700S

OWNERS HANDBOOK

SILK SERVICE SUPPORT

SILK ENGINEERING (DERBY) LIMITED
BOARS HEAD MILL
DARLEY ABBEY
DERBY DE3 1DZ

TEL: 0332-44375

THIS HANDBOOK APPLIES TO _____

COLLECTED BY H.P. MARSHALL FROM _____

ON 29.6.78.

CHASSIS NO. 700S/2

ENGINE NO. 700/2

NOTE: FIRST PART OF NUMBER DEFINES THE SPECIFICATION.
SECOND PART OF NUMBER IS SERIAL NUMBER.

SECOND ISSUE MAY 1977

SILK ENGINEERING

(DERBY) LTD.

BOAR'S HEAD MILL, DARLEY ABBEY, DERBY DE3 1DZ DERBY 44375

SILK MOTOR CYCLES

ENGINEERING SERVICES : INDUSTRIAL ENGINES : TWO STROKE RESEARCH : SCOTT SPECIALISTS

THE SILK 700S

The Silk 700S is designed by enthusiasts and produced in limited numbers for enthusiasts, with character in the tradition of the great classical British motor cycles and the added advantages of light weight and low maintenance. The aeronautical saying "Simplicate and Add More Lightness" summarises our technical philosophy.

Its main features are its light weight, and superb steering and road holding. A flexible, lively engine gives a high power/weight ratio throughout the speed range and fuel economy of 50 to 60 m.p.g. This combination makes it attractive not only for occasional use by the enthusiast, but also for everyday use for business as well as pleasure. It has been designed from the start for long life and low-cost, trouble-free maintenance.

The major features are:-

660 cc, 760 mm bore, 720 mm stroke, 305 lb dry weight, 110 mph, 55 mpg.

For lightness	Rigid, robust duplex frame. Simple all-aluminium engine.
For performance	Special "velocity-contoured" charge/scavenge system. Tuned porting and exhaust system. Deflector pistons for low-speed torque.
For long life	Water cooled. Large safety factors, low stresses, large bearing areas. Designed for 60,000 miles between overhauls.
For simple, cheap maintenance	2 cylinders, 1 carburettor, 1 silencer. Valve-less 2-stroke, Lumenition ignition, without contact-breaker. Separate pumped oil system - 1000 miles between refilling. Enclosed rear chain with single eccentric adjustment. Stainless steel handlebars, nuts, bolts, etc.
For customer's choice	Colour scheme, fuel tank capacity, brakes, handlebars, footrest position, seat height, fairings, etc.

Production is now under way at a rate of 1 per week and orders can be accepted for deliveries in the Spring.

8th January 1976

S I L K 7 0 0 S

OWNER'S HANDBOOK

CONTENTS

SECTION A INTRODUCTION TO OWNER'S HANDBOOK

This handbook

The Silk 700 is a sophisticated and advanced engineering product. It is made only in limited numbers for an exclusive ownership. In writing this handbook for you, the owner of a Silk 700, we have assumed that you have previously owned and ridden a motor-cycle.

We want you to understand, to maintain and to overhaul your Silk 700 so that both in riding it and in working on it, you obtain the maximum pleasure. We have tried to use the minimum of words to do this.

However, few handbooks are perfect, and if we have left anything unclear, our service personnel are always available to answer your queries, and we shall use the extra knowledge so gained to improve the handbook for future owners.

"If in doubt, please ask."

Silk Owners' Club

We ourselves are keen motor-cyclists, and have for many years had very close associations with other one-make Clubs. We know how much pleasure is obtained by owners of exclusive motor-cycles getting together from time to time. We have therefore sponsored the Silk Owners' Club, and on your purchase of this Silk 700, have paid your first year's subscription to the Club.

Silk Service Support

Because of the special relationship which exists between all Silk owners and us, the manufacturers, we provide the facilities for all technical service, maintenance and overhaul at our works. We hope you will make use of these facilities. Please do telephone us first to make an appointment; this will help to avoid delays for you and will help us to plan our work more efficiently.

When telephoning us please quote the machine's Serial No. complete with all letters and numbers, which will be found stamped on the R.H.S. of the steering head. When writing, please address the letter to S.S.S. Silk Engineering (Derby) Limited etc..... and please quote the frame and engine serial numbers at the top of the letter.

The 500 mile service on your Silk 700 is free at the works, including both labour and materials; the work covered is specified in the section "Maintenance at a Glance". Should you prefer to do the 500 mile service yourself, then the equivalent work will be done free at any time you care to return the bike to the works.

In addition, to help you obtain the most pleasure from your Silk 700, we can offer you a renewable works maintenance and overhaul contract, and details of this will be supplied to you separately.

Product Improvement

From time to time, we shall introduce improvements to the Silk 700S. You will hear of these through the Silk Owners' Club. If you would like to keep your Silk right up to date, we can retrofit the latest production modifications in our own factory, at a reasonable cost - please ask us to quote.

SECTION B

GENERAL DESCRIPTION OF THE MOTORCYCLE

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SECTION B DESCRIPTION OF THE MOTOR CYCLE

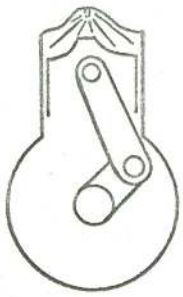
This section describes those features of the Silk 700 which may be unfamiliar to motor cyclists who are used to other makes of machine.

1. The 2-stroke cycle

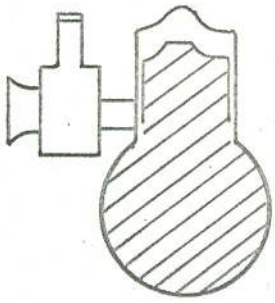
The performance of the Silk 700 stems from its high power/weight ratio and from the abundant torque in the mid-RPM range. These characteristics arise from the special features of the Silk "Velocity Contoured" 2-stroke charge/scavenge system.

In the Silk 700, the piston performs four largely separate functions:

1. The usual 2- and 4-stroke functions of compressing the gas above the piston and then transmitting the power from the combustion into the con-rod and crankshaft.

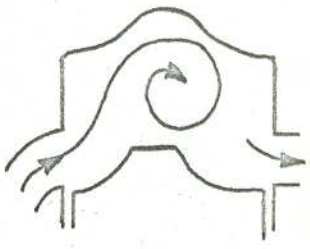


2. The usual 2-stroke function of using the underside of the piston to draw in the charge and to do the primary, or "crankcase" compression. Whilst all 2-strokes do this, we have developed a new "Velocity-Contoured" charge system which is largely responsible for the Silk engine's outstanding performance.



3. The special feature of the Silk 700 piston is the shape of the ports in the piston shirt which control the inflow of the charge to the underside of the piston and the transfer of the charge to the combustion chamber.

4. The specially shaped top of the piston controls the flow of the charge into the combustion chamber, and ensures efficient combustion and scavenging.



The outstanding power and flexibility of the Silk 700 stem from the aerodynamics of the inlet and transfer passages, the crankcase, the piston ports and the piston top. These features have been developed and patented by Silk Engineering over the last few years and checked on a computer programme at Belfast University. These unique features have given rise to their description "Velocity Contoured".

2. The oil system

Oil is supplied to the bearings by a pump. After discharge from the bearings, the oil is picked up by the intake gases and carried into the combustion chamber, where it is burned. The lubrication system is therefore of the "Total Loss" type.

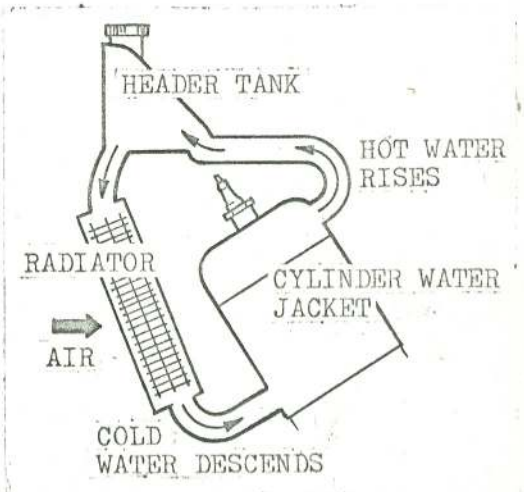
The objective of the lubricating system is to ensure the longevity and reliability of the bearings and piston rings with the minimum possible oil supply.

On the Silk 700, this is achieved by the Silk "Duplex" positive displacement pump. The pump is driven from the crankshaft and controlled by the throttle twist-grip, so that the rate of oil flow varies with RPM and with throttle opening, and therefore with the load on the bearings. The pump delivers through a spring loaded non-return valve, and this together with the ability of the pump to deliver at pressure, minimises any change in lubrication characteristics due to variations in crankcase pressure. Each half of the pump feeds the two crankshaft bearings on one cylinder. The oil is centrifugally channelled from the mains to the big end bearings and then to the underside of the pistons. Oil consumption is better than 300 miles per pint.

3. Water cooling

On modern high-performance engines, water cooling gives much better cooling around such critical areas as the exhaust ports and sparking plugs, at the back of the block and between adjacent cylinders. The water pipes and internal passages of the Silk 700S have been carefully designed to take care of these potential hot spots and to give the most even possible temperature all round the combustion chamber.

The small size and low profile of the Silk 700 enable a Thermosyphon cooling system to be used. The reduction in density of the water as it heats up causes the water to circulate; the system is self-regulating, as the hotter the water in the cylinder block, the faster the circulation, and the more the cooling from the radiator. Also, because no flow occurs until the cylinder block has heated up, quick warming up is achieved. And all without the complications of water pumps and thermostats!



4. The Ignition System

Accurate control of ignition timing, and a really positive spark, are important on all engines but are especially beneficial on 2-strokes. The Silk 700 therefore uses a "Lumenition" transisterised system to elimate the variations encountered with a contact breaker. The "Lumenition" system has no wearing parts and, once correctly set, should be trouble-free and require no further adjustment. A Silk-designed centrifugal advance-retard gives correct advance for starting and throughout the range of RPM.

5. Other Features

The rigid light-weight frame, race-proved front forks, and other features, although contributing to the overall outstanding performance and handling qualities, are relatively conventional. Sufficient descriptions will be found in the relevant sections of this handbook.

