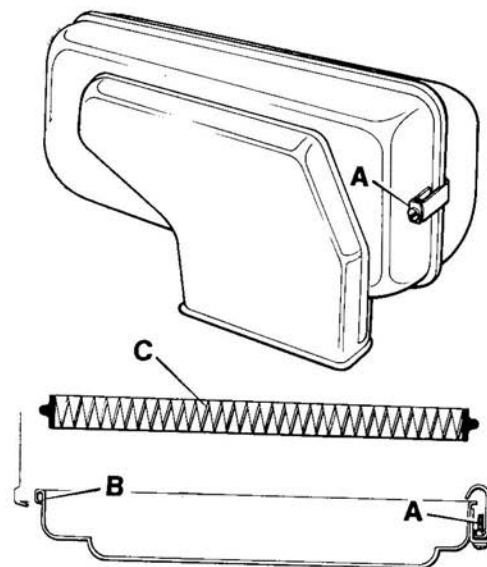


Fig. 45

The air filter, showing the lid and filter unit.

WARNING

WARNING

Any modifications to a Trident motorcycle made by the owner, or on the owner's behalf, shall be held by Norton Triumph International Limited and Norton Triumph Corporation to have been modified at the owner's risk and responsibility and without either the explicit or implied consent of either, or both, Companies.

The Companies will not accept any liability, obligation or responsibility for any defective or modified parts, or for the modified motorcycle itself, or for any claims, demands or legal actions for property damage or personal injuries, which may result from the modification of any Trident.

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ELECTRICAL EQUIPMENT

THE BATTERY

Electrical energy on the form of alternating (A.C.) current passes to the battery via a rectifier which converts the supply to direct current (D.C.). The zener diode varies the charging rate according to the state of the battery. In the event of a discharged battery, the engine can still be started after switching on the ignition, by using the starter pedal.

At intervals of two weeks (more frequently in hot climates) check the level of electrolyte, using distilled water to restore the level as explained on page 19.

Always keep the top of the battery clean and dry.

Never leave the battery in discharged condition.
Re-charge at the earliest opportunity.

It is most important that, whenever the battery leads are being attached, the positive (+) lead is connected to ground (earth).

Caution. Do not use a naked lite when examining the battery during charging, because the gases given off are of an explosive nature. Also ensure that the outlet of the breather pipe is clear of the frame.

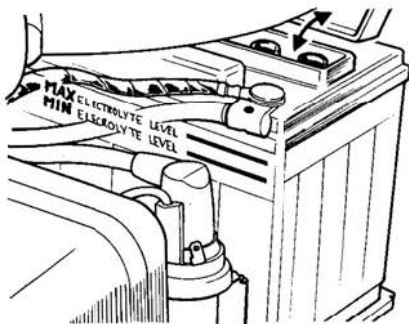


Fig. 46 The battery.

CONTACT BREAKER, STARTER, ALTERNATOR

Contact Breaker. (A) Your dealer will check the fully-open gaps after the first 500 miles (800 km.) when the three nylon "heels" of the moving contacts have settled down. The gaps must be checked thereafter in accordance with the mileages given in "Routine Maintenance", page 68. Full details for adjustment, lubrication, etc. are given on page 28.

Starter (B). Keep the cable connections clean and tight. Periodic lubrication is not required. When the engine is dismantled for general overhaul, the starter motor should also be overhauled (see Workshop Manual). Occasionally, check the tightness of the mounting bolts.

If attention is required earlier than this, it is advisable to return the machine to your dealer for removal of the unit and for servicing by the maker.

Alternator (C). The alternator is situated inside the timing cover and has no wearing parts. Occasionally check that the snap connectors D (in the alternator leads) are clean and tight.

Neutral Indicator Switch. Fitted beneath the transmission (gearbox) inner cover, this switch E is pre-set on assembly and should not be re-adjusted. The only maintenance required is to ensure good electrical connections.

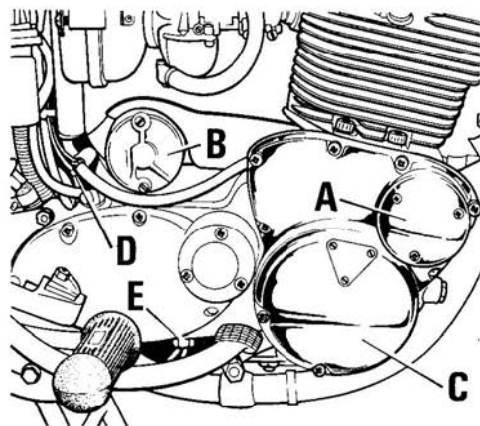


Fig. 47

The Alternator, Starter and Contact Breaker.