SECTION C

TECHNICAL DATA

INDEX

SECTION C TECHNICAL DATA

Note: See "Maintenance Data at a Glance" for all quantities etc. at back of book - Section Z

* See cutaway drawing (Fig. 1)

1. Engine	The engine number is located on the right hand side of the crankcase.
Type:	Inclined twin-cylinder piston-port 2-stroke, water-cooled, with pump lubrication.
Displacement:	656 c.c.
Bore and stroke:	76 mm x 72 mm
B.H.P. at RPM	48 at 6,000 rpm
Max torque:	45 ft.lb at 3,000 rpm
Carburettor:	34 mm Amal concentric Mk II
Lubrication:	Silk "Duplex" micrometering pump fed from separate oil tank
Fuel/oil ratio:	50 : 1 approx.
Ignition:	"Lumenition" transistorised type, with centrifugal advance and retard. Twin 6v. coils in series. $37\frac{1}{2}^{o}$ BTDC on full advance
Sparking plugs:	Champion L10 - Gap 0.025" (.65 mm.) - For running in and sustained low speeds KLG F 220) - Gap 0.025 (.65 mm). - For high speed touring. NGK B8 HC)
Exhaust system:	Siamese expansion type.

2. Transmission

Primary:	Renolds Duplex .437 roller chain, ratio 24 : 49
Clutch:	6 plate running in oil mist
Gearbox:	Four speeds: First 2.29 Second 1.59 Third 1.21 Top Direct
Final Drive:	Renolds 5/8" x $\frac{1}{4}$ roller chain, ratio 19 : 36 Alternative front sprocket - 18 or 20 Dirt excluding chain enclosure Cush drive in rear hub

Overall gearing:		MPH/1000 RPM	Theoretical Speed at 6000 RPM
First	8.874	8.049	48
Second	6.143	11.628	70
Third	4.669	15.298	92
Top	3.868	18.467	111

3. Frame and Suspension

The frame number is located on the right hand side of the steering head.

Frame:	Duplex cradle type.
Forks:	Hydraulically damped telescopic. Dual rate springs
Rear Suspension:	Swinging arm with Girling suspension units. Dual rate 90 springs with 3 position variable pre-load.
Brakes:	Front - Single or Twin Lockheed 10" hydraulic disc. Rear - 7" drum.
Wheels:	Aluminium hubs and rims. Rustless steel spokes.
Tyres:	Avon Roadrunners or) (3.80 x 18 front Dunlop TT 100) (4.10 x 18 rear Front: 24 psi Rear: 27 psi (solo) 24 psi 30 psi (two up depending on load)

4. Cooling System

Type:	Water, with or without antifreeze. Circulation by thermo-syphon.

5. Electrical Equipment

Generator:	Crankshaft-driven 150w. 12v. alternator
Battery:	Yuasa 12V 7 AH
Headlamp:	Lucas 7" halogen H4 60/55 w.
Parking light:	Built-in with headlamp
Rear light:	Combined tail/stop unit with reflector
Trafficators:	Amber flashing indicators front and rear
Indicator lamps:	High-beam and trafficator
Horn:	Lucas 6H.

6. Dimensions

Overall length:	81" (206 cm.) approx.
Wheelbase:	56" (142 cm.)
Width:	26" (67 cm.) approx. with standard handlebar & mirror
Ground clearance:	8" (20 cm.) approx.
Seat height:	From 28" (71 cm.)
Weight:	Approx. 300 lb dry weight, depending on specification

SECTION D

CONTROLS AND ADJUSTMENTS

INDEX

SECTION D CONTROLS AND ADJUSTMENTS

The Silk 700 has conventional motor-cycle hand and foot controls.

1. Handlebar controls

Left side:	Clutch lever with cable adjuster. Combined headlamp dip, horn and trafficator switch.
Right side:	Throttle twistgrip, with twin pull to operate throttle and oil metering system. Combined front brake lever and hydraulic cylinder.

2. Instrument display

Left side:	Speedo
Right side:	Rev. counter or clock
Top centre:	Ammeter
Centre:	Light switch
Lower centre:	Ignition switch
Right and left of ignition switch:	Head beam Trafficator

3. Foot controls

Left foot:	Rear brake pedal
Right foot:	Gear change lever Folding kick-start pedal

4. Choke control

Location:	On carburettor
Operation:	Depress lever fully to bring choke into operation.
Usage:	For cold start only. Lever should be in upper, running, position at all other times.

5. Petrol tap

Type:	On/off and reserve
Location:	Centrally at rear of tank
Reserve:	Pull under tank

6. Rear shock-absorber adjustment (See Fig. 2)

Three-position adjustment for ride height.

Adjustment:	Turn casing clockwise, viewed from top, to stiffen suspension
Setting:	The machine is delivered with the adjustment in the mid-position

SECTION E

FIRST 2000 MILES

SECTION E FIRST 2,000 MILES

1. Running-in

There are no fixed rules for running-in, but we recommend the use of a 32:1 petroil mix for the first 500-750 miles.

In addition, use common sense and avoid:-

High engine speeds

Large throttle openings, particularly at low engine speeds - make use of gears to avoid "slogging".

Long periods at constant speeds and throttle opening.

From 500 miles to 2,000 miles, engine duty can gradually be increased.

2. Checks after first 500 miles running

This work will be carried out free if the bike is returned to the works.

1. Check all coolant hose connections and clips for leaks and tightness.
2. Check engine mounting bolts for tightness.
3. Check steering head bearing and adjust if necessary (See section G18).
4. Change clutch and gearbox oils.
5. Carry out full lubrication.
6. Generally "check-over" the bike to check that nuts are tight and adjustments correct.

3. Points to watch during early running

1. It is advisable to add about ¼ pint oil to each gallon of petrol for first 500 miles.
2. Ensure final drive chain is kept well lubricated while the rubber "gaiters" are wearing themselves in.
3. Check chain and clutch adjustments as these settle down.
4. Check that oil consumption from the oil tank is between the limits 300-600 miles/pint.

SECTION F STARTING PROCEDURE

The Procedure

1. Switch the petrol on.
2. Depress the choke lever fully for cold start only.
3. Switch on ignition.
4. Leave throttle closed - this is especially important when choke is used.
5. Kick-over smartly.
6. Return choke lever to upper position when engine is running.

Three gentle reminders

The engine starts better with the ignition switched on and continues longer with the petrol turned on!

Be sure to switch "off" the ignition when the engine is not running to avoid the risk of a flat battery.

Don't forget to return the choke lever to the normal "Up" position after a cold start.

SECTION G

ROUTINE MAINTENANCE

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SECTION G ROUTINE MAINTENANCE

Some regular maintenance is essential to maintain serviceability and avoid undue wear. The following items are affected by the severity of use, the environment of use (i.e. wet, salt, mud, dust, etc.) and other factors.

Consequently, it is not possible to recommend fixed maintenance periods, and the rider must use his discretion based on experience of his particular type of operation, and on the following information.

1. Engine Oil

Usage should better 300 miles per pint: for safety, the tank should not be allowed to fall below half full.

The oil tank filler cap is located under the hingeing seat. Take care not to obstruct the vent hole in the filler neck - for example by putting plastic bags or clothing over it.

The oil level can be seen through the filler neck or through a translucent panel in the left side of the tank.

The oil pump is a reliable, positive displacement unit and no maintenance is required. Provided that the cable is properly adjusted to have as near "zero" free play as possible, the pump will deliver correctly metered quantities of oil under all conditions.

If for any reason, the oil supply to the engine is questioned, this may be checked by pulling the outer cable from the oil pump with the engine running to give the effect as though the throttle was wide open, and then blipping the throttle for a few minutes. After a short while, the increased oil supply will result in blue exhaust smoke.

2. Coolant

Some evaporation will occur. Experience will show the frequency at which topping-up is necessary. The filler cap is on the header tank, behind the steering head.

Top-up with the correct water and/or anti-freeze mixture (see specification).

3. Tyre pressures

The rider should satisfy himself that the tyre pressures are satisfactory before each journey.

Front tyre pressure:	Solo - 24 lb/sq.in. Dual - 24 " " "
Rear tyre pressure:	Solo - 27 " " " Dual - 30 " " "

4. Hydraulic fluid

No leakage should occur, but the rider should check weekly as part of the lubrication programme.

5. Greasing and oiling

Control levers, control cables, pedal fulcrums, rear swinging arm hinge, rear brake arm, seat hinges etc. are susceptible to wet and dirt. As a guide they should be oiled and greased weekly.

Under adverse road conditions the front brake calliper can jam on cross shafts. When required clean these and lightly smear with silicone grease; this must not be allowed to touch the hydraulic piston.

The swinging arm pivot grease nipple is located centrally underneath the pivot tube. This must be greased regularly; if, through neglect, dirt replaces grease in the bearings, your road holding and steering will soon deteriorate.

Correct operation of the gearbox depends on the spherical bearings in the external linkage being free to move. Little but frequent oiling is required. If the covers are fitted, oil less frequently, but check the freedom of movement regularly.

6. Front forks

If gaiters are not fitted, the sliders should be kept clean to avoid grit entering the seals.

The forks normally require no other maintenance. If inadequate damping is suspected, the oil charge in the forks can be renewed. If leakage has taken place, the seals may need renewing. See overhaul section for details.

7. Battery Acid Level

Evaporation will depend on conditions of usage and again experience will establish the frequency between topping-up periods. At first the level should be checked weekly. After removing either side panel, the acid level can be seen through the battery casing.

For topping up, the battery is removed by releasing the retaining strap: the leads are long enough not to need disconnecting.

8. Lighting system

Check the bulbs frequently, especially the stop/tail lamp.

9. Ignition System

9.1. Timing

Access to the lensed unit is by undoing the top and bottom oil pump bolts and removing the oil pump complete (the front and back bolts hold the cover onto the oil pump and need not be touched). To reset the timing, slacken the clampnut; the advance/retard mechanism can then be rotated on the shaft.

The standard ignition setting is obtained by setting the right piston .3" before top dead centre, measured with a depth gauge through the plug hole; then rotating the chopper at full advance with the ignition switched on until a spark occurs at the spark plug (which can be rested on the cylinder head); then tighten the clampnut. A special tool is available to assist in setting the piston correctly. Note that the photo-electric cell must not be in bright sunlight when checking the timing - it cannot tell the difference between sunlight and its own light beam!

9.2. Maintenance

The "Lumenition" ignition system needs no maintenance once it is correctly set. If it is operating normally, we do not recommend routine testing. The electronics do not deteriorate and therefore only the HT leads and spark plugs require checking and service.

If the system malfunctions, first check all connections.

The system comprises three main components:-

Heat Sink (Power Unit)

Opto-electronic Assembly (Lensed Unit)

Coils

A. To test complete system

1. Remove a spark plug. Replace the lead and lay the plug on the cylinder head. On cranking the engine sparking should occur with ignition switched on.

B. To test the coil and heat sink assembly (power unit)

1. Unplug the lensed unit at the 3-way connector.

2. Remove a spark plug. Replace the lead and lay the plug on the cylinder head.

3. Turn on the ignition switch.

4. By means of a small piece of wire shaped like a hair pin connect the blue wire to the black wire on the heat sink side of the 3-way connector. When breaking this connection sparks should occur.

5. If there is a very weak spark check the coil. If there is no spark suspect a Heat Sink fault.

C. Testing the Opto-electric assembly (Lensed Unit)

The Lensed Unit may be tested with a Lumenition Tester Part LT1 or with a low-reading Voltmeter.

1. Testing with a Lumenition Tester Part No. LT1

   Switch off ignition. Connect the large crocodile clip on the Tester to a good earth and connect its red lead to the positive of the battery. Plug the 3-way connector of the Tester to the 3-way connector of the lensed unit. With an uninterrupted beam of light between lenses the red light should be on. With an interrupted beam of light the red light should be off.

2. Testing with a Voltmeter

This test is only valid with a good Heat Sink Assembly. With the Lumenition system completely wired up, including the 3-way connector, and the ignition switch on, connect the positive lead of Voltmeter carefully to the blue lead at the back of the 3-way connector, and connect the negative lead of the Voltmeter to the earth point of the Heat Sink Assembly. With an uninterrupted beam of light between lenses the meter should read 0.1 to 0.2 volts. With an interrupted beam of light the meter should read 0.8 to 0.9 volts. Before suspecting the Lensed Unit ensure good Voltmeter connections.

3. Cleaning the lensed unit

The lensed unit will function correctly with up to 90% of the lenses obscured. Beyond this, sparks will occur at irregular intervals, giving poor timing, or not at all. Careful cleaning should cure the problem.

9.3 Sparking plugs

Sparking plugs should be replaced at 6,000 mile intervals, or as experience dictates. The leads and the insulators on the heads of the coils should be kept clean. The plug gap should be maintained at 0.025" (0.65 mm).

10. Air filter

Clean and re-oil every 5,000 miles. Exceptionally dusty conditions may require more frequent changes. A blocked filter will cause low power and over-richness leading to high fuel consumption.

11. Primary chain

The primary chain has a nitrile-rubber faced tensioner underneath the bottom run. This is mounted on a removable plate under the chain case, with its rear end supported by an adjustment screw.

To adjust the tensioner, slacken the lock nut, then screw in the adjustment screw until resistance is felt as the chain tightens. Then unscrew the adjustment screw three full turns - the thread is UNF - and retighten the locknut.

12. Driving chain

The driving chain tension should be checked at about monthly intervals. Midway along the plastic enclosure, the chain runs through internal guides. By moving the flexible plastic enclosure up and down, the amount of chain "slack" can be felt. This movement should be between $\frac{1}{2}$" - $\frac{3}{4}$" with normal rider's weight on the back wheel.

Adjust the chain, if necessary, by means of the eccentrically mounted swinging arm pivot spindle (see Fig. 3), as follows:-

1. Slacken both swinging arm pivot pinch bolts (6) in the frame.

2. Slacken the allen screw in the right-hand side of the eccentric adjuster.

3. Rotate the spindle (2) at the left-hand side of the machine with an Allen key to tighten or slacken the chain, ensuring that the adjustment stays in the lower half of the circle.

4. With the machine loaded, correct the adjustment to ½" - ¾" movement at the centre of the top chain gaiter.

5. Tighten pinch bolts (6) and the right hand side Allen screw.

6. Check back brake adjustment.

13. Brake adjustment

The front disc brakes are self-adjusting.

The rear brake is adjusted by means of a cable adjuster at the operating arm on the rear hub. (See Fig. 4).

For cleaning purposes the rear brake backplate can be removed leaving wheel in place.

14. Bleeding the front brake system

If air enters the brake hydraulic system for any reason, the brake will feel "spongy". To bleed the brake:-

1. Check that the reservoir is full of clean fluid (Lockheed 329s) and wrap the reservoir round with cloth to prevent any chance of spillage onto the bike.

2. Place a receptacle under the bleed valve on one of the callipers and unscrew the bleed valve.

3. Pump the brake lever gently and steadily until the fluid coming out of the bleed valve is completely free of bubbles. Check that the reservoir does not empty of fluid while doing this.

4. Re-tighten the bleed valve.

5. Repeat with other bleed valve (for dual discs)

6. Check that the resistance to lever movement is now "firm" and not "spongy".

7. It is essential to fill the reservoir half full and replace rubber diaphragm.

15. Brake lining check

Front brake pads and rear brake linings should be checked for wear at around three monthly, or 4,000 mile, intervals.

The front brake pads can be checked visually at the disc without removing the front wheel. Replacement will be necessary when the friction material is worn down to 1/16 in. (See Fig 5).

To check rear brake lining wear, the back plate must be removed from the wheel (see Section H Items 1-5). When the linings are worn down to 1/16 in., replacement will be necessary (see Fig 5).

16. Gearbox and Transmission case oil

Oil changes are recommended at 12,000 mile intervals.

The gearbox filler plug is on the top of the box, the level plug is on the end plate adjacent to the kickstart shaft, and the drain plug is underneath. They can be reached from the right hand side of the machine. The oil level should be checked with the bike leaning on its prop stand. The transmission case filler plug is located just above the clutch access cover; the level plug is set low on the rear of the casing to the rear; and the drain plug is set in the base of the case. They can be reached from the left hand side of the machine.

17. Clutch adjustment

Clutch adjustment should seldom be necessary, although it must be done if clutch slip occurs or if there is no free movement at the end of the operating lever in the clutch. This should not normally occur at less than 10,000 mile intervals.

Checking operating lever clearance

1. Slacken off the cable adjuster at the handlebar lever.

2. Remove the clutch cable gaiter at the gearbox.

3. Pull the cable at the clutch end and check the amount of free movement before the resistance of the clutch springs is felt. If the free movement is less than 1/8" then adjustment of the clutch is necessary.

Clutch adjustment (See Fig 7)

1. Hinge down rear end of chain enclosure.

2. Rotate the wheel to bring the spring link into view on the sprocket. Remove the spring link. Join the ends of the chain with a long loop of string to facilitate replacement and pull chain until it disengages from the drive sprocket.

3. Remove the three bolts from the drive sprocket bearing support on the left hand side of the gearbox and remove complete with sprocket.

4. Remove the four screws from the clutch access cover (1) and withdraw the cover and oil seal.

5. Slacken the three locknuts (2) on the adjusters (3) and unscrew the adjusters 2 or 3 turns.

6. Gently screw each adjuster back in until resistance is felt as it just touches the thrust washer (4).

7. Back off each adjuster exactly half turn, and holding it in that position, tighten the locknut.

8. Check the operating lever clearance and that the thrust plate lifts squarely when turning engine over.

9. Reset the cable adjuster at the handlebar lever.

10. Refit the clutch access cover.

11. Replace the drive sprocket bearing support and sprocket, ensuring that the string loop passes round the sprocket.

12. Gently pull the chain over the drive sprocket and continue until the two ends can be engaged on the rear sprocket. Remove the string and refit the spring link.

13. Refit the chain enclosure end piece.

18. Steering head adjustment

The steering head has taper bearings, pre-packed with grease and enclosed. Adjustment will not normally be necessary, but may be done as follows:-

1. With the front wheel clear of the ground, slack off the fork pinch bolts in the bottom yoke.

2. Tighten or loosen the stiffnut on top of the steering head until the steering rotates freely but without any perceptible play.

3. Re-tighten the bottom yoke pinch bolts.

19. Carburettor adjustment

The Amal Concentric Mk. II differs from previous Amals in having a separate starter jet instead of a choke slide. In other respects, this follows normal Amal practice.

The height of the needle in the slide controls mainly the mixture in the middle of the range - lowering the needle weakens the mixture. The standard setting is on the middle groove, and normally this should not be altered.

The slow running is controlled by two screws on the left hand side:-

The sloping screw, with the head downwards, is the throttle stop; screwing it in increases the slow-running speed.

The horizontal screw alongside it controls the air bleed to the slow running jet; screwing it in richens the mixture.

A sudden deterioration in slow running may be due to a blocked pilot jet. Remove the carburettor by undoing one of the "Jubilee" clips; unscrew the four setscrews which secure the float chamber. The pilot jet is at the top of the float chamber body; unscrew it and blow through the hole. Do NOT use wire to clear the jet. The jet at the bottom of a long tube is the starter jet; if you remove this, be sure you replace each jet in its correct position.

A coarse fuel filter is fitted over the fule tap inside the fuel tank. Another filter is inside the banjo union at the bottom of the float chamber; be careful not to overtighten the banjo when refitting.

SECTION H

WHEEL REMOVAL AND REPLACEMENT

INDEX

SECTION H WHEEL REMOVAL AND REPLACEMENT

1. Front wheel removal

1. Remove the caliper retaining screws in the fork leg.
2. Swing the calipers clear of the discs.
3. Remove spindle nut at left hand fork leg.
4. Slacken pinch bolt in right hand fork leg.
5. Withdraw spindle and remove wheel and distance piece at left hand side.

2. Front wheel replacement

1. Locate wheel between forks.
2. Position calipers over discs.
3. Replace spindle and distance piece.
4. Replace spindle nut and tighten.
5. Tighten pinch bolt.
6. Refit calipers to fork legs.

3. Rear wheel removal (See Figs 8-10)

1. It is easier to disconnect the brake cable clevis pin and unscrew the adjuster from its housing.
2. Disconnect the brake torque arm at the hub.
3. Slacken and remove one spindle nut. DO NOT REMOVE THE SPECIAL SLOTTED NUT ON CUSH HUB SPINDLE.
4. With the wheel supported, withdraw the spindle and remove the spacer between the brakeplate and the swinging arm.
5. Remove the brake plate.
6. The wheel can now be eased off the cush rubbers and removed.

For dismantling of the cush hub refer to overhaul section.

4. Rear wheel replacement

Reverse the removal procedure to replace the wheel. Some rubber lubricant on the cush rubbers will ease assembly.

5. Front wheel removal - drum brake type

1. Slacken off brake cable adjuster and remove the clevis pin at the operating arm.

2. Disconnect the brake torque arm at the brake plate by removing the large Allen screw.

3. Remove the spindle nut at left fork leg.

4. Slacken pinch bolt in right fork leg.

5. Withdraw spindle and remove wheel and distance piece at left side.

6. Front wheel replacement - drum brake type

1. Locate wheel between forks.

2. Replace distance piece (at left side) and spindle.

3. Replace spindle nut and tighten.

4. Tighten pinch bolt.

5. Refit brake torque arm with Allen screw.

6. Refit brake cable clevis pin and readjust the cable.

SECTION P

BRAKE LININGS

INDEX

SECTION P BRAKE LININGS

1. Front brake pad replacement (see Fig. 5)

1. Slacken the two calliper assembly screws (1).
2. Remove the calliper retaining screws in the fork leg and swing the calliper clear of the disc.
3. Further slacken screws (1) to allow removal of calliper rear plate (4).
4. Lift off pads from locating pegs (8) on calliper front plate (2).
5. Locate new pads on pegs.
6. Reassemble in reverse order.