ELECTRICAL EQUIPMENT

IGNITION SWITCH, WARNING LITES, FUSE

Lighting and Ignition Switch. The switch is of the barrel type, fitted with a detachable key, and the owner should make a note of its number to ensure correct replacement in case of loss. An "emergency start" position is not necessary since, if the battery is discharged, the engine can be started by use of the starter pedal. The switch positions are detailed on page 9.

Warning Lites. For access, remove the three retaining screws and lift off the panel, when the bulb holders can be withdrawn as required.

To remove a bulb, press inwards, turn and release.

Instrument lites. Disconnect the driving cable at the union below the instrument and withdraw this from its flexible cup. Pull out the bulb holder, when the bulb can be withdrawn.

Fuse. A line fuse is included in the circuit in the cable from the battery. The holder carries a springloaded 35 ampere fuse, retained by a bayonet cap. If the engine runs erratically, check whether the fuse has failed. If so, rectify the fault in the circuit before renewing the fuse. The engine will not start unless the fuse is intact.

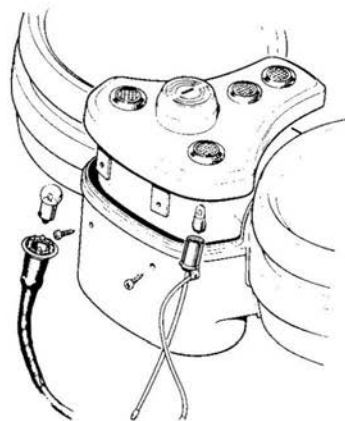


Fig. 48 Access to the warning lites.

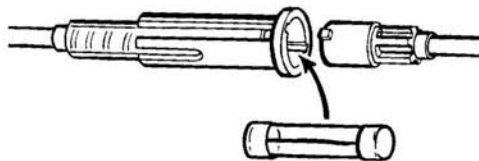


Fig. 49 The fuse.

HEADLITE, HEADLITE BEAM

Headlite. The headlite is adjustable at its side mountings. For access to the bulb, slacken the rim-retaining screw B; then disengage and withdraw the rim and light unit assembly C, removing the upper edge first. To release the bulb, press the adaptor D inwards and turn counter-clockwise.

Parking lite. Access to the bulb holder E is obtained in the same way as for the main bulb. The holder is retained in the reflector by spring "ears", and hand pressed in position.

Headlite beam. When the motor cycle is normally loaded the headlite beam should project straight ahead and be parallel with the road surface. Place the machine on a level surface with the beam square to, and at a distance of 25 ft. (8m.) from a wall. The rider and passenger should be normally seated and the lite adjusted at it side mountings until the pattern on the wall conforms with the illustration.

Lucas bulbs are pre-focussed in relation to the reflector and no further focussing is necessary.

Note: '-A' is the height of the lite center from the ground.

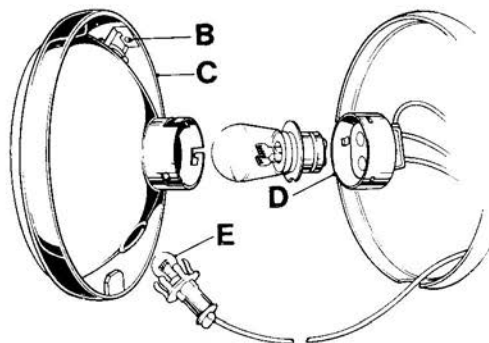


Fig. 50 The headlite bulbs.

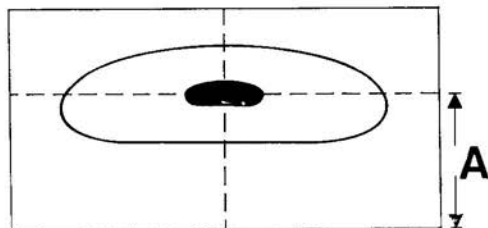


Fig. 51 Setting the headlite beam.

ELECTRICAL EQUIPMENT

ZENER-DIODE

Zener-diode. This device A by-passes excess charging current to the battery and hence keeps it fully charged. It is mounted on a finned "heat sink" B, which dissipates the surplus current in the form of heat and the flow of cooling air round the heat sink must not be impaired. The zener-diode does not normally require attention, apart from keeping the connection clean.