2. Front drum brake - shoe replacement

1. Remove front wheel (See Section H).
2. Lift brake assembly from hub.
3. Undo the countersunk Allen screws in the shoe retaining plates and remove the plates.
4. Ease the shoes off the fulcrums and operating cams, and remove the springs.
5. Check the operating cam spindles for friction and wear. If excessive refer to dealer.
6. Lightly smear cams and fulcrums with grease.
7. Fit springs to replacement shoes.
8. Holding a shoe in each hand, tension the springs and locate the shoes on the fulcrums and cams, and press into place.
9. Refit retaining plates and screws.
10. Replace assembly in hub and refit wheel.

Note:

The external operating linkage is set at the factory and needs no adjustment unless the brake operating cams are disassembled or replaced.

3. Rear brake shoe replacement (see Fig. 2)

1. Slacken brake cable and disconnect by removing clevis pin from the operating arm. Remove the cable from the brake plate by screwing the adjuster right out.
2. Remove the torque arm bolt in the brake drum, slacken attachment bolt on the swinging arm and swing the torque arm clear of the brake drum.

3. Undo one spindle nut and remove spindle.

4. Remove spacer (7) from between brake plate and swinging arm.

5. Lift brake assembly out of hub - the wheel can be left in place.

6. Remove shoe retaining screw and plate.

7. Ease shoes off fulcrum and remove springs (5).

8. Check operating cam spindle for friction and wear. If excessive refer to dealer.

9. Lightly smear cam and fulcrum with grease. Avoid getting grease on shoes or drum.

10. Fit springs to replacement shoes.

11. Holding a shoe in each hand and with the springs held in tension, locate the shoes on the fulcrum and operating cam and press into position.

12. Refit retaining plate and screw.

13. Replace assembly in hub.

14. Refit spacer and wheel spindle. Leave spindle nuts slack.

15. Reconnect brake cable and torque arm.

16. Tighten spindle nuts with brake applied hard to centralise brake plate.

17. Adjust brake cable.

SECTION Q

ENGINE TOPHALF - REMOVAL IN SITU

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SECTION Q ENGINE TOPHALF - REMOVAL IN SITU

1. Cylinder head removal and replacement

Removal

1. Drain coolant at one bottom hose.
2. Remove top hose at the cylinder head.
3. Detach plug leads and remove plugs.
4. Slacken cylinder head steady attachment bolts at frame before removing head bolts.
5. Remove the nine cylinder head bolts.
6. With the pistons at approximately mid-stroke, tap the head sideways with a soft hammer to break seal.

   (If difficulty is experienced, refit plugs and kick over the engine a few times).
7. Remove head and carefully remove gasket for re-use if condition permits.

Replacement

1. Set pistons with crowns below the head-to-block joint.
2. Smear both sides of the thoroughly cleaned gasket with jointing compound and position on cylinder block.

Note:

Do NOT use Silastic 732 on cylinder head gasket if a high proportion of antifreeze is to be used as glycol affects this sealant. Use a normal jointing compound.

3. Carefully place head in position.
4. Refit the nine cylinder head bolts. Ensure that the ring seals are fitted to the bolts passing through the head steady, both above and below the steady.
5. Tighten down the bolts to 18 ft. lb (2.5 kg.m) in the correct order.
6. Tighten head steady bolts at the frame.
7. Refit plugs and leads.
8. Refit top hose to cylinder and check connection of lower hose used to drain the system.
9. Refill the cooling system.

2. Cylinder block removal and replacement

Removal (engine in or out of frame)

1. Remove the cylinder head as detailed in Section 1.
2. Remove the carburettor from the manifold by loosening the clamp, and tie or tape it clear of the block.
3. Detach both coolant hoses from the block.
4. Detach the exhaust pipes from the block by removing the six attachment bolts, and put the gaskets aside for re-use.
5. Remove the five nuts and the two Allen screws (in the top of the manifold) which hold down the block.
6. Gently ease the block upwards clear of the pistons.
7. Remove the gasket and put aside for re-use if condition permits.

Replacement

Before replacement of the block it is recommended that a check of the piston ring end-gaps be carried out. If the end gap exceeds 0.012 in (0.30 mm), new rings should be fitted.

When refitting rings, ensure that they are properly seated against the locating spigots in the ring grooves.

Check also the condition of the cylinder bores, pistons, small end bushes and circlips.

1. Place GREASED gasket on to the crankcase - DO NOT use gasket cement.
2. Turn crankshaft so that one piston is at the top of its stroke.
3. Ease the piston into the cylinder, carefully squeezing each ring into the bore.
4. Lower the block and piston so that the second piston rises to the block and repeat the insertion procedure.
5. Press the block over the five holding-down studs and on to the gasket.
6. Refit and tighten the five nuts and washers and the two Allen screws.
7. Refit the exhaust pipe gaskets and the six attachment bolts.
8. Refit the coolant hoses.
9. Refit the carburettor.
10. Refit the cylinder head (see Section Q1).
11. Refill with coolant.

3. Piston removal and replacement

Removal

1. Remove one of the gudgeon pin retaining circlips.
2. With the piston supported, press out the gudgeon pin until it clears the connecting rod.
3. Remove the piston.

Replacement

First check the condition of the piston, rings, small end bush and circlips.

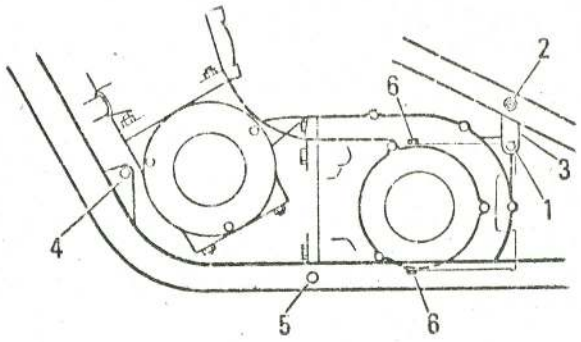
1. Ensure that the piston ring spigots face outwards away from the porting position.
2. Locate the piston over the connecting rod and press the gudgeon pin through to the opposite circlip.
3. Replace the other circlip.

SECTION R REMOVAL AND REPLACEMENT OF ENGINE/GEARBOX UNIT

Removal

1. Ensure that the machine is firmly supported throughout the operation.
2. Remove the primary chain tensioner bolt under the crankcase.
3. Support the engine unit on a suitable block.
4. Drain the coolant from one of the bottom hoses.
5. Disconnect fuel pipe at the fuel tap. The fuel tank can be removed for easier access.
6. Remove the carburettor from the manifold by loosening the clamp. Unscrew the carburettor top and remove the slide. For safety, remove slide from cable, noting the position of the needle. Place carburettor aside.
7. Remove both bottom coolant hoses and the top hose from cylinder head to the header tank.
8. Disconnect clutch cable at the handlebar lever and unclip from the frame.
9. Disconnect the oil control cable from the twistgrip.
10. Remove top and bottom bolts from oil pump and withdraw the unit complete with feed pipe, allowing it to hang clear of the engine unit.
11. Remove the six exhaust pipe attachment bolts from the block and put the gaskets aside for re-use.
12. Disconnect ignition and alternator wiring connectors and plug leads and remove the plugs.
13. Detach cylinder head steady, first from frame and then from cylinder head.
14. Disconnect gear change linkage at the top flexible Rose joint and swing clear.
15. Open rear sprocket enclosure, remove the chain spring-link and pull the chain clear of the gearbox sprocket.
16. Slide the gaiters off the front section of the chain enclosure.
17. If the front gaiter fixture is a fibreglass unit, detach it from the gearbox by removing the two bolts (6).

18. Remove the gearbox mounting bolt (1), slacken the Allen screws (2) in the frame and swing the gearbox mounting fork (3) rearwards to clear the gearbox unit.



19. Remove the front through-bolt (4).

20. Remove the two lower engine bolts (5).

21. Lift the engine/gearbox unit upwards and sideways out of the right hand side of the frame.

Replacement

1. Firmly support the frame and position a block between the frame tubes to support the engine/gearbox unit.

2. Lift the unit into the right-hand side of the frame and lower onto the support block.

3. Adjust the support to allow replacement of lower engine bolts (5) and front through bolt (4).

4. Swing the gearbox mounting fork forwards and locate the mounting bolt (1).

5. Tighten bolts (4), (5) and (1) and Allen screws (2).

6. Smear the joint faces of the oil pump assembly with Silastic 732 or equivalent sealing compound, and refit using two new 'O' rings, ensuring that they are correctly positioned and that the drive engages accurately in the end of the crankshaft. Tighten up top and bottom attachment bolts.

7. Refit oil control cable to twistgrip; reclip to frame at both sides of the adjuster.

8. Refit the clutch cable to handlebar lever, reclip to the frame, and adjust.

9. Refit cylinder head steady, tightening first to the head and then to the frame.

10. Reconnect ignition and alternator wiring connectors.

11. Refit sparking plugs and leads.

12. Reconnect gear change linkage coupling, ensuring the Rose joint moves freely.

13. Refit slide to carburettor, replace on manifold and tighten clamp ring.

14. Reconnect fuel pipe to fuel tap.

15. Refit bottom coolant hoses and top coolant hose.

16. Refit the exhaust pipe gaskets and six attachment bolts.

17. Feed the rear chain onto the top of the gearbox sprocket and carefully work the chain round until the end can be withdrawn from bottom opening.

18. Feed the chain ends through the front section of the chain enclosure and refit enclosure to gearbox with two bolts (6).

19. Attach a length of wire to each chain and use wire to pull chain through top and bottom chain gaiters.

20. Feed the chain ends through the rear section of chain enclosure.

21. Locate gaiters on chain enclosure sections.

22. Locate chain round rear sprocket and refit spring link.

Note:

It may be necessary to slacken the chain adjusters in order to position the chain on the sprocket (see Section G12).

23. Refit rear chain enclosure access panel.

24. Adjust chain as described in Section G12.

25. Remove packing from under crankcase and refit primary chain tensioner bolt.

26. Adjust primary chain as described in Section G11.

27. Refill coolant system (see Section Z4).

SECTION Z

MAINTENANCE DATA AT A GLANCE

INDEX

SECTION Z MAINTENANCE DATA AT A GLANCE

Machine numbers — To be quoted in all correspondence.

Frame number:	On right hand side of steering head.
Engine number:	On right hand side of crankcase.

Tyres

	Front	Rear
Type:	Avon Roadrunners or Dunlop TT100.	
Size:	3.60 x 18	4.10 x 18
Pressure, Solo:	24 lb/sq in (1.7 Kg/sq cm)	27 lb/sq in (1.9 Kg/sq cm)
" Two-up:	24 " " " (1.7 Kg/sq cm)	30 lb/sq in (2.1 Kg/sq cm) (Depending on load)

Fuel

Tank capacity:	3 gals.(13½l)(spring). 4 gals.(18 l.)(touring).
Grade:	4-star petrol, 98/99 octane.

Engine oil

Tank capacity:	3¼ pints (1.8 litres)
Grade:	2-stroke non-mixing. Duckhams 2-stroke or Filtrate Super 2
Consumption:	300 miles (500 km.) per pint approx. or better.

Clutch/chaincase oil

Capacity:	¼ pint (.13 l)
Grade:	Automatic transmission fluid.
Change:	At 500 miles (800 km.) then every 12,000 miles (20,000 km.)

Gearbox oil

Capacity:	1 pint (.5 l)
Grade:	EP 80/90 with Graphoidal Developments "Supergrad" additive.
Change:	At 500 miles (800 km.) then every 12,000 miles (20,000 km.)

Coolant

Capacity:	7 pints (3.8 l)
Type:	Water + Bluecol AA antifreeze, or equivalent for "all-aluminium" engine, when required.

Front forks

Quantity:	½ pint (.25 l) per leg.
Type:	Automatic transmission fluid.

General lubrication

Any normal automotive grease or oil.

Swinging arm pivot: grease frequently.

All hinges, fulcrums, control cables, rear brake arm, etc.: oil frequently.

Front fork sliders

Keep clean to avoid wear on seals if gaiters not fitted.

Front brake hydraulic fluid

Top up with fluid (Lockheed 329S).

Light bulbs

Head:	Thorn Halogen, H4, 60/55 W N0463
Pilot:	5 w
Stop/tail:	21/5 w. offset bayonet pins
Trafficators:	21 w.

Fuse

25 amp

Ignition timing

.3" before T.D.C. on full advance.

Sparking plugs

Type:	Champion L10 (for running in and sustained low speed use) KLG F220 (for high speed touring) NGK B8 HC L60R (for racing and high speed touring)
Gap:	0.025" (0.65 mm.)

Air cleaner

Type:	Unike foam element
Change:	Every 13,000 miles or as required.

Chain adjustment

Primary:	See section G paragraph 11
Final drive:	$\frac{1}{2}$"-$\frac{3}{4}$" (13-19 mm) at centre of top run.

Chain lubrication

Use Renolds "Duckhams" aerosol lubrication frequently during early running and thereafter as required.