If the zener-diode is damaged as a result of a fault in the electrical circuit, after this has been eliminated and the fuse renewed, the motorcycle may still be ridden home provided that the diode is disconnected and the machine ridden slowly with all lights switched on to prevent overcharging of the battery.

Caution. The zener-diode securing stud is of high conductivity material but of relatively low tensile strength, and must be tightened with a torque not exceeding 28 lb. in. (0.32 kg.m). Do not connect the ground (earth) terminal between the diode and the heat sink.

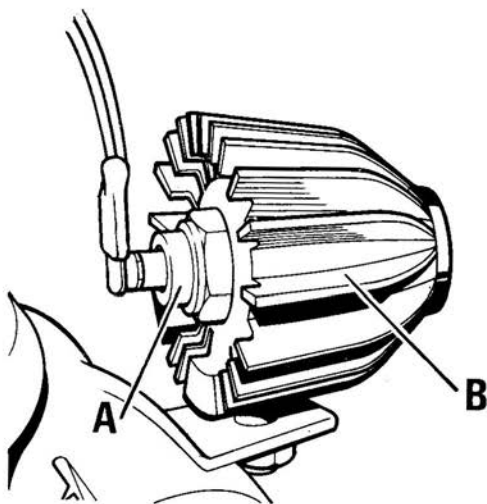


Fig. 52
The zener-diode and its heat sink.

RECTIFIER, COILS

The Rectifier. The central bolt must make good electrical contact with the frame of the motor-cycle. When tightening a rectifier, apply the wrenches as shown. NEVER disturb the nut A which clamps the plates together; these are pre-loaded at the factory to give correct performance. Keep all connections clean and tight.

Ignition coils. These are mounted on the frame in front of the oil tank and are accessible after removal of the panel on the left side of the machine (secured by one screw located beneath the twin-seat and locating pegs on the frame tube.) and of the shield on the right side (two screws). Keep the tops of the coils clean, particularly at the terminals, and inspect the cables for damaged insulation.

If renewing the cables make sure that they do not chafe against any sharp edges.

Note:- Non-resistive cables are used on machines for North America only. All others are "resistive" (for suppression of radio interference).

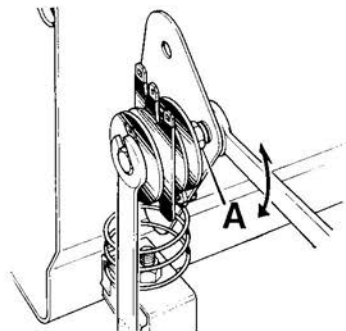


Fig. 53 The rectifier.

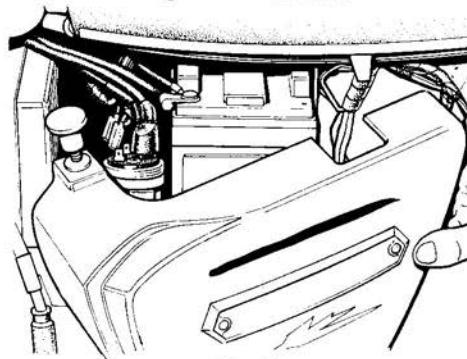


Fig. 54

Access to the coils and other electrical equipment.

ELECTRICAL EQUIPMENT

REAR AND INDICATOR LITES, HORN

Rear lite

Direction Indicator lites. The lens is secured by two screws and removal of these gives access to the bulbs. The rear lite bulb has 'staggered' pins to ensure correct replacement.

Stop-lite switches. These are fitted to the front and rear brake controls, see pages 11 and 13. They should be set so that the stop lite is illuminated as soon as the levers are operated.

Horn. An adjustable screw is located on the back of the horn. If the note becomes unsatisfactory, rotate the screw about a quarter of a turn at a time until the loudest clear note is obtained re-tighten its locknut.

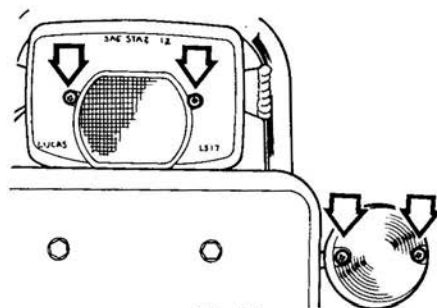


Fig. 55

Access to the rear lite and indicator bulbs.