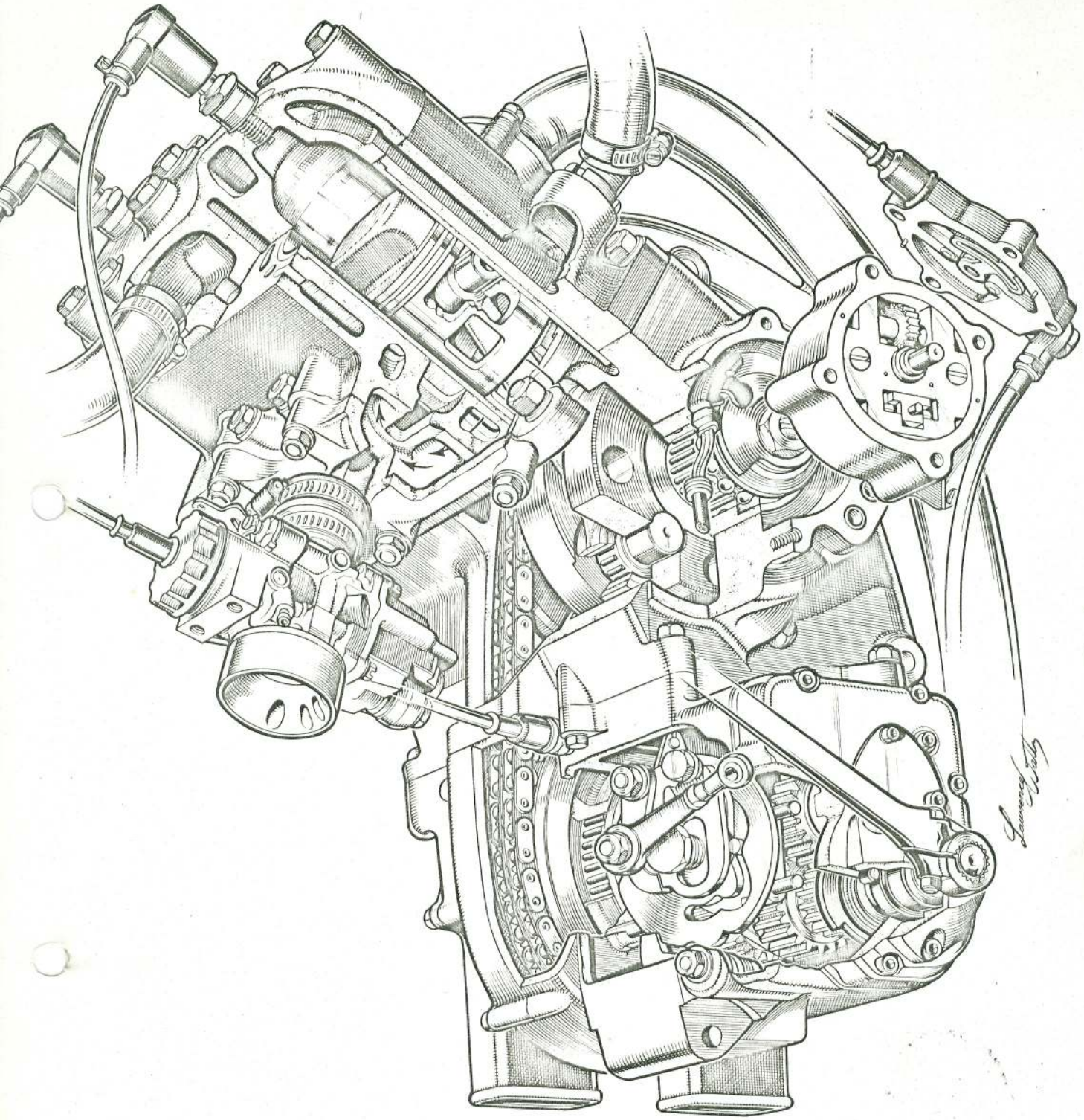


Fig. 1

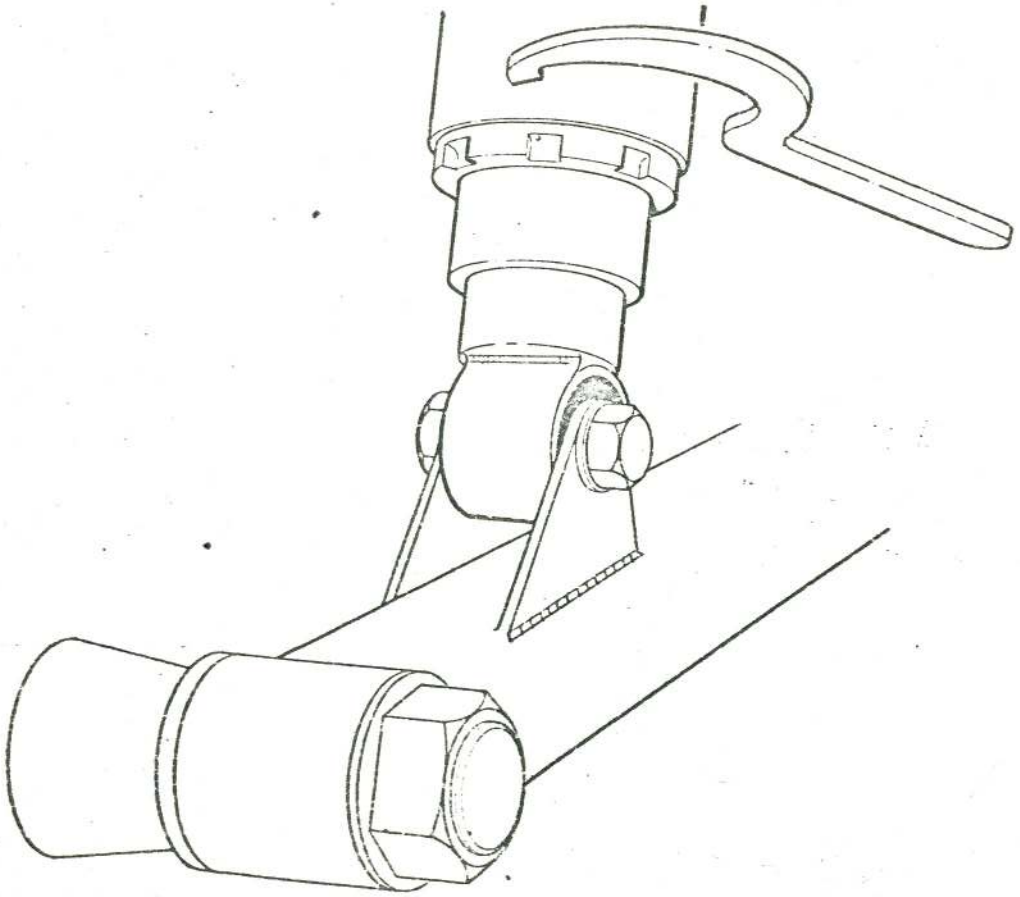


Fig.2 Rear shock absorber adjustment

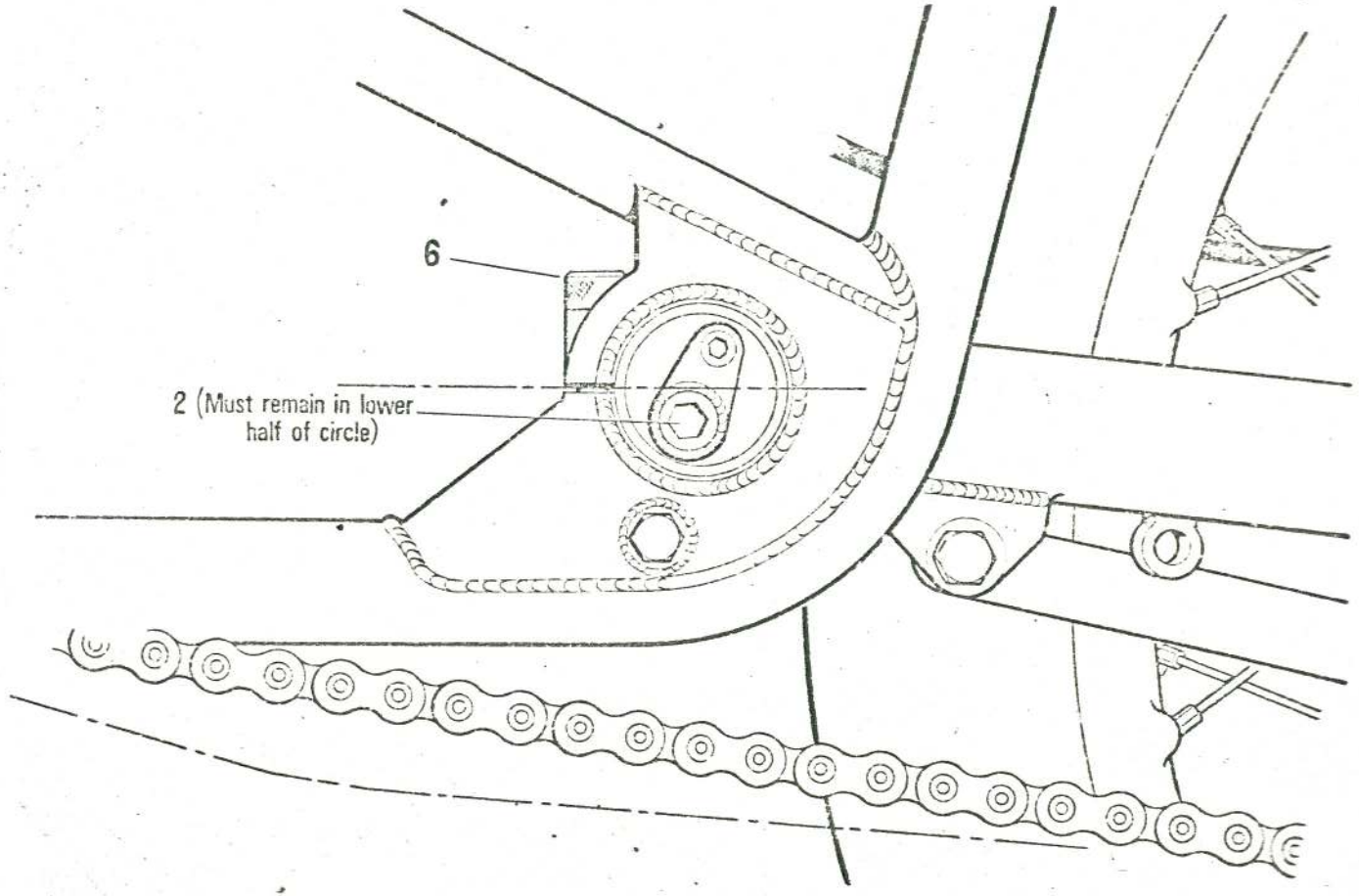


Fig.3 Chain tension adjustment

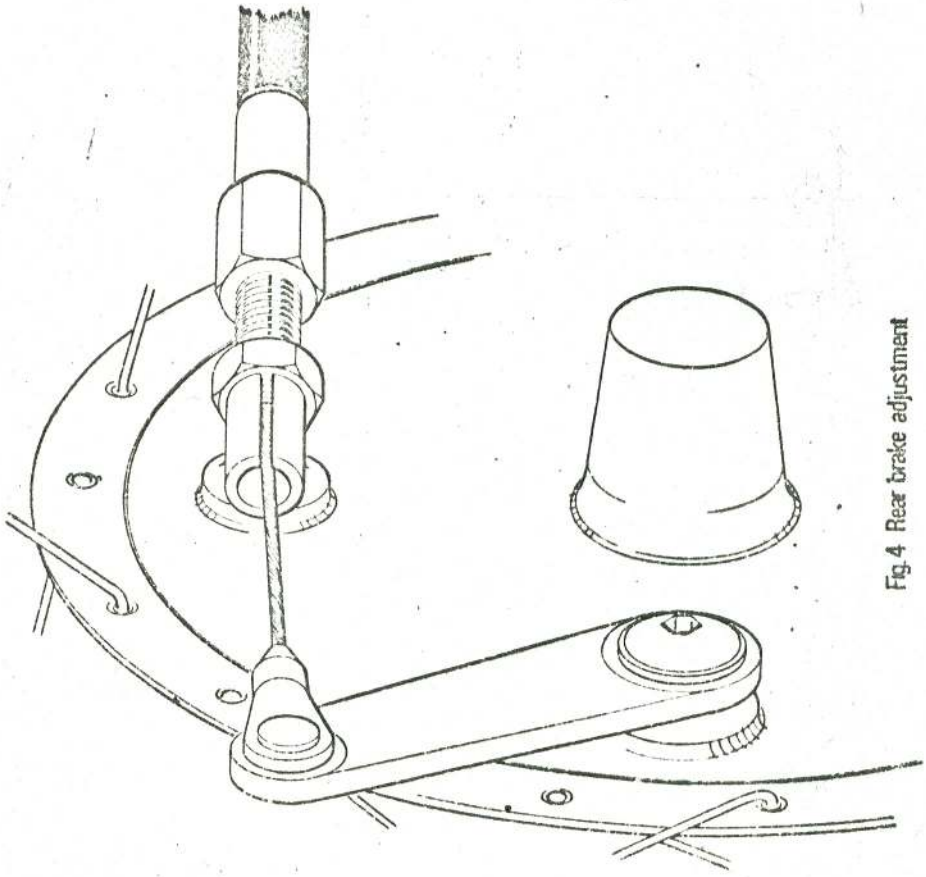


Fig.4 Rear brake adjustment

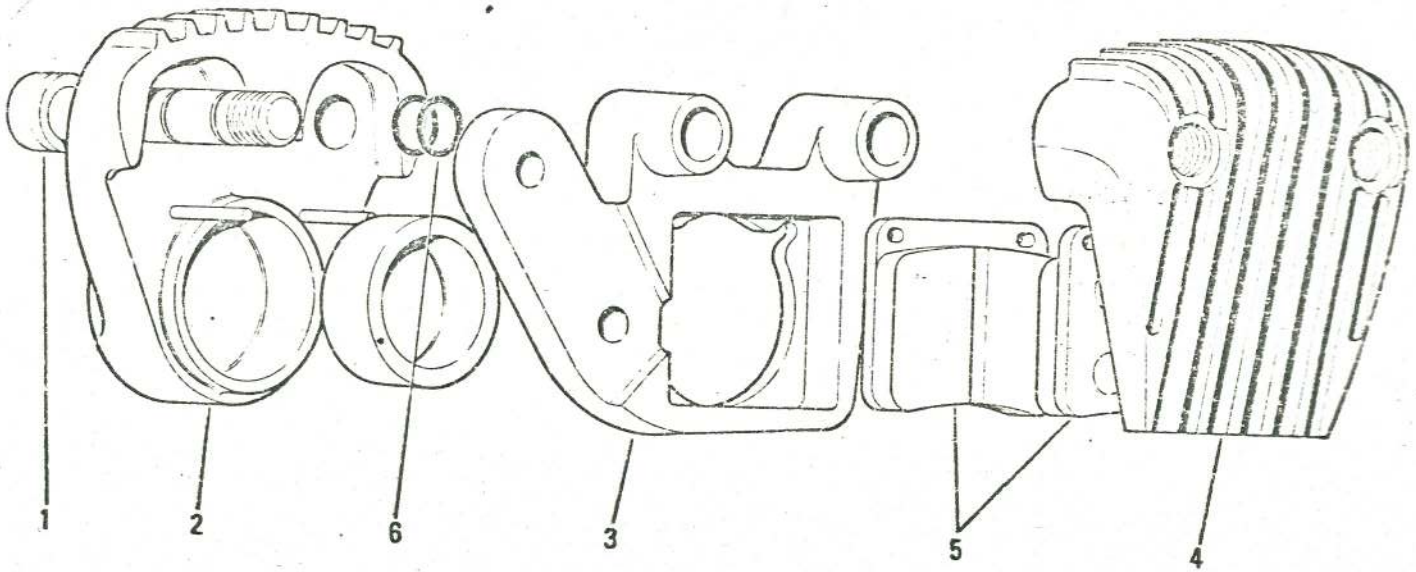


Fig.5. Front brake calliper assembly

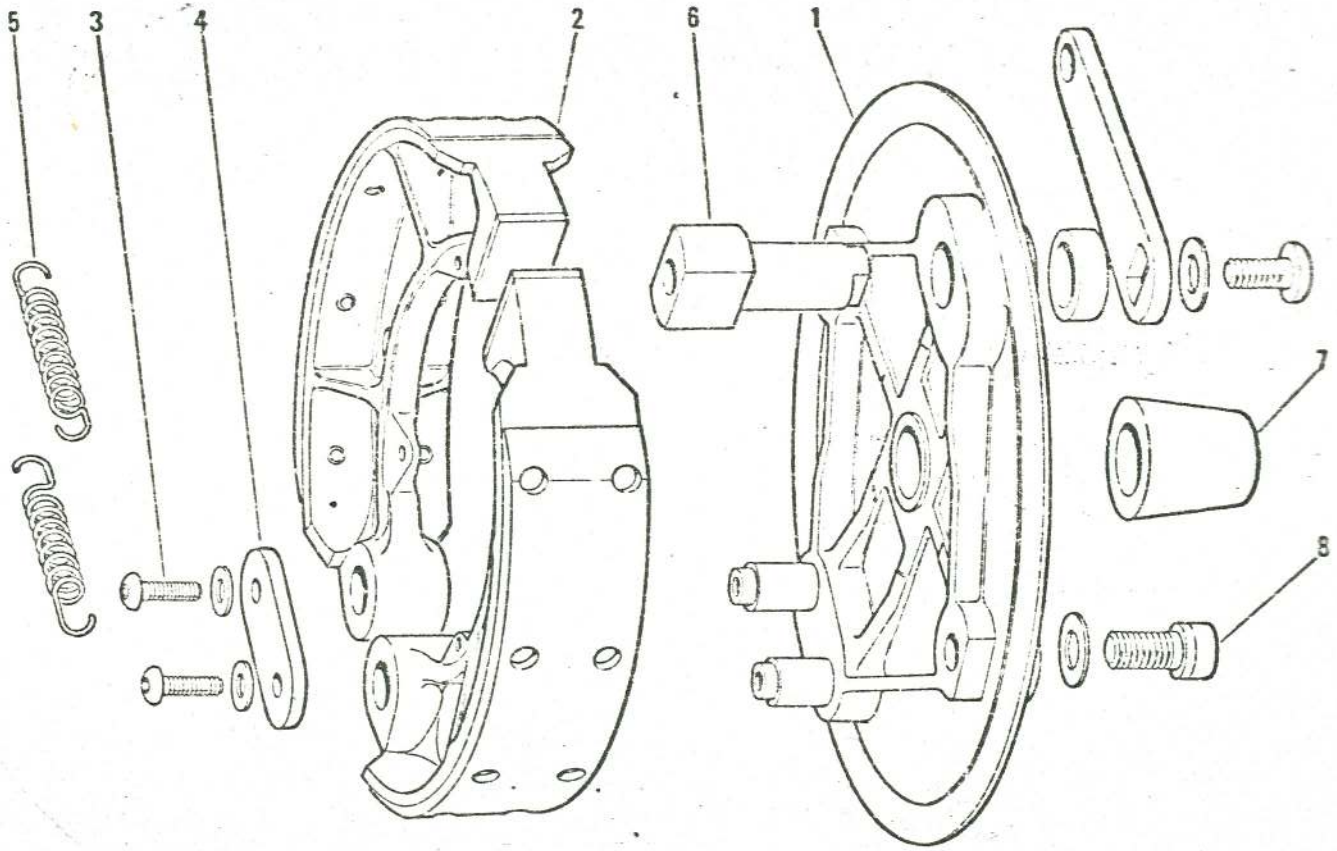


Fig.6 Rear brake assembly

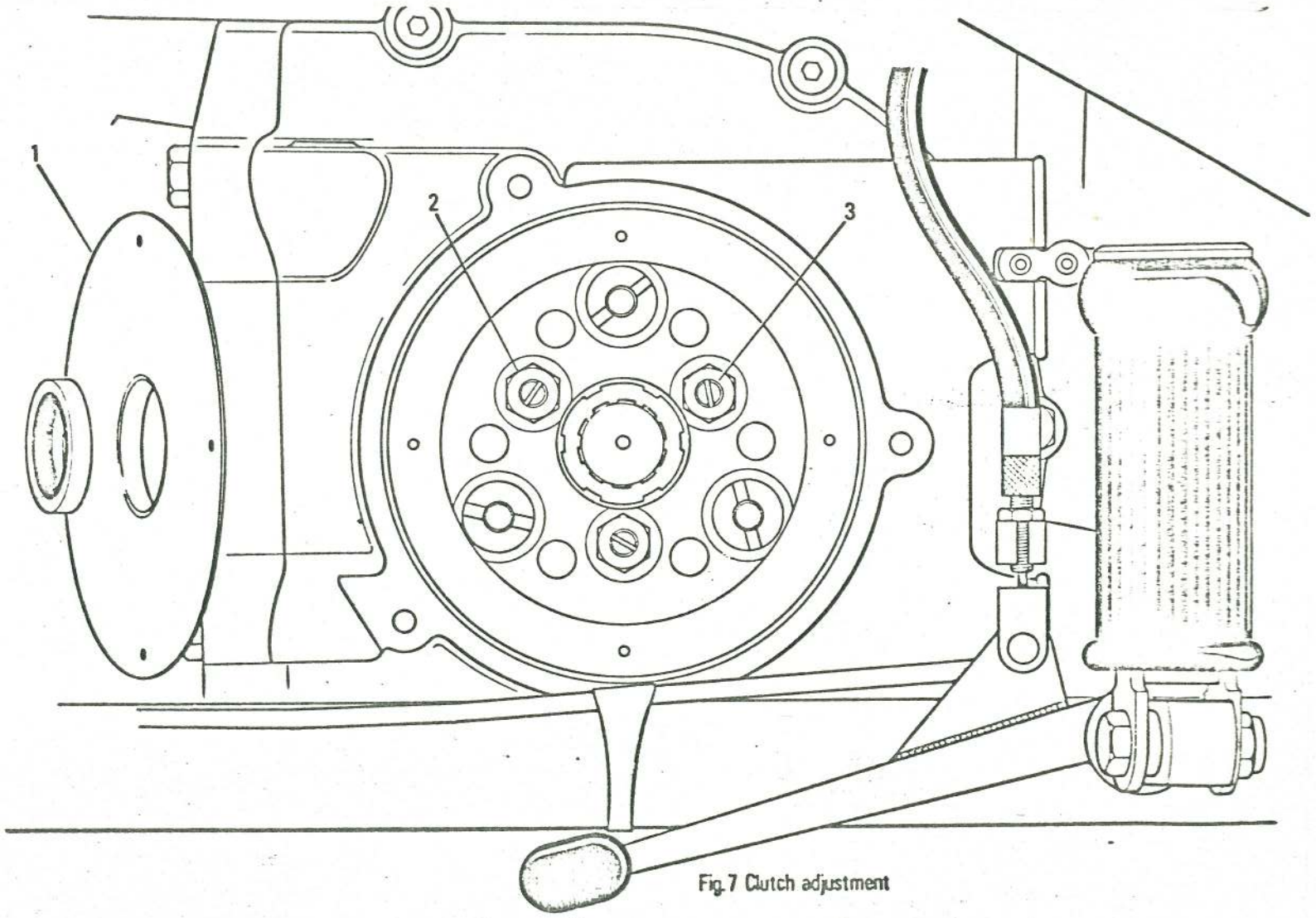


Fig. 7 Clutch adjustment

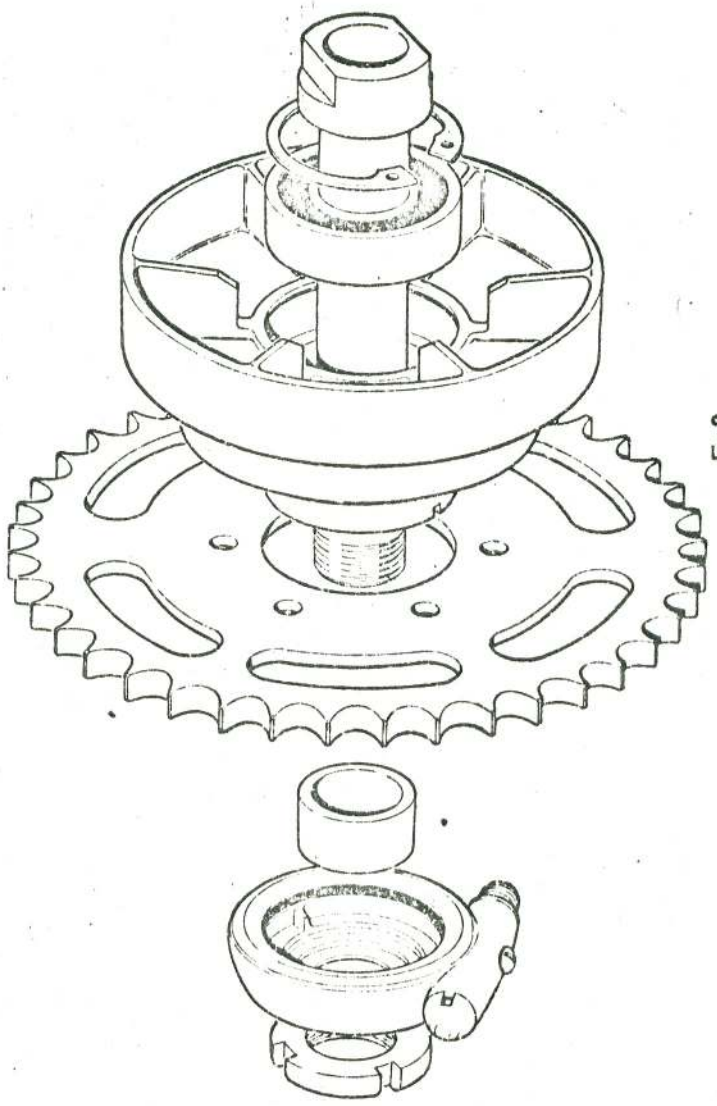