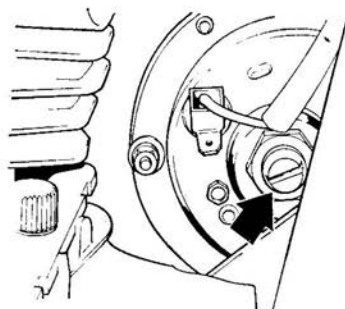


Fig. 56 Horn adjustment.

SUNDRY ELECTRICAL UNITS

Ballast Resistor. This unit A, converts the 12 volt feed from the battery to suit the 6 volt coils.

Condensers B.

Direction Indicator Unit, C (Flasher unit)

Starter Relay, D.

Headlite Warning Unit. This device, fitted to certain North American models only, illuminates the dipped headlite or headlite and taillite when the motor is running.

None of the above units require attention apart from an occasional check to ensure that their connections are clean and tight.

They are sealed by the manufacturer and if any fault develops it will be necessary to fit a new part.

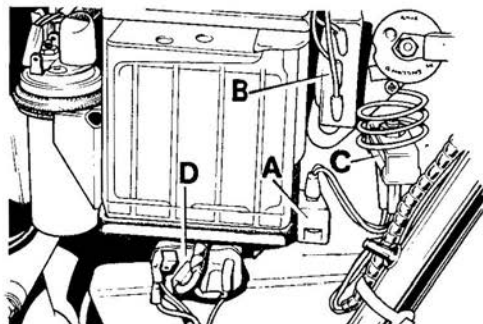


Fig. 57 The electrical units

Fig. 58 The wiring diagram.

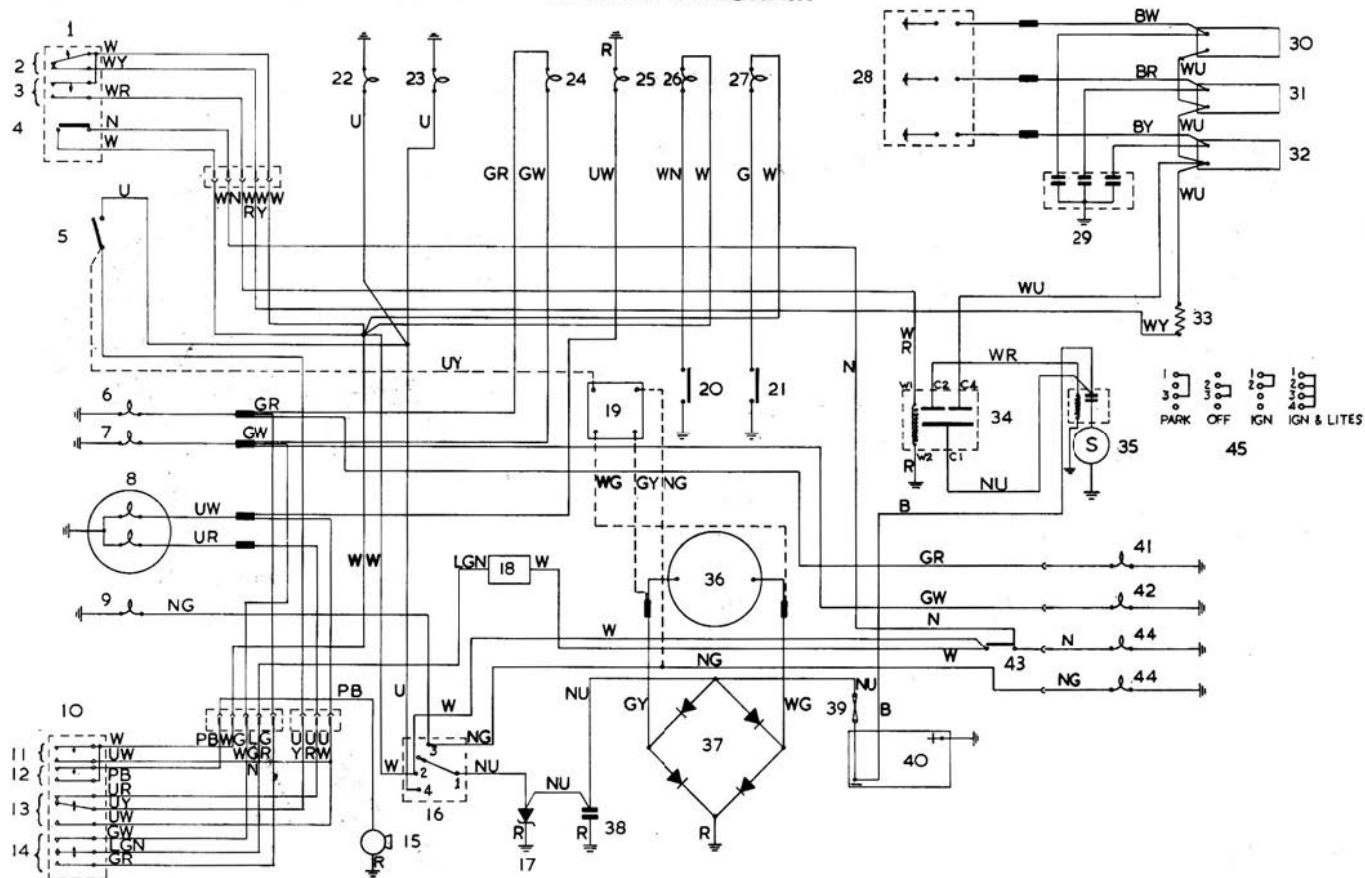


Fig. 58 The wiring diagram.

WIRING DIAGRAM SYMBOLS

1 Right handlebar switch group	22 Speedometer
2 Kill switch	23 Tachometer
3 Starter switch	24 Warning lite (direction indicator)
4 Front brake switch	25 Warning lite (main headlite beam)
5 Headlite/Park switch	26 Warning lite (oil pressure)
6 Front direction indicator (left)	27 Warning lite (neutral switch)
7 Front direction indicator (right)	28 Contact breaker assembly
8 Headlite bulb (Main beam, upper) (Dipped beam, lower)	29 Capacitors
9 Parking bulb	30 Coil RH
10 Left handlebar switch group	31 Coil center
11 Headlite flasher (except earlier models)	32 Coil LH
12 Horn switch	33 Ballast resistor
13 Headlite beam (Dipped, upper) (Main, lower)	34 Relay
(Upper RH)	35 Starter and Solenoid
14 Direction indicator switch (Centre off) (Lower LH)	36 Alternator
15 Horn	37 Rectifier
16 Panel liting—ignition switch	38 Electrolytic Capacitor (Not standard fitment)
17 Zener-diode	39 Fuse
18 Direction indicator "flasher" unit	40 Battery
19 Headlite warning unit (North America only)	41 Rear direction indicator (left)
20 Oil pressure switch	42 Rear direction indicator (right)
21 Neutral indicator switch	43 Rear Brake switch
	44 Stop/rear lite (Stop—upper) (Rear—lower)
	45 Liting and ignition switch positions

	Snap Connectors
	Ground (Earth)

CABLE COLOR CODE

B	BLACK
U	BLUE
N	BROWN
G	GREEN
Y	YELLOW
P	PURPLE
R	RED
W	WHITE
D	DARK
L	LITE

ELECTRICAL EQUIPMENT

BULB LIST

Bulb	Watts	Lucas No.	Triumph No.
Head	45/40, Pre-focus	370	99-1214
Parking	6, M.C.C.	989	99-0548
Rear/stop	6/21, offset pin	380	99-0542
Speedometer	2·2	504	—
Tachometer	2·2	504	—
Ignition warning	2, BA.7S	281	—
Main beam warning	2, BA.7S	281	—
Neutral Ind. warning	2, BA.7S	281	—
Direction Ind. warning	2, BA.7S	281	—
Direction Indicator	21, SCC	382	99-1182

Note:-All bulbs are 12 volts.

GENERAL INFORMATION

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GENERAL INFORMATION

RECOMMENDED LUBRICANTS

UNIT	MOBIL	CASTROL	B.P.	ESSO	SHELL	TEXACO
Engine and Primary Chaincase	Mobiloil Super	Castrol GTX or Castrol XL 20/50	B.P. Super Visco-Static	Uniflo	Shell Super Motor Oil	Havoline Motor Oil 20W/50
Transmission (Gearbox)	Mobilube GX 90	Castrol Hypoy	B.P. Gear Oil SAE 90 EP	Esso Gear Oil GX 90/140	Shell Spirax 90 EP	Multigear Lubricant EP 90
Telescopic Fork	Mobil ATF 210	Castrol T.Q.F.	B.P. Autran 'B'	Esso Glide	Shell Donax T.7	Texomatic 'F'
Wheel Bearings, Swinging Fork Steering Races Speedo Drive Unit	Mobilgrease MP or Mobilgrease Super	Castrol LM Grease	B.P. Energrease L2	Esso Multipurpose Grease H	Shell Retinax A	Marfak All Purpose
Easing Rusted Parts	Mobil Handy Oil	Castrol Penetrating Oil	—	Esso Penetrating Oil	Shell Easing Oil	Graphited Penetrating Oil

The above lubricants are recommended for all operating temps above—18°C (0°F).