Fig.8

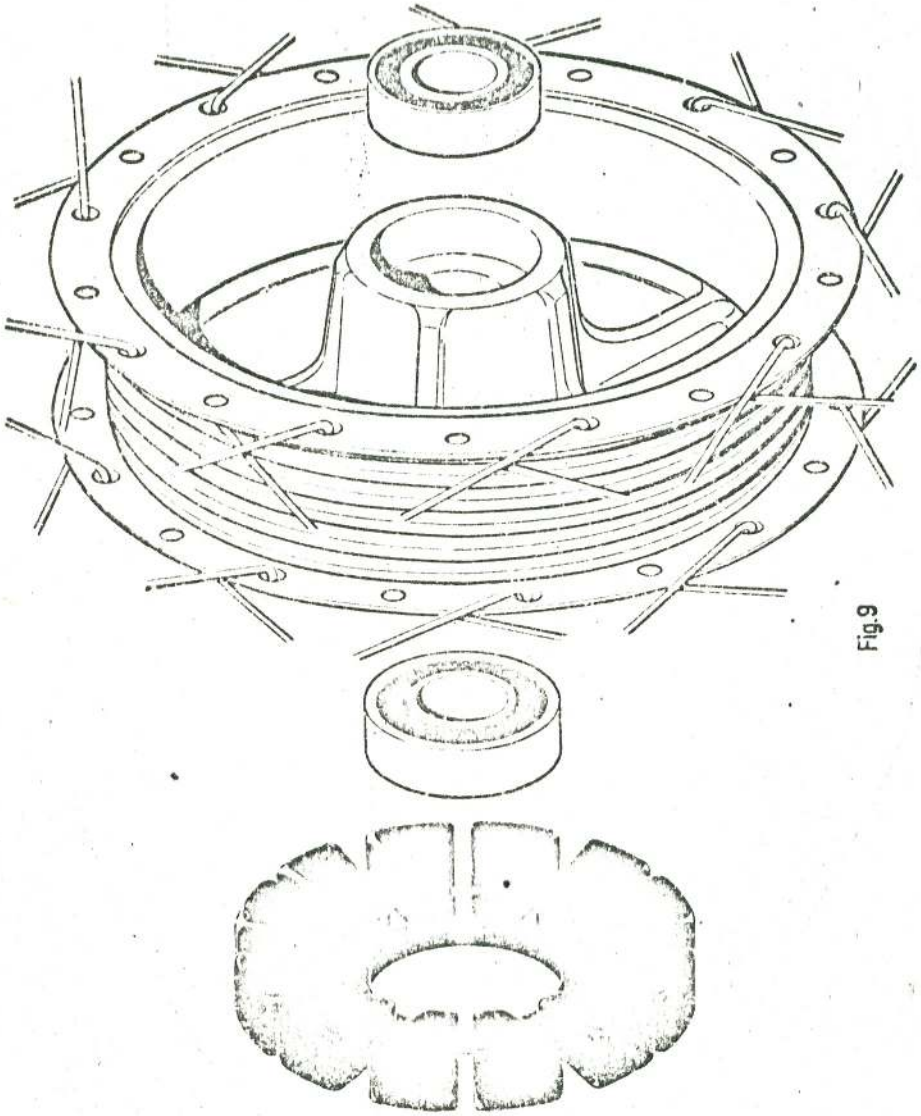


Fig.9

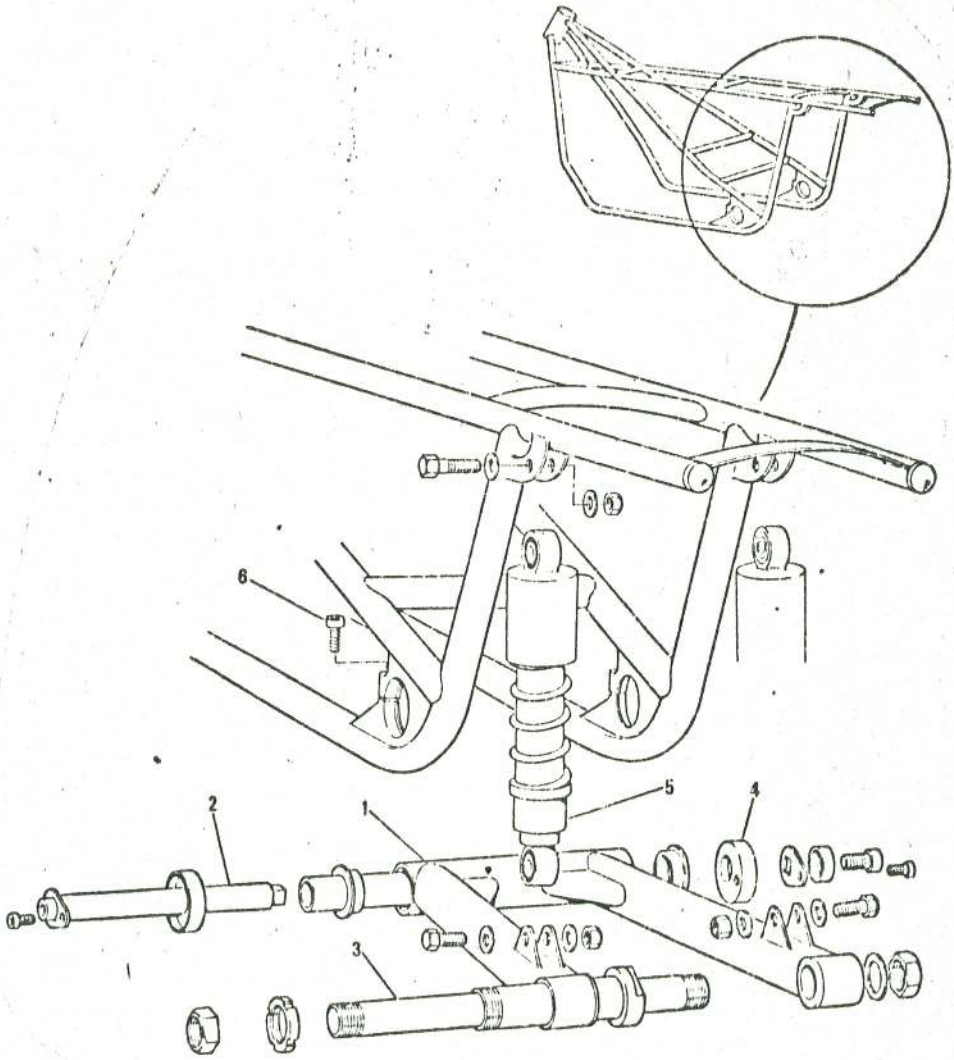
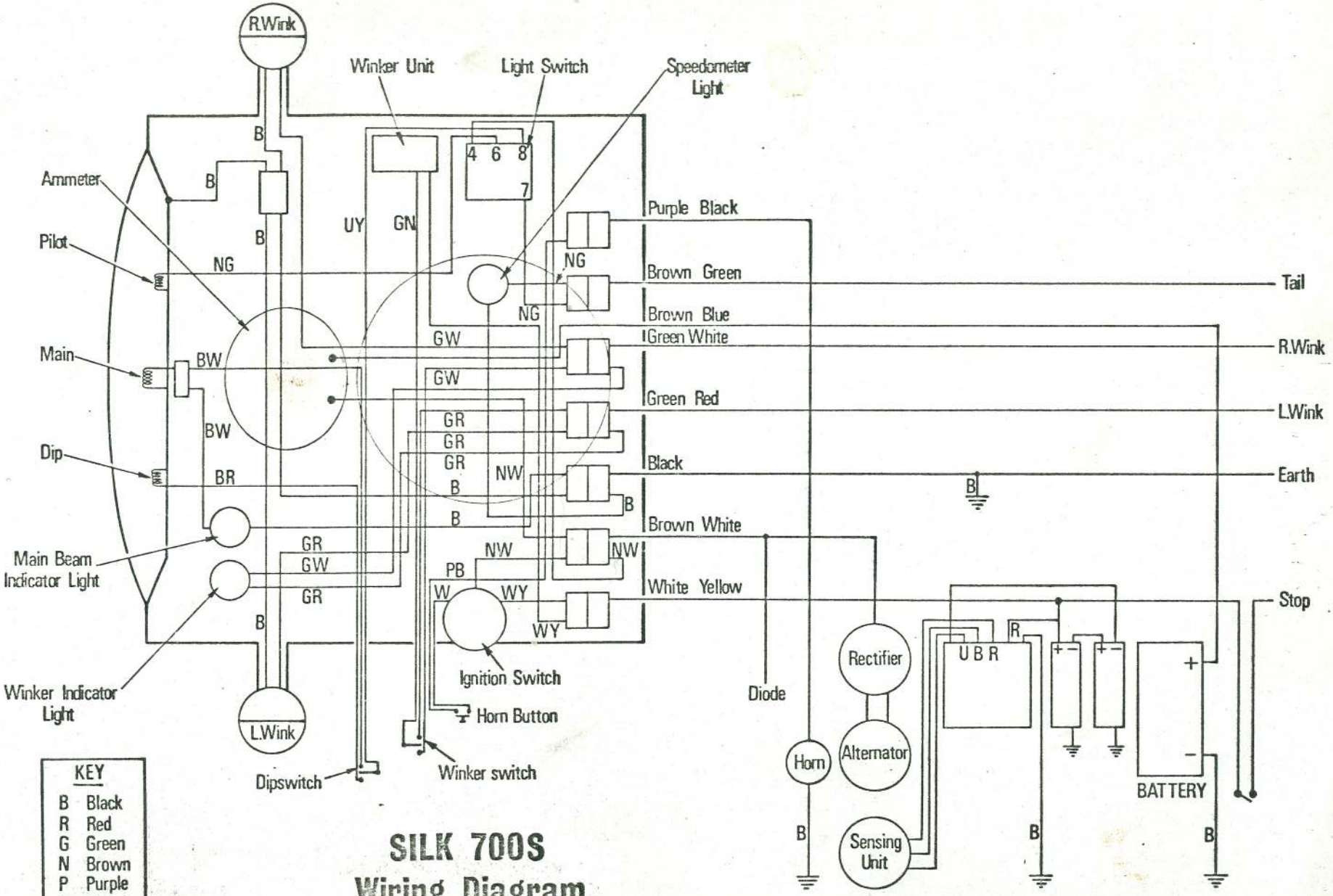
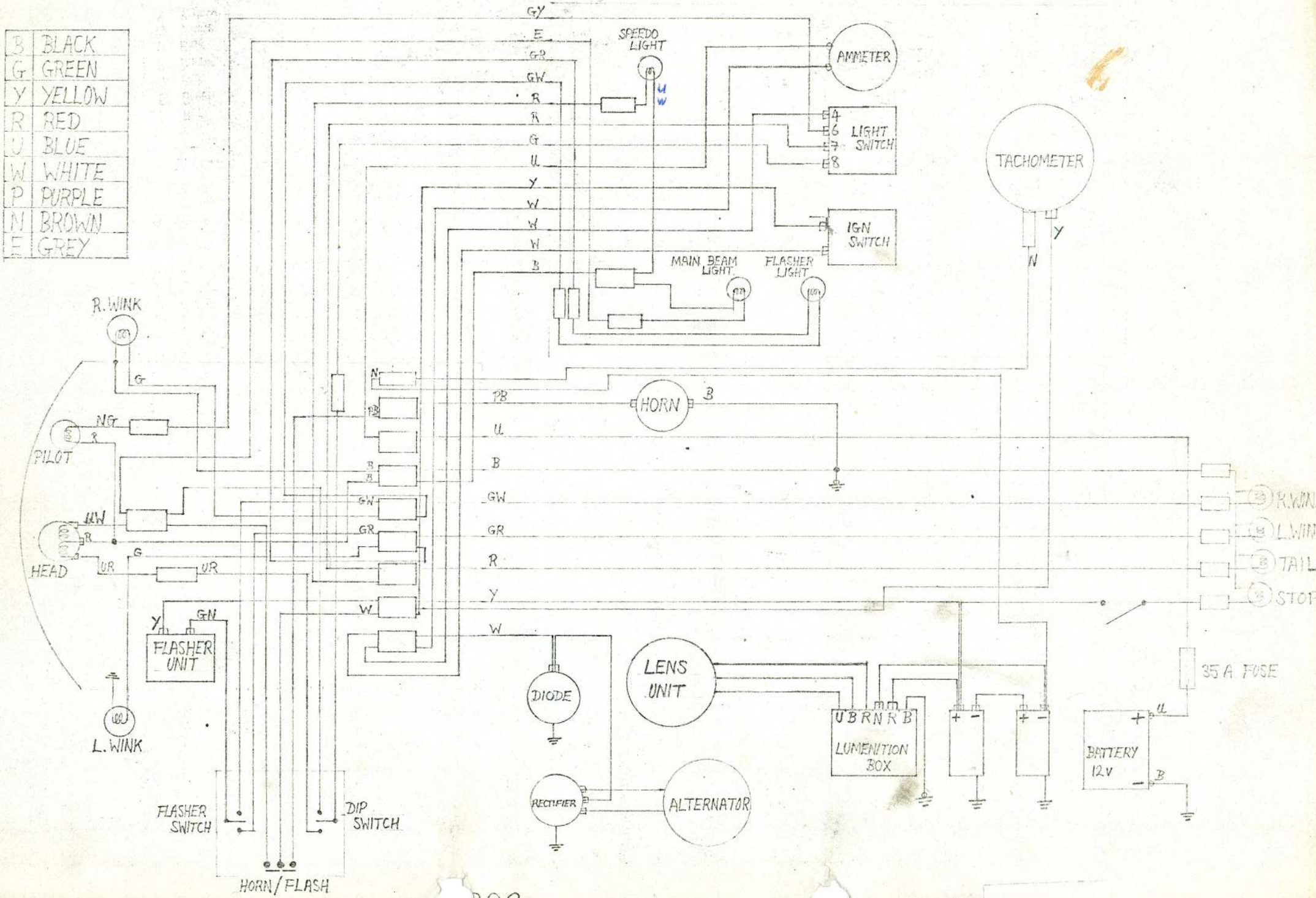


Fig.10 Swinging arm assembly



SILK 700S
Wiring Diagram

Fig.11



DOS MARK II WIRING DIAGRAM