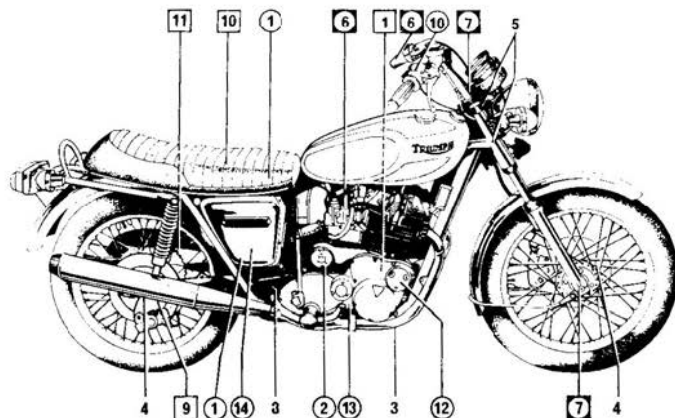
Approval is also given to lubricants marketed by companies other than those listed above provided that they have similar multigrade characteristics and meet the A.P.I. Service M.S. performance level.

Also approved are:—

	Engine and Primary Chaincase	Transmission (Gearbox)	Telescopic Fork	Wheel Bearings, Swinging Fork Steering Races Speedo Drive Unit	Easing Rusted Parts
DUCKHAM'S	Duckham's Q20/50	Duckham's Hypoid 90	Duckham's Q-Matic	Duckham's LB10 Grease	Duckham's Adpenol Penetrating Oil
FILTRATE	Filtrate Super 20W/50	Filtrate EP.90	Filtrate A.T. Fluid 'F'	Filtrate Super Lithium Grease	—

LUBRICATION DIAGRAM

Ref. No.	Description	Page
1	Engine oil tank filler and drain plug ..	20
1	Primary chaincase	20
2	Transmission (gearbox)	21
3	Oil filter (crankcase)	22
4	Wheel bearings	Workshop
5	Steering head bearings }	
6	Exposed cables, balljoints, linkage, carb. etc... .. .	—
7	Telescopic fork	37
8	Swinging fork pivot	35
9	Speedometer drive unit	24
10	Hydraulic brake reservoirs	44
11	Rear chain	24
12	Contact breaker and auto-advance ..	28
13	Oil filter (full-flow)	22
14	Oil filter (tank)	22



Numbers in circles refer to right side of machine.

Numbers in squares refer to left side of machine.

Other numbers refer to center of machine.

Fig. 59

The lubrication diagram.

GENERAL INFORMATION

ROUTINE MAINTENANCE

	<i>Page</i>		<i>Page</i>
Every 1-2 weeks		Clean and adjust contact breaker gap ..	28
Check tire pressures	41	Clean carburetor—drain float chamber ..	48
Check battery electrolyte level	19	Check spark timing	30
Check hydraulic brake fluid level	19	Grease speedometer drive unit	24
Every 250 miles (400 km)		Change engine oil	20
Check engine oil level	18	Clean gauze filters	22
Every 1000 miles (1500 km)		Re-new full-flow filter	22
Lubricate and adjust control cables, carburetor linkage, ball joints, etc.	—	Check transmission (gearbox) oil level ..	21
Check chain adjustment, front and rear ..	32, 34	Check clutch operation	33
Check brakes and pipe connections	—	Every 6000 miles (10,000 km)	
Grease swinging fork pivot	35	Change oil in transmission (gearbox) ..	21
Check nuts, bolts, screws for tightness ..	—	Change oil in front forks	37
Every 3000 miles (5000 km)		Check steering head bearings	36
Lubricate the contact breaker	28	Examine brake pads for wear	46
Lubricate auto-advance mechanism	29	Change the air filter element	51
Check valve clearances	26	Every 12000 miles (20,000 km)	
Clean and adjust spark plugs	27	Grease wheel bearings	See
		Grease steering head bearings	Workshop
		Change oil in braking system	Manual

SPECIFICATION

Engine

Number of cylinders	3
Bore	67 mm (2.637")
Stroke	70 mm (2.756")
Capacity	45.2 cu. in. (740.4 cm ³)
Compression ratio ..	9.5
Maximum safe r.p.m.	8,000
Firing order	1, 3, 2 (No. 1 right side, No. 3 left side)

Valve clearance:

intake006" (0.15 mm)
exhaust008" (0.203 mm)
Spark plugs	Champion N3
Spark timing	38° before t.d.c. (-357°)
Contact breaker gap ..	.014"—.016" (0.35—0.40 mm)

Chains and Sprockets

Primary chain	$\frac{7}{16}$ " pitch (70 links). Duplex.
Secondary chain	$\frac{5}{8}$ " pitch $\times \frac{3}{8}$ " (110 links)
Engine sprocket	23 teeth
Clutch sprocket	43 teeth
Transmission sprocket	19 teeth
Rear wheel sprocket ..	50 teeth

Capacities

Gasolene:			
gallons	2.5 or 4.5		
liters	11.5 or 20.5		
Oil:			
pints	6 (U.S.); 5 (General)	} See dipstick.	
liters	3.0		

Front forks:

cubic centimeters, per leg 210

Transmission (Gearbox):

pints	1 $\frac{1}{2}$ (U.S.); 1 $\frac{1}{2}$ (General)
cubic centimeters ..	850

Primary chaincase:

pints	$\frac{3}{4}$ (U.S.); $\frac{5}{8}$ (General)
cubic centimeters ..	350

Hydraulic Brake system:

Front	60cm ³ approx.
Rear	80cm ³ approx.

Transmission

Gear ratios:	overall	internal
high	4.92	1.00
fourth	5.85	1.19
third	6.89	1.40
second	9.04	1.84
low	12.71	2.58

GENERAL INFORMATION

SPECIFICATION

Electrical Equipment

Coil	Lucas type 17, M6
Alternator	Lucas RM.20/21
Battery	Lucas MCZ/9-8 (12 volt)
Rectifier	Lucas 2DS.506
Zener diode	Lucas ZD.715
Contact breaker ..	Lucas 7CA
Starter motor	Lucas M3

Wheels, Brakes and Clutch

Front wheel:	
brake type	Hydraulic
disc diameter	10ins (25.4 cm)
tire	4.10 × 19 Dunlop
tire pressure	26 p.s.i. (1.83 kg/cm ²)
Rear wheel:	
brake type	Hydraulic
disc diameter	10s (25.4 cm)
tire	4.10 × 19 Dunlop
tire pressure	28 p.s.i. (1.97 kg/cm ²)
Clutch	Single-plate, dry

Carburetors

Type	Amal "Concentric"
Choke size	27 mm
Main jet	150
Pilot jet	non-detachable
Throttle valve ..	4
Needle position ..	2
Needle jet	106

General Dimensions

Wheelbase	58" (147.5 cm)
Ground clearance ..	7" (17.8 cm)
Seat height (unladen)	31½" (79.4 cm)
Overall height	46½" (118 cm)
Overall length	88" (223.5 cm)
Overall width	29" (73.5 cm)
Dry weight	503lb (228 kg)

Note:—Tire pressures are for solo use (see page 41).

BRAKE BURNISHING PROCEDURE

Brakes should be bedded in progressively during the first 300 miles. This is done by gradually increasing brake lever pressure during the period, and braking from progressively increasing speeds.

For guidance refer to the table below. The deceleration in ft./sec.² is converted to the equivalent braking time/distance.

	Stage 1	Stage 2	Stage 3
Speed at commencement of stage	30	50	70
Speed at end of stage	0	30	30
Deceleration (feet/sec. ²)	12·5	12·5	12·5
Distance travelled (feet)	77	135	344
Time taken (secs)	3·5	2·3	4·7

Stage 1. A minimum of 20 stops using the front and rear brakes together. Decelerate from 30 m.p.h. to rest using the distance travelled or time taken to obtain the required deceleration.

Stage 2. A minimum of 50 decelerations from 50 to 30 m.p.h. using front and rear brakes together.

Stage 3. A minimum of 70 decelerations from 70 to 30 m.p.h. using front and rear brakes together.

The distance between brake applications should not be less than $\frac{1}{4}$ -mile in each case. Disengage the clutch when carrying out the procedure to ensure that the brakes receive the full braking load.

The use of the above procedure, subject to traffic conditions will ensure that any high spots on the brake linings are not hardened, resulting in reduced brake efficiency. Correct burnishing will give an approximate lining contact area of 50 per cent which qualifies the published brake performance figures.

GENERAL INFORMATION

LITING REGULATIONS

Certain countries require motor-cycles to be ridden with the headlight, or headlight and tail light, illuminated at all times. Hence, on some North American models, starting the engine automatically illuminates these lights.

During stop-and-start conditions and low speed riding, the battery could become discharged to an excessive degree.

To avoid this, it is advisable to ensure that the engine is maintained at a speed above 2500 r.p.m., at which point the alternator provides sufficient current to balance the discharge. The use of one of the lower gears will ensure this condition.

CONSUMER INFORMATION

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2	Passing times	74

CONSUMER INFORMATION

CONSUMER INFORMATION

These figures indicate braking performances that can be met or exceeded by the vehicle to which it applies, without locking the wheels, under different conditions of loading.

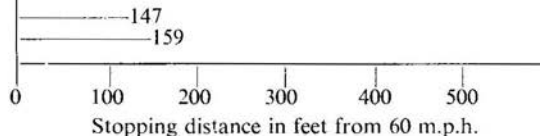
The information presented represents results obtainable by skilled drivers under controlled road and vehicle conditions, and the information may not be correct under other conditions.

Description of vehicles to which this table applies:—

TRIUMPH TRIDENT

A. Fully Operational Service Brake

LOAD
LIGHT
MAXIMUM



This figure indicates passing times and distances that can be met or exceeded by the vehicles to which it applies, in the situations diagrammed below.

The low-speed pass assumes an initial speed of 20 m.p.h. and a limiting speed of 35 m.p.h. The high-speed pass assumes an initial speed of 50 m.p.h. and a limiting speed of 80 m.p.h.

Notice:—The information presented represents results obtainable by skilled drivers under controlled road and vehicle conditions, and the information may not be correct under other conditions.

Description of vehicles to which this table applies:—

AS ABOVE

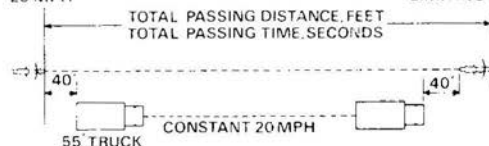
Summary Table LOW-SPEED PASS 373 feet; 7.9 seconds
 HIGH-SPEED PASS 920 feet; 9.0 seconds

The following information is in accordance with the requirements of the U.S.A. National Highway Traffic Safety Administration, Motor Vehicle Safety Regulations part 575, consumer information.

LOW SPEED
INITIAL SPEED:

20 MPH

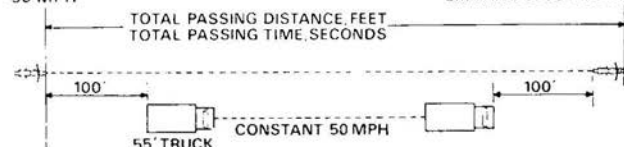
LIMITING SPEED 35 MPH



HIGH-SPEED
INITIAL SPEED:

50 MPH

LIMITING SPEED: 80 MPH



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500 MILE (800 Km)
FREE SERVICE COUPON

This Coupon is valid only for a Triumph Motorcycle

Engine/Frame number.....

Licence (Registration) number.....

Model..... Date of Purchase.....

Owners Name.....

Address

.....

.....

.....

CUSTOMERS TO NOTE

The above details must be fully completed by the Selling Dealer at the time of original sale of the motorcycle to validate this voucher certificate.

SERVICE VOUCHER BOOKLET NUMBER.....

Selling Dealers Name (or Trading Title)

Address (Stamp)

.....
.....
.....
.....
.....

The dealer undertaking the 500 miles (800 Km) service must complete the details requested overleaf, detach and return to the distributor for registration and appropriate action.

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WARWICK

CAUTION

MODIFICATION OF THE FRAME, STEERING
MECHANISM, SUSPENSION SYSTEM, OR
WHEELS ON A TRIUMPH MOTOR CYCLE MAY ALTER
ITS HANDLING CHARACTERISTICS AND RENDER
IT UNSAFE IN NORMAL USE.